



January 2014

The National Highway Traffic Safety Administration, in cooperation with the National Child Passenger Safety Board and Safe Kids Worldwide, are pleased to provide you with the enclosed Instructor Guide for the 2014 edition of the National Child Passenger Safety Certification Training Curriculum. Please use this guide for all classes starting on or after March 1, 2014. Until that time, you should continue to use the current materials.

In addition to the guide, we are providing you an Instructor DVD with resources. We **strongly** recommend that you carefully review all the materials associated with the course. While most of you are seasoned Instructors and very knowledgeable regarding CPS, our field can change rapidly with new products, guidelines, and best practices. So, it is imperative that everyone reviews all materials prior to teaching.

We've enhanced the course with several features including:

- All new photographs and illustrations in the Technician Guide and PowerPoint slides.
- Eight new videos and five 'repurposed' NHTSA videos. Four of the new videos are on rare installations with job aids to use following the course.
- The training program has been condensed so it can be delivered over three days.
- The bulk of the Appendix materials have been moved to the NCPSB website.

The paradigm of "Learn, Practice, Explain" is continued with this revision, as are both the written quizzes and skills assessments.

Beyond the course materials and the DVD, please take advantage of other resources to round out your professional "toolbox." These resources include your State Highway Safety Office, NHTSA Regional Office, and your colleagues.

We thank you for your support of this training and certification program.



TABLE OF CONTENTS

Acknowledgements ..... ii

Instructor Preparation ..... Prep-1

    Introduction ..... Prep-1

    National CPS Certification Process ..... Prep-1

    Outside Consultant Role ..... Prep-2

    Design Features ..... Prep-2

    Course Planning and Process ..... Prep-7

    Sample Agendas ..... Prep-9

    Quizzes and Skills Assessments ..... Prep-13

    Preparing to Teach ..... Prep-15

    Using the Module Plans ..... Prep-16

    Special Needs Accommodations ..... Prep-17

    Instructor DVD Contents ..... Prep-17

    Instructions and Tips for Using the PowerPoint Presentations ..... Prep-20

  

Module 1: Program Introduction ..... 1-1

Module 2: The CPS Technician Role ..... 2-1

Module 3: Injury Prevention & Crash Dynamics ..... 3-1

Module 4: Seat Belt Systems ..... 4-1

Module 5: Air Bags ..... 5-1

Module 6: Lower Anchors & Tethers for Children ..... 6-1

Module 7: Introduction to Car Seats & Booster Seats ..... 7-1

Module 8: Children in Rear-Facing Car Seats ..... 8-1

Module 9: Children in Forward-Facing Car Seats ..... 9-1

Module 10: Children in Booster Seats & Seat Belts ..... 10-1

Module 11: CPS in Other Vehicles ..... 11-1

Module 12: Installation & Communication ..... 12-1

Module 13: Closing & Checkup Event ..... 13-1

**NOTE:** All statistics noted in the program are based on data available at the time of printing.

## ACKNOWLEDGEMENTS

The National Highway Traffic Safety Administration (NHTSA) revision of the program was made possible with the assistance of a substantial number of talented child passenger safety experts from across the country. We are grateful to everyone who gave so much time, attention, and expertise to help bring you this revised program.

Past and present members of the National Child Passenger Safety Board (NCPSB) conceptualized the revised program and guided the redesign with dedication, expertise, and passion. Without their commitment, the National Child Passenger Safety Certification Training Program would not be the first class program that it is today.

## NCPSB MEMBERS

Following are the names of NCPSB members, past and present, who provided direction and technical assistance.

Marian Adams	Stacy Dawkins	Jennifer Huebner-Davidson
Helen Arbogast	Audrey Eagle	Carol Meidinger
J. Kevin Behrens	Suzanne Grace	John Merchant
Jennifer Booge	Carole S. Guzzetta	Sarah Tilton
Allan Buchanan	Barbi Harris	Lorrie Walker
Marilyn Bull	Sarah Haverstick	Narinder Dhaliwal
Sherri Cannon	Amy Heinzen	Bob Wall
Kerry Chausmer	Carol Helminski	Norraine Wingfield

## FIELD REVIEWERS

Additional CPS Technicians and Instructors from the field reviewed the course and provided valuable technical feedback.

Katrina Altenhofen	Kecia Healy	Kevin Poore
Ronald A. Atkins	Stephanie Heitsch	Marissa Ann Rodriguez
Jeffrey Baker	Susan A. Helms	Jennifer Rubin
Dawn Batman	Nichole Hodges	Amy Schultz
Margaret Beers	Jim Hoflund	Jennifer Ann Shea
Jennifer Belyeu	Amy Horn	Deborah June Scruggs
Amy Suzanne Borg	Amanda M. Horner	Terriann Shell
Janet Brooks	Mike James	Raymond Shew
Angela Brown	Steven D. Jensen	Thomas Sholty
Ann Brunzell	Woody Johnston	Jackie Stackhouse Leach
Jennie Burton	Francine Jones	Deborah Stewart
Deana Carson	Lisa A. Jones	John J. Stubbs
Suzanne Cash LeDoyen	Beth Kindschi	Andrea Marie Swanson
Jimmy Cassidy	Kathryn Kruger	Holly M. Terry

## FIELD REVIEWERS (CONTINUED)

Lori Cawley	Dana Landy	Anna Louise Thompson
Emilie Crown	Jeannine Lange	Sandra Tomiyama
Kristi Davis	Phyllis Larimore	Joseph Boyd Tong
Narinder Dhaliwal	Marnita Louzon	Andrew Turnage
Gary Lyn Dill	Ronda Lusk	Mark Van Horn
Denise Donaldson	Chengyeng Ly	Wanda Vazquez
Susan Marie Douglass	Karen Macauley	Eleanor J. Walters
Donald D. Dupray	Deborah A McCabe	Mike D. Warren
Suzanne E. Emery	Angela McFall	Heather Watson
Wendi Felgner	Katie D. Mueller	Kathy White
Victoria Fisher	M. Claire Myer	Tracy Whitman
Tamara Franks	Sarah Nielsen	Kim Wittig
Lisa B. Gardner	Emma Olenberger	Donald Wood
Beth Guzzetta	Jennifer Pavey	Richard Youngs
Bill Hall	Justin Phillips	
Carol Ann Hancock	Lisa A. Phy	
Lester Haynes	Allana Pinkerton	

## PILOT SITE

The course was pilot tested with a group of Technician Candidates. Feedback from the pilot was used to fine-tune the materials. Child Passenger Safety Technician (CPST) Instructor Emilie Crown hosted the pilot session and provided organizational and logistics support. The rest of the instructor team included:

- Jessica Butterfield
- Dale Crown
- Marcelo Ramos
- Kristin Rosenthal

## MANAGEMENT OF INSTRUCTIONAL DESIGN AND DEVELOPMENT

The National Safety Council (NSC) provided overall project management and instructional design and development expertise. NSC engaged a curriculum design specialist to redesign the course according to current adult learning principles.



## INSTRUCTOR PREPARATION

---

### INTRODUCTION

The National Child Passenger Safety (CPS) Certification Training Program provides the basic knowledge and technical skills for the correct use and installation of car seats, booster seats, and seat belts necessary to conduct safety inspection stations and community education.

Successful completion of this training program will result in certification and these competent CPS Technicians will be valuable resources in their communities.

The overall goals for the National CPS Certification training program are to:

1. Certify participants as CPS Technicians.
2. Provide participants with the opportunity to apply basic technical skills and knowledge to the correct installation and use of car seats, booster seats, and seat belts.
3. Equip participants to educate caregivers in the proper selection, installation, and use of car seats and booster seats and to know when to move to seat belts once booster seats are outgrown.
4. Equip participants to educate caregivers so they can confidently install and reinstall car seats and booster seats.
5. Enable participants to be a resource in their communities.

### NATIONAL CPS CERTIFICATION PROCESS

The National CPS Program Certification Training Program would not exist without the cooperation and collaboration of all of its partners. Each is responsible for and contributes to different aspects of the program.

#### National Highway Traffic Safety Administration

The National Highway Traffic Safety Administration (NHTSA) developed the original course in the mid-1990s and continues to update its content with the latest technical information. NHTSA is also a founding member of the National Child Passenger Safety Board (NCPSB).

#### Safe Kids Worldwide

Safe Kids Worldwide is the certifying body for the National CPS Certification Training Program. It is responsible for administering all aspects of certification and maintaining a directory of nationally certified CPS Technicians and Instructors.

#### National Child Passenger Safety Board

The National Child Passenger Safety Board (NCPSB) strives to improve the quality and integrity of CPS information and materials. It provides recommendations and guidance to NHTSA and Safe Kids Worldwide regarding curriculum and test development, as well as serves as a panel of experts and advocates for the program.

The NCPSB provides direction and technical guidance to states, communities, and organizations as a means to maintain a credible, standardized CPS Certification Training Program. Its members include representatives from child restraint manufacturers, vehicle manufacturers, law enforcement, fire/rescue, the medical and public health fields, the insurance industry, and other CPS advocates.

## CONSULTANT ROLE

A National Safety Council curriculum design specialist worked collaboratively with the NCPSB Curriculum Committee to update the technical content and redesign the content flow, Instructor Guide, Technician Guide, PowerPoint slides, and videos. Feedback from the CPS community was used to evaluate each draft of the new materials. A pilot class was conducted to determine course length, content, and evaluation sufficiency.

## DESIGN FEATURES

The course is organized by modules to reflect current terminology in the development of training materials.

- The Instructor Guide (IG) is organized in a two-column format that describes what an Instructor should do and suggestions for what to say. Content is organized with bullet and sub-bullet points. Icons prompt Instructors to:
  - Present information.
  - Display a PowerPoint slide.
  - Play a video.
  - Conduct a practice activity (hands-on practice).
  - Conduct a progress check (short quiz).
  - Ask a question.
  - Reference the TG.
  - Explain best practices.
- The Technician Guide (TG) contains:
  - Key content points and supportive graphics.
  - Tips for discussing technical information with caregivers.
  - Sections for note-taking while viewing videos.
  - Practice activities.
  - Key questions to answer about the topic.
  - Progress checks.
  - Rare installation job aids.
  - Motivational quotes/messages from experts in the CPS field (most modules).
  - Videos (seven modules include one or more).

- PowerPoint slides include key concepts and graphics. Seven of the 13 modules include embedded videos. PowerPoint slides with embedded videos are available in two formats – MP4 and WMV.
- The Instructor DVD includes all PowerPoint presentations, handouts, and forms to support the course.

The following description highlights the purpose and objectives covered in each module.

### Module 1: Program Introduction

The purpose of this module is to:

- Welcome participants, open the course, and provide an opportunity for them to become familiar with the purpose, goals, and completion requirements.
- Provide an opportunity for participants to get to know one another.
- Introduce participants to the statistics and personal costs of incorrect installation and use of car seats, booster seats, and seat belts.

The objectives of this module are to:

- Become acquainted with the purpose, goals, and successful completion requirements of the National CPS Certification Training Program.
- Identify the personal costs of incorrect use and installation of car seats, booster seats, and seat belts.
- Identify national statistics on the use of car seats, booster seats, and seat belts.

### Module 2: The CPS Technician Role

The purpose of this module is to orient participants to their role as a CPS Technician. You will also teach them about the Learn, Practice, Explain Model that will be applied during the training and afterwards on the job.

The objectives of this module are to:

- Describe the CPS Technician role.
- Discuss best practices and caregiver choices.

### Module 3: Injury Prevention & Crash Dynamics

The purpose of this module is to provide participants with an opportunity to explore challenges to crash survival, including what happens during a vehicle crash. Specific ways that car seats, booster seats, and seat belts prevent or reduce the severity of injuries will also be addressed.

The objectives of this module are to:

- Describe challenges to crash survival.
- Explain the concept of crash forces.
- Describe five ways that car seats, booster seats, and seat belts prevent injury.

## Module 4: Seat Belt Systems

The purpose of this module is to provide participants with a solid foundation on the hardware associated with seat belt systems prior to learning about car seat and booster seat installation. You will discuss federal standards for seat belts, two types of seat belts, and seat belt parts.

The objectives of this module are to:

- Identify federal standards related to seat belts.
- Name types of seat belts and seat belt parts.
- Describe types of latchplates.
- Describe types of retractors.
- Locate latchplates and retractors.
- Identify approved additional locking steps.
- Explain best practices about seat belt systems to caregivers.

## Module 5: Air Bags

The purpose of this module is to explore various aspects of air bags including types and locations in the vehicle, when and how they function, and related warnings and markings. Emphasis is placed on front passenger air bag systems and how they work with car seats and booster seats.

The objectives of this module are to:

- Describe the purpose and function of air bags.
- Identify features, warnings, and markings related to air bags for frontal and side impacts.
- Identify features of inflatable seat belts.
- Locate air bag information in owner's manuals and vehicles.
- Explain best practices about air bags to caregivers.

## Module 6: Lower Anchors & Tethers for Children

This module addresses Lower Anchors and Tethers for Children – LATCH – an alternative system to install car seats and booster seats in vehicles. You will teach participants about the LATCH system and lower anchor and tether anchor symbols and locations.

The objectives of this module are to:

- Describe lower anchor and tether anchors.
- Recognize lower anchor and tether anchor symbols and locations.
- Explain lower anchor and tether anchor best practices to caregivers.

## Module 7: Introduction to Car Seats & Booster Seats

This module is an introduction to car seats and booster seats. It provides a foundation of car seat and booster seat information prior to learning details about each type of car seat. Focus is on NHTSA's Standard 213 and recommendations, parts, and functions, selection, and car seats for children with special needs.

The objectives of this module are to:

- Identify NHTSA's Federal Motor Vehicle Safety Standard 213.
- Explain NHTSA's car seat and booster seat recommendations.
- Name car seat and booster seat parts and functions.
- Determine how to select the appropriate car seat or booster seat.
- Identify car seats for children with special needs.

## Module 8: Children in Rear-Facing Car Seats

The purpose of this module is to instruct participants about selection, direction, location, installation, and harnessing with rear-facing car seats. Participants will also learn how to communicate best practices, as well as identify rear-facing car seat errors and consequences.

The objectives of this module are to:

- Describe why children should travel rear-facing.
- Identify types of rear-facing car seats.
- Apply 5 steps for rear-facing car seat use.
- Explain best practices and caregiver choices about rear-facing car seats.
- Identify rear-facing car seat errors and consequences.

## Module 9: Children in Forward-Facing Car Seats

The purpose of this module is to learn about selection, direction, location, installation, and harnessing with different types of forward-facing car seats. Participants will also learn how to explain best practices and identify forward-facing car seat errors and consequences.

The objectives of this module are to:

- Describe when children should travel forward-facing.
- Identify types of forward-facing car seats.
- Apply 5 steps for forward-facing car seat use.
- Explain best practices about forward-facing car seats to caregivers.
- Identify forward-facing car seat errors and consequences.

## Module 10: Children in Booster Seats & Seat Belts

The purpose of this module is to prepare participants to assess whether belt-positioning booster seats and seat belts are being correctly used and teach caregivers about their proper use.

The objectives of this module are to:

- Identify how booster seats protect children.
- Differentiate between types of booster seats.
- Install a booster seat.
- Explain recommendations for children in seat belts.
- Explain best practices about booster seats and seat belts to caregivers.

## Module 11: CPS in Other Vehicles

The purpose of this module is to provide an introduction to car seats in other types of vehicles. You will address pickup trucks, 15-passenger vans, school buses, airplanes, and emergency vehicles.

The objectives of this module are to:

- Identify appropriate car seats and booster seats by vehicle type.
- Explain current recommendations for car seats and booster seats in other vehicles.

## Module 12: Installation & Communication

In this module, participants will apply what they have learned throughout this course by practicing how to determine safe seating positions for two families. Effective communication skills with caregivers will also be addressed.

The objectives of this module are to:

- Determine the safest seating positions and appropriate restraints for all occupants.
- Communicate effectively with caregivers.

## Module 13: Closing & Checkup Event

The purpose of this module is to close the classroom-based portion of the training and for participants to demonstrate their knowledge and skills in conducting seat checks through a checkup event. Participants will also learn about the CPS Technician recertification process.

The objectives of this module are to:

- Identify requirements for CPS recertification.
- Prepare for a checkup event.
- Conduct a checkup event.
- Close and debrief a checkup event.

## COURSE PLANNING AND PROCESS

The following checklist is intended to serve as a guide for experienced as well as new Lead Instructors (LI) and Course Administrators. Read the Policies and Procedures Manual on the CPS Certification website for updated course deadlines and requirements at <http://cert.safekids.org>.

1. Refer to the “Instructor Downloads and Curriculum Clarifications” pages on the [www.cpsboard.org](http://www.cpsboard.org) website to ensure that your Instructor Guide and materials are up-to-date. This is a restricted access site that can be accessed through the “Instructor Downloads (NCPSB)” action item in Certified Instructors’ Safe Kids Certification system online profiles.
2. Get in touch with your state CPS Training Contact. Current contact information is available through the NCPSB website at [www.cpsboard.org](http://www.cpsboard.org). Click on the State CPS Contacts link. Inform your state CPS training contact of your intent to host a class. This person can assist you in identifying Instructors and obtaining training materials and state-specific resources.
3. Choose the Instructor team and dates for the course.
  - An effective LI is vital to the success of your course. If you have never worked with the person before, ask for references and follow up with phone calls.
  - Identify two to three potential dates. Take note of holidays and school closings that might create conflicts.
  - Discuss any fees and/or travel reimbursement with Instructors.
4. Create a detailed agenda.
  - While the course has a specific number of modules and hours of instruction, it may be delivered over three or more days.
  - Two sample agendas are included in this section of your Instructor Guide.
5. Send a confirmation letter to the Instructor team with the following:
  - Dates, times, and location of the course, suggested arrival time, and social events outside class time
  - Expected participants (police officers, nurses, community advocates, etc.)
6. Recruit participants.
7. Select course type.
  - A public course is open to all individuals.
  - A controlled course is open only to individuals approved (online) by the LI or Course Administrator.

8. Schedule the required course CPS checkup event. Partnering with community groups or events will maximize your resources. Examples include:
  - Open-served community event: First-come, first-served public events are usually conducted at retail locations or other public venues such as parks.
  - Appointment-based event: Interested families schedule a time to get their car seats and booster seats checked.
  - Partnering with an inspection station: The inspection station allows the class to “work” the station.

For more information on planning and promoting a checkup event, see the Planning & Logistics Guide located on the Instructor DVD.

9. Select a training facility and negotiate a contract. In-house facilities often work well. Hospitals, law enforcement academies, government agencies, and many businesses have facilities that are designed for training and may be available to you at a reduced cost or no cost. Consider the following factors when selecting a site.

#### **Location and convenience**

- Will participants and the Instructor team be interrupted by other activities at the facility?
- Is the facility clean, in good repair, and professional in appearance?
- Can the classroom be locked at night or is secure storage available nearby?
- Is food/meal preparation available on site? If not, are there other options (catering, nearby restaurants)?
- Does the parking lot have space available for practice activities (be sure to consider safety issues)?
- Is the parking lot readily accessible for practice activities?
- Is overhead cover available to protect participants from the sun, rain, etc.?

#### **Classroom size**

- Is the classroom large enough to accommodate participants, materials, and teaching activities?
- Where will the projector and computer be placed and plugged in?
- Can all participants see the screen and Instructor?

#### **Vehicle storage**

- Is there access to a covered parking area where vehicles can be stored and practice activities and demonstrations conducted?
- Is there a safe area to conduct demonstrations and, if needed, a checkup event?
- Is there a backup plan for adverse weather?

## Equipment

- Who is providing the audiovisual equipment?
- Is there a rental charge for equipment?
- Is the necessary software to run the PowerPoint slides with videos available on the computer to be used?

## SAMPLE AGENDAS

Instructors have the discretion to adjust time frames on the agenda for presentations, activities, assessments, breaks, and lunch times as these are decisions based on factors such as the number of participants, classroom logistics, and weather conditions. While Instructors cannot add or delete information from the course, they can add time to modules if class size or other circumstances warrant.

Instructors can use the following sample agendas to plan their schedules for upcoming classes. The course modules are presented in a cumulative manner with each successive module building on the preceding modules. The written quizzes and skills assessments are structured to test content from specific modules. Reordering the content will disrupt the flow of the course and may jeopardize the ability of participants to successfully master the content.

Time estimates for each module presentation and activity are included on the agendas. These time estimates are provided for planning purposes and may be deleted from the final agenda printed for participants.

LI's should adjust the agenda to fit their needs. Content must be taught in the module order.

### 3-DAY AGENDA

#### DAY 1

Time	Topic/Activity	# of Minutes
8:00-8:45	Module 1: Program Introduction	45
8:45-9:15	Module 2: The CPS Technician Role	30
9:15-10:00	Module 3: Injury Prevention & Crash Dynamics	45
10:00-10:10	Break	10
10:10-12:20	Module 4: Seat Belt Systems	130
12:20-1:00	Lunch	40
1:00-1:30	Module 5: Air Bags	30
1:30-2:15	Quiz #1 for Modules 1-5 (includes review)	45
2:15-3:05	Module 6: Lower Anchors & Tethers for Children	50
3:05-3:15	Break	10
3:15-4:15	Skills Assessment #1 for Modules 1-6	60
4:15-4:55	Module 7: Introduction to Car Seats & Booster Seats	40
4:55-5:00	Q & A, expectations for Day 2	5
	TOTAL:	540 Minutes

DAY 2

Time	Topic/Activity	# of Minutes
8:00-8:05	Review of Day 1, Overview Day 2	5
8:05-8:30	Module 7: Introduction to Car Seats & Booster Seats (cont.)	25
8:30-10:15	Module 8: Children in Rear-Facing Car Seats	105
10:15-10:25	Break	10
10:25-10:50	Module 8: Children in Rear-Facing Car Seats (cont.)	25
10:50-11:35	Quiz #2 for Modules 6-8 (includes review)	45
11:35-12:00	Module 9: Children in Forward-Facing Car Seats	25
12:00-12:30	Lunch	30
12:30-2:10	Module 9: Children in Forward-Facing Car Seats (cont.)	100
2:10-2:45	Module 10: Children in Booster Seats & Car Seats	35
2:45-2:55	Break	10
2:55-4:40	Skills Assessment #2 for Modules 7-10	105
4:40-4:55	Module 11: CPS in Other Vehicles	15
4:55-5:00	Q & A, expectations for Day 3	5
		540 Minutes

DAY 3

Time	Topic/Activity	# of Minutes
8:00-8:05	Review of Day 2, Overview Day 3	5
8:05-9:15	Module 12: Installation & Communication	70
9:15-10:00	Quiz #3 for Modules 8-11 (includes review)	45
10:00-10:10	Break	10
10:10-11:10	Skills Assessment #3 for All Modules	60
11:10-12:05	Module 13: Closing & Checkup Event (Recertification & Preparation for Checkup Event)	55
12:05-1:00	Lunch	55
1:00-4:15	Module 13: Closing & Checkup Event (Checkup Event)	195
4:15-5:00	Module 13: Closing & Checkup Event (Conduct Closing Activities)	45
		540 Minutes

4- DAY AGENDA

DAY 1

Time	Topic/Activity	# of Minutes
8:00-8:45	Module 1: Program Introduction	45
8:45-9:15	Module 2: The CPS Technician Role	30
9:15-10:00	Module 3: Injury Prevention & Crash Dynamics	45
10:00-10:15	Break	15
10:15-12:05	Module 4: Seat Belt Systems	110
12:05-1:05	Lunch	60
1:05-1:25	Module 4: Seat Belt Systems (cont.)	20
1:25-1:55	Module 5: Air Bags	30
1:55-2:40	Quiz #1 for Modules 1-5 (includes review)	45
2:40-2:55	Break	15
2:55-3:45	Module 6: Lower Anchors & Tethers for Children	50
3:45-4:00	Q & A, expectations for Day 2	15
	TOTAL:	480 Minutes

DAY 2

Time	Topic/Activity	# of Minutes
8:00-8:05	Review of Day 1, Overview Day 2	5
8:05-9:05	Skills Assessment #1 for Modules 1-6	60
9:05-10:10	Module 7: Introduction to Car Seats & Booster Seats	65
10:10-10:25	Break	15
10:25-12:05	Module 8: Children in Rear-Facing Car Seats	100
12:05-1:05	Lunch	60
1:05-1:35	Module 8: Children in Rear-Facing Car Seats (cont.)	30
1:35-2:20	Quiz #2 for Modules 6-8 (includes review)	45
2:20-2:35	Break	15
2:35-4:15	Module 9: Children in Forward-Facing Car Seats	100
4:15-4:20	Q & A, expectations for Day 3	5
		500 Minutes

DAY 3

Time	Topic/Activity	# of Minutes
8:00-8:05	Review of Day 2, Overview Day 3	5
8:05-8:30	Module 9: Children in Forward-Facing Car Seats (cont.)	25
8:30-9:05	Module 10: Children in Booster Seats & Car Seats	35
9:05-11:00	Skills Assessment #2 for Modules 7-10 (includes 10-minute break)	115
11:00-11:15	Module 11: CPS in Other Vehicles	15
11:15-12:25	Module 12: Installation & Communication	70
12:25-1:30	Lunch	65
1:30-2:15	Quiz #3 for Modules 8-11 (includes review)	45
2:15-2:30	Break	15
2:30-3:30	Skills Assessment #3 for All Modules	60
3:30-4:25	Module 13: Closing & Checkup Event (Recertification & Preparation for Checkup Event)	55
4:25-4:30	Q & A, expectations for Day 3	5
		510 Minutes

DAY 4

Time	Topic/Activity	# of Minutes
8:00-8:05	Review of Day 3, Overview Day 4	5
8:05-11:20	Module 13: Closing & Checkup Event (Checkup Event)	195
11:20-12:05	Module 13: Closing & Checkup Event (Conduct Closing Activities)	45
		<b>245 Minutes</b>

## QUIZZES AND SKILLS ASSESSMENTS

Written quizzes and skills assessments are included in the course. The following summary describes the quizzes and skills assessments. Specific instructions for each quiz and skill assessment are included in the IG at the point of administration.

### Overall Guidelines for Quizzes and Skills Assessments

All Instructors must follow specific guidelines when administering quizzes and skills assessments. Do **NOT**:

- Provide answers in any form or allow a participant to change their answers once submitted.
- Share the quiz and skills assessment forms with non-participants.
- Alter any quizzes or skills assessments.

### Preparation for Quizzes and Skills Assessments

- Copy/print the quizzes and skills assessments (can be double-sided).
- Hand out quizzes and skills assessments immediately prior to administering them.
- Two versions (A and B) of each quiz are available. The questions are the same for each version, but the order of the questions and/or the answers differ between the two versions. Different versions can be handed out for each quiz in classes where space is limited and Instructors have reason to be concerned about participants copying from the answer sheets of others.
- Help define non-CPS terms, but do not answer CPS-related questions. Have copies of the English-Spanish glossary available for participants ([www.cpsboard.org](http://www.cpsboard.org)).

### Quiz Administration General Instructions

There are three written quizzes, one each for Modules 1 to 5, Modules 6 to 8, and Modules 9 to 12. Each quiz is administered after the group of modules has been taught.

- The recommended time limit for each quiz is 30 minutes followed by a 15-minute review.
- Quizzes are timed and open book. Emphasize to participants that they will need a good grasp of the content. While quizzes are open book, they are not easy.
- Participants must correctly score a total of at least 42 (85 percent) out of 50 questions.
- There are no quiz retakes.
- Specific instructions to administer and wrap-up each quiz are contained in this Instructor Guide at the point of administration (after Modules 5, 8, and 12).
- Participant forms for each quiz are on the Instructor DVD.

- Any scoring discrepancies must be brought immediately to the attention of the LI who will investigate/rule (for example, answer marked incorrect in error).
- Under **NO** circumstances can any participant, Instructor team member, or other person modify the participant quiz answer sheets, except in the case of a scoring discrepancy.
- Any Instructor who knowingly allows quiz altering to occur or shares the quiz with non-technician-candidates and does not take immediate action is at risk of certification sanctions.

### Skills Assessment General Instructions

There are three skills assessments, one each after Modules 6, 10, and 12. Each skills assessment is administered after a group of modules has been taught.

- The recommended time limit varies from 60 to 105 minutes.
- Participants must pass each section of each skills assessment.
- Participants may retake each section of each skills assessment two times.
- Specific instructions to prepare, administer, and wrap-up each skills assessment are contained in this Instructor Guide at the point of administration (after Modules 6, 10, and 12).
- Participant forms for each skills assessment are on the Instructor DVD.
- Emphasize that all assessments are done independent of Instructor input or collaboration with other participants. Participants must work separately.
- If there are three passes (skills assessments and checkup) and at least 42 of 50 correct on the quizzes, the participant will be processed as a CPS Technician.

### Post-Course

The LI:

- Can print out and provide wallet cards for the new CPS Technicians, if desired, and if a computer with Internet access and a printer are available.
- Must keep the Score Sheet as a record of the participants' scores and may destroy any used quizzes after the course is completed.
- Must keep the completed skills assessment forms as records of the participants' scores.
- Submit skills assessment pass/fail scores to the online Safe Kids Certification system.

## PREPARING TO TEACH

Check for curriculum updates and policy clarifications.

- Updates and corrections to the Instructor Guide and policies and procedures are available for download from the Instructors' restricted access area on [www.cpsboard.org](http://www.cpsboard.org).
- Instructors can access this site through the "Instructor Downloads (NCPSB)" action item in their Safe Kids CPS Certification course profiles.

Focus on Instructor preparation and practice as if you were an Instructor Candidate no matter how many times you teach this course.

- Review the IG, TG, practice activities, progress checks, quizzes, and skills assessments in advance.
- Review the contents of the Instructor DVD carefully. Read the instructions for the slides and videos and be sure the videos will work with the computer and projector that will be used in class.
- Review all materials and resources noted in the IG.
- Plan to teach as much of the class in vehicles as is possible in order to increase skills practice.

Have sufficient car seats, booster seats, equipment, non-regulated products, and vehicles on hand throughout the course.

- Provide new and older car seats for participant use during class.
- Arrange for a variety of vehicles to be on hand for presenting, demonstrations, and activities.
- Arrange to have vehicle and car seat/booster seat owner's manuals available.
- Be sure to have sufficient supplies of locking/belt-shortening clips, pool noodles, and other equipment needed for instruction and demonstration.

Follow the module plans.

- This course provides core instructional materials needed to teach the course. Cover everything in the module plans, but do not add to the content unless necessary for further explanation.
- Do **NOT** say, "The way we used to teach this was..." This will only confuse the participants and throw the schedule off track.

Only use approved supplemental materials.

- All course materials should be used in their original form and may not be changed by Instructors without the express written consent of NHTSA.
- There may be limited occasions when approved supplemental information may be used, such as providing state or local child passenger safety resources, data, or legislative updates. To provide supplemental materials, the items must be:
  - Clearly identified as supplemental.
  - Reflect up-to-date factual information.
  - Not conflict with any standardized course information.

- Participants must be informed that they will not be quizzed on the supplemental information.
- Consider using supplemental materials as the foundation of a post-class update shortly after the certification class. This will keep you in touch with your participants and enable you to enhance their skills and knowledge after they have had some experience in the field.

## USING THE MODULE PLANS

This IG contains complete module plans for all topics in the course. The module plans are presented in a two-column format for ease of use. The left column contains the facilitator directives in simple statements and the right column provides the content for use during facilitation.

- **Module Objectives.** All modules begin with participants reviewing the learning objectives for the module.
- **Icon Prompts.** Icons direct you throughout the course to present information, display a PowerPoint slide, play a video, conduct an activity, conduct a progress check, ask a question, reference the TG, or explain best practices.
- **Information.** You present information, as described in the right column of the IG. Participants usually engage in additional activities or discussions to build on information presented.
- **Summary.** Summaries are an important module component in which you wrap up the topic and validate participant understanding before transitioning to the next topic.

The module plans are designed to help ensure you are able to cover the appropriate material within the time constraints of the course, as well as focus on the particular needs of the participants.

## IG Icon Key

		
Present Content	Introduce Video	Conduct Progress Check
		
Reference TG	Play Video	Conduct Activity
		
Display PowerPoint Slide	Ask Question	Explain Best Practices

The **Reference TG** and **Display PowerPoint Slide** icons and directives are in color for emphasis to assist Instructors. All PowerPoint slides with videos have the **Play Video** icon prompt on the slide.

## SPECIAL NEEDS ACCOMMODATIONS

The following guidelines are intended to assist Instructors in meeting the special needs of participants:

- Clearly indicate the physical requirements of this course when providing a description to participants. Potential participants should be told to contact the host agency or administrator if they have any doubts about their ability to fulfill course requirements. Certification is dependent upon satisfactory completion of all course components.
- Instructors should ask at the beginning of class if anyone has any special needs with regard to meeting requirements to complete the course. Participants should be asked to respond to an Instructor during break time instead of asking for a show of hands.
- For those participants who have difficulty with reading, the written quizzes may be given orally. If possible, this should be determined prior to the first quiz so that reasonable accommodations can be made. During an oral quiz, the Instructor should read the question exactly as written and with a consistent tone of voice. During a written or oral quiz, a term not related to technical content (such as transport) may be defined to help the participant understand the question, but not in a way that would indicate the correct answer.
- If individuals are physically unable to install a car seat or booster seat (due to size, disability, or illness) they should be permitted to verbally guide an Instructor in correct installation. Verbal instructions should be clear, concise, and include an explanation for decision(s) and/or action(s). This procedure should not indicate inadequacy of the participant's skills as they should always have the caregiver present when checking car seats and booster seats and the caregiver should always be the last one to install or make any changes to the seat.

## INSTRUCTOR DVD CONTENTS

During the required pre-class Instructor meetings, LIs should ensure that **ALL** Instructors and Instructor Candidates have up-to-date IGs, TGs, and Instructor DVDs.

The Instructor DVD contains six main folders:

1. Course Forms
2. Instructor and Technician Guides
3. Quizzes
4. Planning & Logistics Guide
5. PowerPoint Slides
6. Skills Assessments

## 1. Course Forms

- **Checkup Event Guidelines**  
This form contains guidelines for running a checkup event. It includes participant requirements, traffic safety, how to handle low attendance, emergencies, and weather.
- **Community Resources Tool**  
The Community Resources Tool allows Instructors to provide information on local and special needs resources in one location. Fill it out before each course and distribute it to participants.
- **Course Evaluation**  
The Course Evaluation can be distributed to participants at the end of the course for an evaluation of the class and Instructors. While strongly recommended, there is no requirement that classes be evaluated. There is also no requirement that this form be used for an evaluation of courses. LIs and/or Course Administrators may use any evaluation form they feel are most appropriate. The LI or Course Administrator will need to make sure enough copies are made for all participants.
- **CPS Check Form**  
This form will be used for all seat checks during the final checkup event. This form can also be used for seat checks following the course.
- **Participant Vehicle Information**  
This form is distributed to participants at the beginning of class and collected as quickly as possible. It should be filled in by participants and allows Instructors to determine seat belt systems available for use in practice activities and skills assessments. The LI or Course Administrator should ensure that copies are made for all participants and Instructors and have extra copies on hand.
- **Score Sheet**  
This sheet should be filled out at the close of the course. Use this Score Sheet to track participant progress and keep it for your records of the course.
- **Participant Vehicle Occupant Restraint Systems Details**  
This form is used by Instructors to collect detailed information about the vehicles available for practice activities and skills assessments. Instructors should refer to this information when planning practice activities and skills assessments. The LI or Course Administrator should ensure that copies are made for all participant and Instructor vehicles and have extra copies on hand.

## 2. Instructor and Technician Guides

- **Instructor Guide**  
PDF version of the IG – Instructor Preparation and Modules 1-13
- **Technician Guide**  
PDF version of the TG – Instructor Preparation, Modules 1-13, and Appendix

### 3. Planning & Logistics

- **Planning & Logistics Guide**

This guide provides useful information on the process and procedures that should be followed to plan for, set up, and conduct a National CPS Certification Training Program. Subjects covered include:

- Program overview and goals
- National CPST Certification process
- General Instructor guidelines and position descriptions
- Course planning and process
- Course checklist
- Equipment checklist
- Suggestions for demonstration equipment
- Additional resources

### 4. PowerPoint Slides

- There is one PowerPoint presentation for each module.
- Instructors present the information in the IG and TG, using the PowerPoint slides as a visual aid for participants and to play the embedded videos. **Teaching only from the slides, rather than from the IG and TG as well as the slides, will not provide participants with the proper instruction. This will put an Instructor at risk of certification sanctions.**
- Plan to instruct as much of the course in vehicles as is possible to increase practice time and enhance participant learning. Individual slides that contain content covered in the vehicles may be reviewed very quickly.
- There is one main folder with 13 PowerPoint presentations and associated video files. Videos are in Modules 1, 2, 3, 4, 8, 9, and 10. Instructors have their choice of two video formats (MP4 or WMV) based on which format works better on the computer being used to project the slides and videos. It is advisable to have both versions available for any given class to determine which version works better on the computer used in the classroom.
- It is critical that the LI and/or Course Administrator **set up and test the PowerPoint slides on the computer/projection system** to be used prior to the first day of the course. Remember that what works well on one computer/projection system may or may not work well on another computer/projection system due to differences in operating systems, the type of projection system, and/or versions of PowerPoint.
- **ALL** Instructors must be familiar with the contents of the slides and know how to navigate through a PowerPoint presentation. Training on the AV set up should be included as a part of the Instructor meeting held prior to the start of the course.

## 5. Quizzes

- **Quizzes**

There are two versions (A and B) of the three quizzes (Quizzes #1, #2, and #3). Hand out the form to participants just before you administer each quiz.

- **Quiz Answer Key**

- An Instructor answer key is provided for two versions of each quiz.
- Relevant page numbers (where the answer can be found) from the TG are noted for each answer. Note that the sources for some answers are marked as being “NA = Not applicable. Deductive reasoning is required to come up with correct answer.”

- **Quiz Answer Sheet A**

This document is a blank answer sheet for participants to record their Quiz A answers.

- **Quiz Answer Sheet B**

This document is a blank answer sheet for participants to record their Quiz B answers.

## 6. Skills Assessments

- **Skills Assessment Instructor Log**

This document is part of your permanent training program record for Instructors to record signoff on skills assessments.

- **Skills Assessment Forms**

There are three skills assessments (Skills Assessment #1, #2, and #3) for participants to complete. Hand out the form to participants just before you administer each skills assessment.

## INSTRUCTIONS AND TIPS FOR USING THE POWERPOINT PRESENTATIONS

Always refer to your computer and software manuals for details and troubleshooting.

### Running the Presentation and Videos

To view the presentation on your monitor, open the presentation file for the appropriate module, and then select **Slide Show** from the View menu (or click on **Slide Show** from the icon near the bottom of the screen, or press the **F5** key). The first slide will fill your screen.

There are several ways to advance to the next slide or go back to previous slides. The easiest way is to press the **down arrow** to advance and the **up arrow** to go back. Press the **Esc** (Escape) key to return to the normal view.

The slides with videos are not set to start automatically. Instead, manually start the videos by clicking on the **Play Video** icon. This allows the Instructor to introduce the topic in advance of the video.

## Working with the Presentation and Video Slides

Because the videos are linked to the presentation, the videos **MUST** be in the same folder as the PowerPoint presentation to operate.

- Copy the entire PowerPoint Slides folder from the Instructor DVD as is to the hard drive of the computer that will be used for a course.
- Check **ALL** slides and videos **BEFORE** you begin teaching.
- Be sure to play the each video to the end.

**NOTE:** Always use the **Copy** and **Paste** feature of My Computer (or Windows Explorer or equivalent function) to move the slide presentation files from one folder to another.

The slides with videos are linked to the MP4 or WMV video files. If the video file is separated from the PowerPoint slide it will not play. Follow these steps to reinsert the video file.

1. On a Windows (PC) computer, open the PowerPoint presentation with the slide that links to the video.
2. From the top menu and while in Normal view, select **Insert < Movie < Movie from File**.
  - **Double Click** the video file to insert. This will insert your video directly into the presentation as an image that can be moved, resized, and played either when the slide comes up in your slideshow or when you click on the image.
  - Resize the video file to fit within the slide header/footer.

**NOTE:** Make sure the video is saved into the same folder as your PowerPoint presentation. This helps to prevent broken links and ensure the video will play properly if you move both files (the PowerPoint deck and video) to another location.

3. **Save** the changes made to the PowerPoint presentation.
4. **Play** the video to ensure it is now connected to the slide.

Whether the videos play in PowerPoint or not depends on your computer (PC/Windows, Mac), your operating system version, and the type of media player installed on your computer. Older versions of PowerPoint (such as 2002) may only intermittently play the videos within the PowerPoint slide. In this case you will need to minimize the PowerPoint presentation and directly play the video file.

If one is available, consult your MIS department to assist you with any problems.



# MODULE 1 • Program Introduction

## Module Agenda: 45 Minutes

Topic	Suggested Timing
1. Introduction <ul style="list-style-type: none"> <li>• Large Group Activity: Introductions</li> </ul>	32
2. Personal Costs of Incorrect Installation and Use of Car Seats, Booster Seats, and Seat Belts <ul style="list-style-type: none"> <li>• Video: Flashback</li> </ul>	6
3. Statistics on the Use of Car Seats, Booster Seats, and Seat Belts	4
4. Progress Check and Summary	3
TOTAL	45 Minutes

### Module Purpose

The purpose of this module is to:

- Welcome participants, open the course, and provide an opportunity for them to become familiar with the purpose, goals, and completion requirements.
- Provide an opportunity for participants to get to know one another.
- Introduce participants to the statistics and personal costs of incorrect installation and use of car seats, booster seats, and seat belts.

### Module Objectives

- Become familiar with the purpose, goals, and successful completion requirements of the National CPS Certification Training Program.
- Identify the personal costs of incorrect use and installation of car seats, booster seats, and seat belts.
- Identify national statistics on the use of car seats, booster seats, and seat belts.

### Special Media, Materials, and Resources

- Participant Vehicle Information (Instructor DVD)
- Participant Vehicle Occupant Restraint Systems Details (Instructor DVD)
- Glossary of Terms (NCPSB website at [www.cpsboard.org](http://www.cpsboard.org))

### Video Titles and Times

Flashback, 1:11 minutes (PPT 1-9)

### Activities

- Large Group Activity: Introductions
- Final Progress Check

## Preparation

- Select and customize the agenda you will use (two samples are available in the Instructor Preparation section of this Instructor Guide).
- Document the types of occupant protection systems available. A sample Participant Vehicle Occupant Restraint Systems Details chart is provided on the Instructor DVD. If there is not enough variety of seat belt systems, efforts should be made to obtain additional vehicles.
- Collect and label keys.
- Supply name tags (enough for entire course).
- Provide table tents for participant and Instructor names.
- Gather a variety of car seats and booster seats.
- Arrange for access to a variety of vehicles.
- Become familiar with state child passenger safety laws.
- Refer to the NHTSA website at [www.nhtsa.gov](http://www.nhtsa.gov) and the CPS Board website at [www.cpsboard.org](http://www.cpsboard.org) for the latest statistics and details about effectiveness of correctly using car seats, booster seats, and seat belts and their misuse.
- Review the video for this module.
- Prepare to conduct the progress check.

## [INSTRUCTOR NOTE]

- Since this is a technical course, define new terms or concepts as they are introduced in each module.
- Check to make sure participants understand the content in each module before moving on to the next module.
- Limit personal stories – yours and those of participants.
- Review the information that is covered in the course at the beginning and end of each day.
- Be aware of the diverse learning styles of your participants.
- Have participants fill out the Participant Vehicle Information form before you start the course. A sample form is provided on the Instructor DVD. Vehicle forms should describe vehicle make, model, year, color, and license plate number.

## 1. Introduction

**Display PPT 1-1 (WELCOME).**

[INSTRUCTOR NOTE]

[Display the Welcome PowerPoint slide as participants enter the training room.]

**Display PPT 1-2.****Reference TG page 1-1.**

Welcome participants and introduce the Instructor team.

Hello and welcome to the National Child Passenger Safety (CPS) Certification Training Program!

- My name is \_\_\_\_\_ . I'll be one of your Instructors for the course.
- “CPS” stands for “child passenger safety.” I will explain new terms as they are introduced in each module.

**Display PPT 1-3.**

- This training program is a partnership between three organizations. First, I'll share information about the **National Highway Traffic Safety Administration (NHTSA)**.
  - NHTSA developed this original curriculum in the mid-1990s and regularly updates the content.
  - NHTSA's mission is to save lives, prevent injuries, and reduce traffic crash costs through education, research, safety standards, and enforcement activities.
- The **National Child Passenger Safety Board (NCPSB)** oversees the quality and integrity of the training and certification requirements.
- **Safe Kids Worldwide** is the certifying body and is responsible for administering all aspects of certification.

[INSTRUCTOR NOTE]

[Take a couple minutes to share information about yourself in this introduction. This will help you gain rapport with participants.]



Present module purpose.

The purpose of this introduction is to:

- Provide you with an opportunity to become familiar with the course purpose, goals, and completion requirements.
- Provide you with an opportunity to get to know one another.
- Introduce you to the statistics and personal costs of incorrect installation and use of car seats, booster seats, and seat belts.



Ask question and respond to comments.

***Q. [Ask participants to raise their hands.] Have you ever been involved in a crash or know someone who has been?***



Present context for why course is important.

Traffic crashes can happen to anyone at any time. Statistically, you have about a 9 percent chance of being involved in a vehicle collision every year. That is about five collisions in a lifetime (National Safety Council [NSC] Injury Facts, 2012).

- While traffic crashes affect people of all ages, it is especially concerning that crashes are a leading cause of death of children in the United States. Just as concerning is the reality that, in most cases, child passenger injuries and deaths can be prevented. Many injuries and deaths occur as a result of the high misuse rate of car seats, booster seats, and seat belts.
- Education and proper use of air bags, car seats, booster seats, and seat belts helps save lives and can prevent injuries and deaths every day. When used correctly, the risk of hospitalization, injury, and death for children is greatly reduced.
- Nationally certified Child Passenger Safety Technicians (CPSTs) make a difference in the lives of families by providing basic education to others about safely transporting themselves and others in their care.

Imagine if a car seat or booster seat saves the life of a 6-year-old child. Given mortality rates, it could result in 72 productive years for just one person (Centers for Disease Control [CDC], 2011).

[INSTRUCTOR NOTE]

[Refer to the NHTSA website at [www.nhtsa.gov](http://www.nhtsa.gov) and the CPS Board website at [www.cpsboard.org](http://www.cpsboard.org) for the latest statistics and details about effectiveness of correctly using car seats, booster seats, and seat belts and their misuse.]



**Reference TG  
page 1-2.**



**Display PPT 1-4.**



Present overall goals for the National CPS Certification Training Program.

The overall goals for the National CPS Certification Training Program are to:

1. Certify you as a CPS Technician.
2. Provide you with the opportunity to apply basic technical skills and knowledge to the correct installation and use of car seats, booster seats, and seat belts.
3. Equip you to educate caregivers in the proper selection, installation, and use of car seats and booster seats and to know when to move to seat belts once booster seats are outgrown.
4. Equip you to educate caregivers so they can confidently install and reinstall car seats and booster seats.
5. Enable you to be a resource in your communities.

[INSTRUCTOR NOTE]

[While the official name is the National CPS Certification Training Program, we will use the term “course” to reference the program.]



Review terms used for car seats.

There are many different names used for what caregivers tend to refer to as car seats such as child safety seats, child restraints, CRs, and baby seats.

- Child restraint is the common, and sometimes required, term used by the government and manufacturers in formal and official writings, including labeling and manuals. Child restraints refer to rear-facing car seats, forward-facing car seats, and booster seats.
- Since our purpose with this course is to help you work directly with caregivers, we have chosen to use the more familiar term that is used on many websites, in public service announcements, and is one of the most common search terms – car seats.

- We will use car seats when referring to rear-facing and forward-facing seats with harnesses and we will use booster seats as the term for referring to restraints that secure a child with the use of a seat belt.
- As you go through the course, the terms you will see most often will be car seats and booster seats, with an occasional child restraint when warranted.



### Display PPT 1-5.



Present module objectives.

Every module has learning objectives that will help us achieve the course goals. Let's look at the objectives for Module 1. At the end of this module, you will:

- Become acquainted with the purpose, goals, and successful completion requirements of the National CPS Certification Training Program.
- Identify the personal costs of incorrect use and installation of car seats, booster seats, and seat belts.
- Identify statistics on the use of car seats, booster seats, and seat belts.



Facilitate a large group introduction activity.

Let's get to know each other through an introduction activity. As a large group, I'd like each of you to introduce yourself by sharing your name, role, and any experience you have transporting children in vehicles.

[INSTRUCTOR NOTE]

[Watch time as you facilitate this activity. Each participant should have a chance to share. If you are instructing a large group, set the pace for completing all of the introductions by introducing yourself as an example.]



### Display PPT 1-6.



Review housekeeping items.

Here are some housekeeping and logistic points that are important for us all to know:

- The emergency exits are located \_\_\_\_\_ .
- Restrooms are located \_\_\_\_\_ .
- Break areas are located \_\_\_\_\_ .
- Refreshment areas are located \_\_\_\_\_ .

[INSTRUCTOR NOTE]

[A goal for this class is to help each CPS Technician Candidate feel comfortable in bringing their Technician Guide (TG) to all checkup events. In addition, they will be instructed to bring and use all other resources available to them and bring these resources to checkup events (such as job aids from this course). They should also request that caregivers bring their vehicle manuals and car seat manuals to all events.]



**Display PPT 1-7.**



Review general ground rules for the course.

Now, let's review and discuss some general ground rules for making this a successful learning experience.

- Arrive on time each day and return promptly from breaks and lunch. We will all follow the schedule.
- Ask questions to gain an understanding of the course content to have a successful learning experience. There is no such thing as a trivial question.
- Listen to others when they speak.
- Turn cell phones off (or put on vibrate).
- Dress comfortably. Be prepared for activities to take place in the classroom and outside in vehicles regardless of the weather.
- We will be working around each other's vehicles during this course. Pay attention to your movements in and around vehicles. Take care not to harm vehicles of others.



Ask question and respond to comments.

***Q. What other thoughts and ideas do you have that will help make this a successful learning experience for you and other participants?***



Orient participants to the TG.

The Technician Guide, or TG, will help guide you through this course.

- The TG is a workbook with content and class activities. It is important for you to review content as we work through the course.
- Also, taking notes is an important step in your learning process. Space is provided in your TG to take notes during videos and practice activities.

- Module numbering starts with the module number first and then the page number (1-1, 3-1, 6-1).
- Bring (have) your TG with you at all times during this course. You should also have your TG available after the course for all education activities with caregivers.
- Personalize it by writing your name in the inside front cover.



Describe the course agenda.

This is a standardized certification training program. Open your TG to the table of contents. There are 13 modules comprised of content and activities.

[INSTRUCTOR NOTE]

[Refer to the agenda for this course that you prepared based on a sample agenda from the Instructor Preparation section of this Instructor Guide.]



**Reference TG**  
page 1-3.



**Display PPT 1-8.**



Explain the course completion requirements.

To successfully complete this course, you **MUST**:

- Attend the entire program.
- Participate in class discussions and practice activities.
- Pass three written quizzes with a total of 42 out of 50 correct.
- Pass three skills assessments.
- Participate in the end-of-class checkup event.

[INSTRUCTOR NOTE]

[Tell participants they may use all available resources when taking the quizzes, including their TGs. If they do not pass, **NO** retests are allowed.]

2. Personal Costs of Incorrect Installation and Use of Car Seats, Booster Seats, and Seat Belts



**Reference TG**  
page 1-3.

**Display PPT 1-9.**

Introduce Flashback video (1.11 minutes).

This video, Flashback, will orient you to the issues we will be addressing in this course.

- Watch carefully for the key messages in this video.
- Take notes in your TG as you watch the video.

[INSTRUCTOR NOTE]

[This video was part of a NHTSA public service education campaign.]



Play Flashback video.



Ask questions.

***Q. What happened in this video? What messages does this story communicate to you?***

A. The father almost gets in a crash and flashes back on his life with his family. After he is able to stop the vehicle, he looks into the back seat and sees his two children safely restrained.

The key message is that using car seats, booster seats, and seat belts can save children from injury and death.

### 3. Statistics on the Use of Car Seats, Booster Seats, and Seat Belts

**Reference TG page 1-3.**

[INSTRUCTOR NOTE]

[The following statistics are taken directly from the source and use the terms child restraint and restraint.]

**Display PPT 1-10.**

Present statistics on the use of car seats, booster seats, and seat belts.

Let's now review some important statistics and information about the use of car seats, booster seats, and seat belts.

- About 90 people died each day in vehicle crashes (NHTSA, 2010).
- Vehicle crashes are a leading cause of death for children in the United States (NHTSA, 2012).

- Restraint use among young children often depends upon the driver's seat belt use. When the driver is buckled, children are restrained (car seats/booster seats/seat belts) 95 percent of the time. When the driver is unbuckled, children are restrained 67 percent of the time. (National Occupant Protection Use Survey Controlled Intersection Survey, 2011).



### Display PPT 1-11.

- Child restraints, or car seats, reduce the risk of injury by 71 to 82 percent and reduce the risk of death by 28 percent in comparison to children in seat belts alone. Booster seats reduce the risk of nonfatal injuries by 45 percent among 4 to 8-year-olds (AAA, 2012).



### Reference TG page 1-4.

- Child restraints are often used incorrectly. One study found that 72 percent of nearly 3,500 observed car seats and booster seats were misused in a way that could be expected to increase a child's risk of injury during a crash (NHTSA, 2006).



### Display PPT 1-12.

- In 2010, it is estimated that 303 children under 5 were saved as a result of restraint use. Over the period 1975 through 2010, an estimated 9,611 lives were saved by child restraints (car seats/booster seats or seat belts) for children under 5 in passenger vehicles (NHTSA, 2010).



### Display PPT 1-13.



Present best way to protect children.

The best way to protect children in the car is to put them in the right seat at the right time and use it the right way.

#### 4. Progress Check and Summary



### Reference TG page 1-5.

[INSTRUCTOR NOTE]

[Conduct the following progress check as a large group activity. Pose each question and ask for responses from the group. Add any information not provided by participants.]



Conduct progress check.

Let's review what we learned in Module 1 through a brief progress check. We will have progress checks throughout the course. Write the correct responses in your TG.

1. What is a leading cause of death for children in the United States?

**Answer:** Car crashes are a leading cause of death in the United States (NHTSA, 2012).

2. What is the best way to protect children in the car?

**Answer:** The best way to protect children in the car is to put them in the right seat at the right time and use it the right way.

3. What are the five main goals of this program?

**Answer:**

- Certify you as a CPS Technician.
- Provide you with the opportunity to apply basic technical skills and knowledge to the correct use and installation of car seats and booster seats.
- Equip you to educate caregivers in the proper selection, installation, and use of car seats and booster seats and to know when to move to seat belts once booster seats are outgrown.
- Equip you to educate caregivers so they can confidently install and reinstall car seats and booster seats.
- Enable you to be a resource in your communities.



Conclude module.

There is a glossary of terms on the NCPSTB website that you can refer to as needed after the training.

Now, let's begin looking more closely at the CPS Technician's role.



## MODULE 2 • The CPS Technician Role

---

### Module Agenda: 30 Minutes

Topic	Suggested Timing
1. Introduction	2
2. CPS Technician Role <ul style="list-style-type: none"><li>• Small Group Activity: Course Expectations</li><li>• Video: The CPS Technician Role</li></ul>	18
3. Best Practices and Caregiver Choices	5
4. Progress Check and Summary	5
TOTAL	30 Minutes

#### Module Purpose

The purpose of this module is to orient participants to their role as a CPS Technician. You will also teach them about the Learn, Practice, Explain Model that will be applied during the training and afterwards on the job.

#### Module Objectives

- Describe the CPS Technician role.
- Discuss best practices and caregiver choices.

#### Special Media, Materials, and Resources

Community Resources Tool (Instructor DVD)

#### Video Titles and Times

The CPS Technician Role, 3:02 minutes (PPT 2-3)

#### Activities

- Small Group Activity: Course Expectations
- Final Progress Check

#### Preparation

- Review the video for this module.
- Become familiar with the Learn, Practice, Explain Model.
- Become familiar with laws on car seats, booster seats, and seat belts for your state.
- Create a State Laws handout for participants.
- Prepare to conduct the small group activity and progress check.
- Fill out the Community Resources Tool and make copies for participants.

## 1. Introduction

**Display PPT 2-1.**

Present module purpose.

The purpose of this module is to orient you to your role as a CPS Technician. You will also become familiar with the Learn, Practice, Explain Model that will be applied during the training and afterwards on the job.

**Display PPT 2-2.**

Present module objectives.

As a result of this module, you will be able to:

- Describe the CPS Technician role.
- Discuss best practices and caregiver choices.

## 2. CPS Technician Role



Introduce a small group activity.

Let's begin by identifying expectations you have about this course and being a CPS Technician.



**Reference TG page 2-1.**



Conduct a small group activity.

Take a couple of minutes to discuss expectations you have about this course with a partner.

You can write these expectations down in your TG.

Be prepared to share your responses with the class.



Ask question.

***Q. What expectations do you have about the course?***

[INSTRUCTOR NOTE]

[Have each pair share their expectations.

Tell participants when each expectation will be addressed in this or another module. State if there are expectations that will not be addressed in the course.]

**Display PPT 2-3.**

Introduce The CPS Technician Role video (3:02 minutes).

As we move through this course, we will answer questions you have about your role as a CPS Technician.

Let's begin by hearing from certified CPS Technicians about their role and working with caregivers.

- Watch carefully for specifics about what you could be doing on the job.
- Take notes in your TG as you watch the video.



Play The CPS Technician video.



Ask questions and track responses.

**Q. What did you learn about your role? What will your role be when you return to your community/agency?**

[INSTRUCTOR NOTE]

[Reinforce the discussion with content that follows also located on page 2-2 of the TG.]



**Reference TG page 2-2.**



Reinforce the primary role of the CPS Technician.

The primary role of the CPS Technician is to educate caregivers on the correct selection, installation, and use of car seats, booster seats, and seat belts.

CPS Technicians provide caregiver education through:

- Checkup events or by individual appointments that might be held at locations such as fire stations, car dealerships, hospitals, and retail stores.
- Health and safety fairs and community events where information and materials are provided.
- Educational presentations to professional groups, parent groups, and community organizations.
- Answering caregivers' child passenger safety questions and supporting other CPS Technicians whether in person, by phone, or even by email.



**Display PPT 2-4.**



Reinforce how CPS Technicians carry out their role.

CPS Technicians carry out this role with caregivers by demonstrating and explaining about:

- **Selection:** Ensuring the car seat, booster seat, or seat belt is in good condition and appropriate for the child's age, height, weight, and development levels, as well as ensuring that the seat is not recalled.
- **Direction:** Facing the car seat in the correct direction for the age, height, weight, and developmental levels of the child.

- **Location:** Placing the car seat or booster seat in an appropriate location in the vehicle.
- **Installation:** Installing the car seat or booster seat in the vehicle correctly.
- **Harnessing:** Securing the child in the car seat, booster seat, or seat belt. **NOTE:** Ensure that the caregiver can secure the child in their car seat in the vehicle.



Reference TG  
page 2-3.



Display PPT 2-5.



Introduce the Learn,  
Practice, Explain  
Model.

Emphasis in this course is placed on ensuring that your learning experience will successfully prepare you to achieve the main purpose – to help caregivers safely transport their families.

To ensure you are equipped to educate caregivers so they can confidently use and install car seats, booster seats, and seat belts, this course has been designed using the Learn, Practice, Explain (LPE) Model.

This model is used for instruction in this course, but also is a model for continued work as a CPS Technician following the training.

- **Learn** the facts/skills/information. Seek ways to stay updated.
- **Practice** your new skills and share new information.
- **Explain** (teach) what you have learned to caregivers.

Much of the content in the TG supports the Learn segment of the LPE model.

- Every time you see the Practice icon in your TG, you will be in the Practice segment of the model.
- Every time you see the Explain icon, you will be in the Explain segment of the model.



Conclude topic.

Caregivers seek assistance with car seat installation voluntarily or, in some cases, when ordered to do so by a judge or required for discharge from a hospital.

- Their reasons may affect the questions they ask and their overall attitude.
- Whatever the reason, it is your job to thank them for coming and to do your best to make them confident about their new information and skills.
- An open attitude on the part of the CPS Technician will encourage the likelihood that the caregiver will listen and apply what has been learned.

[INSTRUCTOR NOTE]

[Refer participants to Resources to Keep Your Skills Current listed in the TG on page 2-1.

Hand out the Community Resources Tool that you completed before the course. Tell participants that the resources and programs listed will assist them as they carry out their role in the field.]

### 3. Best Practice and Caregiver Choices



**Reference TG page 2-3.**



Introduce best practices and caregiver choices.

In your role as a CPS Technician, you will:

- Identify the best way to transport a child safely.
- Explain best practices to the caregiver.



**Display PPT 2-6.**



Define best practice.

What do we mean by best practice? **Best practice** is the gold standard of protection (while following manufacturer instructions). It is the safest way to transport a child based on the child's:

- Age
- Height
- Weight
- Developmental levels

Often, when caregivers do not understand the reason for it, they do not choose the best practice. As a CPS Technician, it is your job to know the reason, and explain it to the caregiver in simple, clear terms.

**Display PPT 2-7.**

Define caregiver choices.

You may not always have a clear and definitive answer to provide and may have to give more than one option. This can result in a choice for a caregiver.

**Caregiver choices** are related to issues that may not have a clear answer on the safest way to transport a child. Caregivers will then have the final decision based on best practices you provide. These caregiver choices may often also be considered tough choices.

In many cases, there will be best practices related to the choices.

- A CPS Technician must provide caregivers with available options, making them better able to make choices about how to best secure their child in the appropriate car seat or booster seat.
- We will continue to discuss examples of best practices and caregiver choices throughout the course.



**Reference TG page 2-4.**

[INSTRUCTOR NOTE]

[Review the best practice and caregiver choices example in the TG.]

**Example of Best Practice:** Children should ride in a booster seat until the adult lap-and-shoulder belt fits properly.

**Caregiver Choices**

- The law where you live does not require children to ride in booster seats until they are between 8 and 12. Instead, the law requires only that children ride in booster seats until the age of 6.
- A caregiver wants to follow the law rather than follow best practice.
- As a CPS Technician, it is your job to help the caregiver understand the reason for the best practice.
- If the caregiver chooses to let the child ride without a booster seat, you cannot stop the caregiver from doing so. In this situation, you should help the caregiver understand the reason behind the best practice standard.

- Document the caregiver's choice not to follow best practice on the Check Form your organization uses to document seat checks.

Hand out the State Law Handout that you created before the course. Highlight key laws and how they support best practices. Point out that the CPS Technician needs to be comfortable explaining best practices and choices, as well as understanding how they are different.]



**Display PPT 2-8.**



Conclude topic.

The caregiver, and **NOT** the CPS Technician, always makes the choice about the transport of their child.

- As a CPS Technician, however, you can never support a caregiver in either breaking the law or going against manufacturer instructions.
- In cases where the caregiver does not make the safe choice, document it on your Check Form.



Ask for questions.

***Q. What questions do you have about your role as a CPS Technician?***

#### 4. Progress Check and Summary



**Reference TG page 2-5.**

[INSTRUCTOR NOTE]

[Conduct the following progress check as a large group activity. Pose each question and ask for responses from the group. Add any information not provided by participants.]



Conduct progress check.

Let's review what we learned in Module 2 through a progress check. Write down correct responses in your TG.

##### 1. How do CPS Technicians provide caregiver education?

**Answer:** Through car seat checkup events or by appointment, health and safety fairs and community events, educational presentations, and answering questions in person, by phone, or by email.

2. What do CPS Technicians demonstrate and explain (teach) when they work with a caregiver?

**Answer:**

- **Selection:** Ensuring the car seat, booster seat, or seat belt is in good condition and appropriate for the child's age, height, weight, and developmental levels, as well as ensuring that the seat is not recalled.
- **Direction:** Facing the car seat in the correct direction for the age, height, weight, and developmental levels of the child.
- **Location:** Placing the car seat or booster seat in the appropriate location in the vehicle.
- **Installation:** Installing the car seat or booster seat in the vehicle correctly.
- **Harnessing:** Securing the child in the car seat, booster seat, or seat belt.

3. What is a best practice?

**Answer:** A best practice is the gold standard of protection (while following manufacturer instructions). It is the safest way to transport a child on the basis of the age, height, weight, and developmental levels.

4. Who is responsible for making final choices?

**Answer:** The caregiver always makes the final choices.



Conclude module.

In this course, we will cover all the technical information you will need to help caregivers with transporting children safely.

Now that you have a better understanding of the CPS Technician role, let's take a step back and further discuss how car seats, booster seats, and seat belts prevent injuries.

## MODULE 3 • Injury Prevention & Crash Dynamics

### Module Agenda: 45 Minutes

Topic	Suggested Timing
1. Introduction	3
2. Challenges to Crash <ul style="list-style-type: none"> <li>• Pairs Activity: How to Use Statistics and Information</li> </ul>	12
3. The Concept of Crash Forces <ul style="list-style-type: none"> <li>• Video: 3 Stages of a Collision</li> <li>• Progress Check: Estimating Restraining Force</li> </ul>	20
4. Five Ways That Car Seats, Booster Seats, and Seat Belts Prevent Injury	5
5. Progress Check and Summary	5
TOTAL	45 Minutes

#### Module Purpose

The purpose of this module is to provide participants with an opportunity to explore challenges to crash survival, including what happens during a vehicle crash. Specific ways that car seats, booster seats, and seat belts prevent or reduce the severity of injuries will also be addressed.

#### Module Objectives

- Describe challenges to crash survival.
- Explain the concept of crash forces.
- Describe five ways that car seats, booster seats, and seat belts prevent injury.

#### Special Media, Materials, and Resources

None

#### Video Titles and Times

3 Stages of a Collision, 1:34 minutes (PPT 3-7)

#### Activities

- Pairs Activity: How to Use Statistics and Information
- Progress Check: Estimating Restraining Force
- Final Progress Check

## Preparation

- Prepare to conduct the activities and progress checks.
- Review the video for this module and become familiar with the three collisions in a crash.
- Many resources are available to help participants understand the concepts in this module. Direct participants to national resources and encourage them to seek out local data specific to their community. In addition to those listed below, refer to other resources listed in this module.
  - Check for an updated listing of the National Child Passenger Safety Resources provided on the NCPSPB website at [www.cpsboard.org](http://www.cpsboard.org).
  - Research and be able to provide your participants with current injury data both locally and nationally. A possible resource is the state Highway Safety Office. To find a state Highway Safety office, go to [www.ghsa.org](http://www.ghsa.org).
  - For current car seat, booster seat, and seat belt usage rates to share with participants, refer to the most recent National Occupant Protection Use Survey and the Partners for Child Passenger Safety website at [www.nhtsa.gov](http://www.nhtsa.gov) (search NOPUS).
  - For additional injury data to share with participants, go to the Centers for Disease Control and Prevention at [www.cdc.gov/injury/WISQARS](http://www.cdc.gov/injury/WISQARS).

## 1. Introduction



### Display PPT 3-1.



Present module purpose.

The purpose of this module is to provide you with an opportunity to explore challenges to crash survival, including what happens during a vehicle crash. We will also look at ways that car seats, booster seats, and seat belts prevent or reduce the severity of injuries.

Our goal as CPS Technicians is to educate children and caregivers to make buckling up a habit for life.



### Display PPT 3-2.



Present module objectives.

As a result of this module, you will be able to:

- Describe the challenges to crash survival.
- Explain the concept of crash forces.
- Describe five ways that car seats, booster seats, and seat belts prevent injury.

---

## 2. Challenges to Crash Survival



### Reference TG page 3-1.



Present an introduction to injury prevention and crashes.

Let's begin this module with a few overarching points about injury prevention and crashes.

- Motor vehicle crashes are a leading cause of death in the U.S. (CDC, 2013).
- Injury prevention is a process used to decrease injuries or death due to an injury. However, it does not work 100 percent of the time. Why not?
- There are many factors in a crash that determine the outcomes such as vehicle size, speed, and point of impact. We'll be taking a closer look at these and other factors.



### Display PPT 3-3.



Present challenges related to children, car seats, booster seats, and seat belts.

Let's first review challenges we face related to children, car seats, booster seats, and seat belts in regards to crashes.

- Car seat, booster seat, and seat belt use decrease as children get older. Most children are restrained during the first year of life because they appear to be more fragile and need more protection (NHTSA, 2010).
- According to various reports from NHTSA and the field, car seat, booster seat, and seat belt misuse rates vary from 74 to 90 percent.
- Misuse and nonuse are important issues to address with caregivers.
- Correct selection, installation, and use of a car seat can be challenging.

**Display PPT 3-4.**

- Caregivers may have outdated or incorrect information about car seats, booster seats, and seat belts.
- Caregivers may not choose best practice over personal preferences or actual safety over perceived safety. For example, caregivers might prioritize wanting to see the child more easily and move the child to a forward-facing car seat over best practice recommendations.

Because the heads of young children are disproportionately large compared to their bodies and their pelvic bones and spines are underdeveloped, when installed and used correctly, car seats, booster seats, and seat belts help to protect children in vehicles.

**Display PPT 3-5.**

Fatalities are just the tip of the iceberg. Many more injuries occur than deaths each year. Some injuries have lifelong effects and can be costly.

We must provide caregivers with the information and resources they need to prevent injuries and deaths.

**Conduct a pairs activity.**

Take a couple minutes to talk with a partner about the statistics and information we have just reviewed. The information is also in your TG on page 1 of this module.

Think about the following question with your partner and be prepared to share your thoughts.



Ask question.

**Q. Which of the statistics or information from page 1 of this module do you think would be most valuable to share with caregivers?**

[INSTRUCTOR NOTE]

[Ask for two to three pairs to share the statistics or information they chose, reasons for their choice, and ways they would use the information. Make observations about similarities and differences between the choices.]



Present key points about the value of car seat, booster seat, and seat belt education.

By understanding the correct use of car seats, booster seats, and seat belts, it is easy to see errors and misuse – and offer information and resources to caregivers to correct the errors and misuse.

- It is harder to change the views and actions of those not using car seats, booster seats, and seat belts.
- An example of changing the actions of others might be to have the caregiver move a child to the rear seat of the car. That behavior may conflict with caregiver's desires or beliefs that they want to see the child easily or believe that their child is ready to "graduate" to seat belts and front-seat riding.
- Your job as a CPS Technician is to educate caregivers about correct use overall and how to avoid future misuse.
- Remind caregivers that children may not hear what you say, but they will do what you do. Caregivers must buckle up!



**Reference TG page 3-2.**



Present resources for injury statistics, misuse rates, and related data.

A list of resources for current data is available at [www.cpsboard.org](http://www.cpsboard.org). Review educational materials (articles, websites, videos, brochures, handouts, etc.) every year to be sure you are providing accurate and current information.

Examples of available resources include:

- American Academy of Pediatrics (AAP) at <http://www.aap.org>
- Car seat, booster seat, and vehicle manufacturer websites
- Centers for Disease Control and Prevention (CDC) at [www.cdc.gov/injury/WISQARS](http://www.cdc.gov/injury/WISQARS)

- Children’s Hospital of Philadelphia (CHOP) at <http://www.chop.edu/service/car-seat-safety-for-kids/index.html>
- Governors Highway Safety Administration (GHSA) at [www.ghsa.org](http://www.ghsa.org)
- Insurance Institute for Highway Safety (IIHS) at [www.highwaysafety.org](http://www.highwaysafety.org) or <http://www.iihs.org>
- National Highway Traffic Safety Administration (NHTSA) at [www.safercar.gov](http://www.safercar.gov)
- NHTSA’s National Center for Statistics and Analysis (NCSA) at [www.nhtsa.gov](http://www.nhtsa.gov)
- Safe Kids Worldwide at <http://www.safekids.org>
- State and local health departments

[INSTRUCTOR NOTE]

[Explain that misuse rates vary depending upon what is considered misuse by the organization doing the survey. Local misuse information should be used if available.]

There are a few reasons why misuse statistics vary. Some are based on studies that only look at harnessed car seats, while others include booster seats (which often have a substantially lower misuse rate than car seats). Some studies include all types of misuse while others focus more on what is defined as a “critical” misuse.]



Transition to crash forces.

Now, let’s learn about crash forces.

### 3. The Concept of Crash Forces



**Reference TG page 3-2.**



**Display PPT 3-6.**



Introduce factors related to injury prevention.

There are many factors related to injury prevention that must be considered before, during, and after a crash to prevent or minimize injuries from occurring. Here are a few examples:

- Road conditions before the crash
- Car seat use during the crash
- Seat belt use (such as using lap belt correctly or incorrectly) during the crash
- Emergency response time after the crash



Present the concept of crash forces.

You might do everything correctly when driving safely and still get into a collision. One way to understand the value of occupant protection and how it helps you survive a collision is to look at the dynamics of a collision. Every vehicle collision actually includes three crashes:

- The vehicle crash
- The human crash
- The internal crash



Reference TG  
page 3-3.



Display PPT 3-7.



Introduce 3 Stages of a Collision video (1.34 minutes).

Let's watch the 3 Stages of a Collision video to learn more about these crashes.

- Watch carefully for the crashes or stages of a collision.
- Take notes about the characteristics of each crash in your TG as you watch the video.



Play 3 Stages of a Collision video.



Ask questions.

**Q. What new information about a crash did you learn from the video? What points are important to emphasize with caregivers?**

A. When talking to caregivers, always emphasize how best practices prevent collisions and each type of crash – vehicle, human, and internal.

[INSTRUCTOR NOTE]

[As participants share responses, provide clarifications and/or raise additional points that should be shared with caregivers. Tell participants that a summary of the three crashes is in their TGs.]



Display PPT 3-8.



Reference TG  
page 3-4.



Transition to restraining force.

In any crash, even a minor one, occupants in a vehicle can be seriously injured. Most people are unaware how much force a vehicle has when moving. Consider:

- A vehicle going 40 mph would hit a tree with the same force as hitting the ground after falling off a 50-foot cliff. A person inside the vehicle would hit the windshield with the same force as hitting the ground after a fall from a 5-story building.
- It is important for caregivers to understand that the forces involved in a crash can kill or cause serious injuries to themselves and their child.
- One way to help caregivers understand such forces is to explain that the force needed to restrain an occupant approximately equals the weight of the occupant multiplied by the vehicle speed.

**Example:** A 10-pound infant in a vehicle moving at 30 miles per hour could require at least 300 pounds ( $10 \times 30 = 300$ ) of restraining force to keep from moving forward.

When talking with caregivers, it is important to emphasize that:

- Holding a child in their lap or unrestrained presents great risk to the unbelted child.
- Unbuckled front or back seat passengers can hit and injure or kill other people in the vehicle as can loose objects like toys.



**Reference TG**  
page 3-4.



Conduct a progress check.

Take a couple of minutes to calculate restraining forces.

Estimate restraining force using your weight and a crash at 30 miles per hour.



Ask questions and respond to comments.

***Q. Does someone have an example they would like to share? How did you calculate that restraining force?***



**Display PPT 3-9.**



Introduce types of crashes.

Dangerous crash events can occur in almost any type of collision or chain of crash events. Here are the most common types of crashes and their related injuries.

- Frontal crashes are the most frequent and can result in head, neck, upper body, and lower body injuries.
- Rear-end crashes are also common and can result in back and neck injuries.
- Lateral or side impact crashes can result in torso, head, hip, and leg injuries.



Transition to rollovers, rotations, and ejections.

- A **rollover** crash occurs when the vehicle rolls over onto its side or top (upside down) one or more times. A **vault** is similar, but the vehicle flips end over end. A rollover/vault is often responsible for occupants being thrown from vehicles.
- In a **rotation** (or spin), unrestrained occupants are more likely to be injured as they hit the vehicle interior repeatedly and are much more likely to be thrown from the vehicle than restrained occupants.
- In an **ejection**, vehicle occupants are thrown out a window or door, skid along the pavement, and may be pinned or crushed under a vehicle. Landing gently on a soft surface is highly unlikely.
- A common myth about car seat, booster seat, and seat belt use is that occupants are better off being thrown clear of a crash. People thrown from a vehicle are four times more likely to be killed than those who remain inside (NHTSA, 2009).

Even in the very rare chance of a vehicle fire or landing in the water, a properly belted occupant is more likely to be uninjured and conscious, thus able to exit from the vehicle.



Ask questions and respond to comments.

***Q. What questions do you have about crash forces and the risks associated with not being belted in a crash?***



Transition to ways that car seats, booster seats, and seat belts prevent injuries.

Now let's look closely at how car seats, booster seats, and seat belts help to prevent injuries and deaths.

#### 4. Five Ways That Car Seats, Booster Seats, and Seat Belts Prevent Injury



**Reference TG**  
page 3-5.



Introduce ways that car seats, booster seats, and seat belts prevent injuries.

The use of car seats, booster seats, and seat belts is one of the most important actions that can be taken to prevent injury in a vehicle crash.

- While car seats, booster seats, and seat belts do not prevent crashes from taking place, they play a major role in reducing the severity of injury to vehicle occupants involved in a collision.
- An occupant's chance of survival increases dramatically when appropriately restrained.



**Display PPT 3-10.**



Present five ways that car seats, booster seats, and seat belts prevent injury.

Here are five main ways that car seats, booster seats, and seat belts prevent injury. They:

- Keep people in the vehicle.
- Contact the strongest parts of the body.
- Spread forces over a wide area of the body.
- Help the body to slow or "ride down" the crash forces.
- Protect the head, brain, and spinal cord.

[INSTRUCTOR NOTE]

[It is important that participants understand these five key points to educate caregivers effectively about preventing or reducing injuries through proper car seat, booster seat, and seat belt use.

Use the following as an example of spreading crash forces:

- Poke your arm with your finger directly with pressure.
- Do you feel it in one place or all over? If you did it hard enough and long enough, could it possibly cause a bruise or sore spot?
- Now, use the palm of your hand with the same pressure. Does it feel the same?

- The force has been spread to a wider area and is not as intense.

Also emphasize that unbuckled front or back seat passengers can hit and injure or kill other people in the vehicle.]



**Reference TG**  
page 3-6.



Present additional information about how car seats, booster seats, and seat belts prevent injury.

Here are additional important points to understand and emphasize when talking with caregivers or others.

[INSTRUCTOR NOTE]

[Highlight additional points from TG as time permits.]

- Car seats, booster seats, and seat belts are designed to contact the body at the strongest parts of its structure. For an older child and adult, these parts are the hips and shoulders.
- Car seats, booster seats, and seat belts are designed to spread crash forces over a wide area of the body, putting less stress on any one part.
  - Lap-and-shoulder belts and car seat harnesses spread the force across a large area of the body.
  - A rear-facing car seat spreads the crash force across the shell of the seat, protecting the child's head, neck and spinal cord.
- A quick change in speed is what causes injury.
  - During a motor vehicle crash, the vehicle crush zones help to extend the time it takes for the vehicle and its occupants to slow down.
  - Car seats, booster seats, and seat belts allow the body to slow down with the crash. This extends the time when the occupant experiences the forces during a crash.
- A shoulder belt or harness helps to keep the head and upper body away from the hard interior surface of the vehicle.



Ask question and respond to comments.

**Q. What questions do you have about the ways that car seats, booster seats, and seat belts prevent injuries?**



**Display PPT 3-11.**



Conclude topic.

Remember the following points:

- Car seats/booster seats, seat belts, and air bags = the best chance of survival.
- An occupant's chance of survival increases dramatically when appropriately restrained.
- As CPS Technicians, we can also share information with caregivers to ensure children are safe in and around vehicles even when not on the road. Tips for discussing injury prevention are located in your TG on page 3-6.

## 5. Progress Check and Summary



**Reference TG page 3-7.**

[INSTRUCTOR NOTE]

[Conduct the following progress check as a large group activity. Pose each question and ask for responses from the group. Add any information not provided by participants.]



Conduct progress check.

Let's review what we learned in Module 3 through a progress check. Answer questions to prepare for conversations you will have with caregivers to educate them about injury prevention and crash dynamics. Write down correct responses in your TG.

1. What are two challenges related to children, crash survival, and car seat, booster seat, and seat belt use?

### Answers:

- Car seat, booster seat, and seat belt use decrease, as children get older. Most children are restrained during the first year of life because they appear to be more fragile and need more protection.
- Car seat, booster seat, and seat belt misuse rates vary from 74 to 90 percent. Misuse and nonuse are both issues to address with caregivers.

- Correct selection, installation, and use of car seats can be challenging.
  - Caregivers may have outdated or incorrect information about car seats, booster seats, and seat belts.
  - Caregivers may not choose best practice over personal preferences or actual safety over perceived safety. For example, caregivers might prioritize wanting to see the child more easily and move the child to a forward-facing car seat over best practice recommendations.
2. What are the three crashes involved in every vehicle collision?

**Answer:**

- Vehicle crash
  - Human crash
  - Internal crash
3. What is the equation for estimating restraining force?
- Answer:** WEIGHT X SPEED = RESTRAINING FORCE
4. How much force would a 10-pound infant in a vehicle moving at 40 mph require to keep from moving forward?
- Answer:** At least 400 pounds of force to keep from moving forward
5. What are the five ways car seats, booster seats, and seat belts help prevent or reduce injuries?

**Answer:**

- Keep people in the vehicle.
- Contact the strongest parts of the body.
- Spread forces over a wide area of the body.
- Help the body to slow or "ride down" the crash forces.
- Protect the head, brain and spinal cord.



Conclude module.

Remember, the best way to reduce injury in a crash is through correct use of car seats, booster seats, and seat belts.

Now that you are more familiar with injury prevention and crash dynamic principles, let's take a closer look at occupant protection systems that consist of seat belts, air bags, and car seats and booster seats.

- When used properly, the vehicle's occupant protection system saves lives.
- As a CPS Technician, you play an important role in teaching caregivers about the correct use of these systems.

## MODULE 4 • Seat Belt Systems

### Module Agenda: 130 Minutes

Topic	Suggested Timing
1. Introduction	2
2. Federal Standards for Seat Belts	3
3. Types of Seat Belts and Seat Belt Parts	15
4. Types of Latchplates <ul style="list-style-type: none"> <li>• Progress Check: Latchplates</li> </ul>	25
5. Types of Retractors <ul style="list-style-type: none"> <li>• Progress Check: Retractors</li> </ul>	25
6. Practice Activity: Locate Latchplates and Retractors	15
7. Approved Additional Locking Steps <ul style="list-style-type: none"> <li>• Video: Install a Locking Clip</li> <li>• Video: Install a Belt-Shortening Clip</li> </ul>	25
8. Best Practices on Seat Belt Systems For Caregivers	5
9. Progress Check and Summary <ul style="list-style-type: none"> <li>• Video: Install a Car Seat with a Locking Latchplate</li> <li>• Video: Install a Car Seat with an Automatic Locking Retractor</li> </ul>	15
TOTAL	130 Minutes

### Module Purpose

The purpose of this module is to provide participants with a solid foundation on the hardware associated with seat belt systems prior to learning about car seat and booster seat installation. You will discuss:

- Federal standards for seat belts.
- Two types of seat belts.
- Seat belt parts.

### Module Objectives

- Identify federal standards related to seat belts.
- Name types of seat belts and seat belt parts.
- Describe types of latchplates.
- Describe types of retractors.
- Locate latchplates and retractors.
- Identify approved additional locking steps.
- Explain best practices about seat belt systems to caregivers.

## Special Media, Materials, and Resources

- Quick Reference Guide to Federal Motor Vehicle Safety Standards and Regulations (NCPSTB website at [www.cpsboard.org](http://www.cpsboard.org))
- A variety of vehicles, seat belt parts, latchplates, and retractors
- Large laminated number cards for vehicle identification
- Keys for each demonstration vehicle (keys should be labeled for return to owner)
- Grid with seat belt systems for each demonstration vehicle and teaching team member
- Two forward-facing car seats or one per Instructor team
- Sample vehicle owner's manuals
- A locking clip and a belt-shortening clip

## Video Titles and Times

- Emergency Locking Retractor, :07 seconds (PPT 4-11)
- Automatic Locking Retractor, :06 seconds (PPT 4-12)
- Install a Locking Clip, 2:23 minutes (PPT 4-15)
- Install a Belt-Shortening Clip, 1:47 minutes (PPT 4-17)
- Install a Car Seat with a Locking Latchplate, 1:17 minutes (PPT 4-22)
- Install a Car Seat with an Automatic Locking Retractor, 1:04 minutes (PPT 4-23)

## Activities

- Progress Check: Latchplates
- Progress Check: Retractors
- Practice Activity: Locate Latchplates and Retractors
- Final Progress Check

## Preparation

- Review the videos and job aids in TGs for this module.
- Prepare for the activity and progress checks.
- Arrange for a vehicle with a switchable latchplate (a local car dealer is one option) or a stand-alone demonstration switchable latchplate. Have an owner's manual for a switchable latchplate available as a back up. It can be difficult to locate a vehicle with this type of system.
- Check all vehicle seat belt systems to determine what is available.
- Develop a grid identifying seat belt systems available to the class.
- Review the Participant Vehicle Occupant Restraint Systems Details form completed earlier in the course with each member of the instructing team, showing which seating positions in which vehicles will be used.
- If the class size exceeds available learning resources, ask participants to alternate in the practice activity.
- Remember the driver seating position does not have locking ability in most vehicles. This may be needed for comparison for participants having difficulty understanding the concept.

## 1. Introduction



### Display PPT 4-1.



Present module purpose.

The purpose of this module is to provide you with a solid foundation on the hardware associated with seat belt systems prior to learning about car seat and booster seat installation. We will discuss:

- Federal standards for seat belts.
- Two types of seat belts.
- Seat belt parts.



### Display PPT 4-2.



Present module objectives.

As a result of this module, you will be able to:

- Identify federal standards related to seat belts.
- Name types of seat belts and seat belt parts.
- Describe types of latchplates.
- Describe types of retractors.
- Locate latchplates and retractors.
- Identify approved additional locking steps.
- Explain best practices about seat belt systems to caregivers.

---

## 2. Federal Standards for Seat Belts



### Reference TG page 4-1.



Introduce federal standards for seat belts.

NHTSA sets Federal Motor Vehicle Safety Standards (FMVSS) for seat belts and other safety features. This section of the module includes a basic overview of the seat belt-related government regulation of manufacturers. It lays the groundwork for what we will learn in upcoming modules.



### Display PPT 4-3.



Review FMVSS 208.

FMVSS 208 regulates seat belts and frontal air bags (air bags are covered in Module 5).

- Beginning with 1996 model year vehicles (MY 1996), all passenger seat belt systems must lock to secure car seats. Driver seat belt systems do **NOT** lock because car seats are **NOT** installed in this position.

- Since 2008, lap-and-shoulder belts are required in all seating positions, except some front center seating positions.



Ask question and respond to comments.

**Q. What questions do you have about federal standards for seat belts?**

### 3. Types of Seat Belts and Seat Belt Parts



**Reference TG page 4-1.**



**Display PPT 4-4.**



Present lap belts.

There are two types of seat belt systems found in vehicles – lap belts and lap-and-shoulder belts.

- A lap belt offers 2-point protection because it connects with the body in two places – at each hip.
- It does **NOT** provide upper body protection.

[INSTRUCTOR NOTE]

[If participants ask why lap belts do not provide upper body protection, briefly describe how with no restraint above the waist, the upper body moves forward until it is stopped by something. Many times, it is the head that contacts the dashboard, front seats, consoles, doorframes, floor, or even the individual's knees. This concept will be addressed fully in coming modules.]



Present lap-and-shoulder belts.

- A lap-and-shoulder belt offers 3-point protection because it connects with the body in three places – at each hip and at the shoulder.
- It provides upper body protection.

A lap belt is better than no seat belt at all, but a lap-and-shoulder belt provides better protection.



**Reference TG page 4-2.**



**Display PPT 4-5.**



Introduce seat belt parts.

Seat belts have five main parts.

- **Buckles** accept the latchplate and hold the seat belt in place.

- **Retractors** gather and store extra webbing in the vehicle. Most lap-and-shoulder seat belts have one retractor that holds the webbing for both the lap and shoulder webbing. Some lap-and-shoulder belts have two retractors – one for the lap belt and one for the shoulder belt. Retractors are usually covered in a vehicle and not easy to see.
- **Anchors** attach the seat belts to a strong location in the vehicle.
- **Webbing** is the fabric part of the seat belt that crosses the person or holds the car seat or booster seat.
- **Latchplates** connect the seat belt webbing to a buckle in the vehicle.



Ask question and respond to comments.

**Q. What questions do you have about seat belt parts?**

#### 4. Types of Latchplates



**Reference TG**  
page 4-2.



Introduce the types of latchplates.

Beginning with model year 1996, federal standards have required that either the latchplate or the retractor lock to secure a car seat. This is called the lockability standard. We will begin with latchplates and how they lock or do not lock a car seat and then discuss retractors.

There are different types of latchplates that you will encounter while checking car seats.

- Locking
- Switchable
- Sliding
- Sewn-on
- Dynamic locking



**Display PPT 4-6.**



**Reference TG**  
page 4-3.



Review locking latchplates.

A **locking latchplate** on the seat belt can be found in older vehicles and in the center seat of some newer vehicles.

- Some have a locking bar found on the bottom or back. The bar moves back and forth, as well as up and down. It can be made of metal or plastic.
- Not all locking latchplates look the same. Some have a bar while others have a sliding metal or plastic piece.
- If the seat belt webbing and latchplate lie flat, the latchplate will lock.
- If the latchplate is tilted, the latchplate will remain unlocked.
- The steps to test if the latchplate locks are:
  1. Buckle the seat belt.
  2. Give a firm tug on the lap portion of the seat belt while pulling up on it. If the webbing does not slide through the latchplate, it is locked.



#### Display PPT 4-7.



Review other types of locking latchplates.

Not all locking latchplates look the same.

- Some have a bar like you saw on the first slide. Others have a sliding metal or plastic piece.
- The steps to test if the latchplate locks are the same as with the first latchplate.

[INSTRUCTOR NOTE]

[Demonstrate to participants how the locking latchplate creates a fixed length of webbing in the lap portion of the seat belt.]



Ask question and respond to comments.

***Q. Who can name the steps to test if the latchplate locks?***

1. Buckle the seat belt.
2. Give a firm tug on the lap portion of the seat belt while pulling up on it. If the webbing does not slide through the latchplate, it is locked.



Reference TG  
page 4-3.



#### Display PPT 4-8.



Review switchable latchplates.

Some vehicles have a **switchable latchplate** that uses a button to move from the unlocked position for adults to the locked position for car seats (children).

**Display PPT 4-9.**

Review sliding and sewn-on latchplates.

While all seat belts will lock in a crash, not all seat belts have a latchplate that will lock to secure a car seat. Let's discuss latchplates that do not lock.

- The **sliding** and **sewn-on latchplates** in this slide have no locking feature or moving parts. Sliding latchplates are found on lap-and-shoulder belts. Sewn-on latchplates can be on lap belts and lap-and-shoulder seat belts.
- To test if these latchplates have a locking feature, buckle the seat belt and pull up on the lap portion of the seat belt. The webbing will slip through a sliding latchplate and will **NOT** lock.
- Sewn-on latchplates can be found on both lap-only and lap-and-shoulder seat belts.
- With a sewn-on latchplate, test the seat belt – **NOT** the latchplate. Buckle the seat belt and test to see if it locks by firmly pulling up on the lap portion of the seat belt. The seat belt webbing will not lengthen if some type of locking mechanism has been engaged.



**Reference TG page 4-4.**

**Display PPT 4-10.**

Review dynamic locking latchplate.

New technology can be introduced at any time. These new products may look similar to current hardware available in vehicles, but may function differently. To ensure you are using a new product correctly, you **MUST** refer to the vehicle owner's manual.

**Dynamic locking latchplates** are currently located in the front seat of some vehicles and lock the lap-and-shoulder belt when loaded by an occupant during a crash. This latchplate is **NOT** intended to lock the seat belt for a car seat.

- Some dynamic locking latchplates may seem to lock the seat belt when you buckle it across an empty seat and pull upward on the lap portion. The caregiver could believe that it is safe since it seems to lock.

- The caregiver should move the car seat to a different position or take additional steps as recommended in the vehicle owner's manual to lock the seat belt that has a dynamic locking latchplate.
- Even if you see moving parts on a latchplate, do **NOT** assume it is a locking latchplate. Test for lockability and check the vehicle owner's manual.

[INSTRUCTOR NOTE]

[Conduct the following progress check in three small groups. Have each group provide the answer to one of the questions.]



**Reference TG**  
page 4-5.



Conduct a progress check.

Let's review what you learned so far in this module through a progress check. Write down correct responses in your TG.

1. What are the two types of latchplates that can be locked?

**Answer:** Locking and switchable latchplates

2. What is the step to put a locking latchplate into the locking mode?

**Answer:** The only thing needed to put the locking latchplate into the locked position is to buckle it. There are no other steps.

3. What is the step to put a switchable latchplate into the locking mode?

**Answer:** A switchable latchplate requires the user to push or turn a button on the back of the latchplate from the unlocked position for adults to the locked position for car seats (children).

4. What is one way to determine if a latchplate can be locked for car seats?

**Answer:** Even if you see moving parts on a latchplate, do **NOT** assume it is a locking latchplate. Test for lockability and check the vehicle owner's manual.

5. What types of latchplates cannot be locked?

**Answer:** Sliding, sewn-on, and dynamic locking



Ask question and respond to comments.

***Q. What questions do you have about latchplates?***

[INSTRUCTOR NOTE]

[Refer participants to the Differences Between Types of Latchplates chart on page 4-5 in the TG for a summary on latchplates.]

## 5. Types of Retractors



Introduce the types of retractors.

You have already learned how retractors store seat belt webbing until needed. In some vehicles the retractor – not the latchplate – provides the locking part needed to keep a car seat in place at all times.

These retractors are usually present when a non-locking latchplate (sliding, sewn-on or dynamic locking) is present.

When talking to caregivers, try not to use technical terms and abbreviations to explain how a part works. First, explain and demonstrate how a part works. Then, make sure caregivers practice what to do and are able to explain how it works.

[INSTRUCTOR NOTE]

[While we use many different terms to describe seat belt and car seat parts, use the correct names in class. In this section you will be reviewing different types of retractors. They are referred to in different ways. For example, emergency locking retractor or ELR.]



**Reference TG page 4-6.**



**Display PPT 4-11.**



Introduce Emergency Locking Retractor video (:06 seconds).

You are most familiar with an emergency locking retractor since, as a driver, you probably use it every day. As the name implies, an **emergency locking retractor** locks only in a sudden stop, acceleration, turn, or crash.

This retractor type, along with one of the non-locking latchplates – sliding, sewn-on, or dynamic – cannot secure a car seat without an extra, approved step.

Let's look at how this retractor works.



Play Emergency Locking Retractor video.



Review emergency locking retractors.

Seat belts with emergency locking retractors can be found in lap-only, shoulder-only, or lap-and-shoulder belts. You cannot identify an emergency locking retractor just by looking at the seat belt. You **MUST** test the seat belt to determine if there is a locking feature.

- At the beginning of this module, you learned that the FMVSS required a lockability feature on vehicles made after 1996.
- If the vehicle is older than 1996, you might have a locking latchplate, but it is more likely that the seat belt retractor is an emergency locking retractor with a sliding latchplate and without locking ability. In that case, you will have to use an approved step to put the seat belt into a locked mode (locking clip or car seat lock-off).

[INSTRUCTOR NOTE]

[We will review these approved locking steps later in this module.]



Review how to test for an emergency locking retractor.

Here are the steps to test if the seat belt has an emergency locking retractor.

1. Pull all the webbing slowly and gently out of the retractor.
2. Allow some of the webbing to go back into the retractor.
3. Try to pull the webbing out again very slowly. If the webbing goes freely in and out of the retractor after you have pulled out all of the webbing, you have an emergency locking retractor.

**NOTE:** When you do this test, do not pull quickly or jerk the webbing because this might trigger the emergency locking features of the retractor.



**Display PPT 4-12.**



Introduce Automatic Locking Retractor video (:07 seconds).

Automatic locking retractors are generally easy to use with car seats, but are almost never found in newer vehicles.

Let's look at how this retractor works.



Play Automatic Locking Retractor video.



Review how to test for an automatic locking retractor.

To check if the retractor will lock:

1. Pull 24 to 36 inches of webbing slowly and gently out of the retractor where the extra webbing is stored.
2. Allow some of the webbing (3 to 6 inches) to spool back in the retractor.
3. Gently pull the webbing. If no webbing comes out, then the retractor is an automatic locking retractor.

Some seat belts with automatic locking retractors may appear to have no locking ability if tested when the seat belt is pulled out a very short distance (less than 12 to 18 inches) from the retractor.

- That 12 to 18-inch space is known as the dead-zone and may fool you into thinking the seat belt has no locking ability.
- The true test of seat belt system locking is to pull firmly up on the lap part of the buckled seat belt. The belt should not lengthen. You can also put the belt around yourself and if it locks in place and continues to get smaller and cannot lengthen, you have identified an automatic locking retractor.



**Display PPT 4-13.**



**Reference TG page 4-7.**



Introduce switchable retractors.

The final type of retractor we will discuss is switchable.

- **Switchable retractors** start out in an unlocked “comfortable” mode for adult occupants and switch to a locked mode for use with a car seat.
- A switchable retractor with a sliding latchplate is the most common system you will encounter in the field.
- Just like the switchable latchplate, you manually have to change this retractor from an emergency mode to the automatic locking mode.
- Once switched to the automatic locking retractor mode, this belt will only shorten and cannot be lengthened. To return to the emergency locking mode, this belt must be unbuckled and then all of the webbing fed back into the retractor.

Switchable retractors can be found in vehicles with:

- Lap-belt-only
- Lap-and-shoulder belt



Review switchable retractors.

Seat belts with switchable retractors switch to a tight locked seat belt to install a car seat. Remember, correct installation of a car seat requires the seat belt to be locked at all times.

- A switchable retractor switches to an automatic locking retractor by pulling the belt all the way out slowly.
- You may find instructions on the seat belt webbing for how to use the seat belt with a car seat but many switchable retractors do not come with a label. Test the retractor to be certain.
- A seat belt with a switchable retractor fits the adult comfortably and will lock only in an emergency such as a crash, acceleration, sudden stop, or turn. It should only be switched to the locking position to install a car seat or, in some cases, a booster seat.
- To check if the seat belt has a switchable retractor:
  1. Slowly pull out all of the webbing from the retractor. Like when you tested the emergency locking retractor, be careful not to pull too quickly on the webbing because this might trigger the emergency locking mechanism.
  2. When you have pulled all the webbing out of the retractor, let a few inches go back in. You probably will hear a clicking sound as the webbing goes back into the retractor.
  3. Pull on the webbing. If the webbing will not pull out again, the belt is locked and you have confirmed that the seat belt has a switchable retractor.

[INSTRUCTOR NOTE]

[Describe how some vehicles (mostly older vehicles and trucks) use two separate retractors – one at the hip or floor and one at the shoulder – to provide locking before a crash. Only the retractor at the hip or floor provides a way to lock down the car seat.

Indicate that some lap belts have no retractor and the webbing lies freely on the seat.]



Ask question and respond to comments.

**Q. What questions do you have about retractors?**



**Reference TG**  
page 4-8.

[INSTRUCTOR NOTE]

[Conduct the following progress check in small groups or pairs. Have each group provide the answer to one of the questions.]



Conduct a progress check.

Let's review what you learned about retractors through a progress check. Write down correct responses in your TG.

1. What are the two types of retractors that can lock in a car seat?

**Answer:** Automatic locking retractor and switchable retractor

2. How can an emergency locking retractor be identified?

**Answer:** You cannot identify an emergency locking retractor just by looking at the seat belt. You **MUST** test the seat belt to determine if there is a locking feature.

3. What are the steps to identify a switchable retractor?

**Answer:**

1. Slowly pull out all of the webbing from the retractor. Like when you tested the emergency locking retractor, be careful not to pull too quickly on the webbing because this might trigger the emergency locking mechanism.
2. When you have pulled all the webbing out of the retractor, let a few inches go back in. You probably will hear a clicking sound as the webbing goes back into the retractor.
3. Pull on the webbing. If the webbing will not pull out again, the belt is locked and you have confirmed that the seat belt has a switchable retractor.

- 
6. Practice Activity: Locate Latchplates and Retractors



**Reference TG**  
page 4-9.



Conduct practice activity and debrief.

You have learned about all the different types of retractors and latchplates. Now you will have a chance to see them in vehicles and determine how to lock the seat belt system.

1. For each vehicle, write the vehicle number and mark the seating location in the column on the left side of each table.
2. Locate the seat belt latchplate and retractor for each vehicle and seating locations and enter it in the column on the right side of each table.

This is not a quiz right now, but you will be assessed on these skills later in the course.

[INSTRUCTOR NOTE]

[Be sure that vehicles are numbered and that participants are given vehicle numbers and seating positions to mark in the TG.

Have a member of the Instructor team stationed at each vehicle to assist as participants check the seat belt system.

Ask participants to identify the seat belt latchplate and retractor and place their answers on the worksheet.

Give participants 20 minutes for this practice activity.

When everyone has completed the practice activity, bring them together and ask for answers, vehicle by vehicle.

This exercise can be done as a group, but ensure that every participant has initially made their own assessment and written it down.

Provide feedback and encouragement to participants.]

7. Approved Additional Locking Steps



**Reference TG page 4-10.**



Introduce approved additional locking steps.

In vehicles made before 1996, seat belts were not federally required to provide a locking feature you learned about earlier in the module. Some vehicles did have the locking feature, but it was voluntary on the part of the manufacturer.

Vehicle manufacturers approved two additional steps to secure a car seat in vehicles where neither the retractor nor the latchplate can be locked at all times.

- With a lap-and-shoulder belt, a locking clip/lock-off is one of the approved additional steps.
- With a lap belt with a sewn-on latchplate, belt-shortening clips are the approved additional step.
- You should **NEVER** use a belt-shortening clip with a lap belt that has a locking latchplate.



#### Display PPT 4-14.



Review locking clip/lock-off.

Three conditions must be present to use a locking clip:

- Retractor = emergency locking
- Latchplate = sliding
- Lap-and-shoulder belt is all one piece of webbing

Locking clips (lock-offs) come on the car seats from the factory.

- A locking clip clamps the tightened lap-and-shoulder belt together within 1 inch of the latchplate to make the lap belt a fixed length.
- A lock-off can be on either side of the car seat and must be used according to the car seat manufacturer. This also locks to make the lap belt a fixed length. It is the fixed length lap belt that locks a car seat in place.
- They can be permanently attached to the car seat (lock-off) or can be separately stored on the car seat for removal and use by the consumer. Either a lock-off or locking clip is safe to use. They perform the same function. Do **NOT** use a locking clip if a lock-off is present on the seat.
- A locking clip locks the lap-and-shoulder belts together so the car seat does not move more than 1 inch side-to-side or front-to-back at the belt path.
- Locking clips **MUST** be placed according to the manufacturer instructions. Unless instructed otherwise, place the locking clip no more than 1 inch from the latchplate.

- Incorrect placement of the locking clip can lead to too much slack in the seat belt in a crash and can result in serious injury to the child.
- The locking clip (lock-off) is a temporary fix until the retractor engages in a crash. The locking clip can come off in a crash.

[INSTRUCTOR NOTE]

[Use seat belt webbing and a sliding latchplate to demonstrate how a locking clip creates a fixed length of webbing in the lap portion. Show how it would be placed on the belt in relationship to the latchplate (within an inch of the latchplate). Also demonstrate removing the clip – folding/pinching it in half and taking off.]

If available, have each participant place a locking clip on a section of webbing and then remove it. No car seat is needed during this demonstration. This is only to familiarize the participant with the use and feel of a locking clip.]



**Reference TG**  
page 4-11.



**Display PPT 4-15.**



Introduce Install a Locking Clip video (2:23 minutes).

Let's view a video on how to install a locking clip.

- Watch for the installation steps.
- Take notes in your TG as you watch the video.



Play Install a Locking Clip video.



Ask question and respond to comments.

***Q. What questions do you have about locking clips?***



**Reference TG**  
page 4-11.



Introduce belt-shortening clips.

Let's discuss another approved additional step to use if you are educating caregivers who have an older vehicle that has no locking feature in the seat belt system.



**Display PPT 4-16.**



Review belt-shortening clips.

Three conditions must be present to use a belt-shortening clip:

- Retractor = emergency locking
- Latchplate = sewn-on

- A separate lap belt with no locking feature (there may or may not be a separate shoulder belt)

The belt-shortening clip takes the place of the retractor as all the webbing is pulled out of the retractor and shortened with the belt-shortening clip.

- Frequently, this type of seat belt is found in the front seat of an older car with a motorized shoulder belt and a separate lap belt.
- You can often move a car seat to a back seat location, but in some vans and school buses there will be no other seating position.
- There are times when only a belt-shortening clip will provide the locking feature on a lap belt because neither the retractor nor the latchplate locks.
- While the stronger belt-shortening clip could be used in place of a locking clip (that comes free with a car seat), the locking clip **NEVER** takes the place of the belt-shortening clip to shorten a seat belt.
- Use belt-shortening clips as a last resort. Carefully assess all other alternatives before using this clip.
- Belt-shortening clips are considered vehicle parts (have a part number) and can be purchased at the parts department of an auto dealership.



Reference TG  
page 4-12.



Display PPT 4-17.



Introduce Install a Belt-Shortening Clip video (1:47 minutes).

Let's view a video on how to install a belt-shortening clip.

- Watch for the installation steps.
- Take notes in your TG as you watch the video.



Play Install a Belt-Shortening Clip video.

[INSTRUCTOR NOTE]

[Pass around a belt-shortening clip and a locking clip so participants can see how similar both clips look. Emphasize the differences between the two clips.



Ask question and respond to comments.



Reference TG page 4-12.



Display PPT 4-18.

[INSTRUCTOR NOTE]



Reference TG page 4-13.



Display PPT 4-19.



Review when to flip the latchplate and/or twist the buckle stalk.



Review additional reasons to flip a latchplate or twist a buckle stalk.

Emphasize how the belt-shortening clip is made of heavier metal. A belt-shortening clip can be used as a locking clip but a locking clip can **NEVER** be used to perform belt-shortening.]

**Q. What questions do you have about belt-shortening clips?**

[Refer participants to the table that provides a summary of when to use a locking clip/lock-off vs. a belt-shortening clip. Emphasize that a locking clip should never be used to shorten a seat belt. It is not strong enough by itself to keep a belt shortened during a crash.]

Sometimes, even seat belts that are designed to lock cannot because of the car seat belt path.

Unbuckling and flipping the latchplate over is a step that has been crash-tested and approved for use in most vehicles if the locking latchplate is tilted and stays in an unlocked position.

- Check the vehicle owner's manual to see if the manufacturer prohibits twisting a seat belt to shorten the webbing.
- Not all latchplates allow for flipping.

Twisting the buckle stalk is helpful when the buckle does not lie flat, is in the car seat belt path, or does not allow the belt to be locked with an additional part. This will make the buckle webbing shorter and buckle lower.

1. Check the vehicle owner's manual to see if buckle twisting is allowed.
2. Be sure the buckle release is accessible after twisting.

Sometimes, when a seat belt passes through the car seat belt path as directed by the manufacturer, the latchplate will be positioned so that the locking mechanism is tilted and does not hold the car seat tightly.

The seat belt is probably out of position and cannot lock (remember that the webbing and latchplate must be flat to stay locked).

- There are approved steps to fix this condition:
  1. Flip the latchplate over one time to engage the latchplate's locking feature. This changes the locking angle. Always test the seat belt to be sure it remains locked tightly.
  2. Twist the buckle stalk if it is made of webbing.
    - Best practice is to twist as little as is necessary to obtain a tight seat belt fit.
    - **ALWAYS** use a minimum number of twists, with a maximum of three. The Society of Automotive Engineers (SAE) Child Restraint Subcommittee, based on IMMI data (seat belt webbing company), agreed upon this number.
- It is approved to use a locking clip on a lap-and-shoulder seat belt with a locking latchplate as a last resort. If flipping the latchplate and twisting the buckle webbing do not keep the seat belt from pulling out, you can use a locking clip.
- It is important to remember to check the manufacturer's instructions for both steps, as some buckles cannot be twisted and some latchplates cannot be flipped. Most manuals, however, will not mention or prohibit flipping latchplates or twisting buckle stalks.

[INSTRUCTOR NOTE]

[Encourage CPS Technicians to find other ways that do not require flipping the latchplate.]



Ask question and respond to comments.

***Q. What questions do you have about approved additional locking steps?***

- 
8. Best Practices on Seat Belt Systems for Caregivers



**Reference TG  
page 4-14.**



Reinforce how to explain best practices to caregivers.



**Display PPT 4-20 and 4-21.**

[INSTRUCTOR NOTE]

There are key questions to ask caregivers related to seat belt systems.

[Review the key questions related to seat belt systems.]

Explain and demonstrate best practices to caregivers.

Test whether a seat belt provides locking protection.

- Buckle the seat belt.
- Give a firm tug on the lap portion of the seat belt while pulling up on it.

Test your retractor for lockability.

- Pull all the webbing slowly and gently out of the retractor.
- Allow some of the webbing to go back into the retractor.
- Try to pull the webbing out again very slowly.
- If the webbing goes freely in and out of the retractor, you have an emergency locking retractor. If the webbing stays locked and makes a clicking noise when you let it go back in, then you have an automatic locking retractor. If it moves freely but then locks when you pull all of the webbing out, you have a switchable retractor.

Determine when to use a locking clip. You must have the following:

- Emergency locking retractor
- Sliding latchplate
- Lap-and-shoulder belt is all one piece of webbing

Determine when to use a belt-shortening clip. You must have the following:

- Emergency locking retractor
- Sewn-on latchplate
- A separate lap belt with no locking feature (there may or may not be a separate shoulder belt)



Ask question and respond to comments.

***Q. What remaining questions do you have about seat belt systems and your role in explaining best practices to caregivers?***

## 9. Progress Check and Summary



**Reference TG**  
page 4-15.



Conduct a progress check.

Let's review what we learned in Module 4 through a final progress check. Work with a partner and take a few minutes to complete the matching exercise.

1. Fill in the correct answers from the right-hand column for each of the questions.
2. Write down responses in your TG.

[INSTRUCTOR NOTE]

[Ask for responses to each question. If one pair has an incorrect answer, ask another pair to share their response. Provide answers as needed.]

1. Name the latchplates that do not lock before a crash.

**Answer:** Sliding, sewn-on, and dynamic locking

2. Which retractor has no locking feature under normal driving conditions?

**Answer:** Emergency locking retractor

3. Which tool would you use with an emergency locking retractor lap belt and a sewn-on latchplate to secure a car seat?

**Answer:** Belt-shortening clip

4. Which retractor is always locked when it is buckled under normal driving conditions?

**Answer:** Automatic locking retractor

5. What retractor changes from one mode to another?

**Answer:** Switchable retractor

[INSTRUCTOR NOTE]

[Use a vehicle seat to demonstrate how to install a car seat with an automatic locking retractor, emergency locking retractor, and a switchable retractor by feeding the seat belt through the car seat belt path and appropriately locking the belt systems lap belt.

Also, demonstrate the locking of the belt system around a car seat using the locking, switchable, and sliding latchplate. This is **ONLY** to demonstrate how the belts work with the systems identified in this module. The correct installation of car seats will be covered in future modules.

**NOTE:** The following two videos can be shown to demonstrate how to install a car seat with a locking latchplate and how to install a car seat with an automatic locking retractor.]



**Display PPT 4-22.**



**Reference TG page 4-15.**



Introduce Install a Car Seat With a Locking Latchplate video (1:17 minutes).

Let's view a video on how to install a car seat with a locking latchplate.

- Watch for the installation steps.
- Take notes in your TG as you watch the video.



Play Install a Car Seat With a Locking Latchplate video.



Ask question and respond to comments.

***Q. What questions do you have about installing a car seat with a locking latchplate?***



**Display PPT 4-23.**



**Reference TG page 4-16.**



Introduce Install a Car Seat with an Automatic Locking Retractor video (1:04 minutes).

Let's view a video on how to install a car seat with an automatic locking retractor.

- Watch for the installation steps.
- Take notes in your TG as you watch the video.



Play Install a Car Seat With an Automatic Locking Retractor video.



Ask question and respond to comments.

***Q. What questions do you have about installing a car seat with an automatic locking retractor?***



Refer participants to rare installation resources.

The four rare installation videos we reviewed in this module are available on the NCPSB website. View them periodically to keep your skills fresh.

Job aids with photographs and installation steps are also on the NCPSB website and in the Appendix of your TG. Be sure to have these resources available when educating caregivers.



Conclude module.

Our purpose with this module was to provide you with a solid foundation on seat belt systems – how they lock for use with a car seat and the steps you need to take to lock them if they do not lock. We have briefly explained and shown you how these systems lock for the correct use and installation of a car seat.

Now that you are more familiar with seat belt systems, let's take a closer look at occupant protection systems.

- When used properly, the vehicle's occupant protection systems can save lives.
- As a CPS Technician, you will educate caregivers in the correct use of these systems.



# MODULE 5 • Air Bags

## Module Agenda: 30 Minutes

Topic	Suggested Timing
1. Introduction	2
2. Purpose and Function of Air Bags	2
3. Air Bags for Frontal Impact	6
4. Air Bags for Side Impact	4
5. Inflatable Seat Belts	2
6. Practice Activity: Locate Front and Side Air Bag Information in Owner's Manuals & Vehicles	10
7. Best Practices on Air Bags for Caregivers	2
8. Progress Check and Summary	2
TOTAL	30 Minutes

### Module Purpose

The purpose of this module is to explore various aspects of air bags including types and locations in the vehicle, when and how they function, and related warnings and markings. Emphasis is placed on front passenger air bag systems and how they work with car seats and booster seats.

### Module Objectives

- Describe the purpose and function of air bags.
- Identify features, warnings, and markings related to air bags for frontal and side impacts.
- Identify features of inflatable seat belts.
- Locate air bag information in owner's manuals and vehicles.
- Explain best practices about air bags to caregivers.

### Special Media, Materials, and Resources

- Owner's manuals from participant vehicles, including sections for front passenger air bags
- Additional owner's manuals available for use on NCPSTB website at [www.cpsboard.org](http://www.cpsboard.org) to ensure all types of passenger air bags are represented in the practice activity
- Vehicles

### Video Titles and Times

None

## Activities

- Practice Activity: Locate Front and Side Air Bag Information in Owner's Manuals and Vehicles
- Progress Check: Explain Best Practices About Air Bags to Caregivers
- Final Progress Check

## Preparation

- Remember to define terms and concepts, check for understanding, and encourage questions from participants.
- Prepare to conduct the activity and progress checks.
- Ask that participants bring their vehicle owner's manuals to class. (Instructors should label the manuals to encourage their return.) You can also download and use additional owner's manuals available on the NCPSTB website for the first practice activity.
- Review and be familiar with the information provided in the sample owner's manuals for the front air and side air bag identification activity.
- Make arrangements in advance to have a variety of vehicles with different types of air bag systems and owner's manuals. The activity is conducted outside with vehicles.
- Instructors and Technician Assistants should review all vehicle air bag systems, including the location of warnings and markings, in all available vehicles prior to this module.

## 1. Introduction

**Display PPT 5-1.**

Present module purpose.

We need to understand occupant protection systems and air bags before learning about car seats and booster seats.

- The purpose of this module is to explore various aspects of air bags including types and locations in the vehicle, when and how they function, and related warnings and markings.
- Emphasis is placed on front passenger air bag systems and how they work with car seats and booster seats.

**Display PPT 5-2.**

Present module objectives.

As a result of this module, you will be able to:

- Describe the purpose and function of air bags.
- Identify features, warnings, and markings related to air bags for frontal and side impacts.
- Identify features of inflatable seat belts.
- Locate air bag information in owner's manuals and vehicles.
- Explain best practices about air bags to caregivers.

**Reference TG page 5-1.**

Present definition and examples of automatic crash protection.

This module focuses on **automatic crash protection** systems that do **NOT** require an occupant to take any action to be protected.

- Automatic crash protection includes many safety features that are built into the vehicle that do **NOT** require occupants to do anything to be protected. In other words, **NO** occupant action is required.
- Many people are unaware of the automatic systems in a vehicle, particularly all of the air bags that are designed to protect them in a crash.
- Examples of automatic protection systems are laminated windshields, instrument panel padding, door trim padding, and air bags that open (deploy) when the vehicle determines there has been a crash.

[INSTRUCTOR NOTE]

[Remind participants they will be helping caregivers find air bags in their vehicles.]

## 2. Purpose and Function of Air Bags



Reference TG  
page 5-1.



Display PPT 5-3.



Present definition, considerations, and guidelines about air bags.

What is an air bag?

- An **air bag** is a vehicle safety device made up of a flexible fabric envelope designed to rapidly deploy (open) when the vehicle determines there has been a crash.
- The purpose of an air bag is to reduce the occupant's speed during a collision and reduce the possibility of injury.

Air bags can be:

- Found in most vehicles on the road today. Every vehicle should be checked for air bags. The owner's manual should be reviewed for locations and specific instructions for the air bags in that vehicle.
- Almost anywhere in a vehicle. Proper positioning and use of car seats, booster seats, and seat belts are needed to prevent injury when a crash occurs and an air bag suddenly opens.



Display PPT 5-4.



Review how air bags work.

An air bag can only deploy once and **MUST** be replaced after a crash.

Using the air bag with the seat belt allows the crash forces to spread over a large part of the occupant's body instead of concentrating the crash forces on a smaller part of the body.

- Air bags do **NOT** deploy in every crash.

- Seat belts also provide protection in crashes that do **NOT** deploy air bags, such as rear impacts, some rollovers, sudden stops, or less severe crashes. Use your seat belt whether or not there is an active air bag.

Important considerations related to air bags include:

- Never put a rear-facing car seat in front of an active frontal air bag.
- Avoid leaning against an air bag's opening or putting other objects in front of an air bag's opening.
- Always sit in an upright position, correctly buckled into the seat belt.
- Read the owner's manual carefully. It has information about air bags and instructions for their use.
- Assume all air bags are fully active unless the owner's manual says differently.

[INSTRUCTOR NOTE]

[Be sure to point out labels in vehicles and instructions in owner's manuals that show air bag information, location, and warnings during the upcoming sections. Each vehicle manufacturer places labels in different positions and may call their air bag systems something different.]

### 3. Air Bags for Frontal Impact



**Reference TG**  
page 5-2.



**Display PPT 5-5.**



Describe air bags for frontal impact.

First, let's look at the types of air bags for crashes that occur in the front of the vehicle.

- The driver and front passenger air bags offer powerful protection to front seat occupants who are correctly seated and restrained.
- Frontal crash air bags work with seat belts to protect front seat occupants. The air bags add extra protection to the adult head and chest in a crash.

There are several kinds of air bags for frontal crashes:

- Driver air bags are found in the steering wheel.
- Front seat passenger air bags are found in the instrument panel, over the glove box. While some passenger air bags cover both the middle and right front passenger seating positions, others only cover the right front seating position.
- Knee air bags may be present in the vehicle.



Reference TG  
page 5-3.



Display PPT 5-6.



Introduce three types of passenger air bags that deploy in front crashes.

Passenger air bags can be classified as one of three types:

1. Air bags that are always on or active in the vehicle.
2. Air bags that can be turned on and off using a manual switch.
3. Air bags that are automatically turned on and off by the vehicle based on the occupant seated in the front passenger seat.

For the purposes of installing a car seat or booster seat, the important distinction is whether the air bag will always be **OFF** in the presence of a seat.

[INSTRUCTOR NOTE]

[These types of air bags will **NOT** be referred to as “Advanced Air Bags.” Also, automatic on/off systems will **NOT** be referred to as “Suppression” systems.]



Display PPT 5-7.



Describe best practices for air bags always on or active.

Many vehicles, especially those made before the 2004 model year, have passenger air bags that are always on or active in the vehicle. The passenger air bag in these vehicles **CANNOT** be turned off in the presence of a car seat or booster seat. In such vehicles, the following best practices apply.

- **NEVER** place a rear-facing car seat in the front passenger seat. If the passenger air bag deploys in a crash, the child may be severely injured or killed by the force of the air bag.

- If a forward-facing child must sit in the front passenger seat, move the vehicle seat as far back from the air bag as possible and make sure the child is seated in an appropriate car seat or booster seat. Instruct the child **NOT** to lean forward in the seat toward the air bag.
- Statistics show that children are safer in the rear seat. It is strongly recommended that all children under 13 travel in the rear seat (AAP, 2007).



### Display PPT 5-8.



Describe best practices for air bags turned on and off using a manual switch.

Some vehicles, especially those without a back seat such as some pickup trucks, or with a very small back seat, may be equipped with a manual switch to turn the passenger air bag on and off. In these vehicles, the following best practices apply.

- Caregivers must check the owner's manual to understand the proper operation of the on/off switch in their vehicle. Most are operated by the vehicle's ignition key.
- If a forward-facing child must sit in the front passenger seat, the switch must be in the "off" position. A light near the on/off switch will be lit whenever the passenger air bag has been turned off.

Forgetting to turn the switch back "on" for adult passengers is a common error made by drivers of these vehicles.



### Reference TG page 5-4.



### Display PPT 5-9.



Describe best practices for air bags that automatically turn on and off with an occupant in front passenger seat.

Since the 2004 model year, most vehicles have been equipped with systems that automatically turn the passenger air bag on and off. Vehicle manufacturers use a variety of methods to detect the front occupant, but the following best practices apply for every vehicle with an automatic on/off system.

- Caregivers need to understand the specific systems and indicators installed in their vehicle. Remind them to check their owner's manual.

- Caregivers should always assume the air bag is “on” if they are not sure. **NEVER** place a rear-facing car seat in a seating position with an active front air bag unless the vehicle owner’s manual allows it.



### Display PPT 5-10.

Since not all vehicles have the same system, it is important that the caregiver understands what the indicators in their vehicle mean.

- Caregivers must ensure that the air bag is “off” for the child sizes and conditions listed in the owner’s manual. For all other occupants, the air bag should be turned “on.”
- Just because a vehicle is new, do **NOT** assume the passenger air bag will have an automatic on/off system. Some newer vehicles have air bags that are always “on,” just like in older vehicles.
- Automatic on/off systems can misclassify occupants in the front seat under certain conditions – carefully check all warnings in the owner’s manual.



### Reference TG page 5-4.



### Display PPT 5-11.



Describe location of warnings and markings for air bags that deploy in front crashes.

It is important to be knowledgeable about the typical locations of air bag warnings and markings in a vehicle.

- For air bags that deploy in frontal crashes, the warning label will always be located on the sun visor and you will typically find additional markings on or near the cover of the air bag.



### Display PPT 5-12.

- Always check the vehicle owner’s manual to find more information about air bags for front crashes, as each vehicle manufacturer places labels in different positions and may use different terms.
- Examples of acronyms for front air bags are:

SRS = Supplemental Restraint System

SIR = Supplemental Inflatable Restraint



Ask questions and respond to comments.

**Q. What questions do you have about front passenger air bags or air bags that deploy in front crashes?**



Conclude topic.

Now that you are familiar with front air bags, we are going to discuss air bags that are used in side impacts.

#### 4. Air Bags for Side Impact



**Reference TG page 5-5.**



**Display PPT 5-13.**



Present information about how side air bags work and the locations in the vehicle.

Air bags that deploy for side crashes or rollovers are designed to fill the space between the occupant and the door and/or window. Side air bags:

- May be found in both the front and rear rows of vehicles.
- Are **NOT** required in all vehicles, unlike front air bags. Owner's manuals refer to optional equipment by saying "if equipped." Check the vehicle to be sure if it has a side air bag in this case.
- Are generally smaller than front air bags.

When side air bags are present, they can be found in various places such as in the door, inside the vehicle seat (seat back or under the seat) or in the roof ("inflatable curtains" or "canopies").



**Display PPT 5-14.**

The front center air bag is found in the right (inside) side of the driver's seat. Front center air bags:

- Open from the right side of the driver's seat and deploy forward, between the seat and the center console.
- Are labeled, when present, on the right side of the seat.

Many vehicle manufacturers follow industry standards to minimize the risk of injury from all types of side air bags.

- Usually, children may sit near side air bags without risk of injury.

- Check the vehicle owner's manual to be sure. The owner's manual will always warn if a car seat or booster seat **CANNOT** be installed next to a side air bag. Typically, the vehicle owner's manual does not include information if putting a car seat next to the side air bag is acceptable.
- The owner's manual for the car seat or booster seat must also allow use near a side air bag.
- If either of the owner's manuals forbids using a car seat or booster seat next to the side air bag, put it in a different seating position in the vehicle.



**Reference TG**  
page 5-6.



**Display PPT 5-15.**



Describe locations of warnings and markings for air bags that deploy in side crashes.

Warning labels for air bags that deploy in side crashes may be found almost anywhere in the vehicle, including:

- In the door opening.
- On the end of the instrument panel.
- Near the air bag.

Caregivers should be shown any warning labels in the vehicle and should be familiar with the specific warnings.

- These labels are **NOT** regulated by NHTSA, so they all look different.
- Examples are shown in your TG.



**Display PPT 5-16.**

Like front air bags, side impact air bags usually have a label or marking to show where the air bag comes out in a crash.

These can be found:

- On the side of the seat.
- Near the edge of the roof.
- On the opening or the side of the door.

Always check the vehicle owner's manual to find more information about air bags for side crashes.

Examples of acronyms for side air bags are:

SABIC = Side Air Bag Inflatable Curtain.  
SAB = Side Air Bag.



Ask question and respond to comments.

***Q. What questions do you have about air bags for side impacts?***

## 5. Inflatable Seat Belts



**Reference TG**  
page 5-6.



**Display PPT 5-17.**



Present information about inflatable seat belts

Another type of air bag system is an inflatable seat belt. Important points to know are that an inflatable seat belt:

- Generally opens in frontal, side, and rollover crashes.
- Is located in the shoulder portion of the lap-and-shoulder seat belt. The lap portion of the belt is separate webbing that does **NOT** inflate in a crash.
- Has two retractors and a sewn-on latchplate. The lap belt has a switchable retractor to secure a car seat.
- Spreads belt loads over a greater area of the chest than standard seat belts and provides additional head and neck support during a crash.

Check the car seat owner's manual to determine if the car seat or booster seat can be used with an inflatable seat belt.



Ask question and respond to comments.

***Q. What questions do you have about types and locations of air bags?***

## 6. Practice Activity: Locate Front and Side Air Bag Information in Owner's Manuals and Vehicles



**Reference TG**  
page 5-7.



Conduct practice activity and debrief.

Now that we have learned about many different aspects and features of air bags, let's practice locating the information in two different owner's manuals and vehicles.

1. Work in small groups.
2. Using the owner's manuals provided, document the vehicle's air bag information.
3. In addition to information you find in the owner's manuals, locate and document missing or additional information from inside the vehicle.

[INSTRUCTOR NOTE]

[Give small groups 10 minutes for this practice activity.

This activity should be completed using participant vehicles. Not all types of front and side impact air bags may be represented in participants' vehicles. Small groups will be completing the activity for two vehicles.

Walk around and provide assistance feedback, as needed, to participants as they complete the practice activity.]

## 7. Best Practices on Air Bags for Caregivers



**Reference TG page 5-8.**



Reinforce how to explain best practices to caregivers.

There are key questions to answer related to air bags.



**Display PPT 5-18.**

[INSTRUCTOR NOTE]

[Review the key questions related to air bags.]

Explain and demonstrate best practices to caregivers.

Caregivers need to understand how air bags can protect them, as well as how car seats and booster seats work when used near air bags.

- Follow both vehicle and car seat manufacturer instructions for proper installation and use of car seats and booster seats in the presence of air bags.

- Remind caregivers to look in each vehicle they use to transport children to know where all the air bags are located – even in rented vehicles. Air bags may work differently from air bags in their own vehicle.

***Q. What remaining questions do you have about air bags and your role in explaining best practices to caregivers?***

---

8. Progress Check and Summary



**Reference TG**  
page 5-8.



Conduct progress check.

Let's briefly review what we learned in Module 5 through a progress check. Write down correct responses in your TG.

1. What is the purpose of air bags?

**Answer:** The purpose of air bags is to help a passenger in the car reduce their speed in a collision without getting injured. The cushions are designed to deploy (open or inflate) rapidly when the vehicle determines there has been a crash.

2. What are the crash types in which air bags are designed to deploy?

**Answer:** Front crashes, side crashes, and rollover crashes

3. What are three types of passenger air bags?

**Answer:** Always on, manually switched on/off, and automatically switched on/off

4. What must you do with air bags after a crash?

**Answer:** Can only be deployed once and must be replaced after a crash



Conclude module.

This module addressed the various types of air bags. We need to understand air bags before installing car seats and booster seats in vehicles.

Now that you are more familiar with air bags, let's review the lower anchors and tethers for installing car seats and booster seats.



## Quiz #1 on Modules 1 to 5

### INTRODUCTION

Quiz #1 addresses knowledge and skills taught in Modules 1 to 5.

### Time for Completion

The time limit for Quiz #1 is 30 minutes followed by a 15-minute class review.

### ADMINISTRATION GUIDELINES

1. Have a quiz reading room ready. Offer to read the quiz to participants, encouraging them to take advantage of the option. This is not just for participants where English is not their primary language. Adult learners may score better having the quiz read to them while they read it themselves.
2. Review the instructions for Quiz #1 with the class prior to conducting it (below).
3. Collect the answer sheets and immediately score them in a private area. Do **NOT** announce scores or share them with any other participant.
4. The scoring Instructor must write the correct answer next to any incorrect answer in blue or red ink — **never pencil**.
5. Participants may keep their quizzes when they turn in their answer sheets for reference during the review. Collect all quizzes immediately following the review.
6. Instruct participants to clear their desks of writing materials prior to the review to prevent the copying of answer keys.
7. Review the correct answers for questions participants marked incorrectly.
8. In cases where a second version of a quiz is used, read both the questions being reviewed as well as the answer since the order of the questions and/or the answers differ between the two versions of each quiz.

### PARTICIPANT INSTRUCTIONS

1. You have **30 minutes** to complete and turn in this quiz. Answers will be reviewed in class after the Instructors have scored all quizzes.
2. Review each question and write the correct answer on the answer sheet provided.
  - Remember to mark all answers on the answer sheet. We can only accept answers written on the answer sheet.
  - Each question is worth **2 points** with a total of **36 possible points**.
3. We encourage you to use your Technician Guide as a resource.
4. Let an Instructor know if you would like the quiz read to you. Many adult learners benefit from having quizzes read to them.



# MODULE 6 • Lower Anchors & Tethers for Children

 Module Agenda: 50 Minutes

Topic	Suggested Timing
1. Introduction	2
2. Lower Anchors and Tether Anchors Description	5
3. Lower Anchors and Tether Anchors Symbols and Locations <ul style="list-style-type: none"> <li>• Practice Activity: Locate Lower Anchors and Tether Anchors in Owner's Manuals and Vehicles</li> </ul>	30
4. Lower Anchor and Tether Anchor Misuse	5
5. Progress Check and Summary	8
TOTAL	50 Minutes

## Module Purpose

This module addresses Lower Anchors and Tethers for Children – LATCH – an alternative system to install car seats in vehicles. You will also teach participants about lower anchor and tether anchor symbols and locations.

## Module Objectives

- Describe lower anchors and tether anchors.
- Recognize lower anchor and tether anchor symbols and locations.
- Explain lower anchor and tether anchor best practices to caregivers.

## Special Media, Materials, and Resources

- Several vehicle owner's manuals (use pre-2001 and post-2002 samples including pickup trucks with webbed anchors, if possible)
- Several vehicles with lower anchors and tether anchors (truck, SUV, van, passenger car)
- One car seat with flexible lower anchor connectors
- Copy of a current LATCH Manual (if available)
- LATCH Manual 2013 Excerpt (TG Appendix)
- One car seat or booster seat with rigid lower anchor connectors

## Video Titles and Times

None

## Activities

- Practice Activity: Locate Lower Anchors and Tether Anchors in Owner's Manuals and Vehicles
- Final Progress Check

## Preparation

- Prepare for the activity and progress check.
- Ensure that you have enough owner's manuals and vehicles of different types.
- It is not possible in this course to teach participants every possible misuse of the lower and tether anchors. Therefore, it is critical to role model what correct use looks like and how to use lower anchors and tether anchors properly at every opportunity.
- Prepare to discuss LATCH as a system. Avoid referring to only lower anchors as LATCH. This is also true with the tether anchor. Lower anchors and the tether anchor should **NOT** be called LATCH unless they are used together.

## 1. Introduction



### Display PPT 6-1.



Present module purpose.

This module addresses Lower Anchors and Tethers for CHildren – LATCH – an alternative system to install car seats in vehicles. You will also learn about lower anchor and tether anchor symbols and locations.



### Display PPT 6-2.



Present module objectives.

As a result of this module, you will be able to:

- Describe lower anchors and tether anchors.
- Recognize lower anchor and tether anchor symbols and locations.
- Explain lower anchor and tether anchor best practices to caregivers.

---

## 2. Lower Anchors and Tether Anchors Description



Reference TG page 6-1.



### Display PPT 6-3.



Define LATCH.

**LATCH** stands for Lower Anchors and Tethers for CHildren.

- LATCH is an alternative system to install car seats in vehicles using two lower anchors and one tether. For rear-facing car seats, only the two lower anchors are used unless the manufacturer allows rear-facing tethering.
- If you are referring to the lower anchors and tether it is a LATCH system.



### Display PPT 6-4.

- In LATCH use, the car seat must have a set of lower anchor connectors that attach to the vehicle's set of lower anchors.



Provide additional information about LATCH.

- Each LATCH set in the vehicle is made up of two lower anchor bars and one tether anchor. If there are lower anchors in a vehicle seating position, there is usually a tether anchor for that seating position. Use a tether when forward-facing.  
  
**NOTE:** Not all types of car seats will use a tether anchor. We will learn more about that in later modules.
- LATCH attaches the car seat to the vehicle through anchor points installed in the vehicle and connectors on the seat.
- Most vehicles made after 2002 have at least two complete LATCH systems (lower and tether anchors) and one additional tether anchor.
- Only seating positions that have a standard LATCH system, as defined in the vehicle owner's manual, should be used for lower anchor installation unless otherwise specified in both the manufacturer and car seat or booster seat owner's manuals. Many caregivers install their seat with lower connectors in the rear-center seating position when the vehicle manufacturer may not allow it.
- Some vehicles offer standard LATCH in the center, and some vehicle and child restraints manufacturers allow LATCH in the center, even if it is not a standard LATCH position. Remember, two lower connectors should never be attached to one lower anchor.
- **NEVER** install a car seat using lower anchors and the seat belt at the same time unless specifically allowed by both the seat and vehicle manufacturers. It should be one system or the other because that is how the car seat was crash tested.
- **ALWAYS** look in the owner's manual to determine if a vehicle has lower anchors and tether anchors, and to see which seating positions have a LATCH system and which have only a tether anchor.
- A seating position with a tether anchor only and no lower anchors is not called LATCH. That seating position would use the tether and seat belt to secure a seat.



Reference TG  
page 6-2.



Display PPT 6-5.



Define tethers.

A tether connector holds the back of the car seat and some booster seats against the vehicle seat to reduce the amount of forward and side movement.

- A tether connector can reduce the distance that the child's head moves forward in a crash by 4 to 6 inches.
- This lessens the risk of head injuries in a crash.



Review additional  
tether information.

Tether anchors have upper weight limits that vary by vehicle manufacturer.

- Tether may be used with lower anchors or seat belts.
- Contact the vehicle manufacturer customer service help line to determine the actual tether and lower anchor weight limits approved for that particular vehicle.
- Tether anchors have been required in three vehicle positions since September 2000, but many vehicle manufacturers provided them or marked the tether anchor location in older vehicles so that tether anchors could be installed at a later date.
- Tether anchors are sometimes listed under straps in owner's manuals and are frequently the last item discussed under the car seat or booster seat section (a useful tip if you are having trouble locating that term in the manual's index).
- Tether anchors may look very different in pickup trucks. Refer to the vehicle owner's manual to ensure their correct use.
- Encourage caregivers to use tether connectors for forward-facing children whenever possible. Also encourage caregivers with young children and older vehicles to have tether anchors installed in their vehicles.
- Car seats can be secured using lower anchors and tether or a seat belt and tether.

[INSTRUCTOR NOTE]

[Point out tether anchors made of seat belt webbing if you use pickup trucks in your class.]



Describe some exceptions.

Convertibles, sports cars, school buses, and some heavy trucks (over 10,000 pounds gross vehicle weight/GVW) are not required to have tether anchors, though some of these vehicles are still required to have lower anchors.

- When a vehicle has lower anchors, but there is no tether anchor, consult the car seat owner's manual to see if installing the seat with only lower anchors and no tether is allowed. If the owner's manual says you must use both lower and upper connectors, or if you do not know or cannot find out, then use the seat belt to secure the seat.
- An approved integrated (or built-in) car seat may take the place of one of the LATCH positions NHTSA requires.



Reference TG page 6-3.



Review tips for discussing LATCH systems.

Review the Tips for Discussing LATCH Systems.

- Anchor weight limits are not always stated in the vehicle or car seat owner's manual. If the manufacturer offers no weight limit, do not use lower anchors or the tether anchor if child + car seat weight is more than 65 pounds.
- If a caregiver wants to use the center rear seating position that does not have a LATCH system, they should use the seat belt to secure the car seat. They should also use the tether anchor if there is one for the middle seat.
- Whenever possible, have the caregiver locate the tether anchor and lower anchors in their vehicle.
- Use the current LATCH Manual (Safe Ride News) for information on installing LATCH.



Ask question and respond to comments.

**Q. What questions do you have about LATCH?**

### 3. Lower Anchors and Tether Anchors Symbols and Locations



**Reference TG page 6-3.**



**Display PPT 6-6.**



Identify universal LATCH symbol.

If a lower anchor is hidden behind fabric or a cover in the vehicle, a symbol near the anchor location should identify its position.



**Display PPT 6-7.**



Identify tether anchor locations.

Tether anchor possible locations include:

- Ceiling above rear seating positions
- Rear window shelf
- Back of vehicle seat
- Floor of rear cargo area
- Under vehicle seat
- Under a flap or door



**Reference TG page 6-4.**



**Display PPT 6-8.**



Identify lower anchor locations.

Lower anchor positions can be visible or hidden.

- Labels, buttons, or tags identify lower anchor locations when they are hidden.
- Most vehicles cannot be retrofitted with lower anchors.



Conclude topic.

It is generally not permitted to connect more than one tether hook per tether anchor. Exceptions to this rule are the tether anchors in some pickup trucks.

The same is usually true for lower anchors. They can only be connected to one lower anchor connector.

- Many vehicle owner manuals have diagrams showing available LATCH positions. Sometimes there are restrictions on how many seating positions can be used at the same time, often due to overlap (example from vehicle owners manual – 2013 Chevy Malibu).

[INSTRUCTOR NOTE]

[Tell participants that there is a nationally recognized *LATCH Manual* that is a good CPS Technician resource ([www.saferidenews.com](http://www.saferidenews.com)).]



Ask question and respond to comments.

**Q. What questions do you have about LATCH symbols and locations?**



Conduct practice activity and debrief.

We have covered a lot of information about LATCH. Let's go out to vehicles to practice locating lower anchors and tether anchors in vehicles. We will first locate this information in vehicle owner's manuals.

1. Using the owner's manual section provided, find the information listed below about LATCH in the owner's manual.
2. Locate lower anchor and tether anchor information in two different vehicle owner's manuals.



**Reference TG page 6-5.**

[INSTRUCTOR NOTE]

[Conduct this two-part practice activity outside in vehicles.

Have selected manuals available for participants to look for and locate tether and lower anchor information.

Give participants 5 to 8 minutes for this practice activity. Provide feedback to correct any mistakes.

Mention tether anchor retrofit capabilities for older vehicles.

Remind them that many vehicles did not have lower anchors before 2003.

Once participants have finished the first part of the activity, move on to the second part.]



Continue to conduct practice activity and debrief.

Now locate lower anchors and tether anchors in three different vehicles.

1. Inspect three vehicles to see some differences in the location of LATCH systems and the words/symbols to describe them. Keep in mind that the LATCH system has two lower anchors and one tether anchor.
2. Document the number of seat belts, number of LATCH seating positions, and tether anchors in the three vehicles on the table below.

3. At the end of this activity, an Instructor will install a car seat using LATCH.

[INSTRUCTOR NOTE]

[Give participants 10 minutes for this practice activity.]

Arrange participants into small groups and assign a member of the teaching team to each vehicle.

Have participants rotate through three vehicles to see different placements and locations of lower anchors and tether anchors.

They will practice this later individually. Show two demonstrations – one forward-facing and one rear-facing. You can also use both rigid and non-rigid lower anchors for demonstrations.

When participants return to the classroom, ask about their experience. Ask if they had noticed lower anchors and tether anchors in their vehicles before the class.

The instructing team can provide feedback to participants on their worksheets outside or back in the classroom.

Always refer caregivers to car seat and booster seat instructions and vehicle owner's manuals. There will be times when you will need to advise caregivers that some questions do not have clear answers.]

[INSTRUCTOR NOTE]

[Tell participants that a list of *Child Restraint and Vehicle Manufacturers* can be found on the NCPSTB website. They should keep this list handy at checkup events.]

4. Lower Anchor and Tether Anchor Misuse



**Reference TG**  
page 6-6.



Review common lower anchor and tether anchor misuse.

Any product can be misused. Misuse rates increase when instructions are not read.

- Your job is to help caregivers use their car seat or booster seat according to the manufacturer instructions and encourage them to use the vehicle owner's manual whenever they transport children.

- The only way to know for certain that lower anchors and tether anchors are being used correctly is to use the vehicle and car seat owner's manuals for guidance.
- Both lower anchors and tether anchors have weight limits set by the vehicle and car seat/booster seat manufacturers. To determine the limits of these systems, you must refer to both the car seat and vehicle owner's manual.
- If there are different weight limits listed, the lower limit must be used. If there is no stated weight limit for the vehicle lower anchors or tether anchors, and the car seat lower anchors or tether anchors, you **MUST** assume that they may be used until the total weight of the child and car seat equals 65 pounds.



Display PPT 6-9.

Common lower anchor errors include:

- Lower anchor connectors not firmly attached to bars
- Using a non-approved vehicle seating position
- Using seat belt and lower connectors at same time (unless allowed by manufacturer)
- Securing two car seats or booster seats on one anchor bar

Common tether anchor errors include:

- Not using tether when available
- Not attaching tether via the vehicle manufacturer instructions (routing the strap incorrectly)
- Connecting to the wrong tether anchor
- Tether strap too loose
- Tether strap used over the vehicle manufacturer weight limit

[INSTRUCTOR NOTE]

[Briefly review the Preventing Tether Errors information located in TGs on page 6-6.

- Head restraints may make it hard to use tethers the right way.
- Some head restraints cannot be removed to allow for a tether strap installation.

- Tether straps generally go straight back from the seat to the tether anchor and go under adjustable head restraints or over or around non-adjustable head restraints. Check the vehicle owner's manual for model specific information.]

## 5. Progress Check and Summary



**Reference TG page 6-7.**



**Display PPT 6-10.**



Reinforce how to explain best practices to caregivers.

There are key questions to answer related to LATCH.

[INSTRUCTOR NOTE]

[Review the key questions also located in the TG.]



Conduct a progress check.

Let's review what we learned in Module 6 through a final progress check. Answer the questions in your TG to prepare for conversations you will have with caregivers to educate them about LATCH. Write down responses in your TG.

Remember that caregivers need to understand that they have two safe choices for securing their child's car seat. Use the vehicle and car seat owner's manuals to learn about the vehicle and the seat.

Some booster seats are recommended for installation into a vehicle with lower anchors and/or a tether anchor to prevent it from becoming a projectile when unused.

[INSTRUCTOR NOTE]

[Divide the class into three small groups. Give each group one of the three best practice scenarios to solve along with the associated owner's manual.

For Scenario #2, the 1998 Chrysler four-door Sebring is listed in the LATCH Manual. The TG Appendix has the *LATCH Manual Excerpt – Appendix A Vehicle Information* to point out how to find the part number.

Tell participants they have 5 minutes to come up with their answers.

Here are the scenario answers.

1. What should you tell caregivers regarding where to find all the tether anchors and lower anchors in their car, van, SUV, or truck?

**Answer:**

- Look in the owner's manual first. Some manuals may make it obvious with terms easily found in the index under "Tether or Strap."
  - Always look in the child passenger safety section of the owner's manual for more specific details.
  - The manual should show the lower anchor and tether anchor labels (icons) sometimes located in the vehicle's seating position where the system is located.
2. What can you tell a caregiver who has a 1998 Chrysler 4-door Sebring with no tether anchor and who wants to have one installed?

**Answer:**

- Offer encouraging words by explaining where the part number can be found and telling the caregiver that adding the anchor so they can use the tether is very beneficial for their child's safety.
- Advise the family to take the part number (and technical service bulletin number) to the dealer and have the tether anchor installed there. Generally, in the United States, vehicle manufacturers will provide one tether anchor retrofit free to their customers. Use the vehicle manufacturer's service manual, customer service line or the LATCH Manual if available.
- The part number is specific to the model and year of manufacture. Lower anchors are generally not retrofitted.

3. The vehicle has a lower anchor and tether anchor weight limit to 40 pounds. The car seat is rated to 65 pounds. At what weight limit would you need to install the seat using a seat belt instead of lower connectors?

**Answer:**

- If the car seat harness serves children up to 65 pounds, but the vehicle owner's manual says to use the lower anchors and tether anchor for up to 40 pounds only, the caregiver must use the seat belt to comply with the vehicle manufacturer's instructions.
- LATCH and the seat belt installations should be done according to manufacturer's instructions. Encourage the caregiver to attach the tether whenever possible as long as the tether anchor weight limit is at least 65 pounds child weight.

Always encourage tether use when use is possible with forward-facing car seats that are installed in the vehicle with the seat belt up to the weight limit of the tether anchor.]



Ask question and respond to comments.

***Q. What remaining questions do you have about LATCH and your role in explaining best practices to caregivers?***



Conclude module.

We have covered what you need to know about seat belt systems, vehicle occupant protection systems, and lower anchors and tethers.

We'll now move to the first skills assessment on identifying seat belt systems.

After the assessment, the next module will introduce car seats before we move on to specific types of car seats and booster seats for children of different ages.



National Child Passenger Safety Certification Training Program  
Skills Assessment #1: Identify Occupant Protection Systems

### INTRODUCTION

Skills Assessment #1: Identify Occupant Protection Systems addresses knowledge and skills taught in Modules 1 to 6.

### Objective

Technician candidates demonstrate their ability to identify different types and parts of five vehicle occupant protection systems.

### Time for Completion

The recommended time limit for Skills Assessment #1 is 60 minutes.

### PREPARATION

1. Depending upon class size, vehicles available, and parking arrangements, determine the number of vehicles needed to allow for efficient and effective identification of vehicle systems. Use information from the Participant Vehicle Occupant Restraint Systems Details forms to assist in vehicle selection. If possible, use duplicate stations to keep participants moving through the assessment.
2. Identify the required components in vehicles available for Skills Assessment #1 and clearly mark the seating positions as systems to identify. Mark vehicles with visible numbers and questions (e.g. colored paper or cards) that indicate which specific system participants are asked to identify. For example:
  - Question for Vehicle/System #1: Identify the vehicle occupant protection system(s) in found in front passenger position.
  - Question for Vehicle/System #2: Identify the vehicle occupant protection system(s) found in rear center position.
3. For Instructor reference, make a master list of questions, answers, and specific vehicles used during this assessment.
4. Provide owner's manuals for two to three stations and, when possible, make copies to help move the assessment along.

**NOTE:** Switchable latchplates are identified in the course. However, because they may not be readily available in vehicles used at each training site, they are not included in Skills Assessment #1.

### ADMINISTRATION GUIDELINES

1. Review all instructions for Skills Assessment #1 with the class prior to conducting it (on next page).
2. No talking among participants is allowed during the assessment process.
3. Have participants complete all information lines on the forms before the assessment begins. Do not sign a form without the correct participant name filled in at the top.
4. Participants may refer to any or all of the course resources or vehicle instructions to complete this assessment. Tell participants that finding the page numbers in owner's manuals by looking in the index is permissible and recommended.

National Child Passenger Safety Certification Training Program  
Skills Assessment #1: Identify Occupant Protection Systems (continued)

5. If there are two retractors (ALR, ELR, Switchable) or types of safety belt systems (manual and automatic), **BOTH** retractors and safety belt systems must be identified to be considered a **PASS**.
6. Mark a row as failed if any of the answers are incorrect. Instruct participant to locate the answer in the TG and try again.
7. Should a participant need attempt #3, direct him/her to stop and review the TG again. Encourage the participant to work with an Instructor to find the information and talk through the basics, such as all latchplates and retractors. An Instructor who has not scored that person on that scenario will score the third attempt.
8. Any Instructor who places their ID# on a skills assessment form must provide a signature and Instructor number on the Skills Assessment Instructor Log form for that assessment.
9. Do not provide additional information to participants other than a clarification of instructions.
10. A time limit to complete repeated attempts may be determined at the discretion of the Lead Instructor (LI).

#### PARTICIPANT INSTRUCTIONS

Complete Skills Assessment #1 individually. For five assigned vehicles and seating positions, correctly identify the latchplate, retractor, LATCH parts, and air bags.

1. Stand at least 10 feet away from a station while waiting your turn. Carefully identify the Instructor-assigned vehicle and assigned seating location.
2. Answer sections A, B, and C for each of the scenarios. If there is more than one retractor in the assigned seating position, indicate which type it is next to the type. Examples:
  - ALR – *lap*
  - ELR – *shoulder*
3. Answer **ALL three** sections (A, B, and C) for each vehicle scenario correctly to pass.
  - You **MUST** pass all three sections to pass the scenario. You have up to three attempts to pass each scenario. Instructors will sign off each section (A, B and C) on each attempt.
  - If you need a third attempt to pass, stop and review your TG. A third attempt to pass will be signed off by an Instructor who has not already scored you for that scenario
  - You **MUST** be able to tell the Instructor how you arrived at each selection after each scenario.  
Examples: *I found the air bag information on page B-42 in the vehicle manual.*  
*This is a switchable retractor. I tested it by....*
  - To pass Skills Assessment #1, you must pass all five scenarios.

**NOTE:** Instructors will **NOT** tell you which specific part you did not answer correctly just the section.

# MODULE 7 • Introduction to Car Seats & Booster Seats

## Module Agenda: 65 Minutes

Topic	Suggested Timing
1. Introduction	2
2. NHTSA's Federal Motor Vehicle Safety Standard 213	3
3. NHTSA's Car Seat and Booster Seat Recommendations	5
4. Car Seat and Booster Seat Parts and Functions <ul style="list-style-type: none"> <li>• Progress Check: Match Functions to Parts of Car Seats and Booster Seats</li> </ul>	25
5. How to Select the Appropriate Car Seat or Booster Seat	10
6. Car Seats for Children With Special Healthcare or Medical Needs	15
7. Progress Check and Summary	5
TOTAL	65 Minutes

### Module Purpose

This module is an introduction to car seats and booster seats. It provides a foundation of car seat and booster seat information prior to learning details about each type of seat.

Focus is on:

- NHTSA's Standard 213 and recommendations.
- Parts and functions of car seats and booster seats.
- Selection of car seats and booster seats.
- Car seats for children with special needs.

### Module Objectives

- Identify NHTSA's Federal Motor Vehicle Safety Standard 213.
- Explain NHTSA's car seat and booster seat recommendations.
- Name car seat and booster seat parts and functions.
- Determine how to select the appropriate car seat or booster seat.
- Identify car seats for children with special needs.

### Special Media, Materials, and Resources

- A variety of car seats and booster seats with instruction manuals for teams
- Child Passenger Safety A Parent's Primer: 4 Steps for Kids (NCPSB and NHTSA websites)
- Car Seat Registration Form (NCPSB website)
- Car Seat Questionnaire to Report a Complaint, Defect, or Incident (NHTSA and NCPSB websites)
- Community Resources Tool (Instructor DVD)

### Video Titles and Times

None

## Activities

- Progress Check: Match Functions to Parts of Car Seats and Booster Seats
- Final Progress Check

## Preparation

- Prepare for the progress checks.
- Ensure that you have enough car seats and booster seats for teams with instruction manuals.
- Become familiar with the NHTSA resources listed under Special Media, Materials, and Resources.

## 1. Introduction



### Display PPT 7-1.



Present module purpose.

This module is an introduction to car seats and booster seats. It provides a foundation of car seat and booster seat information prior to learning details about each type of seat. Focus is on:

- NHTSA's Standard 213 and recommendations.
- Parts and functions of car seats and booster seats.
- Selection of car seats and booster seats.
- Car seats for children with special needs.



### Display PPT 7-2.



Present module objectives.

As a result of this module, you will be able to:

- Identify NHTSA's Federal Motor Vehicle Safety Standard 213.
- Explain NHTSA's car seat and booster seat recommendations.
- Name car seat and booster seat parts and functions.
- Determine how to select the appropriate car seat or booster seat.
- Identify car seats for children with special needs.

This module provides an introduction to car seats and booster seats. We will cover each specific type of car seat and booster seat in later modules.

---

## 2. NHTSA's Federal Motor Vehicle Safety Standard 213



### Reference TG page 7-1.



### Display PPT 7-3.



Review FMVSS 213.

NHTSA's Federal Motor Vehicle Safety Standard (FMVSS) 213 provides child restraint performance standards for children up to 80 pounds. Vehicle and car seat/booster seat manufacturers are required to self-certify their products as meeting NHTSA's FMVSS 213.

- These are performance standards and **NOT** design standards.

- Performance standards mandate how the product should perform in a crash while the manufacturer determines design.

The seat must meet federal crash performance standards.

- FMVSS 213 requires that child restraint systems must pass a 30 miles per hour frontal sled test that simulates a crash. NHTSA randomly tests these products to verify they meet the performance standards set forth.



#### Display PPT 7-4.

- Some specifics include:
  - Padding requirements around the head of car seats for use by children weighing 22 pounds or less.
  - Meeting flammability standards.
  - Buckle release pressure.
- Permanent, visible labels on the restraint must include:
  - Verification that it conforms to federal standards.
  - Basic instructions for correct installation and use.
  - Name and address of manufacturer/distributor.
  - Date of manufacture.
- LATCH on car seats must have two parts:
  - Tether connector to reduce forward movement or excursion (not required on rear-facing-only seats)
  - Lower anchor connectors to replace seat belts for installation

Manufacturers are required to provide a registration card with the car seat or booster seat and to notify consumers of product recalls.

The publication *FMVSS 213: Highlights of the Regulation for Child Restraint Systems* provides additional information and is located on the NCPSB website.

### 3. NHTSA's Car Seat and Booster Seat Recommendations



Ask question and respond to comments.

***Q. What do you think influences caregivers when they select a car seat or booster seat?***

Answers may include:

- Word-of-mouth
- Fabric design
- Illusion of comfort
- Cost
- Caregiver's physical limitations
- Doctor recommendation (who may give misinformation such as when a child can be forward-facing)

NHTSA has a 5-Star Ease-of-Use Rating system that allows caregivers to determine how easy certain car seat and booster seat features are to use before they buy a seat. These ratings can be found on the NHTSA website and are updated annually. Some caregivers will use this information to help them purchase a car seat or booster seat.

[INSTRUCTOR NOTE]

[Sometimes caregivers confuse the 5-Star Ease-of-Use Ratings for car seats and booster seats with the star system used to rate vehicle crash worthiness.]



**Reference TG page 7-2.**



Introduce NHTSA's car seat and booster seat recommendations.

Car seats and booster seats should be chosen based on the child's age and size as well as fit of the seat in the vehicle. Children should be kept in car seats and booster seats for as long as possible, and as long as the child fits within the manufacturer's height and weight requirements.



**Display PPT 7-5.**

NHTSA recommends:

- **Birth to 12 Months:** A child under the age of 1 should **ALWAYS** ride in a rear-facing car seat. There are different types of rear-facing car seats: rear-facing-only, convertible, and 3-in-1.



**Display PPT 7-6.**

- **1 to 3 Years:** Children should ride in rear-facing car seats **AS LONG AS POSSIBLE**. It is the best way to keep them safe. The child should remain in a rear-facing car seat until he or she reaches the top height or weight limit allowed by the car seat manufacturer.



Display PPT 7-7.

- **4 to 7 Years:** Children should be kept in a forward-facing car seat with a harness until they reach the top height or weight limit allowed by the car seat manufacturer.



Display PPT 7-8.

- **8 to 12 Years:** Children should be kept in booster seats until big enough to properly fit in a seat belt.

In the following modules we will go into depth on the different types of car seats and booster seats available for children.

A **conventional** car seat is one that is readily available to the public, usually from a retailer. The conventional types include: rear-facing seat with or without a base, a convertible seat that can be used rear-facing for toddlers and forward-facing for older children, forward-facing only seats, combination seats, high-back, and backless booster seats.

Safe transportation for many children with special needs can be provided with a conventional rather than a special needs car seat.

Many children with special needs may be able to ride rear-facing to older ages if they are small and fit in the seat longer.

[INSTRUCTOR NOTE]

[Go to [safercar.gov/therightseat](http://safercar.gov/therightseat) to download NHTSA's car seat and booster seat recommendations flyer.]

---

4. Car Seat and Booster  
Seat Parts and  
Functions



Reference TG  
page 7-3.



Display PPT 7-9.



Review car seat and booster seat labels and registration cards.

All child restraint manufacturers must provide a label on the car seat or booster seat with their contact information. Caregivers are encouraged to register the seat with the manufacturer either online or by mailing in the registration card.

- Manufacturers use this information to contact owners about safety issues, including recalls, and are **NOT** to use owner data for other purposes.
- If a caregiver has not sent in a registration form, he or she can submit NHTSA's *Car Seat Registration Form*, or submit a registration form online through the manufacturer website. Encourage caregivers to register their car seat.
- A car seat or booster seat that is missing its label may be dangerous to use, as recalls cannot be determined. NHTSA's *Recall List* includes information on every recalled seat and is updated on an as-needed basis (when new recalls are announced). Recall lists and checklists should be used for every seat check. They can be accessed on a smart phone to ensure up-to-date accuracy.



Review car seat and booster seat testing and recalls.

While NHTSA does not certify car seats or booster seats before they go to market, they do confirm their standards are being met by randomly testing certain products on the market.

- NHTSA also tests products reported by the public or manufacturer to have a potential problem. If a problem is identified, the product may be recalled.
- A recall may be initiated through compliance testing or through defect monitoring. A seat that has a recall may not be crashworthy and useable until the repair has been made. Follow the manufacturer's recall instructions.
- Manufacturers can identify the need for a recall before involving the government if they are aware of the problem. This information is made available by NHTSA on the *Recall List*.
- Manufacturers may issue a recall and a correction kit if a problem is found with a seat. Many times the consumer can correct the recall at home.

[INSTRUCTOR NOTE]

[Refer participants to the NCPSB website for the following resources:

- NHTSA *Recall List*
- NHTSA *Car Seat Registration Form*
- NHTSA *Car Seat Questionnaire to Report a Complaint, Defect or Incident.*]



Summarize topic.

Now that you have an understanding of NHTSA's recommendations for car seat and booster seat use, let's examine the seat parts and functions.

[INSTRUCTOR NOTE]

[Be brief as you review the seat parts and their functions.

Most of the parts apply to car seats but some do apply to booster seats. Point out those differences. More information will be discussed in the following modules.

Do not expand and discuss the parts in detail here. The purpose in this module is to help participants become familiar with the names and functions of the parts.

Provide car seats and booster seats to participants. Have them follow along on their car seat/booster seat as you point out each of the seat parts and functions. Participants can work in teams or small groups depending on the size of the group and the number of seats you have collected.

Parts may be called different things by different manufacturers such as a lock-off/built-in locking clip, splitter plate/connector, or yoke.]



**Reference TG**  
page 7-3.



**Display PPT 7-10.**



Name car seat and booster seat parts and functions.

Let's review car seat and booster seat parts and their functions. Manufacturers may call parts by different names.

- **Buckle:** The buckle is where the harness system connects and locks.
- **Harness:** The harness straps keep the child in the car seat and spreads out the crash forces.

[INSTRUCTOR NOTE]

[Show the differences between a 5-point and 3-point harness on demonstration car seats.]

Two harness types meet FMVSS 213 requirements.

- **5-Point:** This harness has five points of contact that includes one over each shoulder, one on each side of the pelvis, and one between the legs with all five coming together at a common buckle.
- **3-Point:** This harness has three points of contact that includes two shoulder straps coming together at one buckle in the shell or on a crotch strap.  
**NOTE:** This is **NOT** to be confused with 3-point (lap-and-shoulder) vehicle belt.

Other seat parts include:

- **Retainer Clip:** The retainer clip is the plastic buckle or clasp that holds the shoulder straps together over the child's chest and is positioned at the child's armpit level.



Reference TG  
page 7-4.

- **Harness Adjuster:** This part is used to tighten or loosen the harness.
- **Harness Slots:** Harness slots are where the harnesses go through the seat shell.
- **Labels:** Labels affixed to the car seat or booster seat and are required by federal standards.
- **Shell/Frame:** The shell or frame is the molded plastic and/or metal structure of the car seat or booster seat.
- **Seat Padding:** This covers the shell and/or frame.
- **Level Indicator:** The level indicator is the part of a car seat that helps identify the correct rear-facing installation angles.
- **Padding:** Some manufacturers provide additional padding or inserts that have been crash tested with the seat.



Display PPT 7-11.

- **Belt Path:** The belt path is the place on the car seat where the seat belt or lower anchor connector is placed to secure the car seat in the vehicle.
- **Recline Adjuster:** This allows car seats to be reclined for rear-facing and semi-reclined or upright for forward-facing use.
- **Splitter Plate:** This is the metal plate that connects the two ends of the shoulder harnesses to a single piece of webbing used for adjustment.

[INSTRUCTOR NOTE]

[Tell participants they have already learned about lock-off, locking clips, and lower anchors and tethers. Descriptions can be found in TGs. Point out the parts on your demonstration car seat.]



Reference TG  
page 7-5.

- **Lock-Off:** The lock-off is the built-in belt-locking feature on a car seat that works with certain types of seat belts based on the same concept as a locking clip.
- **Locking Clip:** The locking clip holds a car seat in the proper position during normal driving when no other locking mechanism is available.
- **Tether Connector:** The tether is the piece of belt webbing with a hook connector that anchors the top of the car seat or booster seat to the vehicle. It keeps the restraint from tipping forward on impact and can provide extra protection. Tether straps are most frequently used on forward-facing seats.
- **Lower Anchor Connectors:** These connectors are used in place of the vehicle seat belt to secure a car seat or booster seat. A lower anchor connector can be flexible or rigid.
- **Detachable Base:** This is a separate car seat base that can be installed in the vehicle. The restraint (car seat) portion can be removed from the base and used as a carrier or, in some cases, turned around and placed back in the base for the forward-facing mode.



Display PPT 7-12.

- **Adjustment Foot:** This is the part of the detachable base that raises or lowers to allow a rear-facing car seat to be installed at the correct recline angle.



### Display PPT 7-13.

- **Carry handle:** These are plastic handles attached to the rear-facing only car seats that can be used to carry the car seat with the child in it when removed from the vehicle.

[INSTRUCTOR NOTE]

[Tell participants that while some car seat instructions allow the handle to be placed up while in the vehicle, others do not. Some car seats require the handle to be in a specific position when in a vehicle or when carrying the child outside the vehicle.]



### Display PPT 7-14.

- **Foot Prop/Load Leg:** This pole or leg extends from the base of a rear-facing car seat or from the front of a forward-facing car seat. It is used to prevent or reduce excessive forward and downward rotation in a crash. Manufacturers typically use the term load leg for this car seat part.
- **Anti-Rebound Bar:** This hard bar is on some rear-facing car seats that help to reduce movement of the car seat towards the rear of the vehicle seat (rebound) in the event of a crash.
- **Instruction Book and Storage Location:** Both are required.

[INSTRUCTOR NOTE]

[Tell participants that as they look at and identify different parts of the car seat or booster seat, they should remember to check for obvious defects such as frayed harnesses or other damage. If defects are seen when assisting caregivers, CPS Technicians should encourage caregivers to contact the manufacturer and report the possible defect to the NHTSA hotline.]



Summarize topic.

**NEVER** modify a car seat or booster seat to make it fit. Minor modifications can change the way a seat performs in a crash.



Ask question and respond to comments.

***Q. What questions do you have about car seat parts and functions?***



Conduct progress check.

Let's review what you learned about car seat and booster seat parts and functions through a progress check.

- I will point out several parts on a car seat. Without using your TGs, name the part and state its function.

[INSTRUCTOR NOTE]

[Go around the room and ask for part names and functions. Provide answers as needed. Some parts and functions are described below.

1. Retainer clip: Plastic buckle or clasp that holds the shoulder straps together over the child's chest at armpit level
2. Labels: Information affixed to the car seat or booster seat that is required by federal standards
3. Foot prop/load leg: Extends from the base of a rear-facing car seat or from the front of a forward-facing car seat – used to prevent or reduce excessive forward and downward rotation in a crash
4. Detachable base: Separate car seat base that can be installed in the vehicle – restraint (car seat) portion can be removed from the base and used as a carrier.
5. Splitter plate: Metal plate that connects the two ends of the shoulder harnesses to a single piece of webbing used for adjustment
6. Belt path: Place on the car seat where the seat belt or lower anchor connector is placed to secure the car seat in the vehicle
7. Harness slots: Parts of car seat where the harnesses go through the seat shell
8. Buckle: Where the harness system connects and locks
9. Seat padding: Covers the shell and/or frame
10. Harness: Straps that keep the child in the car seat and spread out the crash forces
11. Recline adjuster: Allows car seats to be reclined for rear-facing and semi-reclined or upright for forward-facing use]

## 5. How to Select the Appropriate Car Seat or Booster Seat



Ask question and respond to comments.

**Q. What do you think a caregiver should consider in choosing the best car seat or booster seat for the child?**

[INSTRUCTOR NOTE]

[Tell participants they should never offer any personal opinions about specific car seat or booster seat products.]



**Reference TG page 7-6.**



**Display PPT 7-15.**



Determine how to select the appropriate car seat.

The best seat is one that:

- Fits the child's age, size, and developmental levels.
- Fits the vehicle.
- The caregiver will use correctly each time.



**Display PPT 7-16.**



Review convenience factors.

Caregivers also choose seats based on convenience factors.

- Number and position of harness strap slots: *Is there room for my child to grow?*
- Automatic or 1-step harness adjustment mechanisms: *Is it easy to tighten and loosen the harness straps?*
- Rear-facing-only car seat versus rear-facing convertible car seat: *Is it more economical for my family to purchase a convertible or 3-in-1 car seat?*
- Detachable base options on rear-facing-only seats: *Is it more convenient for my family as extra bases can be purchased for every person driving my child?*

Behaviorally immature children may need to stay in a more restrictive restraint for a longer period of time than they might need based on size.

Avoid finding fault with what is important to caregivers.

- Some people are cost-conscious, while others want the most expensive model.

- For some children, caregivers will use a booster seat only if it has a cup holder and a place for their child's video game.



### Display PPT 7-17.



Review used car seats and booster seats.

Sometimes the caregiver has selected a used car seat or booster seat. In these cases, the CPS Technician should get a complete history of the seat and find out if it was involved in a crash.

It is the CPS Technician's responsibility to work with the owner of the seat to review it – **NOT** to "certify" it as safe. It is the owner's responsibility to be sure all parts are present and in good working condition.

- The Juvenile Products Manufacturer Association (JPMA) suggests replacing seats after six years if the manufacturer does not state an expiration date on the seat or in the owner's manual. The reasons for this limit includes:
  - Possible deterioration of the plastic shell and other parts.
  - Possible loss/breakage of parts.
  - The fact that older seats will often **NOT** meet current government safety standards.
- Expiration dates vary by manufacturer. Check the manual for your specific seat.



Reference TG page 7-7.



### Display PPT 7-18.



Review car seats and booster seats that have been in a crash.

Seat replacement after a minor crash is not always required. Review NHTSA criteria for assessing minor crash severity. If all criteria are met, it is not always necessary to replace a car seat or booster seat.

- No cracks or deformities (dented or bulging surfaces) can be seen by looking at the seat.
- The vehicle with the seat installed can be driven from the scene.
- The vehicle door nearest the seat is undamaged.

- There were no occupant injuries.
- Air bags did not open.

Check with the seat manufacturer for guidelines on when the product should be replaced.



### Display PPT 7-19.



Review common car seat and booster seat selection errors.

Caregivers make the following car seat and booster seat selection errors by using:

- A car seat or booster seat that the child is too small for or has outgrown.
- A household carrier (or other device that does **NOT** meet FMVSS 213) as a car seat.
- A car seat or booster seat beyond its usable life or expiration date.
- A second-hand car seat or booster seat that is missing instructions and parts and/or has an unknown history.
- A car seat or booster seat that has been involved in a moderate or severe crash.
- An unrepaired recalled car seat or booster seat.  
**NOTE:** This is especially dangerous if the recall is related to crash-worthiness.



Continue to review common car seat and booster seat selection errors.

[INSTRUCTOR NOTE]

[Some caregivers who may have been given household carriers resembling a car seat may not know the difference.

A used car seat or booster seat lacking a known history/original owner may be fine, but there is no guarantee that it was not involved in a crash, has been recalled, may lack parts, or have other damage.]



### Reference TG page 7-6.



Review how to clean and maintain car seats and booster seats.

Caregivers should follow manufacturer instructions for cleaning.

- If necessary, harnesses must be air-dried. Machine drying is too hot for the harness straps and will decrease their effectiveness.

- Use only mild soap and water and rinse with clean water.
- **NEVER** use any chemicals such as starch, bleach, or spray-on fabric care/wrinkle guard products.
- Never iron the harness.
- Never lubricate the buckle.



Ask question and respond to comments.

***Q. What questions do you have about how to select a car seat or booster seat?***

6. Car Seats for Children With Special Healthcare or Medical Needs



**Reference TG page 7-7.**



**Display PPT 7-20.**



Introduce special needs and car seats.

Transportation of children with adaptive restraints and special equipment is becoming more common in our increasingly mobile society.

Special consideration is required for a child with:

- A low birth weight or born prematurely
- Cerebral Palsy
- Breathing problems
- A cast
- Behavior issues



**Display PPT 7-21.**

The approach and criteria for selecting the best car seat remain the same as with any child.

- The first option is to use a conventional car seat if it meets the child's needs. Conventional car seats are easier to find and use and are less expensive.
- Appropriate car seat selection should be made in collaboration with the child's medical team.

- Whenever possible, consult a CPS Technician who has had Safe Travel for All Children training. Safe Travel for All Children is a two-day enhancement curriculum for CPSTs that addresses serving children with special needs.

[INSTRUCTOR NOTE]

[Tell participants that they can locate CPS Technicians with this training on the Safe Kids Certification website.]



Reference TG  
page 7-8.



Display PPT 7-22.

A special needs car seat is usually prescribed by a therapist and approved by a physician. It may need to be ordered from a medical supply company. All or part of the cost may be paid for by the child's health insurance.

- These seats may have higher weight limits for the internal harness or other special features to help position the child.
- Many medical conditions such as Cerebral Palsy or prematurity may make using a conventional car seat difficult. Positioning may be affected by their muscle tone, breathing problems, or other life-threatening situations.
- Specialty vests allow older children to ride lying flat when medically required.

Some conditions resulting in special transportation needs may not be long-term or chronic. Children may have short-term or acute conditions such as a broken leg.

- Hip casts can affect children's ability to sit up. Special restraints may be necessary.
- Larger children in hip spica casts or full body casts who are unable to sit up might need modified vests.
- Caregivers should **NEVER** transport a child with special healthcare/medical needs on a reclined vehicle seat. Check the vehicle owner's manual for details.

[INSTRUCTOR NOTE]

[Refer participants to the Community Resources Tool you handed out earlier in the course for special needs resources.]



Reference TG  
page 7-9.



Display PPT 7-23.



Review child behavior considerations.

Caregivers will often request your advice regarding actions they can take when driving a child with problem behavior.

- The behavior may be caused by a child's medical condition, such as autism or attention deficit hyperactivity disorder (ADHD). These behaviors may distract the driver making proper restraint use for everyone in the vehicle even more important.
- When the child's behavior associated with a medical condition places him/her or others at risk because of car seat issues during travel, caregivers should be referred to the child's physician or a behavioral specialist **AND** to a CPS Technician with special training in safe transportation of children with special needs. They can then discuss the problem and possible options.
- Caregivers can also be referred to the child's school or doctor for help with behavioral issues.
- Some children with behavior issues may benefit from a car seat with a higher weight harness, a non-conventional seat, or vest.

Sometimes a child's behavior may be related to a developmental stage. They may not only resist a car seat but also temporarily resist going to bed at night or refuse certain foods.

[INSTRUCTOR NOTE]

[Emphasize that caution should be taken when discussing behavior issues with caregivers who may feel that their parenting abilities are being questioned.]



Ask question and respond to comments.

***Q. What questions do you have about car seats for children with special needs?***



Reference TG  
Page 7-8 and 7-9.

[INSTRUCTOR NOTE]

[Point out the special needs resources identified in the TG.]



Conclude topic.

There are several additional resources that will provide you with more information on car seats for children with special needs. Review the resources listed in your TG after this training.

## 7. Progress Check and Summary



**Reference TG page 7-10.**



Reinforce how to to explain best practices to caregivers.

There are key questions to answer related to car seats and booster seats.



**Display PPT 7-24 and 7-25.**

[INSTRUCTOR NOTE]

[Review the key questions related to car seats and booster seats.]



Introduce progress check.

Let's review what we learned in Module 7 through a discussion of best practices.

1. Take a few minutes to respond to the best practice questions.
2. Write down responses in your TG.

[INSTRUCTOR NOTE]

[Conduct the following progress check as a large group activity. Pose each question and ask for responses from the group. Add any information not provided by participants.]

The correct answers follow:

1. What is the best car seat or booster seat for a child?

**Answer:** The best car seat or booster seat is the one that fits the child, fits the vehicle, and will be used correctly every time by the caregiver.

2. How long should children ride in rear-facing car seats?

**Answer:** Children should remain in rear-facing car seats **AS LONG AS POSSIBLE**. It is the best way to keep them safe. The child should remain in a rear-facing car seat until he or she reaches the top height or weight limit allowed by the car seat manufacturer.

3. Why might a car seat or booster seat that is missing its product information label be dangerous to use?

**Answer:** Without a label, it is not possible to know whether the car seat or booster seat has been recalled.

4. Should a car seat or booster seat be replaced after a crash?

**Answer:** Car seats and booster seats are, in most cases, made to withstand one crash. Seat replacement, however, is **NOT ALWAYS** required. Always review NHTSA criteria for assessing crash severity and car seat replacement and check with the manufacturer for guidelines on when the product should be replaced.

5. What are some situations or conditions that may require the selection of specialized adaptive car seats?

**Answer:** Situations or conditions that may require the selection of specialized adaptive car seats include children in hip casts, who are small or born prematurely, or have breathing problems.



Ask question and respond to comments.

***Q. What remaining questions do you have about car seats and booster seats and your role in explaining best practices to caregivers?***



Conclude module.

This module provided you with an introduction to car seats and booster seats. The next three modules will address the specifics of rear-facing and forward-facing car seats, booster seats, and seat belts.

## MODULE 8 • Children in Rear-Facing Car Seats

### Module Agenda: 130 Minutes

Topic	Suggested Timing
1. Introduction	2
2. Why Children Should Travel Rear-Facing <ul style="list-style-type: none"> <li>• Video: Why Children Should Travel Rear-Facing</li> </ul>	10
3. Types of Rear-Facing Car Seats <ul style="list-style-type: none"> <li>• Practice Activity: Identify Rear-Facing Car Seats</li> </ul>	15
4. 5 Steps For Rear-Facing Car Seat Use <ul style="list-style-type: none"> <li>• Video: Install a Rear-Facing Car Seat</li> <li>• Practice Activity: Select and Install Rear-Facing Car Seats</li> </ul>	75
5. Best Practices and Caregiver Choices <ul style="list-style-type: none"> <li>• Progress Check: Explain Best Practices About Rear-Facing Car Seats</li> </ul>	10
6. Rear-Facing Car Seat Errors and Consequences <ul style="list-style-type: none"> <li>• Progress Check: Identify Rear-Facing Car Seat Errors and Consequences</li> </ul>	10
7. Progress Check and Summary	8
TOTAL	130 Minutes

### Module Purpose

The purpose of this module is to learn about selection, direction, location, installation, and harnessing rear-facing car seats. Participants will also learn how to communicate best practices, as well as identify rear-facing car seat errors and consequences.

### Module Objectives

- Describe why children should travel rear-facing.
- Identify types of rear-facing car seats.
- Apply 5 steps for rear-facing car seat use.
- Explain best practices and caregiver choices about rear-facing car seats.
- Identify rear-facing car seat errors and consequences.

### Special Media, Materials, and Resources

- Car seat instructions – (if unavailable, download from manufacturer websites)
- Infant dolls
- Rear-facing-only car seat with 3-point and 5-point harness/removable base
- Convertible car seat
- Harness adjusters: metal slide, strap adjuster, A-lock, automatic lock, metal rod

### Special Media, Materials, and Resources (continued)

- Rear-facing car seat with rigid lower anchor connectors
- Rear-facing car seat with flexible lower anchor connectors
- Rear-facing car seat with tether (if possible)
- Rear-facing car seat with load leg (if possible)
- Non-regulated products (i.e. additional padding)
- Recall List (NHTSA website at [www.nhtsa.gov](http://www.nhtsa.gov))
- Seat belt simulation/demonstration seat
- CPS Check Form (Instructor DVD)
- Rolled towel or foam pool noodle
- Dolls for each team and vehicles for installation
- Rear-Facing Quotables: Guiding Parents to Keep Children Rear-Facing Longer (NCPSB website at [www.cpsboard.org](http://www.cpsboard.org))

### Video Titles and Times

- Why Children Should Travel Rear-Facing, 3:53 minutes (PPT 8-4)
- Install a Rear-Facing Car Seat, 3:19 minutes (PPT 8-15)

### Activities

- Practice Activity: Identify Rear-Facing Car Seats
- Practice Activity: Select and Install Rear-Facing Car Seats
- Progress Check: Explain Best Practices About Rear-Facing Car Seats
- Progress Check: Identify Rear-Facing Car Seat Use Errors and Consequences
- Final Progress Check

### Preparation

- Review Rear-Facing Quotables: Guiding Parents to Keep Children Rear-Facing Longer located on the NCPSB website at [www.cpsboard.org](http://www.cpsboard.org).
- Prepare for the practice activities and progress checks in this module.
- Collect all the car seats and other items noted in the Special Media, Materials, and Resources list for the practice activities.
- Identify vehicles with two types of seat belt lower anchor systems for the first practice activity on selecting and installing rear-facing car seats:
  - Lap-belt-only
  - Lap-and-shoulder belt
  - Lower anchors
- Be prepared to discuss which car seat serves each child's (doll's) height and weight for the Select and Install Rear-Facing Car Seats practice activity. Have the following "child cards" available:
  - 18-month-old/29 inches/28 pounds
  - 7-day-old/21 inches/10 pounds
  - 14-month-old/25 inches/19 pounds
  - 3-day-old/19 inches/4 pounds
  - 7-month-old/27 inches/24 pounds
  - 2-year-old/29 inches/26 pounds
  - 10-month-old/27 inches /26 pounds
  - 3-month-old/23 inches/18 pounds

## 1. Introduction



### Display PPT 8-1.



Present module purpose.

The purpose of this module is to learn about selection, direction, location, installation, and harnessing rear-facing car seats. You will also learn how to communicate best practices, as well as identify rear-facing car seat errors and consequences.



### Display PPT 8-2.



Present module objectives.

As a result of this module, you will be able to:

- Describe why children should travel rear-facing.
- Identify types of rear-facing car seats.
- Apply 5 steps for rear-facing car seat use.
- Explain best practices and caregiver choices about rear-facing car seats.
- Identify rear-facing car seat errors and consequences.

---

## 2. Why Children Should Travel Rear-Facing



### Reference TG page 8-1.



### Display PPT 8-3.



Introduce why children should travel rear-facing.

Children's bodies change as they grow. Different types of car seats and booster seats are made to support the child's growth.

Remember that NHTSA recommends children remain in rear-facing car seats for **AS LONG AS POSSIBLE** and until they reach the top height or weight limit allowed by the car seat manufacturer.



### Display PPT 8-4.



Introduce Why Children Should Travel Rear-Facing video (3:53 minutes).

This video provides the rationale for why children should travel rear-facing.

- Watch carefully for information to emphasize with caregivers about the importance of keeping children rear-facing.
- Take notes in your TG as you watch the video.



Play Why Children Should Travel Rear-Facing video.



Ask question and respond to comments.

**Q. What new facts did you learn about why children should travel rear-facing?**



Emphasize points from video.

Emphasize the following points if they do not come up in the discussion.

- Rear-facing-only seats are engineered to distribute the forces of a crash across the entire head and body of an infant and young child. The harnesses are attached snugly to keep the child from sliding up the back of the seat and from flying out of the seat in a crash.
- A rear-facing car seat supports the entire head, neck, and back of a child in a frontal crash. The car seat cradles and moves with the child. It is the shell of the car seat itself that absorbs the forces.
- Children in the second year of life are five times less likely to die or be seriously injured in a crash if restrained rear-facing compared to forward-facing.
- When working with caregivers, it is critical that they understand the reasons why children are safer when traveling rear-facing in vehicles.



**Reference TG**  
page 8-2.

Tell participants that a summary of this information is located on page 8-2 in their TGs.

[INSTRUCTOR NOTE]

[Refer to *Rear-Facing Quotables: Guiding Parents to Keep Children Rear-Facing Longer* on the NCPSB website for information CPS Technicians can use in the field to communicate with caregivers about keeping children rear-facing longer.]

### 3. Types of Rear-Facing Car Seats



**Reference TG**  
page 8-3.

**Display PPT 8-5.**

Introduce types of car seats.

There are two main types of rear-facing car seats.

- **Rear-facing-only** car seat that may have a 3-point or 5-point harness. Some models have a detachable base that can be used with or without the base. Other models can only be used with the base.
- **Rear-facing convertible** car seats have a 5-point harness.



Conduct practice activity and debrief.

Now you will work in a small group to practice identifying types of rear-facing car seats.

1. Work with your small group to examine your assigned car seat.
2. Answer the questions in the TGs about your assigned car seat.

[INSTRUCTOR NOTE]

[Divide the class into small groups. Provide each group with a different rear-facing car seat.

Give small groups 5 to 8 minutes to answer the questions.

1. What type of car seat is it?
2. What type of harness is attached?
3. What are the minimum and maximum height and weight limits for a child using this car seat?

Have one person from each group provide their answers to the class stating the type of car seat, describing the harness system and showing the label, and stating the minimum and maximum height and weight limits for the child.]

**Display PPT 8-6.**

Reference TG page 8-4.



Review rear-facing-only car seats.

Let's discuss rear-facing-only car seats.

- Always check the car seat label for the starting weight. Some car seats are labeled as "birth" and others are labeled for a specific weight.

- In general, the top of the child's head should be well contained within the shell and at least 1 inch from top of shell. Some manufacturer instructions state otherwise so be sure to check the car seat manual.
- The harness needs to be snug and hold the child down in the seat so he or she does not slide up in a crash and suffer ejection from the car. Harnesses should be at or below the child's shoulders unless the manufacturer instructions state otherwise.
- Caregivers should **NEVER** use the rear-facing seat above the height or weight limits designated by the manufacturer. Once a child outgrows the rear-facing-only car seat, he or she should move to a rear-facing convertible seat with rear-facing height and weight limits. This information may be difficult to determine by simply checking labels. Check the manual for more complete information.



### Display PPT 8-7.



Review rear-facing convertible car seats.

Let's discuss rear-facing convertible car seats.

- Many new convertible car seats are approved for rear-facing use up to 40+ pound children. Some seats exceed these weights and should be considered for children whose weight and/or height have exceeded the limits of the rear-facing-only car seat.
- Children commonly sit with their legs crossed or resting on the back of the vehicle seat. As stated in the video, the risk of injury to legs in a crash is low and injuries to the lower extremities are usually less severe with fewer long-term complications (AAP Technical Report, March 2011).
- Although older children with poor head control and other children with special needs are within height and weight requirements of a car seat, they benefit from staying rear-facing as long as possible. In a crash, all children are safer rear-facing as long as their car seat allows.

[INSTRUCTOR NOTE]

[Briefly highlight the Tips for Discussing Rear-Facing Car Seats and Car Seats and Safe Sleeping Practices in the TG on pages 8-4 and 8-5.]

ASTM International, formerly known as the American Society for Testing and Materials (ASTM) has approved a new warning label addressing car seat and sleeping hazards. Participants can learn more about this topic on <http://www.cpsc.gov>.]



Ask question and respond to comments.

**Q. What questions do you have about types of rear-facing car seats?**

#### 4. 5 Steps for Rear-Facing Car Seat Use



Reference TG page 8-4.



Display PPT 8-8.



Review 5 steps for car seat use.

Let's apply 5 steps for car seat use to rear-facing car seats.

1. Selection: Choose the right car seat.
2. Direction: Face the car seat the right way in the vehicle.
3. Location: Install the car seat in an appropriate location in the vehicle.
4. Installation: Secure the car seat to the vehicle in the right way.
5. Harnessing: Place the child correctly in the car seat.



Display PPT 8-9.



Review car seat selection.

#### 1. Selection: Choose the Right Car Seat

- Select the one that is right for the child's height, weight, developmental levels, **AND** that a caregiver can use correctly.
- Select a car seat with an adjustable harness height to offer options for a rapidly growing infant.
- Some seats have multiple positions for crotch straps for better fit as a child grows. Caregivers should refer to the manufacturer instructions for proper placement.



Reference TG page 8-5.



Display PPT 8-10.



Review car seat direction.

## 2. Direction: Face the Car Seat the Right Way

- An infant under the age of 1 should **ALWAYS** ride in a rear-facing car seat.
- A child should remain in a rear-facing car seat **AS LONG AS POSSIBLE**. The child should remain in a rear-facing car seat until he or she reaches the top height or weight limit allowed by the car seat manufacturer. Once a child outgrows a rear-facing only seat, they can transfer to a rear-facing convertible until they reach the maximum height or weight for that seat.



**Display PPT 8-11.**



Review car seat location.

## 3. Location: Install the Car Seat in an Appropriate Location in the Vehicle

- Although there may be many seating positions in a vehicle, not all may be suitable for installing a car seat. The car seat manufacturer instructions and/or the vehicle owner's manual may not allow the use of the center rear seating position.
- Always ask, "Who rides in this vehicle? Where will each person sit?"
- **NEVER** place a rear-facing car seat in the front vehicle seat if the passenger frontal air bag is turned on in the vehicle. If it is necessary to place a forward-facing child in the front seat, be sure the air bag is turned off in the vehicle.



Ask question and respond to comments.

***Q. Why do you think caregivers put children in the front seat?***

A. Some reasons include:

- Caregivers want to provide care, such as a pacifier, bottle, or a comforting touch.
- Many caregivers place children where they can observe them when no other caregiver is in the vehicle. Even with older children, the driver often wants to talk with or entertain the child.
- In some cases, riding in the front seat has been used as a reward for good behavior.

**Display PPT 8-12.**

Review car seat installation.

**4. Installation: Secure the Car Seat to the Vehicle in the Right Way**

- The rear-facing car seat spreads crash forces along the entire head, neck, and back. The correct angle helps keep the airway open. If the car seat is installed too upright, the child's head may flop forward and cut off his/her air supply.
- Know the car seat recline angle, use the recline indicator and adjuster, and adjust to accommodate the seat and vehicle slope.

**Display PPT 8-13.****Recline Angle**

- Caregivers should recline the rear-facing car seat according to manufacturer instructions.
- If permitted by the manufacturer, as the child ages and gains better head control, he or she may sit more upright.

**Reference TG page 8-6.****Recline Angle Indicator**

- The recline angle indicator is part of the car seat and should be used as indicated by the manufacturer.

[INSTRUCTOR NOTE]

[Show a variety of car seats with different recline indicators, including one that states it is level to the ground. Inform participants to also look to be sure angle is correct as some indicators may not give a true reading.]

**Recline Adjuster**

- The vehicle must be on a level surface when checking the car seat angle.
- Many rear-facing car seats have an adjustable base or foot that is used to correct the angle.

- For car seats that do not have an adjustable base, a firm, lightweight object such as a tightly rolled towel or pool noodle can be placed at the vehicle seat crack or bight if permitted by the car seat manufacturer. This:
  - Is helpful when car seats are used on vehicle seats that are not as flat as those used in the testing laboratory.
  - Installation method may be useful when using a carrier without the base.
- Unless the car seat manufacturer indicates otherwise, a rule of thumb is to use either the adjustable base or foot or firm lightweight object – but **NOT** both. The car seat has most likely **NOT** been tested this way.

[INSTRUCTOR NOTE]

[Where possible, teach this section on recline adjusters in vehicles. If not feasible, use a demonstration seat for this demonstration.]

### Seat Slope

- A steep angle may cause the child to ride too upright. Maintain the correct recline angle



Display PPT 8-14.

### Seat Belt or Lower Anchors

- Car seats can be installed with a seat belt or with lower anchor connectors – usually **NOT** both. While the systems are different, they are equally safe.
- Most car seats have **NOT** been tested with both systems used together. Some manufacturers allow this now, so always be sure to read both the vehicle and car seat instructions for help.



Reference TG page 8-7.



Display PPT 8-15.



Introduce Install a Rear-Facing Car Seat video (3:19 minutes).

This video, Install a Rear-Facing Car Seat, shows the steps for installing a rear-facing-only car seat with a seat belt. The steps are the same for a convertible rear-facing car seat with a seat belt.

- Watch carefully for the installation steps.
- Take notes in your TG as you watch the video.



Play Install a Rear-Facing Car Seat video.

[INSTRUCTOR NOTE]

[Using a vehicle seat or a Dial-a-Belt seat, demonstrate to the class how to attach a car seat tightly to a vehicle seat.

Review how to reduce the risk of entanglement from unused seat belts when installed with LATCH.

CPS Technicians should educate the caregiver to evaluate and note unused seat belts that may be within reach of a child. If possible, switch the retractor to the automatic locking mode to lock the unused seat belt against the seat back. Always refer to vehicle and car seat owner's manuals to see if this is allowable.

Briefly review the Special Considerations for Rear-Facing Car Seats on page 8-7 in TGs. Encourage participants to suspend their judgment when interacting with a caregiver and approach an error as a mistake that anyone can make.]



Reference TG  
page 8-8.



Continue to review car seat installation.

### Space requirements

Check the following to see if the car seat fits in the vehicle.

- Do the contours of the vehicle seat permit the car seat to stay level?
- Is there enough space for the car seat to allow for the correct angle?
- Does at least 80 percent of the car seat base (footprint) fit on the vehicle seat? Many manufacturers say that no more than 20 percent of the car seat can hang over the front edge of the vehicle seat. Some models require that 100 percent of the footprint fit on the vehicle seat. Use the 80/20 as a rule of thumb **UNLESS** the car seat manufacturer says differently.
- Does the seat belt/lower anchor connector allow for a tight installation?



Reference TG  
page 8-9.



Display PPT 8-16.



Review common car seat installation errors.

Common rear-facing installation errors include:

- A seat belt or lower anchor connector that is too loose or not locked.
- A rear-facing-only car seat that is facing forward.
- The seat belt or lower anchor connectors routed incorrectly.
- An incorrect recline angle especially for an infant.
- Using two seat belts, or using a seat belt and lower anchor connectors together (must be allowed by **BOTH** the vehicle and car seat manufacturer).



Display PPT 8-17.

- Incorrect use of lower anchor connectors and tethers.
- Not using the appropriate tether anchor or using a tether when it should not be used. Most convertible car seats do not tether when rear-facing.
- The locking clip installed incorrectly.
- The carrying handle not used in the approved position for vehicle travel.

[INSTRUCTOR NOTE]

[The use of tethers on rear-facing car seats, while common in Australia and Sweden, is uncommon in the United States.

A rear-facing car seat should never be tethered unless recommended by the car seat manufacturer and allowed by the vehicle manufacturer. Several products have optional tethers in the rear-facing position.

Several new rear-facing seats have a load leg or foot prop that extends from the front of the base to the floor supporting the seat. These seats are tested according to FMVSS without the leg and with the leg in place. Use this product as directed by the car seat manufacturer instructions.

Explain some special factors to consider for rear-facing car seats: width of car seat, vehicle seat shape, seat belt anchor points that may be too close together or have buckles forward of the seat bight or crack, size of vehicle, 2-door vehicles, small interiors, etc.

Remind participants to check the car seat instructions if the car seat base hangs over the edge of the vehicle seat.]



Review car seat harnessing.

## 5. Harnessing: Place the Child Correctly in the Car Seat

There are four steps for correctly placing a child in a car seat.

1. Place the child all the way back in the car seat.
2. Place the harness straps at or below the child's shoulders, according to manufacturer instructions, and buckle at the crotch.
  - The harness holds the child down low in the car seat so he/she does not slide up and out of the car seat in a crash.
  - The crotch strap keeps the child from moving forward. Adjust the crotch strap if needed to get it as close to the child as possible.
3. Tighten harness straps snugly.
  - NHTSA requires car seat manufacturers to state in the instructions: **“A snug strap should NOT allow any slack. It lies in a relatively straight line without sagging. It does not press on the child's flesh or push the child's body into an unnatural position.”**
  - You should **NOT** be able to pinch excess webbing at the shoulder or hips once the harness is buckled. This is called the pinch test (see photograph on TG 8-9).
4. Place the harness retainer clip at armpit level.



Reference TG page 8-10.

In addition:

- Only place blankets around the child after the harness is snug and secure. Unapproved padding placed behind or under the child or under harnesses can compress in a crash and create slack in the harness. Only items approved or manufactured by the car seat company for a particular model car seat are acceptable.

- Nothing should be placed under the child or between the child and the harness except for the use of a rolled towel or blanket at the crotch strap, if allowed by the manufacturer.
- Use only harness comfort covers or head padding the manufacturer has included with the car seat or that the manufacturer sells separately for the specific car seat.
- Harness hardware can include manual adjusters, “A-locks” (adjuster device on front of many seats), or metal harness adjusters.

Make sure to follow manufacturer recommendations on approved positions for carry handles on rear-facing-only seats.



Reference TG  
page 8-11.



**Display PPT 8-18.**



Review common car  
seat harnessing errors.

Common car seat harnessing errors include a:

- Harness not used and the child is just sitting in the car seat.
- Harness straps are too loose.
- Retainer clip is not at armpit level.
- Harness routed through the wrong slots. **NOTE:** Harness may look as though it is properly routed through the padding, but it may not be routed correctly through the shell. Both areas must be checked.
- Harness not doubled-back through buckle type metal adjuster, if it requires the double-back to secure the harness.
- Harness is twisted.



**Display PPT 8-19.**

- Harness is not placed on the child correctly.
- Harness is frayed or damaged.
- Metal adjuster not flush with the slot or out of position.
- Crotch strap that is adjusted too long.
- Harness not at or below shoulder.
- Crotch strap that is not through the slot closest to the child.
- Harness is incorrectly routed.



Reference TG  
page 8-8.

[INSTRUCTOR NOTE]

[Briefly review the tips for discussing how to install rear-facing car seats located in the TG.

- Tell caregivers that since not every car seat will fit into every vehicle, they can ask the retail store to allow trying out a car seat in their vehicle in the store parking lot.
- Many caregivers who mistakenly test their rear-facing car seat near the child's head (instead of near the belt path) think the car seat is not installed properly because it moves more when tested at this point.
- To reduce risk of entanglement from unused seat belts, educate caregivers to evaluate and note unused seat belts that may be within reach of a child.
- If possible, switch the retractor to automatic locking mode to lock the unused seat belt against the back seat. Refer to vehicle and car seat owner's manuals for guidance.]



Ask question and  
respond to comments.

***Q. What questions do you have about the 5 steps for rear-facing car seat use?***



Reference TG  
page 8-11.



Display PPT 8-20.



Review seats for  
children with special  
needs.

Let's review some AAP recommendations for small and premature children.

The American Academy of Pediatrics (AAP) recommends that all children born before 37 weeks (more than three weeks early) be monitored before they leave the hospital for possible breathing problems or slowing of the heart rate when sitting in a semi-reclined position.

The physician will determine if the child can use a rear-facing-only car seat or should ride lying on their stomach or on their back in a car bed.

**NOTE:** Some very small children do not have respiratory problems but still may require special consideration.

[INSTRUCTOR NOTE]

[Car seats for children with special needs are generally more expensive and may be more difficult to find and use. Use the car seat instruction manual to see if there are specific requirements for installation and use with the child.

While the CPS Technician cannot determine whether a child should be in a special car seat, it is important for them to have a basic understanding of situations or conditions that may require specialized adaptive car seats as well as conventional car seats.]



**Reference TG  
page 8-12.**



**Display PPT 8-21.**



Review how to fit small and prematurely born infants in car seats.

Special car seats may be needed for children who are very small or have special physical or developmental needs.

- Use a rear-facing car seat with small internal harness dimensions.
- Use a car seat designed for the child's low weight.
- Center the child in a car seat with rolled receiving blankets and a crotch roll, if necessary.



**Display PPT 8-22.**



Review how to fit children in car beds.

Car beds are used for children who are small, premature, or medically fragile and need to ride flat as directed by a doctor.

- Secure the child in the car bed with the internal harness or bunting.
- Place the child's head toward the center of the vehicle – **NOT** next to the door.
- Use the seat belt to anchor the car bed lengthwise on the vehicle seat.



**Display PPT 8-23.**



Review how to fit children who have breathing problems in seats.

Breathing problems or other medical conditions may require the child to lie flat or use a non-conventional car seat.

- A semi-reclined position of the car seat could make breathing problems worse.

- Children may need to travel with secured special medical equipment such as apnea monitors, ventilators, and oxygen tanks which must be safely restrained during transport. To secure equipment:
  - Place it on the vehicle floor and wedge it with pillows or foam.
  - Hold it in place by seat belts not in use, if possible.
  - Monitors and oxygen tanks may be stored under the front seat in some vehicles. Check the vehicle manufacturer instructions.
  - Carriers for restraining monitors, ventilators, and oxygen are also available.



**Reference TG**  
page 8-13.



Conduct practice activity and debrief.

Now that you have learned about the 5 steps for rear-facing car seats, you will select and install car seats by a child's age, height, and weight. A child (card with age, height, and weight) will be assigned to your team.

1. Select an appropriate car seat for your child.
2. Using a doll, adjust harness to fit your child.
3. Install a rear-facing-only car seat with and without a base and a rear-facing convertible car seat in a vehicle using a lap-belt-only, lap-and-shoulder belt, and lower anchors, where applicable. Make your car seat selections based on the child's age, height, and weight.
4. Repeat the car seat selection, harness adjustment, and three installations for the type of car seat (rear-facing-only or rear-facing convertible) not chosen the first time.
5. Document how the belt locks in the chart located in your TG.

[INSTRUCTOR NOTE]

[Direct participants to the vehicles with three types of seat belt systems – lap-belt-only (optional), lap-and-shoulder belt, and lower anchors.

This activity will take up to 30 minutes.

For this practice activity, participants will use:

- Rear-facing-only and convertible car seats for each team.
- Vehicles for installation as well as a doll for each team. Be prepared to discuss and know which car seat serves each “child’s” height and weight. Have the following “child cards” available:
  - 18-month-old/29 inches/28 pounds
  - 7-day-old/21 inches/10 pounds
  - 14-month-old/25 inches/19 pounds
  - 3-day-old/19 inches/4 pounds
  - 7-month-old/27 inches/24 pounds
  - 2-year-old/29 inches/26 pounds
  - 10-month-old/27 inches /26 pounds
  - 3-month-old/23 inches/18 pounds

Walk around and provide feedback on their selections and installations. Sign off on TG worksheets to indicate you have checked their work.]

## 5. Best Practices and Caregiver Choices



**Reference TG page 8-14.**



Reinforce how to to explain best practices to caregivers.

There are key questions to answer related to rear-facing car seats.



**Display PPT 8-24 and 8-25.**

[INSTRUCTOR NOTE]

[Review the key questions related to rear-facing car seats.]

Let’s review what we learned in Module 8 through a discussion of best practices. Remember that caregiver choices are issues that may not have a clear answer on the safest way to transport a child. Caregivers will then have to decide among the options you provide.

1. Take a few minutes to respond to the questions to prepare for conversations you will have with caregivers about rear-facing car seats.

[INSTRUCTOR NOTE]

2. Write down responses in your TG.

[Give participants a few minutes to answer the questions. Debrief the questions as a large group.]

1. I have two children. Which child should go in the middle of the back seat?

**Answer:** The caregiver must decide. The caregiver may not want the children sitting too close together and may place both children in the outboard positions with no one in the middle. The vehicle may not be able to handle two child safety seats next to each other.

2. Can I leave the handle up and dangle toys from the car seat to keep my child happy?

**Answer:** Check the car seat instructions. Some car seat manufacturers may require keeping the handle in the “down” position. Check instructions about adding non-regulated products to the car seat. If the toys are manufacturer approved, they are safe to use.

3. Should I use the lower anchors or the seat belt? Which is safer?

**Answer:** Both installation systems can provide safety. The choice should depend on the particular car seat available for installation and the design of the seat belt system in the vehicle. Which car seat system does the caregiver feel more comfortable using? Installing the car seat with more than one system might put stress on the car seat in a crash and may hurt its performance.

4. Should I use a tether on my rear-facing convertible seat?

**Answer:** A rear-facing car seat should never be tethered unless recommended by the manufacturer.

5. I want to see my child. When can I turn him around?

**Answer:** NHTSA (and the AAP) recommends that a child should remain in rear-facing car seats **AS LONG AS POSSIBLE**. The child should remain in a rear-facing car seat until he or she reaches the top height or weight limit allowed by the car seat manufacturer.

## 6. Rear-Facing Car Seat Errors and Consequences



**Reference TG**  
page 8-15.

[INSTRUCTOR NOTE]

[This progress check can be facilitated as a small group or pairs activity.]



Conduct progress check.

Let's apply what you have learned about children in rear-facing car seats.

1. Examine each photograph to determine if the rear-facing car seat is fitted properly.
2. If not fitted properly, identify the error along with the consequences for the child.

[INSTRUCTOR NOTE]

[Give participants a couple minutes to identify the error in each photograph.]

Display the photographs as you debrief the progress check. As you display each photograph, ask participants to identify the error and what they think the consequences might be for the child.

Make the following points if they do not come up in the discussion. Encourage participants to write down the correct answers in their TGs.]



**Display PPT 8-26.**



Debrief the progress check.

### Photograph #1

#### Answer:

- **Error:** The child is forward-facing and should be rear-facing, the retainer clip is too low and should be at armpit level, and the harnesses are too high.
- **Consequences:** Infants must be rear-facing due to their fragile heads, necks, and spines. In a crash, a rear-facing seat helps protect the head, neck, and spine. With a retainer clip that is too low, the child can come out of the harness or the hard, plastic retainer clip can cause internal damage. Harnesses that are too high on a rear-facing seat can cause the child to come up and out of the seat.



**Display PPT 8-27.**

### Photograph #2

**Answer:**

- Error: The seat belt is not tight and harness is routed incorrectly and is too high.
- Consequences: If the seat belt is too loose, the car seat could have too much movement and more crash forces. If the harness is too high for rear-facing, there can be extra slack in the harness and it might not hold the child correctly. Additional crash forces could be transferred to the body.



**Display PPT 8-28.**

### Photograph #3

**Answer:**

- Error: A locking clip is being incorrectly used on a lower anchor connector.
- Consequences: The car seat was not crash tested this way and this practice does not follow manufacturer instructions. We do not know what will happen.

[INSTRUCTOR NOTE]

[Remind participants how a locking clip is used – to lock the belt system before a crash happens. It locks the belt system into a fixed length at the lap belt so the car seat is in the correct position. Lower anchors are designed to lock the car seat instead of the seat belt system so a locking clip is not needed.]



**Reference TG  
page 8-16.**



**Display PPT 8-29.**

### Photograph #4

**Answer:**

- Error: There are non-regulated harness covers. The harnesses appear to be loose and too high on the infant.

- **Consequences:** Adding extra padding to car seats or harnesses not tested with the seat can cause it to not perform in a crash. The padding can also prevent the retainer clip from being positioned properly.

[INSTRUCTOR NOTE]

[Remind participants that retainer clips are used to pre-position the harness over the child's shoulders prior to the crash, keeping the harness in the correct position.]



**Display PPT 8-30.**

### Photograph #5

#### Answer:

- **Error:** The child is bundled up, adding bulk under the harness, the harnesses are loose, and the retainer clip is too low.
- **Consequences:** The harnesses may appear snug when putting the child in the car seat, but the excessive padding can compress during a crash causing the harness to loosen and allowing the child to be ejected. Loose harnesses and a low retainer clip can result in more movement and higher crash forces. The child could come out of the car seat.

---

## 7. Progress Check and Summary



**Reference TG page 8-17.**



Conduct progress check.

Let's review what we learned in Module 8 through a final progress check. Write down correct responses in your TG.

1. How do you determine which harness slot or slots may be used for a rear-facing child?

**Answer:** Harness straps are generally placed at or below a child's shoulders unless manufacturer instructions state otherwise.

2. What factors do you check to be sure a child is properly secured with a rear-facing car seat?

**Answer:** The child must meet the height and weight requirements of the car seat. The car seat must be reclined according to the manufacturer instructions. Harness straps must be at or below the child's shoulders unless otherwise stated by the manufacturer with the retainer clip at armpit level. Harness straps should be snug.

3. What are the two places where you will find accurate information regarding correct seat belt placement?

**Answer:** Locate the belt path arrow or label on the car seat for correct belt path use. Follow the car seat manufacturer instructions.

4. How do you test the tightness of a rear-facing car seat?

**Answer:** To test for tightness, grip the car seat at the belt path and pull on the car seat. There should be no more than 1 inch of side-to-side or forward movement at the belt path.

[INSTRUCTOR NOTE]

[Ask for two volunteers to install a rear-facing car seat. Have the pair explain what they are doing during the installation. The pair can ask for assistance from other participants if needed.]



Ask for questions.

***Q. What remaining questions do you have about rear-facing car seats?***



Conclude module.

We've covered the types of rear-facing car seats and how to correctly select, direct, locate, install, and harness them. Now let's learn about forward-facing car seats and apply the same steps.



## Quiz #2 on Modules 6 to 8

### INTRODUCTION

Quiz #2 addresses knowledge taught in Modules 6 to 8.

### Time for Completion

The time limit for Quiz #2 is 30 minutes followed by a 15-minute class review.

### ADMINISTRATION GUIDELINES

1. Have a quiz reading room ready. Offer to read the quiz to participants, encouraging them to take advantage of the option. This is not just for participants where English is not their primary language. Adult learners may score better having the quiz read to them while they read it themselves.
2. Review the instructions for Quiz #2 with the class prior to conducting it (below).
3. Collect the answer sheets and immediately score them in a private area. Do not announce scores or share them with any other participant.
4. The scoring Instructor must write the correct answer next to any incorrect answer in blue or red ink — **never pencil**.
5. Participants may keep their quizzes when they turn in their answer sheets for reference during the review. Collect all quizzes immediately following the review.
6. Instruct participants to clear their desks of writing materials prior to the review to prevent the copying of answer keys.
7. Review the correct answers for questions participants marked incorrectly.
8. In cases where a second version of a quiz is used, read both the questions being reviewed as well as the answer since the order of the questions and/or the answers differ between the two versions of each quiz.

### PARTICIPANT INSTRUCTIONS

1. You have **30 minutes** to complete and turn in this quiz. Answers will be reviewed in class after the Instructors have scored all quizzes.
2. Review each question and write the correct answer on the answer sheet provided.
  - Remember to mark all answers on the answer sheet. We can only accept answers written on the answer sheet.
  - Each question is worth **2 points** with a total of **30 possible points**.
3. We encourage you to use your Technician Guide as a resource.
4. Let an instructor know if you would like the test read to you. Many adult learners benefit from having quizzes read to them.



## MODULE 9 • Children in Forward-Facing Car Seats

### Module Agenda: 125 Minutes

Topic	Suggested Timing
1. Introduction	2
2. When Children Should Travel Forward-Facing	2
3. Types of Forward-Facing Car Seats <ul style="list-style-type: none"> <li>• Practice Activity: Adjust a Harness and Locate the Belt Path</li> </ul>	15
4. 5 Steps For Forward-Facing Car Seat Use <ul style="list-style-type: none"> <li>• Video: Install a Forward-Facing Car Seat</li> <li>• Practice Activity: Select and Install Forward-Facing Car Seats</li> </ul>	55
5. Best Practices for Caregivers <ul style="list-style-type: none"> <li>• Progress Check: Explain Best Practices About Forward-Facing Car Seats</li> <li>• Video: Loose LATCH and No Tether video</li> <li>• Video: Incorrect Belt Routing and No Tether video</li> </ul>	10
6. Forward-Facing Car Seat Errors and Consequences <ul style="list-style-type: none"> <li>• Progress Check: Identify Forward-Facing Car Seat Errors and Consequences</li> <li>• Progress Check: Identify Misuse with Car Seats</li> </ul>	30
7. Progress Check and Summary	11
TOTAL	125 Minutes

### Module Purpose

The purpose of this module is to learn about selection, direction, location, installation, and harnessing with different types of forward-facing car seats. Participants will also learn how to explain best practices and identify forward-facing car seat errors and consequences.

### Module Objectives

- Describe when children should travel forward-facing.
- Identify types of forward-facing car seats.
- Apply 5 steps for forward-facing car seat use.
- Explain best practices about forward-facing car seats to caregivers.
- Identify forward-facing car seat errors and consequences.

## Special Media, Materials, and Resources

- Manufacturer instructions for each car seat
- Forward-facing car seats with harnesses (convertible, combination, forward-facing-only)
- Car seat with harness adjuster: bar
- Car seat with harness adjuster: front adjustment
- Forward-facing car seat with rigid LATCH
- Forward-facing car seat with flexible LATCH
- Forward-facing car seat with higher weight limits
- Non-regulated products such as padding, etc.
- Recall List (NHTSA website at [www.nhtsa.gov](http://www.nhtsa.gov))
- Vehicle with integrated seat
- Safety vests
- LATCH Manual (if available)
- Child cards
- Role play cards
- Seat belt simulation or belt demonstration seat
- Doll for each small group
- Vehicles for installation activities

## Video Titles and Times

- Install a Forward-Facing Car Seat, 2:57 minutes (PPT 9-12)
- LATCH & Tether Use, :16 minutes (PPT 9-22)
- Incorrect Belt Routing & No Tether, :16 minutes (PPT 9-23)

## Activities

- Practice Activity: Adjust a Harness and Locate the Belt Path
- Practice Activity: Select and Install Forward-Facing Car Seats
- Progress Check: Explain Best Practices About Forward-Facing Car Seats
- Progress Check: Identify Forward-Facing Car Seat Errors and Consequences
- Practice Activity: Identify Misuse with Car Seats
- Final Progress Check

## Preparation

- Prepare for the practice activities and progress checks in this module.
- Review the video for this module.
- Have the following “child cards” available:
  - 2-year-old, 34 inches, 24 pounds
  - 4-year-old, 42 inches, 38 pounds
  - 18-month-old, 32 inches, 26 pounds
  - 5-year-old, 48 inches, 63 pounds
  - 2-year-old, 36 inches, 32 pounds
  - 3-year-old, 37 inches, 33 pounds
- Collect/prepare the car seats and other items noted in the Special Media, Materials, and Resources list for the practice activities.

## 1. Introduction



### Display PPT 9-1.



Present module purpose.

The purpose of this module is to learn about selection, direction, location, installation, and harnessing with different types of forward-facing car seats. You will also learn how to explain best practices and identify forward-facing car seat errors and consequences.



### Display PPT 9-2.



Present module objectives.

As a result of this module, you will be able to:

- Describe when children should travel forward-facing.
- Identify types of forward-facing car seats.
- Apply 5 steps for forward-facing car seat use.
- Explain best practices about forward-facing car seats to caregivers.
- Identify forward-facing car seat errors and consequences.

---

## 2. When Children Should Travel Forward-Facing



### Reference TG page 9-1.



### Display PPT 9-3.



Review when children should travel forward-facing.

Children should:

- Remain in a rear-facing car seat until reaching the top height or weight limit allowed by the car seat manufacturer.
- Ride in a forward-facing car seat with a harness until they reach the top height or weight limit allowed by the car seat manufacturer – usually until they are between ages 4 to 7.
- It is dangerous to exceed height or weight limits.

### 3. Types of Forward-Facing Car Seats



**Reference TG**  
page 9-1.



**Display PPT 9-4.**



Introduce types of forward-facing car seats.

There are five types of forward-facing car seats:

- Convertible
- Combination
- Forward-facing-only
- Large medical seats or vests
- Integrated seats

There are always car seats that do not fit into these categories. For example, there are car seats that rear-face, forward-face, and then become booster seats.



**Display PPT 9-5.**

[INSTRUCTOR NOTE]

[Show a convertible car seat with only the top slot reinforced.]



Review convertible car seats.

Let's discuss the features of each forward-facing car seat. We will start with the convertible car seat.

- Manufacturer instructions for many car seats recommend they be in the upright position when used forward-facing.
- Some manufacturers meet testing standards with their seat in a forward-facing, semi-reclined position, as well as fully upright. Consider this position if the child has special needs or if seat belts cannot be made tight when the car seat is upright.
- Some harness systems are approved for use to 40 pounds, but the marketplace is changing and now includes more seats with higher weight limit harnesses.
- A 5-point harness provides more protection for a child than a booster seat with a lap-and-shoulder seat belt.
- Read the owner's manual to ensure correct use of the belt path and harness slots.

[INSTRUCTOR NOTE]

[Tell participants that a common error with convertible seats is the use of harness slots that are not designed or reinforced, for forward-facing use.]



**Display PPT 9-6.**



**Reference TG page 9-2.**



Review forward-facing combination car seats.

The forward-facing combination car seat is used with a harness until a certain height or weight limit specified by the manufacturer is reached. The harness must then be removed or stored.

- Make sure the mid-point of the back of head or top of ears are **NOT** above the top of the shell or as directed by the car seat manufacturer.
- The backs of all combination seats are reinforced. Any harness slot can be used as long as it is at or above the child's shoulders.
- This car seat does not have air bag warning labels because combination car seats are forward-facing-only and most have a lower weight limit of 20 pounds.
- Once the harness is removed, this seat can then be used as a belt-positioning booster seat.

[INSTRUCTOR NOTE]

[Tell participants that a common error is to assume that the top slot only is used on a combination seat.]



Ask question and respond to comments.

***Q. Why do you think a combination seat does not have an air bag warning label?***

A. This seat should **NEVER** be used rear-facing. Best practice would be to make sure a child is **NOT** placed in a seating position in front of an air bag.

Sometimes in real-world situations, the caregiver may need to make the choice of placing a child in front of an air bag. Caregivers should be instructed **NEVER** to place a rear-facing car seat in front of an air bag. If a child in a forward-facing car seat must be placed in front of an air bag, the vehicle seat needs to be moved back as far as possible.

[INSTRUCTOR NOTE]

[Demonstrate the difference between a forward-facing convertible seat and a combination seat.]

**Display PPT 9-7.**

Review forward-facing-only car seats.

Forward-facing-only car seats are sometimes used for children with special health needs or for heavier children who are not behaviorally mature enough for a booster seat.

- With forward-facing-only car seats, the weight limits can vary. Some have higher harness weight limits than other forward-facing car seats.
- It is important to research and remain aware of currently available car seats with higher weight harnesses.

**Display PPT 9-8.**

Review large medical seats and vests.

Large medical seats, vests, and harnesses may help children with behavioral issues, weak muscles, excess weight, or other situations when a conventional car seat cannot be used.

- Large medical seats are designed for occupants who require supplemental positioning support from a car seat beyond that offered by a conventional restraint. Typically, large medical seats will fit occupants weighing up to 102 to 135 pounds (a few go higher).
- There are different vests available in different sizes for use as restraints. In order to use a vest, a child must have good head control. Some products are made just for school bus use.
- It's important for families to work with an occupational therapist (OT) or physical therapist (PT) to evaluate a child's positioning needs and determine which restraint provides the best positioning options for the child.
- Heavy-duty tethers are sometimes required.
- Always follow the manufacturer instructions.

**Display PPT 9-9.**

**Reference TG**  
page 9-3.



Review integrated seats.

Some vehicles have seats/restraints built into the vehicle. Check the vehicle owner's manual for instructions and weight limits.

- Many integrated seats face forward. Some can be used as a booster seat. They **CANNOT** be moved.
- Some have a 5-point harness.
- Integrated seats, as with other car seats, may need to be replaced after a vehicle collision, if webbing is frayed, or parts are missing or broken. Check the vehicle owner's manual for instructions.
- Caregivers should call the service department of the vehicle dealership and ask to be given information in the repair section of the service manual about replacing car seat parts.



**Display PPT 9-10.**



Review harness fit.

Tighten harness straps snugly. A snug harness lies flat and passes the pinch test. Bulky clothing can interfere with proper harness fit.

- Avoid bulky clothing or padding behind the child's head, back, or under buttocks.
- Bulky jackets can be put on backwards (over the child's arms and torso) after the harness is secured.
- Place blankets over and around the child after the harness is snug.

Children should sit with:

- Their back and bottom flat against the car seat back.
- The harness placed through proper slots, usually at or above the child's shoulders. Refer to the car seat manufacturer instructions.
- The harness straps placed over the shoulders and buckled at the crotch.
- The retainer clip at armpit level.

[INSTRUCTOR NOTE]

[Refer participants to Tips for Discussing Harness Fit on page 9-3 in their TGs.]



**Reference TG**  
page 9-4.



Conduct practice  
activity and debrief.

Now you will work in a small group to adjust a harness for height and weight limits.

1. Working with a forward-facing car seat and doll, move the harness to a different harness slot. Adjust the harness to loosen and tighten.
2. Adjust the car seat harness so it fits the doll.
3. Identify the location of the harness adjustments.
4. Identify the forward-facing seat belt path, lower anchor connector belt path, and tether strap on the car seat.
5. Adjust the car seat to either the upright or forward-facing recline position (if allowed by the manufacturer).
6. Answer the questions located in your TGs.

[INSTRUCTOR NOTE]

[Divide the class into small groups. Provide the class with several forward-facing car seats with lower anchor connectors from which to choose and a child (doll). Participants will review car seat labels to identify height and weight limits and identify the correct belt path.

Assign each group a child from the following list:

- 2-year-old, 34 inches, 24 pounds
- 4-year-old, 42 inches, 38 pounds
- 18-month-old, 32 inches, 26 pounds
- 5-year-old, 48 inches, 63 pounds
- 2-year-old, 36 inches, 32 pounds
- 3-year-old, 37 inches, 33 pounds

Encourage participants to rely on the manufacturer instruction manual to find the harness adjuster part, determine if there are instructions that state which specific harness slot to use, and locate the correct belt path.

Give participants 20 minutes for this practice activity.

Ask each group to explain which car seat they selected and why. Ask if there were any instructions in the car seat manual directing them to use a specific harness slot with that particular car seat. Have participants describe the correct belt path.]



Ask question and respond to comments.

**Q. What questions do you have about the types of forward-facing car seats?**

#### 4. 5 Steps for Forward-Facing Car Seat Use



**Reference TG page 9-4.**



**Display PPT 9-11.**



Review 5 steps forward-facing car seat use.

Let's apply the 5 steps for car seat use to forward-facing car seats. Remember, the steps are:

1. Selection: Choose the right car seat.
2. Direction: Face the car seat the right way.
3. Location: Install the car seat in an appropriate location in the vehicle.
4. Installation: Secure the car seat to vehicle in the right way.
5. Harnessing: Place the child correctly in the car seat.



Review car seat selection.

#### **1. Selection: Choose the Right Car Seat**

As with all car seats, select the one that is right for the child's height, weight, and developmental levels.



Review car seat direction.

#### **2. Direction: Face the Car Seat the Right Way**

A child should be kept in a forward-facing car seat with a harness until reaching the top height or weight limit allowed by the car seat manufacturer. This is generally between the ages of 4 to 7.



Review car seat location.

#### **3. Location: Install the Car Seat in the Right Spot in the Vehicle**

- As with rear-facing car seats, while there may be many seating positions in a vehicle, not all may be suitable for installing a car seat.
- As long as the car seat fits, the center-rear seating position may be safer because it is furthest from impact and intrusion from any direction. However, some center-rear positions are not usable and many families transport more than one child.



Reference TG  
page 9-5.



Review car seat  
installation.

- Weight limits on lower and tether anchors can affect the seating position choice. Each vehicle manufacturer sets these weight limits. Check the vehicle owner's manual or most current *LATCH Manual* (if available) for individual vehicle limits.

#### 4. Installation: Secure the Car Seat to the Vehicle in the Right Way

- Consider seating positions with seat belts that can be locked (locking latchplate, switchable, or automatic locking retractors) or approved lower anchor positions for car seat use.
- A tether increases safety by limiting forward movement and rotation of the car seat. Using the tether strap can stabilize a car seat and limit head movement.
- **NEVER** place noodles or towels behind or under a forward-facing car seat unless allowed by the manufacturer.

[INSTRUCTOR NOTE]

[Select a variety of vehicles to demonstrate seat belts and lower and tether anchors.

Show class the tether and demonstrate how to tightly secure a car seat with a tether (use a demonstration seat or vehicle) by first using the seat belt and then with lower anchor connectors.

Demonstrate placing lower anchor connectors through a forward-facing belt path (making sure that the belt is **NOT** twisted).

Have participants look at LATCH instructions found in vehicle and car seat owner's manuals. Discuss what participants should look for in an owner's manual to be certain they give caregivers accurate information.

Refer participants to the General Methods for Obtaining a Tight Installation and Tips for Discussing Forward-Facing Car Seats in their TGs on page 9-5.]



Reference TG  
page 9-6.



Display PPT 9-12.



Introduce Install a Forward-Facing Car Seat video (2:57 minutes).

This video, Install a Forward-Facing Car Seat, shows the installation steps for installing a forward-facing combination car seat with a harness using a seat belt.

- Watch carefully for the installation steps.
- Take notes in your TG as you watch the video.



Play Install a Forward-Facing Car Seat video.



Ask question and respond to comments.

**Q. What do you need to take into account when using the lower anchors to secure the car seat?**

A. Be sure to follow weight limits for lower anchors. If the weight limit is exceeded, then use the seat belt.



Reference TG page 9-7.



Display PPT 9-13.



Review common car seat installation errors.

Caregivers make the following common forward-facing installation errors:

- A seat belt or lower anchor connector that is too loose or not locked
- A rear-facing-only car seat that is forward-facing
- Seat belt or lower anchor connectors routed incorrectly through the wrong belt path
- Recline angle not adjusted appropriately for forward-facing direction
- Using two seat belts, or using a seat belt and lower anchor connectors together (unless allowed by the car seat and the vehicle manufacturers)



Display PPT 9-14.

- Incorrect use of lower anchors and tether, not installing lower anchor connectors to the correct designated lower anchor bars or attaching the connectors upside down
- Not using the appropriate tether anchor or using it when it should not be used

**Display PPT 9-15.**

- Locking clip installed incorrectly
- Installing a car seat with lower anchors in a seating position that is not a designated LATCH position
- Installing a seat with LATCH when the child weighs more than the vehicle and/or car seat LATCH weight limits

**Display PPT 9-16.**

Review car seat harnessing.

**5. Harnessing: Place the Child Correctly in the Car Seat**

There are four steps for correctly harnessing a child in a car seat.

1. Place the child all the way back in the car seat.
2. Put the harness straps over the shoulders and buckle at the crotch. The harness holds the child back against the car seat so he or she does not slide out in a crash. The crotch strap keeps the child from moving forward.
3. Tighten the harness straps snugly. You should **NOT** be able to pinch excess webbing at the shoulders once the harness is buckled.
4. Secure and place the harness retainer clip at armpit level.

**Display PPT 9-17.**

Review common car seat harnessing errors.

Caregivers make the following common forward-facing harnessing errors:

- Harness not used (child just sitting in the car seat)
- Harness straps are too loose
- Retainer clip not at armpit level
- Harness routed through the wrong slots.  
(**NOTE:** A harness may look as though it is properly routed through the pad, but it may not be routed correctly through the shell.)

**Display PPT 9-18.**

- Harness is twisted or incorrectly routed
- Harness is not placed on the child correctly

- Harness is frayed or damaged
- Metal adjuster not flush with the slot or out of position
- Crotch strap that is adjusted too long, or not through slot closest to the child



**Display PPT 9-19.**



Ask question and respond to comments.

**Q. Which part of this installation is an error?**

**Scenario:** A 2 ½-year-old, 30-pound child is in a combination seat with a snug harness. The latchplate is sliding and the retractor is switchable in the emergency locking retractor mode.

**Answer:** The retractor must be switched to the automatic locking retractor mode.



**Reference TG page 9-8.**



Conduct practice activity and debrief.

Now that you have learned about the 5 steps for forward-facing car seats, you will select and install a forward-facing car seat by a child's age, height, and weight.

1. Your group becomes the caregivers of a child with a specific age, height, and weight.
2. Select the correct car seat for the child, adjust the harness straps and angle, and determine the belt path.
3. Work together to install your car seat.
4. Document retractor and latchplate types and how your vehicle seat belt locks.
5. If you identify any errors, document them in the second and third charts in your TG.

[INSTRUCTOR NOTE]

[Form small groups. Assign each small group a child with age, height, and weight. At least one group should have a special needs situation.

1. 7-year-old, 48 inches, 62 pounds, unable to sit alone: Child needs high weight harness car seat to provide trunk control
2. 3-year-old, 39 inches, 37 pounds: Choose combination or 3-in-1 car seat since child will soon outgrow 40-pound limit harness

3. 20-month-old, 35 inches, 36 pounds: Forward-facing with harness, preferably a high weight harness car seat since child will likely be very young when 40 pounds
4. 5-year-old, 40 inches, 45 pounds, with behavior problems: Child needs high weight harness
5. 2-year-old, 38 inches, 34 pounds: Forward-facing with harness or high weight harness

Participants pick a forward-facing convertible or forward-facing-only car seat for their child. They will install a forward-facing convertible and forward-facing-only car seat using a lap-only seat belt, lap-and-shoulder seat belt, flexible and rigid lower anchor connectors, and a tether in the vehicle.

Set up a misuse of a child in a forward-facing car seat with:

- Harness straps coming from lowest set of slots below the child's shoulders in a convertible car seat.
- Lower anchor connectors routed through the rear-facing belt path.

**NOTE:** The misuse portion is **ONE** small part of the larger practice activity. The entire activity should be signed off.

This activity will take up to 30 minutes.

Walk around and provide feedback on participant selections and installations. Sign off on TG worksheets once you have checked their work.]

## 5. Best Practices for Caregivers



**Reference TG page 9-9.**



Reinforce how to explain best practices to caregivers.

There are key questions to answer related to forward-facing car seats.



**Display PPT 9-20 and 9-21.**

[INSTRUCTOR NOTE]

[Review the key questions.]

We will review what we learned about forward-facing car seats through a discussion of best practices.

1. Let's look at each of the questions in your TGs. We will discuss them as a group to help you prepare for conversations you will have with caregivers to educate them about forward-facing car seats.
2. Write down the correct answers in your TGs.

[INSTRUCTOR NOTE]

[Ask for different volunteers to answer the questions. Debrief the questions as a large group. If time allows, set up one or two scenarios as a role play.]

The correct answers follow:

1. My child is two years old and weighs 39 pounds. Which car seat should I buy?

**Answer:** Check the car seat manufacturer instructions. A car seat with a higher weight limit should be used until the child reaches the upper seat limits.

2. May I use this car seat with a side air bag in a back seat?

**Answer:** Check the car seat manufacturer instructions and vehicle owner's manual. Car seat manufacturers, in most cases, will refer to the vehicle owner's manual because they do not test their products with side air bags.

3. My child fits in the harness, but weighs 43 pounds. Can I keep using this car seat?

**Answer:** Check the car seat manufacturer instructions for weight limitations. A car seat that has a harness with a higher weight limit may need to be purchased.

4. Should I use LATCH or the seat belt?

**Answer:** Use the system that provides correct installation of the car seat. Do **NOT** use both systems together unless permitted by both the car seat and vehicle owner's manuals.

## 5. Do I have to use the tether?

**Answer:** Tethering a forward-facing car seat will reduce forward and side-to-side motion in a crash. It is **HIGHLY** recommended that a tether **ALWAYS** be used if allowed by the car seat manufacturer and vehicle owner's manual.

## 6. My child climbs out of the car seat. What should I do?

**Answer:** Check to be sure the harness is tight. Stop the vehicle until all are buckled. The child may be testing limits. A vest may be a suitable option.

**Display PPT 9-22.**

Introduce Loose LATCH and No Tether video (:16 seconds).

Now, let's look at two videos so you can see the dangers of misuse when installing seats. Watch what can happen when the lower anchor connectors are loose and a tether is not used. You can compare the difference in the side-by-side videos of proper use versus improper use.



Play Install a Forward-Facing Car Seat video.

**Display PPT 9-23.**

Introduce Incorrect Belt Routing and No Tether video (:16 seconds).

In this video we can see what happens when a forward-facing car seat is installed using the wrong belt path without attaching the tether.



Play Install a Forward-Facing Car Seat video.



Review common car seat harnessing errors.

As you can see from these videos, it is critical to install car seats and booster seats correctly to avoid serious consequences.

## 6. Forward-Facing Car Seat Errors and Consequences

**Reference TG page 9-10.**

[INSTRUCTOR NOTE]

[This progress check can be facilitated as a small group or pairs activity.]



Conduct progress check.

Let's apply what you have learned about children in forward-facing car seats.

1. Examine each photograph to determine if the forward-facing car seat is fitted properly.
2. If not fitted properly, identify the errors and consequences to the child.

[INSTRUCTOR NOTE]

[Give participants a couple minutes to identify the error in each photograph.

Display the photographs as you debrief the progress check. As you display each photograph, ask participants to identify the error and what they think the consequences might be for the child.

Make the following points if they do not come up in the discussion. Encourage participants to write down the correct answers in their TGs.]



**Display PPT 9-24.**



Debrief the progress check.

### Photograph #1

**Answer:**

- Error: No retainer clip is used.
- Consequences: The child could come out of the harness if it is loose and no retainer clip is used to position the harness over the shoulders prior to a crash. It is rare that a manufacturer does not require a retainer clip.

[INSTRUCTOR NOTE]

[Have participants discuss correct placement of the retainer clip. Place the retainer clip at armpit level.]



**Display PPT 9-25.**

### Photograph #2

**Answer:**

- Error: The car seat is installed in the center rear using the wrong lower anchors.
- Consequences: We are not sure of the consequences. However, it is **NOT** allowed, and has **NOT** been tested by the manufacturer.

[INSTRUCTOR NOTE]

[Have participants discuss the way to determine the correct installation of the car seat with LATCH. Check the vehicle owner's manual.]



Display PPT 9-26.

### Photograph #3

#### Answer:

- Error: A thick towel is placed under the forward-facing seat.
- Consequences: The towel placed under the seat could provide some slack in the belt system during a crash. The towel will compress causing the child to be too far forward and may result in additional crash forces.

[INSTRUCTOR NOTE]

[It looks like the car seat may be installed with a locking clip on the retractor side. If the locking clip fails in a crash, it could introduce additional slack and movement of the seat, creating dangerous crash forces for the child. The locking clip could also fly off and become a missile in the vehicle.

Have participants discuss the correct installation of a locking clip and placement of a noodle for forward-facing seat. The locking clip should be placed on the buckle side no more than 1 inch from the latchplate. Noodles or rolled towels should **NEVER** be placed under or behind a forward-facing car seat unless allowed by the manufacturer.]



Reference TG  
page 9-11.



Display PPT 9-27.

### Photograph #4

#### Answer:

- Error: One harness strap is twisted.
- Consequences: The child could come out of the harness and, if twisted, crash forces will **NOT** be spread properly.

[INSTRUCTOR NOTE]

[The child also may still be able to be rear-facing. Have participants discuss correct harness fit. The harness should be snug with no slack, positioned comfortably, and pass the pinch test.]



**Display PPT 9-28.**

### Photograph #5

#### Answer:

- Error: The forward-facing car seat is installed using lower anchor connectors through a rear-facing belt path.
- Consequences: The car seat is **NOT** intended to be installed in this way and it has **NOT** been tested by the manufacturer. The car seat could fail to perform in a crash.

[INSTRUCTOR NOTE]

[Have participants discuss how the correct belt path should be determined. Use the manufacturer instruction manual for the car seat and labels on the car seat.]



**Reference TG  
page 9-12.**

[INSTRUCTOR NOTE]

[The next practice activity can be facilitated as a small group or pairs activity. This activity is conducted in the classroom. Make the following preparations.

1. Set up 6 to 8 scenarios in the classroom for participants to identify misuse in small groups.
2. Use cards to show participants the age and weight of the child. Include car seat information so they can check for recalls, time permitting. Cards can include the following:

#### Scenario 1

Rear-facing-only car seat  
Child's weight below limit on seat  
Non-regulated insert  
Harness loose

#### Scenario 2

Forward-facing convertible car seat  
Child less than 1 year and 25 pounds  
Retainer clip too low

#### Scenario 3

Rear-facing-only car seat  
Child too heavy/tall for upper limits on seat

**Scenario 4**

Forward-facing convertible car seat  
 Harness straps below shoulders  
 Seat in full recline position

**Scenario 5**

Combination car seat (20 to 40 pounds with harness)  
 Child too big for harness  
 Harness straps twisted  
 Retainer clip too low

**Scenario 6**

Convertible car seat with higher harness weight  
 4-year-old child, 48 pounds  
 Harness straps below shoulders  
 Harness straps loose

Modifications can be made depending on car seats available.  
 Each scenario should have two to three errors.]



Conduct practice activity and debrief.

We have set up some scenarios around the room. Your group will examine each scenario and identify the misuse.

1. In small groups, carefully examine the information about the child's age, height, and weight. Also, check car seat labels that have been set up in the classroom.
2. Take notes on what you discover regarding car seat misuse for each scenario in your TGs.
3. Use the sample checklists provided to record your answers for at least one of the scenarios.

[INSTRUCTOR NOTE]

[After 10 minutes, have small groups quickly share what they found. Be sure they provide accurate and complete information.

All small groups may not finish the activity due to time constraints. They can listen carefully to the review.]

## 7. Progress Check and Summary



**Reference TG**  
**page 9-13.**

[INSTRUCTOR NOTE]

[Conduct the following progress check as a large group activity. Pose each question and ask for responses from the group. Add any information not provided by participants.]



Conduct progress check.

Let's review what we learned about forward-facing car seats through a final progress check. Write down correct responses in your TG.

1. How do you determine which harness slots to use for a forward-facing child?

**Answer:** Harness straps must be at or above the child's shoulders. Check the manufacturer's instruction manual for the car seat.

2. What is the correct way to secure a child in a forward-facing car seat?

**Answer:** The child must meet the height and weight requirements of the car seat. The car seat should be in an upright or semi-reclined position according to the car seat manufacturer instructions. Harness straps must be at or above the child's shoulders. The retainer clip should be at armpit level. Make harness straps snug and comfortable.

3. How do you find the correct belt path?

**Answer:** Follow the car seat manufacturer instructions. Locate the correct belt path arrow or label on the car seat.

4. How tightly should a forward-facing car seat be installed?

**Answer:** To test the installation, grab the car seat at or near the belt path and pull on the seat. There should be no more than 1 inch of side-to-side or forward movement at the belt path.

5. What is the benefit of using a tether?

**Answer:** A tether reduces the forward movement and rotation of the car seat. It also provides more stability for the car seat installation.

[INSTRUCTOR NOTE]

[Ask for two volunteers to install a forward-facing car seat. Have the pair explain what they are doing during the installation. The pair can ask for assistance from other participants if needed.]



Ask for questions and respond to comments.

**Q. *What remaining questions do you have about forward-facing car seats?***



Conclude module.

We applied NHTSA's 5 steps of selection, direction, location, installation, and harnessing with forward-facing car seats. You also learned how to explain best practices to caregivers and identify forward-facing car seat errors and consequences.

In this next module, we will learn about booster seats and seat belts for older children.

## MODULE 10 • Children in Booster Seats & Seat Belts

### Module Agenda: 35 Minutes

Topic	Suggested Timing
1. Introduction	2
2. How Booster Seats Protect Children <ul style="list-style-type: none"> <li>• Video: Booster Seat vs. Lap Belt</li> <li>• Video: Booster Seat vs. Lap-and-Shoulder Belt</li> </ul>	5
3. Types of Booster Seats	5
4. Install a Booster Seat <ul style="list-style-type: none"> <li>• Video: Install a Booster Seat</li> <li>• Practice Activity: Install a Booster Seat</li> </ul>	8
5. Best Practices on Booster Seats for Caregivers	2
6. Recommendations for Children in Seat Belts <ul style="list-style-type: none"> <li>• Video: Beyond Booster Seats</li> <li>• Progress Check: Identify Seat Belt Errors and Consequences</li> </ul>	10
7. Progress Check and Summary	3
TOTAL	35 Minutes

### Module Purpose

The purpose of this module is to prepare participants to assess whether belt-positioning booster seats and seat belts are being correctly used and teach caregivers about their proper use.

### Module Objectives

- Identify how booster seats protect children.
- Differentiate between types of booster seats.
- Install a booster seat.
- Explain recommendations for children in seat belts.
- Explain best practices about booster seats and seat belts to caregivers.

### Special Media, Materials, and Resources

- Booster seat to use inside the classroom
- Vehicle seat

### Video Titles and Times

- Booster Seat vs. Lap Belt, :05 seconds (PPT 10-5)
- Booster Seat vs. Lap-and-Shoulder Belt, :05 seconds (PPT 10-6)
- Install a Booster Seat, 1:51 minutes (PPT 10-10)
- Beyond Booster Seats, 1:05 minutes (PPT 10-13)

## Activities

- Practice Activity: Install a Booster Seat (may be done in the classroom)
- Progress Check: Identify Seat Belt Errors and Consequences
- Final Progress Check

## Preparation

- Review the videos for this module.
- Become familiar with a variety of booster seats.
- Prepare to conduct the practice activity and progress checks.
- Determine if you will conduct the practice activity in the classroom or in vehicles.
- Collect large dolls to use as 8 to 10-year-old children for the activity.

## 1. Introduction

[INSTRUCTOR NOTE]

[This chapter has fewer Instructor notes than other modules. Booster seats do not require actual installation and normally require few adjustments when being placed in the vehicle. The most important aspect of installation is for the seat belt to fit the child properly.]



**Display PPT 10-1.**



Present module purpose.

The purpose of this module is to prepare you to assess whether belt-positioning booster seats and seat belts are being correctly used and teach caregivers about their proper use.



**Display PPT 10-2.**



Present module objectives.

As a result of this module, you will be able to:

- Identify how booster seats protect children.
- Differentiate between types of booster seats.
- Install a booster seat.
- Explain recommendations for children in seat belts.
- Explain best practices about booster seats and seat belts to caregivers.

---

## 2. How Booster Seats Protect Children



**Reference TG page 10-1.**



**Display PPT 10-3.**



Introduce belt-positioning booster seats.

We use the term belt-positioning booster seat when working with caregivers. This helps to emphasize how lap-and-shoulder belts keep the booster seats in place and keep children safe. In this module, we will shorten the term to booster seats.

Let's first address how booster seats work.

- Booster seats and seat belts continue to protect children in the back seat of vehicles. Children should be in the back seat when under age 13 because it is safer.

- Children should be in booster seats until they are big enough to fit properly in a seat belt. This is the best practice, however, you will see children being moved into a seat belt at much younger ages because the caregivers believe the children are ready.
- Some booster seats are not tightly installed (locked in place) in the vehicle as with car seats.
- Booster seats are held in place by the child's weight and the vehicle's lap-and-shoulder belt.
  - These seats boost children up for correct seat belt fit.
  - Some new booster seats have lower anchor connectors to hold the seat in place when the child is not present.
- According to a Children's Hospital of Philadelphia study (CHOP, 2003), booster seats are more than twice as effective in reducing risk of injury when compared with seat belts alone.
- Skipping the booster seat step or "graduating" to a booster seat too early is common and unsafe.

[INSTRUCTOR NOTE]

[Children's Hospital of Philadelphia (CHOP) conducted a study entitled "Belt-Positioning Booster Seats and Reduction of Injury Risk Among Children in Vehicle Crashes" (Durbin, D.R., Elliott, M., et al. JAMA, June 4, 2003). This study found that belt-positioning booster seats are 59 percent more effective in reducing risk of injury when compared with seat belts alone.]



Ask question and respond to comments.

***Q. How do you think booster seats protect children?***



**Display PPT 10-4.**



Review how booster seats protect children.

Booster seats protect children by increasing crash protection from injuries. Booster seats:

- Are a middle step between a car seat with a harness and a seat belt to protect children who are too large for a car seat and too small for just the seat belt.

- Raise and position a child so the vehicle's lap-and-shoulder belt fit properly over the stronger parts of a child's body.
- The booster seat keeps the lap belt from causing injury to a child's abdomen and keeps the shoulder belt in proper position to give the child upper body protection.

Children should be moved to a booster seat only when they have outgrown the height or weight limit of their forward-facing car seat. Many booster seats have weight ranges starting at 40 pounds and ending at much higher limits.



**Display PPT 10-5.**



**Reference TG page 10-2.**



**Introduce Booster Seat vs. Lap Belt video (:05 seconds)**

The Booster Seat vs. Lap Belt video demonstrates a 6-year-old restrained in a booster seat vs. being restrained by a lap-belt-only seat belt.

- Watch for the yellow line that traces the movement of the child's head during the crash.
- Note the exaggerated movement of the child's head when restrained by just a lap belt and how much further forward it moves than the child restrained in the booster seat.
- Take notes in your TG as you watch the video.



**Play Booster Seat vs. Lap Belt video.**

[INSTRUCTOR NOTE]

[Play the video a second time if needed for participants to see the differences between a crash with the child in a booster seat vs. being restrained by a lap-belt-only seat belt.]



**Summarize the video.**

This video demonstrates why booster seats should **NOT** be used with lap-belt-only seat belts. Serious head and/or internal injuries can result from excessive head movement and jackknifing over the lap belt.



**Reference TG page 10-2.**



**Display PPT 10-6.**



Introduce Booster Seat vs. Lap-and-Shoulder Belt video (:05 seconds)

This next video, *Booster Seat vs. Lap-and-Shoulder Belt*, demonstrates the 6-year-old restrained in a booster seat vs. being restrained by a lap-and-shoulder belt.

- Again, the yellow line traces the movement of the child's head during the crash.
- Note how much further forward the child's head moves when restrained by the lap-and-shoulder belt in comparison to the child restrained by the booster seat.
- Take notes in your TG as you watch the video.



Play *Booster Seat vs. Lap-and-Shoulder Belt* video.

[INSTRUCTOR NOTE]

[Play the video a second time if needed for participants to see the differences between a crash with the child in a booster seat vs. being restrained by a lap-and-shoulder seat belt.]



Summarize the video.

The booster seat keeps the lap belt from causing injury to a child's abdomen by keeping it low on the upper hips and thighs. It also keeps the shoulder belt in proper position to give the child upper body protection.

Booster seats should only be used with lap-and-shoulder belts. Serious head or internal injuries can result from excessive head movement and jackknifing over the lap belt.

Booster seats:

- Must **NEVER** be used with just a lap belt.
- Are **NEVER** used on airplanes.
- May fit children up to 80 or 100+ pounds or more depending on specific models.

**ALWAYS** consult the booster seat owner's manual for the weight ranges and correct use of booster seats.

### 3. Types of Booster Seats



**Reference TG**  
page 10-3.



Introduce different types of booster seats.

We have talked about why booster seats are important and how they provide protection for children. Let's now review two types of booster seats: high-back and backless.

**Display PPT 10-7.**

Review high-back booster seats.

High-back booster seats are recommended for vehicles that have a low seat back or do not have a head restraint. A low seat back does not offer any support for a child's head.

- High-back booster seats provide head, neck, and back support for the child.
- When correctly positioned on a booster seat, vehicle seat belts fit over the shoulder and hips like an adult in a seat belt.
- Use only shoulder belt positioners provided with the booster seat.
- Some high-back booster seats can only be used with vehicle head restraints behind them.
- Some high-back booster seats can be used as backless booster seats by removing the back.

**Display PPT 10-8.**

Review how combination car seats are converted into high-back booster seats.

When a child has outgrown the height or weight limits of the internal harness of a combination car seat, the harness can be stored after removal and the seat can be used as a high-back booster.

Caregivers must carefully follow the manufacturer instructions for changing the combination car seat to a booster seat. Some seats have bases that also need to be removed to use as a booster seat.

**Display PPT 10-9.**

Review backless booster seats.

With a backless booster seat, the child uses the vehicle's seat back or built-in head restraint for head, neck, and back support.

- Use only with a lap-and-shoulder belt in a vehicle seating position with head restraints.
- Most backless booster seats come with a shoulder belt positioner to adjust the shoulder belt height on the child.

- The child's ears should **NOT** be above the back of the vehicle seat or top of head restraint.



**Reference TG**  
page 10-4.



Review booster seats in the front seat.

If a child in a booster seat must ride in the front seat:

- The child must be correctly restrained in a booster seat using the vehicle's lap-and-shoulder belt.
- The vehicle seat must be moved back as far as possible from the dashboard.



Ask question and respond to comments.

***Q. What questions do you have about the types of booster seats?***

#### 4. Install a Booster Seat



**Reference TG**  
page 10-4.



**Display PPT 10-10.**



Introduce Install a Booster Seat video (1:51 minutes).

This next video, Install a Booster Seat, will take you through 5 steps for correct installation.

- Watch carefully for the installation steps.
- Take notes in your TG as you watch the video.



Play the Install a Booster Seat video.



Conclude topic.

Even if the child is not present, booster seats should be secured in the vehicle at all times. When not buckled, the booster seat may become a projectile or object that can be tossed around the vehicle causing injury to vehicle occupants during a crash or sudden stop.

Some forward-facing combination seats may allow for connecting the child restraint to the vehicle using LATCH even when used as a booster seat. However, some high-back boosters can only be used with a seat belt.

Booster seat use may be a hard sell to the child, especially if the child was prematurely transitioned to a seat belt too early.

[INSTRUCTOR NOTE]

[Provide a high-back and backless booster seat for each set of partners.]



**Reference TG**  
**page 10-5.**



Conduct practice activity and debrief.

Now that we have learned the steps to install a booster seat, each of you will practice installing a high-back and backless booster seat with a partner.

1. Read the manufacturer's instructions to see how lap-and-shoulder belts are supposed to be positioned over and around the child and booster seat.
2. Focus on these questions as you practice your installations.
  - Is the booster seat flat on the back seat of the vehicle?
  - Are there vehicle seat shoulder belt guides?
  - Might the vehicle head restraint need to be adjusted?
  - Is the booster seat height adjustable?

[INSTRUCTOR NOTE]

[Give 5 minutes for this practice activity. Walk around and provide feedback on their installations.]

5. Best Practices on Booster Seats for Caregivers



**Reference TG**  
**page 10-5.**



Reinforce how to explain best practices to caregivers.

There are key questions to answer related to booster seats.



**Display PPT 10-11.**

[INSTRUCTOR NOTE]

[Review the key questions.]

Let's now practice explaining how to install a booster seat to caregivers.

1. I will ask a question as though I am a caregiver.
2. Your task is to come up with the answer.
3. You can also build on each other's answers.

[INSTRUCTOR NOTE]

[Ensure that the following ideas are discussed. Have participants write down the correct responses in their TGs.]

1. Why is it important to use booster seats?

**Answer:**

- Increases crash protection from injuries.
- Protects children who are too large for a car seat and too small for a seat belt.
- Booster seats are more than twice as effective in reducing risk of injury when compared with seat belts alone.

2. When should a child move to a booster seat?

**Answer:** Children should move to a booster seat when they have reached the maximum weight or height limits of their forward-facing car seat.

3. Is there a weight and/or height requirement for a booster seat?

**Answer:** While there is not a specific weight (i.e. number of pounds) or height requirement, children should be moved to a belt-positioning booster seat only when they have outgrown the height or weight limit of their forward-facing car seat.

4. What is the proper placement of the lap-and-shoulder belt?

**Answer:** For a seat belt to fit, the lap belt must lie snugly across the upper thighs – **NOT** the stomach. The shoulder belt should lie snug across the shoulder and chest and **NOT** cross the neck or face.]



Ask question and respond to comments.

***Q. What remaining questions do you have about booster seats and your role in explaining best practices to caregivers?***

---

6. Recommendations for Children in Seat Belts



**Reference TG**  
**page 10-6.**

**Display PPT 10-12.**

Review recommendations for children in seat belts.

Seat belts can be used when a child is:

- Tall enough to sit without slouching.
- Able to keep his or her back against the vehicle seat.
- Able to keep his or her knees naturally bent over the edge of the vehicle seat.
- Able to keep his or her feet flat on the floor.

The lap belt must lie snugly across the upper thighs – **NOT** the stomach. The shoulder belt should lie snug across the shoulder and chest and **NOT** cross the neck or face.

- Children must stay in position for the entire ride.
- Children should **NEVER** have the shoulder belt under their arm or behind their back. This can cause severe injuries in a crash. If the seat belt does not fit properly, the child should use a booster seat.
- Children under 13 should ride in the back seat. If a child is in the front seat, the vehicle seat must be moved back as far as possible from the dashboard.
- They should **NOT** lean or rest against air bags, including side air bags.



Reference TG page 10-7.

**Display PPT 10-13.**

Introduce Beyond Booster Seats video (1:05 minutes).

This next video, Beyond Booster Seats, demonstrates proper seat belt fit.

- Watch carefully for seat belt fit tips.
- Take notes in your TG as you watch the video.



Play the Beyond Booster Seats video.

**Display PPT 10-14.**

Conclude topic.

Adults are important role models for the safe behavior of children.

With carpools, emphasize to caregivers that they should make certain that booster seats and seat belts are used correctly every time children ride in a vehicle.

While lap belts are not ideal, they are better than no protection at all!



**Reference TG page 10-8.**

[INSTRUCTOR NOTE]

[This progress check can be facilitated as a small group or pairs activity.]



Conduct a progress check.

Let's apply what you have learned about children and seat belts.

1. Examine each photograph to determine if the seat belt is fitted properly.
2. If not fitted properly, identify the errors along with the consequences for the child

[INSTRUCTOR NOTE]

[Give participants a couple minutes to identify the error in each photograph.

Display the photographs as you debrief the progress check. As you display each photograph, ask participants to identify the error and what they think the consequences might be for the child.

Make the following points if they do not come up in the discussion. Encourage participants to write down the correct answers in their TGs.]



**Display PPT 10-15.**



Debrief the progress check.

### **Photograph #1**

#### **Answer:**

- Error: The child is too small and the shoulder belt is resting on the child's neck.
- Consequences: It may cause spinal and stomach injuries.



**Display PPT 10-16.**

**Photograph #2****Answer:**

- Error: The belt is too loose because the child has a backpack on. The lap belt is also too high.
- Consequences: It increases forward movement and decreases belt effectiveness. It also allows the child to slide out of the position that protects against crash forces and may cause spinal and stomach injuries.



**Display PPT 10-17.**

**Photograph #3****Answer:**

- Error: The shoulder belt is under the child's arm.
- Consequences: It increases head and neck movement, applies force to the rib cage and can cause serious injury, and creates a habit that can continue in later life.



**Reference TG  
page 10-9.**



**Display PPT 10-18.**

**Photograph #4****Answer:**

- Error: The shoulder belt is behind the child's back.
- Consequences: This position prevents the shoulder-and-lap belt parts from working together well, affects the proper fit of the lap belt, and does **NOT** provide upper body protection.



**Display PPT 10-19.**

**Photograph #5****Answer:**

- Error: The seat belt should **NOT** be shared.
- Consequences. Testing has not been done on shared belts and occupants will collide.



**Display PPT 10-20.**



**Reference TG  
page 10-9.**



Describe seat belt syndrome.

**Seat Belt Syndrome (SBS)** describes injuries that doctors see as a result of occupants wearing only a lap belt in collisions involving only the front of a vehicle. These injuries usually result when the occupant's body folds in half over the lap belt during a collision.

- When this happens, the lap belt applies extreme force along the occupant's pelvis to the mid-section.
- Securing only the waist without restraining the upper body can cause serious head and neck injuries after a head strike.

Injuries typically include:

- Severe stomach injuries.
- Fractures of the lumbar spine.
- Serious head and facial injuries.



**Reference TG  
page 10-10.**



Reinforce how to explain best practices to caregivers.

There are key questions to answer related to seat belts.



**Display PPT 10-21  
and 10-22.**

[INSTRUCTOR NOTE]

[Review the key questions.]

Explain and demonstrate best practices to caregivers.

Follow these guidelines for a proper seat belt fit.

1. The lap belt must lie snugly across the upper thighs – **NOT** the stomach.
2. The shoulder belt should lie snug across the shoulder and chest and **NOT** cross the neck or face.

## 7. Progress Check and Summary



**Reference TG**  
page 10-10.

[INSTRUCTOR NOTE]

[Conduct the following progress check as a large group activity.]

Ask for two volunteers to do a role play – one to play the caregiver and other the CPS Technician.

Give participant a couple of minutes for the role play.]



Conduct a progress check.

Let's practice responding to a scenario that you may encounter in the field.

The caregiver tells you the following:

*My child has used a seat belt since he was 4 years old. What should I do now that he is 6 years old?*

- What is the proper seat belt use for this situation?

While you listen to the role play, write down ideas for how to respond to the situation in your TGs.

[INSTRUCTOR NOTE]

[Make the following points if they do not come up in the role-play.]

1. What is the proper seat belt use for this situation?

**Answer:** Most children under 8 are not big enough to use an adult seat belt.

2. When can a child move to a seat belt?

**Answer:** Seat belts can be used when a child is:

- Tall enough to sit without slouching.
- Able to keep his or her back against the vehicle seat.
- Able to keep his or her knees naturally bent over the edge of the vehicle seat.
- Able to keep his or her feet flat on the floor.



Ask question and respond to comments.

***Q. What remaining questions do you have about children in booster seats and seat belts and your role in explaining best practices to caregivers?***



Conclude module.

The purpose of this module was to prepare you to assess whether belt-positioning booster seats and seat belts are being correctly used and to teach caregivers about their proper use. There is an additional topic to cover before we move on to more installation and communication activities – child passenger safety in other vehicles.

## Skills Assessment #2: Select and Install Car Seats and Belt-Positioning Booster Seats

### INTRODUCTION

Skills Assessment #2: Select and Install Car Seats and Belt-Positioning Booster Seats addresses knowledge and skills taught in Modules 7 to 10.

### Objective

Technician candidates demonstrate their ability to select and adjust the harness on four car seats and correctly secure an additional five car seats/booster seats.

### Time for Completion

The recommended time limit for Skills Assessment #2 is 105 minutes.

### PREPARATION

1. This assessment can be done in two parts, with the selection and harnessing inside and installation outside, depending on the availability of car seats and booster seats for use during assessments. Place car seats and booster seats for this assessment in a central location. Participants will select seats from this designated location and return them after each scenario.
2. Assign a seating position for each scenario allowing for use of a variety of belt systems.
3. One scenario **MUST** include using LATCH to secure a forward-facing seat. Do not use lower anchor connectors more than one time (except tether use with forward-facing car seat and seat belt).
4. One installation **MUST** include using a locking clip. This may be a separate installation in the classroom using a mock seat, with the approval of the Instructor team. If the mock seat option is used, write in "mock" for the Scenario # with the locking clip verification on the participant's form. A lock-off may not be substituted for a locking clip.
5. Selection and installation of each car seat and booster seat should follow manufacturer guidelines and instructions. Tethers must be used for a forward-facing car seat if it is available on the car seat and if the tether anchor is available for the assigned seating position and manufacturer-approved.
6. Decisions about car seat selection and harness adjustment will be made based on the age and/or weight of children listed in the scenarios, not on size of dolls or stuffed animals that might be used to represent children in the scenarios. Use of dolls, dummies, or stuffed animals to represent children is optional.

### ADMINISTRATION GUIDELINES

1. Review all instructions for Skills Assessment #2 with the class prior to conducting it (on next page).
2. No talking among participants is allowed during the assessment process.
3. Have participants complete all information lines on the forms before the assessment begins. Do not sign a form without a specific participant name filled in at the top.
4. Participants may refer to any or all of the course resources or vehicle owner's manuals to complete this assessment. Strongly encourage participants to use the TG and checklist. Tell participants that finding the page numbers in owner's manuals by looking in the index is not only permissible, but also recommended.

National Child Passenger Safety Certification Training Program  
Skills Assessment #2: Select and Install Car Seats and Belt-Positioning Booster Seats  
(continued)

5. Mark as failed if any of the answers are incorrect. Encourage participant to find the answers in their TG and practice (remediate) with an Instructor outside of the assessment environment.
6. Should a participant need attempt #3, direct him/her to stop and review the TG again. An Instructor who has not scored that person on that scenario will score the third attempt.
7. Any Instructor who places their ID# on a skills assessment form must provide a signature and Instructor number on the Skills Assessment Instructor Log form for that assessment.
8. Do not provide additional information to participants other than a clarification of instructions.
9. A time limit to complete repeated attempts may be determined at the discretion of the Lead Instructor.

#### PARTICIPANT INSTRUCTIONS

Complete Skills Assessment #2 individually. Correctly select and adjust the harness on car seats and correctly install them in vehicles.

1. Stand at least 10 feet away from a station while waiting your turn.
2. For scenarios 1 to 4, select and adjust the harness on the car seats based on the child's height and weight. Answer sections A to C per manufacturer instructions. Select a different car seat (no repeats) for each one. Be prepared to demonstrate tightening and loosening the harness for the Instructor and explain how to adjust the harness height.
3. For Scenarios 5 to 10, correctly secure the car seat or booster seat. Use the designated vehicles and seating positions. Each scenario except 10 requires a separate installation.
4. Answer **ALL** sections for each scenario correctly to pass. You **MUST** pass each scenario to pass the Skills Assessment #2.
  - You have up to three attempts to pass each scenario. Instructors will sign off on each attempt.
  - If you need a third attempt to pass, stop and review your TG. A third attempt to pass will be signed off on by an Instructor who has not already scored you for that scenario.
  - You **MUST** be able to tell the Instructor how you arrived at each selection after each scenario.
5. Although we promote best practice, you must follow manufacturer instructions to pass. For example, best practice is to keep a child rear-facing as long as possible. However, if scenarios are within the height and weight limits of the car seat, the scenario is correct.

## MODULE 11 • CPS in Other Vehicles

### Module Agenda: 15 Minutes

Topic	Suggested Timing
1. Introduction	2
2. Appropriate Car Seats and Booster Seats by Vehicle Type	10
3. Progress Check and Summary	3
TOTAL	15 Minutes

#### Module Purpose

The purpose of this module is to provide an introduction to car seats and booster seats in other types of vehicles. You will address pickup trucks, 15-passenger vans, school buses, airplanes, and emergency vehicles.

#### Module Objectives

- Identify appropriate car seats and booster seats by vehicle type.
- Explain current recommendations for car seats and booster seats in other vehicles.

#### Special Media, Materials, and Resources

- Samples of harnesses and vests
- Guideline for the Safe Transportation of Pre-School Age Children in School Buses (NCPSB website at [www.cpsboard.org](http://www.cpsboard.org))
- AAP School Transportation Safety (NCPSB website at [www.cpsboard.org](http://www.cpsboard.org))
- AAP Restraint Use on Aircraft (NCPSB website at [www.cpsboard.org](http://www.cpsboard.org))
- Crash Protection for Children in Ambulances (NCPSB website at [www.cpsboard.org](http://www.cpsboard.org))
- Recommendations for the Safe Transport of Children in Emergency Ground Ambulances (National Association of State EMS Officials at [www.nasemso.org](http://www.nasemso.org) and Pediatric Emergency Care Council at [www.nasemso.org/Councils/PEDS/index.asp](http://www.nasemso.org/Councils/PEDS/index.asp))

#### Video Titles and Times

None

#### Activities

Final Progress Check

#### Preparation

Prepare to conduct the final progress check.

## 1. Introduction



### Display PPT 11-1.



Present module purpose.

The purpose of this module is to provide an introduction to car seats and booster seats in other types of vehicles. We will address pickup trucks, 15-passenger vans, school buses, airplanes, and emergency vehicles.



### Display PPT 11-2.



Present module objectives.

As a result of this module, you will be able to:

- Identify appropriate car seats and booster seats by vehicle type.
- Explain current recommendations for car seats and booster seats in other vehicles.

---

## 2. Appropriate Car Seats and Booster Seats by Vehicle Type



Present an introduction to car seats and booster seats by vehicle type.

Vehicle design affects the correct selection and use of car seats and booster seats. CPS Technicians must understand **how** vehicle design impacts the correct use of car seats and booster seats in all modes of transportation.



Reference TG page 11-1.



### Display PPT 11-3.



Review car seat and booster seat use in pickup trucks.

Occupant restraint standards for pickup trucks are the same as for passenger cars.

- Car seats and booster seats are crash tested on forward-facing vehicle seats and cannot be secured on a pickup truck's side-facing jump seat.
- Undersized (or small) rear bench seats may not allow enough space between front and rear-seating areas to achieve the correct recline angle for a rear-facing car seat.



### Display PPT 11-4.

- As with car seats and booster seats in passenger cars, according to most manufacturers, a car seat in a pickup truck must have 80 percent of the base supported by the vehicle seat with no more than a 20 percent overhang on the front edge of the vehicle seat. Some models require 100 percent of the car seat to be on the vehicle seat and some have indicators (lines) on the seat to show how much must be placed on it.
- Cargo areas are **NOT** designed for passenger seating under any circumstances. Children and adults can be easily thrown from cargo areas at relatively slow speeds as a result of a sharp turn.
- Only manufacturer approved seating positions can be used (check the owner's manual for recommendations on cargo areas and also center seating positions).

[INSTRUCTOR NOTE]

[Mention that some regular-cab and extended-cab pickup trucks with frontal passenger air bags have on-off switches for the frontal passenger air bag.]



#### Display PPT 11-5.



Review car seat and booster seat use in 15-passenger vans.

Many childcare providers or schools use 15-passenger vans to transport multiple children. At times, they overload the vehicle. Fully loaded, 15-passenger vans cause the center of gravity to shift rearward and upward, increasing the likelihood of a rollover.

**NEVER** load the roof. This cargo will be above the center of gravity of the vehicle and will increase the likelihood of a rollover.



#### Reference TG page 11-2.



Review the importance of having experienced drivers.

It is important that the van be operated by experienced drivers who should:

- Understand and be familiar with the handling characteristics of their vans, especially when fully loaded.
- Load the van front to back in order to balance and distribute the weight.



Review what manufacturers do to reduce the risk of rollovers.

To reduce the risk of 15-passenger van rollovers, manufacturers:

- Widen the vehicle and/or reduce its height.
- Impose structural standards for school buses.
- Equip them with laminated side windows.
- Provide emergency exits.
- Equip them with extra signs and signals.
- Require a commercial driver's license.
- Equip them with dual rear wheels.



Reference TG page 11-2.



Display PPT 11-6.



Review car seat and booster seat use in school buses.

School bus transportation is the safest form of ground transportation. School buses are nearly eight times safer than passenger vehicles.

- Buses are larger and heavier than most other vehicles. Crash forces are distributed throughout the vehicle differently and are also experienced by the occupants differently.



Display PPT 11-7.

- Passenger seating and crash protection, known as “**compartmentalization**,” is required on school buses.
  - Seats on school buses must have flexible, energy-absorbent, high seat backs (a minimum of 24 inches from the hip reference point).
  - The combination of energy-absorbent seat backs and narrow spacing creates a compartment within which each occupant is confined in a crash.
- Small school buses (weighing less than 10,000 pounds) are required to have seat belts. Lower anchors are also required in at least two seating positions. Tether anchors are **NOT** required in school buses.

[INSTRUCTOR NOTE]

[FMVSS 225, “School Bus Passenger Seating and Crash Protection,” does **NOT** require the installation of seat belts (other than for the driver) on new school buses with gross vehicle weight ratings (GVWRs) of greater than 10,000 pounds, the standard large school bus. Buses with GVWRs of 10,000 pounds or less are required to have seat belts for all passenger positions, but the larger buses rely on strong, well-padded, energy absorbing seats and higher seat backs to compartmentalize and protect passengers during a crash.

Current school bus occupant protection rules are based on compartmentalization. School bus seats made since April 1, 1977, meet the compartmentalization requirement.]



Reference TG  
page 11-3.



Display PPT 11-8.



Review NHTSA school bus safety recommendations.

Let’s review NHTSA recommendations for infants and preschool age children on buses.

- Preschool age children should be properly restrained in car seats meeting FMVSS 213 when they ride on a school bus.
- Retrofitting seat belts on existing school bus seats is possible only when manufacturer instructions are followed.
- Tethers are **NOT** commonly used on school buses. One exception involves certain special needs car seats that require the use of a tether.
- For more information, go to <http://www.nhtsa.gov/School-Buses>.

[INSTRUCTOR NOTE]

[Some new buses can be ordered with lap-and-shoulder belts. School buses can also be ordered with lower anchors. Anytime a retrofit is performed, it is critical that only parts provided by the manufacturer are used and that the manufacturer instructions are followed to satisfy FMVSS.]



Reference TG  
page 11-3.



Display PPT 11-9.



Review child passenger safety options on school buses.

An Individual Education Plan (IEP) is for children between the ages of 3 and 21 and is developed to support each child's special needs. The transportation needs of the child are a related service that should be included in the IEP.

Children under age 3 who have special health care needs receive the same kind of services through an Individual Family Service Plan (IFSP) that considers the family needs of the child as they receive early intervention services and therapy.

There are several options for children who need car seats on a school bus:

- Integrated car seats
- Conventional car seats
- Harnesses and vests
- Wheeled transportation devices

In addition, safety vests are options for children 20 pounds or more when other car seats will not meet the child's needs.



**Reference TG**  
page 11-4.



**Display PPT 11-10.**



Review car seat and booster seat use on airplanes.

The Department of Transportation's Federal Aviation Administration (FAA) encourages, but does **NOT** require, the use of car seats on airplanes for children under the age of 2.

- Airlines currently allow children under the age of 2 to fly free of charge as lap children.
  - Some airlines offer discounts so caregivers can be guaranteed their children can travel in a car seat.
  - Caregivers should always verify car seat policies with the airline on which they are traveling.
- Turbulence (rough flying) can happen with little or no warning. The safest place for children during turbulence or in an emergency is in an approved car seat.
- Any car seat used on an airplane must have a label stating it is certified for aircraft use.



### Display PPT 11-11.

- Use a rear-facing car seat for infants younger than 1 and less than 20 pounds.
- Use a forward-facing car seat for children weighing 20 to 40 pounds.
- Use the airplane seat belt for children over 40 pounds.

The FAA has approved the AmSafe Aviation CARES device. The FAA recently established guidelines for the use of this restraint system on planes only – **NOT** in vehicles.

- CARES uses an additional belt and shoulder harness that goes around the seat back and attaches to the passenger lap belt.
- It is designed for children weighing between 22 and 44 pounds who are less than 40 inches and can sit unassisted.

[INSTRUCTOR NOTE]

[In August 2005, the FAA announced it would **NOT** require the use of car seats on airplanes. The requirement would have resulted in the need for families to purchase additional airline tickets for children making it cost prohibitive to fly, and instead drive, in some cases. The decision was based on current FAA and NHTSA studies showing that such a requirement could result in another 13 to 42 added family member deaths in highway crashes over 10 years, if requiring extra airline tickets forced some families to drive.

All booster seats and vest systems cannot be used as of September 1996 regardless of labeling.]



### Reference TG page 11-5.



Review car seats and booster seats in emergency vehicles.

Emergency vehicles may have side or rear-facing vehicle seats. There are no standards for crash testing a car seat or booster seat on a side-facing or rear-facing vehicle seat. A car seat or booster seat should **NOT** be used in these seating positions.

- Rear-facing car seats are made to face backward on a forward-facing vehicle seat. They **CANNOT** be safely installed on a rear-facing ambulance seat.

- If possible, non-patient children in an emergency situation should be transported in another vehicle. Car seats and booster seats should be secured with seat belts anchored only in locations considered safe in a crash.
- Emergency services should develop and follow guidelines to transport children safely.
- A car seat or booster seat should **NOT** be installed in police vehicles if a prisoner screen is present. The screen does not allow enough space for the forward movement of the child's head. Plastic or prisoner seats are also not compatible with car seats and booster seats and **CANNOT** be used.
- In cases where police equipment is present and correct installation is not possible, police officers will need to find another way to transport the child.

**NOTE:** It is important to secure the EMS provider and equipment. Children are only as safe as the environment around them. Flying unrestrained medics and equipment can be extremely hazardous.

[INSTRUCTOR NOTE]

[Encourage participants who work in a hospital, police department or EMS situation to work with their supervisors to research, develop, and implement a child transportation plan. Refer participants to the NCPSB website for policy recommendations.

Encourage participants to use the resources located on the NCPSB and other websites (and listed in TGs).

If a police officer is in class, mention that the International Association of Chiefs of Police (IACP) has model occupant protection policies for agencies on the use and enforcement of seat belts for officers and transport of others in law enforcement vehicles (including car seats). This policy is available at [www.theiacp.org](http://www.theiacp.org).]

---

3. Progress Check and Summary



**Reference TG**  
page 11-6.

[INSTRUCTOR NOTE]



Conduct progress check.

[Conduct the following progress check as a large group activity. Pose each question and ask for responses from the group. Add any information not provided by participants.]

Let's review what we learned in Module 11 through a progress check. Write down correct responses in your TG.

1. What are some factors to consider when selecting a car seat or booster seat for a pickup truck?

**Answer:**

- The occupant restraint standards are the same for pickup trucks as for passenger cars.
- Undersized or small rear bench seats may not allow enough space between front and rear-seating areas to achieve the correct recline angle for a rear-facing car seat.
- Cargo areas are **NOT** designed for passenger seating under any circumstances. Children and adults can be easily thrown from cargo areas at relatively slow speeds as a result of a sharp turn.
- Only manufacturer approved seating positions can be used (check the owner's manual for recommendations on cargo areas and also center seating positions).

2. What are some factors to consider when selecting a car seat or booster seat for a school bus?

**Answer:**

- Preschool age children should be correctly restrained in car seats and booster seats meeting FMVSS 213 when they ride on a school bus.
- Small school buses (weighing less than 10,000 pounds) are required to have seat belts. Lower anchors are also required in at least two seating positions. Tether anchors are **NOT** required in school buses.
- Tethers are **NOT** generally used on school buses.

3. What are some factors to consider when selecting a car seat to use on an airplane?

**Answer:**

- Any car seat on an airplane must have a label stating it is certified for aircraft use.
- Turbulence (rough flying) can happen with little or no warning. The safest place for children during turbulence or in an emergency is in an approved car seat.

4. What are some factors to consider when selecting a car seat or booster seat for an emergency vehicle?

**Answer:**

- There are no standards for crash testing a car seat and booster seat on a side-facing or rear-facing vehicle seat. Car seats and booster seats should **NOT** be used in these seating positions.
- Rear-facing car seats are made to face backward on a forward-facing vehicle seat. They cannot be safely installed on a rear-facing ambulance seat.
- A car seat should **NOT** be installed in police vehicles if a prisoner screen or other restrictive equipment is present.



Conclude module.

We have covered child passenger safety in other types of vehicles/modes of transportation, along with all types of car seats and booster seats. Let's apply what you have learned up to this point in the course in this next module where you will practice car seat and booster seat installations along with how to effectively communicate with caregivers.

## MODULE 12 • Installation & Communication

### Module Agenda: 70 Minutes

Topic	Suggested Timing
1. Introduction	2
2. Seating Positions and Restraints <ul style="list-style-type: none"> <li>• Practice Activity: Identify Safe Seating Arrangements, Part 1</li> <li>• Practice Activity: Identify Safe Seating Arrangements, Part 2</li> </ul>	25
3. Effective Communication With Caregivers <ul style="list-style-type: none"> <li>• Practice Activity: Conduct a Seat Check</li> </ul>	40
4. Progress Check and Summary	3
TOTAL	70 Minutes

#### Module Purpose

In this module, participants will apply what they have learned throughout this course by practicing how to determine safe seating positions for two families. Effective communication skills with caregivers will also be addressed.

#### Module Objectives

- Determine the safest seating positions and appropriate restraints for all occupants.
- Communicate effectively with caregivers.

#### Special Media, Materials, and Resources

CPS Check Form (Instructor DVD)

#### Video Titles and Times

None

#### Activities

- Practice Activity: Identify Safe Seating Arrangements, Part 1
- Practice Activity: Identify Safe Seating Arrangements, Part 2
- Practice Activity: Conduct a Seat Check
- Final Progress Check

#### Preparation

- Prepare to conduct the practice activities and progress check.
- Set up several scenarios in vehicles depicting the correct and incorrect use of car seats and booster seats. Possible scenarios:

##### **Scenario 1**

Child: Newborn, 4 pounds

Caregiver: Leaving hospital with new baby

Seat: Rear-facing-only

Location: Second row (any position)  
Seat not tight using seat belt or lower connectors (more than 1 inch movement)  
Child's weight below limit on seat (birth to newborn)  
Non-regulated insert behind child  
Harnesses loose

### **Scenario 2**

Child: 7-month-old, 25 pounds  
Caregiver: Wants the child to face forward so she can see the child  
Seat: Convertible seat, forward-facing  
Location: Second row center seat  
Seat installed forward-facing but still in rear-facing recline angle  
Retainer clip too low

### **Scenario 3**

Child: 17-month-old  
Caregiver: Wants to keep the child rear-facing as long as possible  
Seat: Rear-facing-only, correctly installed (seat belt or lower connectors)  
Location: Second row (any position)  
Child too heavy/tall for upper limits on rear-facing-only seat

### **Scenario 4**

Child: 3-year-old, 37 pounds  
Seat: Combination seat, forward-facing  
Location: Second row (any position)  
Harness straps below shoulders, lowest slots  
Seat installed using both seat belt and lower connectors, no tether

### **Scenario 5**

Child: 4-year-old, 47 pounds  
Caregiver: Thinks harness straps are a hassle, states children at school are in boosters or seat belts  
Seat: Combination seat, forward-facing  
Location: Front passenger seat  
Harness straps removed, using as belt-positioning booster seat  
Seat installed using seat belt (across child as booster)

### **Scenario 6**

Child: 5-year-old, 51 pounds  
Caregiver: Knows the child is safer in a harness, has two other children, 2-year-old and 8-year-old (not present)  
Seat: Combination (20 to 40 pounds with harness)  
Location: Second row (any position)  
Seat installed using seat belt with locking clip on wrong side of seat  
Child too big for harness  
Harness straps twisted and retainer clip too low

### **Scenario 7**

Child: 4-year-old child, 48 pounds  
Seat: Convertible with higher harness weight  
Location: Second row center seat  
Installed using LATCH but loose (both lower connectors and tether anchor)  
Lower anchors/tether anchor weight limits unknown  
Harness straps at shoulders and too loose

## 1. Introduction



### Display PPT 12-1.



Present module purpose.

In this module, you will apply what you have learned throughout this course by practicing how to determine safe seating positions for two families. Effective communication skills with caregivers will also be addressed.



Reference TG page 12-1.



### Display PPT 12-2.



Present module objectives.

As a result of this module, you will be able to:

- Determine the safest seating positions and appropriate restraints for all occupants.
- Communicate effectively with caregivers.

---

## 2. Seating Positions and Restraints



Ask question and respond to comments.

**Q. Which vehicle seating position do you think is the safest?**

A. The safest vehicle seating position varies by many factors such as the occupant's age, weight, height, type of car seat, type of vehicle seat, and seat belt system.



Reference TG page 12-1.



### Display PPT 12-3.



Review vehicle seating positions and safety.

Let's discuss each vehicle seating position.

- **Front seat:** The front seat is near the windshield and front air bag. It is closest to front impact crash and has more safety features.
- **Second row driver side outboard seat:** With this seating position, the passenger is on the closest side to oncoming traffic, typically on the traffic side when parking on a street and near the side air bags, if present. It is not easy to glance at a child in this seat. A side impact crash could affect this seat.

- **Second row passenger side outboard seat:** This seating position typically on the curbside when parking on a street and near the side air bags, if present.
- **Second row center seat:** This seat is furthest from impact in any direction and away from air bags.

There is no safety difference between the second row driver side and second row passenger side.

While the back seat middle may be the safest position for a child, it may not always be possible for caregivers to use this seat. Some of these reasons include:

- Vehicle does not have a center seat (captain's chairs, bucket seats)
- Vehicle does not allow car seats or booster seats to be installed in the center
- Caregiver has more than one child and only one can be placed in the center
- Caregiver is transporting two children and the car seats or booster seats do not fit side-by-side
- Children may need to be kept separate from each other
- Caregiver has physical limitations with reaching the center
- Difficulty with tightly installing the car seat in the center resulting in more than 1 inch of movement when checked at the belt path
- Center seat belt is broken
- Desire to use LATCH, but concerned that vehicle manufacturer does not allow the car seat to be installed in the second row center

[INSTRUCTOR NOTE]

[While it is common for LATCH to not be approved for use in the back seat middle position, it does not mean a car seat cannot be installed in that position. Caregivers do have the option of using the seat belt with the car seat.

Neither LATCH nor the seat belt is safer. The caregiver will need to decide. Correctly installing the car seat with LATCH or the seat belt is equally safe.]



**Reference TG  
page 12-1.**



**Display PPT 12-4.**



Review additional seating considerations.

When working with caregivers on seating positions, discuss additional seating considerations.

- When there are multiple children, typically putting the child needing the most protection (such as youngest, and special needs) in the center seat is favored.
- Caregivers may want to keep children away from the doors and windows.
- The rear-facing child may fit better in the rear center seat if the recline of the car seat pushes the front seats too far forward.



**Reference TG  
page 12-2.**



Conduct practice activity.

We are going to move into a practice activity where you will apply what you have learned in this course.

- This is a general activity based on available seating and best practice recommendations.
- The answers based on best practice may not match your state's CPS laws that are often minimum requirements.

You will review the needs of a family and identify possible safe seating arrangements.

1. Identify the appropriate and best seating position in the vehicle for the four family members using the appropriate child/vehicle restraint systems.

2. Review the information about the family members and vehicle restraints. Determine where each of the following family members can sit safely and write your seating position and vehicle restraint selections in the spaces provided.
  - Driver (Parent #1)
  - Parent #2
  - 2-month-old, 11 pounds
  - 3-year-old, 30 pounds
  - 8-year-old, 72 pounds

[INSTRUCTOR NOTE]

[Have everyone work independently.

Use a white board or easel with paper to draw the scenario while participants are working on their answers.

After 5 minutes, ask for volunteers to share their findings and then discuss if the seat belt system or restraint selected is appropriate for the selected family member.]



Debrief the practice activity.

Let's start with parent #2.

**Answers:**

- Parent #2: Front passenger seat
- 2-month-old: Second row passenger side outboard seat (may swap with 3-year old)
- 3-year-old: Second row center seat (may swap with 2-month old)
- 8-year-old: Second row driver side outboard seat (**NEED** lap-and-shoulder belt system for booster seat)



**Reference TG**  
page 12-3.



Conduct practice activity.

Let's try another practice activity to identify where everyone in a family can sit safely.

1. Identify the appropriate and best seating position in the vehicle for the 4 family members using the appropriate child/vehicle restraint systems.
2. Review the information about the family members and vehicle restraints. Determine where each of the following family members can sit safely and write your seating position and vehicle restraint selections in the spaces provided.

- Driver (Parent #1)
- Parent #2
- 7-month-old, 24 pounds
- 2-year-old, 27 pounds
- 4-year-old, 41 pounds
- 12-year-old, 85 pounds

[INSTRUCTOR NOTE]

[The instructions noted in the TG are the same as the prior activity. Again, participants should base their answers on best practice recommendations rather than requirements of their state's CPS laws.]

Have everyone work independently.

Use a white board or easel with paper to draw the scenario while participants are working on their answers.]



Debrief the practice activity.

After 5 minutes, ask for volunteers to share their findings and discuss with the class.

**Answers:**

- Parent #2: Front passenger seat (**NEED** lap-and-shoulder belt system)
- 7-month-old: Second row center seat
- 2-year-old: Front center seat (**NOTE:** Full harness will keep him away from active air bag.)
- 4-year-old: Second row rear outboard seat (**NEED** lap-and-shoulder belt system, however, if the 4-year-old is in a car seat with a higher weight harness, he/she could be switched with the 2-year-old in the front center position)
- 12-year-old: Second row rear outboard seat (**NEED** lap-and-shoulder belt system)

[INSTRUCTOR NOTE]

[If time allows, add a second layer of information to the last practice activity and ask participants how they would respond.]

1. The 2-year-old in a forward-facing car seat is under the weight and height recommendations of the manufacturer.

**Answers:**

- Parent #2: Front passenger seat (**NEED** lap-and-shoulder belt system)

- 7-month-old: Second row center seat
  - 2-year-old: Second row rear outboard seat in a rear-facing car seat
  - 4-year-old: Front center seat (**NOTE:** 4-year-old is in a car seat with a higher weight harness that will keep him away from active air bag.)
  - 12-year-old: Second row rear outboard seat (**NEED** lap-and-shoulder belt system)
2. The caregivers want to transport their 7-month-old in the front seat.

**Answers:**

- If the vehicle has an on/off switch for the air bag, while having the child in the front seat is possible, it is not a best practice.
- If there is no on/off switch, the child should not be in the front seat. You must communicate to the caregiver that there is no safe way to transport a 7-month-old child safely in the front seat with an active air bag.]

3. Effective Communication With Caregivers



**Reference TG**  
page 12-4.



**Display PPT 12-5.**



Describe effective communication with caregivers.

Words that CPS Technicians use may be confusing to caregivers.

- Use simple and correct terms. Do **NOT** use shortened versions of terms (such as ALR, ELR) or slang. CPS means child protective services to some and child passenger safety to others.
- Define technical terms or words before you use them.
  - For example, convertible car seat may mean baby seat to the caregiver or rear-facing-only seat may mean infant carrier to the caregiver.

- Consider what will make more sense to the caregiver – retractor or the part that winds up and stores the seat belt?
- When possible, use the caregiver's primary language, an interpreter, or photographs/illustrations from the vehicle/car seat owner's manuals, NHTSA website, etc.



### Display PPT 12-6.

Engage caregivers.

- Involve caregivers as active participants from the beginning to the end of the educational process.
- Ask follow-up questions to determine what caregivers need. Sometimes caregivers ask a question about one aspect, but upon further questioning they really want help or information about something else.

[INSTRUCTOR NOTE]

[Review the examples on when caregivers or family members ask a question but may mean something else located in the TG on page 12-4.

Which car seat is escape-proof? *My child can get out of the car seat by himself.*

When can I turn her around? *I want to see my child.*

Is it really safer to face the back? *I don't feel comfortable not being able to see my child.*

Does my youngest child really need to be in the center of the back seat next to her brother? *My son may bother or poke her causing a disruption in the car.*

Can I move him to a seat belt yet? *He is pressuring me to move to a seat belt like all of his friends. I need the booster seat for my other child.]*



### Reference TG page 12-5.

Look for information about the vehicle and family members that can help you understand their needs.

- Is the vehicle or car seat/booster seat old or recalled?
- Is English their primary language?
- Are there multiple young children in the family?
- Are there cultural differences that could affect the caregiver's knowledge or attitude about safety?

[INSTRUCTOR NOTE]

[Ask participants to provide examples of good communication with individuals. Also ask participants to provide examples of good communication techniques with individuals whom English is not their first language.]



Reference TG  
page 12-5.



Display PPT 12-7.



Summarize by reviewing additional considerations when working with caregivers.

Becoming a good CPS Technician takes time and practice.

- Remember that the caregiver should be a full partner from beginning to end. Adults learn best by practicing the skill being taught.
- Your job is to educate – **NOT** to install the car seat or booster seat for the caregiver. CPS Technicians should be able to talk a caregiver through correct installation and harnessing without even getting into the vehicle. CPS Technicians should never simply install the car seat or booster seat for the caregiver.
- As the caregiver demonstrates correct installation, have him/her explain what he/she is doing. This provides a better learning experience.
- Some caregivers will need more time than others to learn proper use and correct installation of car seats. Do **NOT** rush them through the process. Allow enough time when you make appointments for families.
- Be positive and encouraging. Point out what they have done correctly.



Display PPT 12-8.

- Make sure your information is up-to-date and correct before sharing it with caregivers. Even the most experienced CPS Technicians do not know all of the answers. The field is always changing due to new technology.

- It is OK to tell the caregiver that you do not know an answer to a question, but that you will find it for them. It is a good idea to always have a phone available to contact another CPS Technician, Instructor, or manufacturer if needed. Make sure to have the caregiver's contact information.
- Remind caregivers of the importance of using vehicle safety features such as child locks that disable power locks on the rear door and automatic window locks that disable rear windows to help keep children safe.



Ask question and respond to comments.

***Q. What questions do you have about effective communications with caregivers?***

[INSTRUCTOR NOTE]

[With members of the instructing team playing the roles of CPS Technicians and caregivers, demonstrate a seat check from greeting through educating the caregiver.]



Demonstrate a seat check.

Before we move to the final checkup event, we want to give you the opportunity to watch and practice a seat check. Two Instructors will first demonstrate a seat check.

[INSTRUCTOR NOTE]

[Depending on the size of the class, divide participants into groups of two or three. Assign a scenario to each team and Instructor/caregiver. You can use the scenarios noted in the preparation section of this module.

Each Instructor plays the role of a caregiver and interacts with a team during this activity. Each team should check one seat and a second if time allows.

Instructors (caregivers) should act as if they are just getting a seat inspected and respond appropriately when asked questions by the team. Do not provide technical assistance at this point during the activity.]



**Reference TG page 12-6.**



Conduct practice activity and debrief.

Let's now practice conducting a seat check. In this activity, you work with your team to apply the information you have learned and skills you have developed to conduct a seat check.

1. Assign roles within your team:

- **Lead** directly interacts with the caregiver (Instructor).

- **Scribe** records the findings and works with the caregiver to complete the sample CPS Check Form (located in the TG Appendix).
  - **Assistant** ensures that nothing has been omitted and all appropriate sections are completed.
2. Approach each seat check as you would if you were working with a caregiver.
- Introduce the team members.
  - Complete the paperwork requirements.
  - Inspect the car seat or booster seat. Remember to take it out of the vehicle and look it over thoroughly inside and out.
  - Identify any misuse and discuss with the caregiver.
  - Teach the caregiver how to use the car seat correctly.
3. Remember the 5 steps to conduct a seat check.
- Selection: Did the caregiver choose the right seat for their child?
  - Direction: Is the seat facing the right way in the vehicle?
  - Location: Is the seat installed in an appropriate location in the vehicle?
  - Installation: Is the seat secured to the vehicle in the right way?
  - Harnessing: Is the child placed correctly in the seat with the harness?

[INSTRUCTOR NOTE]

[After the team is satisfied that the seat is installed correctly and have instructed you how to secure your car seat, provide feedback, pointing out strengths and weaknesses with their seat check. This includes paper work completeness and notes.]



Ask question and respond to comments.

***Q. What questions do you have about seat checks?***

#### 4. Progress Check and Summary



**Reference TG**  
page 12-6.



Conduct progress check.

Let's review what we learned in Module 12 through a progress check. Write down correct responses in your TG.

1. Which seat location is the safest in a vehicle for an occupant?

**Answer:** The safest vehicle seating position varies by many factors such as the occupant's age, weight, height, type of car seat, type of vehicle seat, and seat belt system.

2. What is the main goal for a CPS Technician who is working with a caregiver?

**Answer:** Your goal should be for the child to leave safer than when they arrived and for the caregiver to be equipped with correct information and a working knowledge of their car seat or booster seat.

3. Why is it so important for caregivers to practice installing their car seats and booster seats?

**Answer:** Adults learn best by practicing the skill being taught. Caregivers may have outdated or incorrect information about car seats and booster seats.



Conclude module.

You applied what you learned by determining safe seating positions and appropriate car seats for two families. We'll now move to our last module that concludes the classroom-based portion of this course. This module includes the final checkup event.



## Quiz #3 on Modules 9 to 12

### INTRODUCTION

Quiz #3 addresses knowledge and skills taught in Modules 9 to 12.

### Time for Completion

The time limit for Quiz #3 is 30 minutes followed by a 15-minute class review.

### ADMINISTRATION GUIDELINES

1. Have a quiz reading room ready. Offer to read the quiz to participants, encouraging them to take advantage of the option. This is not just for participants where English is not their primary language. Adult learners may score better having the quiz read to them while they read it themselves.
2. Review the instructions for Quiz #3 with the class prior to conducting it (below).
3. Collect the answer sheets and immediately score them in a private area. Do not announce scores or share them with any other participant.
4. The scoring Instructor must write the correct answer next to any incorrect answer in blue or red ink—**never pencil**.
5. Participants may keep their quizzes when they turn in their answer sheets for reference during the review. Collect all quizzes immediately following the review.
6. Instruct participants to clear their desks of writing materials prior to the review to prevent the copying of answer keys.
7. Review the correct answers for questions participants marked incorrectly.
8. In cases where a second version of a quiz is used, read both the questions being reviewed as well as the answer since the order of the questions and/or the answers differ between the two versions of each quiz.

### PARTICIPANT INSTRUCTIONS

1. You have **30 minutes** to complete and turn in this quiz. Answers will be reviewed in class after the Instructors have scored all quizzes.
2. Review each question and write the correct answer on the answer sheet provided.
  - Remember to mark all answers on the answer sheet. We can only accept answers written on the answer sheet.
  - Each question is worth **2 points** with a total of **34 possible points**.
3. We encourage you to use your Technician Guide as a resource.
4. Let an instructor know if you would like the test read to you. Many adult learners benefit from having quizzes read to them.



## Skills Assessment #3: Identify Misuse of Car Seats and Belt-Positioning Booster Seats

### INTRODUCTION

Skills Assessment #3: Identify Misuse of Car Seats and Belt-Positioning Booster Seats addresses knowledge and skills taught across all modules.

### Objective

Technician candidates demonstrate their ability to correctly identify and diagnose car seat or booster seat misuse.

### Time for Completion

The recommended time limit for Skills Assessment #3 is 60 minutes.

### PREPARATION

1. Set up five misuse scenarios in vehicles. Duplicate stations should be set up to allow more than one station for a single scenario.
2. One scenario **MUST** include misuse of a booster (i.e. incorrect belt use). Try to include at least one locking clip misuse and one LATCH misuse.
3. Depending on car seats/booster seats and vehicles available, set up real-world scenarios.
4. Choose Scenario 1 and an additional four from Scenarios 2 to 15 below based on available car seats, booster seats, and vehicles. Make a note of any differences.

#### SCENARIO 1 (REQUIRED): BELT-POSITIONING BOOSTER SEAT

- 6-year-old, 64 pounds
- Selection: Correct – belt-positioning booster seat
- Direction: Correct – forward-facing
- Installation: SKIP (Same as harness)
- Harness: Incorrect (shoulder belt misrouted such as over armrest if required to be under)

#### SCENARIO 2

- 10-month-old, 18 pounds
- Selection: Correct – rear-facing in a convertible seat
- Direction: Correct – rear-facing
- Installation: Incorrect – (1) too loose (retractor not switched to ALR mode and sliding latchplate) and (2) seat reclined at more than 45 degrees from vertical  
**NOTE:** Loose install needs to be obvious.
- Harnessing: Incorrect – (1) Harness in upper slots above shoulders and (2) retainer clip too low (harness snug)

#### SCENARIO 3

- 18-month-old, 33 pounds
- Selection: Incorrect – rear-facing-only car seat but child too heavy for upper weight limits (designate age and weight of the child according to car seat selected for scenario)
- Direction: Correct – rear-facing
- Installation: Incorrect – seat installed in rear center position with lower anchors but not a lower anchor approved position
- Harness: Correct

National Child Passenger Safety Certification Training Program  
Skills Assessment #3: Identify Misuse of Car Seats and Belt-Positioning Booster Seats  
(continued)

SCENARIO 4

- 11-month-old, 21 pounds
- Selection: Correct – convertible car seat
- Direction: Incorrect – forward-facing (child too young)
- Installation: Incorrect – (1) seat in full reclined position (intended for rear-facing) and (2) loose install
- Harness: Correct – harness in upper slots (above shoulders)

SCENARIO 5

- 3-year-old, 36 pounds
- Selection: Correct – combination seat
- Direction: Correct – forward-facing
- Installation: Incorrect – seat installation with seat belt and lower anchors (tether used correctly)
- Harness: Incorrect – harness in lowest slots below shoulders

SCENARIO 6

- 20-month-old, 34 pounds
- Selection: Correct – convertible seat
- Direction: Correct – forward-facing
- Installation: Incorrect – pool noodle behind seat (tight installation with tether)
- Harness: Incorrect – retainer clip too low

SCENARIO 7

- 4-year-old, 50 pounds
- Selection: Correct – convertible or combination seat with a high weight harness (HWH)
- Direction: Correct – forward-facing
- Installation: Incorrect – (1) locking clip on belt by door (tight installation) and (2) tether not used (if approved)
- Harness: Incorrect – too loose

SCENARIO 8

- 4-year-old, 43 pounds
- Selection: Correct – booster seat
- Direction: Correct – forward-facing
- Installation: Correct – lower anchor connectors used (tether used if approved)
- Harness: Correct – lap-and-shoulder belt routed correctly

SCENARIO 9

- 2 ½-year-old, 34 pounds
- Selection: Correct – convertible or combination seat
- Direction: Correct – forward-facing
- Installation: Incorrect – tether not used (tight install)
- Harness: Correct

National Child Passenger Safety Certification Training Program  
Skills Assessment #3: Identify Misuse of Car Seats and Belt-Positioning Booster Seats  
(continued)

SCENARIO 10

- 18-month-old, 25 pounds
- Selection: Correct – convertible or 3-in-1
- Direction: Correct – rear-facing
- Installation: Incorrect – belt not locked (loose install)
- Harness: Incorrect – (1) too loose and (2) clip too high

SCENARIO 11

- 1-week-old, 4 pounds
- Selection: Correct – convertible or rear-facing-only seat with lower limit of 4 pounds
- Direction: Correct – rear-facing
- Installation – Incorrect - seat installed in front passenger seat with active airbag
- Harnessing – Correct

SCENARIO 12

- 2-year-old, 28 pounds
- Selection: Correct – forward-facing convertible seat
- Direction: Correct – forward-facing
- Installation: Incorrect – (1) rear-facing belt path with seat belt or lower anchor strap and (2) tether not used
- Harness: Incorrect – harness loose

SCENARIO 13

- 15-month-old, 26 pounds
- Selection: Incorrect – rear-facing-only seat with base and upper weight limit of 20 pounds
- Direction: Incorrect – forward-facing, seat cannot be used forward-facing or can only be installed rear-facing
- Installation: Incorrect – belt routed through carrier belt path (not base)
- Harness: Incorrect – unbuckled

SCENARIO 14

- 3-year-old, 37 pounds
- Selection: Correct – forward-facing in a convertible seat
- Direction: Correct
- Installation: Correct
- Harness - Correct

SCENARIO 15

- 5-year-old, 52 pounds
- Selection: Incorrect – harness upper weight limit of < 50 pounds (convertible or combination)
- Direction: Correct
- Installation: Correct
- Harness: Incorrect – too loose

National Child Passenger Safety Certification Training Program  
Skills Assessment #3: Identify Misuse of Car Seats and Belt-Positioning Booster Seats  
(continued)

5. Make car seat/booster seat and vehicle manufacturer instructions available to participants. For booster seats, the harness is the seat belt.

ADMINISTRATION GUIDELINES

1. Review all instructions for Skills Assessment #3 with the class prior to conducting it (on next page).
2. No talking among participants is allowed during the assessment process.
3. Have participants complete all information lines on the forms before the assessment begins. Do not sign a form without a specific participant name filled in at the top.
4. Participants may refer to any or all of the course resources or vehicle owner's manuals to complete this assessment.
  - Strongly encourage participants to use the TG and checklist.
  - Tell participants that finding the page numbers in owner's manuals by looking in the index is not only permissible, but also recommended.
5. You may indicate which part of the scenario (i.e. selection, harness adjustment, or installation) is incorrect, but do not offer suggestions of how to correct it (i.e. stating the harness is correct but there is another problem).
6. Mark as failed if any of the answers are incorrect. Encourage participant to find the answers in their TG and practice (remediate) with an Instructor outside of the assessment environment.
7. Should a participant need a third attempt, direct him/her to stop and review the TG. An Instructor who has not scored that person on that scenario will score the third attempt.
8. Any Instructor who places their ID# on a skills assessment form must provide a signature and Instructor number on the Skills Assessment Instructor Log form for that assessment.
9. Do not provide additional information to participants other than a clarification of instructions.
10. A time limit to complete repeated attempts may be determined at the discretion of the Lead Instructor.
11. Check the scenarios after each participant to be sure that the scenarios have not been disturbed or changed. Examples include: switched retractor, tightness of belt, and angle of recline.

National Child Passenger Safety Certification Training Program  
Skills Assessment #3: Identify Misuse of Car Seats and Belt-Positioning Booster Seats  
(continued)

PARTICIPANT INSTRUCTIONS

Complete Skills Assessment #3 individually. For five scenarios, correctly identify and diagnose car seat or booster seat misuse.

1. Stand at least 10 feet away from a station while waiting your turn. Write down the child's age, weight, and the type of seat (rear-facing-only, combination, forward-facing-only, rear-facing or forward-facing convertible, belt-positioning booster seat).
2. Complete the scenarios according to manufacturer instructions. Use the CPS Check Form in your TG Appendix to guide your assessment of each scenario.
3. Do **NOT** change any part of the scenario or correct the misuse, but be prepared to make best practice recommendations. Notify an Instructor if you inadvertently disturb the set-up in any way.
4. Answer **ALL** sections for each scenario correctly to pass. You **MUST** pass each scenario to pass the assessment.
  - You will have up to three attempts to pass each scenario. Instructors will sign off on each attempt.
  - If you need a third attempt to pass, stop and review your TG. A third attempt to pass **MUST** be signed off by an Instructor who has not already scored you for that scenario.
  - There may be more than one correct answer. Be prepared to defend your answers.



# MODULE 13 • Closing & Checkup Event

## Module Agenda: 295 Minutes

Topic	Suggested Timing
1. Introduction	5
2. Recertification Process	5
3. Prepare for a Checkup Event	45
4. Conduct a Checkup Event <ul style="list-style-type: none"> <li>• Final Assessment: Checkup Event</li> </ul>	195
5. Conduct Closing Activities	45
TOTAL	295 Minutes

### Module Purpose

The purpose of this module is to close the classroom-based portion of the training and for participants to demonstrate their knowledge and skills in conducting seat checks through a checkup event. Participants will also learn about the CPS Technician recertification process.

### Module Objectives

- Identify requirements for CPS Technician recertification.
- Prepare for a checkup event.
- Conduct a checkup event.
- Close and debrief a checkup event.

### Special Media, Materials, and Resources

- CPS Check Form (Instructor DVD)
- Using Your New Skills (NCPSB website at [www.cpsboard.org](http://www.cpsboard.org))
- CPS Inspections and Checkup Events (NCPSB website at [www.cpsboard.org](http://www.cpsboard.org))
- Map It Out (NCPSB website at [www.cpsboard.org](http://www.cpsboard.org))
- Sample Course Evaluation (Instructor DVD)

### Video Titles and Times

None

### Activities

Final Assessment: Checkup Event

## Preparation

- It is the responsibility of the Lead (LI) to ensure that the checkup event is planned in advance and will allow all participants to actively participate.
- The LI may delegate the planning and coordination for the checkup event to another Instructor and/or local CPS Program Coordinator. The LI and/or Checkup Event Coordinator should evaluate the site of the planned checkup event ahead of time to identify safe traffic patterns and establish a safe environment for all attendees, especially children.
  - Ensure that the planned checkup site will be able to accommodate the desired size of the event and the number of traffic lanes needed to enable all participants to actively participate.
  - Use a grid to draw a map of the physical environment and layout of the event so it can be explained to participants and any volunteers who may be assisting.
    - Be sure to include a clearly marked entrance, registration area, and exit with 1-way traffic flow, if possible.
    - Identify lane locations and where supplies will be available for CPS Technicians.
  - Determine which check form participants will use for the checkup event and make enough copies for participants. A CPS Check Form is included on the Instructor DVD and in the TG Appendix. If your state or agency has a different check form, use that one instead.
- Review important information about the checkup event to ensure that all Instructors know what to expect and know how the checkup event will be set up and operated.
- Review the Checkup Event Guidelines (Instructor DVD).
- Duplicate course evaluations to distribute to participants.

## 1. Introduction



### Display PPT 13-1.



Present module purpose.

The purpose of this module is to close the classroom-based portion of the training and for you to demonstrate knowledge and skills in conducting seat checks through a checkup event. You will also learn about the CPS Technician recertification process.



Reference TG page 13-1.



### Display PPT 13-2.



Present module objectives.

As a result of this module, you will be able to:

- Identify requirements for CPS Technician recertification.
- Prepare for a checkup event.
- Conduct a checkup event.
- Close and debrief a checkup event.



Close the classroom portion of the training.

This concludes the classroom-based portion of the course.

- Use all of the job aids and other resources from your TG for our final checkup event and later on the job.
- Be sure to review all the resources available to you on the NCPSB website at [www.cpsboard.org](http://www.cpsboard.org).
- The outcome of your hard work during this course is that you will be able to serve the families of your communities at checkup events, health and safety fairs, and community events.



Ask question and respond to comments.

***Q. What additional questions do you have about any of the technical topics we have discussed?***

---

## 2. Recertification Process



Reference TG page 13-1.



### Display PPT 13-3.



Review the recertification process.

Once you pass the final assessment (checkup event), you will be a certified CPS Technician.

The certification cycle for both CPS Technicians and Instructors is two years. To retain your certification, you must meet all of the requirements and successfully complete the recertification process.

There are two general steps to successful CPS Technician recertification:

1. Meet all pre-registration requirements, including:
  - Verified seat check activities – must be observed by an Instructor or proxy to count for certification
  - A community event
  - Continuing education
  - If an Instructor, teaching hours
2. Register and pay for recertification (may be done up to four months prior to your certification cycle end date).

[INSTRUCTOR NOTE]

[Refer participants to [www.cert.safekids.org](http://www.cert.safekids.org) for more information on the recertification process.]

3. Prepare for a Checkup Event



**Display PPT 13-4.**



Review checkup event requirements.

The checkup event is the final assessment of this course. This event is where you will put into practice the knowledge and skills learned during the course.

- Everyone must fully participate throughout the event.
- It serves as a final assessment of your technical and communication skills.
- Instructors will observe and assess Technician Candidate performance throughout the event.



**Reference TG page 13-1.**



**Display PPT 13-5.**



Introduce how checkup events operate.

It is important to understand how checkup events are planned and operated.

- CPS Technician teams work with and teach caregivers the basics of correct selection, direction, location, installation, and harnessing of car seats, booster seats, and seat belts.
- Checkup events provide opportunities to detect unsafe car seats and booster seats (such as recalled, damaged, missing parts/labels). Always remove and inspect all checked seats.
- Many of the details for setting up and operating an inspection station are similar to those for a parking lot event.



**Reference TG  
page 13-2.**

- There is a *Map It Out* worksheet on the NCPSB website that includes a sample diagram to sketch the traffic flow of your checkup event.



**Display PPT 13-6.**



Review how to prepare for the checkup event.

Let's review several key considerations for planning an event or setting up an inspection station. Additional details may be found on the NCPSB website under *Using Your New Skills* and *CPS Inspections and Checkup Events*.

- Do **NOT** wait until the last minute to plan your event!
- Determine your target audience.
- Estimate the number of families expected to attend.
- Estimate the number of CPS Technicians and volunteers needed.
- Determine the amount of time to allocate per car seat or booster seat.
- Determine who the Checkup Event Coordinator will be at the event. Each event needs a designated Checkup Event Coordinator.
- Determine a safe location and conduct a site visit.
- Gather necessary equipment, supplies, and materials.

[INSTRUCTOR NOTE]

[Tell participants that the instructing team has already planned the final checkup event where they will apply their new knowledge and skills.

Review the diagram for traffic flow you prepared for this final checkup event.]

#### 4. Conduct a Checkup Event

[INSTRUCTOR NOTE]

[Refer participants to any state-specific policies or procedures for conducting CPS events or setting up courses or services such as CPS inspection stations.

Remind participants they must stay for and actively participate in the final assessment checkup event to be eligible for certification as a CPS Technician.

Review the following:

- Time allocations per car seat or booster seat
- The person who will serve as the Checkup Event Coordinator
- Which Check Form will be used and how to use it
- Who will be responsible for reviewing the work of each checkup team
- Location of supplies – forms, clipboards, *Recall Lists*, *LATCH Manual* (if available), car seat/booster seat manufacturer instructions, educational materials for caregivers, etc.]



**Reference TG page 13-2.**



**Display PPT 13-7.**



Review what to expect with the final checkup event.

Remember that the safety of all participants is a top priority when you are setting up and conducting the event.

- Always use a Check Form. Be sure the caregiver signs the form before you begin your check.
- Fully involve the caregiver in the check.
- Team up with a partner and work together.

- Remember to use the Learn, Practice, Explain teaching method. This model does not end with your education. Always look for additional ways you can educate caregivers on child passenger safety such as:
  - Avoiding a vehicle backover.
  - Preventing a child from being locked in a trunk or being caught in a power window.
- Read instructions and labels.
- Document, document, document:
  - Everything you do.
  - Advice you give the caregiver.
  - Choices the caregiver makes – especially advice the caregiver chooses not to follow.

**Display PPT 13-8.**

- Follow any policies or guidelines set by the Checkup Event Coordinator such as which form is being used, replacement of car seats, who will be the lead checker to sign off, etc.
- Promote 1-way traffic flow.
- Turn off all vehicle motors.
- Watch small children, as caregivers may be distracted.
- Walk around every vehicle before starting the engine to be certain there are no children or materials around, near, or under the vehicle.
- Control **ALL** vehicles moving into and from the event. Announce “vehicle moving” when vehicles enter or exit the inspection. Always guide vehicles to the inspection location and exit.

By the end of the checkup, the caregiver should feel confident and competent in their abilities.

There will be an event debriefing to talk about what you saw and what you learned.

[INSTRUCTOR NOTE]

[Due to the sensitive nature of adjusting a child's harness at the crotch, it is advisable to have the caregiver adjust the child's harness under the supervision of the CPS Technician.]



### Display PPT 13-9.



Review how participants will be evaluated.

Instructors will monitor/observe/evaluate performance in the following areas:

- Establishing a safe environment for all who attend (evaluating the site, setting up a 1-way traffic flow, establishing check lanes, and equipping lanes with all necessary tools)
- Acting as a team player with Instructors, technicians, and fellow candidates during set up and throughout the checkup event (holding babies, entertaining toddlers, and going for supplies when not conducting a seat check)
- Effectively communicating with caregivers and children (using words the caregiver can understand, conveying a positive attitude, not judging caregivers for decisions they have made or will make)
- Involving the caregiver in the checkup and participating in correction of errors by explaining what you are doing
  - *Here is the model number and date of manufacture for your car seat.*
  - *I'm going to check to be certain your car seat is not on the recall list.*
  - *Note the expiration date on your car seat.*
- Remembering that your job is to educate – **NOT** to install



### Display PPT 13-10.

- Following and accurately completing the Check Form
- Using resources such as the car seat or booster seat instructions, vehicle owner's manual, recall list, and educational handouts
- Asking appropriate questions of Instructors but first using resources other than Instructors

- Assuring an Instructor signs off before the vehicle leaves after each seat check
- Participating in event breakdown activities such as loading supplies into vehicles, disposing of replaced cars seats and booster seats, carrying supplies back to storage areas, and turning in all paperwork
- Sharing experiences during checkup debriefing with the other participants at the close of the event and making plans for the next event

[INSTRUCTOR NOTE]

[Emphasize that caregivers should always know where their children are at all times. For example, if you take a toddler to a play area, get permission first from the caregiver.

Transition to the checkup event that serves as the final assessment.]

## 5. Conduct Closing Activities

[INSTRUCTOR NOTE]

[Once everything has been put away, return to the classroom with participants to debrief the checkup event.]



**Reference TG**  
page 13-3.



Review how to close the checkup event.

Always debrief the checkup event with other Instructors and volunteers. Discuss:

- What you learned (safety issues, new products, special situations).
- How to improve for the next event.
- Following the event, the Checkup Event Coordinator or Lead Instructor should review all forms and follow up with any questions or concerns.

[INSTRUCTOR NOTE]

[Conduct a debrief of the checkup event.

- Thank participants for their time and hard work. Make any other concluding remarks.
- Tell participants when scores will be entered online and processed.

Refer participants to state and local resources to:

- Locate more experienced CPS Technicians with whom to work.
- Learn about and sign up for CPS events and/or inspection stations (if available).
- Learn about and sign up for CPS continuing education opportunities.
- Obtain educational and promotional materials.
- Find out about potential funding for local CPS courses.



Conduct the course evaluation.

Hand out the course evaluations. Give participants 5 to 10 minutes to complete them. Collect all evaluations.

Review the evaluations with the instructing team after participants leave.]