TEACHER INSTRUCTIONS FOR "BE THE BUCKLE BOSS!"

- Instruct students to answer each question each time they get into the car. Every car ride should be recorded on a new "Buckle Boss" form.

- Explain that "Step 1" answers two questions based on their own observations of the people riding in the car with them.

- Explain that "Step 2" is more like checking off a "To Do" list.

- Let students know when all "Buckle Boss" forms are due.

- Remind students a couple of days in advance when project is due.

- To make compliant with standards of learning for Math:
    - Total # of people wearing belts and not wearing belts.
    - Total # of kids sitting in the back seat and not sitting in the back seat.
    - Compare each total using ratios.
    - Make graphs of the data collected and study/interpret them.
    - Find the likelihood (or percentage) of wearing belts and sitting in the back.

Please help us keep track of our program's reach within your school by letting us know if you used this assignment with your students. Please remove this section and return it to _____. Thanks!

Your name: _____ Grade: _____

Did you use the Scavenger Hunt assignment with your students? _____ YES _____ NO

If NO, why not? _____

_____

Comments/Suggestions: _____

BE THE BUCKLE BOSS!

Step 1: LOOK

While you're in the car, look at the following things:

Is everyone wearing a seatbelt?

__ Yes __ No

Are all the kids in the backseat?

__ Yes __ No

Step 2: TELL

Now tell your family how they did:

__ Tell your family why it's important to wear their seatbelts.

__ Tell the kids why it's important to ride in the backseat.

Good job, Buckle Boss!!

Teacher's Instructions for Safety Scavenger Hunt

Dear Teacher,

Enclosed you will find a pack of Safety Scavenger Hunt homework assignments to give to each one of your students as part of the Make-it-Click Program. The purpose of this assignment is to get the kids into the safety mind-set. Below are instructions to help you guide the students in their safety pursuit. We've also provided tips for how to make this assignment compliant with standards of learning. We appreciate you participating in the effort to keep our children safe.

- Instruct students to find as many pictures of the objects. The pictures can be from magazines, newspapers, the internet, etc. The students can even take the pictures and print them themselves.

- Pictures should be glued/taped onto paper or otherwise clipped together.

- Remind students that the point of this is to get them thinking about car safety.

- We'd appreciate it if you can include this assignment in your lesson plans.

- To expand the fun and make this assignment compliant with standards of learning for Math, you might consider:
  1) Have students work in groups to sum up each type of picture brought in, and/or
  2) Create ratios using the sums created

     e.g.) $\frac{\text{total \# kids wearing seatbelts}}{\text{total \# of all kids pictured in cars}}$

     e.g.) $\frac{\text{total \# of stop signs}}{\text{total \# of all street signs}}$

- To make this assignment compliant with standards of learning for English, you might consider:
  1) Have students arrange pictures in a sequence to tell a story, and/or
  2) Have students plan and present an oral presentation related to their Scavenger Hunt findings

Please help us keep track of our program's reach within your school by letting us know if you used this assignment with your students. Please remove this section and return it to _____.
Thanks!

Your name: _____ Grade: _____

Did you use the Scavenger Hunt assignment with your students? _____ YES _____ NO

If NO, why not? _____
_____

Comments/Suggestions: _____

WANTED:

Safety Scavenger hunters

Your goal is to find as many pictures of the objects on the list below:

1) a Seat Belt
2) Airbag/airbag symbol
3) Windshield
4) Steering wheel
5) Car Door lock
6) kid wearing a seatbelt
7) Kid sitting in the back seat
8) Driver wearing a seat belt
9) Child Safety seat/Booster Seat
10) Speed Limit sign
11) Stop sign
12) Street sign of any kind

- Turn in your items to your teacher by:

_____

Seat Belt Scramble

General Instructions for Teachers

This SOL-friendly activity will teach your students the valuable lesson of wearing one's safety belt in a car. This could be an individual assignment (in class or take home), or you can have students work in groups. To encourage creativity, consider having students decorate their "cars" (boxes) before beginning.

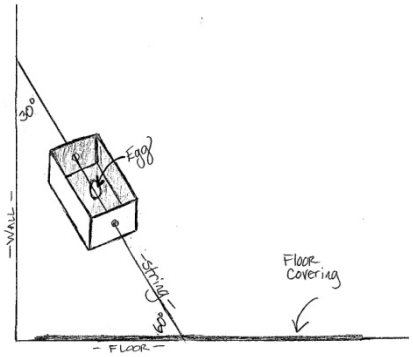
☑ **Remember to discuss the following key facts with the students:**

- Car crashes are the #1 cause of death for children.
- Seatbelts prevent ejection from the car during a crash. You are 4 times more likely to be killed if you are thrown from the vehicle.
- Wearing a seatbelt cuts the risk of injury in a collision by half and is the single most important thing a person can do to keep themselves safe while riding in a vehicle.
- You can also illustrate the dynamics of movement when in a traveling vehicle: Explain that when the "car" is traveling at 35 MPH, so is the egg. If the "car" stops suddenly, the egg continues to travel at 35 MPH if not "buckled" in.

☑ **This assignment can easily satisfy Standards of Learning (SOL) objectives. Here are some suggestions:**

- To make this compliant with English SOLs, you might consider having the students expand on their short answer questions by writing a full essay.
- To make this compliant with Science SOLs, you could elaborate upon concepts such as crash forces and forward motion. Sir Isaac Newton's theory of motion states that "An object in motion continues to remain in motion at the original speed until acted upon by an outside force." Discuss with students the advantages of being stopped by the seat belt (which is meant to stretch slightly) versus the windshield/pavement/hard ground.
- To make this compliant with Math SOLs, you might vary the angle of the string to the floor to see what happens with the unbelted egg when the "car" is traveling on string that is positioned at various decline angles.

☑ **Instructions for student exercise (to complete individually or in groups):**



Materials Needed:

- Shoe boxes (1 for each person or group)
- Eggs (2 per person or group)
- Ball of twine (string) cut into 8 feet pieces
- Tape (masking, packing, or other heavy-duty tape)
- Plastic bag, newspaper, or other item to cover floor for easy clean-up

1. Cut a small hole in each end of the shoe box (about in the middle). Thread the piece of string through each hole so that the string is running through the inside of the box (see diagram).
2. Place egg into shoe box; gently tape it down into the shoe box.
3. Tape one end of the string to the floor and the other end to a wall, so that the string makes a steep decent (downward slope should make an angle about 30 degrees out from the wall).
4. Put plastic bag/floor covering around the string.
5. Hold box with egg at the top of string (near wall), let go of box.
6. Using the same box, place the 2nd egg in the box without taping it.
7. Hold box with the un-restrained egg at the top of the string, let go.

☑ **After the first run,** discuss the outcome with students. Did the egg break? Why not? If egg cracks during this run, discuss the fact that although the egg was "injured", it would have been worse unbelted. What did the students learn from this assignment?

☑ **After the second run,** discuss with students what happened to the egg. Why did the egg break? Discuss the fact that seat belts keep people from being ejected during a crash. Would a similar outcome happen if unrestrained during a car crash?

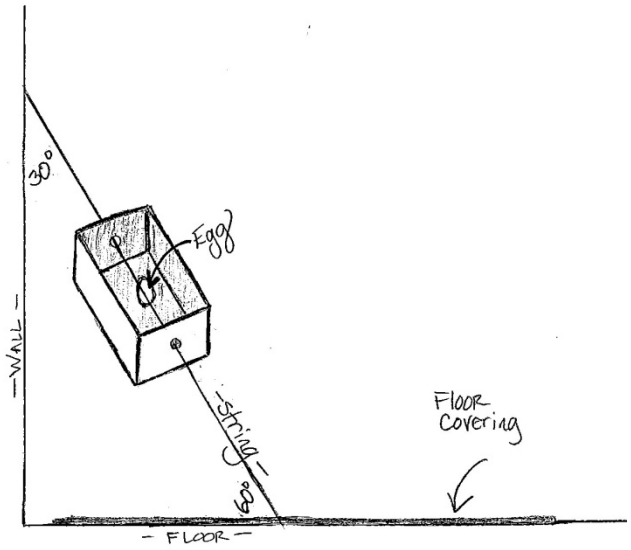
Seat Belt Scramble

Name: _____

Objective: To learn what happens during a car crash when wearing and not wearing a safety belt.

Materials Needed:

- **Shoe boxes (1 for each person or group)**
- **Eggs (2 per person or group)**
- **Ball of twine (string) cut into 8 feet pieces**
- **Tape (Masking, packing, or other heavy-duty tape)**
- **Plastic bag, newspaper, or other item to cover floor for easy clean-up**



Instructions:

1. **Cut a small hole in each end of the shoe box (about in the middle). Thread the piece of string through each hole so that the string is running through the inside of the box (See diagram).**
2. **Place egg into shoe box; gently tape it down into the shoe box.**
3. **Tape one end of the string to the floor and the other end to a wall, so that the string makes a steep decent (downward slope should make an angle about 30 degrees out from the wall).**
4. **Put plastic bag/floor covering around the string.**
5. **Hold box with egg at the top of string (near wall), let go of box. What happened?**
6. **Using the same box, place the 2nd egg in the box without taping it.**
7. **Hold box with the un-restrained egg at the top of the string, let go. What happened this time?**

Short-Answer Questions:

1. **What happened when you dropped the box the first time? Did the egg break? Why or Why not?**

2. **What happened when you dropped the box the second time? Did the egg break? Why or Why not?**

3. **How does this experiment relate to traveling in a real vehicle? In other words, what can you share about car safety that you've learned from this activity?**

Teacher's Instructions for "Bodies in Motion!"

Dear Teacher,

In this assignment, students will calculate the amount of force (in pounds) it would take to restrain an occupant in the event of a car crash. Enclosed you will find the "Bodies in Motion!" worksheet. Below are the instructions to help you guide the students in thinking about proper vehicle safety.

- **Give students background information about crash forces and Newton's law to help them complete this assignment:**
  - Newton's Law of Motion states that an object in motion keeps moving in the direction and speed it was traveling in unless it is stopped by something.
    - In the case of a vehicle, this could mean the brakes, another vehicle, or a tree/pole.
    - In the case of the occupants in that vehicle, this could mean the windshield, seat belt, or anything else inside or outside the vehicle. If the vehicle is traveling at 35 mph, occupants will continue traveling at 35 mph once the vehicle crashes, unless they are belted in and thus, stop with the vehicle.
  - There are three collisions during a car crash
    - Vehicle collision: vehicle begins to stop when it collides with another vehicle, object, etc.
    - Human collision: Occupants in the vehicle continue to move forward in the same speed until they collide with something inside the vehicle.
    - Internal collision: The occupant's internal organs continue to move forward in the same speed until they collide with other organs, bones, etc.
  - To illustrate the power of crash forces, you might use the following example:
    - A car going 40 mph would hit a tree with the same force as hitting the ground after falling off of a 50 foot cliff. An unrestrained person in that car would go through the windshield with the same force as hitting the ground after a fall from a 5-story building.

- **Crash forces can be calculated using the following formula:** person's weight X speed of vehicle = pounds of force needed to keep the occupant in his/her seat. The student exercises can be solved using this crash forces equation. Go over this equation with your students, and consider using some of the following examples:
  - If an average man weighing 180 pounds crashes his car into another vehicle going 50 MPH, the force needed for the seat belt to keep him in the car would be 9,000 pounds. This roughly equals to the weight of an adult African Elephant! Without the seatbelt, the man will propel forward with the force of an elephant.
  - If a 90 pound child is properly restrained with a seat belt in a car that crashes when going 30 MPH, the restraining force provided by the seat belt in a crash is 2,700 pounds. This roughly equals to the weight of a small car! Without the seat belt, the child will propel forward with the force of the weight of a small car.

- **Remind students of the importance of wearing a seat belt while riding in a vehicle, especially when involved in a car crash.** Emphasize the following points:
  - Car crashes are the #1 cause of death for children.
  - Seat belts prevent ejection from the vehicle. You are 4 times more likely to be killed if you are thrown from the vehicle during a crash.
  - Wearing a seatbelt cuts the risk of injury in a collision by <u>half.</u>
  - Wearing a seatbelt is the single most important thing a child can do to keep themselves safe while riding in a vehicle.

- **This assignment can be used to fulfill math or science SOL objectives (for 5th or 6th grade).** To expand the fun, ask the students to think of objects that weigh as much as the answers,

- **Answer Key:**

1a) Abby = 3,600 lbs	2a) Ryan = 2,750 lbs	3a) Amanda = 4,350 lbs
1b) Abby's mom = 5,400 lbs	2b) Matthew = 3,500 lbs	3b) Amanda's baby = 300 lbs

Bodies in Motion!

Instructions: Read each word problem carefully, and complete the questions. Show all of your work on the back of this sheet or a separate sheet of paper. Use the following equation to help you.

Person's Weight	×	Car's Speed	=	Pounds of Force

1. Abby and her mom are driving to the mall. They are both wearing safety belts and they are traveling at 45 MPH. Abby weighs 80 pounds, and her mom weighs 120 pounds. What are the pounds of force Abby's seat belt will need to provide to keep Abby in her seat during a crash? What are the pounds of force the seat belt will need to provide to keep Abby's mom in her seat during a crash?

2. Ryan is riding in a car with his older brother Matthew when they are involved in a car crash. Neither Ryan nor Matthew was seriously hurt during the crash because they were both properly restrained by their seat belts. They were traveling down the road going 25 MPH when they collided with another car. Ryan weighs 110 pounds and Matthew weighs 140 pounds. Calculate pounds of force that were needed to keep both Ryan and Matthew in their seats.

3. Amanda is taking her baby to her friend's house for a visit. Both Amanda and her baby are practicing good car safety and are restrained properly in their seats (using a seat belt and car seat, respectfully). On the way, Amanda's car is struck by another car on the road. Amanda weighs 145 pounds, and her baby weighs 10 pounds. Calculate the pounds of force necessary to keep both Amanda and her baby safe in their seats during the crash, when they were driving 30 MPH.

Make it CLICK

CLICK-TOGETHER-SENTENCES: TEACHER'S INSTRUCTIONS

Dear Teacher,

The purpose of this assignment is to encourage the students to think more about car safety while learning how to construct compound sentences. Below are instructions to help you guide the students in completing the assignment. We appreciate you participating in the effort to keep children safe.

- **Explain to the students that the simple sentences can be combined into one (often longer) compound sentence that conveys the same information. They may need to use punctuation (such as commas) and/or conjunction words (such as "and," "because," "when," and others).**

- **Remember to discuss the following key facts with the students:**
  - **Car crashes are the #1 cause of death for children.**
  - **Seat belts and other restraints prevent ejection from the car during a crash. You are 4 times more likely to be killed if you are thrown from the vehicle.**
  - **Wearing a seat belt cuts the risk of injury in a collision by half and is the single most important thing a person can do to keep themselves safe while riding in a vehicle.**
  - **For this age group, sitting in the back seat reduces mortality risk by almost half.**

- **There are many right ways to combine the sentences for each item. We've provided an example answer for each below, but students may choose to combine them in other ways.**

  <u>Sample Answers:</u>

  1. **Miguel wears his seat belt when he rides in his mother's blue car.**
  2. **Juan's little sister, Maria, uses a car seat.**
  3. **Amanda eats a vanilla sundae in the back seat of the car on the way home from the ice cream shop.**
  4. **Quentin always wears his seat belt when he rides in the car.**
  5. **Amy always wears her seat belt and sits in the back seat when she goes on a trip.**
  6. **Jamal is safe because he always wears his seat belt.**
  7. **Kyrah's grandma will not let her sit in the front seat because it is safer for her to sit in the back seat.**

Click-Together-Sentences

Directions: "Click" the simple sentences together into one compound sentence that provides the same information as the simple sentences. You may need to use punctuation (such as commas) and/or conjunction words (such as "and," "because," or "when").

1. **a) Miguel wears his seat belt. b) Miguel rides in his mother's car. c) Miguel's mother's car is blue.**

2. **a) Juan has a little sister. b) Juan's little sister uses a car seat. c) Juan's sister's name is Maria.**

3. **a) Amanda eats a vanilla sundae. b) Amanda sits in the back seat of the car. c) Amanda is on her way home from the ice cream shop.**

4. **a) Quentin rides in the car. b) Quentin always wears his seat belt.**

5. **a) Amy goes on a trip. b) Amy sits in the back seat. c) Amy always wears her seat belt.**

6. **a) Jamal is safe. b) Jamal always wears his seat belt.**

7. **a) It is safer to sit in the back seat. b) Kyrah's grandma will not let her sit in the front seat.**

TEACHER'S INSTRUCTIONS FOR THE "ULTIMATE BACK SEAT BLUEPRINT!"

For children under the age of 13, the back seat is the safest place to ride in the car. Though many children are given the option to sit in the front seat prior to age 13, it is unsafe for a number of reasons. First, airbags are often not designed to account for smaller passengers and may deploy with too much force and cause injury or even death. Second and more importantly, *most* crashes are frontal, meaning kids in the back are farther from the point of impact. This protection is especially important for the fragile bodies of children under 13 years old.

One way to encourage pre-teens to sit in the back seat is to teach them the benefits and allow them to create their own space. This activity is an opportunity for students to think about how they would re-design the back seat of their family's car if they could add their own style and have everything they need at their fingertips. Below are instructions to help you challenge the students to design the blueprints for the ultimate back seat.

- **Teach students about the advantages of sitting in the back seat:**
  a. **Car crashes are the #1 cause of death for children. The two most important things children can do to stay safe are to use the proper safety restraint and sit in the back seat.**
  b. **For this age group, sitting buckled in the back seat reduces mortality risk by almost half.**
  c. **Most crashes are frontal, so sitting in the back seat moves children farther away from the point of impact.**
  d. **Airbags can seriously injure or kill smaller children who are seated in the front seat.**

- **On the attached sheet or any kind of poster paper, ask students to draw what they consider is the perfect back seat. What are the kinds of things they would want within reach of them? For instance, they might want coloring books/crayons, stickers, etc. How would they redecorate the seat? Encourage the students to be creative!**

- **You can make this activity extra exciting by staging a friendly contest among students and perhaps giving away small prizes/ribbons. One suggestion is to post their work around the room/school, and have the students vote on the most creative back seat.**

- **To make this assignment compliant with <u>English SOLs</u>, you might accompany this assignment with an essay question and have the students complete oral presentations.**

- **To make this assignment compliant with <u>Math SOLs</u>, ask students to categorize and tally similar themes in students' pictures. Then, ask them to calculate proportions and/or graph the results.**

Ultimate Back Seat Blueprint

Instructions: Think about how you would re-design the back seat of your family's car if you could add your own style and have everything you need at your fingertips. Draw your ultimate back seat!

VEHICLE SAFETY DATA: TEACHER'S INSTRUCTIONS

Dear Teacher,

This homework assignment will involve the students in an observation exercise that can fulfill math and science standards of learning objectives; plus, students will learn about the importance of buckling up for safety. Enclosed you will find a Vehicle Safety Data Sheet for your students. Students will observe people driving or riding in cars, and indicate on the attached sheets if drivers and passengers are using their seat belts.

- **Instruct students to observe cars that they see driving slowly in familiar places.** Ideas include parking lots of shopping centers/malls, schools, churches, etc. Instruct students to stand a safe distance from traffic on sidewalks or grassy areas, away from the street or intersections.

- **Be sure to emphasize student safety.** Students are to be accompanied by an adult when collecting data, and to always stand on sidewalks at an entrance, and to never collect data in the street, at dusk or at night. Remind them that they should *NEVER* observe from medians in the middle of the street.

- **On the attached sheet, students are to record the belt use and back seat use of people in passing vehicles.** They are to use one line per vehicle, and record yes or no for (a) whether the driver is wearing a safety belt, (b) whether all passengers are wearing safety belts/restraints, and (c) whether all children are in the back seat. Tell students that if they are unsure of what they saw or couldn't see at all, they should not record the information on the sheet.

- **Remember to convey to students some important facts about wearing a safety belt and sitting in the back seat:**
  - Car crashes are the #1 cause of death for children.
  - For this age group, sitting in the back seat reduces mortality risk by almost half.
  - Most crashes are frontal, so sitting in the back seat moves children farther away from the point of impact.
  - Seatbelts prevent ejection from the car during a crash. You are 4 times more likely to be killed if you are thrown from the vehicle during a crash.
  - Wearing a seatbelt cuts the risk of injury in a collision by half and is the single most important thing a child can do to keep themselves safe while riding in a vehicle.

- **This assignment can easily satisfy Standards of Learning (SOL) objectives. Here are some suggestions:**
  - To expand the fun and make this assignment compliant with **Math SOLs**, you might consider:
    - Ask students to sum up the total of *Yes* responses and *No* responses by column.
    - Create ratios using sums for each column (Examples):
      - *Driver seat belt use*:
        Total number of drivers wearing seatbelts [i.e., Yes in driver column]
        Total number of drivers observed [i.e., Yes + No in driver column]
      - *Passenger seat belt use*:
        Total number of cars observed with all passengers wearing belts [i.e., Yes in passenger column]
        Total number of cars observed with passengers [i.e., Yes + No in passenger column]
      - *Children observed in the back*:
        Total number of cars observed with kids in the back seat [i.e., Yes in kids in back column]
        Total number of cars observed with kids [i.e., Yes + No in kids in back column]
  - To make this assignment compliant with **Science SOLs**:
    - Ask the students to create graphs of the data collected and study/interpret them.
    - Beforehand, have the students make predictions about what they might observe. After they collect the data, ask them to make inferences about the data, and draw conclusions about what they found.
  - To make this assignment compliant with **English SOLs**:
    - The students could write an essay about what they found, and whether the people they observed were traveling safely. Students could also present their findings orally to the class.

Vehicle Safety Data Sheet

Circle Yes/No for seat belt use you observe in passing vehicles.
Use a separate line for each vehicle.

Your Name: _____ Date: _____

Time: _____ Location: _____

	Is the driver wearing a seat belt?	Are all the other people in the car wearing a seat belt? (Leave blank if no passengers)	If there are kids, are they all in the back seat? (Leave blank if no kids)
1	YES NO	YES NO	YES NO
2	YES NO	YES NO	YES NO
3	YES NO	YES NO	YES NO
4	YES NO	YES NO	YES NO
5	YES NO	YES NO	YES NO
6	YES NO	YES NO	YES NO
7	YES NO	YES NO	YES NO
8	YES NO	YES NO	YES NO
9	YES NO	YES NO	YES NO
10	YES NO	YES NO	YES NO
11	YES NO	YES NO	YES NO
12	YES NO	YES NO	YES NO

Always stand a safe distance from traffic on sidewalks or grassy areas, away from the street or intersections. Never observe from medians in the middle of the street!

	Is the driver wearing a seat belt?	Are all the other people in the car wearing a seat belt? (Leave blank if no passengers)	If there are kids, are they all in the back seat? (Leave blank if no kids)
13	YES NO	YES NO	YES NO
14	YES NO	YES NO	YES NO
15	YES NO	YES NO	YES NO
16	YES NO	YES NO	YES NO
17	YES NO	YES NO	YES NO
18	YES NO	YES NO	YES NO
19	YES NO	YES NO	YES NO
20	YES NO	YES NO	YES NO
21	YES NO	YES NO	YES NO
22	YES NO	YES NO	YES NO
23	YES NO	YES NO	YES NO
24	YES NO	YES NO	YES NO
25	YES NO	YES NO	YES NO
26	YES NO	YES NO	YES NO
27	YES NO	YES NO	YES NO
28	YES NO	YES NO	YES NO

Always stand a safe distance from traffic on sidewalks or grassy areas, away from the street or intersections. Never observe from medians in the middle of the street!