

<b>Road Safety Theme:</b> Forces and Car Passenger Safety	<b>Year-group:</b> Year 3
<p><b>Aims:</b> To get everyone to wear a seatbelt for every journey by being convinced about how forces affect the behaviour of all objects in moving / braking cars.</p> <p><b>Objectives:</b> Discuss what happens to objects in a car when the car stops. Calculate the force of an object travelling at 30mph. Show the children how a seatbelt should be used, explain the importance of using a booster cushion, ask the children to explain 'what's wrong' in the pictures.</p>	<p><b>Curriculum Links:</b> Mathematics/Number and algebra/Knowledge, skills and understanding/Calculations. Science/Physical processes/Forces and Motion. PSHE/Developing a healthy, safer lifestyle.</p> <p><b>Resources:</b> Computer and screen to run PowerPoint presentation. Tennis ball and tin of baked beans. Box of tissues and magazine. Booster cushion (optional). Access to a real car (see follow-up)</p> <p><b>Lesson duration:</b> 35 minutes total</p>
<p><b>Introduction:</b> (5mins) Throw a tennis ball gently to one or two volunteers. Ask 'What made it move?' (We pushed it through the air); 'What made it stop?' (We caught it). Pick up the tin of beans as if about to throw them. Ask 'Why might the tin hurt you but not the ball?' (Heavier, harder, sharp edges). Introduce the concept of Force.</p>	
<p><b>Main Focus:</b> (25 mins) When objects are in a moving car, what happens when the car stops? (Objects go flying forward until they hit something which stops them). Show picture of front seats and dashboard of the car. Talk about the damage which could be done by ordinary objects such as a box of tissues or a magazine due to speed. Show picture of child in the back of the car, no seatbelt or booster, not sitting back properly. Ask 'What would happen if the car stopped suddenly?' (She would collide with front seats/dashboard/windscreen.) Explain that at 30mph the force of an object is 30 times its weight. Calculate the force for a child weighing 33kg, breaking the sum down if using mental maths, or writing it out on a whiteboard. The force, nearly a tonne, is about the same as the weight of a baby elephant! Show the Car Crash animation sequence. Explain the importance of seatbelts to keep people safe, and that they are designed to fit across the strong parts of your skeleton. A seatbelt is designed for an adult. Show picture of young adult with seat belt on. Show picture of child who is too small for the adult belt. Ask 'What does she need?' A booster cushion. Explain how the booster cushion works – demonstrate with an actual one if available. Show pictures and discuss – Loose, twisted belt/ Two children sharing a belt/ Belt under arm. If a dog is in the car, it could be injured or harm you in the event of a crash. Show dog with harness on.</p>	
<p><b>Plenary:</b> (5 mins) Why do we need to wear a seatbelt? (To stop us being thrown forward if the car stops suddenly) How tall do we need to be to wear an adult belt? (135cm) If we are smaller what should we use? (Booster cushion) How often should we wear our seatbelts? (Every journey, in friends' cars, remind your parents too)</p>	
<p><b>Evaluation:</b> The session usually takes about 35 minutes, which gives enough time for interaction and discussion. Follow-up worksheets on Seatbelts and Forces are available. Another follow-up idea - look at the teacher in his/her car, children to see the difference when they sit in.</p>	