

Engineering Car Crash Safety with Newton's Third Law

Name: _____

Date: _____

Student worksheet

Directions: Use this worksheet to record your designs and observations as you use the engineering design process.

Car Design

1. Come up with your own idea for a car design.
 - a. Draw a picture of your design.
 - b. Label the main parts of your design (wheels, axles, chassis).
 - c. Make a list of the materials needed for your design.

Engineering Car Crash Safety—Page 2

Name: _____

2. Talk to your group and agree on a single car design that you will build. This can be a combination of two or more designs.
 - a. Draw a picture of the design.
 - b. Label the main parts of the design (wheels, axles, chassis).
 - c. Make a list of the materials needed for the design.
3. Write down your observations of what happened when you crash-tested your group's car. What happened to the car? Was there any damage to the car?

Engineering Car Crash Safety—Page 3

Name: _____

Bumper Design

1. Come up with your own design for a bumper that can protect your group's car during a crash.
 - a. Draw a picture of your design (the bumper attached to the car).
 - b. Make a list of the materials needed to build your bumper (you do not need to re-list the materials for the car).

Engineering Car Crash Safety—Page 4

Name: _____

2. Talk to your group and agree on a single bumper design that you will build. This can be a combination of two or more designs.
 - a. Draw a picture of the design.
 - b. Make a list of the materials needed to build the bumper (you do not need to re-list the materials for the car).

Engineering Car Crash Safety—Page 5

Name: _____

Testing

1. Test your bumper, and use this table to record your observations and the changes you made to make your bumper better.

Test #	Observations	Changes you made before the next test
1		
2		
3		

2. If you had more time or materials, what other changes would you make to your car's bumper? Briefly explain why you would try these changes.