



# A CRASH COURSE in COLLISIONS

FAMILY ACTIVITY

Your child has been learning about energy, force, and motion with the help of Lightning McQueen—the world champion racer of Disney • Pixar’s *CARS 3*. Continue exploring the science behind racecars together with this fun activity.

**You’ll Need:** Several books, 3-foot-long piece of cardboard, tape, small ball, a variety of small toys or household objects the ball can crash into, ruler, pen or pencil.

**Set It Up:** In Disney • Pixar’s *CARS 3*, Lightning McQueen experiences a crash. If one car bumps another during a high-speed race, its energy is transferred to the other car. That can send one or both cars spinning out of control. Follow the steps below to see the science of what happens when objects collide.

1. In an open, preferably uncarpeted area, stack several books to 1 foot high. Tape one end of the piece of cardboard to the top of the stack and the other end to the floor. This is your racetrack.
2. Use the table below to set up different crash scenarios with toys or household objects.
3. Release the “car” ball from the top of the ramp. Have your child write down what happened when the car struck the objects. Fill in the table below and discuss.



TYPE OF CRASH	OBSERVATIONS	MEASUREMENTS
1 object at the base of the ramp		
1 object placed 1 foot from the base of the ramp		
2 objects in a row at the base of the ramp		
1 object at the base of the ramp whose height has been raised a few more inches		

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