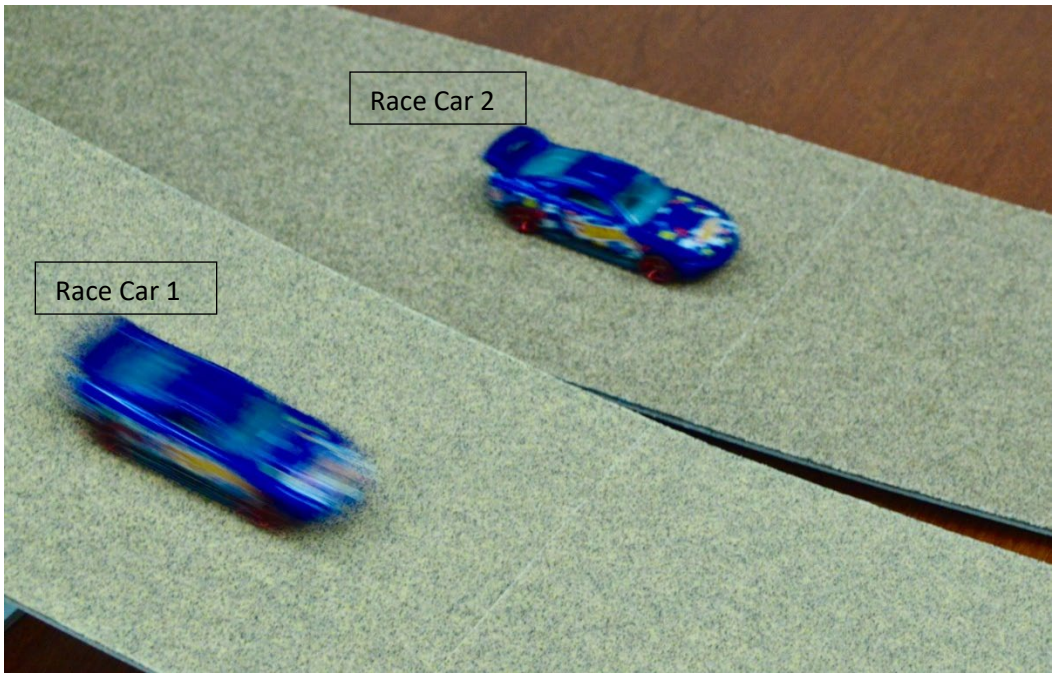
**Name: _____** **Date: _____**

## Energy Transfer Student Pre- or Posttest (Answer Key)

1. Two identical race cars are racing around a track.




Photograph by Hector Mireles

a. Describe the speed of the two cars.

**Ideal response:**

Race Car 1 is faster than Race Car 2.

b. Compare the energy of the two cars. How do you know which car has more energy?

**Ideal response:**

Race Car 1 has more kinetic energy compared to Race Car 2. I know this because Race Car 1 is moving faster than the other car, even though both cars have the same mass.

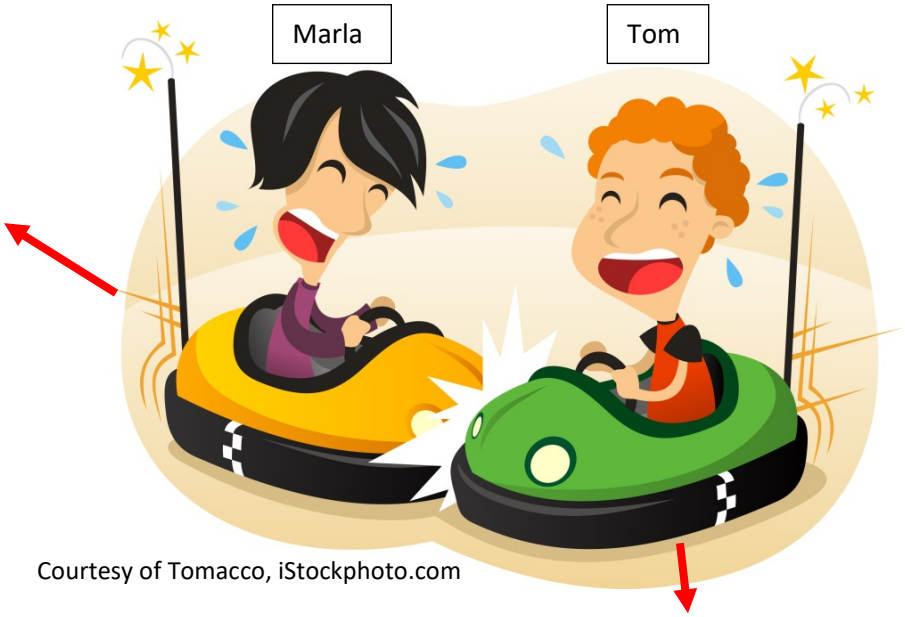
2. It's the Fourth of July, and fireworks are exploding everywhere! How do you know that energy is involved when fireworks explode? What evidence do you observe in the photograph? List all of the forms of energy that are present in the fireworks.

Photo courtesy of Pixabay.com

**Ideal response:**

The energy in the fireworks transforms, or changes, into sound, heat, and light.

3. Tom and Marla go to the local amusement park. They're excited to ride in the bumper cars, but Tom can't get his car to move. Marla sees her chance to run into Tom. BAM! Marla hits Tom's car.




Courtesy of Tomacco, iStockphoto.com

a. Describe what happens to the motion of both Marla's car and Tom's car after the crash.

**Ideal response:**

The force from the collision pushes the cars away from each other.

b. What happens to the energy of both cars during the crash?

**Ideal response:**

Some of the cars' energy in the cars changes, or transforms, from kinetic energy into heat and sound.

4. Jonelle is moving down a slide on the playground.

Photo courtesy of Pixabay.com

a. Describe Jonelle's energy as he moves down the slide.

**Ideal response:**

At the top of the slide, Jonelle's energy is mostly in the form of potential energy. As he moves down the slide and speeds up, his potential energy decreases, and his kinetic energy increases. Some energy turns into heat as he rubs against the surface of the slide.

b. Where did the energy come from to move Jonelle down the slide?

**Ideal response:**

The energy to move Jonelle down the slide came from potential energy. This potential energy came from Jonelle when he worked hard to climb up the stairs.

5. Klaire turns on the TV to watch her favorite show. She has been learning about energy at school and tells her mom that their TV has energy. How does Klaire know that the TV has energy? What is her evidence?

**Ideal response:**

Klaire knows that the TV has energy because heat, light, and sound are released.

- The TV gets warm.
- The screen lights up.
- Sound can be heard as the volume increases.