

# Second Law of Motion

Newton's second law of motion states that acceleration is produced when a force acts on a mass. The greater the mass of the object to be accelerated the greater the amount of force needed to accelerate the object. Each of the following situations demonstrates Newton's second law. Describe how the difference in mass will affect the acceleration in each situation.

**1** Amy weighs 78 pounds and her dad weighs 187 pounds. They are rollerskating. Amy challenges her dad to a race. They stand poised at a starting line. Her dad yells, "Go!"

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**2** Tony and Jose play on the football team. Since Tony is older, he weighs more and is taller than Jose. During practice, Tony and Jose practice blocking on a tackle dummy. Both boys start from the same place and position. Each tackle dummy has the same mass. At the same time, the boys run forward into the dummy.

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**3** Two vehicles are broken down on the side of the road. One is a small sports car. The other is a delivery truck. The drivers need to push the vehicles forward and onto the shoulder of the road. Both drivers are about the same size. Each driver stands at the back of his vehicle and pushes.

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