

Worksheet: Newton's 2nd and 3rd Laws

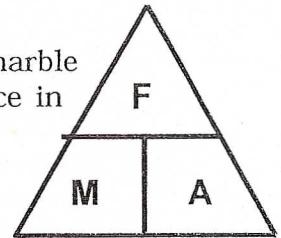
Name _____ Date _____ Period _____

1. Explain using Newton's Second Law of Motion, why you can throw a golf ball further than a bowling ball, even though you throw both at the same angle and with the same amount of force.

2. Describe what a force is in physics.

For questions 2 and 3 refer to the triangle formula to the right.

3. A steel marble with a mass of .020 kg is fired at an angle of 45° from the marble launcher. If the acceleration of the marble is 5.6 m/s^2 , what was the force in Newtons applied to the marble? Include the correct units!



4. What mass will a pumpkin have if a force of 450 Newtons accelerates it to 110 m/s^2 ? Include the correct units!

5. **Explain using Newton's Third Law of Motion**, what will happen when a person standing on a skateboard or rollerblades, throws a heavy concrete block as fast as they can to a person standing 10 feet in front of them.

6. **Explain using Newton's Third Law of Motion**, how starting blocks have helped lower times in sprinting events.
