

<b>MAS</b> 9-10 correct	<b>PRO</b> 7-8 correct	<b>APP</b> 5-6 correct	<b>DEV</b> 3-4 correct	<b>BEG</b> 0-2 correct
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## Bill Nye the Science Guy - Motion

<http://www.youtube.com/watch?v=TGuhXTJgsqc>



*While watching the movie answer the following questions.*

1. Everything in the universe is in \_\_\_\_\_.
2. If a scooter is placed on an air track, will the scooter move on its own? YES or NO
3. If something is moving, it keeps on moving unless acted on by an outside \_\_\_\_\_.
4. Newton's first law states: things at rest stay \_\_\_\_\_ and things in motion stay \_\_\_\_\_ unless acted on by an outside force.
5. Newton's second law states: to move a mass, you need a \_\_\_\_\_.
6. In the formula  $F=ma$ , "F" means \_\_\_\_\_ "m" means \_\_\_\_\_ and "a" means \_\_\_\_\_.
7. Newton's third law states, for every action there is an equal and opposite \_\_\_\_\_.
8. To have motion, it takes motion. You are either going to \_\_\_\_\_ or \_\_\_\_\_.
9. \_\_\_\_\_ is measured in grams or kilograms.
10. In zero gravity, do the laws of motion still apply? YES or NO

## Bill Nye the Science Guy – Motion Quiz

*Answer the following questions once you have watched the Bill Nye video on Motion.*

1. Forces put things in motion. TRUE or FALSE
2. Only objects that are not moving have inertia. TRUE or FALSE
3. Unmoving objects are being acted on by balanced forces. TRUE or FALSE
4. The inertia of a bowling ball is the same as the inertia of a golf ball. TRUE or FALSE
5. The mathematical formula,  $f=ma$ , says that the amount of force necessary to move two bowling balls is twice the force necessary to move one bowling ball. TRUE or FALSE
6. The mass of an object is measured in grams or kilograms. TRUE or FALSE
7. Newton's Laws of Motion do not apply in outer space. TRUE or FALSE
8. Which of the following statements about inertia is correct?
  - a. The more mass a body has, the more inertia it has.
  - b. The more mass a body has, the less inertia it has.
  - c. The amount of inertia a body has is not dependent upon its mass.
  - d. None of the above is correct.
9. Which of the following statements about Newton's Laws of Motion is correct?
  - a. Objects at rest stay at rest; objects in motion stay in motion.
  - b. The force necessary to overcome an object's inertia depends on its mass.
  - c. When a force acts on an object, the object exerts an equal and opposite force back.
  - d. All of the above.
10. Which of the following statements about the mass and weight of an object is correct?
  - a. The mass of an object is the same regardless of where it is measured.
  - b. The weight of an object varies with the force with which gravity pulls on it.
  - c. Both statements A and B are correct.
  - d. Neither statement A nor B is correct.