

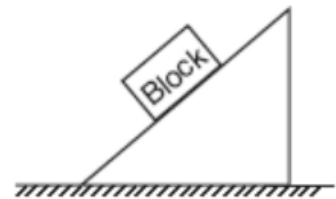
## Motion Assessment Study Guide

Read the investigation and answer the questions to review the concept:

- A **fair test** (controlled investigation) tests one variable at a time.

Chris and Martin Kratt are studying friction during their motion unit. They wondered how different textures affect the motion of an object. They decide to test 3 different textures: sandpaper, printer paper, and wax paper. To test their prediction they: (1) covered a ramp with sandpaper, (2) placed a block on a ramp, (3) released the block, and (4) measured how far it slid. Then, they repeated these steps with printer paper and wax paper. Here were their results.

Ramp Surface	Ramp Height	Distance the bottle rolled
Sandpaper	10cm	30cm
Printer paper	10cm	50cm
Wax Paper	10cm	60cm



1. What was the one **variable** that changed in this investigation? \_\_\_\_\_  
\_\_\_\_\_
2. What were some of the **constants** in this investigation? \_\_\_\_\_  
\_\_\_\_\_
3. Chris and Martin measured distance. Name a tool you could use to measure distance. \_\_\_\_\_
4. Was this a fair test? \_\_\_\_\_

Read the statements and decide if they are True or False to review the concepts:

- Scientists use models to test and explain ideas.
- Models have limits.

5. \_\_\_\_\_ Models can be used to describe and explain the real world.
6. \_\_\_\_\_ Models play an important role in science.

**Complete the following activities to review the Force and Motion concepts:**

- Motion is movement.
- You can describe an object's motion by how long it takes to move, how far the object travels, how fast the object goes, and what path it follows.
- How you describe motion is **relative** to your position.
- Changes in motion are caused by forces.
- A force is a push or a pull.
- There are many types of force like gravity, friction, and magnetism.
- On Earth, gravity is a force that pulls everything down.
- Friction is a force (a pull) that slows down moving objects.

**Matching:**

- |     |       |          |    |  |
|-----|-------|----------|----|--|
| 7.  | _____ | Force    | A. | A force that slows down a moving object. |
| 8.  | _____ | Speed    | B. | Movement                                 |
| 9.  | _____ | Gravity  | C. | A push or pull.                          |
| 10. | _____ | Texture  | D. | How quickly something moves.             |
| 11. | _____ | Friction | E. | A force that pulls objects to Earth.     |
| 12. | _____ | Motion   | F. | The feel or look of a surface            |

**Fill In:**

**Word Bank:**

Distance, Seconds, Relative, Motion, Stopwatch

13. Forces cause \_\_\_\_\_.
14. We measure how long an object moves in \_\_\_\_\_ using a stopwatch.
15. We measure how fast an object goes by using a \_\_\_\_\_ for time and a ruler for \_\_\_\_\_.
16. We usually talk about the motion of an object \_\_\_\_\_ to other objects.