**Physical Science Force and Motion 5th Grade Pre - Test**

**Multiple Choice** *Circle all of the answers that complete the statement or answer the question (more than one answer is possible).*

1. **A student uses a toy car and ramp to investigate how surface affects the speed of a rolling object. What should the student intentionally change when doing this experiment?**

A. The material on which the toy car rolls

B. The weight of the toy car

C. The color of the toy car

D. The distance the toy car travels

1. **Which two tools should be used together to measure speed?**
2. Balance and spring scale

B. Ruler and graduated cylinder

C. Meter stick and stopwatch

D. Clock and a measuring cup

1. **Which describes a contact force?**

A. A magnet pulling a paper clip towards it

B. Gravity pulling down a baseball

C. An electrical field

D. Wind pushing a sailboat

1. **Which of the following are examples of movement caused by non-contact forces?**

A. Wind pushing against a kite

B. Paperclips being pulled toward a magnet

C. Shoes rubbing against the floor

D. An electrical field

1. **A boy is pulling his little sister in a wagon. If his older brother comes along and they pull on the wagon together, how will this increase in force affect the motion of the wagon?**

A. It will accelerate

1. It will remain at rest

C. It will continue unchanged

D. It will change direction

1. **A train is moving along a track. If the forces acting on the train are balanced, how will its motion be affected?**

A. Change direction

B. Speed up

C. Continue, unchanged

D. Stop

1. **Two classes are playing tug-of-war. If the center of the rope is not moving, what must be true?**

A. One class is pulling harder than the other

B. Both classes have equal mass.

C. The forces are balanced.

D. Both classes are pulling equally.

1. **A girl is riding her bike on a smooth bike path. She starts on level ground. When she gets to a hill, she has to pedal harder to go the same speed. Why does this happen?**

A. Her bike is slipping backwards down the hill.

B. There is more wind resistance on the hill.

C. The force of gravity is slowing down her bike.

D. The friction on a hill is more than on level ground.

1. **A row boat is floating on the water with two passengers. The weight of the boat is pushing on the water and the water is exerting an upward force called buoyancy on the boat. What will happen if another passenger gets on the boat?**
2. It would go left.
3. It would go lower in the water.
4. It would rise higher in the water.
5. It would sink to the bottom of the water
6. **The chart below describes the distance different balls traveled in 5 seconds**.

|  |  |
| --- | --- |
| Type of Ball | Distance (in meters) |
| Baseball | 12 |
| Hacky Sack | 8 |
| Basketball | 2 |
| Soccer Ball | 5 |

**Which ball travelled at the fastest speed?**

A. Baseball

1. Basketball

C. Hacky Sack

D. Soccer Ball

**Constructed Response**

1. **A car is driving past a house at 15 miles per hour. Describe the perceived motion of the car from each of the following positions..**

Position 1: Person walking on the sidewalk next to the car

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Position 2: Person sitting in the back seat of the moving car

Position 3: Person looking out the window of the house at the car.