ORCHIDS The International School

Grade 4 Science Worksheet:1 (DifficultyLevel: Difficult)

Name: _____ | Date: _____

Section 1: Multiple Choice Questions

Choose the most accurate answer:

1. Which of the following statements best describes gravitational force?
   a) It acts only on objects that are not in motion.
   b) It pulls all objects toward the Earth's center.
   c) It only affects objects in space.
   d) It repels objects away from the Earth.
2. Which force is responsible for slowing down a car when brakes are applied?
   a) Elastic force
   b) Magnetic force
   c) Frictional force
   d) Gravitational force
3. What is the term for the force opposing an object's motion in a liquid?
   a) Buoyancy
   b) Water resistance
   c) Friction
   d) Elasticity
4. Two magnets are placed close to each other, and they attract. What type of force is acting here?
   a) Frictional force
   b) Gravitational force
   c) Magnetic force
   d) Elastic force
5. What is air resistance an example of?
   a) Non-contact force
   b) Contact force
   c) Elastic force
   d) Magnetic force

Section 2: Fill in the Blanks

1. The force that pulls objects toward the center of the Earth is called _____.

2. The force that works in the opposite direction to motion on a surface is _____.
3. _____ force allows a swimmer to float in water.
4. The ability of a magnet to attract or repel is due to _____ force.
5. Airplanes face _____ while flying, which slows them down.

Section 3: Match the Forces with Their Descriptions

Forces:

1. Gravitational force
2. Buoyant force
3. Frictional force
4. Air resistance
5. Elastic force

Descriptions:
a) Acts upwards to help objects float
b) Slows down objects moving through air
c) Pulls objects toward the center of a celestial body
d) Acts between surfaces in contact, opposing motion
e) Restores an object to its original shape after deformation

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Section 4: True or False

1. Air resistance and buoyant force both act in the same direction.

2. Friction only acts when two objects are moving.

3. Gravitational force can act across large distances.

4. Magnets can only attract objects, not repel them.

5. Buoyant force is stronger than gravity in water.

Section 5: Short Answer Questions

1. Why do astronauts experience less gravity on the Moon than on Earth?
2. Explain how friction helps in walking.
3. Describe a situation where air resistance plays a key role.
4. How does elastic force work in a bow and arrow?
5. What would happen if there were no friction while driving a car?

Section 6: Identify the Force

Write the force acting in each situation:

1. A leaf falling to the ground: _____
2. A cork floating in water: _____
3. A skier sliding down a snowy slope: _____
4. A magnet picking up paper clips: _____
5. A stretched spring recoiling: _____

Section 7: Problem-Solving

1. A person is pushing a box up a hill. Identify three forces acting on the box and explain their roles.
2. A hot air balloon is rising. Which forces are acting on it, and how do they interact?
3. When a fish swims underwater, what forces allow it to move and stay afloat?
4. You drop a tennis ball and a basketball from the same height. Why do they reach the ground at the same time?

Section 8: Application-Based Question

Experiment Idea:
Design an experiment to test the effect of friction on motion. Use a toy car and roll it on different surfaces (e.g., wood, carpet, glass).

- Record your observations for each surface.
- Write a conclusion about how friction changes with surface type.

Enjoy exploring forces in action! 🚀

BE CHAMPION