

Grade 4 Science Worksheet:2 (DifficultyLevel: Difficult)

Name: _____ | Date: _____

Section 1: Multiple Choice Questions

Choose the correct answer:

- Which of the following is an example of a non-contact force?
 - Tension
 - Friction
 - Gravitational force
 - Applied force
 - Which force allows a person to walk on the ground?
 - Gravitational force
 - Frictional force
 - Magnetic force
 - Elastic force
 - What is the force that acts on an object moving through a fluid, like air or water?
 - Air resistance
 - Gravitational force
 - Buoyant force
 - Magnetic force
 - When a rubber band is stretched and then released, which force causes it to return to its original shape?
 - Elastic force
 - Gravitational force
 - Frictional force
 - Magnetic force
 - A magnet attracts a piece of iron. What kind of force is this?
 - Gravitational force
 - Magnetic force
 - Frictional force
 - Electrostatic force
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Section 2: Fill in the Blanks

- The force that causes objects to fall toward the Earth is called _____.
- The force that helps objects float in water is known as _____.

3. The force acting between the surface of an object and the ground to stop or slow it down is _____.
 4. A magnet has two poles: _____ and _____.
 5. The force that makes a stretched spring return to its original shape is called _____ force.
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Section 3: Match the Forces with Their Effects

Forces:

1. Gravitational Force
2. Frictional Force
3. Air Resistance
4. Magnetic Force
5. Elastic Force

Effects:

- a) Pulls objects towards the Earth's surface
 - b) Slows down an object as it moves through air
 - c) Opposes the motion of objects in contact with surfaces
 - d) Causes a rubber band to snap back to its original shape
 - e) Causes attraction or repulsion between magnetic poles
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Section 4: True or False

1. Friction increases the speed of objects in motion.

 2. Gravitational force is weaker on the Moon than on Earth.

 3. A magnet can attract both magnetic and non-magnetic objects.

 4. Buoyant force acts in the downward direction.

 5. Elastic force works only when a material is stretched or compressed.

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Section 5: Short Answer Questions

1. Explain how friction helps in stopping a moving vehicle.

 2. Describe an example where both gravitational and buoyant forces act on an object.

 3. Why do objects fall to the ground when dropped?

 4. How does elastic force work in a spring?

 5. How does air resistance affect a skydiver's fall?

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Section 6: Force Identification

Identify the type of force acting in each situation:

1. A boat floating on water: _____
 2. A person pushing a cart: _____
 3. A ball thrown in the air and pulled down: _____
 4. A magnet attracting a nail: _____
 5. A spring being stretched: _____
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Section 7: Problem-Solving Questions

1. A car is moving on a road. What are the forces acting on the car, and how do they influence the motion?

 2. A person is jumping from a height. Explain how gravity and air resistance affect the fall.

 3. When you stretch a rubber band and let it go, it snaps back to its original shape. What force causes this?

 4. What would happen if there was no friction on the surface of a road? How would it affect a car?

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Section 8: Experiment Design

Experiment Idea:

Design an experiment to test how different surfaces (e.g., wood, carpet, glass) affect the amount of friction.

- List the materials you would use.
 - Describe the procedure to follow.
 - Explain how you would measure the effect of friction on a moving object.
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Section 9: Application-Based Questions

1. If you were designing a car, what would you do to reduce air resistance and improve fuel efficiency?

2. How does the shape of an object affect the amount of air resistance it experiences?

3. If a person jumps into a pool, why do they feel lighter under the water compared to on land?

Section 10: Essay Question

Explain how different types of forces (gravitational, frictional, magnetic, and elastic) are essential for everyday activities. Provide at least three examples from daily life where these forces play a role.