



3055 BA SANGAM COLLEGE

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WORKSHEET 27

School: Ba Sangam College

Name: _____

Subject: Basic Science

Year/Level: 9

Strand 3	ENERGY
Sub Strand 3.3	Forces
Content Learning Outcome	Investigate the effect of force on an object at different places and describe the different ways force affects the shape and motion of objects.

Lesson Notes Types of Forces

Gravitational force

- Is the pulling force that attracts objects to the center of the earth
- Force of gravity is not the same on all objects
- The greater the mass of the object, the greater the force of gravity on it
- All objects are attracted to all other subjects but earth is much bigger it attracts objects very strongly.

Mass and weight

Mass

- The amount of matter in an object
- Never changes, no matter where the object may be
- Measured in kilograms(kg)

Weight

- The force of gravity on an object
- Is zero in space
- Is about 1/6 less than the moon than the earth
- Is measured in newton(N)

Gravity (gravitational force)

- The first person who discovered gravity was Sir Isaac Newton, a British scientist
- Every object pulls the things around it.
- The earth is much bigger and its pull is much stronger.
- This force of attraction towards the earth is called gravity.
- Isaac Newton explain that gravity depends on mass of an object e.g. the sun which has a very huge mass, has a greater force of gravity than the earth so the earth moves around the sun
- The moon goes around the earth because the earth's gravity is larger than the moon

Magnetic force

- Is the force of attraction (pull) or repulsion (push) produced by magnets on magnetic materials like iron, steel etc.
- Is a non-contact force
- Becomes weaker as the objects moves further away from the magnet
- Is very useful e.g. magnetic needle in a compass for giving direction

4. Electrostatic force

- Is a force between two charges
- Interaction between two like charged objects is repulsive
- Interaction between two opposite charged objects is attractive
- Positive charge objects and neutral objects attract each other
- Negative charged objects and neutral objects attract
- E.g. a plastic ruler was charged by rubbing with hair and attracted the neutral paper

Effects of force

- Change the shape and size of an object.
- Change in the speed of a moving object either speeding it up or slowing it down.
- Change the direction in which an object is moving.
- Stop a moving object. *Moving a stationary object. *Have no visible effect at all

Effect of force on different surface area

- Rolling is much easier than sliding on an object
- More friction is needed to slide something

Exercise

- All objects are _____ towards the earth by a force called _____.
force. (1 mark)
- This was first written by _____ who said that _____ objects
pull one another. (1 mark)
- We feel the pull of the earth more than the pull of a school bag because earth is _____
than the object on it. (1 mark)
- Define mass and weight. _____

(1 mark)
- The following were weighed on earth .how much they weigh on the moon.
a) A 600N man b) A 2400N car

(2 marks)

6. The following objects had their masses measured on earth. What would their masses be on the moon?

a) A 2kg bag of potatoes

c) a 0.5 kg packet of sausage

(2 marks)

7. Study the diagram of two cars carrying the magnet to answer the questions that follow:



i. Would the two cars carrying the magnet repel each other or be attracted to each other?

(1 mark)

ii. What type of force is being exerted between the two magnets?

(1 mark)

TOTAL: ____/10

