



G. SCIENCE REVISION FOR GRADE 5

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CHAPTER 7

PROPERTIES OF MATTER

Change in matter are either physical or chemical.

Physical change :- changes do not basically change in matter.
Or it changes size, shape , or state of matter.

Chemical change :- basically change matter in way that the matter loses its
original feature .

It means matter is changed in to one ore more different kind of matter.

Density; *is property of matter and it can be used to identify materials or to compare two different objects .*

Density is define as the mass of certain volume.

PROPERTIES AND CHANGES

Physical properties :- it includes color, odor, hardness and shape.

Chemical properties :- it involves a changes in chemical composition of a substance. Eg. Burning of wood, burning of papers. Etc

CHAPTER 8

PHYSICAL SCIENCE

- ▮ 1. Life science – mainly focuses on living things. It includes Biology and medicine.
- ▮ 2. Physical science – deals with non-living matter. It includes physics and chemistry.

SIMPLE MACHINES

Machines help to do work.

Mechanics :- help people to do work easily by changing the size or direction of applied force .There are always two forces involved in using machine.

1. Effort :- the force applied to a machine

2. Load :- the force that the machine exerts on an object.

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There are six different type of simple machines.

- 1. Inclined plane :-** an inclined plane is a slanted surface used to raise an object. Eg Ramp (
- 2. Wedges :-** most wedges are mode of two inclined plane.
Eg. Knife, an axe and a razor blade
- 3. screw :-** wrapped around a cylinder to form a spiral.
- 4. pulleys :-** is a chain, belt or rope wrapped around a wheel.
- fixed pulley can not multiply a force.
- 5. Wheel and axle :-** a lever that rotates in a circle.
- 6. Lever :-** is free of pivot or move about at a fixed point when an effort force is applied. The fixed point of the pivot is called fulcrum.

CLASSES OF LEVERS

There are 3 classes of levers based on the position of effort force, the load and the fulcrum.

A. First order lever :- the fulcrum is between the effort force and the load.

Eg. Crow bar

B. Second - order levers :- the load is between the fulcrum and the effort force. Eg. Wheel barrow, door, paper cutter

3. Third order lever :- the effort force is between the load and the fulcrum. E.g fishing pole, hoe, shovel
in this class of lever the effort force is greater than the load.

8.3 HEAT AND TEMPERATURE

Heat and temperature are related but they are not the same.

Heat is a kind of energy but temperature is described as hot, warm, cool and cold.

Temperature device :- temperature is measured by a device called thermometer.

Temperature scales :- there are 3 types of temperature scale

- 1. The Celsius scale** :- the lower fixed point is 0° and the upper fixed point is 100°C .
- 2. The Fahrenheit scale** :- the lower fixed point is 32°F and the upper fixed point is 212°F .
- 3. The Kelvin scale** :- temperatures are measured in units called Kelvin.

To convert Celsius temperature in to Fahrenheit scale

$$^{\circ}\text{F} = 9/5x\ ^{\circ}\text{C} + 32$$

To convert Fahrenheit scale in to Celsius scale

$$^{\circ}\text{C} = 5/9 (^{\circ}\text{F} - 32)$$

To convert Celsius scale in to Kelvin

$$^{\circ}\text{K} = ^{\circ}\text{C} + 273$$

Example

$$20^{\circ}\text{C} \text{-----} ^{\circ}\text{F?}$$

$$^{\circ}\text{F} = 9/5x\ ^{\circ}\text{C} + 32$$

$$^{\circ}\text{F} = 9/5x\ 20^{\circ}\text{C} + 32$$

$$^{\circ}\text{F}=68$$

$$100^{\circ}\text{C} \text{-----K?}$$

$$\text{k} = ^{\circ}\text{C} + 273$$

$$\text{k} = 100^{\circ}\text{C} + 273$$

$$\text{K}=373$$

$$36^{\circ}\text{F} \text{-----} ^{\circ}\text{C?}$$

$$^{\circ}\text{C} = 5/9 (^{\circ}\text{F} - 32)$$

$$^{\circ}\text{C} = 5/9 (36 - 32)$$

$$^{\circ}\text{C}=2.222$$

PROPERTIES OF HEAT

The two most important features of heat are change of color and expansion.

Heat exchanges

The law of heat exchange states that the amount of heat lost by the hotter substance is equal to the quantity of heat gained by the colder substance.

Heat transfer

There are 3 Method of heat transfer.

A. conduction :- heat transfer from one substance to an other by the direct contact of the molecule.

B. convection :- heat transfer takes place and gases.

C. Radiation :- Heat transfer in empty space or vacuum

8.5 CHANGE OF STATES

There are 3 states as a solid, liquid, and gas states .
Materials can be transparent, translucent and opaque.

- 1. Transparent:** - a substance light passes completely through the object. E.g water, air, glass
- 2. Translucent:** - light passes through the object partially. E.g waxed paper and frosted glass
- 3. Opaque :-** objects that does not pass light through it. E.g wood, card board