



WE ARE
RABINDRANATH
WORLD
SCHOOL

Class 6th Science



Sorting Materials into Groups

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- A thing that can be seen and touched is called object.
- The matter of which an object is made is called material.
- Objects can be natural or manmade. They are of different shapes , sizes and colours.
- In order to understand objects around us, it is necessary to classify them into groups.

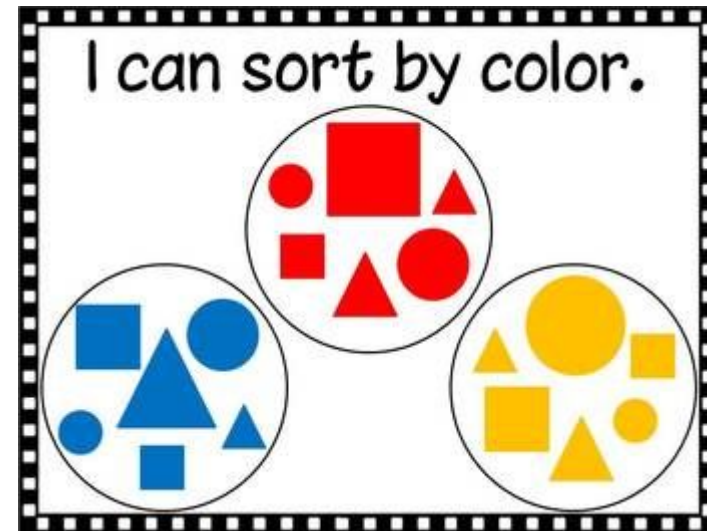
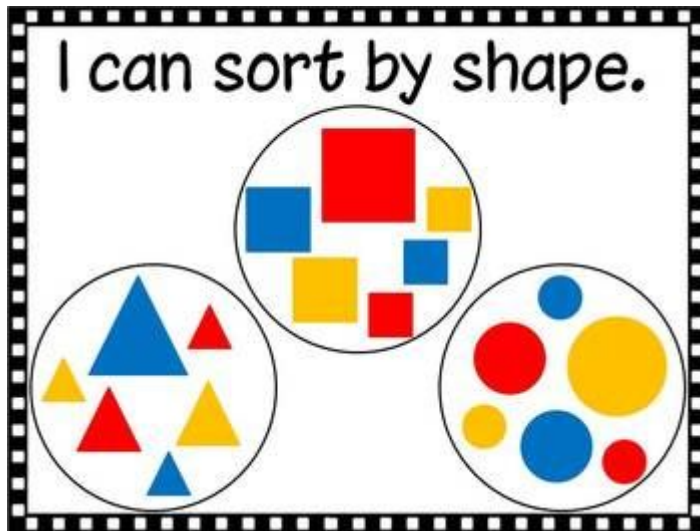


Classification of objects

The sorting of objects into groups with each group having its own characteristic properties, called classification of objects.

Advantages of classification

1. The classification of objects into groups makes it easier to locate them and work with them.
2. The classification of objects into groups helps in understanding them.



Basis of classification of Objects

The classification of various objects into groups can be done on the basis of their similarities and dissimilarities such as :living and non living , plants and animals, nature of material, their use, colour, shape, size, appearance, hardness, texture etc.



Properties of material

The matter of which an object is made is called material.

Materials can be natural or man made.

Natural material – Wood , Coal, Gold, Leather, Soil etc.

Man made material – Iron, Cement, Glass, Plastic etc.

Objects can be made of **same material** or the **combination** of different material. Even the same objects may be made of different material.





Classification of materials

The materials are classified on the basis of certain properties such as:

Appearance

Hardness and softness

Solubility and insolubility in water

Heaviness or lightness

Transparency, Translucency or opaqueness

On the basis of appearance

On this basis materials are classified into two groups:

Shiny Appearance

Dull appearance

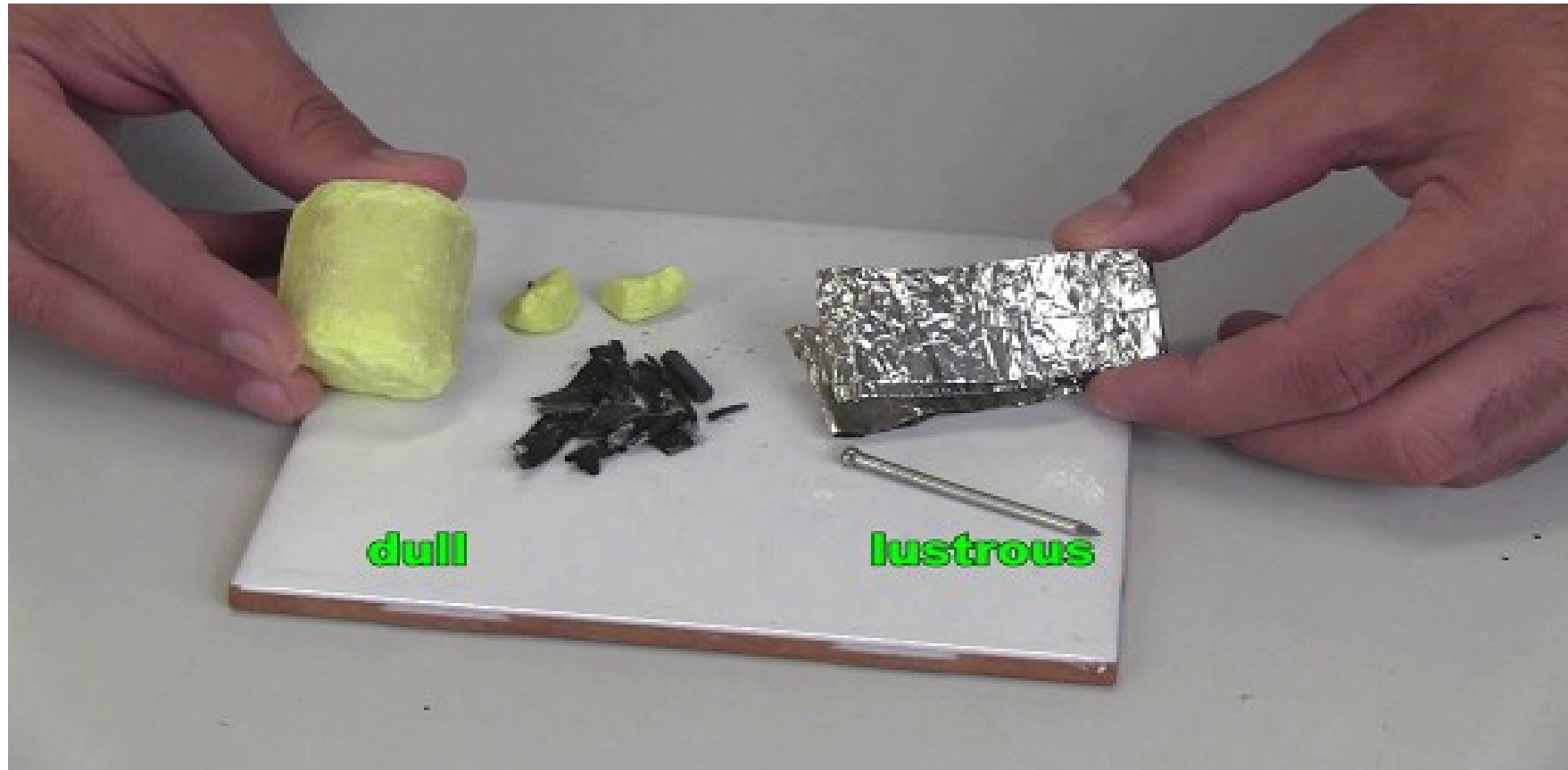
Those material which have shiny appearance are said to have lustre. some metals like iron, copper lose their shine due to the action of air and moisture. So, we should look for lustre in freshly cut surfaces.

Ex. Metals like gold, silver, copper, aluminum, Metal alloys like steel and diamond



Those material which have dull appearance are said to have no lustre.

Ex. Paper, wood, cardboard, rubber





On the basis of Hardness and softness

On this basis materials can be classified as

Hard material

Soft material

Those materials which cannot be easily compressed, cut, bent or scratched are called **hard materials**.

Ex. Iron, steel, rock, bricks, diamond, teeth ,bones etc.

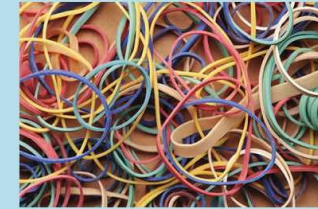
Those materials which can be easily compressed, cut, bent or scratched are called **soft material**.

Ex. Sponge, cotton, wax, clay, tomato etc.

hard



soft





On the basis of solubility in water

On this basis materials can be classified as

Soluble in water

Insoluble water

When we mix different materials in water some of them get dissolved while some are undissolved in water.

Even some gases like oxygen and carbon dioxide are soluble in water whereas gases like nitrogen and methane are insoluble in water

Wax



Sugar



Sand



Salt



Jelly



On the basis of their density

On this basis we can classified material as

Materials which are heavier than water

Materials which are lighter than water

The materials which are heavier than water sinks in water while the materials which are lighter will float on water.





On the basis of Transparency

On this basis material can be classified as

Transparent

Translucent

Opaque

Those material through which we can see clearly are called transparent materials. Ex. Glass, air, water etc.

Those materials through which we cannot see clearly are called translucent materials. Ex. Butter paper, tissue paper etc.

Those material through which we cannot see at all, are called opaque materials. Ex. Wood, metals, brick etc.



Opaque



Translucent



Transparent



THANK YOU

CLASS 6th

Website

www.rwsgurgaon.com

Science

Ms. Simi Rana

Email Address

info@rwsgurgaon.com