ODM EDUCATIONAL GROUP
Changing your Tomorrow

PHYSICAL AND CHEMICAL CHANGES

SUBJECT-CHEMISTRY

CHAPTER NO- 2

Types of changes- periodic and non periodic changes, desirable and undesirable changes, reversible an irreversible changes

PERIOD-2

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: 1800 120 2316
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

LEARNING OBJECTIVE

Students will be able to

- Understand the meaning of periodic and non periodic changes, desirable and undesirable changes, reversible and irreversible changes.
- Distinguish the two types of changes- periodic and non periodic changes
- Distinguish the two types of changes- desirable and undesirable changes
- Distinguish the two types of changes- reversible an irreversible changes

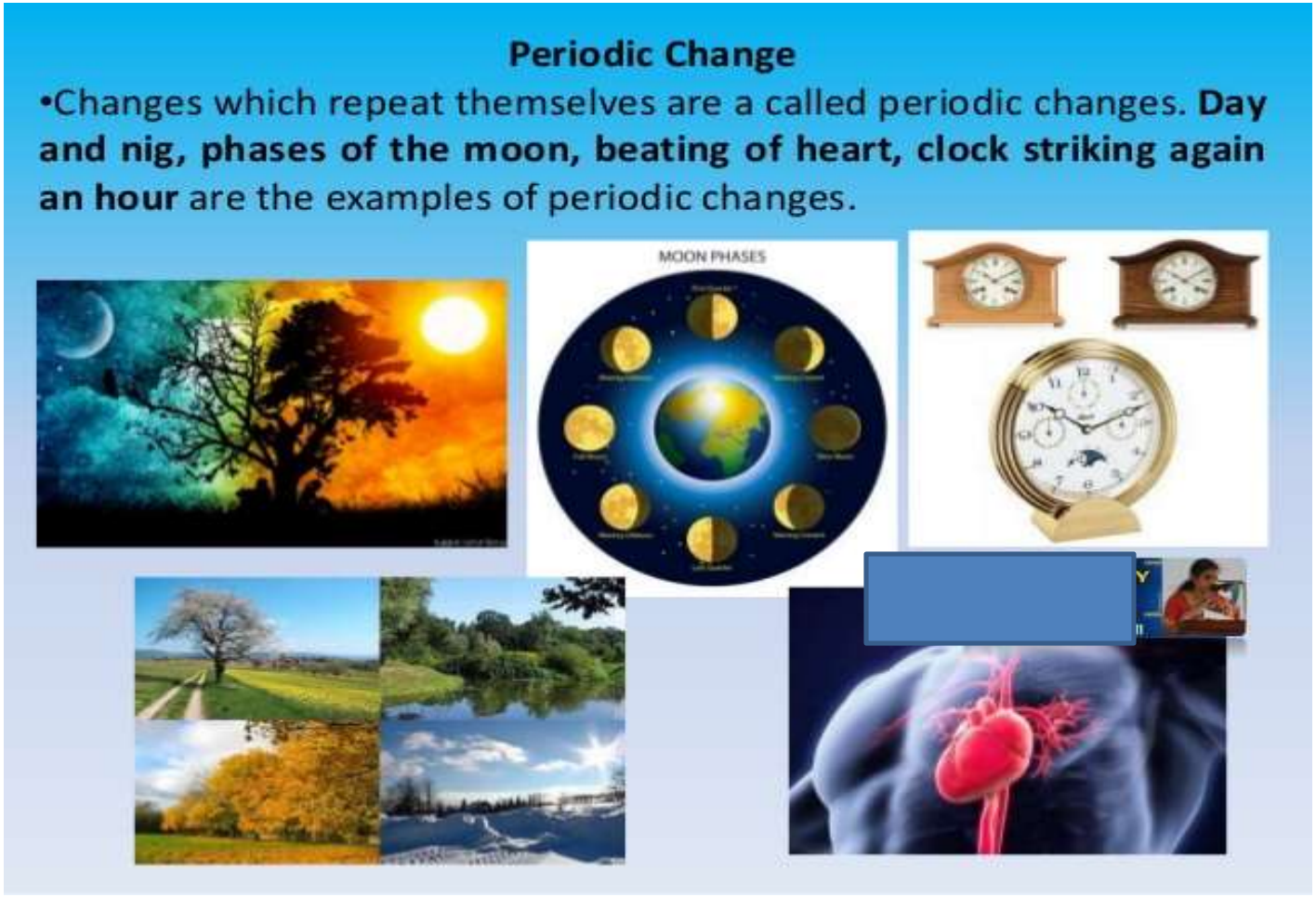
WARM UP QUESTIONS

Recapitulation of the previous topic by asking following questions

- Classify the following into slow and fast change
- Blinking of eyes
- Change of seasons
- Explosion of crackers
- Rusting of iron
- Growing of nails
- Formation of curd from milk
- How will you differentiate between natural and manmade changes? Give some examples.

PERIODIC AND NON PERIODIC CHANGES

- Changes that repeat at regular intervals are called periodic changes.



Certain changes that do not repeat themselves at regular intervals of time, and such changes are called non-periodic changes.

Non-periodic Changes:

- Changes which do not occur regular intervals of time are called non-periodic changes. For example **eruption of volcanoes, earthquakes, forest fire** etc., are non-periodic changes.

- Demonstrate any one of each type of change by showing images based on real life examples- like change of day and night, change of seasons, development of high tides and low tides, power break down, earth quakes.
- Show a video for better understanding of the concept
- https://youtu.be/PRbMEtUMuNk

Desirable and undesirable changes

Desirable change	Undesirable change
(i) Changes brought about by nature or man which produces – useful or good results.	Changes brought about by nature or man which prdouces – useless or bad results.
(ii) ***Examples of a desirable chang***	***Examples of an undesirable change***
Rain bringing water to the crops, change of milk to curd, Ripening of fruits seedling into a plant.	Rain causing destruction by floods, milk turning sour on a hot day, rotting of fruits, cutting of trees.

forest fire

decaying of fruit

egg to chicken

Wind mills

- Demonstrate any one of each type of change by showing images based on real life examples- like burning of fuel for cooking, cutting of trees, floods
- Show a video for better understanding of the concept
- https://youtu.be/FuZKaM5X1L8

Reversible an irreversible changes

Reversible process	Irreversible process
It is a slow process going through a series of smaller stages with each stage maintaining equilibrium between the system and surroundings.	In this process the system attains final state from the initial state with a measurable speed. During the transformation, there is no equilibrium maintained between the system and surroundings.
A reversible process can be made to proceed in forward or backward direction.	Irreversible process can take place in one direction only.
The driving force for the reversible process is small since the process proceeds in smaller steps.	There is a definite driving force required for the progress of the irreversible process.
Work done in a reversible process is greater than the corresponding work done in irreversible process.	Work done in a irreversible process is always lower than the same kind of work done in a reversible process.
A reversible process can be brought back to the initial state without making an change in the adjacent surroundings.	An irreversible process cannot be brought back to its initial state without making a change in the surroundings.

Reversible Changes

What is a reversible change?

A reversible change is a change that can be undone or reversed.

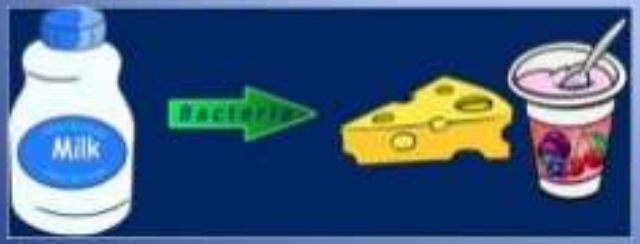
When chocolate is warmed it melts and turns into a liquid. It can be turned back into a solid again by cooling .

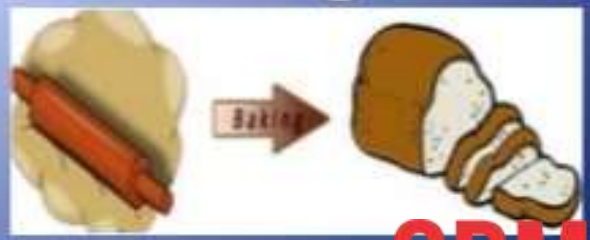
Orange juice can be frozen to form a solid icy pole. When it melts it becomes liquid again.

When candle wax is heated it becomes liquid and as it cools it becomes a solid again.

Irreversible Changes

- Are Chemical reactions.
- Start with a material and end up with one or more new ones.
- The new material is completely different from the original one.
- Sometimes the new material is useful and sometimes it is not.
- Sometimes microorganisms such as bacteria and yeast are used to create irreversible changes.





- Demonstrate any one of each type of change by showing images based on real life examples- like glowing of electric bulb, stretching of rubber band, melting of wax
- Show a video for better understanding of the concept
- https://youtu.be/-01G5cOqpqM

HOME ASSIGNMENT

Exercise-2,3

Q. Differentiate between periodic and non periodic changes

Q. Differentiate between desirable and non desirable changes

Q. Differentiate between reversible and irreversible changes

THANKING YOU

ODM EDUCATIONAL GROUP