

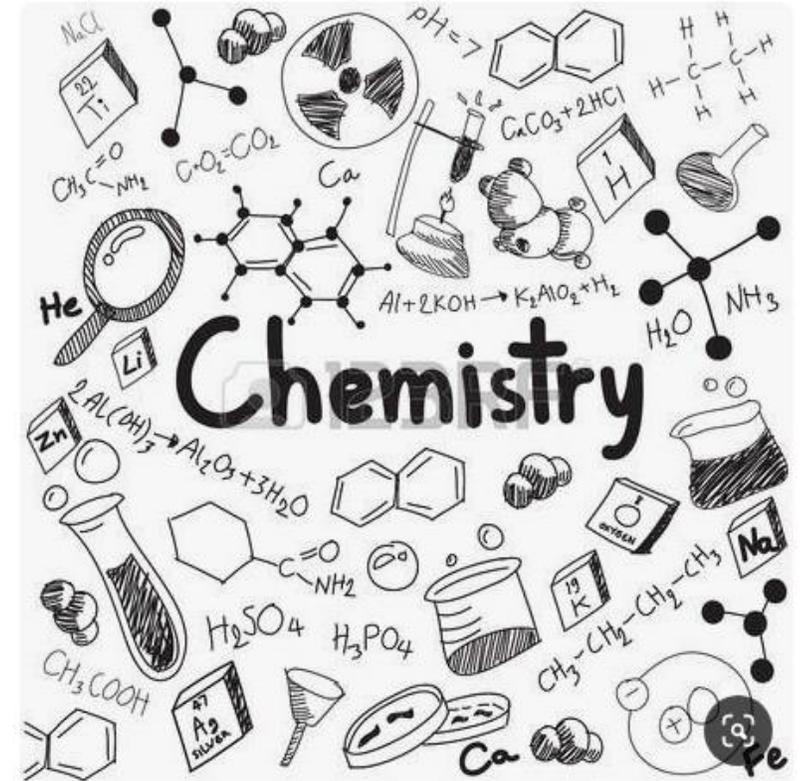
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- Lesson: Reactivity of metals (with water and oxygen)
- Scholastic Year: 2023-2024
- Grade: 7CS



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Objective:

1. To investigate the reactivity of metals
2. To describe how metals react with water and oxygen

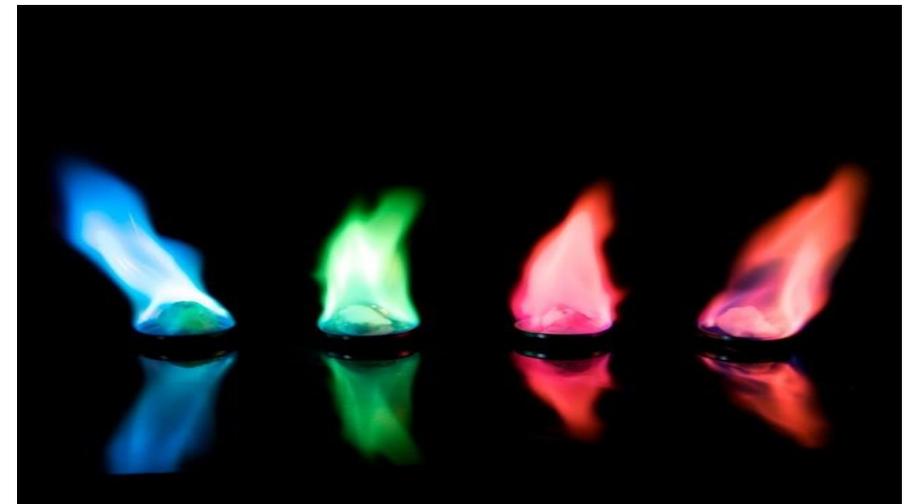


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Reactions of metals

Metals can react with water, oxygen and acid. The reactivity of the metal determines which reactions the metal participates in.



Reactions with water



- Reaction with cold water

- Some metals react with cold water (water at room temperature) such as potassium, sodium, lithium and calcium, forming metal hydroxide and hydrogen gas.
- An indicator (litmus paper/universal indicator/ phenolphthalein) can be used to help to compare the rate of reactivity of the metal.

The faster the change of color, the higher the rate of reactivity.

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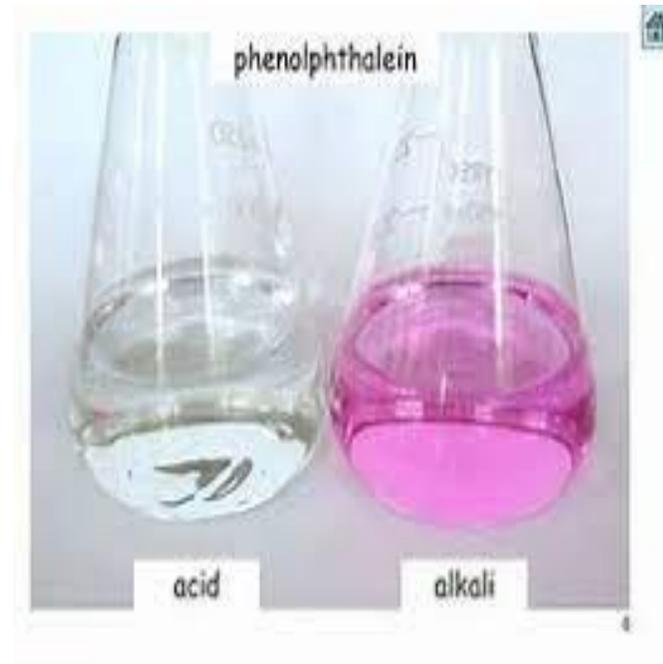
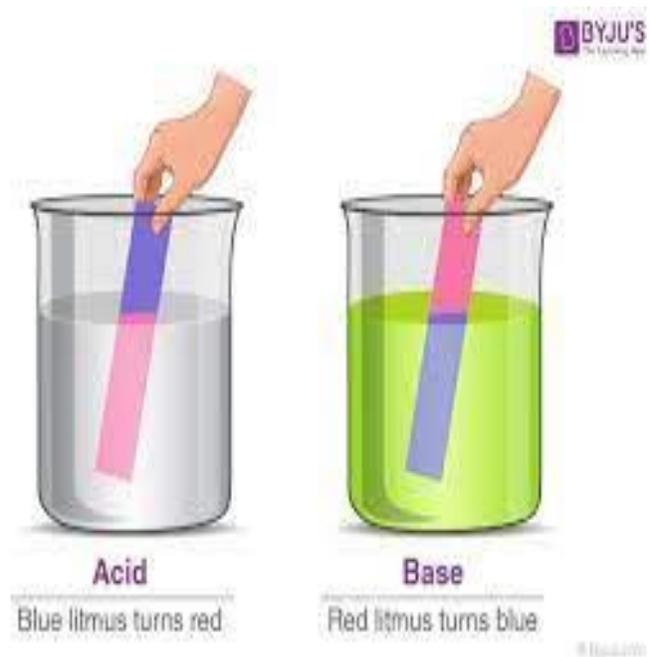
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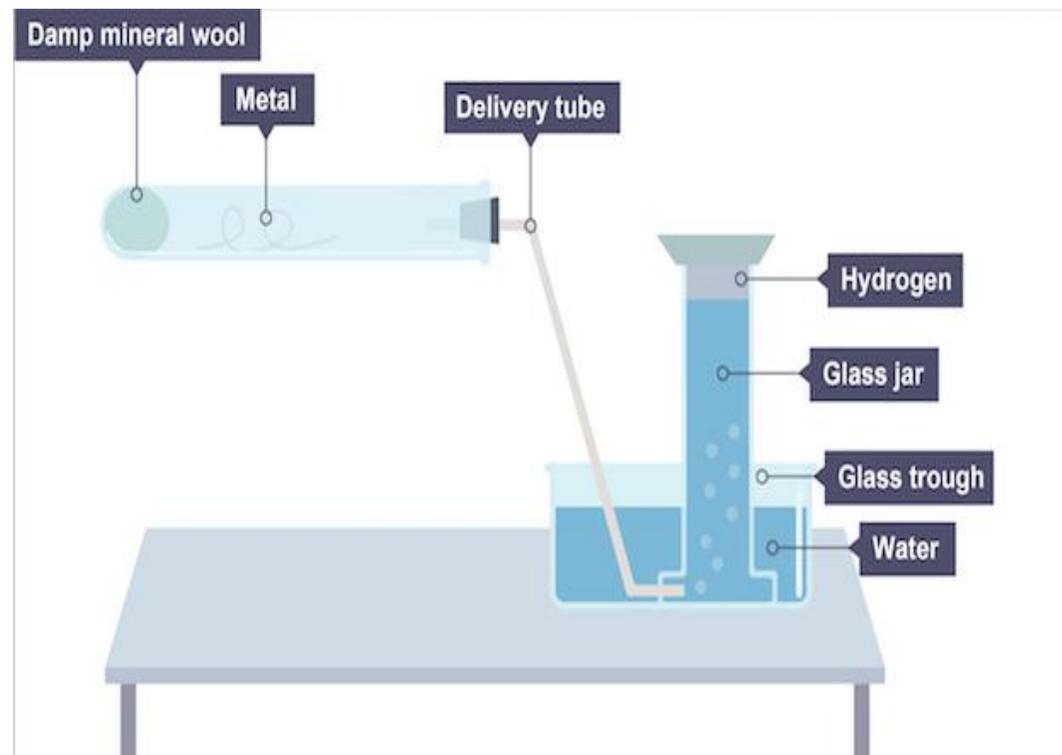


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• Reaction with steam

- The damp mineral wool is heated to generate steam.
- Steam will cause a chemical reaction with the metal sample.
- If the metal was reactive, hydrogen gas will be produced. The gas will pass through the delivery tube and then it will be collected in the measuring cylinder.
- The amount of gas produced helps to compare the reactivity rate of the metals. The more gas the higher the rate of reactivity.



Reactions with oxygen

metal+ oxygen → metal oxide

- Reaction with open air

Most metals react with oxygen in the air. Some react fast, once they are exposed to open air, forming a layer of metal oxide, others need to be burned to allow the reaction to take place.

- Burning metals

- When metals are burned in oxygen, they will give flames with different colors and different amounts of energy will be given out.

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Thank you