

Lesson Plan: Introduction to Chemical Sciences

Grade Level: Year 3

Subject: Chemical Sciences

Duration: 60 minutes

Australian Curriculum: Science Understanding - Chemical sciences

Learning Area: Science

Lesson Objectives: By the end of this lesson, students will be able to:

1. Define what a chemical is and identify examples of chemicals in everyday life.
2. Understand that substances can change when mixed (chemical reactions).
3. Identify safety precautions when dealing with chemicals.

Materials Needed:

- Various safe household chemicals (e.g., vinegar, baking soda, lemon juice)
- Safety goggles

- Clear plastic cups
- Stirrers (spoons or popsicle sticks)
- Safety posters or visuals
- Worksheet for chemical reactions (optional)

Lesson Procedure:

1. Introduction (10 minutes)

- Begin with a discussion on what students know about chemicals. Prompt them with questions like: What is a chemical? Where do we find chemicals in our daily lives?
- Introduce the definition of a chemical (substances with specific properties) and give examples of common chemicals they might encounter (water, salt, sugar, etc.).

2. Exploration Activity: Simple Chemical Reactions (20 minutes)

- Divide students into small groups (3-4 students per group).
- Provide each group with a set of household chemicals and plastic cups.

- Instruct them to mix different combinations of the chemicals (e.g., vinegar and baking soda, lemon juice and baking soda) and observe what happens.
- Encourage students to record their observations and discuss changes they observe (e.g., fizzing, colour change).
- Emphasize safety precautions: wearing safety goggles, handling chemicals carefully, and not tasting or smelling directly.

3. Discussion (15 minutes)

- Bring the class together for a discussion on what happened during the chemical mixing activity.
- Guide the discussion towards understanding that mixing certain substances can cause chemical reactions (e.g., bubbles forming due to gas release).
- Discuss safety precautions and why it is important to be cautious when handling chemicals.

4. Conclusion and Reflection (10 minutes)

- Recap the key points of the lesson: what chemicals are, examples of chemical reactions observed, and safety rules.
- Allow students to ask any remaining questions or share any additional observations.
- Assign a simple worksheet or reflective journal entry where students can draw and label examples of chemicals and write about what they learned today.

Extension Activity (if time allows):

- Conduct a demonstration of a safe and simple chemical reaction (e.g., vinegar and baking soda volcano).
- Discuss with students how this demonstration relates to what they observed in their own experiments.

Assessment:

- Informal assessment through observations during the activity and discussions.

- Review students' worksheets or journal entries for understanding of key concepts and ability to apply knowledge.

Homework (Optional):

- Ask students to find examples of chemicals used at home and list their uses (e.g., soap, detergent, food additives).

This lesson plan provides a hands-on introduction to chemical sciences while ensuring safety and engaging students through exploration and discussion. Adjustments can be made based on class dynamics and resources available.
