

Report on Promoting Scientific Temperament in Upper Primary Schools

Theme: Eclipse - Myths, Facts, and Upcoming Solar Eclipse

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Introduction

Let's begin by exploring how a teaching plan on eclipses can nurture scientific thinking among students. Imagine walking into a classroom where, instead of simply memorizing facts, students are challenged to ask questions, make observations, and discuss the mysteries of the sky. How might technology and hands-on activities help shift from rote learning to genuine scientific inquiry?

Engaging Prior Knowledge

In the first phase, students were asked to recall concepts of light and shadow. Consider questions like: "What happens during an eclipse?" and "Why do eclipses occur?" These open-ended prompts set the stage for students to share what they already know. As a facilitator, how might you can prompt students to relate their everyday observations to these larger phenomena?

Demonstration

The classic "torch and balls" demonstration was the starting point. Three cases were modeled:

- Torch covered with black paper with small hole to limit the light to focus on wall- no obstruction
- Torch covered with black paper with small hole to limit the light to focus on wall with obstruction (ball)- partial shadow
- Torch without black paper to focus on wall with obstruction (ball) at the same distance as in previous case- full shadow

The interactive aspect comes alive as students were asked follow-up questions, linking these simple demos directly to solar and lunar eclipses.

Integration of Technology

The use of animated models and simulations for eclipses (Headstart video), showing umbra and penumbra, makes abstract concepts real. Visualizations of total, partial, and annular eclipses help students not just see but also predict eclipse types. The facilitator led an interactive discussion, reinforcing understanding and encouraging students to voice their questions and curiosities.

Types and Causes of Eclipses

Discussions move deeper with students, they analyzed when a solar eclipse occurs (Moon between Earth and Sun) with a lunar eclipse (Earth between Sun and Moon). Subtypes were explored: total, partial, and annular solar eclipses; total and partial lunar eclipses. The facilitator discussed with class: "Why don't we see eclipses every 14 days?" Simulations helped to answer these questions with clarity.

Discussion on Myths and Facts

The highlight was the discussion on following myths:

- Myth 1: Food spoils during eclipse, but the fact is that no change occurs.
- Myth 2: Pregnant women gets affected but the fact is that there is no scientific evidence for that.
- Myth 3: Bad omen but the fact is that it is predictable astronomical alignment.

Students actively participated, shared myths they've heard at home and collaboratively seek scientific explanations.

Safety Precautions

The dialogue turns practical. Facilitator and students discuss why one must never look directly at the Sun and what safe observation methods exist, such as pinhole projectors and certified eclipse glasses.

Conclusion

This integrated teaching approach, combining lesson plan activities and integration of technology (digital CD resources), provides a holistic learning experience for all the students. It nurtures scientific temperament by promoting observation, questioning, and reasoning. Students not only learn about eclipses but also develop a mindset that values

scientific evidences over superstitions/myths. Linking the unit with the upcoming solar eclipse ensures meaningful and real-world learning connection for students.



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