High School Lesson Plan

Science Grade 10

OBJECTIVES

1. Students will explore the engineering principles behind lighthouse construction.
2. Investigate the technology of the Lydia Ann Lighthouse
3. Discuss the role of renewable energy in modern lighthouses.

TEKS ADDRESSED

Science (10.7) - Earth and Space: The student understands the processes that shape Earth and the solar system.

ACTIVITIES

1. ***Engineering Design Challenge:*** Introduce students to the engineering challenges of building lighthouses, such as withstanding coastal erosion and extreme weather conditions. Task students with designing and constructing their own model lighthouses using specified materials.

2. ***Case Study Analysis:*** Present case studies of lighthouses around the world, including the Lydia Ann Lighthouse, focusing on their engineering features and technological innovations.

3. ***Renewable Energy Discussion:*** Lead a discussion on the use of renewable energy sources in modern lighthouses. Explore how technologies such as solar panels and wind turbines have been integrated into lighthouse design to reduce reliance on traditional power sources.

5. ***Presentation:*** Have students present their model lighthouses to the class, explaining the engineering principles behind their designs and how they addressed specific challenges.

ASSESSMENT

Students will be assessed based on the quality of their model lighthouses, their participation in class discussions and activities, and the depth of their understanding demonstrated in their presentations.