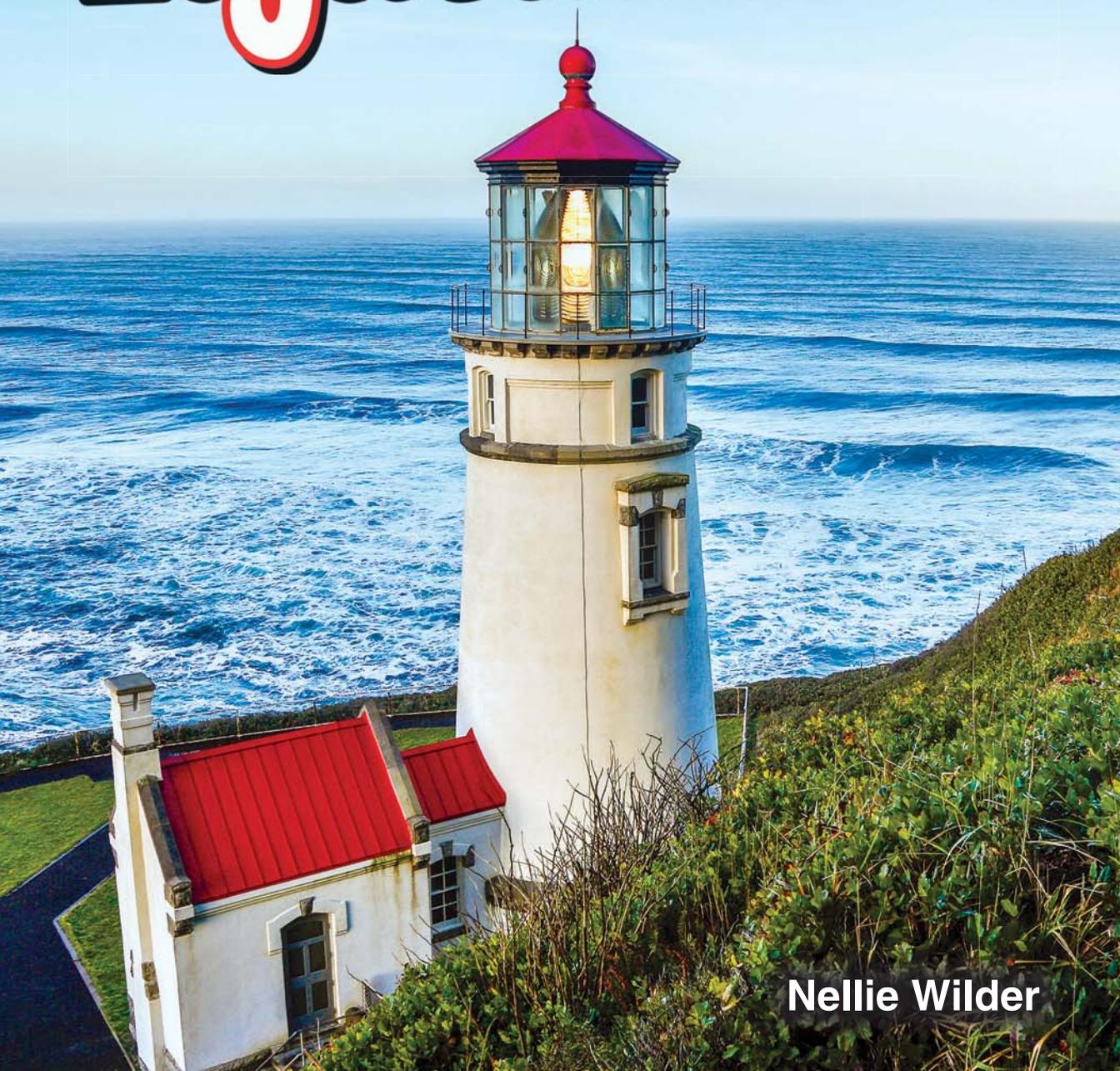




Smithsonian

# Building Lighthouses



Nellie Wilder

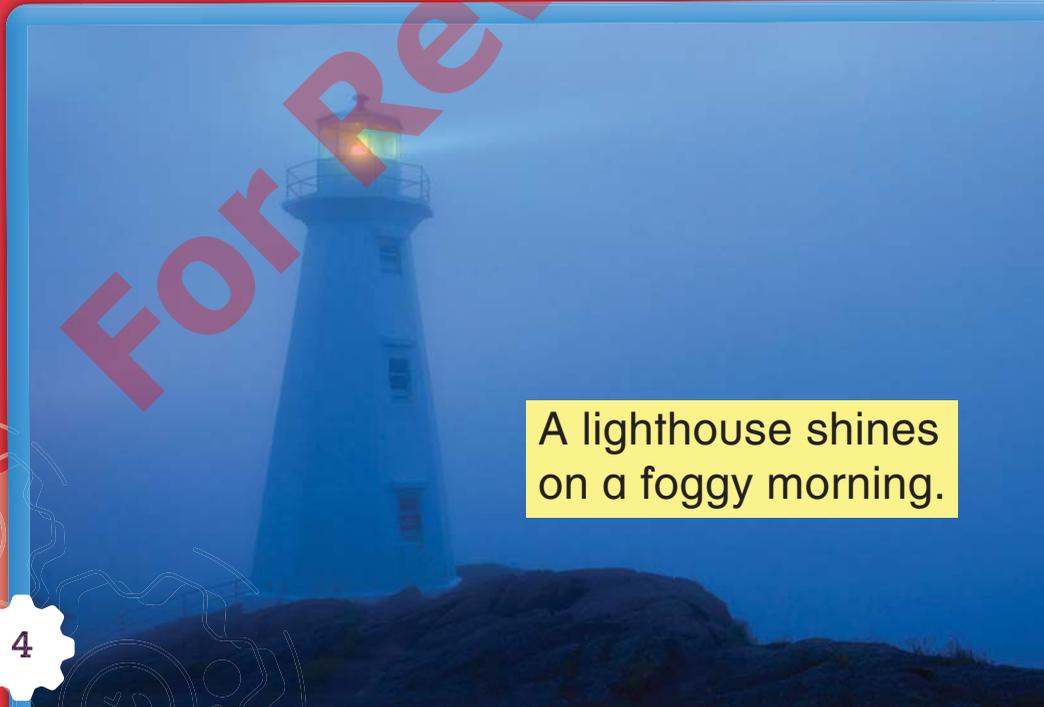
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# Let There Be Light

Ships at sea can travel far. But what if they get close to land? If it is **foggy** or dark, they may crash into a coast.

That is when lighthouses can help!



A lighthouse shines on a foggy morning.

People can see lighthouses during the day.



Lighthouses guide ships near coasts. The lights show **sailors** where to go. The lights also warn sailors of danger. Lighthouses are like traffic signs for sea travel.





foghorn

## Technology & Mathematics

### What Is That Sound?

When it is foggy, people use foghorns to warn sailors. Foghorns can be heard about 6 kilometers (4 miles) away. Lighthouses can be seen up to six times that far!

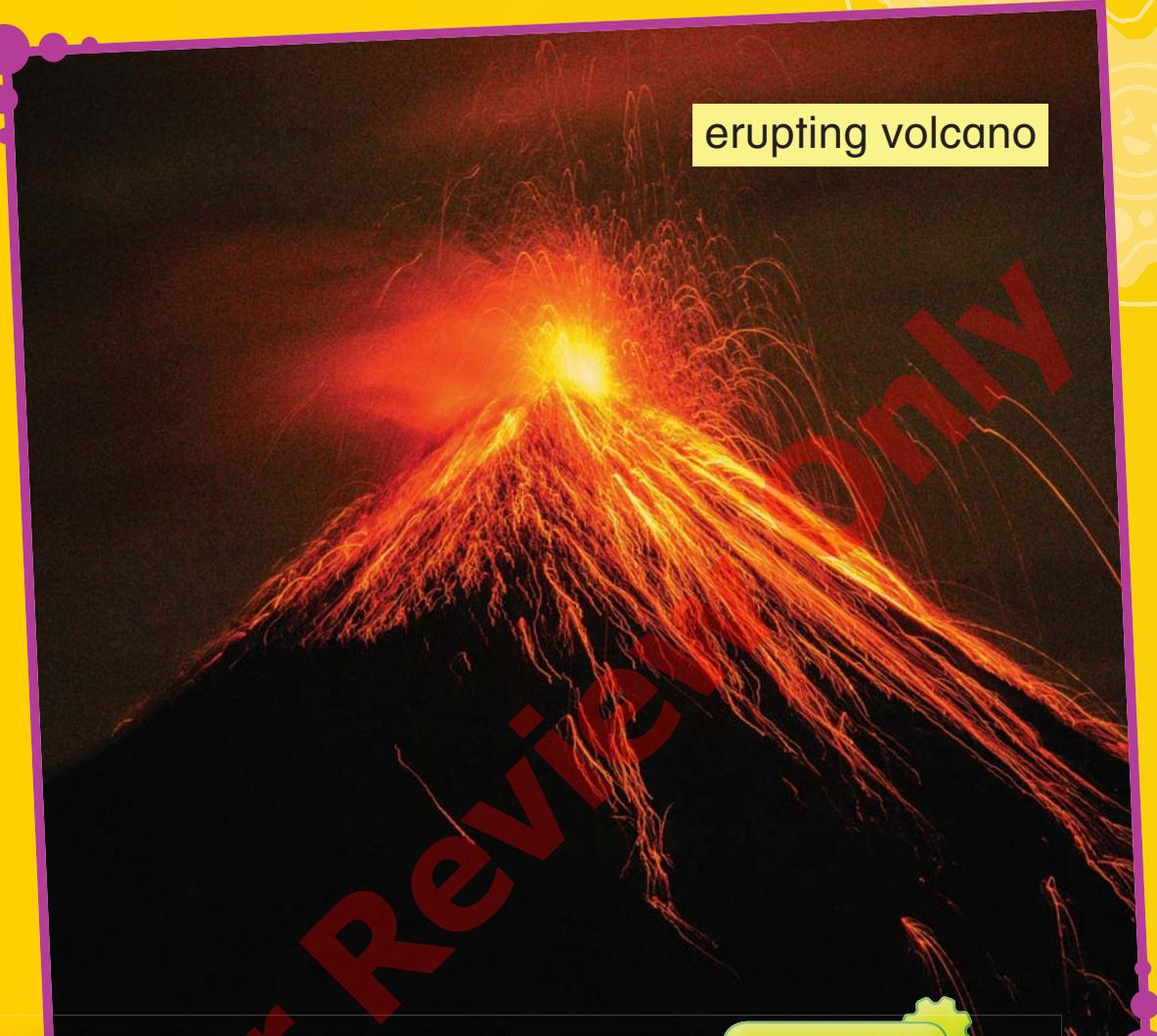


# Lighthouse History

Lighthouses are towers with bright lights at the tops. They shine out in the dark. In the day, they are markers so sailors can see where they are.



The Statue of Liberty was once used as a lighthouse.



erupting volcano

Science

## Nature Made

Nature can make lighthouses!  
Volcanoes normally cannot be seen at night. But they glow when they erupt. Their glow can be used to guide ships.

# STEAM CHALLENGE

## The Problem

A new lighthouse is needed on the coast. You have been asked to design it. It should be unique. It must shine its light for a long distance. Are you up to the task?

## The Goals

- Use any materials to build a model of your lighthouse.
- Use a flashlight to act as the light.
- Use your lighthouse in a dark room to test it.





## Research and Brainstorm

What do modern lighthouses use for light? How can light be seen from far away?



## Design and Build

Draw your plan. How will it work? What materials will you use? Build your model!



## Test and Improve

Place a flashlight inside your lighthouse. Turn on the flashlight. Turn off all other lights. Can you see the light from the other side of the room? Can you make the lighthouse better? Try again.



## Reflect and Share

What else besides light and sound could help ships near the shore? How can people driving cars stay safe when it is dark or foggy?