



Smithsonian

Seeing More Stars



Joseph Otterman

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Star Bright

Star light, star bright, will I see
a star tonight?





Light Pollution

Outdoor lights can block the light from stars. This is called *light pollution*. It can cause problems for most living things.



Dung beetles rely on a dark night sky to navigate.

Bright outdoor lights
cause light pollution.



Some animals sleep during the day. They are awake at night. If there is too much light, they may not know it is nighttime!



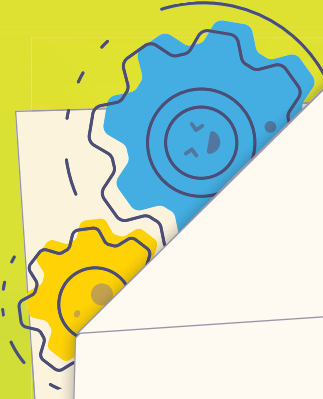
A green sea turtle
nests on a beach.



Science

Turtle Trouble

Some sea turtles come to land at night to **nest**. They do not nest when there is too much light. No nests mean there will be no new turtles.



STEAM CHALLENGE

The Problem

You want to dim light pollution on your street. Your job is to stop extra light coming from streetlights. The streetlights must light the road but not the sky.

The Goals

- Create a hood for a streetlight that will focus the light.
- Create a hood using any material that will not burn when it is near a hot light bulb.
- Create a hood that can be tested on a table lamp.





Research and Brainstorm

What is the purpose of streetlights? How can you focus light?



Design and Build

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



Test and Improve

Place your model hood on a table lamp. Turn on the light. Does the light shine up? Does the light only shine down? Can you make it better? Try again.



Reflect and Share

How wide can you make the beam of light without the beam spreading? Would the hood help with light pollution?