

This exhibit is made possible thanks to the contributions of the Institute of Theoretical Physics, the Department of Physics, the Community Engaged Learning programme of Utrecht University, and Sonnenborgh Observatory.



Utrecht University

Community Engaged Learning

SONNENBORGH

Material adapted from:

<https://www.nachtvandenacht.nl/>

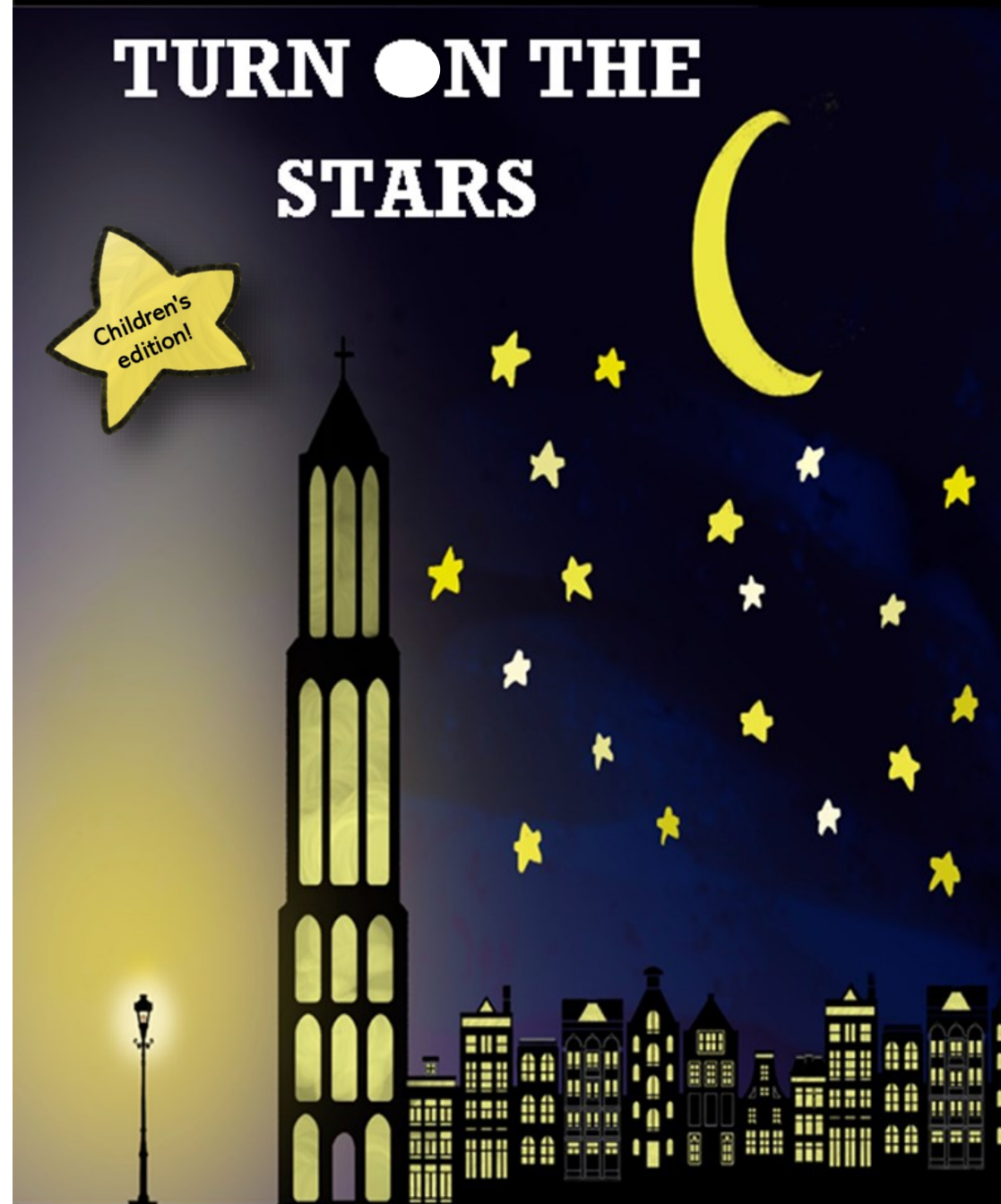
<https://www.atlasleefomgeving.nl/kaarten>

<https://www.darksky.org/>

<https://www.globeatnight.org/>

TURN ON THE STARS

Children's edition!



SONNENBORGH



Universiteit
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MAKE YOUR OWN MODEL!

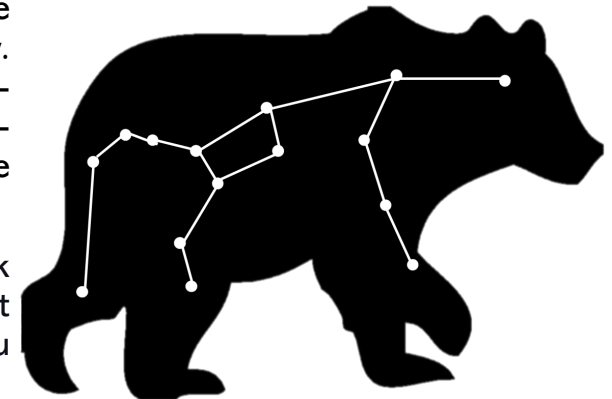
Materials

- ★ 1 cardboard box
- ★ Black paint or sheets of black paper
- ★ Glow in the dark stars
- ★ 1 small flashlight



Instructions

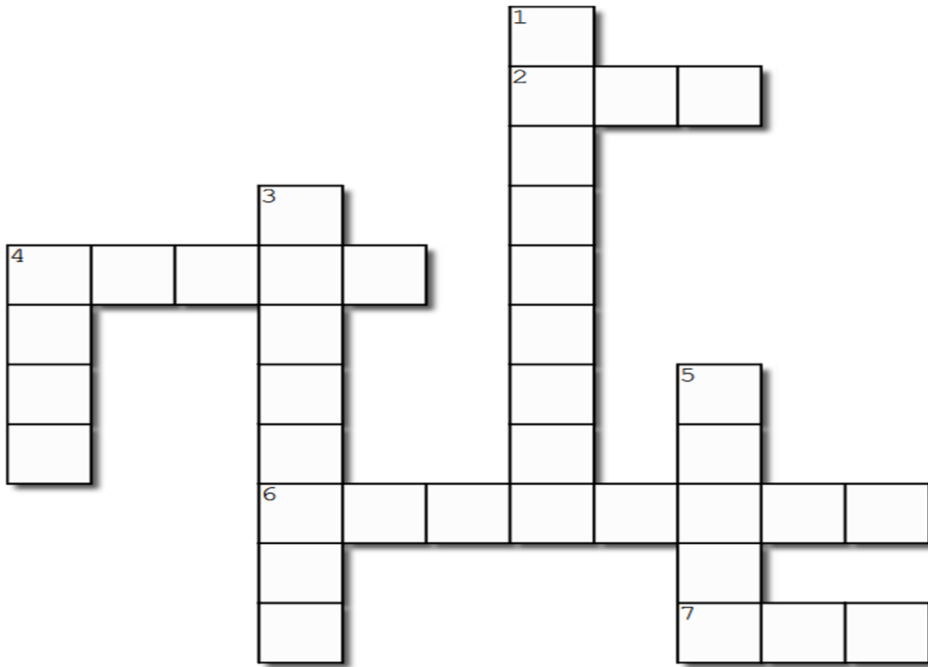
1. Paint the cardboard box inside or glue the sheets of black paper inside it. This will help us simulate a dark night!
2. Glue the stars inside the box over your dark sky. You can even try to imitate the Big Dipper constellation that is in the image!
3. Make the room as dark as you can and count the number of stars you can see glowing.
4. Turn on the flashlight and try to count how many stars you see shining now.
5. Compare it to the number of stars you could see before turning on the flashlight. This is the effect of skyglow!





WHAT CAN I DO TO HELP?

Let's solve this crossword to find it out!



Across

- Turn ____ the lights in your room when you're not using them!
- Talk to your friends and family about how ____ pollution affects us all and the environment.
- Light must be inclined _____ (opposite of upward).
- Lights should shine towards the area we want to ____.

Down

- Keep looking for information about light _____.
- Light bulbs should be _____ to prevent light from being directed into the night sky.
- Try to use ____ light when you don't need it.
- Don't waste light! Help us save the night and turn on the ____ again!

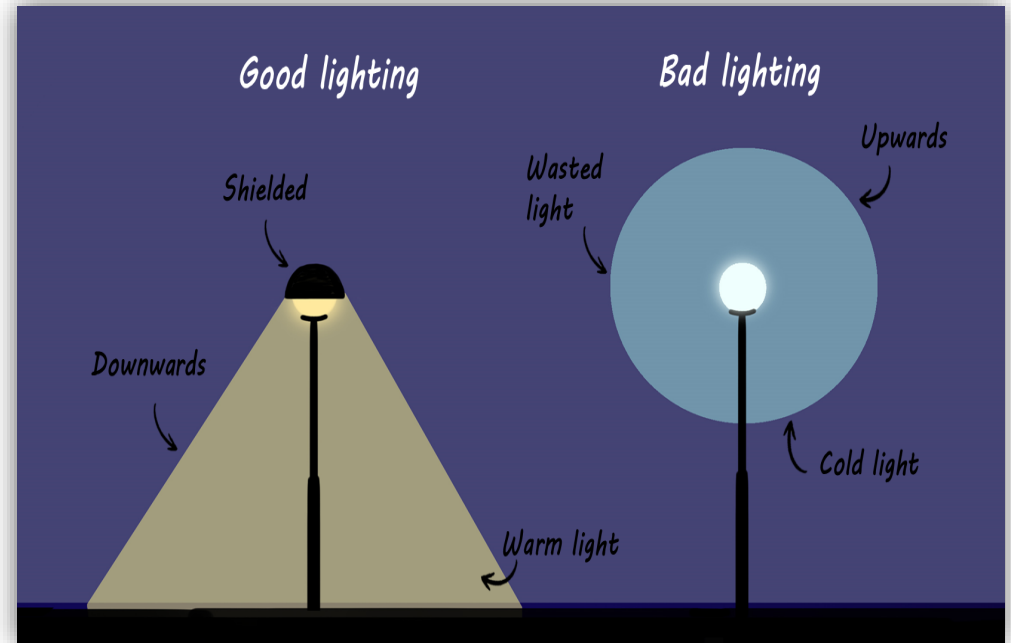
Across: off, light, downward, see. Down: pollution, shielded, less, stars.



WHAT IS LIGHT POLLUTION?

Light pollution is the **excessive amount of light at night** due to artificial lighting, which results from everything that human beings have built to illuminate, such as light bulbs. The excessive amount of light can make our eyes hurt if it is very bright, annoy us when we want darkness (for example to sleep) or prevent us from seeing the stars at night.

The problem is that much of the light we use is **wasted** because we illuminate places that are not being used and we do not properly direct light to the space we want to shine.





CONSEQUENCES OF LIGHT POLLUTION

Light Pollution and Astronomy

Astronomy is the science that studies the universe and all the bodies in it, like the stars, galaxies, and planets.



When there is light pollution, the sky becomes brighter than the stars and planets that we want to observe, hiding them. This is called **skyglow**, and it prevents astronomers from observing the stars. In the image, we can see how the light from the streetlamp hides the stars in the sky.

In this word search there are 10 hidden words, find them!




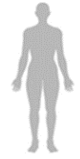


ASTRONOMY
STARS
POLLUTION
GALAXY
PLANETS
NIGHT
SKYGLOW
MILKYWAY
ARTIFICIAL
LIGHT



Light Pollution and Living Beings

Light pollution has negative effects on our environment, animals, plants, and our human body.

 <p>Birds use the night to guide their flight, and artificial lights can cause them to become disoriented and collide with buildings.</p>	 <p>Insects can die attracted by the lights in our gardens and lose the protection that night offers them from their predators.</p>	 <p>Newborn sea turtles find their way to the sea using the moonlight to orient themselves and follow it to the water. Artificial lights can disorient them and prevent them from finding the sea.</p>	 <p>Humans need the darkness of the night so our brain can know that it is time to sleep and rest.</p>
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Help the newborn sea turtle find its way to the sea!

