



Project Exploration creates transformative learning opportunities for youth underrepresented in the sciences --particularly students of color and girls -- by equipping them with the skills, practices, and mindset needed for a lifelong pursuit of learning. STEM@Home makes activities around science, technology, engineering, and math accessible and fun to do at home. This STEMbook activity, resources, and more are available at www.projectexploration.org/stemathome.

In this activity, you will:

Explore outside and learn about how heat builds up in cities, making cities heat islands.



Supplies Required:

- Pencils
- Paper
- 1 liter bottle of water
- Paint brush
- Watch or timer

Video

Do you think it gets hot enough to cook an egg on a sidewalk? Watch this video to find out: <https://youtu.be/3nJNWyc361Y>

Overview

Why are cities warmer than their surroundings? It's called the urban heat island effect. There are a lot of different surfaces in the city and the Sun can heat up these surfaces. Shade and how much Sunlight all affect how hot a surface like the sidewalk can get. In cities, there are a lot of surfaces that get heated up by the Sun and not a lot of shade to keep things cool. That's why cities are often warmer than their surroundings.

Instructions

1. With adult supervision, find a spot of sidewalk that is in the Sun.
2. Using a paint brush and water, make the same water drawing on the sidewalk.
3. Make a prediction! What will happen to the water drawing?
4. Watch the drawing, using a timer or watch keep track of how long it takes for the drawing to disappear. Record the time and your observations.
5. Find a spot of sidewalk covered in shade. Draw the same drawing you drew before on this spot.
6. Watch the drawing, using a timer or watch keep track of how long it takes for the drawing to disappear. Record the time and your observations.
7. Compare your results, what did you discover?
8. Repeat the experiment on a spot of grass in the Sun and a spot of grass in the shade.
9. What do you think will happen with the grass? Does the sidewalk get hotter than the grass?

Additional Resources

1. Learn more about city heat islands with this PBS Kids activity: <https://tinyurl.com/37bk8823>
2. NASA Scientists explain why cities are usually hotter than the surrounding countryside: <https://youtu.be/lnBO4vX82Fs>

Share It Out

Share on social media: Record a video or take a picture of your activity and post the results online using the hashtags:

#XXX
#ProjectExploration
#StemAtHome

Tag a friend and challenge them to do it, too!

For more activities like this one, go to www.projectexploration.org/stemhome. If you're interested in learning more about Project Exploration and our free events, programs, and activities, please find us on social media and be sure to follow!



Call or text us for help: 312-772-6634



www.projectexploration.org