

Urban Heat & Cooling Your Community



DIORAMA ACTIVITY



What to expect

Ages: Ideal for students in Grades 6-8

Objective: Learn how improving local greenspaces can help protect our communities from overheating.

Materials needed

- Pencil for drawing
- Shoebox for diorama
- Craft supplies for building a diorama (like recycled materials, glue, fabric, paint, etc.)

INTRODUCTION

What is Urban Heat?

Urban Heat, or the Urban Heat Island Effect, refers to the phenomenon wherein cities have higher temperatures compared to their forested and rural counterparts. This is due to a greater presence of concrete, buildings, cars, etc., which trap in more heat from the sun. One of the greatest things we can do to counteract the urban heat effect is to foster urban greenspaces. Through planting trees, creating community gardens, and other opportunities to add more greenery to our neighbourhoods, the heat will also go down.

Why are Native Trees and Shrubs Important?

The first reason is shading! Trees, shrubs, and even grass create cooling effects compared to concrete. Trees' leafy canopies protect us from the harsh sun rays. Furthermore, they release water vapor in a process called transpiration. Native trees and shrubs are vital to ensure our communities can become more resilient to the impacts of climate change like worsening heatwaves, fires and flooding. Through planting more fire-adapted and drought-resistant species, we can effectively cool concrete jungles. Some examples of fire-adapted species include those found in Garry Oak meadows. These are fire-adapted ecosystems that have plants that regenerate quickly after fires.

How Can I Learn More About Urban Heat?

Visit whatstherush.ca. The Resilient Urban Systems & Habitat (RUSH) Initiative is a mapping tool, created alongside schools on the unceded and unsundered territories of the lək'wəŋən and SENĆOŦEN speaking peoples. Your school can help out this organization by identifying the plants in your school yard. Their goal is to create ecosystems that support biodiversity and resilience against a changing climate.

ACTIVITY 1

Sketch your school

Instructions: Draw a picture of your school below! Try to include as much as possible from a birds-eye view. You will use this for your diorama activity. Try to include the layout of your school like any trees, benches, concrete and field areas!

After you draw your school, try to add in elements to reduce urban heat. For example, are there waterways you can create? Temporary swamp areas for the winter? New trees or community gardens? Get creative with it! And when you're done, send a photo of your drawing to us at education@sierraclub.bc.ca. We'd love to see it!

ACTIVITY 2

Make a diorama of your school

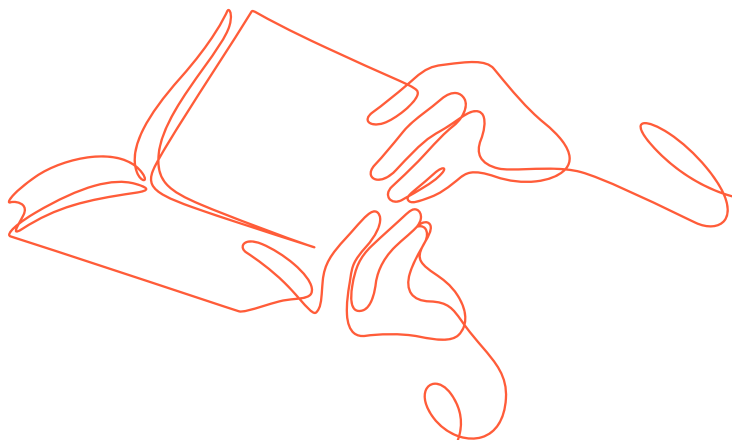
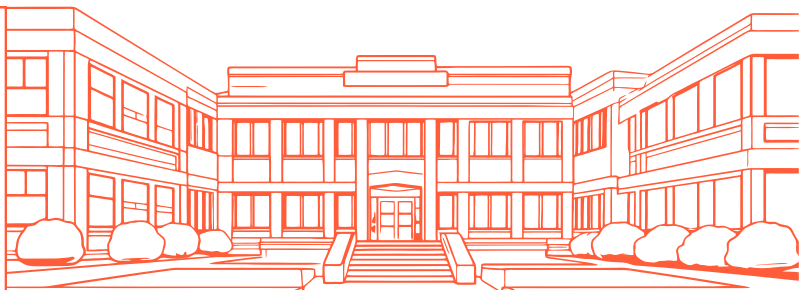
Try out this diorama activity on your own, with your family, or with your class! For this activity, you will need a shoe box, some craft supplies, and a drawing of your school. Using the elements that cause urban heat on the first page, try to create a diorama of your school as if it was a perfectly cool school!

For this activity you will need:

1. **Recycled materials from around your house or classroom.** Can an egg carton become the base of your school? Can toilet paper rolls become the base of trees?
2. **Try to recycle your plastics!** A lot of plastics can end up in ecosystems and harm plants and animals. Try to use any plastics you find to create parts of your school. For example, can these become windows for your school?
3. **Use old fabrics lying around your house.** These can bring color to your landscape! Try to find bits of green for grass and some grey for concrete. Get creative!
4. **Try to make it come alive through compostable paper mache.** There are many resources online that teach how to make zero-waste paper mache.
5. **Add in details with clay, glitter and more!** Once you have established the base of your diorama, visit your nearest craft store to make this diorama really pop!

Instructions:

1. **Make your school as-is.** Try to create a hyper-realistic diorama of your school as it already exists.
2. **Do a little research.** Read through this packet and find out what reduces urban heat.
3. **Make it cool.** Using your research make this landscape as cool as possible.
4. **Add extra flair:** Adding more decorations like glitter, easy-bake clay, or tissue paper can add more detail to your diorama.
5. **Now step back and admire the future of your school!** If you feel up for a challenge, try to slowly expand this landscape. Can you include neighboring buildings?
6. **Try to make your school cooler in real life!** Can you take this diorama to your local municipality and create real, important changes in your community?



Discussion Questions & Conclusions

Think about a time when you were really overheated. What was the cause? Where were you? How did you find a cool area, was it a pool, a tree, an indoor area? How can you add these components to your drawing or diorama? How do you think animals respond to heat?

Outside of heat prevention, what are other things that you can do to support your community? What steps can you take to foster connection and support in your area?

Did you have any assumptions about heat and fires before this worksheet? Have the ways that you view fire and heat changed through the course of this lesson? Why or why not?