

Shade Mapping:

How sun safe is your school ground?

Students create a safer community by identifying the shady spots in their school ground, marking them, mapping them, and sharing them with the rest of the school.

How much time will it take?

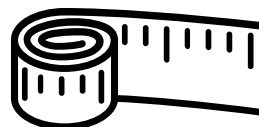
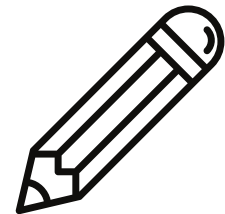
Two 45-minute classes: Steps 1-7 indoor preparations; Steps 8-12 outdoors; Steps 13-16 indoors again, to create and share the map.

Curriculum Links

Shade Mapping connects with subjects in Alberta's Middle Years Programs of Study including Health and Life Skills (Wellness Choices: Safety and Responsibility), Physical Education (Basic Skills-Walking), Social Studies (Geographic Thinking), Math (Spatial Sense; Shape and Space), Science (Grade 4 Topic D Light and Shadows; Grade 5 Topic D: Weather Watch; Grade 6 Topic C: Sky Science), and Art (Expression).

Here's what you will need:

- clipboard
- pencil and eraser
- map or photo of school ground
- copies of the Shade Mapping Sheet
- mapping software or a large printed or hand-drawn map
- art supplies to create sun safe spot flags
- materials to mark a sun-safe spot outdoors: for example, flag, flagging tape, pylon, chalk
- hats
- sunscreen, if possible
- a sunny day (preferably)
- Optional: tape measure, thermometer



Let's get started inside (45 minutes)

1. **Let's talk about shade.** Initiate a discussion with your students about the positive benefits of having shade on the school ground. Why is shade good?
2. **What makes shade?** Ask students what kinds of structures produce shade, for instance, trees, playground equipment, buildings.
3. **Look at a map or aerial photo of the school ground.** Show it on the large screen or print out individual hard copies. Where are they most likely to find shade?
4. **Name the shady spots.** Brainstorm names (for example shade glades, sun safe spots, sun circles, shadow boxes!) The goal is to highlight these spots for the whole school.
5. **Come up with a symbol.** Choose or create a symbol to mark the spots on the map (small version) and on the school ground (large version)!
6. **Get into small groups.** Each group will choose a shady spot, examine it, answer some questions about it, or mark it.
7. **Make a marker for the school yard.** Choose a way to mark sun safe spots in the school ground—with a flag (with the symbol on it), flagging tape, chalk, or pylons.

Now we're out in the sunshine (30 minutes)

1. **Throw on hats and smear on sunscreen!** Practice good sun safety protocol!
2. **Take your supplies outside with you.** Each group takes a clipboard, marker, and a Shade Mapping Sheet. Tape measure and thermometer optional.
3. **Choose a shady spot.** Once outside, groups choose the spot they're going to work on.
4. **Work through the Shade Mapping Sheet.** Also, If they have a paper map/aerial photo of the school yard, they can draw the shadow right onto the map.
5. **Mark the spot clearly and safely.** Students mark their chosen sun safe spot to help other students become aware of the shade available to them, and its importance.

Back into to the classroom (15 minutes)

1. **Let's discuss observations.** Use the questions on the Shade Mapping Sheet as a guide.
2. **Compile your spots and create your Shade Map!** Use the symbol to mark their shady spots on a digital or large hardcopy map of the school ground.
3. **Share your map with other classes.** Share the electronic map with other classes or post a hard copy on a prominent bulletin board in your school.
4. **Explain the importance of shade to the community.** In your email or on your bulletin board, include an explanation of the purpose of your map! Invite students to hang out in the shade!

Ideas for going a further

Visit the shady spots at a different time of the day. Students will see how the amount of shade changes according to the angle of the sun.

Does shade impact heat? Students use a thermometer to measure heat in the sun and in the shade. Do they record any difference? What are the implications?

How is sunlight measured? We know how to measure the strength of wind, the amount of rain, the heat given off by the sun. How do scientists measure the strength of sunlight?

Do shadows make shapes? Can students identify squares, rectangles, circles, rhombuses, or trapezoids?

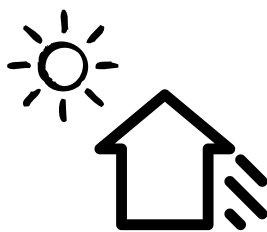
Calculate the area of a shadow. Using a tape measure and their knowledge of shapes, students calculate the area of the shade in their school yard.

Calculate the number of square meters of shade available per student.

Brainstorm easy temporary ways to increase the amount of shade. Students can imagine ways to use tents, shelters, umbrellas, banners, flags, fabric, cardboard or other temporary materials to create more shade. Who can create the largest area of shade?

Brainstorm long-term permanent ways to increase the amount of shade.

1. What steps can the school take over the next few years (planting shrubs and trees, building arbours, gazebos, or other shade structures). Create a long-term shade plan and submit it to school administrators.
2. Students imagine fantastical ways to create shade; have them draw or paint their outrageous plans.



Let us know how this activity worked for you and your students.
Send us an email at alberta@canadianskincancerfoundation.com

Shade Mapping Sheet



What structure is creating this shade?

Sketch the structure (if you can) and the shade it creates on the back of this sheet.

If you have a map of your school yard, draw in the shade.

How many students can fit in this shady spot?

What kinds of activities is this shady spot good for?

Does this shadow have a regular shape (like a circle, square, or rectangle or some other shape)?

If you have a tape measure, measure the length and width of the shaded area.

Is it possible to calculate the area in square meters? If not, can you estimate the area in square meters?

Do you think the shadow changes in shape/size over the day?

What direction does your spot face?

Does it have protection from the wind?

Is the ground flat or sloped?

What is the surface like (gravel, asphalt, cement, or grass, for example)?

Is it a quiet or busy area?

Does it have a place to sit?

Are there trees or other plants in this spot?

What kind of activities do or could happen in this area?

What else is interesting about this spot?