Grade 2 Science Curriculum Links to Sustainability Education and Action

Topic A: Exploring Liquids

Describe some properties of water and other liquids, and recognize the importance of water to living and nonliving things. Describe the interaction of water with different materials, and apply that knowledge to practical problems of drying, liquid absorption and liquid containment.

Links to Place and Nature

- Why is water important to use? What do we use it for? Where does our water come from? Where does the water we use go? Where does water go when it rains?
- How does water flow in nearby creeks or rivers?
- How does water transform itself through the water cycle?
- How do plants and animals use water?
- What factors can affect water quality? How can we help ensure a good water quality?
- How does poor water quality affect humans and other organisms?

Links to Indigenous Perspectives

- What is the traditional importance of water to Indigenous peoples in my area?
- What waterways and water bodies were important to Indigenous peoples in my area?
- Why do Indigenous peoples consider water to be sacred?

Links to Climate Change

- How will melting glaciers and dry periods without rain (i.e. droughts) affect our water supplies?
- How can climate action help maintain reliable supplies of water?
- What actions can I take to protect water supplies (i.e. use of rain barrels for watering plants)?

Links to City of Calgary Environmental and Climate Strategies

- **Climate Resilience Strategy (2):** In Calgary, we can expect (p. 66-68):
  - More snow in winter and less rain in summer
  - More short-duration, high intensity storm events
  - Multi-year drought
  - Effects of melting glaciers on stream flow
- To learn what The City is doing to prevent impacts from river and stormwater flooding, see p. 85 of the **Climate Adaptation Action Plan (2)**
- **Be YardSmart (3):** By keeping water on our property (e.g. in rain barrels, rain gardens, etc.) we are helping to prevent stormwater runoff and store water for use during dry periods. Visit Be YardSmart to learn more about what you can do to keep water on your property.
- There are many actions we can take to conserve water in our homes and schools. Visit **calgary.ca/water (4)** to learn more and checkout water education resources.

Grade 2 Science Curriculum Links to Sustainability Education and Action

Topic B: Buoyancy and Boats

Construct objects that will float on and move through water, and evaluate various designs for watercraft.

Links to Place and Nature

- How do animals float on water?
- How do fish and aquatic animals control their buoyancy?

Links to Indigenous Perspectives

- What types of boats were traditionally used by Indigenous peoples in my area? Across Canada?
- To what degree are they still used today?
- What features do they have for staying afloat?

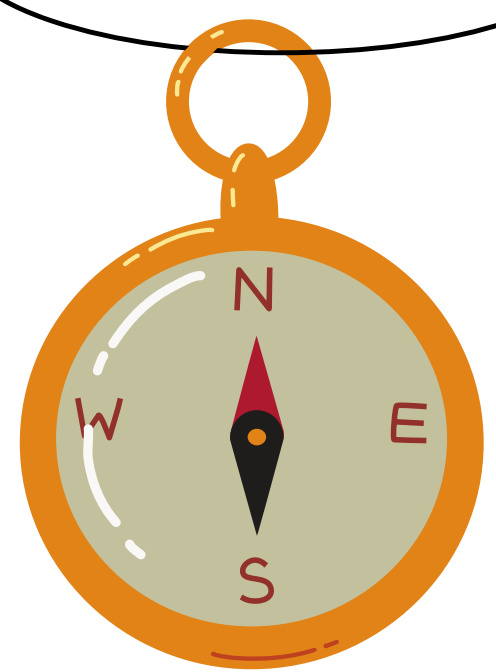
Grade 2 Science Curriculum Links to Sustainability Education and Action

Topic C: Magnetism

Describe the interaction of magnets with other magnets and with common materials.

Links to Place and Nature

- What evidence of magnetism exists in nature?
- How do magnetic compasses work?



Grade 2 Science Curriculum Links to Sustainability Education and Action

Topic D: Hot and Cold Temperature

Recognize the effects of heating and cooling, and identify methods for heating and cooling.

Links to Place and Nature

- How do we use thermometers to measure ambient temperature?
- How does temperature affect how we dress to go outside?
- How does temperature vary throughout the course of the day?
- What places in the schoolyard and warmer or cooler?
- How does the human body maintain an even temperature?
- What do local animals do to keep warm or stay cool?

Links to Indigenous Perspectives

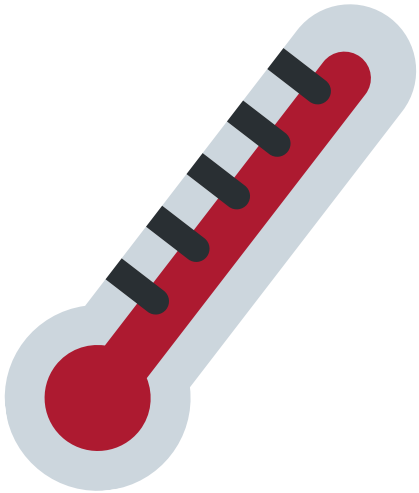
- How did Indigenous peoples in my area traditionally stay warm or cool throughout the seasons?
- How do these methods compare to modern methods of staying warm or cool?

Links to Climate Change

- How does ambient temperature affect me?
- How does extreme heat affect me?
- How does it affect plants and animals?

Links to City of Calgary Environmental and Climate Strategies

- **Climate Resilience Strategy (2):** Calgary's average annual temperature is increasing due to climate change. The amount of very hot days is increasing in Calgary due to climate change (p. 65-72).
- The **Climate Adaptation Action Plan (2)** includes many actions to manage our very hot days in Calgary. For example, The City of Calgary is continuing to expand naturalization programs for City parks and green space to reduce the Urban Heat Island Effect in Calgary (p.86).



Grade 2 Science Curriculum Links to Sustainability Education and Action

Topic E: Small Crawling and Flying Animals

Describe the general structure and life habits of small crawling and flying animals; e.g. insects, spiders, worms, slugs; and apply this knowledge to interpret local species that have been observed.

Links to Place and Nature

- What types of small animals are found in the schoolyard or community?
- Where are these animals typically found (habitats and micro-habitats)? Why are they typically found in certain places and not others?
- How do small animals respond to heat and cold? How do they regulate their temperature?
- How do small animals contribute to biodiversity in my area?
- Why is biodiversity important?

Links to Indigenous Perspectives

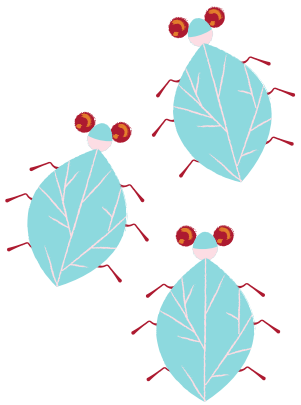
- See **Learn Alberta grade 2 sample lesson plan (1)** for this unit.
- What are the structures and life habits of small animals that inhabit my area?
- How are small animals connected to me and to each other through the web of life?

Links to Climate Change

- How might climate change the ability of small animals to access food, water, shelter and space?
- How does biodiversity contribute to healthy and resilient ecosystems, particularly in light of climate change?

Links to City of Calgary Environmental and Climate Strategies

- **Climate Resilience Strategy (2):** There are many expected climatic changes that might affect small animals, including (p.65-72):
  - Multi-year drought
  - Changes in seasonality
  - Increase in the amount and severity of very hot days
- The City of Calgary's 'green' infrastructure offers important habitat for small animals (Climate Resilience Strategy, p. 51).
- **The City of Calgary's Nature Explorations programs (5)** provide environmental education and nature experience for students in preschool to Grade 12



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References

(1) Alberta Education. (2020). Sample Lesson Plans: Science. Retrieved from LearnAlberta http://www.learnalberta.ca/content/fnmilp/science.html

(2) City of Calgary. (2018). Climate Resilience Strategy: Mitigation & Adaptation Action Plans [PDF]. Retrieved from https://www.calgary.ca/content/dam/www/uep/esm/documents/esm-documents/climate-resilience-plan.pdf

(3) City of Calgary. (2020). Be YardSmart. Retrieved from https://www.calgary.ca/uep/water/water-conservation/lawn-and-garden/water-wise-gardening-and-plants/yardsmart.html?redirect=/yardsmart

(4) City of Calgary. (2020). Water services. Retrieved from https://www.calgary.ca/sitepages/cocis/scripts/subcategory-waterservices-grid.aspx?redirect=/water

(5) City of Calgary. (2020). School Programs. Retrieved from https://www.calgary.ca/csps/parks/programs/school-programs/school-programs.html