The science and social science of winter sports

A curriculum-linked Grade 7 and 8 teaching resource prepared by [www.rinkwatch.org](http://www.rinkwatch.org) to help students practice critical thinking and cultural analysis. Students are guided in creating a podcast that explores the science and social science of winter sports and activities.

This resource contains suggested activities for use in Grade 7 and 8 science and social sciences classes to help students develop skills in:

* Understanding how human activities have the potential to alter the environment (*Grade 7 science)*
* Understanding the science and technology involved in heating and cooling mechanisms (*Grade 7 science)*
* Assessing the social, economic, and environmental impacts of systems (*Grade 8 science)*
* Evaluating water consumption, including how human and natural factors cause changes in water tables (*Grade 8 science)*
* Exploring the identity and culture (*Grade 7 & 8 history and human geography)*

These activities are designed to correspond with specific objectives in the Ontario grade 7/8 science and social sciences curriculum, but are suitable for general classroom use and may be modified for correspondence with curriculum in other jurisdictions).

This package includes:

- A list of required materials

- A teacher’s guide

- Reproducible student worksheets (sample questions that can be tailored to specific themes being addressed)

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List of required materials

The activities described in this guide require the following materials to be available in the classroom

* Internet access to online resources
* A recording device (many students will be able to use their phones, but supplementary recording devices should be available for students without their own)
* Pre-printed questionnaires (see master version below)

Teacher’s guide

Curriculum objectives:

Ontario’s grade 7/8 science and social sciences curriculum expect students to be able to:

* Understand how human activities have the potential to alter the environment (*Grade 7 science)*
* Understand the science and technology involved in heating and cooling mechanisms (*Grade 7 science)*
* Assess the social, economic, and environmental impacts of systems (*Grade 8 science)*
* Evaluate water consumption, including how human and natural factors cause changes in water tables (*Grade 8 science)*
* Develop greater familiarity with Canadian identity and culture (*Grade 7 & 8 history and human geography)*

Context

Winter in Canada (and the northern US) affects cultural practices, government programs, sports, laws, and schooling. Despite personal feelings about the cold, winter is an important part of life in Canada.

In recent decades, researchers have found that human activity is causing significant changes to natural systems. These include change to the climate that are having significant impacts on the weather conditions we experience during a Canadian winter. As winters change, will Canadians habits and culture adjust and adapt?

*For additional information, including maps, about the expected future changes to Canada’s climate, consider visiting:* [*http://prairieclimatecentre.ca/2017/10/new-map-series-highlights-changes-coming-to-canadas-climate/*](http://prairieclimatecentre.ca/2017/10/new-map-series-highlights-changes-coming-to-canadas-climate/) *(materials on this website are written in language accessible to Grade 7/8 students).*

Lesson Plan

The teacher should start the activity with a discussion of climate change and the human interaction with the environment. In particular, the teacher should guide discussion toward reflecting on the implications of shorter, milder winters for Canadians' lifestyles. The conversation should get students thinking about the variety of cultures in Canada and how they interact with winter, at both an everyday level and in a larger sense. Discussion questions are provided as a sample.

The class’s main learning activity is to create a podcast about winter culture. The [www.RinkWatch.org](http://www.RinkWatch.org) website contains links to RinkTalk, a series of podcasts about the science, art and culture of outdoor skating. The teacher may wish to play the class a segment from one of the RinkTalk podcasts as an example (one particular episode that may be of interest is an interview with Chuck temple, illustrator of the Brady Brady children’s books, contained in the first episode of Rinktalk, found at <http://www.rinktalk.org/133551/588153-brady-brady-and-the-year-you-could-build-a-rink-in-vancouver>

After listening to the podcast the discussion, a class discussion can be held about the cultural importance of the outdoor skating rink described in the episode (suggested discussion questions are found below). Students should then be introduced to the objectives of the learning activity (if this has not already been done). The class should be organized into no more than five groups. Each group will attempt to identify a topic for which they will record a segment for the class podcast. The activity should start by having the groups brainstorm ideas, then reconvene the whole class and have a spokesperson for each group explain their idea. Classmates can ask questions and offer suggestions on how to refine the idea for the segment. Once the teacher approves the idea, each group will then be tasked with doing online research about their topic. Once researched, each group will write a script to be recorded by one or more members of the group. The recordings will then be shared with the other groups and, if desired, all the segments can be combined into a master podcast for sharing with parents.

Some resources:

Canadian winter sports:

<https://olympic.ca/>

<http://www.thecwhl.com/>

<https://www.nhl.com/>

Indigenous culture and winter:

<https://indigenoustourism.ca/en/embrace-winter-canada-indigenous-experiences/>

<http://www.cbc.ca/news/canada/edmonton/alberta-winter-games-indigenous-1.4540938>

Climate change and human interaction:

<https://www.theglobeandmail.com/technology/science/climate-change-will-be-felt-strongly-in-countries-such-as-canada-researcher-says/article14588012/>

<http://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=D189C09D-1>

How to create a podcast

<https://www.shopify.ca/blog/34911301-how-to-start-a-podcast-the-ultimate-step-by-step-podcasting-guide>

Appendix A: Preliminary discussion questions

1. How is people’s behaviour different in winter than in summer?
2. What cultural events or activities only happen in the winter?
3. What human systems or activities affect climate or environment in general? Are there any that are specific to winter? (e.g. applying salt to roads)
4. What impact does climate change have on winter?
5. How will a change in winter affect Canadian’s culture and lifestyle?

Appendix B:How are ice rinks a part of Canadian culture?

Go to rinktalk.org (or link there via rinkwatch.org) and listen to one of the podcasts. After listening to the podcast, answer the following questions.

1. What is the overall theme of the podcast?

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2. What is the main message of the episode you listened to?

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3. What did you learn about the cultural importance of skating rinks from listening to the podcast?

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4. Think about one example from the podcast that describes human interaction with culture and the environment. Describe the example and what are the benefits (or bad outcomes) of the interaction.

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5. If you wanted to produce another episode of RinkTalk, who would you like to interview, and what questions would you ask them?

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Appendix C: Student Activity Sheet: Make your own podcast!

1. Having thought about and listened to podcasts relating to the relationship between human interaction, water, and systems in winter, come up with an idea for a podcast segment that relates to this theme. Here’s some suggestions to get you started, but it’s better to get creative and think of your own!

Indigenous culture and winter

The effect of salting our roads

Cold temperature plants

Endangered species

How winters have changed

Impacts of climate change on me

Winter Olympics and culture

Children and winter

What does the average person think about climate change?

2. What is your topic? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. How does your topic explore human interaction with the environment, winter, and/or culture? What is the main message?

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4. Do some online research and come up with five important facts or ideas you would like to include in your podcast segment. List each of them here:

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 e) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Write a script. The script will be handed into the teacher as part of the marking scheme. Using a recording device, record your podcast segment and share it with the class.

Appendix B:How are ice rinks a part of Canadian culture?

Listen to the podcast segments recorded by other groups, then answer the following questions about one of them:

1. What is the title and theme of the podcast segment that interested you most?

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2. What is the main message of the segment?

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3. What did you learn from listening to it?

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4. Choose an example of something discussed in the podcast segment that describes human interaction with culture and the environment, and summarize it below.

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5. After listening to the podcast segment, you may be left with unanswered questions. What else would you like to learn about this topic?

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6. If you wanted to further develop the podcast segment, who could you interview and what questions would you ask them?

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