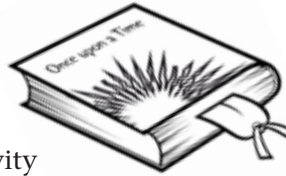




The Cross-curricular Sun

General information

- ★ Grade level: All elementary cycles
- ★ Students per group: Individual or group activity
- ★ When: After the Planetarium visits your school
- ★ Duration: One or more periods
- ★ Where : A well sunlit space outside and/or in the classroom
- ★ Type of activity: Reading, writing, discovering, games, research, physical activity
- ★ Subjects covered: English — Mathematics — Geography, history and citizenship education — Visual arts — Music — Physical education and health
- ★ Essential knowledge: Mathematics: measure length and time (estimating and measuring) — Geography, history and citizenship education: elements of society that affect the organization of the territory (cultural characteristics: beliefs, religion, arts, language, diet, dress, recreational activities, customs) — Visual arts: transforming gestures and their extension, the tools; visual arts productions — Music: sound sources (voice, musical instruments), instrumental techniques, music appreciation repertoire — Physical education and health: concepts related to the body; time and space concepts; principles and methods of communication; principles of synchronization; roles; regular physical activity; safe participation in physical activity
- ★ Subject-specific competencies: English: read and listen to literature, popular and information-based texts; write self-expressive, narrative and information-based texts; express her/his literacy in different media; use language to communicate and learn — Mathematics: solve a situational problem related to mathematics; reason using mathematical concepts and processes; communicate by using mathematical language — Geography, history and citizenship education: understand the organization of a society in its territory; be open to the diversity of societies and their territory — Visual arts: produce individual works in the visual arts — Music: interpret musical pieces; appreciate musical works, personal productions and those of classmates — Physical education and health: act and interact in different physical activity settings; adopt a healthy, active lifestyle
- ★ Cross-curricular competencies: Use information — Use creativity — Communicate appropriately — Cooperate with others — Solve problems — Exercise critical judgment — Adopt effective work methods — Construct an identity



Goals

The Sun's importance is felt in many aspects of our lives. The suggestions below, which are divided into different school subjects, will help students begin or continue their study of the Sun and understand its effects on us.

Steps in the activity

Listed below are activities suggested for different subjects.



English

Reading

- 1 Visit the school library or a city library to look for stories with the Sun, shadows or sundials as their main topic.
- 2 Students can each read an excerpt from their book aloud in class
- 3 Older students can read their story to younger children.
- 4 Students can discuss the parts of the stories that are based on real scientific facts.

Writing

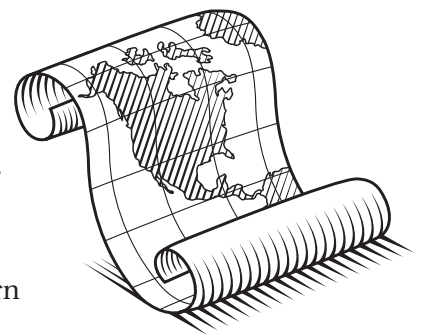
- 1 Write a short story on one of these topics:
 - The day I lost my shadow
 - A journey to the Sun
 - The day the Sun didn't come up
- 2 Write a newspaper article on the invention of the sundial and how it tells time. Include the four W's (who, what, when and why) of good journalism.

Mathematics

- 1 Build a sundial that can tell time to the half-hour and quarter-hour.
- 2 Place objects of different sizes in a sunny area of the schoolyard. Measure the length of shadows throughout the day.

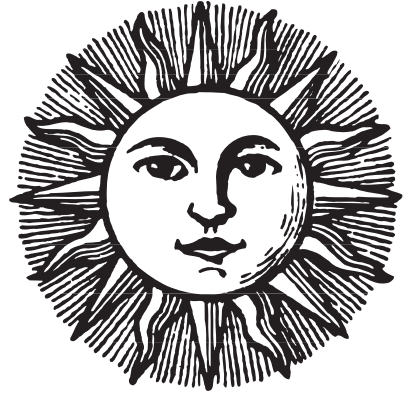
Geography

From a list of cities around the world, determine the time difference between each city (for example, when it's noon in Vancouver, it's 3 p.m. in Toronto, which means a three-hour difference). Also determine the time difference between each city and the city you live in. Name the geographic points of interest in the time zones east or west of your own time zone; and in the northern and southern hemispheres along your own time zone.



History

Research the history of the sundial. Find out where and when it was invented. Speak about different ways people can tell time with the Sun using various objects or instruments.



Citizenship education

Find aboriginal tales and legends about the Sun. Identify any aboriginal groups living in your region. How do these stories help us better understand their culture and their attachment to the land? Because aboriginal culture is often not written down, invite a member of an aboriginal group to come to class to tell the stories or the legends aloud according to oral tradition.



Visual arts

Make a sundial watch. Design an ad campaign to sell this new fashion accessory.

Music

- 1 Draw up a list of songs with lyrics or titles containing the word “Sun” or referring to the Sun, or containing words like “light,” “rainbow,” “shadow,” “heat,” “day” or “night.”
- 2 Listen to some of these songs in class.
- 3 In music class, the teacher can teach students to sing or play these songs.



Physical education and health

- 1 Play shadow tag in the schoolyard on a sunny day.

First, ask students to find their shadow. In regular tag, the player who’s “it” tags other players with his hand to make them “it.” In shadow tag, the “it” must step on the shadow of other players. Enjoy the game!

- 2 Create a sundial in the schoolyard using the bodies of your students.

With chalk, draw the lower part of the sundial (hour lines) using **The Sundial activity** sheet. Be sure that the dial faces south (see **The Sundial activity** sheet). Place one student on the starting point of the lines in order to serve as the style of the sundial. Ask the other students to tell time, in other words to identify the time shown by their classmate’s shadow. Repeat throughout the day with different students acting as the style.

- ④ Research the damage caused when you get a sunburn or a tan and when you look at the Sun without proper eye protection. Research how scientists study these topics.
- ④ Invite a parent who's a pharmacist, nurse or doctor to come speak about how the Sun benefits us (vitamin D), how excessive sunlight exposure is dangerous (sunburns, melanoma, cancer) and how the Sun can react with medication taken for certain ailments or conditions.

Wrap-up

You can present the results of these activities at a science exhibition or an art show at your school.