

# Connecting to the Earth Through an Exploration of Time

Grades 3-5

What makes the world around us unique and special? The Earth is always changing. We know this because scientists observe how it changes historically. Thinking about how the planet has changed over time helps us understand urgent problems and actions we can take to tackle things like climate change. In these fun activities, you will explore the concept of time and how time connects to the Earth.

Some of the activities include optional Internet links, but most can be completed without an electronic device. You will need a pencil, some paper, and things from your household recycling bin or clean garbage items.

**Note to Parents:** French Second Language students are encouraged to do their work *en français*. While the entire document has not been translated, some French instructions and explanations are included.



# Learn to Observe the Passage of Time

What makes the world around us **unique** and special? The Earth is always changing. We know this because scientists observe how it changes **historically**. Thinking about how the planet has changed over time helps us understand **urgent** problems and actions we can take to **tackle** things like **climate change**. In these fun activities, you will **explore** the concept of time and how time connects to the Earth.

Cultures around the world have developed systems to mark the passage of time and record important events.

**Calendars** are one system used for this purpose. Many calendars, such as those of Indigenous communities in Canada, are based on **environmental observations** over time, on cycles in nature, such as the seasons.

## Definitions

passage of time: different ways that time passes

unique: one of a kind

historically: compared to past events

urgent: requiring immediate action or attention

tackle: taking action to deal with a problem

climate change: changes in weather conditions and patterns over time

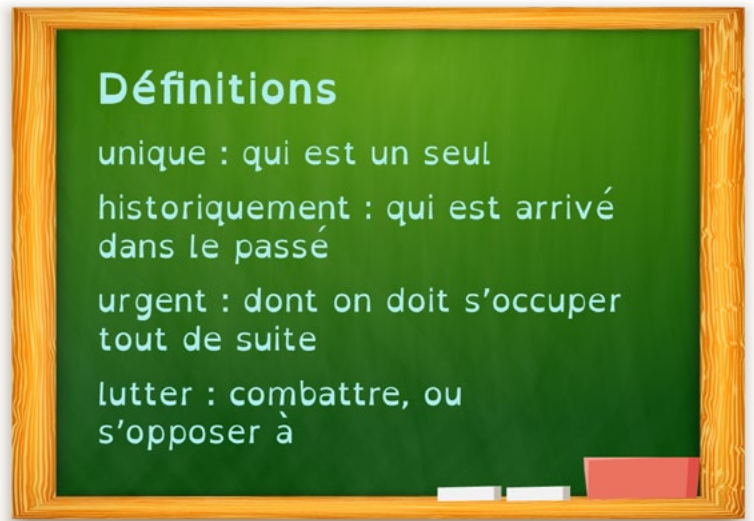
explore: think about in different ways

calendar: a way of organizing periods of time or events

environmental observations: things that you can notice in the world around you, such as things that change in nature on a regular basis

# Apprenez à observer le passage du temps

Qu'est-ce qui rend le monde qui nous entoure **unique** et spécial? La Terre change constamment. Nous le savons parce que les scientifiques observent comment il change **historiquement**. Penser à la façon dont la planète a changé au fil du temps nous aide à comprendre les problèmes **urgents** et les actions que nous pouvons prendre pour **lutter** contre comme le changement climatique. Dans ces activités amusantes, tu vas explorer le concept du temps et comment le temps se connecte à la Terre.



# Create a Calendar Collage

Western calendars use months to track time. Some Indigenous calendars use the moon to track time. The first moon of the year always ends on the shortest day of the year (December 21). The other moons are generally named after activities or occurrences that happen during each particular moon.

Here are the moon names in the Algonquian tradition:

January	Wolf Moon	July	Buck Moon
February	Snow Moon	August	Corn (Sturgeon) Moon
March	Worm Moon	September	Harvest Moon
April	Pine (Pink) Moon	October	Hunter's Moon
May	Flower Moon	November	Beaver Moon
June	Strawberry Moon	December	Cold Moon

A calendar collage is examples of activities or events that show Indigenous relationships to the environment, or ideas about the moons and changing seasons. To begin, gather the materials you need. Find images or photos from magazines of the seasons and illustrations of things which occur in nature, pieces of coloured cloth that depict the seasons, and found objects like acorns or coloured leaves.

In New Brunswick, there are three First Nations (Mi'kmaq, Wolastoqey, and Peskotomuhkati) which have existed for thousands of years before European contact and are still here today. For more information, visit the [Wabanaki Collection](#) website.



Using your variety of items, choose a month or moon and create a collage with examples of activities or events that show Indigenous relationships to the environment, or your own ideas about the moons and the changing seasons. You can use key words, pieces of material, maps, quotations, photos and illustrations in your collage. Share your collage with your family and ask them if they can identify the month you chose.

Source: To Be Indigenous Is to Be Free (Grade 4 Treaty Education)

# Learn about Timescales and the Passage of Time

We observe some changes and events on familiar **timescales** like:

- Birthdays
- Hockey seasons
- Leaves falling in Autumn, buds growing in Spring

We observe other changes and events on larger timescales like:

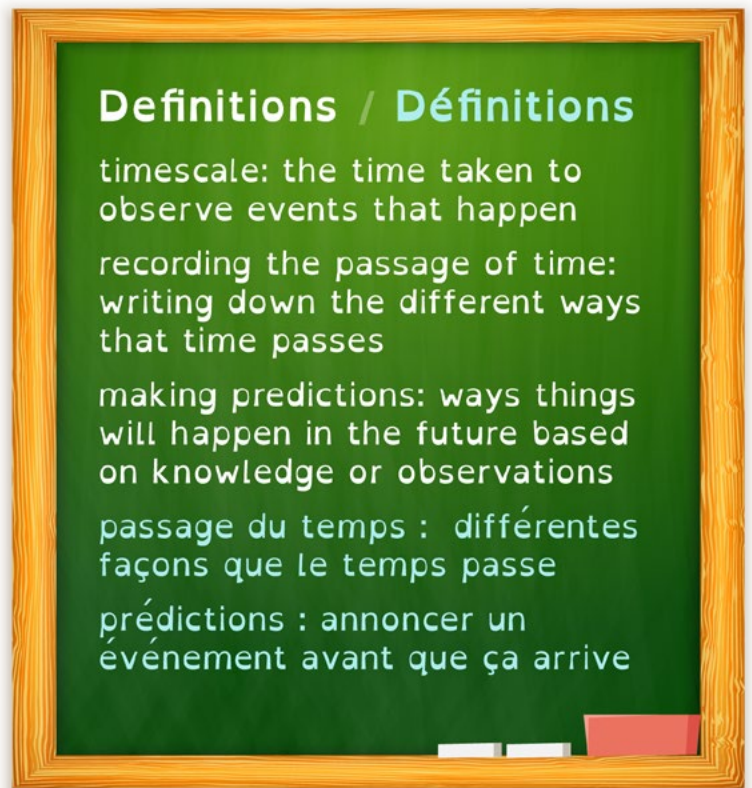
- When dinosaurs lived (e.g., Jurassic era)
- Formation of Mount Everest



How old is old?

Did you know the Earth is over 4 billion years old?

How many zeros is that?



How can **recording the passage of time** and **making predictions** help people care for the Earth?

*Comment l'enregistrement du **passage du temps** et l'établissement de **prédictions** peuvent-ils aider les gens à prendre soin de la Terre?*

It is important for people to know the time of day or the season. This helps us makes decisions like what clothes to wear, when to plant and harvest crops, and what activities we can do. People have many ways of tracking time. By practicing talking about time and making observations, you might notice changes that have happened and/or are happening, and you can plan ways to take better care for the Earth.

Think about some ways people keep track of or record the passage of time.

*De quelles façons est-ce qu'on mesure le passage du temps?*

Try using these words to help you talk about the passage of time.

- Second
- Minute
- Hour
- Day
- Month
- Season
- Year
- Impossible
- Possible
- Likely
- Not Likely

For example: People are **likely** to use **hours** to track how long they sleep.

*Les personnes utilisent des heures pour mesurer quand elles dorment.*

*Utilise des mots tels que (seconde, minute, heure, jour, mois, saison, année, impossible, possible, probable, peu probable) pour t'aider à parler du passage du temps.*

## [Koluskap and the Giant Beaver](#)

This story describes the creation of a number of areas including Grand Lake and Oak Bay.

Explain the passage of time in three of the following ways:

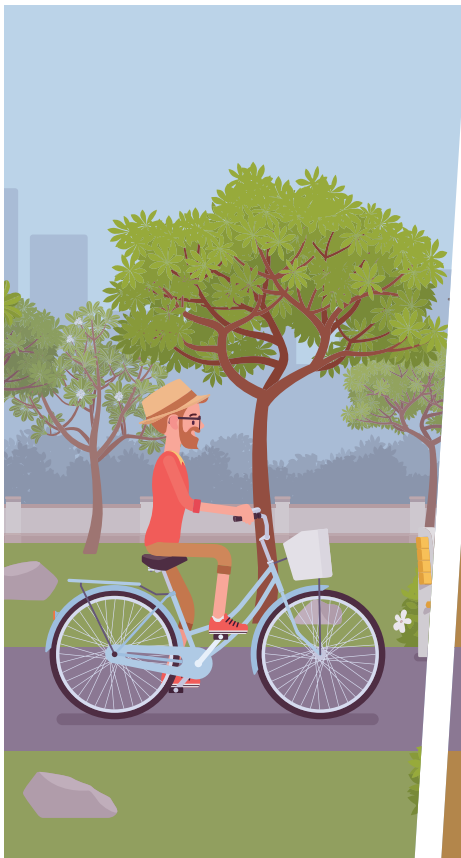
- with your personal health and wellness (how your body feels in the morning and at night)
- in your community (waste and recycling)
- in nature (the behaviors of wildlife: migration of birds, deer herds in spring and winter, fish runs for spawning)
- in Canada (when a new Prime Minister is elected)
- in your culture (your favourite celebration)

What do you notice about time when you are at home?

*Explique le passage du temps avec trois des façons suivantes :*

- *avec ta santé personnelle et ton mieux-être (comment tu te ressens le matin et le soir)*
- *dans ta communauté (recyclage et déchets)*
- *en nature (comportement des animaux, la migration des oiseaux, les troupeaux de chevreuils au printemps et en hiver)*
- *au Canada (quand un nouveau Premier Ministre est élu)*
- *dans ta culture (ta célébration préférée)*

*Que remarques-tu à propos du temps chez-toi?*



# Read Two Wabanaki Legends

The Abenaki are members of the Wabanaki confederacy, along with the Peskotomuhkati, Mi'kmaq, Wolastoqey, and Penobscot.

First, read these Abenaki legends with a family member. Note that Glooscap legends are important for the five Wabanaki Nations; each Nation has different spellings.

- [Gluscabi and the Wind Eagle](#) explains how Gluscap caused there to be winds at some times but not at other times, and how this is beneficial.
- [How Glooscap Found the Summer](#) explains why it is that winters last only half of the year.

Then, talk over these questions:

- What did the legend make you think of?
- What parts of the legend show that time has passed?

First Nations oral traditions, or “A’tugwaqann” in Mi’kmaq, are important ways to teach about worldviews, history and the responsibility each of us has to the land and future generations.

Storytelling is a way of communicating that First Nation Elders and knowledge keepers use to share knowledge and cultural information, and to teach children. Some of these stories contain special information like where certain medicines grow or how to make a drum, that only certain people are allowed to know and share. Some stories are simple and can be shared by anyone, like the best ways to grow food.

A legend is a type of story that contains cultural information, like the origins of a people. Legends are widely shared and known by many within and outside of a culture.



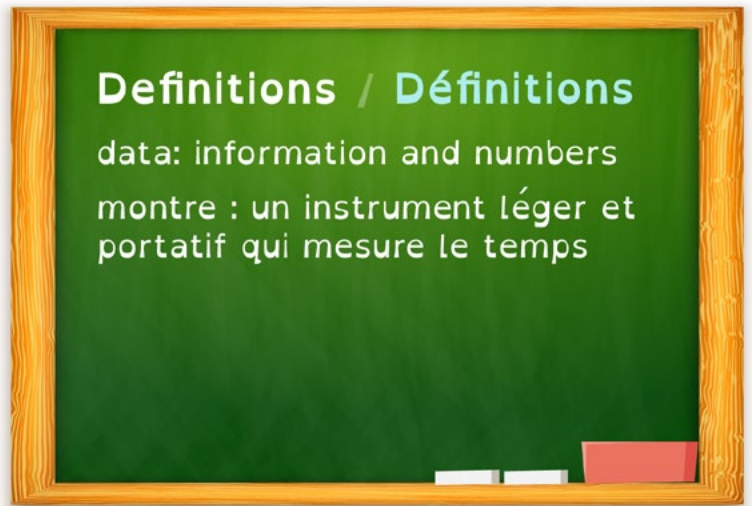
# Gather Time Data!

If clocks and watches had never been invented, how would you keep track of the passage of time?

*Si les horloges et les **montres** n'existaient pas, comment est-ce que tu pourrais observer le passage du temps?*

1. Can you invent or use a tool, nature, or another way to observe the passage of time? Can you track the passage of time without using technology? *Peux-tu inventer un outil ou utiliser un outil ou une autre façon pour observer le passage du temps? Comment peux-tu observer le passage du temps sans technologie?*
2. How could you record your observations? Design a way to observe and record the passage of time with things you find at home. You could use a tally to keep track of days; use objects to record your tally and create a 3D calendar; or use line plots, charts, or bar graphs. *Imagine une façon d'observer le passage du temps avec les objets que tu trouves à la maison.*
3. How could you share your observations with others?
4. Can you use your observations to make a prediction about the future?
  - Will your observations be the same tomorrow?
  - Will your observations be the same next week? Next month?
  - How likely is your prediction to be true?

*Pense d'une façon que tu peux mesurer le passage de temps. Comment peux-tu noter tes observations? Comment peux-tu partager tes observations avec les autres?*





# Make a Sun Dial

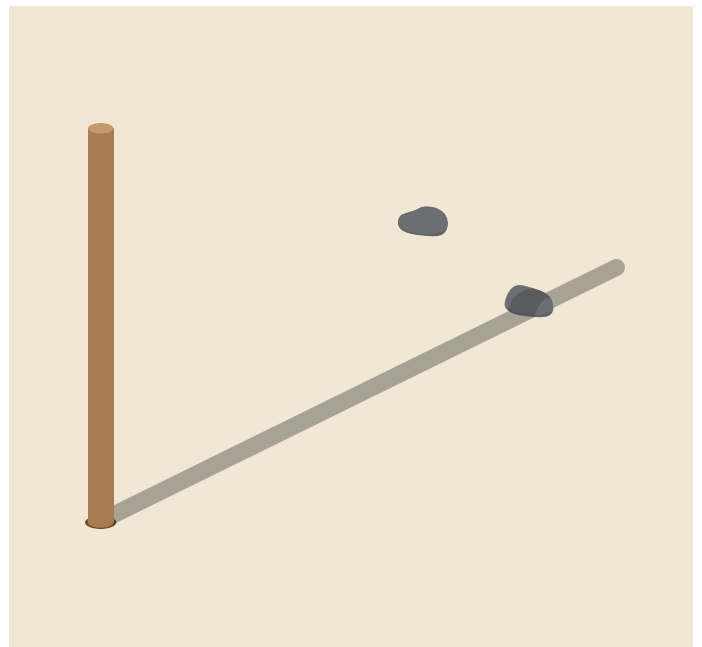
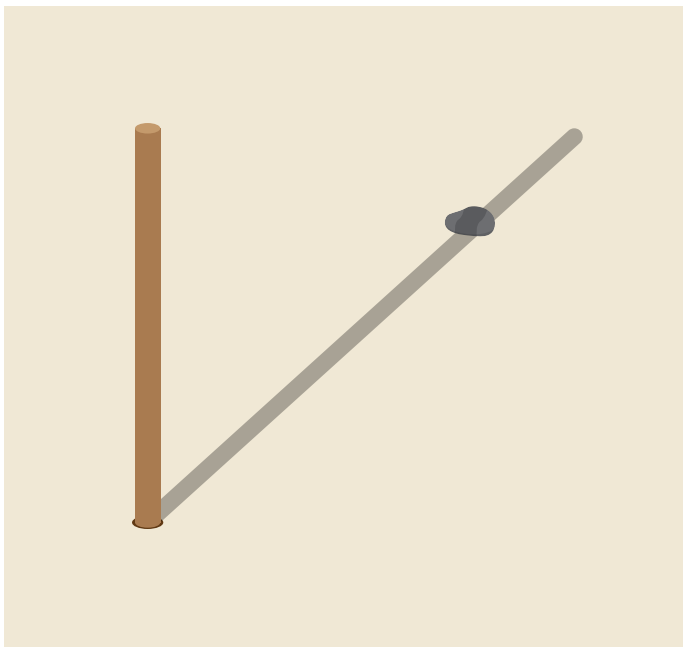
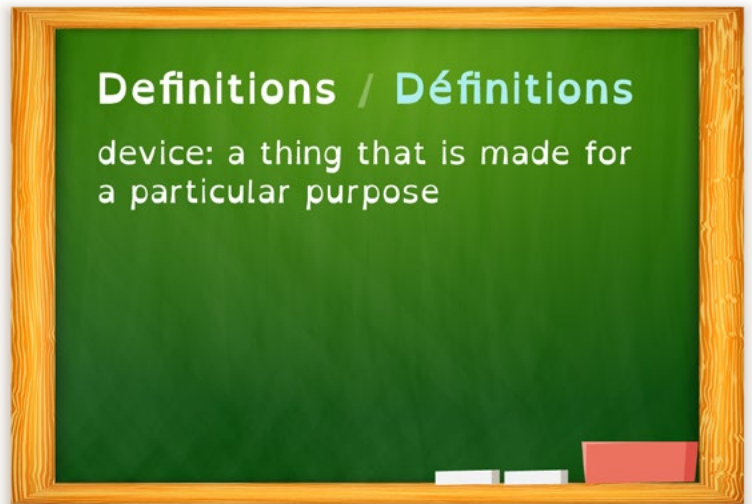
How does the sun help people track the passage of time?

The sundial is one of the oldest **devices** known to measure time. People use sundials to see shadows created by the sun, which helps them predict the time of day. Sundials are not used often anymore, but some people still have them for fun and interest.

*Construis un cadran solaire pour mesurer le passage du temps.*

Here is how to build a sun dial with just a stick and some stones.

- Put the stick in the ground and mark the shadow of the stick with a stone.
- As time passes, the shadow will move.
- Try checking it each hour. What do you notice?
- Will the shadow be the same tomorrow? Next week? In a few weeks?



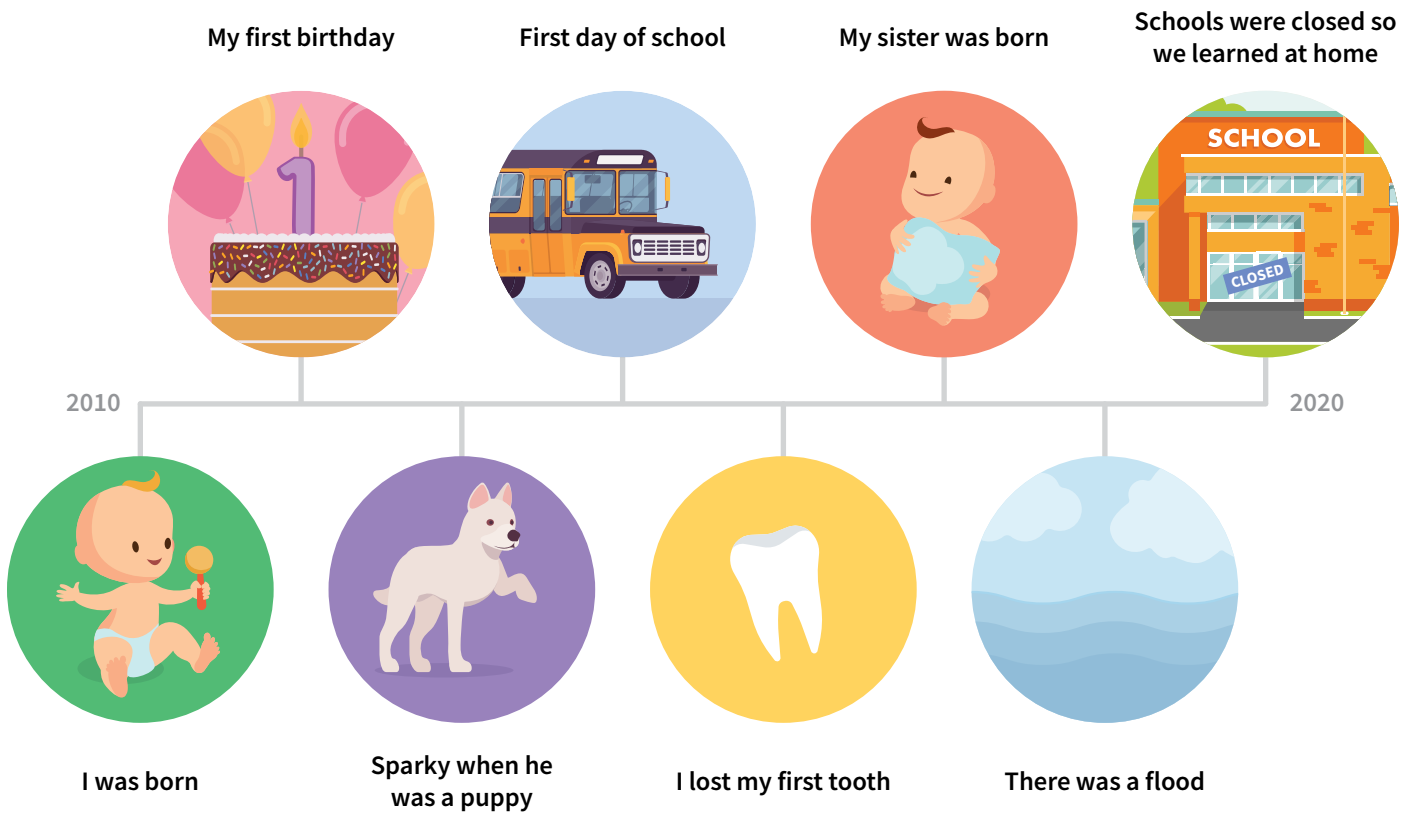
There are other ways you can tell time without a clock. Try these! How accurate are they?

[5 Tricks to Tell the Time Without Using a Watch or a Clock](#)

[How to Tell Time Without a Clock](#)

# Design Your Own Timeline

Timelines can be used to show when events take place over a period of time. For example, photos or drawings of family and pets can show the passage of time in years.



Create a personal timeline using events in your life that are important to you. Use drawings or photos to show the passage of time. Talk with members of your family and share stories of their/your life. Do you think your events will be the same as someone else's? Why or why not?

*Crée une ligne du temps personnelle des événements importants dans ta vie. Penses-tu que ta ligne du temps va être la même que la ligne d'une autre personne? Pourquoi? Pourquoi pas?*



# Conclusion

We are out of time and that's the end of this activity!

Observing the passage of time and making predictions helps us understand and connect to the Earth. You have learned to pause and reflect, but your understanding of time and your ability to observe is still growing! Try to notice both little and large changes that happen over time. Make a note of what is around you and in nature. If you enjoyed doing this activity, make observing part of your everyday routine. Share what you notice by talking with others.

