

Daily and Seasonal Changes Curriculum Map

Daily and Seasonal Changes is a comprehensive Grade 1 science resource that introduces students to the predictable patterns of Earth's cycles. Through eleven lessons, students explore the days of the week, day and night, the months of the year, and the four seasons. They investigate how the sun affects heat and daylight, observe the moon's changing shape, and learn how animals and plants respond to seasonal changes. Each lesson includes teacher notes, learning intentions, success criteria, materials, and differentiation strategies to support all learners.

The resource also integrates Indigenous perspectives through a lesson on Aboriginal seasonal activities, helping students understand how people adapt to environmental changes. Hands-on experiments and observations encourage students to apply scientific inquiry skills while building foundational Earth and Space Science knowledge. This resource aligns with all Canadian provincial/territorial Grade 1 science expectations, NGSS 1-ESS1 and 1-LS1, and Common Core literacy standards.

Canadian Provincial & Territorial Standards Alignment

Province/Territory	Standards Met
Ontario	Daily & Seasonal Changes (1.1–1.5)
BC	Seasonal changes; sun/light; adaptations
Alberta	Seasonal Changes; light/heat
Saskatchewan	ES1.1, ES1.2
Manitoba	Cluster 4: Daily & Seasonal Changes
Quebec	Earth & Space: seasonal patterns
Nova Scotia	Daily & Seasonal Changes
New Brunswick	Earth & Space Science
PEI	Seasonal changes; weather; adaptations
Newfoundland & Labrador	Earth & Space Systems
Yukon	Follows BC curriculum
NWT	Follows Alberta curriculum
Nunavut	Seasonal cycles; Indigenous knowledge

U.S. Standards Alignment

Standard	Description	Lessons Aligned
NGSS 1-ESS1-1	Patterns of sun/moon	Day & Night, The Moon
NGSS 1-ESS1-2	Daylight across seasons	Seasonal Changes, In the Light of Day
NGSS 1-LS1-1/2	Animal/plant adaptations	Animal Adaptations, Plant Adaptations
CCSS RI.1.1–1.3	Informational text comprehension	All lessons with reading components
CCSS W.1.2	Explanatory writing	Student assessments & activities

The lessons and experiments fall under eleven topics that relate to an aspect of earth science: Daily and Seasonal Changes.

The activities have two intentions:

1. to teach concepts related to earth science
2. to provide students the opportunity to apply necessary skills needed for mastery of science and technology curriculum objectives.

Introduction, Assessments and Learning Expectations

- At A Glance – List of Skills
- Introduction
- Student Assessment Form
- Teacher Assessment Form

Lessons:

In each section you will find teacher notes designed to provide you guidance with the learning intention, the success criteria, materials needed, a lesson outline, as well as provide some insight on what results to expect when the experiments are conducted. Suggestions for differentiation are also included so that all students can be successful in the learning environment.

Lesson 1: Seven Day Cycle

Students will learn about the days of the week and the sequencing of daily events in a week.

Lesson 2: Day and Night

Students will learn about the 24 cycle and determine the differences of activities done at night and during the day.

Lesson 3: A Year at a Glance

Students will learn about the months of the year and the sequencing of monthly events that take place in one year.

Lesson 4: Seasonal Changes

Students will learn about the four seasons, in terms of weather, clothing, activities, and how to prepare for each season.

Lesson 5: Aboriginal Activities

Students will learn about the activities of Aboriginals throughout seasonal changes.

Lesson 6: The Heat of the Sun

Students will learn about heat from the sun that happens throughout the day and the seasons.

Lesson 7: In the Light of Day

Students will learn about the amount of daylight and the sun's position throughout a day and in the seasons.

Lesson 8: The Moon

Students will learn about the shape and position of the moon throughout a month.

Lesson 9: Animals – Day and Night

Students will learn about the differences of animal activity at night and during the day.

Lesson 10: Animals Adaptations

Students will learn about the changes of animal appearance, location, and activity throughout seasonal changes.

Lesson 11: Plant Adaptations

Students will learn about the differences in the appearance and behavior of plants throughout seasonal changes.

THE MOON

LEARNING INTENTION:

Students will learn about the shape and position of the moon throughout a month.

SUCCESS CRITERIA:

- identify the different phases of the moon
- track the change in shape and position of the moon during one month
- explain the changes that are seen in the moon during one month
- create a mobile to show the different phases of the moon

MATERIALS NEEDED:

- a copy of “Moon Phases” Worksheets 1, 2, 3, and 4 for each student
- a copy of “Let’s Go on a Moon Watch!” Worksheets 5 and 6 for each student
- a copy of “Making a Mobile of the Moon” Worksheet 7 for each student
- a copy of “Moon Phase Name Cards” Worksheet 8 for each student (**on card stock**)
- **2 copies** of “Moon Phase Creation Cards” Worksheet 9 for each student (**on card stock**)
- a model of the Sun, Earth, and Moon (that is able to show rotation)
- black pencil crayons (one per student)
- chart paper, markers
- coat hangers (one per student), or 2 sticks and string (per student)
- scissors, yarn
- pencils

PROCEDURE:

***This lesson can be done as one long lesson, or be divided into four shorter lessons. Items 1, 2, 4, and 5 can be done at school. Item 3 contains a homework component.**

1. Explain to students that the moon moves around the Earth, taking about one month to go fully around the Earth. Give them Worksheet 1, read it through and discuss the moon’s rotation. Divide students into pairs and give them Worksheets 2 and 3. Allow them time to do a “think-pair-share” activity to brainstorm some possible answers to why the moon looks different as it rotates around the Earth.

2. Come back as a large group. Have a discussion about the moon’s rotation by asking some pairs to share their answers. *An option is to record student responses on chart paper.* Then using a model of the Sun, Earth, and Moon, demonstrate for students how the moon rotates. Explain why it looks different throughout its rotation around the Earth. Give students Worksheet 4 to complete their observations and conclusions.

(As the moon orbits the Earth, the phases change. The phase of the moon is how much of the moon appears to us on Earth to be lit up by the sun. Once a month, the moon orbits around the Earth. The phases of the moon are a new moon, waxing crescent, first quarter, waxing gibbous, full moon, waning gibbous, third quarter, and waning crescent.

As the moon begins to orbit the Earth, we can only see a portion of the lit up side. As the moon continues to orbit the Earth, we see more of the lit up side until finally the moon is on the opposite side of the Earth from the sun and we get a full moon. When we can see 100% of the lit up side, this is a full moon. As the moon continues to orbit the Earth, we see less of the lit up side. When we can’t see any of the lit up side, this is called a new moon. In the new moon phase, the moon is between Earth and the sun.)

3. Explain to students that they will embark on a moon watch for one month. Each night, they will observe and record what the moon looks like. Give them Worksheet 5 and a black pencil crayon to take home. Explain to students that they are to use the black pencil crayon to shade in the part of the moon that is not showing lit up. The circles on the Worksheet represent the moon, the small square boxes inside each “day square” can be used to write in the calendar numbers for the month.

***It may be beneficial to track the moon’s phases each day by going to a website that offers this information. This can be an activity that is done as a class, so that the students all go home with the same information. This could be an incentive for students to check on the moon each night in order to see if the information given on the website is accurate. Track this data on a large chart, so that it can be used for reference for a later activity.**

4. After 30 days, ask students to return Worksheet 5 to school. *An option at this point is to give students time to share and compare their data with each other.* Give students Worksheet 6 to complete as they analyse the data they have collected.

5. Explain to students that they will create a mobile of the moon phases. Referring back to the chart on the moon’s phases created as a class, circle the point in the month’s cycle where a new moon is evident, then do the same for a **waxing crescent, first quarter, waxing gibbous, full moon, waning gibbous, third quarter, and waning crescent**. Students can refer to these as they complete their moon phase creation cards for their mobiles. Give students Worksheet 7. Read through the materials needed and what to do sections to ensure their understanding of the task. Then give them the materials to create their moon mobile!

DIFFERENTIATION:

Slower learners may benefit by being paired up with a stronger student to complete Worksheets 2 and 3. Also, it would be beneficial for these students to work in a small group with teacher direction to aid with idea flow and pacing in order to complete Worksheet 4.

For enrichment, faster learners could create a short poem about the moon. This poem could be attached to the centre of their moon phases mobile.



The Phases of the Moon

The moon does not shine light, by itself.

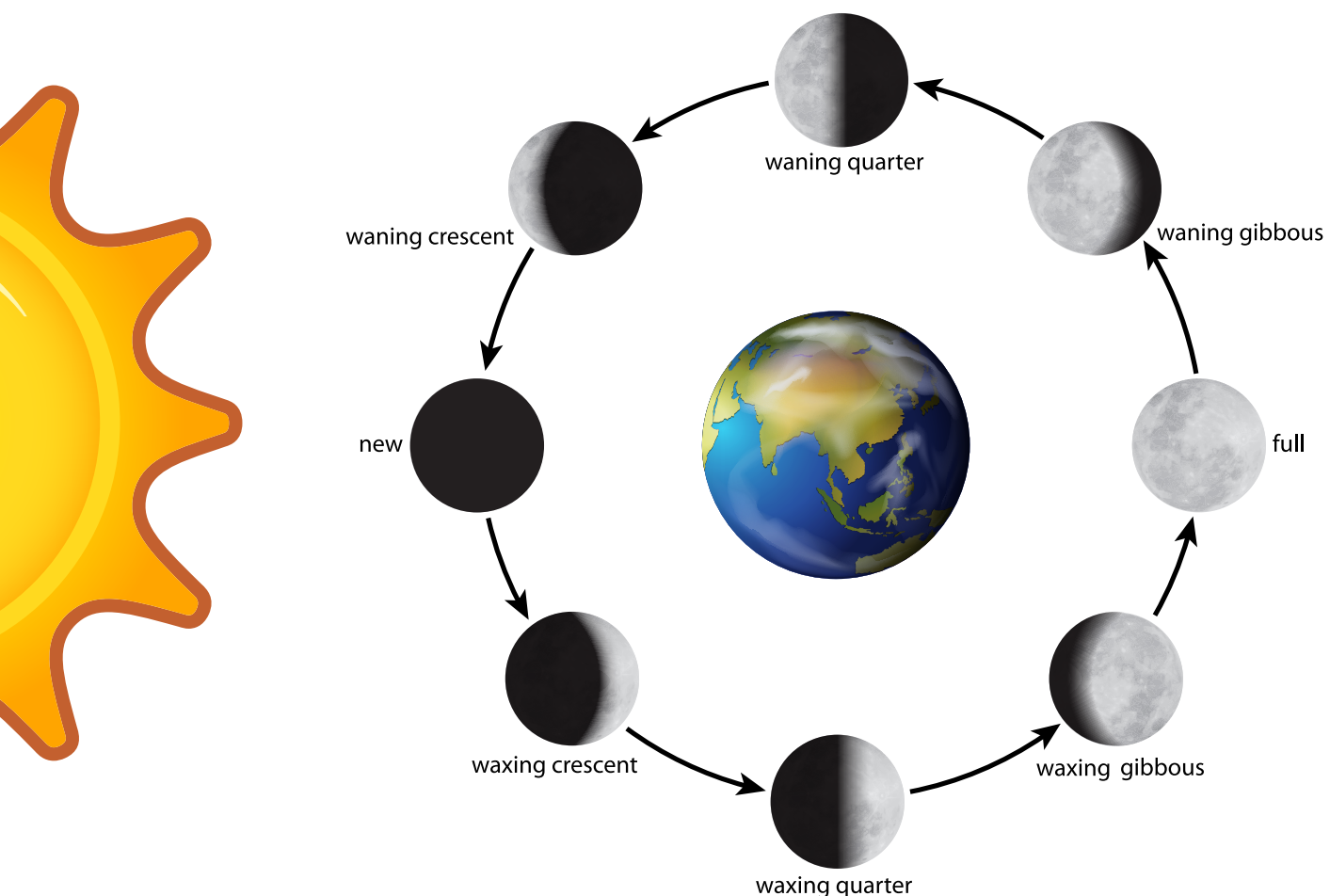
What we see when we look at the moon is the sun's light bouncing off the moon.

Sometimes we only see part of the moon, sometimes we see the full moon, and other times we can't see the moon at all.

Have you ever wondered why the moon looks different in the sky some nights?

Look at the diagram to see how the moon moves around the Earth.

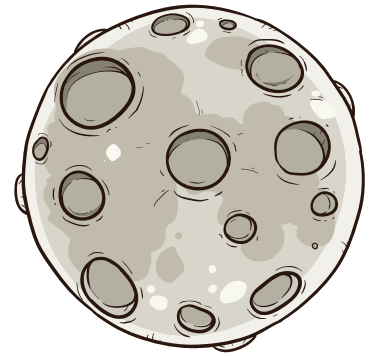
The Moon as seen from Earth



Think Pair Share

With a partner, do some thinking and sharing of ideas about the moon's phases.

Use pictures and words when recording your ideas in the chart.



Draw what the moon looks like when **the moon** is **between** the Earth and the sun.

My partner and I think it is dark because...

Draw what the moon looks like when **the moon** is **one quarter** of the way around the Earth.

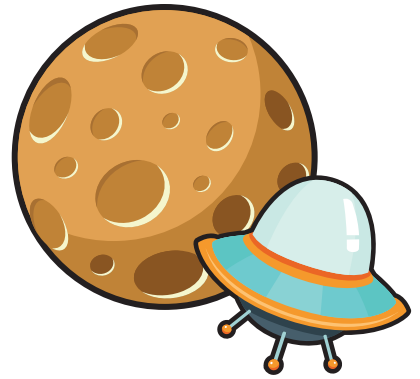
My partner and I think it is partly lit because...



Think Pair Share

With your partner, continue doing some thinking and sharing of ideas about the moon's phases.

Use pictures and words when recording your ideas.



Draw what the moon looks like when **the Earth** is **between** it and the sun.

My partner and I think it is fully lit because...

Draw what the moon looks like when **the moon** has gone **three quarters** around the Earth.

My partner and I think it is partly lit because...

Let's Observe

When my teacher showed how the moon goes around the Earth, I noticed that...

And I noticed...

Let's Conclude

I learned that...



Let's Go on a Moon Watch!

Observe the shape of the moon for a month.

Record your observations by drawing what the moon looks like each night.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

A Closer Look!

Let's take a closer look at the data you have collected about the moon during one month!

Draw what the moon looked like when you began your observations.

Draw what the moon looked like after 30 days.

Describe exactly how the moon changed during the month.



Making a Mobile of the Moon

You have learned about what the phases of the moon look like. Now let's create a mobile of these moon phases!

You'll need

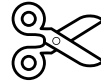
a coat hanger



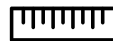
some yarn



scissors



a ruler



a black pencil
crayon



moon phase
name cards



moon phase
creation cards
(2 sheets)



What to do:

1. Cut out the moon phase name cards and creation cards.
2. Look at the moon phase chart that your class completed. Find the 8 different phases of the moon that your teacher circled.
3. Draw one phase on each moon phase creation card. (Use a black pencil crayon to shade in the part of the moon that is not lit up).
4. Punch a hole at the top of each of the moon phase creation cards.
5. Punch a hole at the top and at the bottom of each of the moon phase name cards.
6. Cut 16 pieces of yarn, each about 8 inches (20 cm) long.
7. Tie a piece of yarn to the top of each moon phase creation card. Then tie the other end of the pieces of yarn to the bottom of the matching moon name cards.
8. Tie a piece of yarn to the top of each of the moon name cards. Then tie the other end of the pieces of yarn to the coat hanger. You have created a moon mobile!

Moon Phase Name Cards

New Moon

Waxing Crescent

First Quarter

Waxing Gibbous

Full Moon

Waning Gibbous

Third Quarter

Waning Crescent



Moon Phase Creation Cards

