# THE ADVENTURES WITH FRISBEE ROB

*The Long Way Down*

*Adventure 001: Isaac Newton*

COMPLETE TEACHER GUIDE SET

# GRADE 2

| ELAL | Math | Science | Social Studies | PE & Wellness |
|---|---|---|---|---|

*Wonder in Motion*

Alberta K–6 Curriculum · Adventure 001

# THE ADVENTURES WITH FRISBEE ROB

*The Long Way Down*

*Adventure 001: Isaac Newton*

GRADE 2

## ENGLISH LANGUAGE ARTS and LITERATURE

*Teacher Guide*

### Question, Clue, Revise

| GRADE | SUBJECT | TIME |
|---|---|---|
| Grade 2 | ELAL | 2 × 30 minutes |

**CENTRAL QUESTION**

How do questions, story evidence, and revised predictions help us understand Rob and Newton's adventure?

*Wonder in Motion*

# Lesson at a Glance

Teachers with a continuous 60-minute block may teach both sessions together.

| | |
|---|---|
| **Story connection** | Rob's first question launches the Adventure. As Rob and Newton observe the apple, frisbee, and leaf, each new clue changes what they notice and leads to another question. |
| **ELAL focus** | Questioning, locating literal information, recognizing cause and effect, making evidence-based predictions, revising thinking, and explaining how comprehension changes. |
| **Learning intention** | We are learning to use questions and clues from a story to make a prediction, then revise our thinking when new information appears. |
| **Core experience** | Across two 30-minute sessions, students create a class Question–Clue–Revise trail using selected story moments. They then rehearse and share explanations showing how evidence confirms, changes, or adds to their understanding. |
| **Flexible use** | Session 1 is a complete core lesson and can be used independently. Session 2 continues the same Wonder Lab through rehearsal, refinement, sharing, and deeper questioning. |
| **Use after reading** | Read Adventure 001: The Long Way Down before beginning. The lesson uses a prediction rewind: students revisit selected moments and reason from only the information available at that point. |
| **Story context** | Isaac Newton was a real historical person. Rob's visit, their conversation, and the events they experience together are imaginative parts of the story. |

## Optional Teacher-Spoken Success Indicators

I can ask a question that helps me understand the story.
I can make a prediction using a clue from the text and what I already know.
I can explain why new information confirmed or changed my thinking.
I can return to the story when I need more evidence.

# How to Use This Guide

### THE GUIDE IS A TOOL, NOT A SCRIPT

This guide is designed to support responsive teaching rather than prescribe every word or action.

Session 1 is a complete 30-minute Grade 2 Comprehension lesson and can be taught independently.

Session 2 continues the same comprehension process through rehearsal, refinement, sharing, and questioning. It does not introduce additional curriculum.

Follow productive student thinking and conversation while protecting the central question, selected Comprehension KUSP, questioning, evidence use, prediction, revision, and cause-and-effect thinking, meaningful participation, and approximate lesson timing.

Adjust the amount of text, grouping, response mode, language support, and pacing to meet the needs of the learners in front of you while preserving the comprehension goal.

Students already know the ending of the Adventure. During prediction rewinds, ask them to reason from the information available at that moment rather than pretend they have forgotten what happens.

The goal of the second session is not to do more. It is to give students enough time to think, try, improve, and communicate what they understand.

# Curriculum Alignment

Session 1 provides sufficient opportunities to gather evidence of the selected KUSP. Session 2 offers additional opportunities for students to demonstrate and communicate their understanding.

These lessons do not assess the complete learning outcome.

| | |
|---|---|
| **Organizing Idea** | Comprehension: Text comprehension is supported by applying varied strategies and processes and by considering both particular contexts and universal themes. |
| **Guiding Question** | How does comprehension facilitate the meaning of a text? |
| **Learning Outcome** | Students examine and apply a variety of processes to comprehend texts. |
| **Assessment Focus** | Gather formative evidence of selected Grade 2 Comprehension KUSP through questioning, locating information, identifying cause and effect, making or revising predictions, and explaining reasoning. |

## Selected KUSP for These Lessons

| KUSP element | Selected curriculum learning | What it looks or sounds like |
|---|---|---|
| **Knowledge** | Questioning includes asking or answering who, what, where, when, why, and how questions. Answers may not be immediately apparent and may involve searching for more information. Predicting includes imagining an outcome based on title, pictures, evidence, and background knowledge. | Students ask a useful question, identify available clues, and make a plausible prediction rather than guessing without support. |
| **Understanding** | Comprehension can be enhanced by formulating questions and searching | Students describe how new story information confirms, changes, or |

| KUSP element | Selected curriculum learning | What it looks or sounds like |
|---|---|---|
| | for answers within texts. Comprehension can be supported by making and revising predictions. | adds to their earlier thinking. |
| **Skills & Procedures** | Ask questions to clarify information in texts. Answer questions requiring literal recall and understanding of evidence, details, or facts. Answer questions that require interpretations, opinions, or recognition of cause and effect. Make predictions prior to and while reading, viewing, or listening to a text. Revise understandings in response to new information. Compare actual outcomes to predictions made. | Students build a Question–Clue–Revise trail, locate evidence, explain a cause-and-effect relationship, rehearse a prediction revision, and share their current understanding. |

*Curriculum source: Government of Alberta, English Language Arts and Literature (K–6) Curriculum, Comprehension, pp. 17–19.* *View the Alberta program of study*

# Teacher Preparation

**STANDARD PATHWAY**

Use these two 30-minute sessions after students have heard Adventure 001: The Long Way Down.

Session 1: Follow the Evidence is the core lesson. Students examine questioning and prediction through one carefully staged story moment and build a class Question–Clue–Revise trail.

Session 2: Revise the Thinking continues the same Wonder Lab. Students use additional story moments to rehearse, revise, explain, and share evidence-based thinking.

If only one 30-minute period is available, teach Session 1.

If a continuous 60-minute block is available, the two sessions can be taught together with a brief transition or movement break between them.

# Flexible Use of the Guide

### Core Pathway | 30 minutes

Teach Session 1: Follow the Evidence.

Students experience:

**Get Curious → Model → Build → Think It Through**

This is a complete Grade 2 Comprehension lesson and provides opportunities to gather formative evidence of the selected KUSP through questioning, locating information, cause-and-effect thinking, prediction, and revision.

### Full Wonder Lab | 2 × 30 minutes

Teach both sessions.

Students experience the complete Wonder Lab cycle:

**Model → Build → Rehearse → Share**

Session 2 deepens the same learning rather than adding additional curriculum. Students use the same Question–Clue–Revise process with additional story moments and communicate how evidence changes understanding.

It also gives students time to deepen story-based questions through:

**Puddle → Pond → Lake → Ocean**

### Continuous Block | ~60 minutes

If scheduling allows, Sessions 1 and 2 may be taught consecutively.

Take a brief movement or transition break after the first Think It Through before beginning Reconnect. Protect Rehearse and Share rather than adding a new comprehension target.

## Materials

A copy of Adventure 001: The Long Way Down
Whiteboard, chalkboard, or chart paper and marker
Four headings: Question, Clues We Have, Our Prediction, New Information / Revised Thinking
Optional picture cards for the first frisbee throw, Newton with the apple, the three paths, and the Moon
Optional sticky notes for clues and revisions

## Before Students Begin

Create the four-part Question–Clue–Revise trail on the board.

Mark three rewind moments: after Rob's opening question, before the orchard frisbee test, and before the Moon question.

Prepare one unsupported guess and one evidence-based prediction so students can compare the difference.

Keep the class trail available for Session 2.

Use professional judgment to choose the Session 2 grouping—partners, groups of three, or whole group—that best supports student participation. Whole-group rehearsal may provide helpful structure when students are not yet ready for independent partner work.

Important
Students already know the ending. Ask them to reason from the evidence available at each rewind moment, not to pretend they have forgotten the story.

**Substitutions**

Use pictures, short teacher-read excerpts, oral retelling, pointing, or acted story moments instead of requiring students to reread independently. Reduce the number of clues or rewind moments when needed while preserving the Question–Clue–Revise process.

# Useful Vocabulary

Pre-teach essential vocabulary through an explicit vocabulary routine, providing students with opportunities to build meaning, interact with the words, and use them in context before and throughout the lesson.

**Comprehension words**
**question • clarify • clue • evidence • predict • confirm • revise • outcome • cause • effect**

**Story words**
**gravity • glide • drift • curve • return • curious • orchard • Moon**

A prediction is a reasonable idea about what may happen, based on clues and background knowledge.

To revise is to change or add to thinking when new information appears.

A cause helps make something happen. An effect is what happens as a result.

# Supporting Our Diverse Learners

Use these supports proactively while preparing and teaching the two sessions.

| | |
|---|---|
| **Make it accessible** | Use one rewind moment at a time. Pair each trail section with a simple visual icon, and reread only the short story portion needed for the current question. |
| **Support language** | Model I predict... because..., The text says..., I noticed..., and I revised my thinking when.... Allow partner or home-language rehearsal where appropriate. |
| **Offer response choices** | Accept speaking, pointing, sorting picture cards, drawing arrows, dictation, gesture, communication devices, or assistive technology. |
| **Support participation** | Offer roles such as questioner, clue finder, predictor, outcome checker, evidence pointer, or revision reporter. Students may observe a round before taking an active role. |
| **Reduce memory load** | Keep the four-part trail visible. Reveal only the story information needed for the current rewind and limit the number of clues displayed at one time when helpful. |
| **Support rehearsal** | Allow students to repeat the same explanation after checking a clue or hearing a partner question. Rehearse one sentence frame at a time before combining the full reasoning. |

| | |
|---|---|
| **Preserve the learning** | Change the number of clues, language demand, amount of rereading, grouping, or response mode—not the comprehension process. Students still use evidence to make or revise a reasonable prediction or understanding. |

# KUSP Assessment: Evidence to Notice

**FORMATIVE ASSESSMENT**

Gather evidence through observations and conversations across both sessions.

Session 1 provides sufficient opportunities to gather evidence of the selected KUSP.

Session 2 gives students additional opportunities to demonstrate, refine, and communicate their understanding.

These lessons do not assess the complete learning outcome.

| Evidence source | Listen or look for | Possible teacher note |
|---|---|---|
| **Observation** | Listen or look for:<br>Student locates a relevant clue, places it in the correct part of the trail, returns to the story when evidence is uncertain, or distinguishes a stated detail from background knowledge. | "Revisits the frisbee passage to check what happened before the turn and places that information under Clues We Have." |
| **Conversation** | Listen or look for:<br>Student asks or answers a useful question, explains why a prediction is reasonable, identifies cause and effect, or describes how new information confirmed, changed, or added to earlier thinking. | "Names the apple fall as a text clue, prior frisbee experience as background knowledge, and explains how the next story event changes the prediction." |
| **Class product** | Listen or look for:<br>Contributions to the Question–Clue–Revise trail show a reasonable relationship among the available evidence, a prediction or interpretation, and revised understanding. | "Adds the curved return as new information and explains that the class should revise rather than simply mark the first prediction wrong." |

# The Two-Session Flow

### Session 1 — Follow the Evidence | 30 minutes

| Time | Section | Student experience |
|---|---|---|
| ~5 min | **Get Curious** | Student experience<br>Reconnect with Rob's opening question and identify what he notices, what the story states, and what he still wants to understand.<br>Teacher move<br>Invite useful who, what, where, when, why, and how questions without turning the lesson into a science explanation. |
| ~5 min | **Wonder Lab: Model** | Student experience<br>Compare a random guess with an evidence-based prediction and see how new information can confirm, change, or add to thinking.<br>Teacher move<br>Make the reasoning visible: clue + background knowledge → prediction → new information → revision. |
| ~15 min | **Wonder Lab: Build** | Student experience<br>Build one complete class Question–Clue–Revise trail around the orchard frisbee moment.<br>Teacher move<br>Prompt students to identify available evidence, distinguish it from what they already know, and explain why the prediction fits. |
| ~5 min | **Think It Through** | Student experience<br>Reflect on how questions, clues, prediction, cause and effect, and revision supported comprehension.<br>Teacher move<br>Use student examples from the trail as evidence and reinforce that revision is a sign of attentive reading. |

### Session 2 — Revise the Thinking | 30 minutes

| Time | Section | Student experience |
|---|---|---|
| ~5 min | **Reconnect** | Student experience<br>Return to the class trail and reconstruct the prediction process from memory and evidence.<br>Teacher move<br>Ask students to rebuild the reasoning rather than simply read the completed board. |

| Time | Section | Student experience |
|---|---|---|
| ~8 min | **Wonder Lab: Rehearse** | Student experience<br>Apply the process to another story moment and improve an explanation after checking the text.<br>Teacher move<br>Use flexible grouping and prompt students to make one clear improvement rather than add more information. |
| ~9 min | **Wonder Lab: Share** | Student experience<br>Share and compare evidence-based predictions, interpretations, and revisions.<br>Teacher move<br>Value transparent reasoning over being right and ask the audience to identify the clue-to-revision relationship. |
| ~3 min | **Think It Through** | Student experience<br>Explain why changing an idea can strengthen comprehension.<br>Teacher move<br>Return to the central question and connect revision with new information. |
| ~5 min | **Keep Wondering** | Student experience<br>Generate and deepen questions about the Adventure through Puddle–Pond–Lake–Ocean.<br>Teacher move<br>Keep deeper questions anchored in the narrative and in how readers understand it. |

# Session 1 — Follow the Evidence

### Get Curious | ~5 minutes

Display or sketch Rob's frisbee high in the air.

Revisit his opening words:

> *"If gravity is always pulling things down… why doesn't my frisbee fall right away?"*

Ask:

- What information is stated directly?
- What does Rob notice?
- What does Rob want to understand?
- What who, what, where, when, why, or how question could help us understand this moment?
- Which questions can this Adventure help answer?

Teacher move
Questions do not need immediate answers to be useful. Keep the inquiry focused on understanding the story rather than requiring a complete scientific explanation.

### Model | ~5 minutes

Use the moment when Newton first sees the frisbee.

Offer an unsupported guess:

> *"I predict Newton will eat the frisbee."*

Ask whether the story has supplied a clue that makes the prediction reasonable.

Then model:

> *"Newton watches the frisbee closely and turns it over in his hands. I predict he will ask Rob about it because his actions show that it is unfamiliar and interesting to him."*

Reveal the next information: Newton calls it a poor hat and then asks whether it always flies that way.

Think aloud:

> *"The new information partly confirms my prediction. I would revise it to say that Newton explores the object in a playful way before asking how it flies."*

**FACILITATION PROMPTS**

- What clue did I use?
- How is a prediction different from a random guess?
- Did the new information confirm, change, or add to my thinking?
- Why is revision a sign that I am paying attention?
- What part of my original idea can stay?

Teacher move
Use partly confirms and adds to as well as changes. Revision does not always mean the first prediction was wrong.

### Build | ~15 minutes

Build one complete class Question–Clue–Revise trail.

Recommended moment:

Newton says, "Everything returns to Earth," and Rob asks, "Even this?"

Question

Possible questions:

- What will happen when Rob throws the frisbee?
- How might its path be different from the apple's?
- What is Newton expecting to observe?

Clues We Have

The apple falls straight down when Newton releases it.
Rob already knows his frisbee can glide.
Newton has watched Rob throw and catch the frisbee.
Rob's question suggests he expects something worth comparing.

Our Prediction

Invite a class prediction using at least one clue.

Record the reasoning with because.

New Information / Revised Thinking

Revisit the frisbee's flight: it climbs, floats, curves, turns, and returns to Rob.

Record how the new information confirms, changes, or adds to the class prediction.

Then identify a story-supported cause-and-effect relationship.

For example:

Because Rob throws the frisbee and the breeze catches it, the frisbee follows a longer curved path before returning.

**FACILITATION PROMPTS**

- What does the story tell us directly at this moment?
- Which clue is most useful?
- What background knowledge are we adding?
- What outcome actually occurs?
- Which part of our thinking should stay?
- Which part should change?
- What cause and effect can we describe from the narrative?

Teacher move
Keep the reasoning grounded in what the narrative shows.

### Think It Through | ~5 minutes

Ask:

- Which question helped us notice important information?
- Which clue came directly from the story?
- Where did we add background knowledge?
- What new information caused us to revise?
- Can a prediction be useful even when the outcome is different?
- What does revising show about a reader's thinking?

## Sample Response Guidance

| Possible response |
|---|
| "We wondered what the frisbee would do. The apple fell straight down, but Rob already knew the frisbee could glide, so we predicted it would stay in the air longer." |
| "The frisbee curved back to Rob, so our first prediction was only partly right. We revised our thinking because the new information showed a different path." |
| "Because Rob throws the frisbee and the breeze catches it, the frisbee follows a longer curved path before returning." |

Look for a useful question, a traceable clue, a reasonable prediction or interpretation, and evidence that the student can revise when the Adventure supplies new information. Students do not need identical predictions.

### Session 1 Closing

Tell students:
"Today we followed a question from clues to a prediction and then changed our thinking when the Adventure gave us more information. Revising did not mean our first thinking was useless—it showed that we were paying attention."

> *"Next time, we'll use the same process with another moment from the story and practise explaining how our thinking changes."*

If Session 1 is the only lesson being taught, finish by asking:
"What is one clue from the Adventure that changed or strengthened your understanding?"

## Session 2 — Revise the Thinking

#### Reconnect | ~5 minutes

Return to the Question–Clue–Revise trail.

Ask students to reconstruct the process:

- What was our question?
- Which clue came first?
- What did we predict?
- What new information appeared?
- How did our thinking change?

Teacher move
Make students reconstruct the reasoning rather than simply read the completed board.

#### Rehearse | ~8 minutes

Pairs choose one moment:

the leaf beginning to drift from the tree
Rob looking up at the Moon after Newton says everything returns

Each pair rehearses four moves:

State a useful question.
Name one or two clues available at that point.
Make a reasonable prediction or interpretation.
Explain how the story's outcome confirms, changes, or adds to the idea.

Students may use:

We wondered...
We noticed...
We predicted...
When we learned..., we revised our thinking to...

After one attempt, ask students to check one part against the story and improve their explanation.

**FACILITATION PROMPTS**

- Is your question clear enough to guide your thinking?
- Which clue comes from the story?
- Are you adding background knowledge?
- What actually happened?
- How did your understanding change?
- What could make your explanation clearer?

Teacher move
Use professional judgment to choose partners, small groups, or whole-group rehearsal. Listen for a clear relationship among question, clue, prediction or interpretation, and revision; avoid requiring polished speaking.

### Share | ~9 minutes

Invite pairs to share one complete trail or one strong revision statement.

After each share, ask the audience to identify:

the question
the clue
the prediction
the new information
the revision

Ask:

- Which clue made this prediction reasonable?
- Did the outcome confirm, change, or add to the pair's thinking?
- Could another prediction also fit the same evidence?
- What additional story information might help decide?

Teacher move
Value transparent thinking over being right.

### Think It Through | ~3 minutes

Ask:

- Why can changing your mind be a sign of strong comprehension?
- What makes a prediction useful even when it is not exactly correct?
- When should a reader return to the story?

Return to the central question.

Teacher move
Return to the central question. Emphasize that strong readers revisit evidence and revise when new information changes what they can reasonably understand.

### Keep Wondering | ~5 minutes

Questions can focus on one detail, connect several details, or invite deeper thinking across the Adventure.

### PUDDLE

A question that can usually be explored by returning to one clear story detail.

- What does Newton do with the frisbee when he first sees it?
- What happens when Newton releases the apple?
- What does Rob ask about the Moon?

### POND

A question that connects a few story details.

- What clues show that Newton is curious about the frisbee?
- How does the frisbee's path differ from the apple's?
- What happens after Rob and Newton compare the three paths?

### LAKE

A question that requires thinking across several parts of the Adventure.

- How do Rob's questions change as the Adventure continues?
- How does each new observation change what Rob notices?
- Why does comparing the apple, frisbee, and leaf lead to another question?

### OCEAN

A deeper story-based question that may support more than one thoughtful, defensible answer.

- Why do you think the Adventure shows Rob changing his thinking several times?
- What does the story suggest about what good thinkers do when new evidence appears?
- Why might Rob's final question matter even though the Adventure does not answer it?

## Invite Student Questions

Ask:
"What are you still wondering about this Adventure?"

Invite students to generate story-based questions. Choose several and ask:
"Does this feel like a Puddle, Pond, Lake, or Ocean question?"
There does not need to be one perfect classification.

#### FACILITATION PROMPTS

- Is your question about one detail or several parts of the story?
- Which clue or story moment would help us explore it?
- Could another reader make a different reasonable prediction or interpretation?
- How could we deepen a fact question by asking how the new information changes the reader's thinking?
- What part of the Adventure made you wonder that?

Teacher move
A deeper question does not need to move into another subject or introduce information students have not encountered. Depth comes from noticing, connecting, interpreting, and wondering more deeply about the story itself. Keep questioning focused on comprehension of The Long Way Down rather than turning the discussion into a separate science lesson.

Close with one student-generated question that the class would like to keep wondering about.

> *"Every adventure begins with a question. Keep wondering."*

## Likely Misconceptions and Helpful Responses

| If students... | Try this teacher response |
|---|---|
| If students treat a prediction as any imaginative guess: | "Which clue makes that outcome reasonable?" |
| If students use knowledge of the ending without returning to the rewind point: | "What did a reader know at that exact moment?" |
| If students think revision means failure: | "Readers revise because they noticed new information. What did the new clue help you understand?" |
| If students confuse cause with sequence: | "Did the first event help make the second happen, or did it only happen earlier?" |
| If students think a prediction must come true to be useful: | "Did the prediction help you pay attention to what happened next? What did you learn by comparing the outcome?" |
| If students mix text evidence and background knowledge without distinction: | "Which part did the Adventure tell us, and which part did you bring from what you already know?" |
| If students believe everyone should revise in the same way: | "Could two readers begin with different reasonable predictions and therefore revise differently?" |
| If students move beyond the Adventure during Keep Wondering: | "What part of the story made you wonder that? How could we make the question about this Adventure?" |

## Use the Evidence Next

If a student gives unsupported guesses:
Limit the choice to two plausible outcomes and ask which clue supports each one.

If a student recalls evidence but does not revise:
Ask, "What can you now say that you could not say before?"

If a student confuses evidence and background knowledge:
Label each contribution together and show how both can inform a prediction.

If a student identifies sequence rather than cause:
Use Because..., then... and test whether the relationship makes sense.

If a student makes a reasonable prediction but cannot explain it:
Return to the trail and ask which clue should be connected with because.

If a student independently evaluates alternatives:
Invite comparison of two predictions and ask what evidence would strengthen each.

If a student generates mostly Puddle questions:
Ask them to connect two story moments or ask how new information changed a character's or reader's thinking.

If a student demonstrates understanding nonverbally:
Treat accurate sorting, pointing, sequencing, or card placement as substantive comprehension evidence and continue offering multiple response modes.

## Optional ELAL Extensions

Use these only when they naturally support classroom learning. They are not required parts of the two-session experience.

Question Sort

Return to questions already generated during the lesson. Students sort them according to whether the answer is directly stated, inferred from clues, or remains open to interpretation within the Adventure. Ask students to justify one placement using story evidence.

Prediction Rewind Cards

Create or display the three rewind moments used during the lesson. Students identify what a reader knows at each point, make a reasonable prediction from that evidence, and explain how later information confirms, changes, or adds to the prediction.

Cause-and-Effect Chain

Link Rob's opening observation, the orchard visit, the three journeys, and the Moon question. Students decide which connections show cause and effect and which simply show sequence. Ask them to explain one relationship using because.

Illustration Clues

Use one Adventure illustration without rereading the accompanying words. Students identify what the visual confirms, what they can reasonably infer, and what still requires evidence from the written story. Revisit the text to check one idea.

*Every adventure begins with a question.*
*Keep wondering.*

# THE ADVENTURES WITH FRISBEE ROB

*The Long Way Down*

*Adventure 001: Isaac Newton*

GRADE 2

## MATHEMATICS

*Teacher Guide*

### Measure the Journey: Which Unit Works?

| GRADE | SUBJECT | TIME |
|---|---|---|
| Grade 2 | Mathematics | 2 × 30 minutes |

**CENTRAL QUESTION**

How can equal-sized units help us measure and compare mathematical models of the apple, frisbee, and leaf journeys?

*Wonder in Motion*

# Lesson at a Glance

| | |
|---|---|
| **Story connection** | The apple, frisbee, and leaf follow noticeably different paths in Newton's orchard. Students use classroom models inspired by those journeys to move from comparing lengths to quantifying them with units. |
| **Math focus** | Tiling and iterating units, measuring length with non-standard and standard units, avoiding gaps and overlaps, comparing measurements, using centimetres, and recognizing that the size of the unit affects the number of units required. |
| **Learning intention** | We are learning to measure length with equal-sized units and explain why changing the unit can change the number in a measurement without changing the actual length. |
| **Core experience** | Across two 30-minute sessions, students measure story-inspired path models using repeated equal-sized units and centimetres. They collaboratively build a Journey Measurement Chart, rehearse accurate measurement procedures, share and compare results, and explain why the numerical measurement depends on the unit used. |
| **Flexible use** | Session 1 is a complete core lesson and can be used independently. Session 2 continues the same Wonder Lab by giving students additional time to rehearse, refine, share, and deepen their mathematical thinking.<br>Teachers with a continuous 60-minute block may teach both sessions together. |
| **Use after reading** | Read Adventure 001: The Long Way Down before beginning. The story reading is separate from the Mathematics sessions. |
| **Story context** | Isaac Newton was a real historical person. Rob's visit, their conversation, and the events they experience together are imaginative parts of the story. |
| **Important mathematical distinction** | The path models are classroom mathematical representations inspired by the Adventure. The measurements describe the classroom models, not actual distances travelled within the fictional story. |

## Optional Teacher-Spoken Success Indicators

- I can measure a length with equal-sized units.
- I can measure without gaps or overlaps.
- I can record a number and the unit I used.
- I can explain why differently sized units can give different numbers for the same length.

# How to Use This Guide

### THE GUIDE IS A TOOL, NOT A SCRIPT

This guide is designed to support responsive teaching rather than prescribe every word or action.

Session 1 is a complete 30-minute Grade 2 Measurement lesson and can be taught independently.

Session 2 continues the same learning through rehearsal, refinement, sharing, and questioning. It does not introduce additional curriculum.

Follow productive student thinking and conversation while protecting the central question, selected Measurement KUSP, meaningful participation, and approximate lesson timing.

Adjust path lengths, units, grouping, response modes, and pacing to meet the needs of the learners in front of you.

The exact numerical measurements will depend on the materials used. The mathematics lies in the measuring process, unit choice, and reasoning—not in reaching predetermined numbers.

The goal of the second session is not to do more.

It is to give students enough time to measure, test, improve, explain, and communicate what they understand.

# Curriculum Alignment

| | |
|---|---|
| **Organizing Idea** | Measurement: Attributes such as length, area, volume, and angle are quantified by measurement. |
| **Guiding Question** | How can length contribute to interpretations of space? |
| **Learning Outcome** | Students communicate length, using units. |
| **Assessment Focus** | Gather formative evidence of selected Grade 2 Measurement KUSP through students' use of equal-sized units, tiling or iteration without gaps or overlaps, measurement with centimetres, comparison of measurements, and explanations of how unit size affects numerical measurement.<br>Session 1 provides sufficient opportunities to gather evidence of the selected KUSP.<br>Session 2 offers additional opportunities for students to demonstrate and communicate their understanding.<br>These lessons do not assess the complete learning outcome. |

## Selected KUSP for These Lessons

| KUSP element | Selected curriculum learning | What it looks or sounds like |
|---|---|---|
| **Knowledge** | Tiling is the process of measuring a length by using many copies of a unit without gaps or overlaps.<br>Iterating is the process of measuring a length by repeating one copy of a unit without gaps or overlaps.<br>The unit can be chosen based on the | Students choose a repeated unit, begin at an endpoint, place or iterate equal-sized units without gaps or overlaps, and name the unit used. |

| KUSP element | Selected curriculum learning | What it looks or sounds like |
|---|---|---|
| | length to be measured.<br>Length can be measured with non-standard units or standard units.<br>Non-standard units found in nature can be used to measure length on the land.<br>Standard units, such as centimetres, can enable a common language around measurement. | |
| **Understanding** | Length is quantified by measurement.<br>Length is measured with equal-sized units that themselves have length.<br>The number of units required to measure a length is inversely related to the size of the unit. | Students recognize that smaller units require more repetitions than larger units to describe the same length and explain that the actual length has not changed. |
| **Skills & Procedures** | Measure length with non-standard units by tiling, iterating, or using a self-created measuring tool.<br>Compare and order measurements of different lengths measured with the same non-standard units, and explain the choice of units.<br>Compare measurements of the same length measured with different non-standard units.<br>Measure length with standard units by tiling or iterating with a centimetre.<br>Compare and order measurements of different lengths measured with centimetres. | Students measure model paths accurately, record measurements with units, compare measurements using the same unit, and investigate the same length with differently sized units. |

*Curriculum source: Government of Alberta, Mathematics (K–6) Curriculum, Measurement.* *View the Alberta program of study*

# Teacher Preparation

### STANDARD PATHWAY

Use these two 30-minute sessions after students have heard Adventure 001: The Long Way Down.

Session 1: Build the Measurement is the core lesson. Students reconnect to the three journeys, investigate what makes measurement fair, see tiling and iteration modelled, and collaboratively measure path models.

Session 2: Test the Unit continues the same Wonder Lab. Students return to measurement procedures, rehearse with partners, correct errors, share results, compare units, and explore questions of different depths about the Adventure.

If only one 30-minute period is available, teach Session 1.

If a continuous 60-minute block is available, the two sessions can be taught together with a brief transition or movement break.

# Flexible Use of the Guide

### Core Pathway | 30 minutes

Teach Session 1: Build the Measurement.

Students experience:

**Get Curious → Model → Build → Think It Through**

This is a complete Grade 2 Measurement lesson and provides opportunities to gather formative evidence of the selected KUSP.

### Full Wonder Lab | 2 × 30 minutes

Teach both sessions.

Students experience the complete Wonder Lab cycle:

**Model → Build → Rehearse → Share**

Session 2 deepens the same learning rather than adding additional curriculum.

It also provides time to question the mathematics of the Adventure through:

**Puddle → Pond → Lake → Ocean**

### Continuous Block | ~60 minutes

If scheduling allows, Sessions 1 and 2 may be taught consecutively.

Take a brief movement or transition break after the first Think It Through before beginning Reconnect.

# Materials

- A copy of Adventure 001: The Long Way Down
- Three flexible path models
- Equal-sized connecting cubes, paper clips, craft sticks, tiles, or another non-standard unit
- A second non-standard unit that is noticeably larger or smaller
- Centimetre cubes, centimetre strips, or rulers
- Whiteboard, chalkboard, or chart paper and marker
- Journey Measurement Chart with headings:
  - Path
  - Unit
  - Measurement

- Optional masking tape to mark starting points
- Optional cards showing correct and incorrect measurement examples

## Before Students Begin

- Prepare three path models of manageable lengths.
- Test all measuring materials in advance.
- Ensure repeated units within each measurement are equal-sized.
- Choose one path that will be measured with two different non-standard units.
- Decide how students will handle curved paths. Flexible models may be gently repositioned without changing length.
- Prepare one intentionally incorrect measurement with a gap.
- Prepare one intentionally incorrect measurement with an overlap.
- Keep the Journey Measurement Chart and path models available for Session 2.
- Use professional judgment to choose the Session 2 grouping—partners, groups of three, or whole group—that best supports student participation. Early in the year, whole-group practice may help students establish the routine, build confidence, and understand what successful participation looks and sounds like.
- Decide whether students will measure in pairs or small groups.

### Substitutions

Use paper strips, desk edges, ribbons, drawn lines, classroom objects, or other measurable lengths if path models are unavailable.

## Useful Vocabulary

Pre-teach essential vocabulary through an explicit vocabulary routine, providing students with opportunities to build meaning, interact with the words, and use them in context before and throughout the lesson.

Mathematics words:

**length • unit • measure • centimetre • tile • iterate • equal-sized • gap • overlap • compare • standard • non-standard**

Story words:

**apple • frisbee • leaf • path • fall • glide • drift • return**

A unit is an amount used repeatedly to describe a measurement.

To tile a length means to place equal copies of a unit along it without gaps or overlaps.

To iterate means to repeat one copy of a unit along a length without gaps or overlaps.

A centimetre is a standard unit of length.

## Supporting Our Diverse Learners

Use these supports proactively while preparing and teaching the two sessions.

| | |
|---|---|
| **Make it accessible** | Begin with large, easy-to-handle non-standard units before using centimetres. Use straight path models first if curved models create unnecessary motor demands. |
| **Support language** | Model:<br>The path measures _____ _____.<br>We used _____ as our unit.<br>The smaller unit needed more because...<br>The larger unit needed fewer because... |
| **Offer response choices** | Accept speaking, placing units, iterating one unit, pointing, drawing, recording numerals, selecting unit cards, communication devices, or assistive technology. |
| **Support participation** | Offer roles such as unit placer, gap checker, overlap checker, counter, recorder, or reporter. |
| **Reduce memory load** | Keep a visual measurement checklist visible:<br>Start at the endpoint.<br>Use equal-sized units.<br>No gaps.<br>No overlaps.<br>Count each unit once.<br>Name the unit. |
| **Support rehearsal** | Allow students to measure the same path again after feedback rather than immediately moving to a different example. |
| **Preserve the learning** | Change the path length, unit size, number of measurements, or response mode—not the measurement principles. Students still quantify length by repeating equal-sized units. |

# KUSP Assessment: Evidence to Notice

**FORMATIVE ASSESSMENT**

Gather evidence through observations and conversations across both sessions.

Session 1 provides sufficient opportunities to gather evidence of the selected KUSP.

Session 2 gives students additional opportunities to demonstrate and communicate their understanding.

| Evidence source | Listen or look for | Possible teacher note |
|---|---|---|
| **Observation** | Student measures from an endpoint using equal-sized units without gaps | “Moves one cube repeatedly and marks each stopping point before |

| Evidence source | Listen or look for | Possible teacher note |
|---|---|---|
| | or overlaps. | continuing.” |
| **Conversation** | Student explains why differently sized units result in different numerical counts. | “Explains that more cubes were needed because each cube is shorter than a craft stick.” |
| **Product** | Student records a measurement as both a number and a named unit and compares measurements appropriately. | “Records 27 cm rather than only 27.” |

# The Two-Session Flow

### Session 1 — Build the Measurement | 30 minutes

| Time | Section | Student experience | Teacher move |
|---|---|---|---|
| ~5 min | **Get Curious** | Explore what is missing when someone says a path is “20 long.” | Create a need for units and fair measurement procedures. |
| ~5 min | **Wonder Lab: Model** | Observe correct and incorrect examples of tiling and iteration. | Make equal-sized units, endpoints, gaps, and overlaps visible. |
| ~15 min | **Wonder Lab: Build** | Collaboratively measure the three journey models and compare results. | Coach measuring process and unit language rather than supplying answers. |
| ~5 min | **Think It Through** | Explain why measurements require units and why changing unit size changes the count. | Connect procedure to mathematical meaning. |

### Session 2 — Test the Unit | 30 minutes

| Time | Section | Student experience | Teacher move |
|---|---|---|---|
| ~5 min | **Reconnect** | Diagnose incomplete or incorrect measurements. | Reactivate measurement principles. |
| ~8 min | **Wonder Lab: Rehearse** | Measure a path, receive partner feedback, and improve the process. | Use a simple measurement checklist to guide revision. |
| ~9 min | **Wonder Lab: Share** | Compare measurement results | Distinguish genuine |

| Time | Section | Student experience | Teacher move |
|---|---|---|---|
| | | and explain differences. | measurement errors from legitimate differences caused by unit choice. |
| ~3 min | **Think It Through** | Reflect on what makes a measurement reliable and communicable. | Return to the central question. |
| ~5 min | **Keep Wondering** | Generate and deepen questions about measurement and the three journey models. | Use Puddle–Pond–Lake–Ocean. |

# Session 1 — Build the Measurement

### Get Curious | ~5 minutes

Display one path model.

Say:

> *"I measured this path. It is 20."*

Pause.

Ask:

- Is that enough information?
- Twenty what?
- Could 20 paper clips and 20 craft sticks describe the same length?
- What information do we need beside the number?
- How could objects help us measure the whole path?
- What rules would make our measurement fair?

Show two possible units of noticeably different lengths.

Ask:

- "If we used the smaller unit, would we need more or fewer?"
- "If we used the larger unit, what do you predict?"

Record predictions without confirming.

**TEACHER MOVE**
Create a need for measurement rules rather than announcing them immediately.

## 2. Wonder Lab

### Model | ~5 minutes

Place identical units along a path.

Deliberately leave a gap.

Ask:

- "Did we measure every part of the path?"
- Correct it.
- Then deliberately overlap two units.

Ask:

- "Did we count part of the path more than once?"
- Correct it.
- Show proper tiling with equal-sized units.
- Then demonstrate iteration using one unit.
- Place it at the starting endpoint.
- Mark or remember the ending point.
- Move the same unit so its new start matches the previous end.
- Repeat.

Think aloud:

> *"The unit stays the same size."*
>
> *"Every part of the path is measured once."*
>
> *"No spaces are skipped."*
>
> *"No part is counted twice."*

**FACILITATION PROMPTS**

- Where should measurement begin?
- Why should the units be the same size?
- What happens if we leave a gap?
- What happens if we overlap?
- How can one unit be used again and again?
- What information do we record besides the number?
- What would make a measurement unfair?

**TEACHER MOVE**

Use intentional errors as mathematical reasoning opportunities.

Ask students to explain why the procedure fails rather than simply naming it "wrong."

### Build | ~15 minutes

Measure the first path together with one common non-standard unit.

Record the number and unit.

For example:

Apple Path — 18 cubes

The exact result depends on the model.

Invite pairs or small groups to measure the remaining paths with the same unit.

Record all three results.

Ask:

- "Since the same unit was used, what can the numbers help us compare?"
- Order the measurements if appropriate.
- Next choose one path and measure it using the second, differently sized non-standard unit.
- Record both measurements.

Ask:

- Did the path change?
- Did the numerical measurement change?
- Which unit required more repetitions?
- Which unit was smaller?
- What relationship do you notice?

Finally introduce or revisit centimetres.

Use centimetre cubes, a centimetre strip, or ruler to measure one model.

Record the result with cm.

**FACILITATION PROMPTS**

- Where is the starting endpoint?
- Are our units all equal-sized?
- Do you see any gaps?
- Do you see any overlaps?
- How many units fit?
- What unit must we write with the number?
- Can we directly compare two measurements if the units are different?
- Which unit is larger?
- Which unit requires more repetitions?
- Did changing units change the path?
- Why might centimetres be useful to another class?

**TEACHER MOVE**

Do not rush to standard measurement.

The comparison between different non-standard units gives students the conceptual reason a shared standard is useful.

### Think It Through | ~5 minutes

Keep the measurements visible.

Ask:

- What makes a measurement fair?
- Why should units be equal-sized?
- Why do we need both a number and a unit?
- Why did the same path have two different numbers?
- Which unit required more repetitions?

- What stayed the same even when the number changed?
- Why might centimetres help people communicate measurements?

### Sample Response Guidance

| Possible response |
|---|
| "We need to say 18 cubes, not just 18." |
| "The smaller unit fit more times, so the number was larger." |
| "The path stayed the same length even though we changed the unit." |
| "Centimetres help because the unit means the same thing to everyone."<br>Look for conceptual understanding of measurement rather than successful counting alone. |

### Session 1 Closing

Tell students:

> *"Rob and Newton compared three very different journeys. Today we learned that mathematicians can give a path a numerical measurement—but the number only makes sense when we know the unit."*
>
> *"Next time, you will become Measurement Detectives and make your measurements as clear and reliable as possible."*

If Session 1 is the only lesson being taught, finish by asking:

> *"What is one rule you would teach someone who has never measured a length before?"*

## Session 2 — Test the Unit

#### Reconnect | ~5 minutes

Display:

24 cubes

24

24 cm

Ask:

- Which examples tell us both a number and a unit?
- What is missing from 24?
- Could 24 cubes and 24 cm describe different lengths?
- Why?

Next show an incorrectly tiled path.

Ask:

- "What needs to be fixed?"

- Invite students to identify gaps, overlaps, unequal units, or an incorrect starting point.

**TEACHER MOVE**
Use Reconnect to reactivate the reasoning behind measurement procedures rather than simply reviewing vocabulary.

## 2. Wonder Lab

### Rehearse | ~8 minutes

Students work in partners.

Partner A chooses or receives one path and one unit.

Partner A measures.

Partner B uses the checklist:

- Started at an endpoint
- Equal-sized units
- No gaps
- No overlaps
- Counted each unit once
- Named the unit

Partner B gives one piece of feedback.

Partner A measures again or adjusts the record.

Switch roles.

If appropriate, have one partner use a non-standard unit and the other use centimetres.

**FACILITATION PROMPTS**

- Where does your measurement begin?
- Are your units equal-sized?
- Can your partner see any gaps?
- Is any part counted twice?
- What does your number mean?
- Which unit did you use?
- What could you improve on your second try?
- Would another unit produce the same number?
- Would another unit produce the same length?

**TEACHER MOVE**
Rehearsal should create an actual second attempt.
The value comes from students noticing, adjusting, and improving their own measurement process.

### Share | ~9 minutes

Invite several pairs to share results.

Select examples that allow useful comparison.

Ask:

- Which paths were measured with the same unit?
- Which numerical measurements can we directly compare?
- Which used different units?
- Could a larger number describe the same length?
- Why?
- Which unit required more repetitions?
- What would happen if the unit became even smaller?

Show one path with two valid measurements using different units.

Ask students to explain why both can be correct.

**FACILITATION PROMPTS**

- What measurement did the pair report?
- What unit did they use?
- Did their process appear fair?
- Why might another pair have a different number?
- Does a different number automatically mean someone made an error?
- What would we need to know before comparing the numbers?
- Which measurement communicates most clearly?

**TEACHER MOVE**

Protect the important distinction between different answers caused by measurement errors and different answers caused by legitimate unit choice.

### Think It Through | ~3 minutes

Ask:

- What makes a measurement reliable?
- Why is the unit as important as the number?
- What happens to the count when the unit becomes smaller?
- Why are shared standard units useful?

Return briefly to the central question:

How can equal-sized units help us measure and compare mathematical models of the apple, frisbee, and leaf journeys?

Accept several responses.

### Keep Wondering | ~5 minutes

Questions can focus on one measurement or invite us to think more deeply about relationships among measurements and units.

## PUDDLE

A small question about one mathematical detail.

Examples:

- How many centimetres long is this path model?
- Which unit did we use?
- Which path had the greatest measurement when all three used the same unit?

### POND

A question that connects several measurement ideas.

Examples:

- Why can the same path have different numerical measurements with different units?
- What happens to a measurement if we leave gaps?
- Why is it easier to compare paths when they are measured with the same unit?

### LAKE

A question that requires thinking across several measurements.

Examples:

- How could two groups measure the same path correctly and record different numbers?
- How does unit size affect the number of units required?
- Why can a standard unit communicate better than a classroom object?

### OCEAN

A deep mathematical question that invites reasoning about measurement itself.

Examples:

- Why does a measurement need both a number and a unit?
- How can changing the unit change the number without changing the length?
- What rules must mathematicians share if measurements are going to communicate the same quantity?

The purpose is not for Grade 2 students to classify every question perfectly.

The water language helps students notice that mathematical questions can invite different depths of reasoning.

## Invite Student Questions

Ask:

- “What are you still wondering about measuring Rob and Newton’s three journey models?”
- Accept questions connected to units, length, comparison, measurement procedure, or numerical results.

Choose several student questions and ask:

> *“Does this feel like a Puddle, Pond, Lake, or Ocean question?”*

#### FACILITATION PROMPTS

- Is your question about one measurement or a relationship between measurements?
- Would we need to test more than one unit?
- Could two answers both be correct?

- What evidence would help us investigate?
- Can we make this Puddle a little deeper?
- What could turn this Pond into a Lake?
- What larger measurement idea could make it an Ocean question?

**TEACHER MOVE**

Keep questions anchored to the Adventure and Grade 2 measurement.

Do not move toward calculating real frisbee flight distances or other content not encountered in the lesson.

Close with one student-generated mathematical question the class would like to keep.

"Every adventure begins with a question. Keep wondering."

## Likely Misconceptions and Helpful Responses

| If students... | Try this teacher response |
|---|---|
| If students begin counting before placing units: | "Where does each number connect to the length you are measuring?" |
| If students leave gaps: | "What part of the path did we skip?" |
| If students overlap units: | "Did we count part of the path twice?" |
| If students mix unit sizes: | "Would a fair measurement use units that keep changing size?" |
| If students omit the unit: | "Twenty what?" |
| If students assume the larger numerical measurement always represents the longer path: | "Were both measurements made with the same unit?" |
| If students believe changing units changes the actual length: | "What changed—the path or the measuring unit?" |
| If students think an Ocean question must involve a very large number: | "Ocean means deeper reasoning, not a larger measurement." |

## Use the Evidence Next

- If a student counts accurately but leaves gaps, focus on placement before number.
- If a student tiles correctly but forgets the unit, consistently ask, "How many what?"
- If a student understands tiling with many units, introduce iteration with one repeated unit.
- If a student confuses different-unit comparisons, measure one path with two units and discuss the relationship.

- If a student measures fluently in centimetres, ask them to predict how a larger or smaller unit would affect the count.
- If a student generates mainly Puddle questions, invite them to compare two units used on the same path.
- If a student develops a strong mathematical question that the class cannot immediately answer, preserve it for later exploration.
- If a student demonstrates understanding nonverbally, document what their unit placement and correction strategies show.

## Optional Mathematics Extensions

Measurement Error Detective

Prepare examples showing a gap, overlap, mixed unit size, or incorrect starting point.

Students identify the problem and correct the measurement.

Same Length, Two Units

Measure one path with two different non-standard units.

Represent both results and explain why the numbers differ.

Create a Measuring Tool

Students create a paper strip or other tool from equal-sized repeated units.

They test the tool on one or more model paths.

Estimate First

Before measuring a path, students predict how many selected units may fit.

Measure and compare the estimate with the result.

*Every adventure begins with a question.*
*Keep wondering.*

# THE ADVENTURES WITH FRISBEE ROB

*The Long Way Down*

*Adventure 001: Isaac Newton*

GRADE 2

# PHYSICAL EDUCATION & WELLNESS

*Teacher Guide*

## Physical Education & Wellness

| GRADE | SUBJECT | TIME |
|---|---|---|
| Grade 2 | Physical Education & Wellness | 2 × 30 minutes |

**CENTRAL QUESTION**

**How can noticing and changing the phases of a frisbee movement improve control and efficiency?**

*Wonder in Motion*

**Teacher Guide**

**Ready, Move, Follow Through**

# Lesson at a Glance

| | |
|---|---|
| **Story Connection** | When Rob throws the frisbee in *The Long Way Down*, the movement can appear to happen all at once.<br>Grade 2 students slow that movement down.<br>Before the frisbee leaves Rob's hand, his body prepares.<br>His body then carries out the action.<br>After the frisbee leaves, the movement continues as his body completes the action and regains stability.<br>The Adventure therefore provides a familiar movement that students can examine through the curriculum's three phases: preparation, carrying out, and completion or follow-through.<br>Students begin to discover that a movement does not simply happen at the instant an object is released.<br>What happens **before**, **during**, and **after** can all matter. |
| **Physical Education & Wellness Focus** | Exploring the phases of movement, practising them repeatedly, using feedback, and modifying one or more phases to improve control and efficiency.<br>Students use a simple frisbee movement as the physical context for learning to:<br>● recognize preparation<br>● recognize carrying out<br>● recognize completion or follow-through<br>● repeat a movement<br>● receive useful feedback<br>● change one phase deliberately<br>● compare what happens after the change<br>● reflect on whether the modification affected control or efficiency<br>The purpose is not to establish one perfect throwing technique.<br>The purpose is to help students become more aware of movement and begin using that awareness to make intentional adjustments. |
| **Learning Intention** | **We are learning to notice the phases of movement and change a phase to improve control and efficiency.** |
| **Core Experience** | Across two 30-minute sessions, students complete the companion **Grade 2 Adventures FlightPlan in Frisbee Playbook**. |

# Session 1 — Find the Three Phases

**Get Curious → Wonder Lab: Model → Wonder Lab: Build → Think It Through**

Students slow down a familiar frisbee movement, identify the three phases, and experience how the phases connect.

# Session 2 — Change One Thing

**Reconnect → Wonder Lab: Rehearse → Wonder Lab: Share → Think It Through → Keep Wondering**

Students repeat the familiar movement, use one focused piece of feedback, modify one phase, compare attempts, and communicate what changed.

### Flexible Use

Session 1 is a complete Grade 2 Movement Skill Development lesson and can be taught independently.

Session 2 gives students additional time for:

- feedback
- repeated practice
- movement adjustment
- comparison
- reflection
- communication

Teachers with a continuous 60-minute block may teach both sessions together.

### Use After Reading

Read Adventure 001 before beginning.

The story reading is separate from the two Physical Education & Wellness sessions.

### Story Context

Isaac Newton was a real historical person.

Rob's visit, their conversation, and the events of the Adventure are imaginative.

### Important Physical Education & Wellness Distinction

The three phases are not being used to prescribe one universal perfect frisbee technique.

They are a **movement-analysis tool**.

Students ask:

- **What happens before the action?**
- **What produces the movement?**
- **What happens as the movement finishes?**

Different students may make different effective adjustments.

One student may benefit from changing preparation.

Another may need to continue the movement more deliberately through the finish.

Another may discover that the first adjustment they test does not help.

All of those experiences can provide meaningful Grade 2 evidence.

The curricular goal is to:

**notice → practise → receive feedback → modify → try again → reflect**

Do not reduce the lesson to:

> *"Here is the correct way to throw a frisbee."*

The Grade 2 goal is broader:

**Use awareness, feedback, repetition, and deliberate adjustment to improve movement.**

## Optional Teacher-Spoken Success Indicators

I can identify preparation, carrying out, and follow-through.

I can practise a movement more than once.

I can use feedback to notice something about my movement.

I can change one phase.

I can explain whether my change helped control or efficiency.

### Frisbee Playbook FlightPlan

#### The FlightPlan Is the Physical Lesson

This Teacher Guide is designed to be used with the companion **Grade 2 Adventures FlightPlan in Frisbee Playbook**.

**Open the FlightPlan before teaching these PE sessions.**

A FlightPlan is a ready-to-use PE lesson sequence that shows what students physically do, in what order, and for how long.

For this Adventure, the Grade 2 FlightPlan contains both 30-minute sessions.

The FlightPlan provides the practical information required to run the physical experience, including:

- session and activity sequence
- phase and activity timing
- educator notes
- Drill instructions
- coaching cues
- frisbee and equipment information
- grouping and activity-specific setup
- modifications where applicable

When a Drill appears in the FlightPlan, select **Details** when you need the complete instructions, coaching cues, equipment information, or additional resources.

### Grade 2 FlightPlan

**Direct access**

https://frisbeeplaybook.com/flightplan/newton/grade-2

**Or navigate:**
**Frisbee Playbook → Build → Adventures with Frisbee Rob → The Long Way Down → Grade 2**

Keep the FlightPlan open on a phone, tablet, or computer during class, or select **Print** before teaching.

### Standard and Quick Launch

Use **Standard** to view the complete two-session experience.

When only one short block is available, select **Quick Launch**.

For the Newton Adventures FlightPlans, Quick Launch provides the four activities in Session 1:

**Get Curious → Model → Build → Think It Through**

Quick Launch displays the activities intentionally selected as the essential short-block pathway.

It does not automatically shorten every activity.

### How the Two Resources Work Together

**FlightPlan = what students physically do.**

**Teacher Guide = what the teacher is looking for and why it matters.**

The FlightPlan is required to deliver the physical portion of these lessons.

This Teacher Guide is designed to be used alongside the FlightPlan, not instead of it.

The public Adventures FlightPlan focuses primarily on lesson delivery.

Curriculum interpretation, assessment evidence, feedback guidance, learner supports, misconceptions, reflection, and deeper questioning remain in this Teacher Guide.

# How to Use This Guide

#### THE GUIDE IS A TOOL, NOT A SCRIPT

Before teaching, open the Grade 2 Adventures FlightPlan and review the physical experience.

During class: use Frisbee Playbook to run the activities and use this Teacher Guide to understand what movement learning to notice, support, and assess and The FlightPlan contains the operational details.

This Guide intentionally does not duplicate every setup instruction, partner arrangement, repetition, distance, or physical coaching cue.

Session 1 independently provides sufficient opportunities to gather evidence of the selected KUSP.

Session 2 deepens the same curriculum through feedback and repeated practice.

Keep feedback focused.

One useful cue connected to one phase and tested several times is generally more useful than five corrections delivered simultaneously.

Do not expect every movement adjustment to improve performance immediately.

An adjustment that does not help can still generate strong learning when a student:

- notices the result
- recognizes that the adjustment did not help
- decides what to change next

Students may need different modifications.

The teacher's role is to help students connect:

**notice → receive feedback → change → try again → reflect**

The goal of the second session is not to do more. It is to give students enough time to think, try, improve, and communicate what they understand.

# Curriculum Alignment

| | |
|---|---|
| **Organizing Idea** | **Movement Skill Development:** Developing physical literacy through movement and active living supports well-being across a lifespan. |
| **Guiding Question** | **How are awareness and movement connected?** |
| **Learning Outcome** | **Students modify movement to improve control and efficiency.** |
| **Assessment Focus** | Gather formative evidence through students':<br>● physical demonstrations<br>● observations<br>● repeated attempts<br>● responses to feedback<br>● movement modifications<br>● comparisons<br>● explanations<br>Look for students who:<br>● identify the three phases of movement<br>● experiment with the phases<br>● participate in repeated practice<br>● receive and use feedback<br>● modify one or more phases<br>● compare attempts<br>● explain whether a modification affected control or efficiency<br>Session 1 provides sufficient opportunities to gather evidence.<br>Session 2 adds refinement, feedback, and communication.<br>These lessons do not assess the complete Learning Outcome. |

## Selected KUSP for These Lessons

| KUSP element | Selected curriculum learning | What it looks or sounds like |
|---|---|---|
| **Knowledge** | **Selected Curriculum Learning**<br>The **preparation phase or ready position** includes:<br>● facing the target<br>● establishing a stable position<br>● finding a lower centre of gravity<br>The **carrying-out phase** includes the body gathering momentum and working to produce movement.<br>The **completion or follow-through phase** includes:<br>● movement continuing in the direction of action<br>● slowing down of movement<br>● regaining stability<br>Movement skills can be refined and corrected with feedback and practice. | Students begin seeing a frisbee movement as an action with connected phases.<br>They can identify something the body does before the main action, something that produces the movement, and something that occurs as the movement finishes.<br>Students may initially use accessible language such as ready, move, and finish.<br>The teacher can connect those ideas to the curriculum terms: preparation, carrying out, and completion or follow-through.<br>Students do not need to produce formal biomechanical descriptions.<br>They need to recognize that the movement contains distinguishable phases. |
| **Understanding** | **Selected Curriculum Learning**<br>Three phases of movement include preparation, carrying out, and completion or follow-through.<br>Movement skill development requires repeated practice and effort.<br>Performance in physical activities can be enhanced by effort and repeated practice.<br>Feedback and practice can enhance performance, enjoyment, and physical literacy. | Students understand that movement can improve through deliberate repetition and useful information.<br>They begin recognizing that a second attempt is an opportunity to make a decision rather than simply:<br>**"Do it again."**<br>They may begin thinking:<br>● "What did I notice?"<br>● "What feedback did I get?"<br>● "What should I change?"<br>● "Did the change help?"<br>Students also begin understanding that practice does not mean performing every repetition identically.<br>Practice can involve noticing, adjusting, and learning from what happens. |
| **Skills & Procedures** | **Selected Curriculum Learning**<br>Experiment with the three phases of movement in a variety of physical | Students:<br>● identify a phase<br>● make an intentional adjustment |

| KUSP element | Selected curriculum learning | What it looks or sounds like |
|---|---|---|
| | activities.<br>Modify one or more phases of movement to improve control and efficiency.<br>Participate in repeated practice for skill development.<br>Reflect on the performance of movement skills and apply ways to be more efficient. | • repeat the frisbee movement<br>• compare what happened<br>• reflect on whether the adjustment helped<br>A student does not need immediate performance improvement to demonstrate curriculum learning.<br>For example:<br>“I changed my ready position, but I don’t think it helped yet.”<br>can provide stronger evidence than an accidentally successful throw with no movement awareness. |

*Curriculum source: Government of Alberta, Physical Education and Wellness (K–6) Curriculum, Movement Skill Development, p. 6.* *View the Alberta program of study*

# Teacher Preparation

**STANDARD PATHWAY**

Use these sessions after students have heard Adventure 001.

**Before teaching, open the Grade 2 Adventures FlightPlan:**
https://frisbeeplaybook.com/flightplan/newton/grade-2

Review both sessions and the relevant Drill details.

# Session 1 — Find the Three Phases

Students slow down a familiar frisbee movement and explore how the phases connect.

The instructional focus is:

**seeing the phases before trying to improve them**

# Session 2 — Change One Thing

Students use feedback to select and test one movement adjustment.

The instructional focus is:

**one feedback point → one phase → one testable change**

If only one 30-minute period is available, teach Session 1 or use Quick Launch.

If a continuous 60-minute block is available, teach both sessions with a brief transition.

# Flexible Use of the Guide

### Core Pathway | 30 minutes

Open the Grade 2 Adventures FlightPlan and teach Session 1:

**Get Curious → Model → Build → Think It Through**

The FlightPlan provides the physical lesson.

This Teacher Guide provides the curriculum, movement-analysis, questioning, assessment, and feedback lens.

Session 1 independently provides sufficient selected KUSP evidence opportunities.

### Full Wonder Lab | 2 × 30 minutes

Teach both sessions through the companion FlightPlan:

**Model → Build → Rehearse → Share**

Session 2 deepens the same movement learning through: feedback, modification, repetition, comparison, and communication.

Students also deepen Adventure-based inquiry through:

**Puddle → Pond → Lake → Ocean**

### Continuous Block | ~60 minutes

Teach both sessions consecutively with a brief transition.

Reconnect may be shortened when Session 1 remains fresh.

Protect Rehearse and Share.

Do not use the extra time to introduce an unrelated frisbee skill.

The curricular progression remains:

**notice the phases → practise → receive feedback → change one thing → compare → reflect**

# Materials

### Required

Companion Grade 2 Adventures FlightPlan in Frisbee Playbook

Adventure 001

The FlightPlan identifies the frisbees, equipment, grouping, setup, and physical-delivery information required for the activities.

### Optional Teacher Guide Supports

Phase cards:

- PREPARATION
- CARRYING OUT

- FOLLOW-THROUGH

Optional accessible labels:

- READY
- MOVE
- FINISH
- Optional partner-feedback cards

These are instructional supports rather than additional FlightPlan activities.

## Before Students Begin

Open the Grade 2 FlightPlan.

Review:

- Session 1 and Session 2
- Standard and Quick Launch
- **Ready, Move, Finish** Drill details
- **Movement Detective** Drill details
- activity timings
- equipment requirements
- educator notes
- coaching cues
- Use professional judgment to choose the Session 2 grouping—partners, groups of three, or whole group—that best supports student participation. Early in the year, whole-group practice may help students establish the routine, build confidence, and understand what successful participation looks and sounds like.
- activity-specific modifications

Keep the three curriculum phases visible if helpful:

**PREPARATION → CARRYING OUT → FOLLOW-THROUGH**

Use the accessible language alongside the formal terminology when needed:

**READY → MOVE → FINISH**

Prepare the recurring questions:

- **Which phase are you noticing?**
- **Which phase could you change?**
- **What happened when you tried again?**

Do not provide every possible technical correction.

Feedback should be:

- specific
- manageable
- connected to one phase
- testable through another attempt

Examples of focused feedback include:

- “Face the target before you begin.”

- "Find a stable ready position."
- "Keep the movement going through the finish."

The physical coaching cues required to run the Drill are available in Frisbee Playbook.

# Useful Vocabulary

Pre-teach essential vocabulary through an explicit vocabulary routine, providing students with opportunities to build meaning, interact with the words, and use them in context before and throughout the lesson.

### Physical Education & Wellness Words

**preparation • ready position • carrying out • completion • follow-through • feedback • practice • control • efficiency • effort • stability**

### Story Words

**Rob • Newton • frisbee • throw • Adventure • question**

**Preparation** is the ready phase before the main action.

**Carrying out** is the phase in which the body works to produce the movement.

**Completion or follow-through** is the phase in which the action continues, slows, and the body regains stability.

**Feedback** is information that can help a person understand or improve movement.

**Control** is the ability to manage a movement effectively.

**Efficiency** means performing movement increasingly purposefully without unnecessary effort.

**Stability** refers to being balanced or controlled enough to perform or complete the movement effectively.

# Supporting Our Diverse Learners

| | |
|---|---|
| **Make It Accessible** | Use the FlightPlan's physical adaptations as the primary source for activity modifications.<br>Slow demonstrations and visually freeze the three phases when helpful.<br>Allow students to practise a body movement without releasing the frisbee before adding object manipulation.<br>Use phase cards on the floor or wall.<br>Keep the physical task simple enough that students can attend to the phases.<br>If the task itself consumes all of the student's attention, movement analysis becomes difficult. |
| **Support Language** | Use frames such as:<br>• "My preparation was _____."<br>• "During carrying out, I _____." |

| | |
|---|---|
| | • "My follow-through _____."<br>• "I changed _____."<br>• "The feedback helped me _____."<br>• "The change made the movement _____."<br>Use:<br>**READY → MOVE → FINISH**<br>alongside:<br>**PREPARATION → CARRYING OUT → FOLLOW-THROUGH**<br>when needed. |
| **Offer Response Choices** | Accept: physical demonstration, pointing to phase cards, oral response, drawing, gesture, AAC, partner-supported response, and teacher-recorded explanation.<br>Students may demonstrate phase awareness before naming the formal terminology independently. |
| **Support Participation** | Meaningful roles may include mover, observer, phase detective, feedback partner, demonstrator, phase-card holder, and reporter.<br>Use the FlightPlan for the primary grouping and activity organization. |
| **Reduce Memory Load** | Keep the three phases visible.<br>Use the same movement task across repeated attempts.<br>Provide one feedback cue at a time.<br>Do not ask students to remember several corrections simultaneously. |
| **Support Rehearsal** | Give students several repetitions before asking them to modify a phase.<br>Allow students to watch, practise, notice, and then explain.<br>Rehearse the feedback sentence before students give feedback to one another. |
| **Preserve the Learning** | Adjust: distance, equipment, speed, release type, participation role, and communication mode.<br>Do not remove the requirement to recognize and modify movement phases.<br>**Change the access pathway—not the learning goal.** |

# KUSP Assessment: Evidence to Notice

**FORMATIVE ASSESSMENT**

Gather evidence naturally while students complete the FlightPlan rather than creating a separate throwing test.

Session 1 provides sufficient evidence opportunities.

Session 2 adds feedback use, movement refinement, and communication.

| Evidence source | Listen or look for | Possible teacher note |
|---|---|---|
| **Observation** | Student demonstrates recognizable preparation.<br>Student carries out the movement.<br>Student continues into a recognizable completion or follow-through.<br>Student repeats the movement.<br>Student makes an intentional adjustment.<br>Student demonstrates increased awareness of stability or movement completion. | "Changes ready position before the next attempt and demonstrates greater stability during the movement."<br>Or:<br>● "Continues movement through the finish rather than stopping immediately after release." |
| **Conversation** | Student identifies a phase.<br>Student explains what feedback they received.<br>Student identifies the phase connected to the feedback.<br>Student connects an adjustment with an observed result.<br>Student recognizes that a change did not help. | "Says, 'I faced the direction I wanted before I started and it felt easier to control.'"<br>Or:<br>● "Says, 'I changed my finish, but I need more tries to know if it helped.'" |
| **Product / Class Product** | ● An optional **Three Phases of Movement** diagram can provide supporting evidence.<br>● Students may contribute: a movement cue, a drawing, a movement example, a phase card, and an observation.<br>● Physical performance and reflection remain the primary evidence. | |

# The Two-Session Flow

### Session 1 — Find the Three Phases | 30 minutes

| Time | Section | Student experience | Teacher move |
|---|---|---|---|
| ~5 min | **Get Curious** | Complete **Get Curious** in the Grade 2 Adventures FlightPlan.<br>Students reconnect with Rob's frisbee movement and question whether a throw really begins at | Slow down the familiar action conceptually and introduce the idea that movement has phases.<br>Use the FlightPlan for the physical directions. |

| Time | Section | Student experience | Teacher move |
|---|---|---|---|
| | | the moment of release. | Use this Guide to establish the curriculum lens:<br>● **What happens before?**<br>● **What happens during?**<br>● **What happens after?** |
| ~5 min | **Wonder Lab: Model** | **FlightPlan activity: Ready, Move, Finish**<br>Observe the Model experience in Frisbee Playbook in real time and in a way that makes the three phases visible. | Help students see: preparation, carrying out, and follow-through.<br>without overwhelming them with throwing technique.<br>The Model phase is about **seeing the phases**, not correcting every part of the movement. |
| ~15 min | **Wonder Lab: Build** | **FlightPlan activity: Ready, Move, Finish**<br>Complete the Build experience and repeat the familiar frisbee movement while noticing the three phases. | Use repeated attempts to deepen awareness.<br>Ask students what they notice before immediately correcting movement.<br>Redirect attention toward the body when students focus only on where the frisbee travels. |
| ~5 min | **Think It Through** | Explain or demonstrate what each phase contributes to the movement. | Connect phase awareness with the possibility of improving control and efficiency.<br>Return to the central question. |

## Session 2 — Change One Thing | 30 minutes

| Time | Section | Student experience | Teacher move |
|---|---|---|---|
| ~5 min | **Reconnect** | Complete **Reconnect** in the FlightPlan and physically reconstruct the three phases. | Reactivate:<br>● PREPARATION<br>● CARRYING OUT<br>● FOLLOW-THROUGH<br>● before adding feedback.<br>Reconnect the phases as one movement sequence. |
| ~8 min | **Wonder Lab: Rehearse** | **FlightPlan activity: Ready, Move, Finish**<br>Repeat the movement, receive one focused piece of feedback, | Keep feedback: specific, manageable, and connected to one phase.<br>Feedback should create one |

| Time | Section | Student experience | Teacher move |
|---|---|---|---|
| | | modify one phase, and try again. | clear experiment.<br>Avoid feedback such as:<br>“Throw better.” |
| ~9 min | **Wonder Lab: Share** | **FlightPlan activity: Movement Detective**<br>Students demonstrate or describe a before-and-after movement.<br>Observers identify:<br>● which phase changed<br>● what remained the same<br>● what effect the mover noticed | Help students communicate movement learning rather than identify the “best throw.”<br>A meaningful Share contribution may include:<br>● “I changed preparation.”<br>● “My follow-through continued longer.”<br>● “I felt more stable.”<br>● “The change did not help me.” |
| ~3 min | **Think It Through** | Explain whether the modification affected control or efficiency. | Return to the central question and reinforce that movement improvement may take several attempts. |
| ~5 min | **Keep Wondering** | Complete the FlightPlan Keep Wondering transition, then use the Puddle–Pond–Lake–Ocean prompts in this Teacher Guide. | Keep inquiry anchored to Rob’s movement, the three phases, feedback, practice, and movement improvement.<br>Do not allow Keep Wondering to become a lesson about frisbee aerodynamics. |

# Session 1 — Find the Three Phases

### Get Curious | ~5 minutes

**Open the Grade 2 Adventures FlightPlan and run Get Curious.**

Use the FlightPlan for the physical directions.

Return attention to Rob throwing the frisbee in the Adventure.

Ask:

> ***“When does Rob’s throw begin?”***

Some students may answer:

> *“When the frisbee leaves his hand.”*

Invite students to mime the movement.

Freeze before the imagined release.

Ask:

- "Were you already moving?"
- "What happened before the frisbee would leave your hand?"

Then allow the movement to continue.

Ask:

> *"Did your body stop immediately when the frisbee would have left?"*

Introduce:

**PREPARATION → CARRYING OUT → FOLLOW-THROUGH**

If helpful, pair those with:

**READY → MOVE → FINISH**

Say:

> ***"One movement can have several connected phases."***

**FACILITATION PROMPTS**

- What does the body do before?
- What produces the main movement?
- What happens afterward?
- Where does the body need stability?
- When does the movement actually finish?
- Could changing something early affect what happens later?

**TEACHER MOVE**

Use the Adventure to make a familiar movement worth examining closely.

Do not immediately shift into correcting the throw.

First teach students to **notice**.

## 2. Wonder Lab

### Model | ~5 minutes

**Open the FlightPlan and run Ready, Move, Finish — Model.**

Use the FlightPlan for the Drill directions and coaching cues.

Make the three phases visible through the Model experience.

Ask:

- "Where is preparation?"
- "When is the body carrying out the movement?"
- "What does the follow-through look like?"

If useful, show one version with a visible difference in preparation.

Ask students what they notice without immediately deciding whether one version is "better."

FACILITATION PROMPTS

- Is the body facing the intended direction?
- Does the mover appear stable?
- Where does movement begin?
- What continues after release?
- What does regaining stability look like?
- How do the phases connect?
- Could changing preparation affect what comes next?

TEACHER MOVE

Teach students to **see the phases before asking them to improve them.**

The FlightPlan contains the physical demonstration.

The Teacher Guide provides the analytical lens.

### Build | ~15 minutes

**Open the FlightPlan and run Ready, Move, Finish — Build.**

Use Frisbee Playbook for Drill instructions, timing, equipment, repetitions, coaching cues, and activity delivery.

Use this Teacher Guide for observation and questioning.

During practice, ask:

- “What does your preparation look like?”
- “What happens during carrying out?”
- “What happens after the frisbee leaves your hand?”
- “Can you notice all three?”
- “Which phase is easiest to notice?”
- “Which phase is hardest?”

Allow repeated attempts before adding significant feedback.

If students begin evaluating only where the frisbee lands, redirect:

> ***“What did the body do?”***

FACILITATION PROMPTS

- Can you find a stable ready position?
- What is moving during carrying out?
- What happens during your finish?
- Does the movement stop abruptly?
- Can you repeat the same phases?
- What changes naturally from one attempt to another?
- What phase are you noticing right now?

**TEACHER MOVE**

The Build phase is for **experimentation and awareness**.

Do not ask students to change several phases simultaneously.

Do not turn every observation into a correction.

Sometimes the most useful teacher response is:

**"What did you notice?"**

### Think It Through | ~5 minutes

**Run Think It Through from the FlightPlan, then deepen the reflection with the prompts below as appropriate.**

Ask:

- "Which phase happens first?"
- "What does preparation help the body do?"
- "What happens during carrying out?"
- "What does follow-through include?"
- "Why might repeated practice help us notice our movement more clearly?"
- "How could changing one phase affect the whole movement?"

Return to:

**How can noticing and changing the phases of a frisbee movement improve control and efficiency?**

## Sample Response Guidance

| Possible response: |
|---|
| "I faced where I wanted to send it before I started." |
| "My body moved during the throw." |
| "My arm kept moving after the frisbee left." |
| "I had to get balanced again." |
| "If I change how I get ready, the next part might change too." |
| • "I noticed the finish more after doing it several times."<br>• Look for **connected phase awareness** rather than memorized definitions alone. |

## Session 1 Closing

Tell students:

- "One movement can have several connected phases."

- "Today we slowed the movement down enough to notice preparation, carrying out, and follow-through."
- "Practising more than once helped us notice what our bodies were doing."
- "Next time, we'll use feedback and change one phase to see what happens."

If Session 1 is taught alone, ask:

> ***"Show me one phase of a frisbee movement and tell me where it belongs."***

# Session 2 — Change One Thing

### Reconnect | ~5 minutes

**Open the Grade 2 FlightPlan and run Reconnect.**

Display or say: PREPARATION, CARRYING OUT, and FOLLOW-THROUGH.

Invite students to physically demonstrate the sequence without a frisbee.

If useful, deliberately omit or change part of the sequence.

Ask:

- "What seems different?"
- "Why does the order matter?"
- "If you wanted more control, which phase might you examine?"
- Accept different responses.

**TEACHER MOVE**

Reconnect the phases as **one complete movement sequence** before introducing feedback.

Do not assume that students remembering the words means they understand the movement.

Physical demonstration is important.

## 2. Wonder Lab

### Rehearse | ~8 minutes

**Open the FlightPlan and run Ready, Move, Finish — Rehearse.**

Students repeat the familiar Drill.

Now add one focused piece of feedback.

Ask students to identify:

- **Which phase does the feedback connect to?**
- Then test one change.

Prompt:

- "What will you change?"
- "Which phase is it?"
- "What happened when you tried again?"

FACILITATION PROMPTS

- What feedback did you receive?
- Which phase does it connect with?
- What will stay the same?
- What will you change?
- Did the next attempt feel more controlled?
- Did it feel more efficient?
- Would you keep the change?
- Do you need another attempt before deciding?

TEACHER MOVE

Feedback should lead to **one clear experiment**.

Avoid vague feedback such as:

“Do better.”

“Throw harder.”

“Fix your throw.”

Instead, connect the information to one observable phase.

The goal is not to produce identical movement across the class.

The goal is for students to use information to make a purposeful adjustment.

### Share | ~9 minutes

**Open the FlightPlan and run Movement Detective — Share.**

Students demonstrate or explain a before-and-after movement.

Movement detectives observe the selected phase.

Ask:

- “What changed?”
- “Was the change in preparation, carrying out, or follow-through?”
- “What stayed the same?”
- “What effect did the mover notice?”
- “Did the same feedback affect everyone the same way?”

FACILITATION PROMPTS

- What change could you see?
- What phase was it in?
- What stayed the same?
- Did the movement look more stable?
- What did the mover report?
- Would another adjustment also be possible?
- What evidence supports the explanation?
- Could a change be useful even if the frisbee outcome was not perfect?

**TEACHER MOVE**

The Share phase communicates **movement learning**.

It is not a contest to identify the best thrower.

A student who can clearly explain:

"I tried this change and it didn't help me"

may demonstrate stronger movement understanding than a student who happens to make a successful throw without knowing why.

### Think It Through | ~3 minutes

**Run Think It Through from the FlightPlan.**

Ask:

- "How did feedback help?"
- "What did repeated practice allow you to notice?"
- "Which change helped you?"
- "Did anyone try a change that did not help?"
- "What did you learn from that?"
- "Why might a movement change take more than one attempt?"

Return to the central question.

### Keep Wondering | ~5 minutes

The FlightPlan transitions students into Keep Wondering.

Use the questions below to deepen the inquiry.

#### PUDDLE

- What does Rob do before he throws?
- What happens after the frisbee leaves Rob's hand?
- Which movement phase comes first?
- Where can you notice Rob getting ready?

#### POND

- How does Rob's preparation connect to what happens next?
- Why might follow-through matter even after the frisbee has left his hand?
- What might Rob change if a throw did not feel controlled?
- How might Rob know which phase he wants to practise?

#### LAKE

- How can one change in preparation affect the rest of Rob's movement?
- Why might feedback help Rob notice something he missed himself?
- How could repeated practice change what Rob notices about his movement?
- How might Rob compare two attempts to decide whether an adjustment helped?

#### OCEAN

- Why might the same feedback help one person but not another?

- How do the three phases work together rather than as completely separate movements?
- How could Rob decide whether a movement change actually improved his performance?
- Why might a movement adjustment that does not work still help Rob learn?

## Invite Student Questions

Ask:

> ***"What are you still wondering about the phases of Rob's frisbee movement in the Adventure?"***

**FACILITATION PROMPTS**

- Which phase is your question about?
- Could your question connect two phases?
- What part of the Adventure made you wonder?
- What might Rob change?
- How could he try the idea again?
- Could more than one answer be reasonable?
- Can we deepen a Puddle question by asking how one phase affects another?
- Could feedback change what Rob notices?

**TEACHER MOVE**

A deeper question does not need to move into another subject or introduce information students have not encountered.

Depth comes from:

noticing

connecting

interpreting

comparing

wondering more deeply about the story itself

Keep questions on **body movement** rather than turning Keep Wondering into a lesson about frisbee aerodynamics.

If a student asks:

"Why does the frisbee curve?"

acknowledge the curiosity, then return to the PE&W lens:

**"What are you wondering about Rob's body movement while he sends it?"**

Close with one student-generated question worth preserving.

# Likely Misconceptions and Helpful Responses

- **If students think the action is finished the instant the frisbee leaves**

Try:

- **"What does your body continue doing after release?"**
- **If students think follow-through controls the frisbee after it has already left**

Try:

- **“Follow-through describes the body completing its movement. What is the body doing?”**
- **If students think feedback means criticism**

Try:

- **“Feedback is useful information. What information could help you understand your movement?”**
- **If students change several things at once**

Try:

- **“Which one phase will you test first?”**
- **If students expect one change to produce immediate success**

Try:

- **“How many attempts would give you a better chance to notice whether the change helps?”**
- **If students think the same feedback should work identically for everyone**

Try:

- **“Do different bodies sometimes need different movement adjustments?”**
- **If students evaluate only where the frisbee lands**

Try:

- **“What changed in your movement, regardless of the frisbee result?”**
- **If students think practice means repeating something without thinking**

Try:

> ***“What could you notice on this attempt that you did not notice before?”***

| If students... | Try this teacher response |
|---|---|
| If students think the movement begins only at release | Try:<br>● **“What was your body doing before the frisbee left?”** |

# Use the Evidence Next

**If a student cannot identify the phases**

Slow or freeze a demonstration.

Use: READY, MOVE, and FINISH.

alongside the formal phase terms.

**If a student identifies the phases but cannot modify one**

Offer two possible adjustments and ask the student to select one.

**If a student makes a change but cannot assess it**

Compare two or three attempts.

Ask:

- “What felt or looked different?”
- **If partner feedback becomes too broad**

Require the feedback to name one phase.

### If a student demonstrates improved control

Ask:

- **“Which change may have contributed?”**
- **If a student’s change does not help**

Ask:

- **“What did that attempt tell you?”**
- Then support the next decision.
- **If a student struggles because the physical task itself is too difficult**
- Use the FlightPlan modifications to simplify the task before adding more feedback.
- **If a student becomes successful but cannot explain the change**
- Ask them to compare the movement rather than only the frisbee result.
- **If a student asks a thoughtful question about improvement**
- Preserve the question for future practice rather than immediately supplying an answer.
- **If a student generates mainly Puddle questions**

Ask:

> ***“How might one phase affect another?”***

## Optional Physical Education & Wellness Extensions

These extensions are optional.

They do not replace the core Grade 2 Adventures FlightPlan.

### Phase Freeze

A student or teacher performs a familiar movement.

Observers call: PREPARATION, CARRYING OUT, and FOLLOW-THROUGH.

The mover freezes or pauses at the appropriate moment when feasible.

Ask:

- “What tells you which phase this is?”
- “What is the body doing?”

**Use READY → MOVE → FINISH if students need more accessible language.**

### One Change Test

Students select one phase and make one deliberate adjustment during a familiar movement.

Compare several attempts.

Ask:

- “What did you change?”

- “What happened?”
- “What evidence makes you want to keep or change the adjustment?”

Do not require the adjustment to improve performance.

The learning comes from purposeful modification and interpretation.

### Feedback Match

Provide simple feedback statements.

Students match each statement with PREPARATION, CARRYING OUT, and FOLLOW-THROUGH.

For example:

- “Face where you want to send.”
- “Continue moving through the finish.”
- “Regain your balance.”

Ask:

- “Why does that feedback belong with that phase?”
- More than one explanation may sometimes be reasonable.
- **Rob in Slow Motion**
- Return to a frisbee moment from the Adventure.
- Students recreate Rob’s movement slowly.

Ask:

- “Where might preparation be?”
- “What part looks like carrying out?”
- “What happens during follow-through?”

Then ask:

> ***“If Rob wanted to change one thing, which phase might he examine?”***

Keep the focus on movement analysis rather than frisbee-flight physics.

*Every adventure begins with a question.*
*Keep wondering.*

# THE ADVENTURES WITH FRISBEE ROB

*The Long Way Down*

*Adventure 001: Isaac Newton*

GRADE 2

## SCIENCE

*Teacher Guide*

## Light in the Orchard: Where Does It Go?

| GRADE | SUBJECT | TIME |
|---|---|---|
| Grade 2 | Science | 2 × 30 minutes |

**CENTRAL QUESTION**

How can different objects and materials affect the path of light?

*Wonder in Motion*

# Lesson at a Glance

| | |
|---|---|
| **Story connection** | Rob and Newton make their observations outside in Newton's orchard. They can see the apple, frisbee, leaves, trees, and one another because light is present. The orchard setting gives students a natural reason to wonder what happens when light meets different objects and materials. |
| **Science focus** | Identifying sources of light, recognizing that light travels from a source, investigating how different objects and materials affect the path of light, observing reflection and transmission through transparent materials, and using evidence from an investigation. |
| **Learning intention** | We are learning to identify a source of light and investigate how different objects and materials can affect the path of light. |
| **Core experience** | Across two 30-minute sessions, students investigate light using an electric light source and several story-inspired or classroom materials. They collaboratively build a Light Path Observation Board, rehearse how to describe what happened to the light, and share evidence showing that different materials can affect light in different ways. |
| **Flexible use** | Session 1 is a complete core lesson and can be used independently. Session 2 continues the same Wonder Lab by giving students additional time to investigate, rehearse, explain, share, and deepen their scientific thinking.<br>Teachers with a continuous 60-minute block may teach both sessions together. |
| **Use after reading** | Read Adventure 001: The Long Way Down before beginning. The story reading is separate from the two Science sessions. |
| **Story context** | Isaac Newton was a real historical person. Rob's visit, their conversation, and the events they experience together are imaginative parts of the story. |
| **Important scientific distinction** | The Grade 2 Energy outcome includes both light and sound.<br>These lessons intentionally focus on selected **light** KUSP. Students are not expected to address the complete light-and-sound learning outcome during one Adventure connection.<br>The orchard provides the story context for investigating light; the Adventure itself does not provide experimental evidence about reflection, transparency, or other light behaviours. |

## Optional Teacher-Spoken Success Indicators

I can identify a source of light.

I can observe what happens when light meets different materials.

I can describe what I actually observed.

I can use evidence from our investigation to explain how a material affected the light.

# How to Use This Guide

### THE GUIDE IS A TOOL, NOT A SCRIPT

This guide is designed to support responsive teaching rather than prescribe every word or action.

Session 1 is a complete 30-minute Grade 2 Energy lesson and can be taught independently.

Session 2 continues the same learning through rehearsal, refinement, sharing, and questioning. It does not introduce additional curriculum.

Follow productive student thinking and conversation while protecting the central question, selected Energy KUSP, meaningful participation, and approximate lesson timing.

Adjust materials, grouping, viewing conditions, response modes, and pacing to meet the needs of the learners in front of you.

The exact result of an investigation may depend on the light source, material, surface, and classroom conditions. Students should describe what they actually observe rather than memorize a predetermined result for every material.

Use a small number of materials that produce clear observations rather than attempting to demonstrate every behaviour of light listed in the curriculum.

The goal of the second session is not to do more.

It is to give students enough time to observe, investigate, compare, improve, and communicate their scientific understanding.

# Curriculum Alignment

| | |
|---|---|
| **Organizing Idea** | Energy: Understandings of the physical world are deepened by investigating matter and energy. |
| **Guiding Question** | Where do light and sound come from, and how do they move? |
| **Learning Outcome** | Students investigate the behaviours of light and sound. |
| **Assessment Focus** | Gather formative evidence of selected Grade 2 Energy KUSP through students' identification of light sources, investigation of light paths, and observations of how different objects or materials affect light.<br>Session 1 provides sufficient opportunities to gather evidence of the selected KUSP.<br>Session 2 offers additional opportunities for students to demonstrate and communicate their understanding.<br>These lessons do not assess the complete learning outcome. |

## Selected KUSP for These Lessons

| KUSP element | Selected curriculum learning | What it looks or sounds like |
|---|---|---|
| **Knowledge** | Sources of light include<br>the Sun<br>electricity<br>fire<br>some plants and animals (bioluminescence)<br>Light behaves in various ways, including<br>travelling in a straight line from its source<br>bouncing off a surface (reflection)<br>bending as it travels from one material to another (refraction)<br>splitting into colours (dispersion)<br>Light travels through objects that can be seen through (transparent).<br>The path of light is affected by mirrors, prisms, and water.<br>The path of sunlight can be affected in a variety of ways by natural objects such as<br>leaves<br>trees<br>bodies of water<br>mountains | Students identify the source used in the classroom investigation and observe what happens when selected materials are placed in the path of light.<br>They distinguish the source of light from the material affecting the path. |
| **Understanding** | Behaviours of light affect its path. | Students recognize that light does not behave identically when it encounters every material and use observations to compare what happened in different trials. |
| **Skills & Procedures** | Identify sources of light.<br>Conduct an investigation to determine how the path of light can be affected.<br>Examine how natural objects affect the path of sunlight. | Students make a prediction, introduce a selected object or material into a light path, observe what happens, record evidence, and compare the results of different materials. |

*Curriculum source: Government of Alberta, Science (K–6) Curriculum, Energy, pp. 5–6.* *View the Alberta program of study*

# Teacher Preparation

**STANDARD PATHWAY**

Use these two 30-minute sessions after students have heard Adventure 001: The Long Way Down.

Session 1: Follow the Light is the core lesson. Students reconnect with the orchard setting, identify a source of light, see prediction and observation modelled, and collaboratively investigate how several materials affect a light path.

Session 2: Explain the Light Path continues the same Wonder Lab. Students return to the Light Path Observation Board, rehearse an evidence-based explanation with a partner, refine their scientific language, share observations, and explore questions of different depths about light within the Adventure setting.

If only one 30-minute period is available, teach Session 1.

If a continuous 60-minute block is available, the two sessions can be taught together with a brief transition or movement break between them.

# Flexible Use of the Guide

### Core Pathway | 30 minutes

Teach Session 1: Follow the Light.

Students experience:

**Get Curious → Model → Build → Think It Through**

This is a complete Grade 2 Energy lesson and provides opportunities to gather formative evidence of the selected KUSP.

### Full Wonder Lab | 2 × 30 minutes

Teach both sessions.

Students experience the complete Wonder Lab cycle:

**Model → Build → Rehearse → Share**

Session 2 deepens the same learning rather than adding additional curriculum.

It also provides time for students to reflect on and question the Science of the Adventure through:

**Puddle → Pond → Lake → Ocean**

### Continuous Block | ~60 minutes

If scheduling allows, Sessions 1 and 2 may be taught consecutively.

Take a brief movement or transition break after the first Think It Through before beginning Reconnect.

# Materials

A copy of Adventure 001: The Long Way Down

One or more electric flashlights or similar classroom light sources

White card, paper, or another surface on which the light can be observed

A mirror

A transparent piece of plastic or other clearly transparent material

A leaf or several leaves

A frisbee

An apple or substitute

Optional clear container of water

Optional additional materials selected by the teacher

Whiteboard, chalkboard, or chart paper and marker

Three cards or headings:

- WHAT DID WE TEST?
- WHAT DID WE PREDICT?
- WHAT DID WE OBSERVE?

# Before Students Begin

Create a class Light Path Observation Board with three spaces:

Material or Object

Prediction

Observation

For example:

mirror | The light will stop. | The light appeared in a different place after it met the mirror.

Test the selected light source and materials before the lesson so you know which combinations produce observations that will be visible in your classroom.

Choose three or four materials rather than attempting to demonstrate every behaviour named in the curriculum.

A useful set may include:

mirror

transparent plastic

leaf

frisbee or another opaque classroom object

Use the mirror to make reflection particularly visible.

Use a clearly transparent material when investigating light travelling through an object.

Where useful, connect the leaf to the orchard setting and ask students how leaves may affect where sunlight reaches.

- Use professional judgment to choose the Session 2 grouping—partners, groups of three, or whole group—that best supports student participation. Early in the year, whole-group practice may help students establish the routine, build confidence, and understand what successful participation looks and sounds like.

Keep the Light Path Observation Board and selected materials available for Session 2.

### Substitutions

Use another available electric light source, different transparent materials, natural objects, or classroom surfaces when the suggested materials are unavailable.

A teacher-controlled demonstration can replace small-group stations when that produces clearer observation for the class.

Diagrams and photographs may support an observation but should not replace direct investigation when suitable materials are available.

## Useful Vocabulary

Pre-teach essential vocabulary through an explicit vocabulary routine, providing students with opportunities to build meaning, interact with the words, and use them in context before and throughout the lesson.

Science words:

**light • source • path • reflect • reflection • transparent • material • mirror • predict • observe • evidence**

Story words:

**orchard • leaf • tree • apple • frisbee • Moon • notice • question**

A light source produces light.

A light path describes where light travels.

Reflection happens when light bounces off a surface.

Transparent materials allow light to travel through so objects can be seen through them.

A prediction describes what we think may happen before an investigation.

Evidence is information gathered through observation or investigation.

## Supporting Our Diverse Learners

Use these supports proactively while preparing and teaching the two sessions.

| | |
|---|---|
| **Make it accessible** | Begin with a large whole-class demonstration so the source, material, and observed result are clearly established.<br>Use a plain background or dimmer area of the room when appropriate to make the light easier to observe. |
| **Support language** | Model sentence frames such as:<br>The light source is _____.<br>We placed _____ in the light path.<br>I predicted _____.<br>I observed _____.<br>Our evidence shows _____. |
| **Offer response choices** | Accept speaking, pointing, arranging arrow cards, drawing a light path, selecting observation cards, recording key words, gesture, communication devices, or assistive technology. |
| **Support participation** | Offer roles such as light-source observer, material chooser, prediction recorder, observation recorder, diagrammer, comparison checker, or science reporter. |
| **Reduce memory load** | Keep the headings Source, Material, and Observation visible.<br>Investigate one material at a time.<br>Leave previous observations visible so students can compare rather than remember all trials independently. |
| **Support rehearsal** | Allow students to retest or re-examine the same material before explaining it.<br>Let students practise identifying the source, material, and observed effect with a partner before whole-group sharing. |
| **Preserve the learning** | Change the number of materials, visual supports, language demands, grouping, or response mode—not the scientific goal.<br>Students still identify a source and use evidence to describe how an object or material affected the path of light. |

# KUSP Assessment: Evidence to Notice

**FORMATIVE ASSESSMENT**

Gather evidence through observations and conversations across both sessions.

Session 1 provides sufficient opportunities to gather evidence of the selected KUSP.

Session 2 gives students additional opportunities to demonstrate and communicate their understanding.

| Evidence source | Listen or look for | Possible teacher note |
|---|---|---|
| **Observation** | Student attends to the light source and observes what changes or remains visible when a material enters the light path. | "Tracks the light from the flashlight to the mirror and then points to where the reflected light appears." |
| **Conversation** | Student distinguishes the source of light from the material affecting the light path and describes an observed result. | "Identifies the flashlight as the source and explains that the mirror changed where the light appeared." |
| **Product** | Contribution to the Light Path Observation Board or a simple diagram accurately represents the material tested and the observed result. | "Draws the light travelling toward the mirror and then in a different direction after meeting the mirror." |

# The Two-Session Flow

### Session 1 — Follow the Light | 30 minutes

| Time | Section | Student experience | Teacher move |
|---|---|---|---|
| ~5 min | **Get Curious** | Reconnect with the orchard setting and wonder where the light that makes observation possible comes from. | Create a need to distinguish the light source from the objects and materials the light encounters. |
| ~5 min | **Wonder Lab: Model** | Observe light travelling from a source and see what happens when one material is introduced. | Model the difference between prediction and observation. |
| ~15 min | **Wonder Lab: Build** | Collaboratively investigate several materials and build the Light Path Observation Board. | Keep students focused on what was actually observed rather than what they expected to happen. |
| ~5 min | **Think It Through** | Explain how different materials affected the light in different ways. | Connect the observations to the understanding that behaviours of light affect its path. |

### Session 2 — Explain the Light Path | 30 minutes

| Time | Section | Student experience | Teacher move |
|---|---|---|---|
| ~5 min | **Reconnect** | Revisit the Light Path | Ask students to use recorded |

| Time | Section | Student experience | Teacher move |
|---|---|---|---|
| | | Observation Board and reconstruct the source, material, prediction, and observation. | evidence rather than memory alone. |
| ~8 min | **Wonder Lab: Rehearse** | Work with a partner to select one trial and rehearse an evidence-based explanation. | Prompt students to distinguish what was predicted from what was observed. |
| ~9 min | **Wonder Lab: Share** | Present light-path observations and compare results across materials. | Focus audience attention on the source, tested material, and evidence. |
| ~3 min | **Think It Through** | Reflect on what makes a light investigation and explanation clear. | Return to the central question and the importance of evidence. |
| ~5 min | **Keep Wondering** | Generate and explore questions of different depths about light within the world of the Adventure. | Use Puddle–Pond–Lake–Ocean language to deepen story-based scientific wondering. |

# Session 1 — Follow the Light

### Get Curious | ~5 minutes

Reconnect students to Newton's orchard.

Ask:

> *"What could Rob and Newton see around them?"*

Invite several details from the Adventure:

the apple

the frisbee

the leaves

the trees

one another

the Moon near the ending

Ask:

- "What helps us see these things?"
- Bring attention to light.
- Show the classroom flashlight while it is off.

Ask:

- “Is it producing light right now?”
- Turn it on.

Ask:

- “What changed?”
- “Where is the light coming from?”

Introduce the scientific challenge:

> *“Today we are going to follow light from a source and investigate what happens when different materials get in its path.”*

**TEACHER MOVE**

Do not turn the opening into a lesson on the anatomy of vision.

The scientific focus is the source and behaviour of light.

Allow students to share prior ideas without confirming the outcome of the investigation before they collect evidence.

## 2. Wonder Lab

### Model | ~5 minutes

Direct the light toward a white card or suitable surface.

Identify:

Source: flashlight

Path: light travelling from the source toward the card

Now introduce the mirror.

Ask:

- “What do you predict will happen when the light reaches the mirror?”
- Record one or two predictions.
- Place the mirror in the light path.
- Observe where light can now be seen.

Ask:

- “What did we actually observe?”
- Introduce or reinforce reflection.

Think aloud:

> *“My prediction was what I thought might happen.”*
>
> *“My observation is what I actually saw.”*
>
> *“The flashlight is still the source.”*
>
> *“The mirror affected the path.”*

**FACILITATION PROMPTS**

- What is producing the light?

- Where is the light travelling before we add the mirror?
- What do you predict?
- What did you actually observe?
- Did the source change?
- What changed about where we could see the light?
- What evidence should we record?

**TEACHER MOVE**

Keep prediction and observation visibly separate.

A prediction that does not match the observation is not a failed response. It provides a reason to revise thinking from evidence.

### Build | ~15 minutes

Create or return to the Light Path Observation Board.

Test several selected materials.

For each trial:

Identify the light source.

Show the material.

Invite a prediction.

Place the material in the light path.

Observe carefully.

Record what happened.

Possible trial:

Transparent plastic

Ask:

- Can we still observe light beyond the material?
- What does transparent mean?

Possible trial:

Leaf

Ask:

- What happens when the leaf is placed in the light path?
- How might many leaves affect where sunlight reaches in an orchard?

Possible trial:

Frisbee or another opaque object

Ask:

How is this result similar to or different from the transparent material?

Possible trial:

Mirror

Repeat or vary the angle so students can compare the observed reflection.

Continue until the class has several clear observations.

**FACILITATION PROMPTS**

- What material are we testing?
- What do you predict before we test it?
- Where is the light source?
- What happened when the material entered the path?
- Can we still see light beyond it?
- Did the light appear somewhere different?
- What evidence belongs on the board?
- How is this material similar to the last one?
- How is it different?
- What should we say if the observation does not match our prediction?

**TEACHER MOVE**

Repeatedly ask:

"What did we actually observe?"

This should become the scientific refrain of the Wonder Lab.

Do not force every trial into advanced vocabulary such as refraction or dispersion when the classroom evidence does not clearly demonstrate those behaviours.

### Think It Through | ~5 minutes

Step back from the Light Path Observation Board.

Ask:

- What was our source of light?
- What different materials did we investigate?
- Did every material affect the light in the same way?
- Which material allowed us to observe light travelling through?
- Which material reflected the light?
- What happened with the leaf or other natural object?
- Why did we record predictions separately from observations?
- How did comparing several materials help us understand light?

Return to the central question:

How can different objects and materials affect the path of light?

## Sample Response Guidance

| Possible response: |
| --- |
| "The flashlight was the source." |
| "The transparent material let light travel through." |
| "The mirror made the light appear in another place." |
| • "Different materials affected the light in different ways."<br>• Look for evidence-based description rather than memorization of vocabulary alone. |

## Session 1 Closing

Tell students:

> *"Rob and Newton became curious by noticing what happened around them. Today we became light investigators and did the same thing."*
>
> *"We made predictions, tested materials, and used our observations as evidence."*
>
> *"Next time, you will choose one investigation and explain clearly what the evidence showed."*

If Session 1 is the only lesson being taught, finish by asking:

> *"What is one thing you discovered about what can happen when light meets a material?"*

# Session 2 — Explain the Light Path

### Reconnect | ~5 minutes

Return to the Light Path Observation Board.

Cover one observation.

Point to the material.

Ask:

- What did we predict?
- What did we observe?
- How could we check instead of relying only on memory?

Reveal the recorded observation or repeat the demonstration.

Then point to another row.

Ask:

- "What was the source in this trial?"
- "Did the source change just because the material changed?"

**TEACHER MOVE**

Reconnection should reactivate the investigation process rather than become a vocabulary review.

Emphasize that recorded evidence helps scientists return to what actually happened.

## 2. Wonder Lab

### Rehearse | ~8 minutes

Students work with partners.

Each pair chooses one investigated material.

Partner A prepares a four-part explanation:

1. Name the light source.
2. Name the material.
3. Describe what was observed.
4. Explain how the observation provides evidence that the material affected the light path.

Possible sentence frames:

> *"Our light source was _____."*
>
> *"We tested _____."*
>
> *"We observed _____."*
>
> *"Our evidence shows _____."*

Partner B checks:

- Did you identify the source?
- Did you identify the material?
- Did you describe an observation rather than only the prediction?
- Can you show or draw what happened to the light?
- Could the explanation be clearer?

Partner A makes one improvement.

Switch roles.

**FACILITATION PROMPTS**

- Which part of your statement is the prediction?
- Which part is evidence?
- What did you actually see?
- Can you trace or draw the path?
- Did the material produce the light?
- How did it affect the light already travelling from the source?
- What could you improve before sharing?

**TEACHER MOVE**

Rehearsal should produce a clearer explanation of the same investigation.

Students do not need increasingly complicated terminology to improve. Greater precision about source, material, and observation is enough.

### Share | ~9 minutes

Bring the class together.

Invite several pairs representing different tested materials.

After each share, ask:

- What was the source?
- What material was tested?
- What did they observe?
- What evidence did they use?
- How was this result similar to another trial?
- How was it different?

Compare two results explicitly.

For example:

mirror versus transparent plastic

leaf versus transparent plastic

Ask students what changed when the material changed.

**FACILITATION PROMPTS**

- Which part of their explanation was strongest?
- Could we see the light beyond the material?
- Did the light appear somewhere new?
- What is similar about these two trials?
- What is different?
- Does a different observation mean one group was wrong, or were they testing different materials?
- How does comparing evidence strengthen our understanding?

**TEACHER MOVE**

Share is about communicating scientific evidence, not producing a perfect technical explanation of optics.

### Think It Through | ~3 minutes

Ask:

- Why do scientists identify the source of light?
- Why do we separate prediction from observation?
- How can comparing materials help us understand the behaviour of light?

Return to the central question.

Accept several student responses.

### Keep Wondering | ~5 minutes

Questions can begin with one observation from the Adventure setting and deepen by connecting evidence and light behaviours.

#### PUDDLE

A small question about one light detail.

Examples:

- What was our light source?
- Which material allowed light to travel through?
- Which material reflected light?

#### POND

A question connecting a few observations.

Examples:

- How did the mirror and transparent material affect light differently?
- How could leaves in Newton's orchard affect where sunlight reaches?
- What changed when we replaced one material with another?

#### LAKE

A question requiring connections across several trials.

Examples:

- How could we sort our materials according to what happened to the light?
- How can the same source produce different observed light paths when different materials are introduced?
- What evidence would help us compare two light-path investigations?

#### OCEAN

A deep science question that may support more than one thoughtful investigation or explanation.

Examples:

- How can the same light behave differently when it encounters different materials?
- Why is identifying the source important before studying what happens to the light path?
- How can an investigation change what we first thought would happen?

The purpose is not for Grade 2 students to classify every question perfectly.

The water language helps students notice that questions can invite different depths of observing, comparing, connecting, and explaining.

## Invite Student Questions

Ask:

- "What are you still wondering about light in the world of Rob and Newton's Adventure?"
- Accept questions connected to sunlight, leaves, the orchard, materials, reflection, transparency, or light paths.

Choose several student questions and wonder aloud together:

> *"Does this feel like a Puddle, Pond, Lake, or Ocean question?"*

There does not need to be one perfect classification.

### FACILITATION PROMPTS

- Can we answer the question with one observation?
- Would we need to compare two materials?
- Could we test the question?
- What evidence would we collect?
- What part of the Adventure made you wonder that?
- Can we make this Puddle a little deeper?
- What could turn this Pond into a Lake?

### TEACHER MOVE

Keep questions anchored to light and the Adventure setting.

A deeper question does not need to move into another Science topic or introduce information students have not encountered.

Depth comes from observing, comparing, connecting evidence, and wondering more deeply about light.

Close with one student-generated question worth preserving.

"Every adventure begins with a question. Keep wondering."

# Likely Misconceptions and Helpful Responses

| If students... | Try this teacher response |
|---|---|
| If students identify the mirror as the source: | Try:<br>"Where was the light produced before it reached the mirror?" |
| If students think light begins at the object they can see: | Try:<br>"Can we trace the light path back to its source?" |
| If students treat a prediction as an observation: | Try:<br>"What did you think would happen? What did you actually see?" |
| If students assume all transparent-looking | Try: |

| If students... | Try this teacher response |
|---|---|
| materials will behave identically: | “Instead of assuming, what could we test?” |
| If students use reflection to describe every result: | Try:<br>“Did the light bounce, travel through, or show another observable result?” |
| If students think the leaf or frisbee produces the light: | Try:<br>“Is the object making light, or is light from our source reaching the object?” |
| If students give an explanation that goes beyond the investigation: | Try:<br>“What evidence did our investigation actually provide?” |
| If students move completely away from the Adventure during Keep Wondering: | Try:<br>“What in Newton’s orchard or Rob’s observations made you wonder that?” |
| If students think an Ocean question is about brighter or more powerful light: | Try:<br>“Ocean means deeper scientific thinking, not brighter light.” |

## Use the Evidence Next

If a student cannot identify the source:

Trace the light path backward and ask where the light begins.

If a student identifies the source but cannot describe the material’s effect:

Offer two or three observation choices and repeat the demonstration.

If a student describes the observed result but lacks vocabulary:

Connect their observation to a term such as transparent or reflection without replacing their evidence.

If a student accurately compares two materials:

Invite them to explain what stayed constant and what changed between the trials.

If a student can explain reflection from evidence:

Invite a comparison with another reflective or non-reflective surface.

If a student records strong observations:

Ask them to represent the path using arrows or a simple diagram.

If a student generates primarily Puddle questions:

Model how one question can deepen by comparing two materials or connecting two observations.

If a student generates a thoughtful story-based Science question:

Preserve it even when the class cannot answer it immediately.

If a student demonstrates understanding nonverbally:

Record what their pointing, diagramming, sorting, or path tracing shows about scientific understanding.

## Optional Science Extensions

Use these only when they naturally support classroom learning. They are not required parts of the two-session experience.

### LIGHT PATH DIAGRAM

Choose one completed investigation.

Students draw the source, material, and observed light path using simple arrows.

Compare diagrams and ask which details help another scientist understand what happened.

### NATURAL OBJECT TEST

Select two natural objects that connect to the orchard setting.

Students predict and investigate how each affects the classroom light source.

Compare observations rather than assuming all natural materials behave alike.

### TRANSPARENT MATERIAL HUNT

Identify several classroom materials students think may be transparent.

Choose a few to test.

Students compare the prediction with direct evidence.

### PREDICTION DETECTIVE

Present a new material.

Students record a prediction before the test.

After the observation, ask:

- What did we predict?
- What did the evidence show?
- Did our thinking need to change?

*Every adventure begins with a question.*
*Keep wondering.*

# THE ADVENTURES WITH FRISBEE ROB

*The Long Way Down*

*Adventure 001: Isaac Newton*

GRADE 2

# SOCIAL STUDIES

*Teacher Guide*

## What the Past Passes Forward

| GRADE | SUBJECT | TIME |
|---|---|---|
| Grade 2 | Social Studies | 2 × 30 minutes |

**CENTRAL QUESTION**

How can traditions, languages, histories, and relationships with the land connect the past with heritage today?

*Wonder in Motion*

# Lesson at a Glance

| | |
|---|---|
| **Story connection** | *The Long Way Down* shows students that a person from long ago can still become meaningful to people living today.<br>Grade 2 widens that idea beyond one historical person.<br>Communities can remain connected with the past through heritage—through traditions, languages, histories, and relationships that continue across generations. |
| **Social Studies focus** | Understanding heritage as connected with foundations from the past, recognizing that heritage can be passed through generations, examining curriculum-specific First Nations, Inuit, Métis, and Francophone heritage connections, and recognizing that communities in Canada reflect diverse heritages. |
| **Learning intention** | We are learning to identify ways heritage connects the past and present and explain how traditions, languages, histories, and relationships with the land contribute to heritage. |
| **Core experience** | Across two 30-minute sessions, students build a Heritage Connections Board using selected Grade 2 curriculum statements.<br>Students examine relationships between land and First Nations and Inuit tradition and identity, distinct traditions and languages and Métis heritage, and history and French language and Francophone heritage.<br>They rehearse and share explanations about how heritage can be passed forward while keeping distinct communities and histories accurate. |
| **Flexible use** | Session 1 is a complete core lesson and can be used independently. Session 2 continues the same Wonder Lab by giving students additional time to connect, rehearse, explain, share, and deepen their Social Studies thinking.<br>Teachers with a continuous 60-minute block may teach both sessions together. |
| **Use after reading** | Read Adventure 001: *The Long Way Down* before beginning.<br>The story reading is separate from the two Social Studies sessions. |
| **Story context** | Isaac Newton was a real historical person.<br>Rob's visit and their experiences together are imaginative parts of the Adventure. |
| **Important Social Studies distinction** | Isaac Newton is not being presented as an example of Canadian heritage.<br>The Adventure provides a familiar doorway into a larger idea: things from the past can remain meaningful in the present.<br>The Grade 2 heritage learning comes from the Alberta Social Studies curriculum and appropriate classroom resources.<br>Distinct First Nations, Inuit, Métis, and Francophone heritage connections should not be combined into one generic cultural story. |

### Optional Teacher-Spoken Success Indicators

I can explain that heritage connects with the past.

I can identify something that can continue through generations.

I can connect a tradition, language, history, or relationship with land to the correct heritage example.

I can explain why communities in Canada reflect diverse heritages.

## How to Use This Guide

#### THE GUIDE IS A TOOL, NOT A SCRIPT

This guide is designed to support responsive teaching rather than prescribe every word or action.

Session 1 is a complete 30-minute Grade 2 Time and Place lesson and can be taught independently.

Session 2 continues the same learning through rehearsal, refinement, sharing, and questioning. It does not introduce additional curriculum.

Follow productive student thinking and conversation while protecting the central question, selected Time and Place KUSP, meaningful participation, and approximate lesson timing.

Use the official curriculum statements as the factual foundation for the heritage connections.

When adding local examples, use accurate and appropriate resources rather than inventing cultural or historical details.

Do not ask students to represent their family, cultural community, First Nation, Métis community, Inuit community, or Francophone community for the class.

Personal heritage connections may be shared voluntarily, but they are not required.

The goal of the second session is not to do more.

It is to give students enough time to connect ideas, preserve important distinctions, improve their explanations, and communicate their understanding.

## Curriculum Alignment

| | |
|---|---|
| **Organizing Idea** | Time and Place: Exploring the dynamic relationships between people, place, and time supports understanding of perspectives and events to make meaning of the world. |
| **Guiding Question** | How can heritage build on foundations from the past? |
| **Learning Outcome** | Students relate traditions to Canada's heritage. |
| **Assessment Focus** | Gather formative evidence of selected Grade 2 Time and Place KUSP through students' recognition that heritage is passed through generations and their |

| | |
|---|---|
| | ability to relate selected traditions, languages, histories, and relationships with land to the heritage contexts identified in the curriculum.<br>Session 1 provides sufficient opportunities to gather evidence of the selected KUSP.<br>Session 2 offers additional opportunities for students to demonstrate and communicate their understanding.<br>These lessons do not assess the complete learning outcome. |

## Selected KUSP for These Lessons

| KUSP element | Selected curriculum learning | What it looks or sounds like |
|---|---|---|
| **Knowledge** | Since time immemorial, First Nations and Inuit inhabited the land and had unique ways of living on the land.<br>Distinct traditions and languages, such as Michif, with blended First Nations and European roots contribute to Métis heritage.<br>Histories of first settlements and French language contribute to Francophone heritage.<br>Heritage is passed down through generations.<br>Communities in Canada reflect diverse heritages.<br>Canada is a multicultural nation with people from diverse cultures. | Students recognize that heritage can include traditions, languages, histories, and relationships with land that connect people and communities with earlier generations.<br>Students accurately connect selected examples with the communities named in the curriculum rather than treating all heritage examples as interchangeable. |
| **Understanding** | Heritage reflects traditions of people and communities.<br>Heritage plays a foundational role in our communities. | Students explain that things connected with the past can continue to influence identity, traditions, language, and community life in the present. |
| **Skills & Procedures** | Explore ways the land contributes to First Nations and Inuit tradition and identity.<br>Relate distinct traditions and languages to Métis heritage.<br>Relate history and language to Francophone heritage. | Students build accurate connections among the selected Grade 2 examples and communicate what each example helps them understand about heritage. |

*Curriculum source: Government of Alberta, Social Studies (K–6) Curriculum, Time and Place, p. 3.* *View the Alberta program of study*

# Teacher Preparation

**STANDARD PATHWAY**

Use these two 30-minute sessions after students have heard Adventure 001: *The Long Way Down*.

Session 1: **Build the Heritage Connections** is the core lesson. Students reconnect with the idea that people today can remain connected with the past, learn the concept of heritage, see one curriculum-supported heritage relationship modelled, and collaboratively build several Heritage Connections.

Session 2: **Explain What Carries Forward** continues the same Wonder Lab. Students return to the Heritage Connections Board, reconstruct incomplete connections, rehearse an explanation with a partner, refine their language, share distinct examples, and explore questions of different depths about how the past can remain meaningful.

If only one 30-minute period is available, teach Session 1.

If a continuous 60-minute block is available, the two sessions can be taught together with a brief transition or movement break between them.

# Flexible Use of the Guide

### Core Pathway | 30 minutes

Teach Session 1: **Build the Heritage Connections**.

Students experience:

**Get Curious → Model → Build → Think It Through**

This is a complete Grade 2 Time and Place lesson and provides opportunities to gather formative evidence of the selected KUSP.

### Full Wonder Lab | 2 × 30 minutes

Teach both sessions.

Students experience:

**Model → Build → Rehearse → Share**

Session 2 deepens the same learning rather than adding additional curriculum.

It also provides time for students to reflect on and question the Social Studies ideas in the Adventure through:

**Puddle → Pond → Lake → Ocean**

### Continuous Block | ~60 minutes

If scheduling allows, teach both sessions consecutively.

Take a brief movement or transition break after the first Think It Through before beginning Reconnect.

# Materials

A copy of Adventure 001: *The Long Way Down*

Whiteboard, chalkboard, or chart paper and marker

A Heritage Connections Board with:

FOUNDATION FROM THE PAST

HERITAGE CONNECTION

WHAT CONTINUES OR MATTERS TODAY?

Prepared curriculum cards or headings:

land

First Nations

Inuit

tradition

identity

Michif

Métis heritage

distinct traditions

French language

Francophone heritage

histories of first settlements

generations

heritage

Optional arrow cards labelled:

PASSED FORWARD

CONNECTS

CONTRIBUTES TO

Optional teacher-approved photographs, maps, or illustrations supporting the selected curriculum content

# Before Students Begin

Prepare three main curriculum-supported connection sets.

**Connection 1**

Land

→ First Nations and Inuit tradition and identity

**Connection 2**
Distinct traditions and languages, such as Michif

→ Métis heritage

**Connection 3**
Histories of first settlements and French language

→ Francophone heritage

Keep these visually separate enough that students do not blend them into one generalized heritage story.

Prepare the anchor statement:

**HERITAGE IS PASSED DOWN THROUGH GENERATIONS.**

Keep it visible throughout the lesson.

Choose only a manageable amount of additional information.

The goal is to understand the heritage relationships, not memorize a large number of unrelated details.

- Use professional judgment to choose the Session 2 grouping—partners, groups of three, or whole group—that best supports student participation. Early in the year, whole-group practice may help students establish the routine, build confidence, and understand what successful participation looks and sounds like.

Keep the Heritage Connections Board available for Session 2.

**Substitutions**
Use printed words, photographs, maps, symbols, oral descriptions, digital cards, or approved classroom resources.

Students who find the amount of vocabulary demanding can work with one heritage connection at a time.

Students do not need to disclose personal or family heritage to demonstrate understanding.

# Useful Vocabulary

Pre-teach essential vocabulary through an explicit vocabulary routine, providing students with opportunities to build meaning, interact with the words, and use them in context before and throughout the lesson.

Social Studies words:

**heritage • generation • tradition • language • history • identity • land • community • First Nations • Inuit • Métis • Michif • Francophone • multicultural**

Story words:

**Isaac Newton • Rob • Adventure • past • long ago • question**

**Heritage** reflects traditions of people and communities and can connect the present with foundations from the past.

A **generation** is a group of people living during a similar period of time.

A **tradition** is a belief or behaviour that can be passed through generations.

A **language** can carry knowledge, history, stories, and identity.

**Identity** relates to who people or communities are.

**Multicultural** describes the presence of people from diverse cultures.

## Supporting Our Diverse Learners

Use these supports proactively while preparing and teaching the two sessions.

| | |
|---|---|
| **Make it accessible** | Use arrows, picture supports, and large connection cards.<br>Build one heritage relationship at a time before showing all three together. |
| **Support language** | Model sentence frames such as:<br>_____ contributes to _____ heritage.<br>_____ connects the past with the present because _____.<br>The curriculum connects _____ with _____.<br>Heritage can be passed through _____.<br>One thing that is distinct about this example is _____. |
| **Offer response choices** | Accept matching, arrow placement, speaking, drawing, sequencing, selecting cards, written responses, gesture, communication devices, or assistive technology.<br>Personal heritage disclosure is not required. |
| **Support participation** | Offer roles such as connection builder, card reader, arrow placer, heritage checker, board recorder, vocabulary helper, or Social Studies reporter. |
| **Reduce memory load** | Keep the three main heritage connections visible.<br>Use consistent arrows and headings.<br>Do not require students to remember community names, terms, and relationships simultaneously without visual support. |
| **Support rehearsal** | Allow students to reconstruct one heritage relationship several times.<br>Let students practise the same explanation with a teacher or partner before comparing it with another example. |
| **Preserve the learning** | Change the number of examples, language demand, physical role, or response mode—not the heritage relationship.<br>Students still connect traditions, languages, histories, or land with the appropriate Grade 2 heritage context. |

# KUSP Assessment: Evidence to Notice

**FORMATIVE ASSESSMENT**

Gather evidence through observations and conversations across both sessions.

Session 1 provides sufficient opportunities to gather evidence of the selected KUSP.

Session 2 gives students additional opportunities to demonstrate and communicate their understanding.

| Evidence source | Listen or look for | Possible teacher note |
|---|---|---|
| **Observation** | Student accurately builds or reconstructs a selected heritage connection. | "Matches Michif and distinct traditions with Métis heritage." |
| **Conversation** | Student explains how something connected with the past can continue through generations. | "Explains that a language can be passed forward and remain part of heritage." |
| **Product** | Student contribution to the Heritage Connections Board correctly represents one of the selected curriculum relationships. | "Connects French language and histories of first settlements with Francophone heritage." |

# The Two-Session Flow

### Session 1 — Build the Heritage Connections | 30 minutes

| Time | Section | Student experience | Teacher move |
|---|---|---|---|
| ~5 min | **Get Curious** | Reconnect with Newton as someone from the past who is still discussed today and wonder how the past can continue to matter. | Use the Adventure to open the idea of past-to-present connection, then clearly shift to Canadian heritage. |
| ~5 min | **Wonder Lab: Model** | See one curriculum-supported heritage relationship constructed. | Make "passed through generations" and "contributes to heritage" visible. |
| ~15 min | **Wonder Lab: Build** | Collaboratively build the selected First Nations and Inuit, Métis, and Francophone heritage connections. | Protect distinctions among communities while helping students notice the shared concept of heritage. |
| ~5 min | **Think It Through** | Explain how heritage can connect foundations from the | Connect the examples to the understanding that heritage |

| Time | Section | Student experience | Teacher move |
|---|---|---|---|
| | | past with communities today. | plays a foundational role in communities. |

### Session 2 — Explain What Carries Forward | 30 minutes

| Time | Section | Student experience | Teacher move |
|---|---|---|---|
| ~5 min | **Reconnect** | Return to the Heritage Connections Board and reconstruct missing parts. | Ask students to reason from relationships rather than simply repeat vocabulary. |
| ~8 min | **Wonder Lab: Rehearse** | Choose one heritage connection and practise explaining it accurately. | Prompt students to identify what is connected, what heritage is named, and how the past remains relevant. |
| ~9 min | **Wonder Lab: Share** | Share several distinct heritage connections and compare the larger ideas. | Focus attention on the common concept of heritage without collapsing different community histories. |
| ~3 min | **Think It Through** | Reflect on how heritage builds on foundations from the past. | Return to the central question. |
| ~5 min | **Keep Wondering** | Generate and deepen questions about how traditions, languages, histories, and relationships with land continue across time. | Use Puddle–Pond–Lake–Ocean language to deepen story-anchored Social Studies wondering. |

# Session 1 — Build the Heritage Connections

### Get Curious | ~5 minutes

Reconnect students to Newton.

Ask:

- “Did Isaac Newton live today?”
- “No.”
- “Why are people still talking about him?”

Students may mention:

books

stories

ideas

history

school

the Adventure

Say:

> *"That reminds us of an important idea: something from the past can still matter today."*
>
> *"Grade 2 Social Studies has a word that helps us think about things communities carry forward from the past: **heritage**."*

Display HERITAGE.

Ask students what they think the word may mean.

Then clarify the story connection:

> *"We are not calling Newton part of the Canadian heritage we are studying today."*
>
> *"The Adventure simply helped us begin with a question: How can the past continue to matter in the present?"*

**TEACHER MOVE**

Make the boundary explicit before students begin building heritage examples.

The factual content now comes from the Grade 2 curriculum.

## 2. Wonder Lab

### Model | ~5 minutes

Display:

**HERITAGE IS PASSED DOWN THROUGH GENERATIONS.**

Choose one curriculum relationship.

For example:

French language + histories of first settlements

→ Francophone heritage

Ask:

- "What is connected with the past?"
- "What heritage does the curriculum connect it with?"
- "What does our arrow mean?"

Build the connection visually.

Think aloud:

> *"The French language and histories are not the same thing as heritage by themselves."*
>
> *"They contribute to Francophone heritage."*
>
> *"The word heritage helps us connect foundations from the past with communities today."*

**FACILITATION PROMPTS**

- What is the foundation from the past?
- What does it contribute to?
- Which community or heritage does the curriculum name?
- What does “passed through generations” mean?
- Does being passed forward mean nothing ever changes?
- Why should we keep the community name connected to the correct example?

**TEACHER MOVE**

Avoid presenting heritage as something frozen in the past.

The curriculum explicitly identifies heritage as foundational in communities.

### Build | ~15 minutes

Create the Heritage Connections Board.

#### Connection 1 — Land

Display:

Since time immemorial, First Nations and Inuit inhabited the land and had unique ways of living on the land.

Ask:

> *“What does the curriculum ask us to explore?”*

Connect:

Land

→ First Nations and Inuit tradition and identity

Discuss that the curriculum identifies relationship with land as important to this heritage learning.

Do not invent particular practices without appropriate sources.

#### Connection 2 — Distinct traditions and languages

Display:

Distinct traditions and languages, such as Michif, with blended First Nations and European roots contribute to Métis heritage.

Build:

Distinct traditions + languages such as Michif

→ Métis heritage

Ask students what the word **distinct** helps them understand.

#### Connection 3 — History and French language

Display:

Histories of first settlements + French language

→ Francophone heritage

Build the connection.

After all three are visible, add:

**COMMUNITIES IN CANADA REFLECT DIVERSE HERITAGES.**

Ask:

> *"What is similar about our three connections?"*

Possible response:

They connect things from the past with heritage.

Ask:

> *"What is different?"*

Possible response:

They describe different communities, histories, languages, or relationships.

**FACILITATION PROMPTS**

- Which information belongs together?
- What is the heritage connection?
- What has been carried or continued?
- What is distinct about this example?
- What do all three examples have in common?
- Why should we not combine all three into one generic story?
- How can something from the past still shape a community today?

**TEACHER MOVE**

Repeatedly protect both ideas:

**Heritage provides a common concept.**

**Distinct communities retain distinct histories and connections.**

### Think It Through | ~5 minutes

Step back from the Heritage Connections Board.

Ask:

- What does heritage help us understand?
- What does it mean for heritage to be passed through generations?
- How does land contribute to the selected First Nations and Inuit curriculum connection?
- What contributes to Métis heritage in our selected learning?
- What contributes to Francophone heritage?
- Why does the curriculum say communities in Canada reflect diverse heritages?
- Can heritage come from the past and still matter today?
- How is this different from simply remembering one famous person like Newton?

Return to the central question:

How can traditions, languages, histories, and relationships with the land connect the past with heritage today?

## Sample Response Guidance

| Possible response: |
|---|
| "Heritage can be passed through generations." |
| "Land contributes to First Nations and Inuit tradition and identity." |
| "Michif and distinct traditions contribute to Métis heritage." |
| "French language and histories contribute to Francophone heritage." |
| • "Different communities have different heritages."<br>• Look for accurate relationships rather than a memorized definition of heritage alone. |

## Session 1 Closing

Tell students:

> *"The past does not simply disappear."*
>
> *"Traditions, languages, histories, and relationships can continue to shape communities across generations."*
>
> *"That connection is one important part of heritage."*
>
> *"Next time, you will choose one heritage connection and explain how its parts belong together."*

If Session 1 is the only lesson being taught, finish by asking:

> *"What is one example of something that can connect the past with heritage today?"*

# Session 2 — Explain What Carries Forward

### Reconnect | ~5 minutes

Display incomplete connections.

Michif → _____

French language + histories of first settlements → _____

Land → First Nations and Inuit tradition and _____

Students reconstruct the missing words.

Then cover the word HERITAGE.

Ask:

- "What larger idea connects all three?"
- Reveal HERITAGE.

Ask:

- "Does heritage mean all three communities are the same?"
- Invite students to explain.

**TEACHER MOVE**

Reconnect both the common concept and the distinctions.

## 2. Wonder Lab

### Rehearse | ~8 minutes

Students work with partners.

Each pair chooses one Heritage Connection.

Partner A explains:

> *"The curriculum connects _____ with _____."*
>
> *"This contributes to heritage because _____."*
>
> *"It connects past and present by _____."*
>
> *"One thing we should keep distinct is _____."*

Partner B checks:

- Did the speaker name the correct community or heritage?
- Did the explanation match the curriculum?
- Did the speaker explain a connection rather than only list words?
- Did the speaker combine communities that should remain distinct?
- Could the explanation be clearer?

Partner A revises.

Switch roles.

**FACILITATION PROMPTS**

- Which parts belong together?
- What is the heritage connection?
- What came from or connects with the past?
- What continues to matter?
- Which community does this statement specifically name?
- What could you improve?

**TEACHER MOVE**

Accuracy outranks elaboration.

A short, accurate heritage connection is stronger than an elaborate explanation containing invented cultural information.

### Share | ~9 minutes

Invite students to share all three heritage contexts across the class.

After each share, ask:

- What is the foundation or connection from the past?
- What heritage is named?
- What continues or remains meaningful?
- How is this connection distinct from another example?

After several shares, ask:

- "What do all three help us understand about heritage?"
- "How can communities in Canada have diverse heritages while sharing the same country?"

#### FACILITATION PROMPTS

- What is accurate in this explanation?
- What relationship did the speaker identify?
- What is similar to the previous heritage connection?
- What is different?
- Why do those differences matter?
- What larger Grade 2 idea connects the examples?

#### TEACHER MOVE

Compare the concept of heritage without flattening distinct communities into interchangeable examples.

### Think It Through | ~3 minutes

Ask:

- How can heritage build on foundations from the past?
- Why might heritage remain important today?
- Why do we need to keep distinct heritage stories accurate?
- How is heritage different from simply knowing that something happened long ago?

Return to the central question.

### Keep Wondering | ~5 minutes

#### PUDDLE

Examples:

- What does heritage mean?
- What language is named in our Métis heritage connection?
- What language contributes to Francophone heritage?
- What word tells us heritage can move across time?

#### POND

Examples:

- How can language connect generations?

- How can land contribute to identity?
- How can history continue to matter after many years?
- Why are the three heritage connections different?

### LAKE

Examples:

- How can communities carry different kinds of heritage while all belonging within Canada?
- Why is it important to keep distinct heritage stories accurate?
- How can something change over generations and still remain part of heritage?
- How is community heritage different from the historical legacy of one person like Newton?

### OCEAN

Examples:

- What might be lost when languages, traditions, or histories are no longer passed forward?
- How can people honour heritage while communities continue to change?
- Why might two people connected with the same heritage understand or express it differently?
- How can people today learn responsibly about heritage that began long before they were born?

The purpose is not for Grade 2 students to create increasingly complicated questions.

Depth comes from connecting past and present, considering continuity and change, and protecting the distinct experiences of communities.

## Invite Student Questions

Ask:

> *"What are you still wondering about how the past can continue into the present?"*

Invite students to connect their questions with the Adventure's original spark:

Newton is from long ago, yet people today still learn about him.

Then return questions toward heritage.

#### FACILITATION PROMPTS

- Is your question about one person or a community?
- What is being passed or continued?
- Would we need more information to answer?
- Which heritage connection made you wonder?
- Can we turn this Puddle into a question about generations?
- What could make this question a Lake?

#### TEACHER MOVE

Keep the Adventure as the curiosity anchor while keeping the Grade 2 content grounded in Canadian heritage.

Close with one student-generated question worth preserving.

"Every adventure begins with a question. Keep wondering."

# Likely Misconceptions and Helpful Responses

- **If students combine First Nations, Métis, and Inuit into one interchangeable group**

Try:

- "Which specific community or communities does this statement name?"
- **If students think heritage means only old objects**

Try:

- "Can language, traditions, histories, and relationships with land also contribute to heritage?"
- **If students think heritage belongs only in the past**

Try:

- "What does 'passed down through generations' tell us?"
- **If students assume all Canadians share one heritage**

Try:

- "What does the curriculum say about diverse heritages?"
- **If students use one heritage connection for another community**

Try:

- "Which words in our curriculum card tell us where this example belongs?"
- **If students think heritage cannot change**

Try:

- "Could people continue a heritage while the way it is expressed changes over generations?"
- **If students feel required to share family heritage**

Try:

- "You can use one of our class curriculum examples."
- **If students think an Ocean question means the oldest heritage**

Try:

> *"Ocean means deeper thinking, not the oldest example."*

| If students... | Try this teacher response |
|---|---|
| If students say Newton is an example of Canadian heritage | Try:<br>• "Newton helped us ask how the past can matter today. Which heritage examples does our Grade 2 curriculum actually identify?" |

# Use the Evidence Next

**If a student recognizes the word heritage but cannot connect an example**

Use the prepared cards and rebuild one relationship.

**If a student accurately matches one connection**

Ask:

- "How does this connect past and present?"
- **If a student mixes communities**
- Return to the three separate visual chains.
- **If a student understands one heritage connection**
- Invite comparison with a second.
- **If a student understands the common concept of heritage**
- Ask why keeping distinct stories distinct still matters.
- **If a student describes heritage as something frozen in the past**

Ask:

- "What does 'passed through generations' suggest about continuity into today?"
- **If a student asks for cultural details beyond the supplied curriculum information**
- Preserve the question for later use with appropriate sources rather than improvising.
- **If a student generates mostly Puddle questions**
- Invite them to ask how an example continues or why it matters.
- **If a student demonstrates understanding nonverbally**
- Record what their matching, sequencing, arrow placement, or visual representation demonstrates.

# Optional Social Studies Extensions

### HERITAGE CONNECTION CARDS

Students independently or collaboratively reconstruct the three selected curriculum relationships.

Ask students to explain each arrow rather than simply match cards.

### PASSED FORWARD

Prepare examples of things that can connect generations, such as:

language

stories

traditions

historical knowledge

relationships with land

Students discuss how each can contribute to heritage.

### HERITAGE IS NOT ONE STORY

Place the three selected heritage connections side by side.

Students identify:

- What is similar?
- What is distinct?
- Why does accurate language matter?

### QUESTIONS ACROSS TIME

Return to Newton.

Ask:

- "How is remembering one historical person different from learning about a community's heritage?"
- Students generate questions that distinguish personal historical legacy from community heritage.

*Every adventure begins with a question.*
*Keep wondering.*