The Canadian Reader is published eight times during the school year in English and in French from September through May by LesPlan Educational Services Ltd.

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How to use this resource:

The Canadian Reader is a made-in-Canada teaching and learning resource featuring all-Canadian content. It has three main components; use the entire package, or pick and choose the pages that suit your class the best.

1. Literacy Focus – This generic lesson plan focuses on seven key non-fiction reading comprehension strategies, presented in the following order:
   Issue 1: Using Text Features
   Issue 2: Making Connections
   Issue 3: Visualizing
   Issue 4: Asking Questions
   Issue 5: Making Inferences
   Issue 6: Determining Importance
   Issue 7: Transforming/Synthesizing
   Issue 8: Reading Strategies Review and Assessment

Teachers may introduce and practice each month’s strategy using any of the articles in the issue, or save it for another time or text.

2. Canadian news stories – Each of the three articles is leveled and accompanied by Comprehension Check questions, a Language Focus, and a literacy-based lesson plan and supporting materials. Teach the lessons as they are presented, or pick and choose the activities and assignments you’d like to explore with your students.

3. Did You Know? comic – This comic provides basic information about a current news story or event, or supports one of the articles with background information. It’s a great way to engage reluctant readers and build students’ background knowledge in a fun and graphic way.

Note: All URLs referenced in The Canadian Reader are posted as links on our student website at www.lesplan.com/en/links. Bookmark this URL on your school’s computer network to give students easy access to our recommended sites.

Share The Canadian Reader with other staff members in your school, including itinerant, relief, and substitute teachers.
Introduction:

- To introduce the concept of Transforming or Synthesizing, give each student four small balls of playdough, each a different colour. Ask students to create something with the playdough. After about five minutes, ask students to stop what they are doing, and to look at what the other students have made with their playdough. In what ways are students’ creations similar? In what ways are they different? How can students account for any similarities or differences? (*All students began with the same materials, but their creations were likely different because each person shaped the playdough with his or her own ideas to create something new*).

- Use the Transforming student handout (p. 4) to explain to students that the Transforming (or Synthesizing) reading strategy is similar to their playdough experience. Students may all read the same article or book, but as they read, they add their own thinking when they question, make connections, visualize, and make inferences. The blending of the text with student’s thinking can lead to changed – or transformed – thoughts.

Modelling:

- Draw a T-Chart on a piece of chart paper, the board, or an overhead. Label the left-hand side Summary and the right-hand side Response. Choose one article from this issue to use to model Transforming. Read this article to students. As you read, stop after each paragraph or section to record key facts (a summary) on the left. On the right, record your response or reaction to the summary. What connections can you make? What questions do you have? What do you see in your mind? What inferences can you make? (*Remind students that when they summarize, they should tell what is important, tell it in a way that makes sense, and try not to tell too much.*)

- After reading the article, tell students that you will put your Summary and Response together to try to figure out how your thinking about the topic has changed. What matters most to you about the article? Why might the writer have wanted you to read the article?

Guided Practice:

- Choose a second article to read to students, pausing after each paragraph or section so students can record their own Summary and Response on a T-Chart. After reading, have students try to synthesize what they read with their own thinking to figure out what matters most to them about the article.

Independent Practice:

- Distribute a copy of the My Changing Thoughts organizer (p. 5) to each student. In the space at the top, have students record the topic of a third article. Then, ask students to record what they already know about the topic in the first cloud. In the second cloud, have them record what they wonder or would like to know about the topic. Read the article aloud. After reading, ask students to consider how their thinking about the topic might have transformed. Has their understanding of the topic changed? Do they now think about the topic in a different way? Have students record their transformed thinking in the last cloud, then share their organizer with a partner or with the class.

To transform means to change something. When you use the Transforming reading strategy you add your background knowledge, your experience, and your thinking to what you are reading to come up with a new way to think about something.

Transforming . . .

. . . changes your understanding of a topic. It causes you to think about a topic in a new way.

. . . relies on many other reading strategies: Making Connections, Asking Questions, Visualizing, and Inferring.

. . . is summarizing, plus your own thinking.

. . . is what reading is all about.

When you do a puzzle, build with Lego, or bake cookies, you are transforming one set of items into something else. What other things can you transform?
Review with students the reading comprehension strategies that they have learned and practiced this year using the Reading Strategy Review handout (p. 7). Which strategies have students used most? Which have they found easiest to use? Which have been more difficult? What reasons can students suggest to explain these observations?

Choose one article from this issue to use to assess students' understanding of and ability to apply the reading strategies. Ask students to read this story independently. Then, have students use the article to complete the Reading Strategies Assessment (p. 8).

Rubric for Reading Strategies Assessment: Use the rubric below to assess other oral, written, and anecdotal evidence of students' understanding of and ability to apply the following reading comprehension strategies, gathered throughout the year:

**Asking Questions/Making Inferences**
- 1 – Is not able to form a question about what has been read.
- 3 – Is able to ask simple questions about what has been read and is able to answer 'right there' questions accurately. Can ask/answer some simple 'in my head' questions (can make an inference).
- 5 – Can ask questions that demonstrate deep understanding of the text. Can clearly explain what an inference is and can make inferences that are thoughtful. Questions and inferences are relevant to the topic.

**Determining Importance**
- 1 – May be able to identify the topic.
- 3 – Can identify the topic and retell important ideas and some details. Can identify some key words.
- 5 – Can identify main ideas and key words, and is able to summarize in own words.

**Making Connections**
- 1 – Is unable to make connections to the text.
- 3 – Can make both personal connections and connections to background knowledge. Connections are meaningful (relevant to the content).
- 5 – Is able to make text-to-self, text-to-text, and text-to-world connections. Can express how the connections have helped enhance understanding.

**Transforming/Synthesizing**
- 1 – Is not able to identify new thinking. May be able to retell but not rethink the text.
- 3 – Understands that readers sometimes develop new thoughts from reading. Is able to apply some of the reading strategies to the text. New thinking may be shown only with facts.
- 5 – Is able to find simple ways of rethinking the text. Independently uses all of the reading strategies. Uses experiences and text to identify a new perspective or thought that enhances meaning and deepens understanding.

Source: Adapted from Nonfiction Reading Power by Adrienne Gear, Pembroke Publishers, c. 2008
Reading Strategy Review

**Good readers . . .**

. . . **make connections.** As they read they think about what the text reminds them of. This thinking – or reminding – is called connecting.

. . . **ask questions** before, during, and after they read. Sometimes, the answers to these questions can be found right in the story. Sometimes, the answer has to come from you.

. . . **visualize.** As they read, they make pictures or a movie in their head. These pictures or movies are called visualizing.

. . . **make inferences.** They fill in, in their heads, what is not written or shown on the page. Predicting is one kind of inference.

. . . **determine importance.** They sift and sort information in their heads, making decisions about what information they need to remember and what information they can ignore.

. . . **transform** their thinking. They add their background knowledge, their experience, and their thinking to what they are reading to come up with a new way to think about something.

Name: ___________________________ Date: ___________________________

Article title: _______________________________________________________

Reading Strategies Assessment

1. What is one meaningful connection you can make?

2. Write one ‘right there’ question that you have.

3. Write one ‘in your head’ question. Then, answer this question.

4. Write down important points from one section of the article. Then, write a nugget summarizing the most important points.

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5. Explain how this article has changed your thinking on this topic.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
A Salmon Cannon

The salmon are swimming upstream. Battling against the current. Struggling through the rapids. They’re migrating from the ocean near Vancouver up the mighty Fraser River. They’re headed there to spawn. But then... they run into a Big Problem.

The circle of life

The Fraser River is a major salmon highway. Millions of salmon migrate upstream each summer and fall.

The fish return to the tributary streams where they were born. They spawn in the gravel. The eggs hatch and the young fish make their way downstream. After spending time at sea, the next generation of salmon returns to spawn.

It’s a cycle that has been repeating itself for thousands of years.

No go

Then, in late 2018, disaster struck. One stretch of the Fraser flows through a narrow canyon. That’s where huge pieces of rock broke off from a 125-metre cliff. They crashed into the river, narrowing the channel. They also formed a five-metre high waterfall. This created a big obstacle for the fish.

The rock slide was on the traditional territory of the Secwepemc Nation. It was on a remote stretch of the river where there were no roads. So fisheries officials didn’t find out about it until June 2019.

A tributary stream is a stream flowing into a larger river or lake.
That’s when alarm bells rang. Even before the rock slide, many Fraser River salmon runs were in trouble. Now they faced the possibility of extinction.

**To the rescue!**

Government fisheries workers joined forces with local First Nations.

They tried to make the channel easier for the fish to get through. They placed big boulders in the current. This created pools of quieter water behind the rocks where fish could rest.

They also scooped up more than 60,000 salmon from below the blockage. They were lifted by helicopter past the obstruction. Unfortunately many of those fish did not survive the trip to the spawning grounds.

All in all, 2019 was a terrible year for the Fraser River salmon runs.

Was there another way to help the fish?

**Whoosh!**

This summer the salmon are in for the surprise of their lives!

Just before they reach the rock slide, they will encounter a ‘fish ladder.’ Five hundred concrete blocks have been placed in the river to form steps. Fish can use this ladder to reach a holding pond just below the rock slide.

Then, they’ll get a boost from a ‘salmon cannon.’ Workers feed the salmon into long rubber hoses. Water is pumped through the hoses to ‘whoosh’ the fish up 160 metres. Once above the rock barrier, the fish are whooshed back into the river.

“We want to see the fish passage completely restored,” says a fisheries worker. But in the meantime, he says, these salmon need a friendly boost.

**Did you know?**

Some Fraser River salmon swim over 1600 kilometres upstream to reach their spawning grounds.
A Salmon Cannon

Comprehension Check

Write the letter of the *best* answer in the space beside each question.

____ 1. Where do salmon spawn?
   a) In the ocean.  
   b) Anywhere they want.  
   c) Where they hatched.  
   d) On Vancouver highways.

____ 2. When do salmon migrate to spawn?
   a) From summer through fall.  
   b) From winter through spring.  
   c) From fall through winter.  
   d) In winter only.

____ 3. Where is the Fraser River?
   a) Alberta.  
   b) British Columbia.  
   c) Manitoba.  
   d) Nunavut.

____ 4. When did a rock slide block part of the Fraser River?
   a) 2017.  
   b) 2018.  
   c) 2019.  
   d) 2020.

____ 5. What is a salmon cannon?
   a) Nets hanging from a helicopter to lift salmon over obstacles.  
   b) Concrete blocks that form steps in the river.  
   c) Long rubber hoses that whoosh fish over obstacles.  
   d) A large piece of artillery used in salmon warfare.
A Salmon Cannon

Language Focus

A **compound word** is formed when two words are joined to form a new word.

*Example*: space + suit = spacesuit

☆ Which word from the group of three can be combined with the word on the left to make a compound word?

*Write this new word in the blank.*

1. moon + (beam, star, orbit) = __________________________

2. milk + (cream, drink, shake) = __________________________

3. key + (turn, board, player) = __________________________

4. sand + (stone, gravel, toys) = __________________________

5. sea + (fish, snack, shore) = __________________________

☆ Now go back and reread the article. List all the compound words that you find:

____________________________________________

____________________________________________

____________________________________________

____________________________________________

____________________________________________
A Salmon Cannon

Lesson Plan

Before Reading:

☐ Write the phrases below on slips of paper. Play a version of Pictionary, where individual students draw their selected phrase on the board, overhead, or piece of chart paper, for classmates to guess:
  - upstream
  - salmon highway
  - rock slide
  - waterfall
  - fish ladder
  - salmon cannon

☐ When the game is over, read the title of the article, the headings, and the introduction aloud. Invite students to predict what the article is about.

☐ Distribute to each student a copy of Listen-Sketch-Draft* (p. 16). Tell them that you are going to read the article aloud in four sections, one section at a time. Direct them to listen and sketch what they visualize or see in their mind’s eye – what they are imagining is happening in the section they are listening to. * adapted from Faye Brownlie.

During Reading:

☐ Read aloud the first section of text. Give students a few minutes to finish sketching. Then, ask them to take turns sharing and talking about their sketches with a partner. When partners are done sharing, have students summarize (or draft) the main idea of the section—what it mostly was about—and take turns sharing their summaries.

☐ Repeat for each section of the article.

After Reading:

☐ Distribute a copy of the article to each student. Invite them to select one section to reread closely. Direct them to go back to their original sketch, and notice what details they included and what was left out. Then, challenge them to create a simple comic strip (5-6 panels) that tells the visual story of their section. There are many comic strip templates available to download, such as:
  https://www.creativetemplate.net/comic-strip-template/
  https://www.teachingideas.co.uk/art/comic-strip-templates

☐ Before students begin drawing, look at several examples of comic strips to elicit their features. Working with one comic strip at a time, analyze with students how the comic-strip creator combined text, quotes, and images to tell a story or event or convey a message. Point out features such as captions, dialogue (thought and speech bubbles), typography, sound effects, and scene perspectives (close up, landscape, mid shot).

☐ If students wish to conduct further research on their topic before creating their comic strip (e.g., life cycle of salmon, the Big Bar landslide, rescue efforts in 2019, new technologies introduced in 2020), direct them to the resources listed in Internet Connections.
A Salmon Cannon

Lesson Plan

☐ Criteria for Assessment: An informative comic strip contains accurate information that is presented in a logical sequence; uses special features to help convey the message; and is creative or unique.

Extensions:

☐ Option 1: Learn more about salmon cannons
Invite students to learn more about Whoosh, the company that designed the salmon cannon, and its products at https://www.whooshh.com/

☐ Option 2: Become a salmon steward
Science World has created a unit ‘Life of a Salmon’ with 10 activities (hands on, interactive) to help students identify each stage of the salmon lifecycle as well as factors that affect salmon survival. Skim through the unit to find suitable activities for your class, at: https://www.scienceworld.ca/resource/life-salmon/

Learn more about Salmonids in the Classroom, sponsored by Fisheries and Oceans Canada. While this requires a 10 month commitment (beginning each September), the website has some excellent teaching resources for studying the biology, habitat, and stewardship of the Pacific salmon. To learn more, go to: http://www.salmonidsintheclassroom.ca/
A Salmon Cannon

Lesson Plan

Internet Connections:

☐ Read more about this news story:

☐ Watch how salmon are helped to migrate past the landslide area:
  https://globalnews.ca/news/6875619/salmon-cannon-landslide-big-bar/

☐ Look at before and after photos of the Big Bar area:
  https://bc.ctvnews.ca/photos-show-big-bar-area-before-and-after-landslide-1.4510958

☐ Learn more about the Big Bar Landslide:
  https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/fish/fish-passage/big-bar-landslide-incident

☐ See how blasting helped clear some debris from the river after the initial landslide:

☐ See how the fish are being ‘helped’ upstream with fish ladders and man-made features:

☐ See an early version of a salmon cannon in action:
  https://www.youtube.com/watch?v=kIC532kady4

☐ Discover more about the life cycle of salmon:
  https://www.youtube.com/watch?v=EqmGSexPaEk
  https://www.psf.ca/learn/species-lifecycle

Note: All URLs are posted as links at www.lesplan.com/en/links
# A Salmon Cannon

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Let’s head for Gjoa Haven. It’s a community in Nunavut. It’s way north, far above the Arctic Circle. Imagine a treeless landscape of rock and tundra. That is probably not where you expect to find a garden growing fresh lettuce and tomatoes.

**Welcome to Naurvik**

The garden is inside two shipping containers. Even during the cold, dark, Arctic winter, there’s light and warmth inside the containers. Solar panels and windmills provide most of the power.

Crops are grown hydroponically. That means they don’t need soil. Instead they grow in a solution of water and nutrients.

The garden is called Naurvik. That means “growing place” in Inuinnaqtun – the Inuit language of the region.

**Northern food**

Naurvik is a research project. Its purpose is to learn how to grow food in remote and harsh environments. Places like Gjoa Haven, for example. Or even on the moon or Mars. That’s why the Canadian Space Agency is one of the project partners.

Government scientists are supporting this project. Local people helped to design and run it. This is a team effort.

“It’s this really neat, magic thing that’s happening,” says the project leader.
The people of Gjoa Haven have traditionally hunted for food. They’ve harvested plants and berries. They’ve never been farmers. So why have they welcomed this greenhouse project?

Food is very expensive in the North. Most of it has to be flown in. By the time it reaches the local store, it’s not fresh.

If northern communities could grow some of their own food, it would cost less. Also, people would eat healthier.

First crop

“I never grew plants before in my life,” says Betty Kogvik. She is one of five technicians working in the greenhouse. She helped grow the first crop of lettuce – in the dead of winter.

“It was so crisp. Really fresh and tasty,” she says. Not at all like the old, tired lettuce in the grocery store.

The lettuce was delivered to local elders. They were delighted. “One elderly lady even danced with joy when she got her lettuce.”

What’s next?

Next up for the garden – a crop of cherry tomatoes. After that, it depends what community elders decide. Some like the idea of blueberries and cloudberries. Others suggest plants used for traditional teas and medicines.

If it is a success, the project could be expanded. It’s easy to get more shipping crates. The project could also spread to other northern communities. Gjoa Haven would help with the training.

“When I first heard of [the project], I thought it would never work up here,” says one Gjoa Haven elder. “Not in this 40 below zero [climate].”

“Now I know anything is possible.”

Would you be interested in growing a garden? Explain.
Growing a Garden Where???

Comprehension Check

Answer the questions below in complete sentences:

1. Describe Arctic winters.

2. How have the people of Gjoa Haven traditionally accessed food?

3. Where is the Naurvik garden located?

4. How do crops grow hydroponically?

5. List suggestions given by the Gjoa Haven community for future crops to grow in the Naurvik garden.
Growing a Garden Where???

Language Focus

Homographs are words that are spelled the same but have different meanings. (They may or may not be pronounced the same.)

Example: bow = a knot tied with loops / to bend over

Directions: Choose five homographs from the list below. For each one, write two sentences to show two possible meanings:

present, tear, bat, bass, lead, project, desert, object, fine, wind, minute, back

Example: He tied a bow in his shoe / The actors each took a bow.

1. a) ____________________________  
   b) ____________________________

2. a) ____________________________  
   b) ____________________________

3. a) ____________________________  
   b) ____________________________

4. a) ____________________________  
   b) ____________________________

5. a) ____________________________  
   b) ____________________________

What examples of homographs can you find in the article?
Growing a Garden Where???

Lesson Plan

Before Reading:

- Draw a large Venn diagram on the front board. Label one side with the name of your community; label the other with Gjoa Haven.
- Read the title of the article, aloud. Using a Think-Pair-Share discussion structure, invite partners to brainstorm and share what it takes to grow a garden (in their community). Record their ideas on strips of paper (1 idea/strip).
- Using appropriate technology, project several images of Gjoa Haven’s landscape:
  - https://i.pinimg.com/originals/83/ee/b8/83eeb81f04e426f80c51a69ff3927f8bc.jpg
  - https://upload.wikimedia.org/wikipedia/commons/c/cb/Taloyoak_01.jpg
- Then, read the short excerpt on the climate of Nunavut at http://resources4rethinking.ca/media/Malas%20Eyes.pdf (scroll down to “Temperature & Permafrost” p. 42)
- Ask pairs to speculate what would it take to grow a garden in Canada’s northern-most territory. Record their ideas on strips of paper.
- As a class, sort and tape the strips onto the appropriate section of the Venn diagram. Ask students to notice similarities and differences between the two communities and to speculate, given the environment in Gjoa Haven, what special accommodations might be needed to grow food.

During Reading:

- As they read the article, encourage students to highlight or underline important information about how gardens are grown in Gjoa Haven.

After Reading:

- Revisit the ideas on the Venn diagram. Put a √ next to the ideas that were confirmed in the article. Set to the side any facts that were not confirmed. Record any new facts about growing food in northern communities onto strips of paper. Add these to the appropriate place on the Venn diagram.
- Distribute to each student, or pairs of students, a copy of What’s important? And, why? (p. 23). Direct students to re-read the article and record five important facts about growing food in Gjoa Haven in the left-column.
- Then, ask them to explain why each fact is important in the right-column. Work through an example together, using the first paragraph as reference:

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<th>Why?</th>
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<td>The landscape (rocks and tundra) in Nunavut makes it hard to grow food</td>
<td>so they have to find other ways of growing food</td>
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</table>
Lesson Plan

- When students have completed the two-column chart, have them draw an overall ‘so what’ conclusion about the impact growing food might have for northern communities in the box at the bottom of the organizer.

- **Criteria for Assessment**: An effective conclusion is plausible (logical, likely to be true given the evidence); supported with specific, relevant details; and insightful (helps the reader understand new/important ideas about a topic).

**Extension:**

- **Option 1: Learn more about hydroponics**
  If students are interested in learning more about hydroponic agriculture, encourage them to watch this short video: [https://www.youtube.com/watch?v=UHpNu4_6uc0](https://www.youtube.com/watch?v=UHpNu4_6uc0) Then, have them summarize their research in a Pros and Cons chart, and respond to this question: What are the advantages and disadvantages of hydroponic agriculture in northern communities?

- **Option 2: Discover more about traditional foods of the Inuit**
  Encourage students to learn more about country food (any food that the land supplies) and traditional hunting practices of the Inuit. Then, as a class, create an illustrated alphabet book summarizing what they learned. (Assign one letter per student/pairs of students.) The following links may be helpful:
  - [http://firstpeoplesofcanada.com/fp_groups/fp_inuit3.html](http://firstpeoplesofcanada.com/fp_groups/fp_inuit3.html)
  - [http://www.learnalberta.ca/content/ssogn/c/inuitLifestyle/index.html](http://www.learnalberta.ca/content/ssogn/c/inuitLifestyle/index.html)
  - (pp. 29-34 talks about berries, wild plant greens, seaweed)

**Internet Connections:**

- Read more about this news story:
  - [https://www.rcinet.ca/eye-on-the-arctic/2019/05/08/nunavut-kugluktuk-food-grow-hydroponic/](https://www.rcinet.ca/eye-on-the-arctic/2019/05/08/nunavut-kugluktuk-food-grow-hydroponic/)

- Learn more the converted shipping containers:

*Note*: All URLs are posted as links at [www.lesplan.com/en/links](http://www.lesplan.com/en/links)
Growing a Garden Where???

What’s important? And why?

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So what?

_In my opinion, being able to grow their own produce will help northern communities..._
Map: Nunavut

Complete this map assignment to help you better understand the context of the article Growing a Garden Where???.

Label the following, then colour:

- Provinces
  - Alberta
  - Saskatchewan
  - Manitoba
  - Ontario
  - Quebec

- Territories
  - Nunavut
  - Northwest Territories

- Islands
  - Devon Island
  - Victoria Island
  - King William Island
  - Ellesmere Island
  - Baffin Island

- Water Bodies
  - Beaufort Sea
  - Arctic Ocean
  - Baffin Bay
  - Hudson Bay

- Capital cities
  - Yellowknife
  - Iqaluit

- Other
  - Greenland (Denmark)
  - Gjoa Haven

Did you know?
The Arctic Circle is an imaginary line of latitude that circles the globe at 66° 32’ North.

Can you draw and label the Arctic Circle on your map? Use an atlas or other reference source to help you, if necessary.

A good map is complete, accurate, and visually appealing.
Congratulations Joshua Kutryk and Jennifer Sidey-Gibbons!

Choosing “the best of the best”

All applicants needed to have at least one university degree (most had two or more). Their degrees were in science, engineering, or medicine. They had to be physically fit and in excellent health.

They were put through rigorous tests. These tests assessed their thinking skills and logic. Their ability to quickly learn new skills. Their character. Judgment. Motivation. Teamwork. Communication skills.

The applicants were thrown into pretend emergency scenarios. Could they think and react under pressure? How resilient were they? Did they show good leadership skills?

The thousands of applicants were reduced to 72. Then to 32. Then to 17.

Then to two.

From farm boy to fighter pilot

Joshua Kutryk grew up on a farm in eastern Alberta. As a kid he was fascinated by space.

At age nine he went for a ride in a small plane.

“When we landed I knew that I wanted to fly.” He also wanted to understand “the science and engineering that made flying possible.”
He earned several university degrees. He became a test pilot with the Canadian Armed Forces.

“It combined two of my favourite things: engineering and high-performance flying.”

His dad used to tell him to always try new things. He thinks that’s good advice.

“I have learned to embrace new, unknown experiences and not to fear them.”

Teacher and inspiration

Jennifer Sidey-Gibbons grew up in Calgary. She, too, likes to figure out how things work. She also loves a challenge.

She has several degrees in mechanical engineering. She became a researcher at one of the world’s top universities. She was also an instructor.

“My favourite part was the interaction I had with students.”

As an astronaut, she’ll continue inspiring young people to pursue their interests in science.

The best advice she ever received? Don’t sweat the small stuff.

“There will be setbacks and difficult times. Stay focussed on a long-term goal. Make sure you don’t get discouraged.”

Off to NASA

All new CSA recruits complete two years of basic astronaut training. They learn everything they need to know to blast off and work in space. They do this training with American astronauts from NASA. They’ve just graduated.

“Jenni is outrageously smart,” said one NASA classmate. “She’s outrageously fun to be around. And she’s just going to be a fantastic crewmate.”

As for Mr. Kutryk? Great technical skills, said his classmates. But one said his special talent was making crewmates feel empowered and listed to.

“I think I trust him with my life.”

As you see it, which adjectives best describe Jennifer Sidey-Gibbons and Joshua Kutryk?
Comprehension Check

Mark the statements T (True) or F (False). If a statement is true, write one fact to support it on the lines below. If a statement is false, write the word or words that make it true on the lines below.

1. Astronauts must have at least three university degrees.

2. Astronauts must be resilient and have good leadership skills.

3. Basic astronaut training takes one year.

4. Jennifer Sidey-Gibbons and Joshua Kutryk are from Alberta.

5. Jennifer Sidey-Gibbons has a degree in medicine.

6. Joshua Kutryk was a teacher before becoming an astronaut.
**Language Focus**

A *contraction* is a shortened form of a word or phrase. Most contractions are formed by replacing some letters with an apostrophe.

Example: *should not* – *shouldn't*

Can you make contractions for the word combinations below?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. it is</td>
<td>__________________________</td>
</tr>
<tr>
<td>2. was not</td>
<td>__________________________</td>
</tr>
<tr>
<td>3. will not</td>
<td>__________________________</td>
</tr>
<tr>
<td>4. should not</td>
<td>__________________________</td>
</tr>
<tr>
<td>5. is not</td>
<td>__________________________</td>
</tr>
<tr>
<td>6. let us</td>
<td>__________________________</td>
</tr>
<tr>
<td>7. he is</td>
<td>__________________________</td>
</tr>
<tr>
<td>8. could not</td>
<td>__________________________</td>
</tr>
<tr>
<td>9. we have</td>
<td>__________________________</td>
</tr>
<tr>
<td>10. can not</td>
<td>__________________________</td>
</tr>
</tbody>
</table>

**Challenge:** How many contractions can you find in the article?
Lesson Plan

Our Newbie Astronauts: Ready to Lift Off!

Before Reading:

☐ Students will use the organizer K-W-L + (p. 33) in an individual mini-inquiry in the After Reading activity. Use the template to create 4 class charts: What We Know/Think We Know; What We Wonder; What We Learned; What We Wonder Now. Post these.

☐ Write or post the following inquiry question on the front board: What does it take to become an astronaut?

☐ Facilitate a Think-Pair-Share discussion, asking pairs of students to brainstorm what they know or think they know about what it takes to become an astronaut. Record their ideas on the first chart. Ask responders to explain how they learned those things (e.g., read it, saw a video, watched an interview, background knowledge). Record their sources as well.

☐ Next, ask the same pairs to generate questions they have about becoming an astronaut. Record their questions on the second chart.

☐ Using appropriate technology, view the following video launched by the Canadian Space Agency (CSA) at the beginning of their latest recruitment campaign which started in 2016: https://www.asc-csa.gc.ca/eng/search/video/watch.asp?v=1_pfuugodj

☐ Revisit the charts. Put a √ next to the requirements confirmed in the video. Add a ! next to questions answered in the video.

☐ Then, invite several students to share what they learned about becoming an astronaut from watching the video. Add these facts to the third chart.

☐ Finally, ask students what they still wonder as a result of watching and discussing the video. Record their questions on the fourth chart.

☐ Read the title of the article aloud and ask students to make predictions: what do they think the article is about?

During Reading:

☐ As they read the article, encourage students to mark the text in the following ways:
  • put a √ mark next to facts that appeared on the Know/Think We Know chart;
  • highlight or underline new information about what it takes to be an astronaut;
  • put a ! next to answers for the questions listed on the What We Wonder chart.

After Reading:

☐ Revisit all four charts and repeat the pre-reading process of corroborating information and questions and recording new facts and questions.

☐ Distribute to each student a copy of the organizer K-W-L+. Challenge them to choose one of the new questions (or come up with their own) as the focus for an individual mini-inquiry. Direct students to follow the same steps, as they research answers to their questions.
Alternatively, have students complete a Q & A foldable (with 3 sheets of different coloured paper), writing the inquiry question on the top page: *What does it take to become an astronaut?* Then, writing and illustrating the top 5 answers on the remaining pages. To learn how to make a foldable, watch the short video ‘How to make a foldable’ at https://www.youtube.com/watch?v=R7UZ6lV8b_Y [1:11].

**Criteria for Assessment:** An effective inquiry question is open-ended (has many answers); not easy to answer (you have to do some research); and related to the topic.

**Extension:**

- **Option 1: Become a Junior Astronaut**
  Invite students to learn more about the recruitment campaign:
  Afterwards, students may enjoy participating in the CSA’s Junior Astronaut Program. The CSA has put together a collection of activities in three streams—Science and Technology, Teamwork and Communication, and Fitness and Nutrition. The activities reflect the kind of skills and knowledge that are required from astronauts. To learn more about the program and see the activities, check out this link: https://asc-csa.gc.ca/eng/resources-young/junior-astronauts/application/activities

- **Option 2: Test Your Astronaut Survival Skills**
  Challenge small teams of students to complete the NASA exercise ‘Survival on the Moon’. In this simulation, teams must rank order 15 items needed for survival on the moon after a crash landing. Download the instructions, answers, and scoring guide, at:
  https://www.humber.ca/centrefortheteachingandlearning/assets/files/pdfs/MoonExercise.pdf
Lesson Plan

Internet Connections:

- Read more about this news story:
  https://www.ctvnews.ca/sci-tech/canada-s-newest-astronauts-finish-basic-training-at-nasa-in-
  texas-1.4762814?cache=yes%3FclipId%3D375756%3FautoPlay%3Dtrue

- Visit the Canadian Space Agency’s website:
  https://www.asc-csa.gc.ca/eng/default.asp

- Meet Canada’s newest astronauts:
  https://www.youtube.com/watch?v=yZ3ZqYWj_Tw [5:40]

- Find out more about Jennifer Sidney-Gibbons and Joshua Kutryk:
  https://www.asc-csa.gc.ca/eng/astronauts/how-to-become-an-astronaut/2017-recruitment-
  campaign.asp

- Watch this live-streamed video with Jenni Sidey-Gibbons talking about the future of space
  exploration: https://www.youtube.com/watch?v=L41BYU3Cyoo [29:47]

Note: All URLs are posted as links at www.lesplan.com/en/links
Think Before You Read: K-W-L +

What I already **know** or **think I know**...

What I **wonder**...

How I learned these things:

3-5 things I **learned** after reading (sketch or make notes):

A related website I found on the topic

**Title:**

**Author:**

**URL:**
The Canadian Space Agency (CSA) is responsible for Canada’s space program.

The headquarters of the CSA is located at John H. Chapman Space Centre in Saint-Hubert, Quebec.

The Canadian Space Agency was created in 1989. It works closely with other space agencies on many projects.

One aim of the CSA is to make sure that all Canadians learn and benefit from products and services that space research helps to make possible.

Over the years, there have been three recruiting campaigns for astronauts for the CSA. In all, twelve astronauts belong or have belonged to the agency.

Each year the federal government spends about $350 million on the CSA.

Another aim is to contribute to space exploration.
The Canadian Space Agency

Comprehension Check

Write the letter of the best answer in the space beside each question.

_____ 1. What does CSA stand for?
   a) Canada's Solar Advent.  
   b) Canada Space Association.  
   c) Canadian Space Agency.  
   d) None of the above.

_____ 2. Where is the CSA headquarters located?
   a) In Ontario.  
   b) In Chapman.  
   c) In Quebec.  
   d) None of the above.

_____ 3. What does the CSA aim to do?
   a) Ensure that Canadians benefit from space research.  
   b) Contribute to space exploration.  
   c) Both a and b.  
   d) None of the above.

_____ 4. How many times has the CSA hired new astronauts?
   a) Once.  
   b) Twice.  
   c) Three times.  
   d) None of the above.

_____ 5. In all, how many astronauts are or have been part of the CSA?
   a) Six.  
   b) Nine.  
   c) Fourteen.  
   d) None of the above.

Look closely at the comic. What are some products and services that space research has made possible? Which of these have you benefited from?
A Salmon Cannon
p. 11: Comprehension Check
1. c; 2. a; 3. b; 4. b; 5. c.

p. 12: Language Focus
1. moonbeam; 2. milkshake; 3. keyboard; 4. sandstone; 5. seashore.
Example of compound words in the article: upstream; highway; downstream; waterfall.

p. 16: Listen-Sketch-Draft
Answers will vary.

Growing a Garden Where???
p. 19: Comprehension Check
1. Describe Arctic winters.
Arctic winters are cold and dark with temperatures that can go down to 40 below zero.
2. How have the people of Gjoa Haven traditionally accessed food? The people of Gjoa have traditionally hunted for food and they have harvested plants and berries.
3. Where is the Naurvik garden located? The Naurvik garden is inside two shipping containers in Gjoa Haven.
5. List suggestions given by the Gjoa Haven community for future crops to grow in the Naurvik garden.
Some like the idea of growing blueberries and cloudberries. Others suggest plants used for traditional teas and medicines. (It will depend on what the elders decide.)

p. 20: Language Focus
Examples of homophones in the article: head; rock; power; place; project; run; neat; store; spread.

p. 23: What’s important? And why?
Answers will vary but may include some the following:
The garden is inside 2 shipping containers so the plants are protected from the harsh climate; solar panels and windmills provide most of the power to the shipping containers so they can be heated and lit 24-7, 12 months of the year with little expense; crops are grown hydroponically so they can grow without soil year round; Naurvik is a research project, so scientists & the CSA can learn how to grow food in other harsh, remote environments; the local people helped design and run the project so they can learn new skills but also share their knowledge of traditional food & harvesting practices with others; this project could help other northern communities grow their own food so they can have access to food that is cheaper & healthier than food flown in; the produce grown in the greenhouse is fresh and tasty so the locals can eat local produce and taste the ‘freshness’; the community elders will help decide what other crops will be planted so traditional knowledge can be passed on; if it’s successful the project could be expanded so other communities could grow their own food; the people of Gjoa Haven would help with training so jobs are created and knowledge is shared.

Our Newbie Astronauts: Ready to Lift Off!
p. 28: Comprehension Check

p. 29: Language Focus
1. it’s; 2. wasn’t; 3. won’t; 4. shouldn’t; 5. isn’t; 6. let’s; 7. he’s; 8. couldn’t; 9. we’ve; 10. can’t.
Examples of contractions in the article: that’s; she’ll; they’ve; she’s.

p. 33: K-W-L +
Answers will vary but may include some the following:
To be an astronaut, you need: at least 1 university degree in science, engineering or medicine; be physically fit; be in excellent health; pass rigorous tests; be a good logical, critical thinker; learn new skills quickly; be of good character; make good judgments; be motivated; have good teamwork & communication skills; be able to think and react well under pressure; be resilient; show good leadership skills

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- create a PDF document and use Adobe Reader’s ‘Read Out Loud Mode’
- save paper and copying costs and help protect the environment
- promote and encourage students’ computer skills

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1) Select the data you wish to Copy and then Paste it into any word processing program. Use Select All to copy the entire document.

2) Import the entire Word file into LibreOffice (or another similar program) and then save as a new file

3) To remove the password from a protected Word file, use Save As to make a new copy of the file. You can then change the Security settings and remove the password.

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- Article: Goodbye Kawhi (and Thanks)
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