



IGNITE MY FUTURE

LESSON TITLE

'Free Phone' or bring your own?

Guiding Question: Is Life Fair?

SUBJECTS

Social Studies
English/Language Arts
Math

COMPUTATIONAL THINKING PRACTICE

Constructing Explanations
and Designing Solutions

COMPUTATIONAL THINKING STRATEGY

Finding Patterns

MATERIALS

[Phone Companies in Canada](#)
student handout

[Comparing Phone Plans](#) student
capture sheet

[Presentation Outline](#) student
capture sheet

[Presentation Feedback Form](#)

Computers with Internet access

Ignite Curiosity

- Do you have a smartphone?
- Do you have a phone or data plan?
- Would it be cheaper to buy a phone and buy a plan separately or to get a 'free phone' by committing to a contract with a cell phone provider?

In this lesson, students will think like computers to determine the wisest way to get a new phone and a new plan. In **THINK**, students will examine current policies of cell phone companies ('free phone' vs bring your own phone) in Canada's telecom market. In **SOLVE**, students will use computational thinking to compare the 'free phone' vs. bring your own phone approaches across different companies they've learned about in Think. In **CREATE**, students will create a presentation for their family to convince them to fund their chosen plan. In **CONNECT**, students will gain an understanding of how financial literacy impacts their lives and the lives of those around them.

Students will be able to:

- **Understand** patterns and common features related to various phone plans
- **Create** a presentation for their family and a criteria-based chart to compare plans
- **Apply** the patterns in data they have identified to support their pitch



Students will explore the major cell phone providers in Canada and get to know their plans.

1 Read the following scenario to students:

Imagine you are the only person in your class without a phone. Your family told you that if you do some research and find a reasonably priced option, they would consider funding part or all of your purchase. You have saved some money but that is not enough to buy a phone and/or pay for a plan. How will you convince your family to support you?

2 Lead students to consider the importance of research before making a purchase:

- What are the advantages of looking at different options before spending money?
- What could happen if people just bought the first thing they saw?
- Why do some people rely on reviews from family, friends, and strangers to make purchases?
- Are all phone plans the same? Are there different types?

3 Distribute the [Phone Companies in Canada](#) student handout. Have students complete the handout by noting the various telecom providers and whether they allow their customers to sign up for a plan and/or bring their own phones. Students can work in pairs and share their findings with the class. Consider using a Google Doc and assigning one provider per student.



Students will use the computational thinking strategy of finding patterns to identify which company and which plan works for them.

- 1 Ask** students to consider the advantages of bringing your own phone and signing up for a plan versus signing a multi-year contract and getting a 'free phone'. While 'free phone' seems cool, you are stuck in the contract and cannot leave the plan without paying a penalty. On the other hand, if you bring your own phone, you can leave the provider at any time if the service is unsatisfactory or if you find a better deal.

Distribute the [Comparing Phone Plans](#) student capture sheet. Assign each pair of students with one of the providers based on the work done in [Think](#). Students should use the criteria of unlimited data to ensure they compare plans as equally as possible.

Complete the [Comparing Phone Plans](#) student capture sheet sections to find out if it is cheaper to buy a phone separately or together with a plan. When pairs finish, they can share their results with their teachers and classmates and compare the best and worst deals.

Please note that phone plans change frequently and this will serve as a snapshot in time.

Also note that it would be best if everyone picks the **same phone to compare** as this will provide an accurate snapshot of the true values we are trying to calculate.

The idea is to get a clear picture of how cell phone companies compare (a difficult and time-consuming task for an individual to do on their own).

Extension: Once students complete and share their research, ask them to populate the information on a shared online or paper document that you created beforehand.

- 2 Ask each group to share their findings.** As a class, ask students to determine which phone plan would be best for students who want a 'free phone' vs. bringing your own phone.
- 3 Students will share** their findings and reach a group consensus to determine which phone plan is better in each category. Lead students in discussing other 'wise' ways to save on their monthly phone bill (e.g., buy a used phone or ask for an older phone from a family member, have limited data, talk and text, etc.).



Students will create a persuasive presentation for their families to encourage them to support their chosen phone plans.

- 1 Student pairs should decide** which option they feel they could be more persuasive about—'free phone' or bringing one's own phone.
- 2 Students can use** the [Presentation Outline](#) student capture sheet to structure their persuasive pitch. They may use any form of media (paper and pencil, PowerPoint, Flipgrid, etc.) to share their information

Extension:

Student pairs will present to their classmates, family, and friends to try to persuade them to support their specific plan of choice. Audience members will provide feedback to the presenters using the [Presentation Feedback Form](#).



Select one of the strategies listed below to help students answer these questions:

- How do this problem and solution connect to me?
- How do this problem and solution connect to real-world careers?
- How do this problem and solution connect to our world?

- 1 Write** the three questions on PowerPoint or flip chart slides and invite students to share out responses.
- 2 Display** pieces of chart paper around the room, each with one question written on it. Ask students to write down their ideas related to the questions on each sheet.
- 3 Assign** one of the questions to three different student groups to brainstorm or research, and then share out responses.
- 4 Invite** students to write down responses to each question on a sticky note, and collect them to create an affinity diagram of ideas.

How does this connect to students?

In the world of consumerism, purchasing something means you are casting a vote for a product. Students need to understand that the process of 'voting with their money' is important. Just as they (or someone else) had to work hard to make money, he or she should invest the time to consider all the options before making a purchase.

How does this connect to careers?

Customer Service Representatives provide support to customers who are purchasing new products (sales and troubleshooting).

Marketers use psychology and human behaviour to persuade people to buy products.

Sales Representatives specialize in selling goods and services to customers.

Behavioural Psychologists are scientists that study the motives behind different human behaviours and choices.

How does this connect to our world?

A strong understanding of how to compare the various choices you have using criteria-based research is an important skill in making wise purchases.

It helps you gather facts rather than relying on word of mouth, convenience or the marketing strategies that companies put out.

TATA Consultancy Services recently launched an application to help teens develop 21st century skills such as financial literacy. To learn more [click here](#).

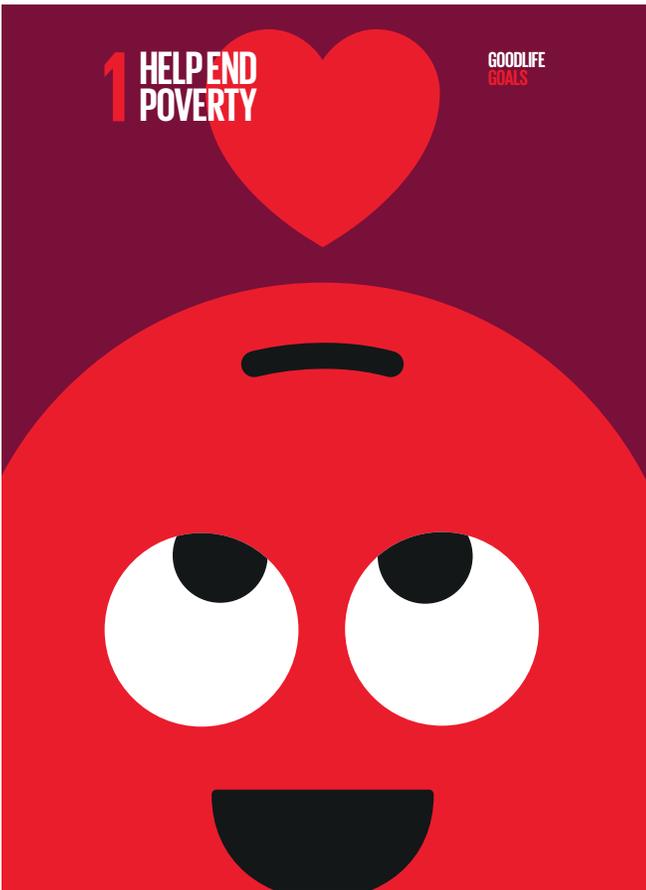
Curriculum Connections

UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS



“For the goals to be reached, everyone needs to do their part: governments, the private sector, civil society and **people like you.**”
—The United Nations

“The Sustainable Development Goals are the blueprint for a better future. And together we can reach them. By following the Good Life Goals, we can all help make tomorrow better than today. Let’s do this! #GoodLifeGoals”



HELP END POVERTY
Actions

1

- | | |
|--|---|
| <p>1
Learn the causes of poverty at home and abroad</p> | <p>4
Save, borrow and invest responsibly</p> |
| <p>2
Share and donate what you can</p> | <p>5
Demand decent wages and opportunities for all</p> |
| <p>3
Buy from companies that pay people fairly</p> | |



End poverty in all its forms everywhere.

SUSTAINABLE DEVELOPMENT GOALS

Source:

[The Good Life Goals by Futerra Sustainability Communications Ltd and 10-Year Framework of Programmes on Sustainable Lifestyles and Education Programme](#) is licenced under CC BY-ND 4.0.

Find more easy-to-implement resources to integrate computational thinking practices into your classroom by visiting [ignitefutureinschool.ca](https://www.ignitefutureinschool.ca)

Global Competencies

CMEC (Council of Ministers of Education, Canada) Pan-Canadian Global Competencies Descriptions

Highlighted sections apply to this lesson

Global Competency	Definition	Student Descriptors
Collaboration	Collaboration involves the interplay of the cognitive (including thinking and reasoning), interpersonal, and intrapersonal competencies necessary to participate effectively and ethically in teams. Ever-increasing versatility and depth of skill are applied across diverse situations, roles, groups, and perspectives in order to co-construct knowledge, meaning, and content, and learn from, and with, others in physical and virtual environments.	<p>Students participate in teams by establishing positive and respectful relationships, developing trust and acting co-operatively and with integrity.</p> <p>Students learn from and contribute to the learning of others by co-constructing knowledge, meaning, and content.</p> <p>Students assume various roles on the team, respect a diversity of perspectives, and address disagreements and manage conflict in a sensitive and constructive manner.</p> <p>Students network with a variety of communities/groups and use an array of technology appropriately to work with others.</p>
Communication	Communication involves receiving and expressing meaning (e.g., reading and writing, viewing and creating, listening and speaking) in different contexts and with different audiences and purposes. Effective communication increasingly involves understanding both local and global perspectives, societal and cultural contexts, and adapting and changing using a variety of media appropriately, responsibly, safely, and with regard to one's digital footprint.	<p>Students communicate effectively in different contexts in oral and written form in French and/or English through a variety of media.</p> <p>Students communicate using the appropriate digital tools and create a positive digital footprint.</p> <p>Students ask effective questions to acquire knowledge, listen to understand all points of view, voice their own opinions, and advocate for ideas.</p> <p>Students gain knowledge about a variety of languages and understand the cultural importance of language.</p>

Global Competencies cont.

Highlighted sections apply to this lesson

Global Competency	Definition	Student Descriptors
Global Citizenship and Sustainability	Global citizenship and sustainability involve reflecting on diverse worldviews and perspectives and understanding and addressing ecological, social, and economic issues that are crucial to living in a contemporary, connected, interdependent, and sustainable world. It also includes the acquisition of knowledge, motivation, dispositions, and skills required for an ethos of engaged citizenship, with an appreciation for the diversity of people, perspectives, and the ability to envision and work toward a better and more sustainable future for all.	<p>Students understand the ecological, economic, and social forces, their interconnectedness, and how they affect individuals, societies, and countries.</p> <p>Students take actions and responsible decisions that support quality of life for all, now and in the future.</p> <p>Students recognize discrimination and promote principles of equity, human rights, and democratic participation.</p> <p>Students understand Indigenous traditions and knowledge and its place in Canada, learn from and with diverse people, develop cross-cultural understanding, and understand the forces that affect individuals, societies, and nations.</p> <p>Students engage in local, national, and global initiatives to make a positive difference.</p> <p>Students contribute to society and to the culture of local, national, global, and virtual communities in a responsible, inclusive, accountable, sustainable, and ethical manner.</p> <p>Students as citizens participate in networks in a safe and socially responsible manner.</p>

Global Competencies cont.

Highlighted sections apply to this lesson

Global Competency	Definition	Student Descriptors
Critical Thinking and Problem Solving	Critical thinking and problem solving involve addressing complex issues and problems by acquiring, processing, analysing, and interpreting information to make informed judgments and decisions. The capacity to engage in cognitive processes to understand and resolve problems includes the willingness to achieve one's potential as a constructive and reflective citizen. Learning is deepened when situated in meaningful, real-world, authentic experiences.	<p>Students will solve meaningful, real-life, complex problems by taking concrete steps to address issues and design and manage projects.</p> <p>Students will engage in an inquiry process to solve problems as well as acquire, process, interpret, synthesize, and critically analyse information to make informed decisions (i.e., critical and digital literacy).</p> <p>Students will see patterns, make connections, and transfer what they have learned from one situation to another, including in real world applications.</p> <p>Students will construct, relate, and apply knowledge to all domains of life such as school, home, work, friends, and community.</p> <p>Students will analyze the functions and interconnections of social, economic, and ecological systems.</p>
Innovation, Creativity and Entrepreneurship	Innovation, creativity, and entrepreneurship involve the ability to turn ideas into action to meet the needs of a community. The capacity to enhance concepts, ideas, or products to contribute new-to- the-world solutions to complex economic, social, and environmental problems involves leadership, taking risks, independent/unconventional thinking and experimenting with new strategies, techniques, or perspectives, through inquiry research. Entrepreneurial mindsets and skills involve a focus on building and scaling an idea sustainably.	<p>Students formulate and express insightful questions and opinions to generate novel ideas.</p> <p>Students contribute solutions to complex economic, social, and environmental problems or to meet a need in a community in a number of ways including; enhancing concepts, ideas, or products through a creative process, taking risks in their thinking and creating, making discoveries through inquiry research, and by hypothesizing and experimenting with new strategies or techniques.</p> <p>Students demonstrate leadership, initiative, imagination, creativity, spontaneity, and ingenuity in a range of creative processes and motivate others with an ethical entrepreneurial spirit.</p>

Global Competencies cont.

Highlighted sections apply to this lesson

Global Competency	Definition	Student Descriptors
<p>Learning to learn and to be self-directed and self-aware</p>	<p>Learning to learn and to be self-directed and self-aware, means: becoming aware and demonstrating agency in one's process of learning, including the development of dispositions that support motivation, perseverance, resilience, and self-regulation. Belief in one's ability to learn (growth mindset), combined with strategies for planning, monitoring and reflecting on one's past, present, and future goals, potential actions and strategies, and results. Self-reflection and thinking about thinking (metacognition) promote lifelong learning, adaptive capacity, well-being, and transfer of learning in an ever-changing world.</p>	<p>Students learn the process of learning (metacognition) (e.g., independence, goal-setting, motivation) and believe in their ability to learn and grow (growth mindset).</p> <p>Students self-regulate in order to become lifelong learners and reflect on their thinking, experience, values, and critical feedback to enhance their learning. They also monitor the progress of their own learning.</p> <p>Students develop their identity in the Canadian context (e.g., origin and diversity) and consider their connection to the environment. They cultivate emotional intelligence to understand themselves and others. They take the past into account to understand the present and approach the future.</p> <p>Students develop personal, educational, and career goals and persevere to overcome challenges to reach these goals. They adapt to change and show resilience to adversity.</p> <p>Students manage various aspects of their lives: physical, emotional (relationships, self-awareness), spiritual, and mental well-being.</p>

Phone Companies in Canada Student Handout

Phone Company Name	Offers contracts with 'free phone' (Yes/No)	Offers bring your own (Yes/No)

Comparing Phone Plans Student Capture Sheet

Complete the following sections in order to find out if it is cheaper to buy a phone separately or together with a plan. When you finish, share the data with your teacher and classmates and compare the best and worst deals.

Please note that phone plans change frequently and this will serve as a snapshot in time.

Also note that it would be best if everyone picks the **same phone to compare** as this will provide an accurate snapshot of the true values we are trying to calculate.

Phone Company:

Part A

Bring your own unlimited Data plan cost (per month): _____

'Free phone' (contract) unlimited Data Plan cost (per month): _____

What is the difference between the prices?: _____

_____ - _____ = _____
 'Free Phone' Contract price (per month) Bring your own phone price (per month) Difference

Part B

Which 'free phone' is being offered as part of the contract? (If more than one option, pick one)

What is the market value of the phone (i.e., if you were to buy it online/in-store brand new)?

Comparing Phone Plans Student Capture Sheet

Part C

How long is the 'free phone' contract in months? (e.g., 2 years = 24 months)

Part D

Take the difference from Part A and multiply by the number of months of the contract from Part C.

$$\frac{\text{Difference}}{\text{Number of months in the contract}} \times \text{Number of months in the contract} = \text{Cost of the phone during the contract}$$

Part E

Take the cost of the phone during the contract (Part D) and subtract that from the market cost of the phone (Part B).

$$\text{Market value of the phone} - \text{Cost of the phone during the contract} = \text{Difference in price}$$

Did you get a - or + number for the difference in the price above? What does each mean?

For your specific phone provider, is it wiser to buy your own phone and buy a plan separately or sign a contract and get a 'free phone'?

How could you get a phone plan with unlimited data for a lower price?

How can you buy a cellphone at a cheaper price?

Presentation Outline Student Capture Sheet

Hook: Start with an unexpected introduction to hook the audience (e.g., a question, a joke, a personal story, a quote, a dance routine, etc.)

Share the question you are answering and give some background on the topic.

Share the details of your findings (pros and cons of each option). Use your research to support your points. Make sure to cite your sources.

List reasons why your choice would be the best and other options are not as good.

Conclude by restating your point and asking for support to get your desired phone plan.

Presentation Feedback Form

Share feedback with the presenters by answering the four prompts below.

Content—Did the speaker(s) state their points and support them with research?

Speaking—Was the speaker(s) easy to understand?

Persuasive—Did you feel that the speaker(s) presented the best option for you?

Engaging—Did you find the presentation interesting and wanted to hear more?