

Chaperone Guide



For chaperones of visitors ages 12 to 15 years

The goal of this guide is to support you in deepening student's experiences during your visit to the Canada Science and Technology Museum.

*Reminder: Children under 12 must be accompanied by an adult at all times.

Tips for Chaperones

- We appreciate that chaperones play an essential role in ensuring that young visitors have a positive experience.
- Remember that it's not special knowledge that makes a great chaperone, it's just a willingness to get involved!
- Please keep your group together during your museum visit and remain with them at all times.
- Ensure everyone behaves in a safe manner and respects other visitors. This means no running or yelling.
- Try to make your visit unique by sharing stories or asking your own open-ended questions.
- Feel free to share your own thoughts and opinions on the concepts that you encounter in the exhibits.
- Don't forget that the museum guides are on hand to help! Encourage your party to ask them any specific questions they may have.
- Help the group find answers to their own questions by looking at the exhibits together and reading the panels with them.

Using this guide

- Remember: Our suggested questions are meant to encourage young visitors to reflect on and discuss what they are experiencing, rather than to test their knowledge.
- As you explore the museum:
 - Invite them to notice their surroundings.
 - Invite them to ask questions and use their imagination.
 - Encourage them to read directions and other posted information.
- Use the questions below to open up a conversation and get your party thinking. Make sure they know that there are no right or wrong answers!

What do you see/hear/feel?
What do you think this does?

What does this make you wonder?
Does this remind you of something you use in your daily life?

What do you think this means? How do you think this works? Can you read this to me?



Exhibit: Artifact Alley

<i>Brand Canada</i>	If you had to pick something here as most representative of Canada, what would you choose and why?
<i>Science Fiction</i>	When in space, astronauts eat dried food. If you were in space, what food would you like to eat?
<i>Tools</i>	How do you think these tools work? What do they do? Can you think of anything else that works in the same way?

If you had to pick something here as most representative of Canada, what would you choose and why?

Exhibit: Into the Great Outdoors

<p><i>Adapting Adventure</i></p>	<p><i>Note to chaperones: This section addresses accessibility for people with disabilities. Here are a few things to keep in mind when discussing them with your group:</i></p> <ul style="list-style-type: none"> • <i>Every disability looks and feels differently.</i> • <i>Not every person with a disability is elderly and not every elderly person has a disability.</i> • <i>Disabilities or impairments affect different parts of the body (for example, the brain, the eyes, the ears, the arms, the legs, etc.).</i> • <i>The inventions featured here allow for more freedom in the same way that crutches, every-day wheelchairs, white canes, and other assistive devices do.</i> • <i>Be mindful of the vocabulary that you use. For example, a person is not confined to a wheelchair, rather, their wheelchair is a tool that aids their mobility.</i> • <i>If your group includes someone with a disability, don't put them on the spot but, instead, give them the space to share their perspective should they do choose to speak up.</i> <p>What are those inventions? How are they different from conventional sports equipment?</p> <p>How do people use these devices to help them explore the outdoors?</p> <p>Think about your favourite sport. What kind of obstacles might people with different disabilities encounter when playing this sport? How could it be made more accessible to people with disabilities?</p> <p>What challenges might people with blindness or low vision experience when enjoying the great outdoors? What could be done to make the outdoors more accessible for them?</p> <p>What challenges might wheelchair users experience when enjoying the great outdoors? What could be done to make the outdoors more accessible for them?</p>
<p><i>Freedom on Two Wheels</i></p>	<p>What do you notice most about the evolution of the wheels on these bicycles, from the oldest to the newest one?</p> <p>How do you think bike riding impacts our community? How does it affect our health?</p>
<p><i>Pathways to Adventure</i></p>	<p>What vehicles do you use to go on vacation? In the past, people couldn't always afford to go on vacation. What factors do you think have changed to allow people to vacation more? What barriers might still exist for some?</p>

Exhibit: Steam

Locomotives

Find the CN 6400 locomotive. When this locomotive was built in 1936, people said its sleek design was very “modern.” What features would you keep or change if you were to design a modern-looking locomotive today?

How do you think the steam locomotives work?

Why do you think there are different models of trains? Which is your favourite locomotive?

How do these trains compare to modern light rail trains, like Ottawa’s O-Train?

Exhibit: Sound by Design

How do you listen to music? What kind of music do you like?

Seeing Sound

Find the telephone display. All of these telephones have been created and used in different time periods. If you had to pick one to use at home, which one would it be?

The telephone in the middle is a copy of the first telephone invented. What do you think about using part of a human ear in technology?

Soundscape Design

While some people decorate a room to make it look a certain way, other people change their space to make it sound a certain way. For example, they might close a window to block out the sound of cars. Think about your bedroom. Do you do anything special to make your room sound a certain way?

Making Silence

Go inside the quiet cube. Does it feel different in here? How do your ears feel?

What happens if you clap in here? Why can’t you hear an echo?

How could a room like this be useful?

Design Icons

What do you notice about the various music players in this gallery? How have they changed over time?

How do you use music? What does it help you with? Does it relax you? Get you excited? Keep you focused? How do you think the world would be today if we couldn’t record our music?

Build a Song Spin Table

What difference does turning the record in one direction versus the other make?

Electronic Instruments

Why would people want to make music with machines? Do you think it’s easier or harder to make music or play music this way?

Try to play the theremin. What do those sounds make you think of?

Can you play a recognizable song on the theremin?

Find the sakbut interactive. This is a replica of the first electronic synthesizer. Do you think you can play more than one key at a time? Can you play any songs?

Exhibit: From Earth to Us

How do we impact the planet in positive and negative ways? How can we increase our positive impacts and decrease our negative impacts?

<i>Steel</i>	<p><i>Find the deconstructed Smart Car.</i> Which parts of this car can you identify?</p> <p>Ninety percent of this car is recyclable. Which parts do you think are not recyclable?</p>
<i>Mining</i>	<p>How does mining affect us? What potential impacts might it have on health, the environment, and the economy?</p>
<i>Fertilizer</i>	<p>What's your favourite food? Do you like it because of its taste? What gives food its flavour? Can you think of a spice your family uses in the kitchen? Do you think most spices come from nearby or from far away?</p> <p>What do you think food security means? Why is it important? Are there parts of the world where food security is more of a challenge? What do you think we can do about this issue as individuals/families/schools/communities/cities/a country/the world?</p>
<i>Energy</i>	<p>Which household item uses the most energy? The least? Why do you think that?</p> <p>Do you think you use a lot of energy at home? How could you use less? Why might it be important for us to use less?</p>
<i>Changing Climate, Changing World</i>	<p><i>Go inside the glacier alcove to see the Voices of Climate Change video.</i> How do you think the person telling the story feels? Why? Do you think we can do anything about climate change? As individuals? As families? As a school?</p>
<i>Nuclear Fusion</i>	<p><i>Try activating the tokamak.</i> Did you know that nuclear fusion reactors like this one can get hotter than the sun itself when they're running? Why do you think that happens?</p>
<i>Materials</i>	<p><i>Find the Dollhouse Teardown display.</i> Can you identify 10 toys/characters/pop culture references that you see inside the dollhouse?</p> <p><i>Find the Want/Need interactive.</i> What are your criteria for a "need"? Do you need the item for survival? For happiness? For health?</p>
<i>The Periodic Table</i>	<p>Everything that you have ever seen on Earth is made up of combinations of the different elements on the periodic table. How many things can you make with this app using the elements?</p>

Exhibit: Medical Sensations

<i>Touch</i>	<i>Try out the Robotic Surgery challenge.</i> What did you discover about robotic surgery? Was it difficult? Why would doctors chose this type of surgery over traditional surgery?
<i>The Five Senses</i>	<i>Find the medical instruments display.</i> As our understanding of medicine and science grows, so does our range of tools and the ways in which we use them. What do you think of these instruments? Do any of them resemble something you've seen a doctor or nurse use before?
<i>Sound</i>	<i>Find the stethoscope display.</i> Doctors and nurses use these to listen to a patient's heart. Do you know where else on your body you can feel your pulse/heartbeat? <i>Find the 3D printed stethoscope in the display.</i> You can plug this stethoscope into a smartphone to record your vital signs and then send them to a doctor, without having to visit them in person. Would you prefer to have an in-person appointment or to try using the application? Why?
<i>Crazy Kitchen +</i>	The Crazy Kitchen is just like a regular kitchen, but the entire structure is tilted at an angle. Some people become dizzy in the Crazy Kitchen because the brain is receiving two different signals: one from the inner ear and one from the eyes. One signal says the room is level and the other says it's slanted. How do you feel in the Crazy Kitchen? Can you think of times when your brain has struggled with mixed signals like this?
<i>Sight</i>	<i>Find the imaging technologies display.</i> These machines can show us what's happening inside people's bodies. Why would we want to see such things? How are these four machines different? How are they similar?

Exhibit: Hidden Worlds

<i>Deep Sea</i>	The Mariana Trench is the deepest part of the ocean, and most of the ocean has yet to be discovered. What do you think we will find when we learn more about the ocean?
<i>Ocean Garbage</i>	<i>Find the Aqua Mess Ocean Garbage display.</i> All of this garbage was found in the ocean or on a beach. Can you think of actions we can take at home or at school to help keep plastics out of our oceans?
<i>One Sky, Many Astronomies</i>	Listen to some Indigenous astronomy stories. What do these legends tell us about the world and the history of the people who created the stories?
<i>Microscopes</i>	All of these tools are used to look at things that are incredibly small. If you could magnify <i>anything</i> , what would you want to see up close? Look carefully at the collection of microscope slides. What's the strangest thing you can find on a slide? Why do you think scientists might have wanted to look at this through a microscope? What's the smallest animal you've ever seen?

Exhibit: Wearable Tech

What sort of technology do you wear every day? How does it make your day easier? *Don't forget things like glasses and shoes, too.* What technology would you hope to wear someday?

<i>Body Shop</i>	<i>Find the Alleles Prosthetic Covers display.</i> These covers are used to cover prosthetic legs while complementing the wearer's personal taste and individual style. How would you design yours? What colours/pictures would you use?
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Exhibit: Technology in Our Lives

<i>Heart of the Home</i>	Look at how the size of the freezer has changed over time. Think about how much food you store in your freezer: how much of it is prepackaged food? What are the advantages and disadvantages of prepackaged food versus fresh food? What do think the refrigerators of the future will look like? How will they be different from the ones from the past?
<i>Tiny House</i>	Why do you think people might choose to live in a tiny house? Would you ever consider living in a tiny house? Why? Why not? How would you set it up? Is this space bigger or smaller than where you live? Have you ever seen a composting toilet? Where do you think a composting toilet would be most useful? Can you imagine having one in your home?