

# Chaperone Guide



## For chaperones of visitors ages 8 to 12 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>Winter</i>	<p>Which do you think would be more comfortable to ride in: the snowmobile or the sleigh? Why do you think that?</p> <p>Do you think the clip-on feature for ice skates is something we should bring back into fashion? Why? What are the upsides/downsides of this feature?</p>
<i>Science Fiction</i>	<p>When in space, astronauts eat dried food. If you were in space, what food would you like to eat?</p> <p>What else can you think of that, like space travel, was once considered science fiction but is now a reality?</p>
<i>Tools</i>	<p>How do you think these tools work? What do they do? Can you think of anything else that works in the same way?</p>
<i>Braille</i>	<p>Can you write me a message in braille? I can write one back to you!</p>
<i>Smartphone</i>	<p>What do you think would be the next coolest thing that a smartphone could do?</p>

## 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"> <li>• <i>Every disability looks and feels differently.</i></li> <li>• <i>Not every person with a disability is elderly and not every elderly person has a disability.</i></li> <li>• <i>Disabilities or impairments affect different parts of the body (for example, the brain, the eyes, the ears, the arms, the legs, etc.).</i></li> <li>• <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></li> <li>• <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></li> <li>• <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 choose to speak up.</i></li> </ul> <p>What are these inventions? How are they different from conventional sports equipment? How do people use these devices to help them explore the outdoors? Think about your favourite sport. What kind of obstacles might people with disabilities encounter when playing this sport? How could it be made more accessible to people with disabilities?</p>
<p><i>Enjoying Winter</i></p>	<p>Why do you think there are so many kinds of snowshoes? Humans use snowshoes to help us walk in deep snow. How do animals walk through the snow? How have snowmobile designs changed over time?</p>
<p><i>Freedom on Two Wheels</i></p>	<p>Do you have a bike at home? Do you ride your bike often? Do you see a bicycle on display that looks like yours? What do you notice most about the evolution of the wheels on these bicycles, from the oldest to the newest one? Which bicycle on display looks most like the bikes we see today? What differences can you see between the earliest bicycles we see here and the bike you have at home? How do you think bike riding impacts our community? How does it affect our health?</p>
<p><i>Pathways to Adventure</i></p>	<p>Would you have fun in the CabinCar Trailer? Does it look comfy inside? Where would you like to go on vacation in Canada? What activities can you do in that area?</p>

## Exhibit: Steam: A World In Motion

<i>Locomotives</i>	<p>How do you think the steam locomotives work? Why do you think they are so large?</p> <p><i>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?</i></p> <p>The CP 926 has an open back and no closed cabin, whereas the CP 3100 has doors and is closed. Which would be more comfortable to work in? <i>Think about the heat from the fire and how your answer might change, depending on the season and where you are in the world.</i></p> <p>Why do you think there are different models of trains? Which is your favourite locomotive?</p> <p>Pretend that it’s one hundred years ago and you work for the Canadian National or the Canadian Pacific railway. Which job would you like to have? Why?</p>
<i>Empress of Britain II Ship Model</i>	<p>Why do you think this ship has so many portholes?</p>
<i>Cargo Ships</i>	<p>What are some differences between cargo ships and passenger ships?</p>
<i>Starting Over</i>	<p>Look at the size of the trunks that people used when moving to a new city. What would you put in your trunk if it was all you could take with you? What do you think families put in their trunks a hundred years ago?</p>

## Exhibit: Sound by Design

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

<i>Soundscape Design</i>	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?
<i>Making Silence</i>	<i>Go inside the Quiet Cube.</i> 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?
<i>Design Icons</i>	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?
<i>Build a Song Spin Table</i>	What difference does turning the record in one direction versus the other make? How does the sound change when the record spins faster? Did you know that people still use turntables? What devices do you use to listen to music?
<i>Electronic Instruments</i>	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? <i>Try to play the theremin.</i> What do those sounds make you think of? Can you play a recognizable song on the theremin? <i>Find the sackbut interactive.</i> 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

<p><i>Steel</i></p>	<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> <p>Can you name one or two objects that you own that you think are made of steel? What is their purpose? Would the objects still work if they were made of wood?</p>
<p><i>Fertilizer</i></p>	<p>What's your favourite food? Do you like it because of its taste? What gives food its flavour?</p> <p>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><i>Energy</i></p>	<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> <p><i>Find the Energy's Energy Mix interactive map.</i> Are there any resources that are found in every province across Canada?</p>
<p><i>Changing Climate, Changing World</i></p>	<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>
<p><i>Nuclear Fusion</i></p>	<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> <p>What are we doing when we move the lever? Turn the wheel? Can we activate the tokamak?</p>
<p><i>Materials</i></p>	<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>All of these toys look like fun, but the plastic they are made out of is not recyclable. It ends up polluting our environment, because plastic can take thousands of years to decompose/disappear. If you were a toy designer wanting to make a toy like this, what material would you use?</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>
<p><i>The Periodic Table</i></p>	<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>Smell and Taste</i>	<i>Find the electric nose artifact.</i> This is a machine that can smell. What do you think it's used for? If you could use it, what would you use it for?
<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 Sounds of Different Coughs interactive.</i> Have you ever experienced a cough like any of these? What happened? Did it hurt/was it uncomfortable?
<i>Crazy Kitchen +</i>	Does the kitchen feel like it's level? Does it look level? What's happening? Have you experienced a sensation like this before? How? When?
<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? Can you find the x-ray machine? Have you ever had an x-ray? <i>Find the Body Systems interactive.</i> Make your skeleton perform your favourite dance move!

## 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>	Did you know that there were this many types of microscope/telescope? Why are there so many? 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? 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?
<i>Get Connected</i>	<i>Find the Spy Cameras display.</i> Can you find the camera that is spying on you right now?
<i>Suit Yourself</i>	<i>Find the big orange Newtsuit.</i> How would this suit feel to touch? How would it feel to wear it? Do you think you could swim wearing this suit? <i>Find the Shockbox interactive:</i> What is the lowest force possible that can still result in a concussion? Does this seem like a hard blow? <i>Find the diving helmet.</i> Divers used to wear helmets like this when working underwater. Imagine you're a diver: what kind of work would you be doing underwater? <i>Find the amauti parka.</i> The amauti is one of the oldest wearable techs in Canada that is still worn today by Inuit. How do you think "wearing" a baby in an amauti is different from pushing a baby in a carriage?
<i>Pet Projects</i>	Do your pets wear any kind of technology? <i>Find the K-9 search and rescue dog.</i> This dog needs to wear protective equipment when it's doing its job. Can you think of any other jobs where you'd need to wear protective gear?

## Exhibit: Technology in Our Lives

This gallery shows us tech innovations that have made life easier over the years. What kind of technology would you invent to make everyday life easier?

<i>Weight of Our Stuff</i>	<i>Find the Hot Diggity Dogger.</i> This machine's sole purpose is to make hot dogs and toast buns at the same time. If you could create a machine to make your favourite meal, how would it work?
<i>Heart of the Home</i>	How did these refrigerators change over time? Why do you think they changed? 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? What do you like about this house? 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?