



# Canada Science and Technology Museum

## Museum mission

## Museum mission questions

Ages 12 Plus



## Recommended for explorers ages 12+

Your mission — should you choose to accept it — is to explore the museum and gain as much knowledge as possible!



Artifact Alley-Stroll through interactive displays and over 700 artifacts.

- A. **Into the Great Outdoors**-See how people use technology to get outdoors and experience Canada.
- B. **Steam: A World in Motion**-Explore a time when steam made Canada—and the world—go round.
- C. **Sound by Design**-Hear and see what happens when sound meets design.
- D. **From Earth to Us**-Explore how we transform natural resources to make the everyday things in our lives.
- E. **Medical Sensations**-Explore the world of medicine through the five senses.
- F. **Hidden Worlds**-Engage with microscopes, telescopes, and interactives to explore worlds beyond our reach.
- G. **ZOOM (ages 0-8)**-A hands-on space where children can imagine, build, test, try...and try again!
- H. **Wearable Tech**-Discover a range of innovative technologies designed for the body.



- I. **Technology in Our Lives**-See the gadgets, tools, and appliances that shape our lives.
- **Exploratek**-A tinkering space dedicated to learning by doing.
- **Crazy Kitchen +** -Challenge your perceptions and experience illusions that play with your senses.



## Into the great outdoors

### Enjoying winter

1. How do snowshoes stop you from sinking deep in the snow?
2. On display, you will see Huron snowshoes, Ojibwe snowshoes, Yukon snowshoes, Bear Paw snowshoes and modified Bear Paw snowshoes. Why are their shapes different from each other?





## Freedom on two wheels



Starting in the 1880s, safety bicycles introduced ingenious design elements that we use to this day.

3. Name three elements which improved the bike:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

## Pathways to adventure

4. What was the cost of a convertible car in the late 1940s?
5. How long did it take Rosemary and her friends to drive from Vancouver to Ottawa along the Trans-Canada Highway?
6. What distance did they travel?
7. In which decade did people start using planes to get to the outdoors?



## Steam: a world in motion

8. Name the four locomotives on display:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

9. What kind of engine do they use?

10. How many kilometres of track were built across Canada between 1907 and 1956?

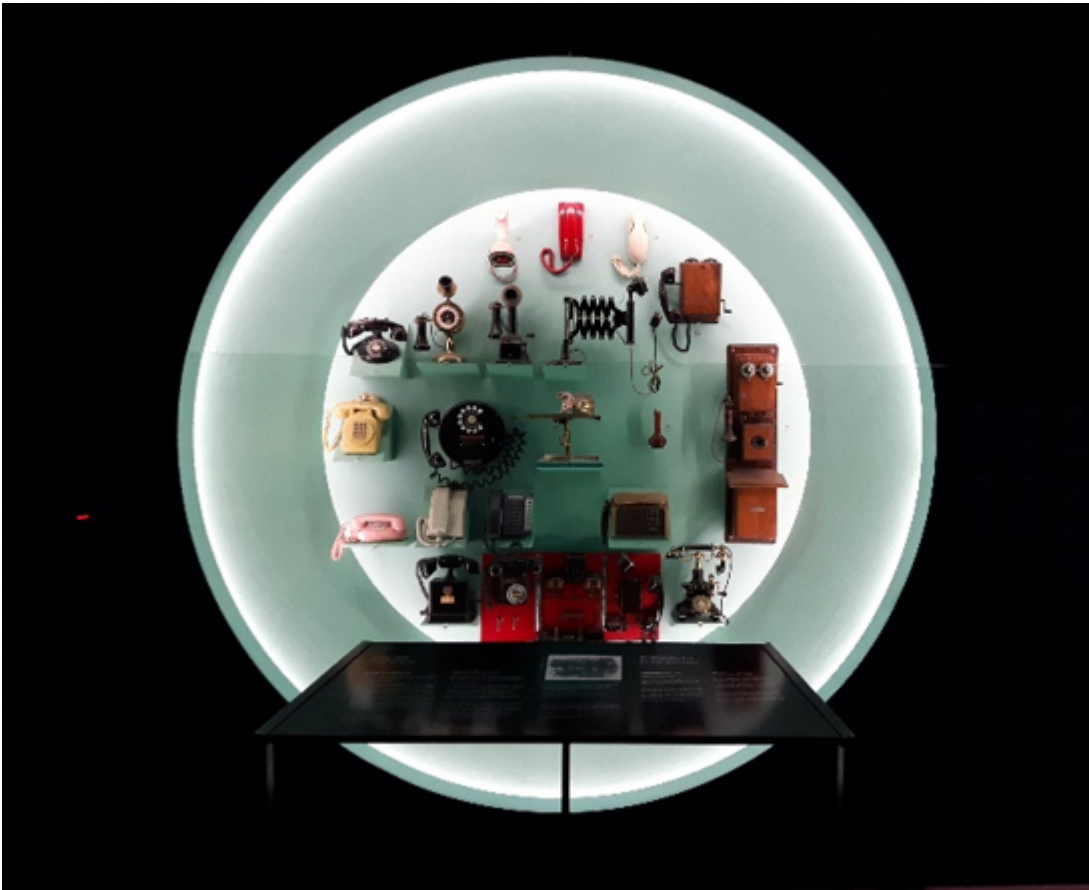
11. How many immigrants came to Canada between 1900 and 1950?

12. Almost all of them arrived using the power of \_\_\_\_\_.





## Sound by design



### Seeing sound

13. Which controversial invention lead to the invention of the telephone?

14. Who invented it?



## Making silence

Go to the Quiet Cube.

15. Do you hear an echo? An anechoic chamber is built to eliminate echo and noise.

16. What is used to get rid of echoes in an anechoic chamber?

## Design icons

17. The Grammy award was named after what?

## Electronic instruments

18. We can play it without ever touching it. What is this instrument?





## From earth to us

Throughout the exhibition, you will find white circles with green recycling symbols. These contain information on the recyclability of different materials. While in this exhibition, keep an eye out for these signs and answer the questions below:



Material	Is it recyclable?	What percentage can be recycled?
Metal		
Composites		
Polymers		
Ceramic		
Plastic toys		
Smartphone		
Steel		
Smart car		
Toaster		



## Changing climate, changing world

19. What is global warming?

20. What is climate change?

21. How do scientists learn about past climates?

## Mining: Why we really dig earth!

22. Which raw materials do we mine to make the following?

Glass → \_\_\_\_\_

Plastic → \_\_\_\_\_

Structures → \_\_\_\_\_





## Energy: how do we power our lives?

23. Which home appliances use the most energy?

Tablet

or

TV

Washer

or

Dryer

Heater

or

Portable fan

24. Which one uses the most energy of all?

25. What percentage of global hydroelectricity is produced in Canada?





## Medical sensations

### Touch

26. How are 3D printers used in medicine?

27. What were two uses of the Clay Anatomical Model?

### Smell and taste

28. A doctor's first clues about an illness often come from the smell of the patient's body. Associate the following smells to the disease:

- |                        |                    |
|------------------------|--------------------|
| a. Butcher shop        | i. Diabetes        |
| b. Fish                | ii. Typhoid        |
| c. Freshly-baked bread | iii. Liver failure |
| d. Nail polish remover | iv. Yellow Fever   |

29. At what angle is the slope of the Crazy Kitchen?

30. What three words does the sphere of letters in the Out of the Shadows artifact spell?



## Hidden worlds

31. Name three Ininew constellations:

32. Name three Ojibwe constellations:

33. Name three D(L)akota constellations:



## Beyond earth

34. What is the difference between a reflecting and a refracting telescope?

## Magnificent magnifiers

35. A simple microscope with a single lens can magnify up to 200 times. What about a compound microscope?

36. What about an electron microscope?



## Wearable tech

### Pet projects

37. What information does the SeeHorse Biometric Monitor tell you about your horse?

38. Dogs have different characteristics that allow them to do things humans cannot. Rescue gear has been created for them to wear to help them do the following:

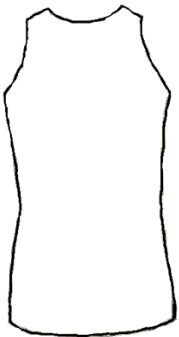
### Suit yourself

39. Find the unique apparel created by Inuit women. What is it called?

### Get connected:

40. What is the purpose of the Hexoskin, the biometric suit?

41. Draw the location of the breathing sensors within the Hexoskin on the diagram.

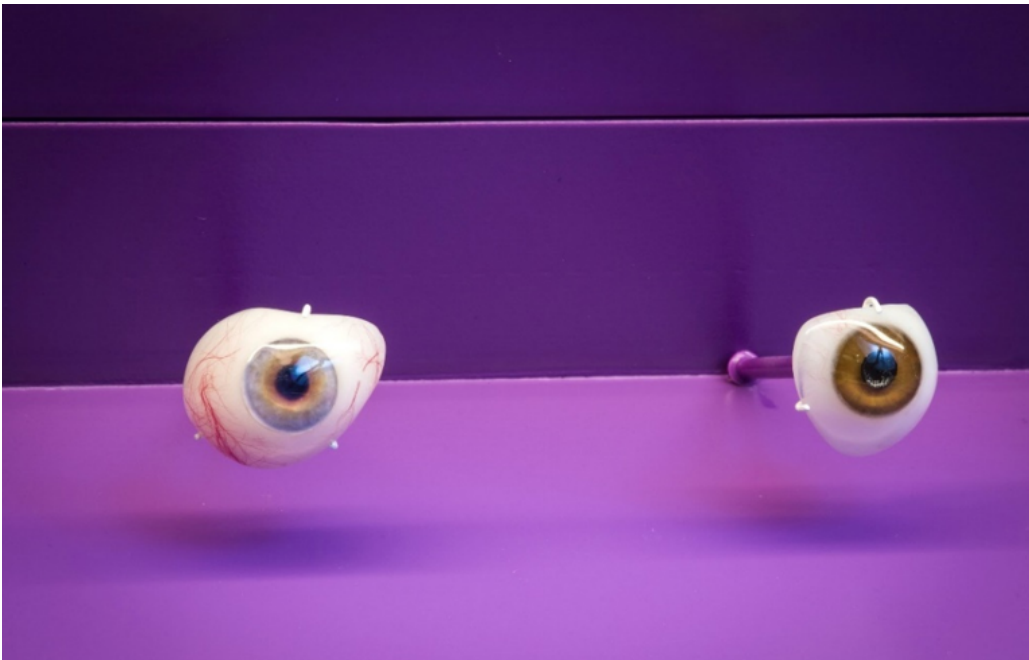


42. What is the name of the Canadian Olympic champion wrestler from Ottawa who trained with this Hexoskin?



## Body Shop

43. A regular heartbeat is essential for ensuring the body gets the oxygen and nutrients it needs. How does a pacemaker keep the heart beating in rhythm?
44. Ocular prostheses can be useful despite the fact that they do not provide sight. Name two uses for them.





## Technology in our lives

### Consumer culture

45. What was the proportion of women in the paid labour force during wartime?
46. How old were you when Kijiji was launched?
47. What was the main contributor of Canada's population growth in 1999?
48. Name a household item that was once considered a luxury but is now a necessity. Do you agree?



**This lesson plan was produced by the Canada Science and Technology Museum.**

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