# EXHIBIT EXPLORATION GUIDE

Grade 5

**Students: Please fill out this worksheet as you explore our exhibit halls.**

LEVEL 6

## The AstraZeneca Human Edge

## Section A

### Hanging Skeletons

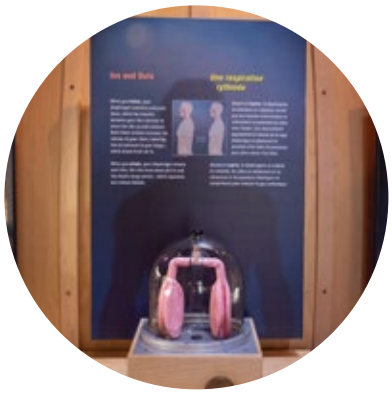
Topic: Human Health and Body Systems

**A1.** Find the two older human skeletons hanging together. (Hint: They are both missing hands.) Look for exposed tooth roots on the skeletons. What might this tell you about a person's health, including their diet and nutrition?

## Section B

### Ins and Outs

Topic: Human Health and Body Systems



**B1.** Take a deep breath and hold the air in your lungs. Right now, your diaphragm muscle is contracted. Turn the crank and observe what happens to the lungs on display. Sketch the lungs when the diaphragm is relaxed (up) and when it is contracted (down):

Relaxed diaphragm

Contracted diaphragm

ONTARIO SCIENCE CENTRE
An agency of the Government of Ontario

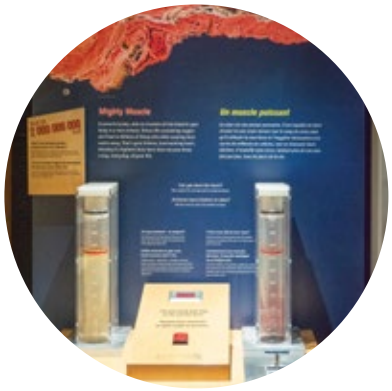
# EXHIBIT EXPLORATION GUIDE

Grade 5

## Section C

### Mighty Muscle

Topic: Human Health and Body Systems



**C1.** Can you pump blood faster than the average adult resting heart? Start the race to find out! How did you do?

**C2.** You used muscles in your arm to pump the fake blood in this exhibit. Meanwhile, your heart muscle was pumping real blood in your body.

Did you feel your arms get tired? _____

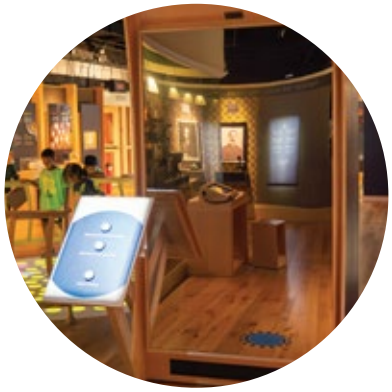
Did you feel your heart get tired? _____

**C3.** Why do your arm muscles get tired when you exercise, but your heart muscles don't?

## Section D

### Immunity Mirror

Topic: Human Health and Body Systems



**D1.** Stand on the marked area on the floor. Press the "Without Vaccine" button. What happens when a virus that you have not been vaccinated against enters your body? Record your observations below.

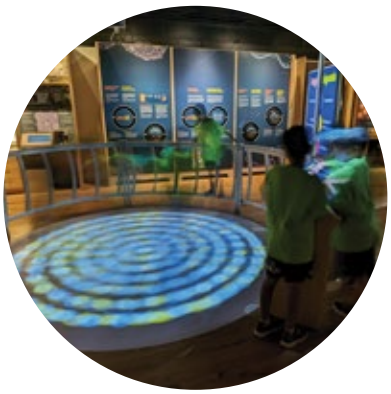
## Section D (cont.)

**D2.** Press the “With Vaccine” button. What happens when a virus that you have been vaccinated against enters your body? How does this differ from the above scenario?

## Section E

### How Do Vaccines Keep Communities Safe?

Topic: Human Health and Body Systems



Find a friend (or two) and approach the interactive floor.

**E1.** Use the control panel to select a disease and the level of vaccination coverage: the percentage of vaccinated people in the community. Circle your choices below:

| Flu | COVID-19 | COVID-19 (Omicron) | Measles | |
|---|---|---|---|---|
| ☐ | ☐ | ☐ | ☐ | |
| 0% | 20% | 50% | 80% | 95% |
| ☐ | ☐ | ☐ | ☐ | ☐ |

**E2.** The dots you see on the floor represent people. Yellow dots are unvaccinated people and blue dots are vaccinated people. Walk across the floor. What happened?

## Section E (cont.)

**E3.** Choose a new disease or coverage and try the experiment again. What happened?

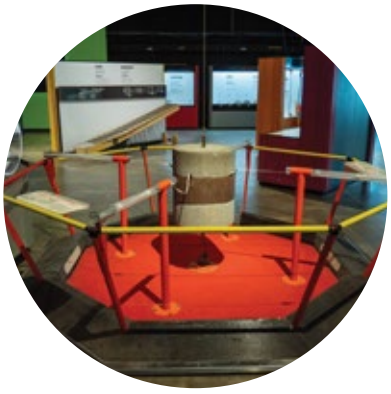
LEVEL 6

# Science Arcade

## Section F

### 200 kg Pendulum

Topic: Forces Acting on Structures



**F1.** Try to make the 200 kg pendulum swing. (Hint: Ask a friend for help.) Were you successful?

**F2.** Describe your strategy for making the pendulum move.

# EXHIBIT EXPLORATION GUIDE

Grade 5

LEVEL 6

# The Bruce Poon Tip Living Earth Hall

## Section G

### The TELUS Rain Forest

Topic: Properties of and Changes in Matter

**G1.** Enter the TELUS Rain Forest and look for evidence of condensation on the walls, ceiling and doors. Where do you think this water came from? (Hint: The answer involves a change of state.)

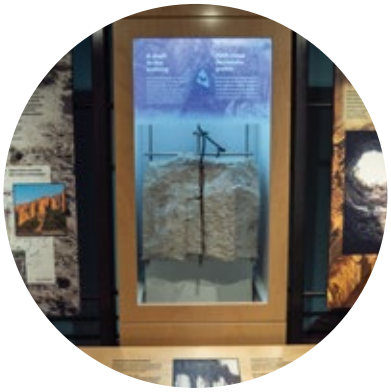
**G2.** Is this a physical change or a chemical change? Circle your answer. (Hint: Chemical changes are usually irreversible.)

Physical Change ☐ Chemical Change ☐

## Section H

### A Shaft in the Making

Topic: Properties of and Changes in Matter



**H1.** Describe what is happening to the limestone near the entrance of the cave.

**H2.** Is this a physical change or a chemical change? Circle your answer.

Physical Change ☐ Chemical Change ☐

ONTARIO SCIENCE CENTRE
An agency of the Government of Ontario

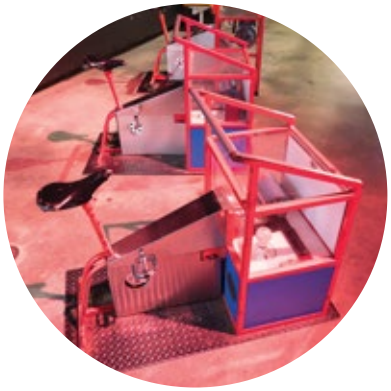
# EXHIBIT EXPLORATION GUIDE

Grade 5

## Section I

### Pedal Power

Topic: Properties of and Changes in Matter



**I1.** Try to pedal each of the different bicycles. There are many different energy transformations happening here! Which types of energy are being produced?

**I2.** The energy that you used to pedal originally came from the Sun. How did it get to you?

LEVEL 6

# The Weston Family Innovation Centre

## Section J

### Windblown Walls

Topic: Forces Acting on Structures

**J1.** Design and build a wall using the materials provided in order to slow down the wind from the fan. Sketch your structure below. What internal and external forces are acting on your wall?

## Section J (cont.)

**J2.** Was your wall successful in slowing the wind speed? Why do you think this is? If your wall was successful, how much did it decrease the wind speed by? Do you think your wall could withstand the external forces of a hurricane?

**J3.** What structural features could you include to make your wall more stable and able to withstand the force of higher wind speeds? Test different features and record your observations.