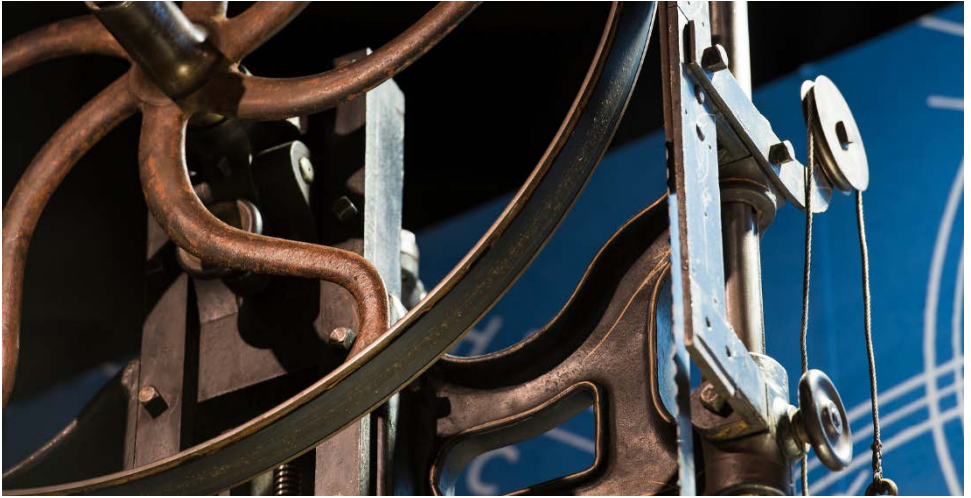
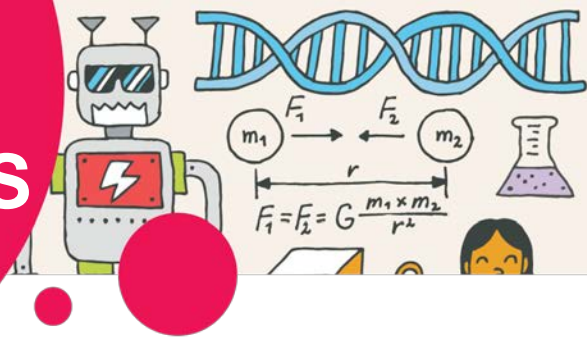


# PULLEYS AND GEARS



## MUSEUM MISSION

**Grades: 4 / Primary Cycle 2**

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



## Exhibitions

### 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.

### Crazy Kitchen +

Challenge your perceptions and experience illusions that play with your senses.

### E Medical Sensations

Explore the world of medicine through the five senses.

### F Hidden Worlds

Engage with microscopes, telescopes, and digital 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.

### Exploritek

A tinkering space dedicated to learning by doing.

## Paper Strength

Exhibit – Artifact Alley – Materials

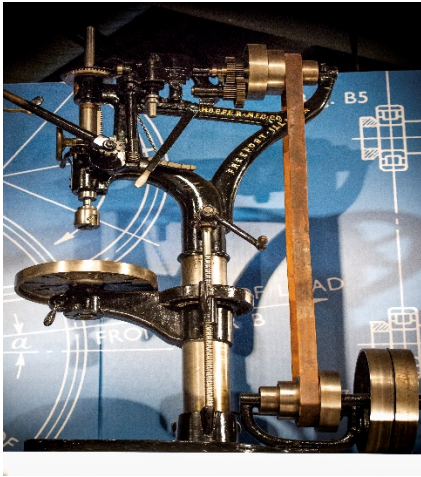


Can you **find** the piece of paper? Where is it?

**Think:** How do the gears help to pull the piece of paper to determine its strength?

## Drill Press

### Exhibit – Artifact Alley - Tools



**Find** the different sized pulleys. Why do you think there are different sizes?

**Think:** Circle the different functions of the gears that you can see (circle all that apply):

- a. Change direction
- b. Increase speed
- c. Increase power
- d. Change plane of rotation
- e. Decrease speed
- f. Decrease power

**\*remember: gears from big to small increase speed, and from small to big increase power**

## Time Flies

### Exhibit – Artifact Alley - Smartphone



This is the inner workings of a clock from 1719. **Find** all the gears, how many can you count?

**Think:** What is the source of power for this clock? (Circle the answer you think is correct):

- a. Chemical Energy
- b. Electrical Energy
- c. Mechanical Energy
- d. Solar Energy
- e. Wind Energy
- f. Hydro Energy

## Sounds Good

### Exhibit – Artifact Alley - Smartphone



**Find** the microphone boom. What is it used for?

**Think:** Do these pulleys make it easier to lift a weight or change the direction of the force required?

## Evolution of the Bicycle

### Exhibit – Into the Great Outdoors – Bicycle Exhibit



**Think:** Try the bicycle race interactive. Which bike won and why?

Why do you **think** some bicycles have an advantage in a race over others? Circle those that apply.

- a. Number of gears
- b. Size of the tires
- c. Strength of the rider
- d. Position of the handle bars
- e. Weather outside



## Catch a Train

Exhibit – Steam – A World in Motion – Model Train Set



**Find** all the pulleys and gears and list where they are.

Pulleys:

Gears:

**Think:** The roundhouse was used to turn the massive locomotives around. Which simple machine could be used to help make this work easier?



## Ship's Ahoy

### Exhibit – Steam a World in Motion – Ship Display



**Find** all the pulleys and gears. How many do you see?

Pulleys:

Gears:

**Think:** Why were pulleys used on ships? Circle all that apply:

- a. Lift and lower the sails
- b. Dry laundry
- c. Raise a flag
- d. Raise and lower lifeboats
- e. Get water from the well
- f. Turn the ship ventilators  
(see the big ship ventilator artifact behind you).