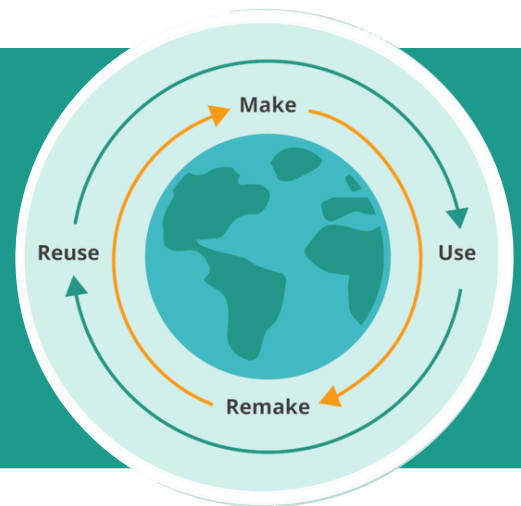


# Reimagining Economy Using Biomimicry

#Eco360

Activity

Grade Level: 9-12



## Main Objective

Learners will learn about biomimicry and how it can be used to design better products and systems to eliminate plastic waste.

## Learning Outcomes

By the end of this activity, learners will:

- Identify and describe biomimicry
- Understand how biomimicry is used to develop innovative design solutions that eliminate plastic waste
- Think critically about a reimagined economy that takes inspiration from nature by adopting biomimicry

## Length of Activity: 60 - 90 hours

**Step 1+2:** Intro to biomimicry and its application

**Step 3:** Take a nature walk

**Step 4:** Answer reflection questions

## Materials Required

- Internet-enabled device
- Topic backgrounder
- Eco 360 notebook (we recommend asking learners to maintain a notebook for this program to write down reflections as they go through the program)

## Curriculum Connections

### Alberta

Biology 30 Unit D: Population & Community Dynamics

- 30-D2.1sts explain why Canadian society supports scientific research and technological development to facilitate a sustainable society, economy and environment

Social 10-1

- 3.7 explore multiple perspectives regarding the relationship among people, the land and globalization (spirituality, stewardship, sustainability, resource development)

### Ontario

Grade 9 Biology

- B1. assess the impact of human activities on the sustainability of terrestrial and/or aquatic ecosystems, and evaluate the effectiveness of courses of action intended to remedy or mitigate negative impacts

Grade 10 Biology (B1.3)

## Activity

### Step 1: Begin by introducing learners to the concept of biomimicry

Watch this short film with the class: 'Biomimicry'



[https://www.youtube.com/watch?time\\_continue=51&v=sf4oW8OtaPY&feature=emb\\_logo](https://www.youtube.com/watch?time_continue=51&v=sf4oW8OtaPY&feature=emb_logo) (20 minutes)

### Step 2: Find inspiration to create a biomimicry based design for circular economy

In this activity, explore technologies where the innovators took inspiration from nature to design them using the concept of biomimicry.

- Invite learners to take inspiration from nature and think outside the box as they re-imagine a circular economic system that incorporates biomimicry. Have learners take notes in their Eco 360 notebook as they explore the various ways innovators have taken inspiration from nature to design products and solutions.
- Ask Nature:

 <https://asknature.org/innovations/>

### Step 3: Take a nature walk!

Invite learners to take a walk outside their home or school into their backyard or just around the community and observe the natural world around them. Ask learners to bring their Eco 360 notebooks with them. If a green space is not accessible to learners, we recommend some of these virtual resources below to rekindle connection with nature for this activity:

- Exploratorium exhibits:

 <https://www.exploratorium.edu/exhibits/all?name=&collection=All&phenom=All>

- Wall of Birds, the Cornell Lab:

 <https://academy.allaboutbirds.org/features/wallofbirds/>

- 30 Days of Reconnection, Biomimicry Institute. Note: This is an extensive resource, but learners can pick and choose any day activity that inspires them the most

 <https://biomimicry.org/30days/>

### Step 4: Conclusion

Have learners reflect on the following questions as they reconnect with nature, observing systems and design elements in the natural world that we can learn from. Learners can record their observations in their Eco 360 notebooks.

1. What did you observe? Describe it.
2. Define any natural system that you observed in your exploration?
3. Did you find any waste generated by the system? What is the nature of that waste? Where does it go?
4. Did you observe any animals in your exploration? If yes, which ones? What struck you the most about them?
5. Can we learn anything useful from the natural world that you explored and observed during this exercise to eliminate plastic waste? How can any of the system and design elements be applied to our economy to make it free of plastic waste?