

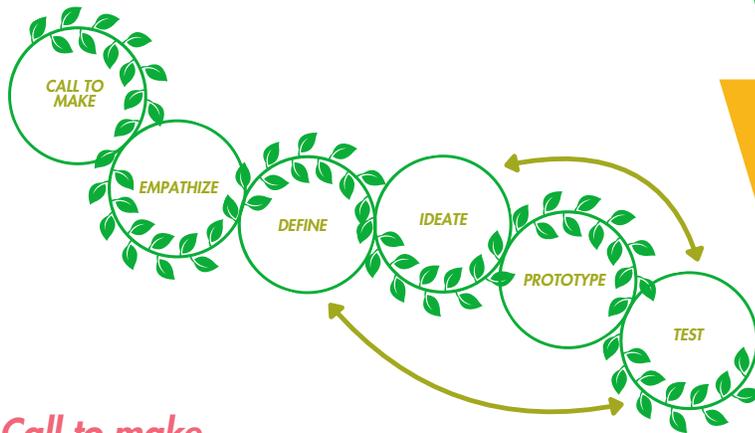
Design from biomimicry

What if we could use biomimicry to reach the sustainable development goals? Create an invention prototype inspired by something from nature!

Setup

Seek inspiration from nature and research on natural objects, beings, and phenomena that you find interesting.

Content



Call to make

What if the answer to interstellar space travel was hidden in the shapes of a sea snail? Or what if we could climb walls by making a human sized version of an ant's feet? In this #MakerFun challenge, explore examples of extraordinary features of nature that can inspire a new invention for humans!



Skills

- Prototyping
- Design Thinking Process
- Problem finding/ problem solving

Materials

- Craft Supplies
- Paper
- Pencil or your favourite tool for digital design!



Empathize

Think of some creatures that do amazing things, or have impressive features. How could these features make life more sustainable for humans? Who is this project for and how will they use it? Remember to keep the end user in mind while you create your prototype. How will they interact with your invention? What is a creature that lives in harsh conditions? How can we learn from this creature and apply it to human's interactions with their environment?



Define

What animals, creatures, plants, or formations fascinate you in nature? How could those same features be adapted to make life better for humans? What features from nature will you use as inspiration for your invention? How will this invention influence or help humans to live more sustainably on Earth? What are the other solutions available that could help you?

Ideate

In what situation would your invention be the most helpful? What are the concepts that you need to learn more about? How could you build a prototype of this invention? What materials could be used or developed to mimic the creature you're using as inspiration? Look at other inventor's attempts to do something similar (if they have). How will your design be different? What inspiration will you take from their ideas?

Prototype

Using drawings, recyclables, craft supplies, digital art or 3D design software to make a prototype of your invention inspired by nature.

Test

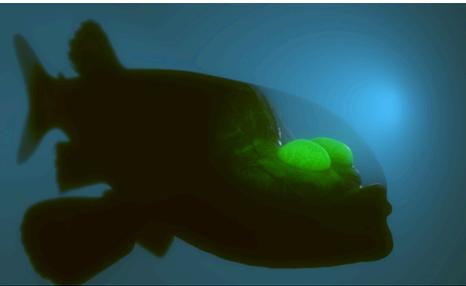
Did it work? How different is your final product from your original design? Do you have any changes to make in a second prototype? If so, ideate some revisions before starting your next prototype.



Teachable Moments

Math

Use a ruler or measuring tape when creating your prototype. Record measurements that you would use in a working version of this product. Consider weight when designing. Does it matter if the prototype is heavy or light? Is your prototype to scale? What is the ratio of size to full scale? What if you needed to make 12 prototypes? Give a list of detailed supplies needed to produce more prototypes.

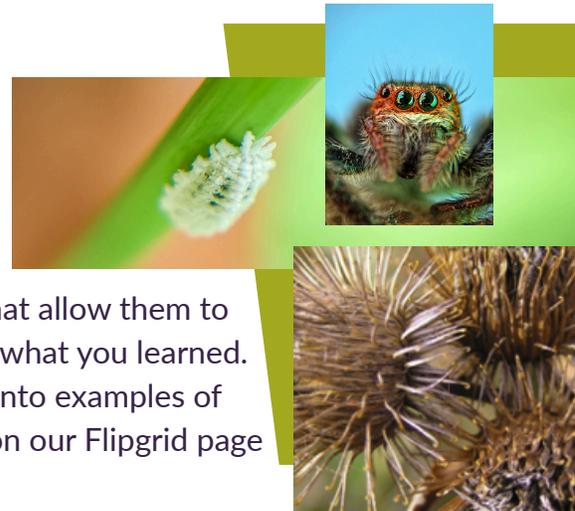


Science

Explore the idea of adaptations in nature. What are some examples of creatures or plants that have undergone unique transformations in order to adapt to their environment or way of life? The materials you use to mimic a creature's traits, what is it made of? What properties does it have that you will utilize?

Visual Arts

Research macro photography, and macro art. Look closely and examine something in nature up close and create art or take photography that is focused on something very close up.



Language Arts

Research creatures in nature that have unique characteristics that allow them to thrive in their environment. Write a nonfiction piece explaining what you learned. Include text-features such as diagrams, subheadings, etc. Look into examples of other inventions that are influenced by nature. Record a video on our Flipgrid page at flipgrid.com/blabs to share what you've learned!

Music

Write a short catchy jingle that would be used in an ad to sell your invention

Physical Education

Design a game where the players need to mimic specific creatures as part of the game.



Social Studies

How have humans mimicked nature in the past? Research to find some examples from the past. It could be tools, fashion, weapons, architecture, transportation, etc.

Health

What are some ways that humans have used or learned from plants or animals to better our own health?

Technology, Education, and Engineering

How can you use CAD software to help with designing your prototype?

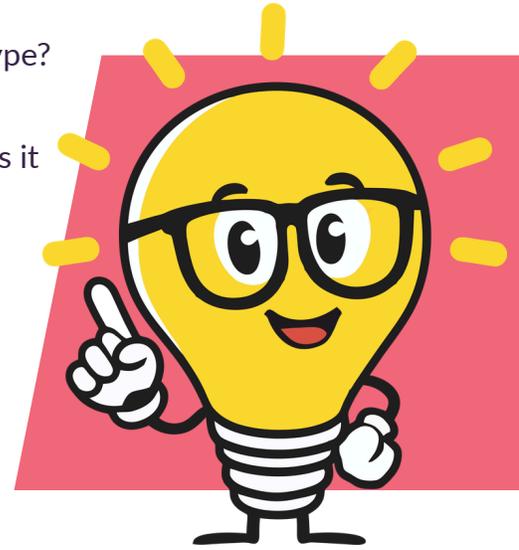
Take it Further

Come up with a pitch to sell the idea of your prototype. What makes it unique? How will it make life better or easier for humans in specific situations? Opportunity-Solution-Business Model-Advantage-Team

Glossary

Biomimicry

Biomimicry is a practice that learns from and mimics the strategies found in nature to solve human design challenges – and find hope along the way. - Biomimicry Institute



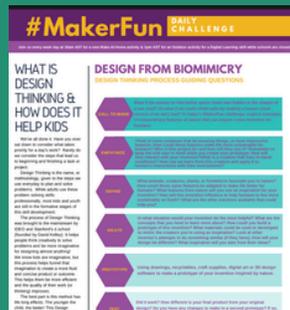
Resources

Design from biomimicry

Teachable Moments Questions



Design Thinking Process Questions Graphic



Challenge Graphic



Design from biomimicry video

Have you ever noticed how some human inventions look a lot like things in nature? Learn more about biomimicry with us!



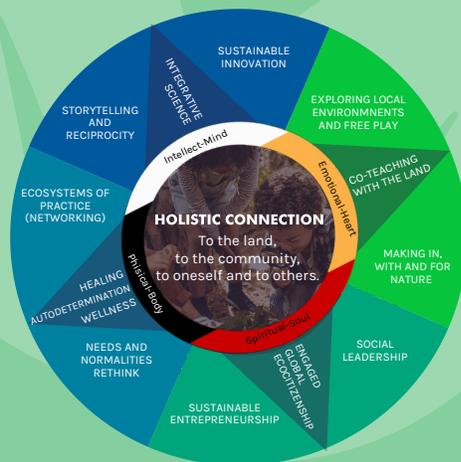


4 QUALITY EDUCATION 	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 	11 SUSTAINABLE CITIES AND COMMUNITIES 	12 RESPONSIBLE CONSUMPTION AND PRODUCTION 
---	---	---	---

Learning continuum: Sustainable Innovation Through Holistic Connection

Based on three emerging pedagogies* and in recognition of indigenous knowledge, the natural maker educational continuum aims to support the learner through a holistic journey of connection to the earth, the community, oneself and others, in order to evolve globally towards a more open, humble, democratic and decolonized way of thinking, learning and living.

* wild pedagogies, conscious pedagogies and decolonization of education



#EarthDayInNature
#ActForEarth #ClimateAction

 [brilliantlabs/laboscreatif](https://www.facebook.com/brilliantlabs/laboscreatif/)

 [brilliantlabs/laboscreatif](https://www.instagram.com/brilliantlabs/laboscreatif/)

 [@BrilliantLabs](https://www.youtube.com/@BrilliantLabs)

 brilliantlabs-edu.bsky.social

brilliantlabs.ca/natural-making