# Plant Biomimicry

# Looking to Nature to Solve Problems

Acknowledgements
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# Compare and contrast



BBC NEWS

# Biomimicry

“*Bio*” “*mimic*”

(jot students ideas here)

**Class Definition**:

Example: Biomimicry is when people use ideas from nature (plants, animals) to create solutions for everyday problems

## Example A:

Photo courtesy Robert Lucking

## Example B:

Image credit Flickr user ftarmog

## Example C:

Photo by Kew Gardens

## Example D:

Photo courtesy Robert Lucking

# Small Group Sorting Activity: Plant or Animal?

| **Plant** | Animal |
| --- | --- |



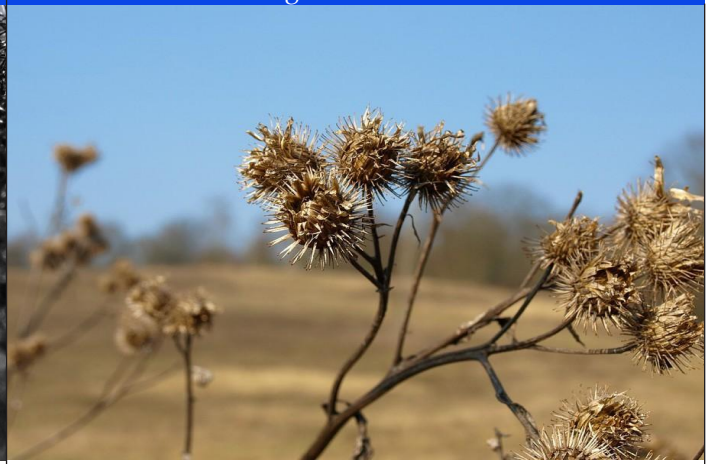

**Discussion**: **Why would these animals want to mimic plants? What kinds of benefits do these animals gain from mimicking their environment?**

1. Read about mimicry
2. Take a moment to think about the questions above
3. Turn and talk with your partner/small group
4. Share out

**Burr |**
Attaches to clothing and fur

Copyright by MaxPixel

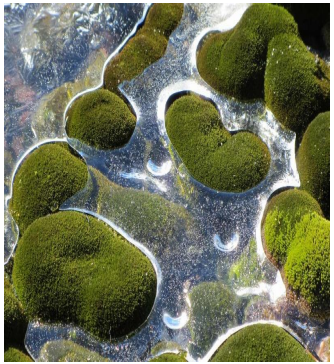
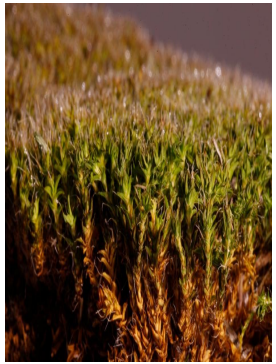
**Velcro |**
Materials that stick together



Alexander Klink [CC BY 3.0 (https://creativecommons.org/licenses/by/3.0)]

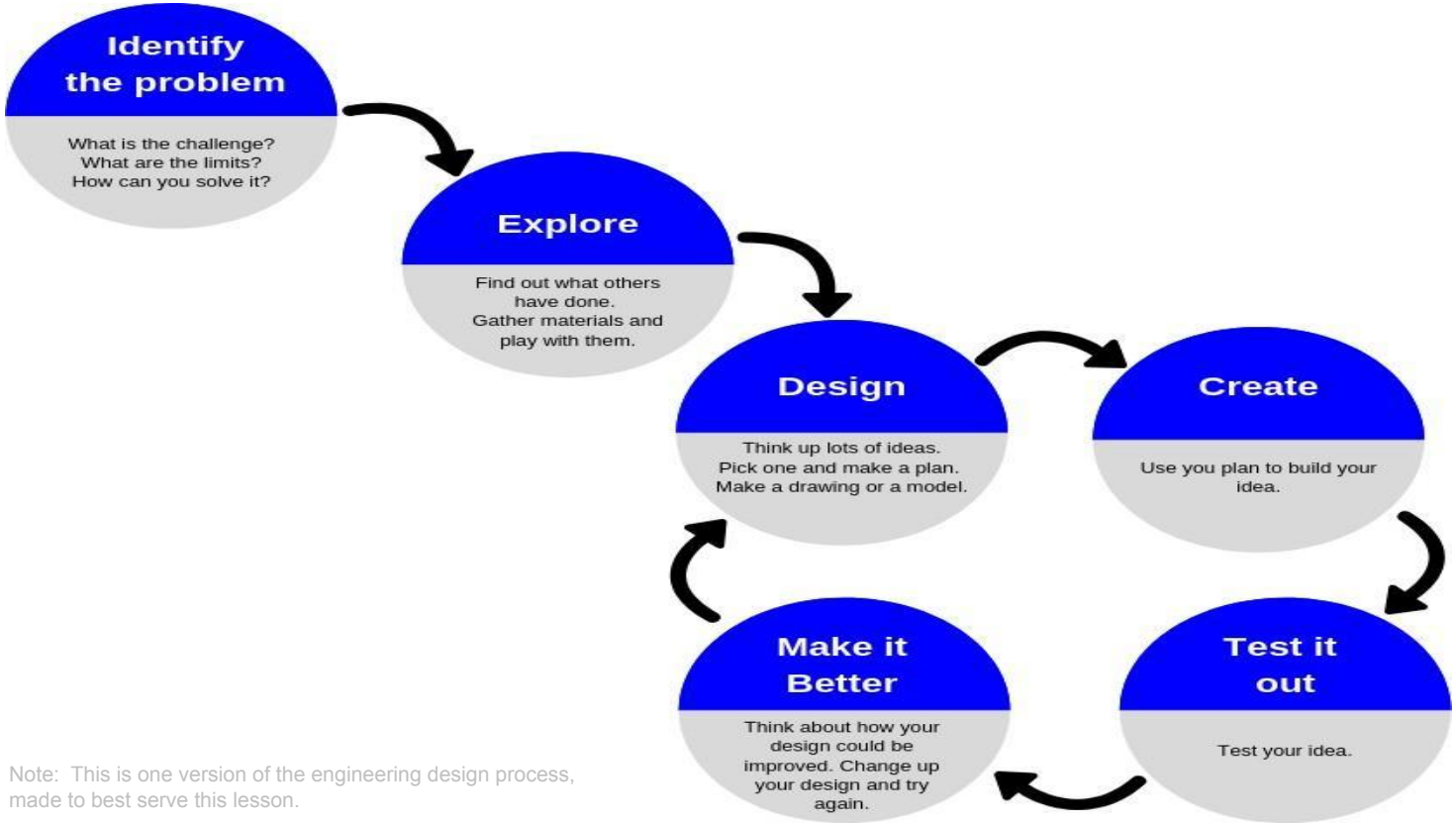
Velcro video link:

# Examples of Biomimicry

| | | | | |
|---|---|---|---|---|
|  |  |  |  | What structure helps this plant function? |
|  |  |  |  | How did humans adapt the structure and function to help solve a problem? |

**Brainstorm: What are some other problems we face that we could look to nature to solve?**

# Engineering Design Process




Note: This is one version of the engineering design process, made to best serve this lesson.

# Ready, Set, Invent!

## Engineering Design Planning Document

**Student Resource 2.0**

**Team Name:**

**Team Members:**

| Criteria | Constraints |
| --- | --- |
| • Your invention must solve a problem in everyday life | Your design must mimic nature. Ways you can mimic nature:<br>1. mimic how a plant **moves**<br>2. mimic the form or **shape** of a plant<br>3. mimic the **system** of a plant |

Student Resource

**Identify the Problem**

What problem have you chosen to solve? Why is the problem important to you?

**Explore**

Find out what others have done.

## Engineering Design Planning Document

**Design**

Write down at least 3 ideas.

Pick one and make a plan.

Student Resource

## Engineering Design Planning Document

**Design**
Create a model or drawing(s) of your plan. Make sure to Include labels and arrows.

Student Resource

**Create**
Use your plan to build your idea.

Check here after building your model.

**Test**
Test your idea. Write your observations from your test to the right.

What went well? What needs to be improved?

## Engineering Design Planning Document

**Gather Feedback from others**

Record feedback you've received from your project here.

Student Resource

**Make it Better**

Think about what went well and what still needs work. How are you going to improve your design?

# Research links:

- https://kids.kiddle.co/Moss
- https://www.washingtonpost.com/news/speaking-of-science/wp/2016/06/07/moss-is-a-master-of-mechanical-engineering/
- https://www.youtube.com/watch?v=SS2vTGeME3Y
- https://thekidshouldseethis.com/post/mimicking-shark-skin-to-combat-superbugs-bacteria-biomimicry

# Example Invention: