

# 2017 Science Unit 3: Mimicking Organisms to Solve Problems ; Grade 1

Content Area: **Science**  
Course(s): **Science 1**  
Time Period: **Marking Period 3**  
Length: **January- February**  
Status: **Published**

## Established Goals/Standards

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SCI.1-LS1-1

Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

## Essential Questions

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- How can we design a solution to a human problem that mimics how plants and/or animals use their external parts to help them survive?

## Enduring Understanding

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- How can humans mimic how plants and animals use their external parts to help them survive and grow?

## Content

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All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (1-LS1-1)

- Every human-made product is designed by applying some knowledge of the natural world and is built using materials derived from the natural world.
- The shape and stability of structures of natural and designed objects are related to their function(s).
- All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow.
- Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs.
- Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.

Designs can be conveyed through sketches, drawings, or physical models. These representations are

useful in communicating ideas for a problem's solutions to other people. (K-2-ETS1-2)

## **Assessment**

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Students who understand the concepts are able to:

- Observe and describe how the shape and stability of structures of natural and designed objects are related to their functions.
- Use materials to design a device that solves a specific problem or [design] a solution to a specific problem.
- Use materials to design a solution to a human problem that mimics how plants and/or animals use their external parts to help them survive, grow, and meet their needs: Examples of human problems that can be solved by mimicking plant or animal solutions could include:
  - ☐ Designing clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales.
  - ☐ Stabilizing structures by mimicking animal tails and roots on plants.
  - ☐ Keeping out intruders by mimicking thorns on branches and animal quills.
  - ☐ Detecting intruders by mimicking eyes and ears.
- Develop a simple model based on evidence to represent a proposed object or tool.
- Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

## **Resources**

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Teacher generated ActivBoard Flipcharts

United Streaming

You Tube

Mystery Science

NGSS @ nsta.org National Science Teachers Association website

Science Spin

NJ Model Curriculum

<https://www.symbaloo.com/mix/ngss7> NGSS symbaloo

Experiments/Observations/Journals

Non-Fiction Science leveled readers

Non-Fiction Books from school library

Scholastic News First Grade Level

Mailbox Magazine activities (core curriculum aligned)

Teacher's Helper activities (core curriculum aligned)

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