

Copy Catters

Primary Curriculum	Grade 1
Supplemental Curriculum	Grades 1–2
Notes	Standard unit/refill kit comes with enough materials for 30 students.

Description

From Velcro to high-speed trains, nature provides the spark for innovation.

Work smarter not harder—isn't that what they say? So why not turn to nature first when looking to solve a human problem or challenge? Join entrepreneurs from all over the world as they talk about their bio-inspired innovations.

Using the overarching phenomenon of bio-inspired innovation, students will continue their exploration into biomimicry and plant and animal traits and behaviors as they ask themselves: *“How can we look to nature for inspiration to find solutions to human problems and challenges?”*

Main Investigations

Inspired by Nature Mix and Match game



Sounds of Nature



Design Your Own Superhero



Number of Lessons*

Full unit – 25 lessons

Supplemental program – minimum 8–10 lessons

**Lesson = 30–40 min. block, 50% of full unit lessons can be delivered in non-science classes*

Best Suited For

- Classroom science instruction

Overarching Enduring Understanding

How can we look to nature for inspiration to find solutions to human problems, challenges, or goals?

Number of Lessons*

Full unit – 25 lessons

Supplemental program – minimum 8-10 lessons

**Lesson = 30 – 40 min block, 50% of full unit lessons can be delivered in non-science classes*

FLOW OF INSTRUCTION

Introductory Investigation: Inspired by Nature (hands-on investigation, occurs during weeks 1 and 2)

In this mix and match introductory investigation, students are given a set of cards—half of which contain a picture of a common technology (Velcro®, cement, windmills, etc.) and the other half contain a picture of the natural organism that inspired the technology. Students must try to match the technology with the inspiration and explain their thinking.

Design Challenge: Design Your Own Superhero (introduced in week 1 or 2 completed in weeks 6–8)

In this design challenge students will need to create their own superhero based on things they observe in nature. When they describe their superhero, they will need to identify the following things:

- Describe the superhero's traits and connect them to the plant or animal.
- Describe why having those traits helps the superhero.
- Discuss the idea if your superhero had kids if they would pass along their "powers" to their kids. Use examples from nature.

Investigation: Sounds of Nature (mini-research project, occurs during weeks 3 and 4)

Students will learn about various entrepreneurs who are designing technology based on how animals communicate. Students are challenged with finding an animal that uses sound in an extraordinary way and report back to the group on what the sound is and why the animal uses it.

Investigation: Sounds of Nature Part 2 (hands-on investigation, occurs during week 5)

Working with the materials provided, students will try to mimic the sounds of a variety of animals. Throughout this investigation they will be identifying connections between sound and vibrations.

Overarching Enduring Understanding**How can we look to nature for inspiration to find solutions to human problems, challenges, or goals?****Number of Lessons***

Full unit – 25 lessons

Supplemental program – minimum 8-10 lessons

Lesson = 30 – 40 min block, 50% of full unit lessons can be delivered in non-science classes*FLOW OF INSTRUCTION****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.

1-LS1-2

Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.

1-LS3-1

Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.

1-PS4-1

Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.

Introductory Investigation: Inspired by Nature (hands-on investigation, occurs during weeks 1 and 2)

In this mix and match introductory investigation, students are given a set of cards—half of which contain a picture of a common technology (Velcro®, cement, windmills, etc.) and the other half contain a picture of the natural organism that inspired the technology. Students must try to match the technology with the inspiration and explain their thinking. (1-LS1-1)

During the reflection portion of this investigation students will chose 1 or 2 examples for which they will they will:

- Identify similarities and differences between parents and offspring (1-LS1-1)
- Discuss why they think the plant or animal developed some of their specific traits in the first place. (1-LS1-1)

Design Challenge: Design Your Own Superhero (introduced in week 1 or 2 completed in weeks 6–8)

In this design challenge students will need to create their own superhero based on things they observe in nature. When they describe their superhero, they will need to identify the following things:

- Describe the superhero's traits and connect them to the plant or animal. (1-LS1-1)
- Describe why having those traits helps the superhero. (1-LS1-1)
- Discuss the idea if your superhero had kids if they would pass along their "powers" to their kids. Use examples from nature. (1-LS3-1)

Investigation: Sounds of Nature (mini-research project, occurs during weeks 3 and 4)

Students will learn about various entrepreneurs who are designing technology based on how animals communicate. Students are challenged with finding an animal that uses sound in an extraordinary way and report back to the group on what the sound is, how the animal creates it, and why the animal uses it. (1-LS1-2, 1-PS4-1)

Investigation: Sounds of Nature Part 2 (hands-on investigation, occurs during week 5)

Working with the materials provided, students will try to mimic the sounds of a variety of animals. Throughout this investigation they will be identifying connections between sound and vibrations.

(1-PS4-1)