

Drawn To Nature

GRADES: 6-12

Keywords and Definitions

OBSERVE : to watch something carefully and closely; to notice details and qualities.

NATURE JOURNAL : similar to a personal journal or diary, a nature journal is a place to record observations and to reflect on them through writing or drawing. Unlike a diary, a nature journal is used specifically to record observations of, and thoughts about, nature.

BIOMIMICRY : the design and production of structures and systems modeled on biological processes.

*Look for keywords—**BOLDED**—throughout this lesson extension!*

Activity 1: Biomimicry Comic Strip

One, approximately 30-minute session; pre-visit

LEARNING OBJECTIVE

Students feel empowered by nature as they explore different ways in which animals, plants and fungi adapt to meet challenges.

MATERIALS

- Internet access
- AskNature.org
- [Key Word List](#)
- Drawing/writing utensils
- [Comic strip template](#)
- Superhero images



PROCEDURE

Remind students about the upcoming trip to Wave Hill. Share that today they will consider how nature meets challenges. Explain that it is a common practice in science and art to solve problems through the process of **BIOMIMICRY**. Take a moment to define this word and show some of the provided superhero images as examples. Highlight that careful **OBSERVATION** of nature can help humans solve issues of our own.

Explain that students will use the answers they receive from nature to give themselves problem-solving super powers. Students are welcome to generate a key word of their own, or they may choose from the provided [Key Word List](#). Their word should align with a challenge of their own or a problem-solving technique students would like to see in action in the natural world.

Once all students have selected their word, send them to [AskNature.org](#). Ask students to type the key word(s) into the search bar. Have them refine their search by selecting "Biological Strategies" on the left-hand side. Give students a few minutes to browse articles and choose one to which they feel connected. Then, pass out blank comic strips and drawing utensils.

Students then use the biological strategy they chose to develop a superhero that embodies it. Have students draw their superhero in action on the comic strip. At the bottom of the page, ask students to write a few sentences about why they chose this nature power, and how it can help people to solve problems. Leave time for willing students to share what they created.

SOURCES

"Innovation Inspired by Nature." *AskNature*, The Biomimicry Institute, 2018, <http://asknature.org/>.

Sanchez, Diego. "Free, Printable Comic Strip Templates." *Medialoot*, Medialoot, 7 Feb. 2018, <http://medialoot.com/blog/free-printable-comic-strip-templates/>.

Activity 2: Andy Goldsworthy Art

One, approximately 45-minute session; post-visit

LEARNING OBJECTIVE

Students advance their relationship with nature in the production of meditative, Andy Goldsworthy-inspired art.



MATERIALS

Selected nature items

[Andy Goldsworthy images](#)

[Rivers and Tides documentary](#) (Useful Clips: 6:30-10:31; 28:20-31:30; 34:08-38:15)

PROCEDURE

Before class, ask students to gather nature items from the surrounding area, such as leaves, sticks, seeds, seedpods, feathers, grass, soil, rocks or shells.

At the start of class, take a few moments to explore the found nature items. Share that now it is time to become a co-creator with nature. Show Andy Goldsworthy's art in a clip or clips of your choice from *Rivers and Tides*. Ask students how Goldsworthy is a co-creator with nature. Ask what particular knowledge and skills he needs as this type of artist. Ask what his work tells us.

Give students time to look over and discuss images of Goldsworthy's installations. Note that they are all outdoors, they mimic the rhythms of nature and require tremendous concentration. Next, have students gather their preferred nature items and take time to create a piece in the style of Andy Goldsworthy. Ask them to use the piece to communicate what they have learned about nature while **NATURE JOURNALING**.

If students are motivated, encourage them to combine pieces to create a class statement about nature and community. Provide time for students who are willing to share their art with the rest of the class.

SOURCES

Caddy, John. "Artist/Naturalist Andy Goldsworthy." *Morning Earth*, Morning Earth, www.morning-earth.org/ARTISTNATURALISTS/AN_Goldsworthy.html.

Riedelsheimer, Thomas, director. *Rivers and Tides: Andy Goldsworthy Working With Time*. YouTube/Rivers and Tides, Skyline Productions, 2002, www.youtube.com/watch?v=8WP2AfqyOsl.

BACKGROUND INFORMATION

[Nature Journaling Tips](#)

McCoy, Barb. "Nature Journals - Ideas and Tips." *HubPages*, HubPages, 3 Dec. 2017, www.hubpages.com/education/naturejournal.

[Nature Journaling Examples](#)

Denker, Kari. "Just Some Nature Journaling." *Stone Soup for Five*, 2018, www.stonesoupforfive.com/2012/03/just-some-nature-journaling.html.



More Examples

Leslie, Clare Walker. "Illustrations from Clare Walker Leslie." *Clare Walker Leslie*, 2019, www.clarewalkerleslie.com/illustrations.htm.

Biomimicry

Hutchins, Giles. "Biomimicry: Looking to Nature to Solve Human Problems." *The Guardian*, Guardian News and Media, 15 Nov. 2013, www.theguardian.com/sustainable-business/blog/biomimcry-nature-human-problems-sustainability.

Andy Goldsworthy Anthology

Goldsworthy, Andy. "Andy Goldsworthy Digital Catalogue: Home." *Andy Goldsworthy Digital Catalogue: Home*, Crichton University Campus, 2006, www.goldsworthy.cc.gla.ac.uk/.

Found Poetry

"Found Poetry - Found Poem." *Creative Writing Courses and Ideas: An Online Resource for Writers*, William Victor, S.L., 2018, www.creative-writing-now.com/found-poetry.html.



Biomimicry Comic Strip Keywords

1. Move
2. Store
3. Make
4. Create
5. Break down
6. Change
7. Heal
8. Grow
9. Protect
10. Community
11. Diversity
12. Stability
13. Color
14. Camouflage
15. Strength
16. Flexibility
17. Time
18. Temperature
19. Strategy
20. Success
21. Defense

Biomimicry Superheroes

KLARA PRAST



Klara's ability is to control or "talk to" plants. Her name is a play on the word chloroplast, relating to her plant powers. She uses "Chlorokinesis" to manipulate the growth and movement of plants at will and with incredible ease.

GROOT



This Guardian of the Galaxy comes from a race of tree-like beings that were once thought to be extinct. When damaged, he can regenerate limbs and even regrow his entire body from a single splinter—speaking to the resilience and healing strategies of trees.

ANT MAN



Ant-Man can shrink to the size of an ant and use antennae built into his helmet to send pheromones to actual ants. As a result, he can communicate with them, join their colony and work alongside them to stop evil in its tracks!

CAPTAIN PLANET



In situations that the Planeteers cannot resolve alone, they can combine their powers to summon the title superhero, Captain Planet, a superhero who possesses all of their powers: earth, fire, wind, water (and heart). As a result, he can mimic intense weather events and geological changes to protect the earth.

BEAST BOY



Beast Boy has the ability to morph and transform into any animal that he has seen. Then Beast Boy can use different forms and animal adaptations for different functions. He is one of the most versatile and powerful young superheroes out there!

SQUIRREL GIRL



SG's powers include enhanced speed, reflexes, agility and leaping ability "proportionate to that of a squirrel." She has also small, sharp claws, rather than fingernails and retractable knuckle spikes—both principally used for climbing. She can speak with squirrels, who tend to do her bidding because of how well she treats them. She also has a semi-prehensile squirrel tail.

SPIDER MAN



Spider Man can produce strong webs from spinnerets, as well as climb vertically and sense vibrations using tiny hairs all over his body—just like a real spider!

STORM



Storm can control all forms of weather over vast areas. She can modify temperature and precipitation, create lightning and other electromagnetic atmospheric phenomena and alter atmospheric pressure. She can incite tornadoes, thunderstorms, blizzards and hurricanes, as well as mist.