



How Do Butterflies Flap Their Wings?

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STANDARDS (4th Grade)

NGSS Science Standards (applicable to this unit)

4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Common Core Math Standards (applicable to this unit)

CCSS.Math.Content.4.G.A.3 Recognize a line of symmetry for a 2-dimensional figure as a line across the figure such that the figure can be folded along the line of inot matching parts.

Common Core Writing Standards (applicable to this unit)

–CCSS.Writing.Content.4.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly

Visual Arts Standards (applicable to this unit)

Artistic Perception

1.5 Describe and analyze the elements of art (e.g., color, shape/form, line, texture, space, value), emphasizing form, as they are used in works of art and found in the environment.

Creative Expression

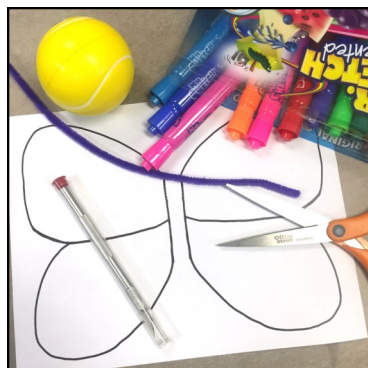
2.3 Use additive and subtractive processes in making simple sculptural forms.

Connections, Relationships, Applications

5.2 Identify through research twentieth-century artists who have incorporated symmetry as a part of their work and then create a work of art, using bilateral or radial symmetry.

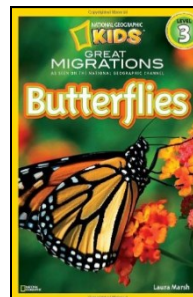
MATERIALS

- 2-2.5 in diameter squishy ball (1/student)
- popsicle sticks (2/student)
- school glue
- 8.5 x 11 in paper (2/student)
- scissors
- pipe cleaners (1/student)
- black permanent markers
- X-Acto blade (teacher only)
- markers (non digital version)
- access to internet, computer, & printer (digital version)



RESOURCES

- Teacher Guide for Unit (includes project How-To) <https://goo.gl/gXFszT>
- Slow Motion Bees Video <https://goo.gl/enjdiU>
- Great Migration: Butterflies by Laura Marsh <https://goo.gl/iDQwU8>
- Monarch Butterflies Migration to Mexico Video <https://goo.gl/GPdhFR>
- Just the Right Size by Nicola Davies <https://goo.gl/KdONTd>
- “Monarch Butterfly Information Table” <https://goo.gl/LgWjO0>
- Online paint tool (digital version only) <https://paintz.zmyaro.com/>
- “Designing Butterfly Wings Online” How-to Video <https://goo.gl/rAvYLz>
- Art Rubric for Self-Assessment <https://goo.gl/9lh4Gz>



PROCESS

1. Compare / contrast the flight of different animals
2. Compare / contrast bird and butterfly flight
3. Compare / contrast bird and butterfly wing structure
4. Watch *Slo-Motion Bees in Flight* video
5. Read Great Migration: Butterflies
6. Watch *Monarch Butterflies Migrate to Mexico* video
7. Read Just the Right Size
8. Fill out “Monarch Butterfly Information Table”
9. Identify and define symmetry
10. Identify contemporary symmetrical artworks
11. Overview building model
12. Walk through the steps of building the model
13. Write an informational text about Monarch butterflies
14. Self-assess art model with rubric