

# Design a Creature

Kindergarten

Unit 6 – Wonders of Nature: Plants, Bugs, and Frogs

Text Connection: *From Tadpole to Frog, From Caterpillar to Butterfly* or any book that you've read that discusses the "parts" of an animal, insect, plant, etc.

## Design Challenge Summary

**Challenge:** What will the students be required to do?

We have been studying about parts of animals and plants and about geometric shapes. Think about the shapes you see in animals and people. Design and build an imaginary creature with two moving parts out of two-dimensional shapes and paper fasteners. Your creature must have: at least 5 different shapes but no more than 20 shapes in all. It must have at least two moving parts.

**Standards:** What standards are addressed?

### Science:

- NS.1.K.1 Record observations pictorially, orally, and in writing
- NS.1.K.2 Ask questions based on observations
- NS.1.K.3 Conduct scientific investigations as a class and in teams
- NS.1.K.6 Collect empirical evidence as a class
- NS.1.K.7 Use age-appropriate equipment and tools in scientific investigations
- LS.2.K.3 Differentiate between plants and animals
- PS.6.K.2 Demonstrate various ways that objects can move...

### Math:

Mathematical Practice Standards

- K.CC.1 Count to 100 by ones and by tens
- K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality
- K.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group
- K.MD.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count
- K.G.1 Describe objects in the environment using names of shapes...
- K.G.2 Correctly name shapes regardless of their orientations or overall size
- K.G.3 Identify shapes as two-dimensional or three-dimensional
- K.G.5 Model shapes in the world by building shapes from components...
- K.G.6 Compose single shapes to form larger shapes

### Other:

- W.K.3 Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.
- W.K.8 With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
- SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups
- SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood
- SL.K.6 Speak audibly and express thoughts, feelings, and ideas clearly.

# Design a Creature

**Result:** What will students know, value, and be able to do as a result of the lesson? What's the big idea?

Know and apply the engineering design loop process.

Understand how shapes work together to create new "shapes" or objects.

Understand how parts of an animal or plant (creature) work together and move.

**Assessment:** What evidence will be used to determine student learning?

Did they build a creature that met the stated criteria?

Did they follow the design loop process?

Did they work collaboratively?

**Prior Knowledge/Experiences:** What prior content knowledge and skills will the students need?

Connections to the Mathematical Practices

Investigations/inquiry in Science

Experiences with shapes

Experiences with movement

**Summary/Connections:** How will this design challenge connect with new/future learning, other content areas, real world experiences, etc.?

This lesson will help students develop problem solving skills and collaboration skills that are essential in succeeding in the 21<sup>st</sup> century. It will allow student the opportunity to transfer and apply skills from various content areas within one task.

As a summary activity, you could engage students in: **W.K.3** Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.

Extensions:

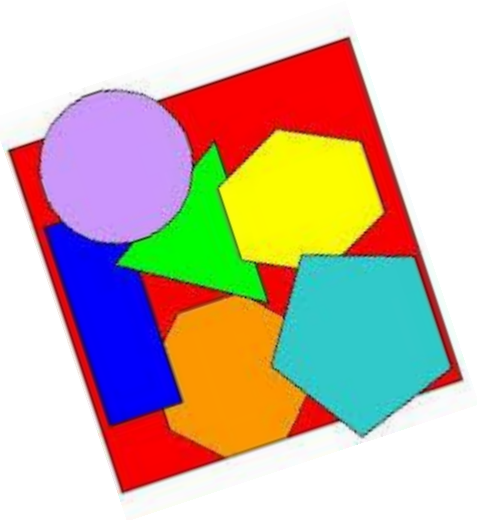
Change the criteria - # of shapes to use; cannot use a shape more than once; has to have more moving parts; etc.

**Materials/Equipment/Preparation:** What materials and equipment will students need to successfully complete this design challenge?

Variety of paper shapes (die cut shapes, pre cut shapes, etc)

Glue

Paper fasteners (brads)



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Group Supplies:

Paper shapes, glue, paper fasteners