



Nature-Watch Activity Kit

Froggy Face

(Nature Watch Kit #123)

Kit Contents

<u>Item:</u>	<u>Kit Size</u>	
	25	100
Froggy Masks	25	100
Blowers	25	100
Bug Sheets	6	24
Velcro Loops	100	400
Velcro Dots	25	100
Elastic Straps	25	100
Instructor Manual	1	1

This page includes the Next Generation Science Standards (NGSS) mapping for this kit and Science, Technology, Engineering, and Math (STEM) extensions (on back) to use in adapting and extending this activity to other subject areas.

**See Back for
STEM Extensions**

Next Generation Science Standards Alignment

- K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.
- K-ESS3-1. Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.
- K-ESS3-3. Communicate solutions that will reduce the human impact on the land, water, air, and/or other living things in the local environment.
- 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-LS3-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
- 2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.
- 3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.
- 3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.
- 3-LS1-1. Develop models that describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
- 3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.
- MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.
- MS-LS3-1. Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.

This Nature Watch Activity Kit contains an Instructor Manual and materials to implement the curriculum. The kit was designed to be used with adult supervision only. Unsupervised use is not recommended.



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STEM Extensions

Science

See how frogs' permeable skin leaves them vulnerable to the chemicals in their environment through a simple experiment. Imagine that a shelled egg is a reptile or a mammal, animals with thicker skin than amphibians. A peeled egg represents a frog. Place each egg in a cup. Add 25 drops of food coloring to each cup. Let the eggs sit for 24 hours. Then, peel the shelled egg and cut both eggs in half. Measure how far into the eggs the food coloring traveled. What does this result tell you about frogs and their skin?

Choose a frog species and create a mini-habitat for it inside a fishbowl or other small, glass container. Use items from outside or get creative with craft materials to make its habitat look realistic.

Find out about some of the frog's relatives in the amphibian class of animals (toads, salamanders, newts, and caecilians). How are they alike and different from frogs? Make a cube (build it with paper or use a wooden cube purchased at a craft store) that displays a picture and information about different amphibians on each side.

Technology

One fascinating thing about frogs is the sounds made by different species. Go online to listen to some frog calls. Choose three frogs and replicate their calls using either your own voice or objects around you. Record your frog calls. Play back your frog calls and see if your friends can guess which frogs they are imitating.

Make a WebQuest about frogs. Come up with five questions about frogs to stump your friend, and have your friend do the same for you. Then give each other 15 minutes to find the answers to the other's questions by searching online. (Sample questions: Do frogs have teeth? Which continent does not have any frogs?) What are some reliable and informative websites with information about frogs?

Engineering

Go online to watch videos of frogs jumping. Using materials you have on hand, try to recreate the frog's jumping mechanism. What kinds of materials are helpful for good jumping? (Hint: Look up "origami frogs" for some ideas about using paper for jumping.)

Engineers have copied frogs' webbed feet to make boats and people move faster through the water. Find examples of products that mimic frogs' webbed feet or other features and write and deliver a sales pitch to get your classmates to buy one of the products.

Math

Make a froggy life events calendar using the information provided in "Information on Metamorphosis". If a frog lays eggs on May 1 of this year, when will the new frogs be born? When will their hind legs form? Front legs? When will the froglet be ready to leave the water? When will the froglet reach maturity? Draw pictures in the calendar for each of these milestones.

Have a jumping competition in which each student jumps as far as he can from a standing position. Record how far each student jumps, then compare it to the distances that various frogs can jump. Rank who would come in 1st place, 2nd place, 3rd place, and so on for all the students and frogs combined.