



Pond Life Pre-visit

Classroom Activities

Brief Synopsis

Students will be given a photo of an object or an animal part. For every object, there is a corresponding animal part that serves the same, or a similar purpose (function). The students must find their match and discuss the form and function of their object and animal part before sharing with the rest of the class.

Ages: Designed for 5th–8th grade

Time Considerations: Approximately 30 minutes.

Materials: Photos of objects and animals on the following pages.

Vocabulary: Macroinvertebrate, form, function, ecosystem, organism.

Outcomes:

1. Students will be able to describe the form and function of organisms.
2. Students will be able to identify and describe forms and functions of common objects and corresponding animals.

Minnesota Academic Standards:

Science:7.IV.E.3

Language Arts: 4.III.A.1-3, 5.III.A.1, 2&4,

6.III.A.1,3&6 , , 7.III.A.1&6, 8.III.1,2,6&7

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Background:

Macroinvertebrates are an essential presence in pond ecosystems. During the *Pond Life* class at Eagle Bluff, students will be searching for macroinvertebrates and identifying them. One of the keys to the identification of these creatures are the forms and functions of their adaptations. This pre-activity will aid your students in determining the form and function of living creatures by relating them to commonly known objects.

Activity: What's your Function?

A form is what that adaptation or feature is, or looks like, where as the function is what that feature or adaptation does. Everything on earth has a form and a function and macroinvertebrates (aquatic insects) are no exception. To help your students understand the concepts of form and function, this activity will ask them to discover the reasoning behind a common object's design and an animal's features, and discuss what function they have in common.

Procedure:

1. Print off the included pages and cut apart the photos of the objects and animals.
2. Using the associated list to make sure they all match up, pass out a photo of either a common object or an animal to each student. (Only distribute the pictures, not the descriptions).
3. The students must then find the student with the object or animal that corresponds to the object or animal they have in regards to function. *Ex: A Down Comforter would match up with a Great-horned Owl (the feathers from both trap air and create insulation).*
4. Together, these students must discuss the function that their object and animal have in common. Afterwards, have the pair share their discovery with the rest of the class.

Assessment:

- Do the students have a clear idea of what form and function are?
- Can the students match the objects or animals and describe their form and function?

Extension Options:

- Have the students brainstorm other forms and functions of animals.

Teacher Tips

- To ensure that matching forms are giving to students who normally do not socialize place the cut out photos underneath their chairs previous to them arriving to class.



Additional Resources

http://www.uen.org/utahlink/activities/view_activity.cgi?activity_id=4750

A website dedicated to animal adaptations (form and function). Includes links to other websites

<http://www.woodlands-junior.kent.sch.uk/Homework/adaptation.htm>

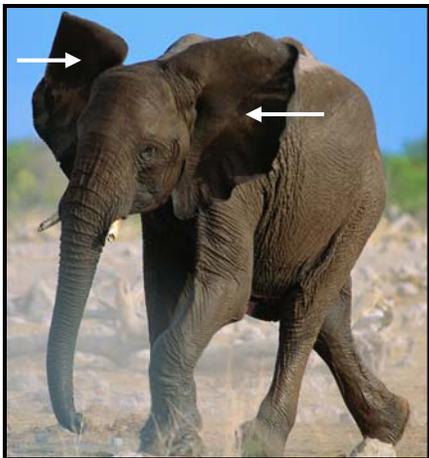
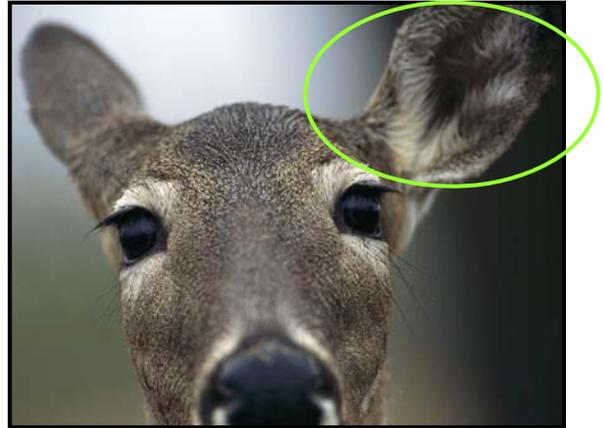
Additional information on adaptations.

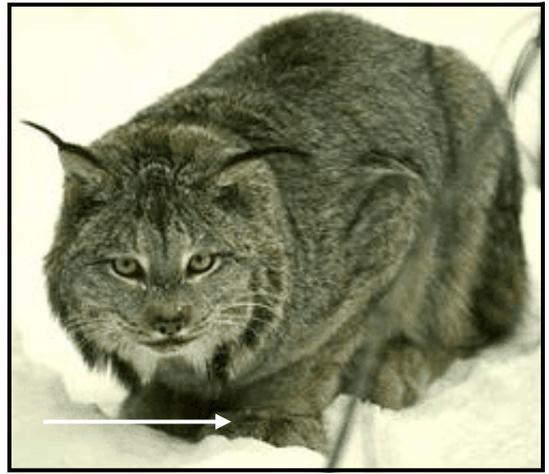
<http://widgeon.com/Wilson/Grade4/SelectedAnimals.html>

Pictures and information about animal adaptations.

Teacher Reference Sheet: Object form, Animal form, and Function sheet

<u>Object Form</u>	<u>Animal Form</u>	<u>Function</u>
Forks	Raptor Talons	Forks and raptor talons have many uses, but in this case, they are both used to hold food down (especially when food is being cut by a knife or torn apart by a sharp, hooked beak).
Satellite Dish	Deer Ear	Both objects are used to catch information, and in the deer's case, sounds. The size of the ear improves its hearing.
Drinking Straw	Butterfly Proboscis	Both are used for drinking. The butterfly uses the proboscis to drink nectar from flowers.
Hand Fan	Elephant Ear	They are both used to keep cool in hot temperatures.
Snowshoes	Canada Lynx Feet	In deep snow, people wear snowshoes to keep from sinking and Canada Lynx have incredibly large paws for the same reason.
Hypodermic Needle	Bee Stinger	Hypodermic needles are hollow to inject medicines and vaccines, as bee stingers are hollow to inject venom.
Swimming Flipper	Duck Foot	Flippers and duck feet both aid in swimming fast and also diving deep into the water.
Handfork	Bear Paw	The handfork garden tool is similar to the bear paw in that they are both primarily used to dig in the ground (bears look for insects).
Suction Cup	Tree Frog Foot	Both are used to stick to objects like walls, windows, trees or leaves.
Chisel	Beaver Teeth	Both are used to chip away at materials.
Spear	Kingfisher beak	The spear is used for hunting by piercing the animal, while the kingfisher will use its beak as a spear while hunting for fish.
Stripes under Football player's eye	Malar Stripes of Falcons	The color black absorbs light (including sunlight), so football players paint black stripes under their eyes. Falcons need that protection as well, so they have black (malar) stripes near their eyes (some falcons have more defined malar stripes than others).
Sun Visor	Supraorbital Ridges of Raptors	Some raptors have "ledges" above their eyes (supraorbital ridges) that act as sun visors to shield their eyes from the sun.
Airplane	Vulture	Both keep their wings extended to remain in flight.
Fly Swatter	Horse Tail	Both are used to keep away flies.
Swim Goggles	A fish's clear eyelid	Both help the user to see clearly under water.





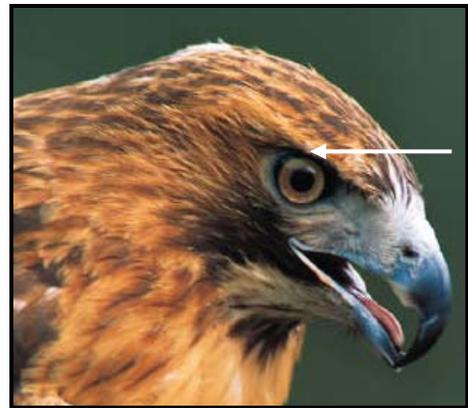
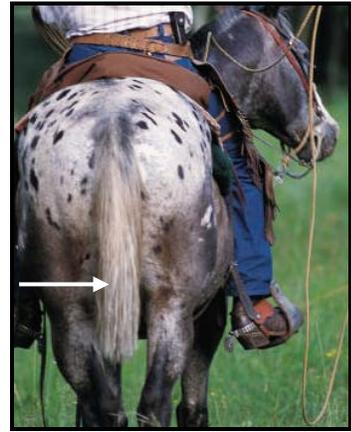


Photo by Jim Williams



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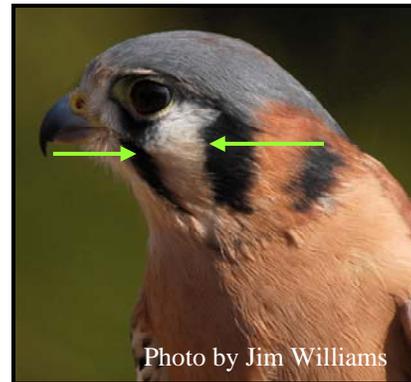


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