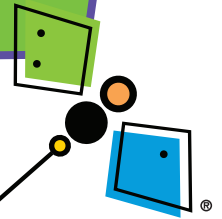


# DragonflyTV: GPS Activity 12

## Investi-gators



**Mississippi Museum of Life and Science**  
Jackson, MS  
[www.mdwfp.com/museum/](http://www.mdwfp.com/museum/)



### Alligator Habitat

We're Katelyn and Blake and we're nuts about animals—especially reptiles! Katelyn is a junior volunteer at the Mississippi Museum of Natural Science in our hometown of Jackson, Mississippi. She knows a lot about reptiles. Her work at the museum got us some special access to check out some of the animals there—including snakes, alligators, frogs, and turtles. Here's our question: What makes a good home for alligators?

After we spent some time at the museum's indoor and outdoor swamp exhibits, we decided to take what we learned out in the field to observe some alligators. We made a chart to keep track of the number of gators we saw and headed to Australia Island, a spot further up the Mississippi River. We counted 12 alligators at our first location. We took notes and a water sample. At our second location, where the swamp was wider, we didn't see any 'gators. So we took a water sample and headed back to the museum.





## Icebreaker

Use your creativity to design your own species of fish.



45 minutes

### DragonflyTV Skill: Planning

#### Guide your kids as they

- 1) Select a picture of a fish, describe the fish's "lifestyle," and speculate on its habitat by looking at its coloration, body shape, and mouth.
- 2) Study the fish's adaptations: look at its mouth, body shape, coloration, and fins. How do these adaptations help the fish survive in its habitat?
- 3) Using the materials and craft supplies create a 3D fish with the adaptations that help it survive in its habitat. Follow these steps:
  - draw a large picture of the fish on a large folded sheet of paper
  - draw the pectoral fins and pelvic fin on a separate piece of paper
  - using the craft materials and markers, decorate both sides of the paper
  - keeping it folded, cut out the fish
  - staple the two sides together leaving an opening
  - stuff the fish with crumpled paper to give it a three dimensional look and staple it closed
  - glue on the pectoral and pelvic fins
- 4) Write a description of their fish. They can write it in the form of a newspaper article, an interview with a fish, a science journal report, or the field notes of a famous naturalist.
- 5) Present their fish to the class.

#### You'll need:

- colored paper
- markers/crayons
- scissors
- glue
- a stapler
- assorted craft supplies
- pictures of fish

### DFTV Science Helper

Let the kids be even more creative by encouraging them to "invent" a new species of fish or describe a fish from another world. They should be able to describe the "special" habitat the fish lives in and explain why it has the adaptations they gave their fish. How do these adaptations help it survive? See if they can find a real fish that has similar adaptations. They may be surprised by what they find.



For more simple activities like this one, surf to [pbskidsgo.org/dragonflytv/superdoit/index.html](http://pbskidsgo.org/dragonflytv/superdoit/index.html)



## Investigation

### Collecting Invertebrates to Determine Water Quality



2-3 hours

#### Collecting Invertebrates to Determine Water Quality

##### Guide your kids as they

- 1) Go to a local pond, lake, stream, or even roadside ditch. Divide the kids into 4 or 5 groups and pass out one net and bucket per group. Put some water from the pond into the bucket. Use the dip nets to collect invertebrates from the pond. Put them in the water in the buckets. Try to keep the water as clean as possible. Scoop through the aquatic plants, the detritus or mud on the bottom, and through the water column to find the invertebrates.
- 2) Keeping the water as clear as possible, pour a small amount of water into the shallow pan and place the invertebrates in the pan.
- 3) Use the viewing scopes and magnifying glasses to study the invertebrates and how they behave.
- 4) Different types of invertebrates are more tolerant of pollution than others. Group One - invertebrates that are not tolerant of pollution are caddisfly larva, stonefly larva, dobsonfly nymph, mayfly nymph, water penny beetle, riffle beetle, and snails with openings to the right or center. Count how many of these types of invertebrates they collected. For example, 3 snails would not count as 3, but instead would represent only 1 of the types listed from Group One. Three snails and 1 dobsonfly nymph would count as only 2 types of invertebrates from Group One.
- 5) Group Two - invertebrates somewhat tolerant of pollution are crayfish, damselfly larva, sowbug, scud, beetle larva, crane fly larva, clam, watersnipe larva, and dragonfly nymph. Count how many of these types of invertebrates they collected.
- 6) Group Three - invertebrates very tolerant of pollution are midge fly larva, leech, black fly larva, aquatic worm, and pouch snails with openings to the left. Count how many of these types of invertebrates they collected.

#### You'll need:

- dip nets, long-handled or short with fine mesh (1 per group of 3 kids)
- buckets, 1 per group
- large shallow pans - preferably white, 1 per group
- small viewing scopes or magnifying glasses, 1 per child
- pictures of some common aquatic invertebrates, such as found in a pond guide (or see [www.students.ed.uiuc.edu/freymuth/wetlands/](http://www.students.ed.uiuc.edu/freymuth/wetlands/))
- boots or shoes that can get wet and muddy

#### DFTV Science Helper

Collecting invertebrates can be challenging since many are very small and well camouflaged. Bringing the nets onto the bank with all the leaves and other debris still in them and then watching for things to move can be the best way to find the animals. Just be sure to put everything back in the water when done.

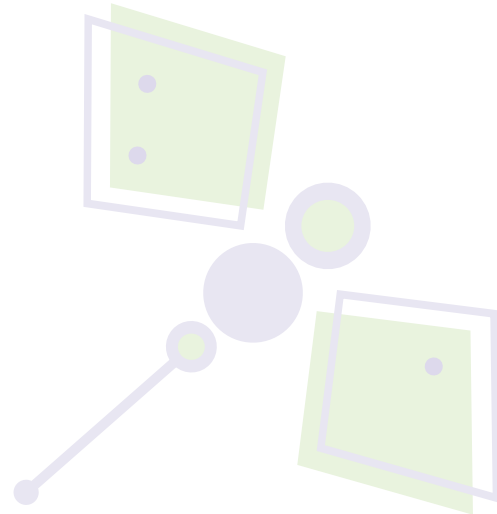


## DFTV Kids Synthesize Data and Analysis

To determine the quality of the water in the pond use the following calculations.  
When counting:

- 1) Take the number of types of Group One invertebrates were collected and multiply by 3.
- 2) Take the number of how many types of Group Two invertebrates were collected and multiply by 2.
- 3) Take the number of how many types of Group Three invertebrates were collected and multiply by 1.
- 4) Add the results from steps 1-3. This is the total index value for the water at the pond. Compare this total index value to the following numbers to determine the water quality.

Index value > 22 is excellent.  
Index value = 17-22 is good.  
Index value = 11-16 is fair.  
Index value < 11 is poor.



## Keep Exploring!

Speculate on why the water quality in the pond is excellent, good, fair, or poor. Are you in a city with lots of pollution entering the water? Is there a wetland nearby which has helped to clean the water? Discuss what could be done to improve the water quality. Encourage the kids to collect the garbage they scoop out of the pond and then dispose of it properly.