

# Ponds and Wetlands Kit #17

## Blackline Masters



Name \_\_\_\_\_ Check Point 1

1. Has the number of acres of wetland in the U.S. increased, decreased or stayed the same over the last 300 years?  
\_\_\_\_\_

2. What human activities have affected the amount of wetlands in the U.S.? List two human activities.  
\_\_\_\_\_ , \_\_\_\_\_

3. The water in wetlands is part of which of the Earth's "spheres"?

Circle one:

Atmosphere

Hydrosphere

Lithosphere

Use these locations to answer questions 4 and 5.

air and soil    oceans    ground water    glaciers and icecaps    surface water

4. Where is most of the Earth's water found? \_\_\_\_\_

5. Where is most of the Earth's fresh water found? \_\_\_\_\_

6. What are two factors needed for a pond to form? Circle two letters.

A. an impermeable layer of soil or rock

B. ground or surface water

C. warm days and cool nights

D. a high place for the pond to form

7. The Earth's clay, soil and rocks found under the water in a pond is part of which "sphere"?

Circle one:

Atmosphere

Hydrosphere

Lithosphere

Check Point 2 (pH, Temp.)

Name \_\_\_\_\_

1. You may have to look at the diagram to answer some of the questions.

A. As the pH number becomes lower does the water become more basic or more acid? \_\_\_\_\_

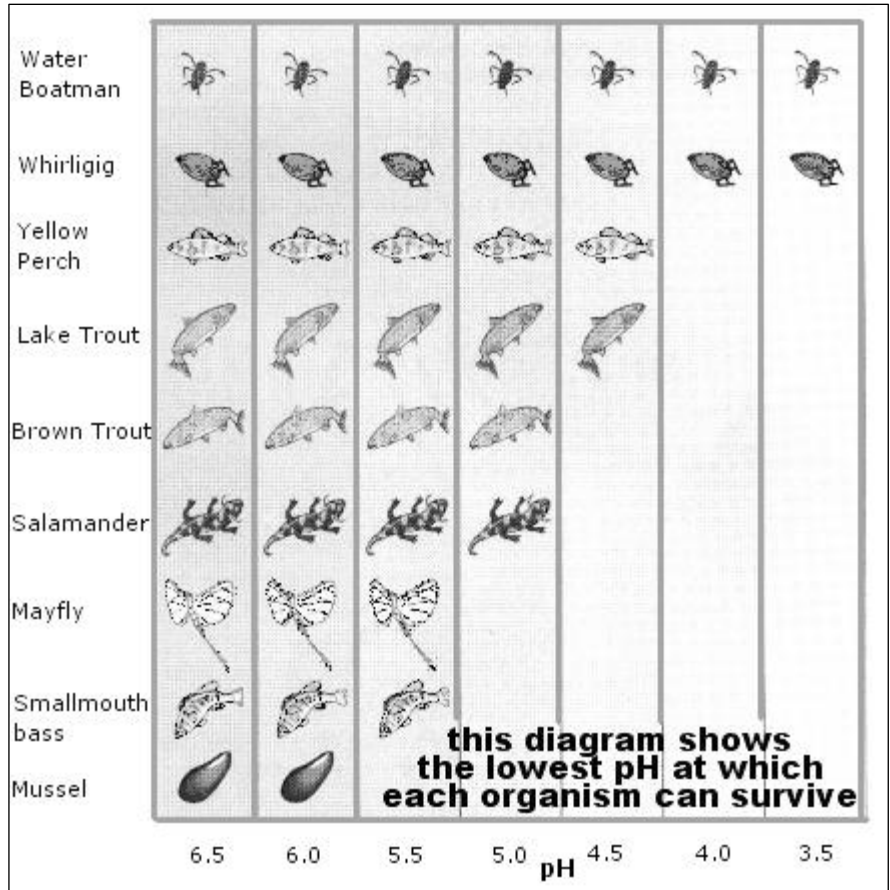
B. At what pH will all of the organisms do best? \_\_\_\_\_

C. Which organisms can survive at the lowest pH?  
 \_\_\_\_\_  
 \_\_\_\_\_

D. If the Lake Trout eat Mayflies, how would the pH falling to 5.0 affect each of these?

Mayfly: \_\_\_\_\_

Lake Trout: \_\_\_\_\_

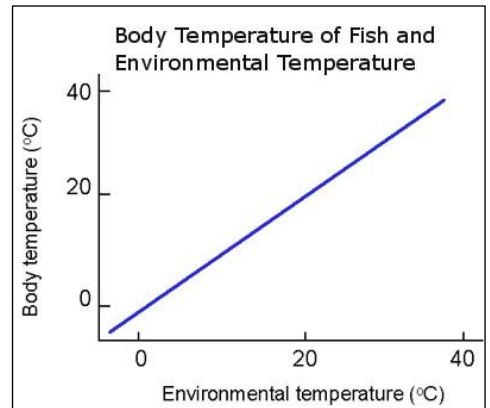


Answer the following questions by filling in the blanks.

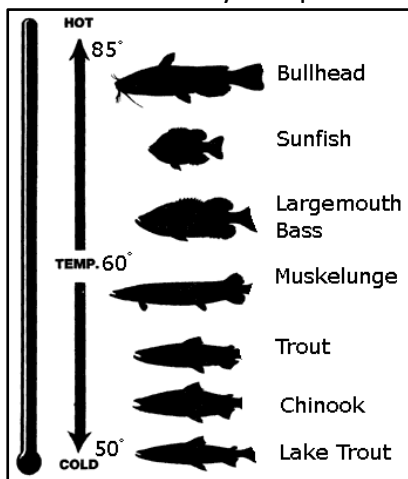
2. If cooler temperatures were forecast for an area which would change temperature more slowly, a large pond or a small pond?  
 \_\_\_\_\_

3. The graph to the right compares a fish's body temperature to the temperature of the surroundings (environment).

The graph is showing that as the Environmental temperature increases the Body Temperature of the fish \_\_\_\_\_.



4.



What does the diagram to the left tell you about fish and water temperatures?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Check Point 3 (DO, Light)

Name \_\_\_\_\_

Dissolved Oxygen

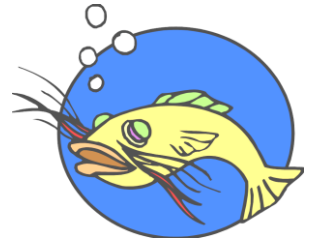
1. What do we mean by the term “dissolved oxygen”?

\_\_\_\_\_

2. Why do most living things need oxygen?

\_\_\_\_\_

3. Below is a list of factors that affect the dissolved oxygen levels in aquatic systems.



Place an “I” in front of those that can make the dissolved oxygen INCREASE.

Place a “D” in front of those that can make the dissolved oxygen DECREASE.

\_\_\_\_\_ plants using sunlight to store food (photosynthesis)

\_\_\_\_\_ many fish, salamanders, tadpoles and worms in a pond

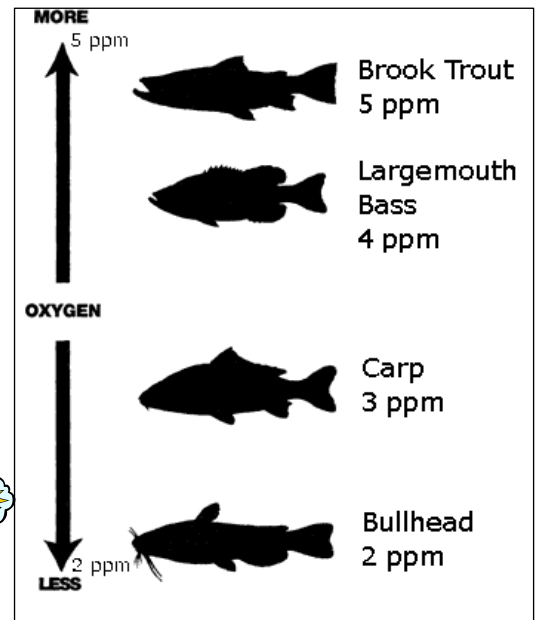
\_\_\_\_\_ a sunny day causing the water to warm up

\_\_\_\_\_ wind blowing the water into small waves

4. The diagram to the right shows four different fish. Each fish has dissolved oxygen (ppm) levels at which it can survive.

A. Which fish would be most affected by a low oxygen level of 3 ppm?  
\_\_\_\_\_

B. Which fish would survive best in a warm, small pond with few water plants?  
\_\_\_\_\_



LIGHT: Complete each thought by filling in the missing words.



5. A pond receives its light energy from \_\_\_\_\_.

6. Two factors that can affect the amount of light energy reaching a pond are \_\_\_\_\_  
\_\_\_\_\_ and \_\_\_\_\_.

7. The group of living things directly affected by an increase or decrease in sunlight is \_\_\_\_\_.

8. Light energy is important to an aquatic system because \_\_\_\_\_  
\_\_\_\_\_

Name \_\_\_\_\_

Check Point 4 (Aquatic Organisms)

1. Unicellular or multicellular?

For each of the following organisms, write if they are unicellular or multicellular.




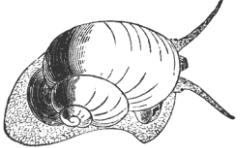


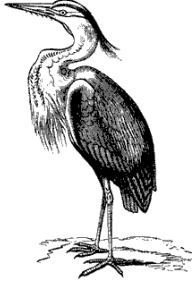
A. \_\_\_\_\_ fish

B. \_\_\_\_\_ snail

C. \_\_\_\_\_ amoeba

D. \_\_\_\_\_ protists

2. The table below tells you how some organisms get their energy. Your task is to study the pictures and create two food chains. Use the names of the organisms in your food chain.

<p><b>Algae</b> - get their energy from sunlight</p> 	<p><b>Minnow</b> - feed on smaller organisms such as snails</p> 	<p><b>Kingfisher</b> - consumes small fish, newts, worms and insects</p> 	<p><b>Snail</b> - feeds on algae</p> 
<p><b>Tadpole</b> - feeds on algae and organic matter</p> 	<p><b>Newt</b> - preys on snails, mussels, fish eggs and small tadpoles</p> 	<p><b>Great Blue Heron</b> - feeds on fish</p> 	<p><b>BONUS</b> Animal name: _____ How it gets its energy. _____</p>




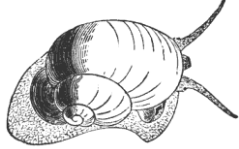



Food Chain A:

Food Chain B:

**Bonus:** Add to the table an animal that would fit into one of the food chains.

Name \_\_\_\_\_

Table 1

<p><b>Algae</b> - get their energy from sunlight</p>  <p>_____</p>	<p><b>Minnow</b> - feed on smaller organisms such as snails</p>  <p>_____</p>	<p><b>Kingfisher</b> - consumes small fish, newts, worms and insects</p>  <p>_____</p>	<p><b>Snail</b> - feeds on algae</p>  <p>_____</p>
<p><b>Tadpole</b> - feeds on algae, and organic matter</p>  <p>_____</p>	<p><b>Newt</b> - preys on snails, mussels, fish eggs and small tadpoles</p>  <p>_____</p>	<p><b>Great Blue Heron</b> - feeds on fish and frogs</p>  <p>_____</p>	<p><b>BONUS</b> Animal name: _____</p> <p>Where it fits in the food web. _____</p>

1. In each picture label the organisms as a producer, herbivore, carnivore or omnivore.
2. Draw a simple food web diagram using the names of the organisms in the above table.

**Bonus:** Add to the table an animal that would fit into the food web.

Name \_\_\_\_\_

Check Point 5b (Food Web, Pyramid)

Draw an energy pyramid (pyramid of numbers) using a food chain from Table 1.



Write in words what the energy pyramid diagram is showing.

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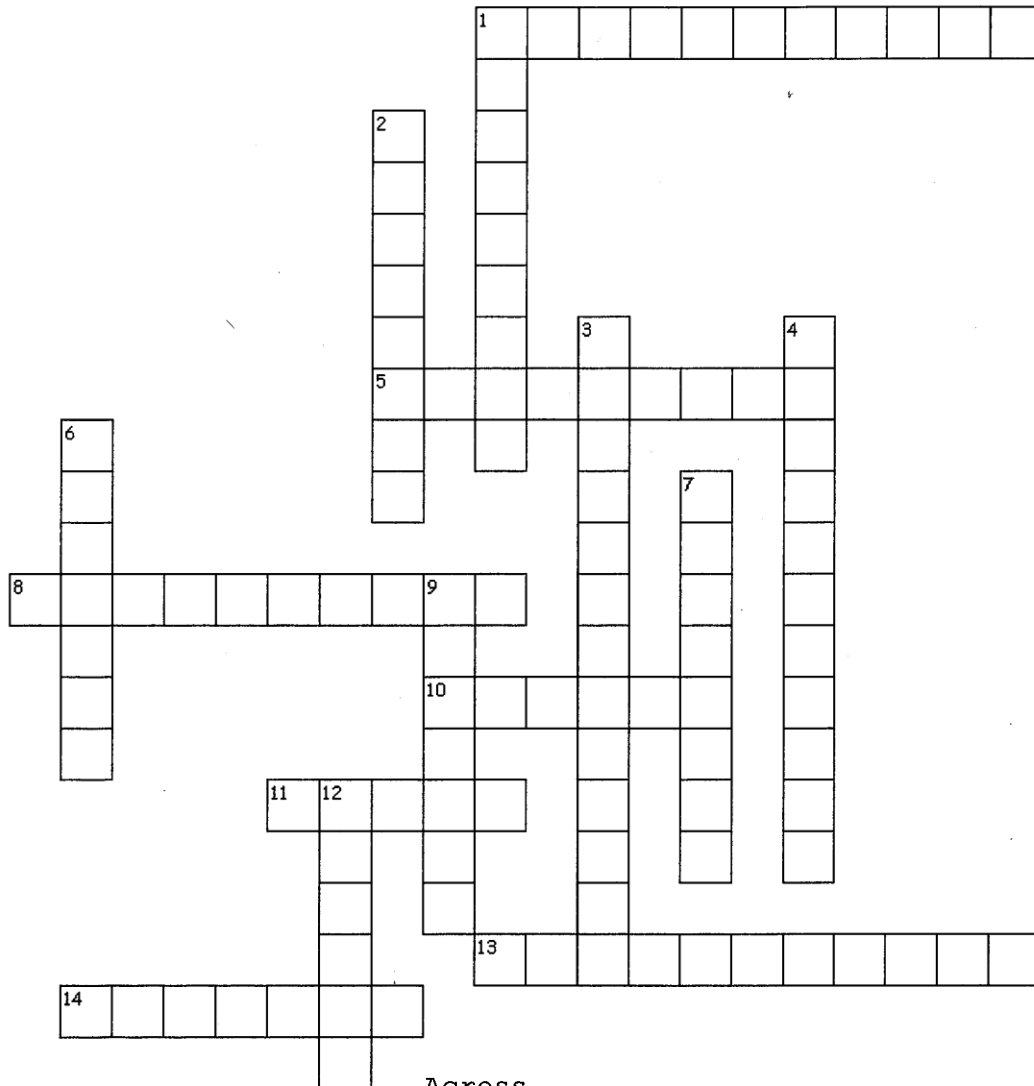
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Name \_\_\_\_\_

## You Are All Wet



### Across

1. the water part of the Earth
5. a consumer of animals
8. an instrument used to magnify objects
10. a gas needed by living things
11. having a pH greater than 7
13. a measure of energy of motion
14. related to water environments

### Down

1. a plant eater
2. a living thing that stores light energy
3. a living thing too small to be seen
4. related to land environments
6. a place where a living thing lives
7. a living thing
9. a one-celled organism
12. having a pH less than 7



Name \_\_\_\_\_

## Building a Backyard Pond

You would like to plan a backyard that has a backyard pond. In planning the project, you will need to think about the best place in the yard for the pond. You will need to think about what else will be in your yard. Since there will be living things in the pond you will need to think about meeting their needs for survival. Your task is to plan a backyard pond by providing the information below. You can use your Student Journal as a reference.

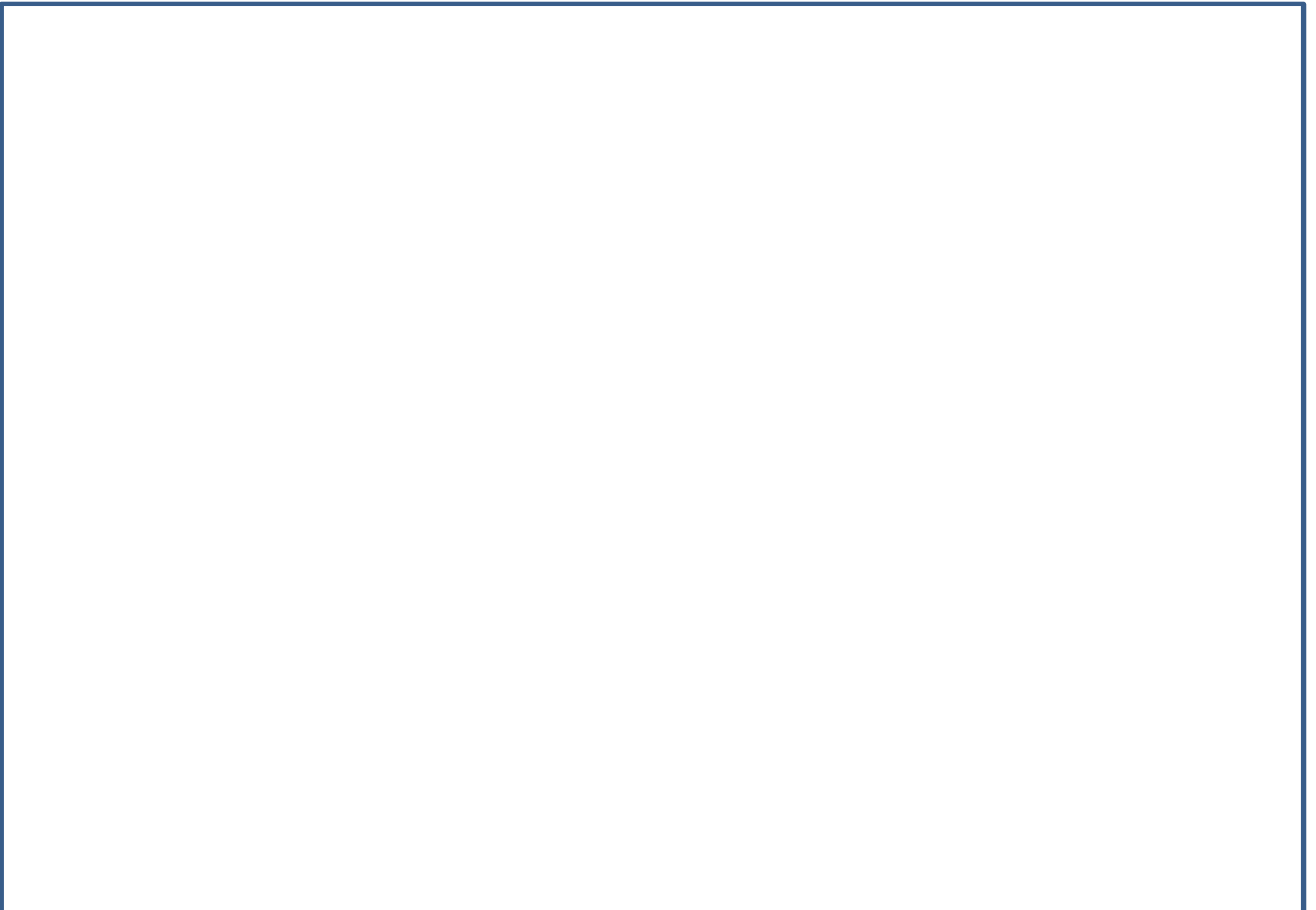
### 1. Planning the location: (Environment)

List two things that are important in deciding where to place the pond in your backyard.

A. \_\_\_\_\_

B. \_\_\_\_\_

Draw a backyard with your pond. Be sure to include trees, shrubs, swings and whatever else you would have in your backyard. Label the items in your backyard.



Name \_\_\_\_\_

**2. Building the pond:**

How will you keep the water in the pond? How will the pond be built to keep an amount of water in the pond?

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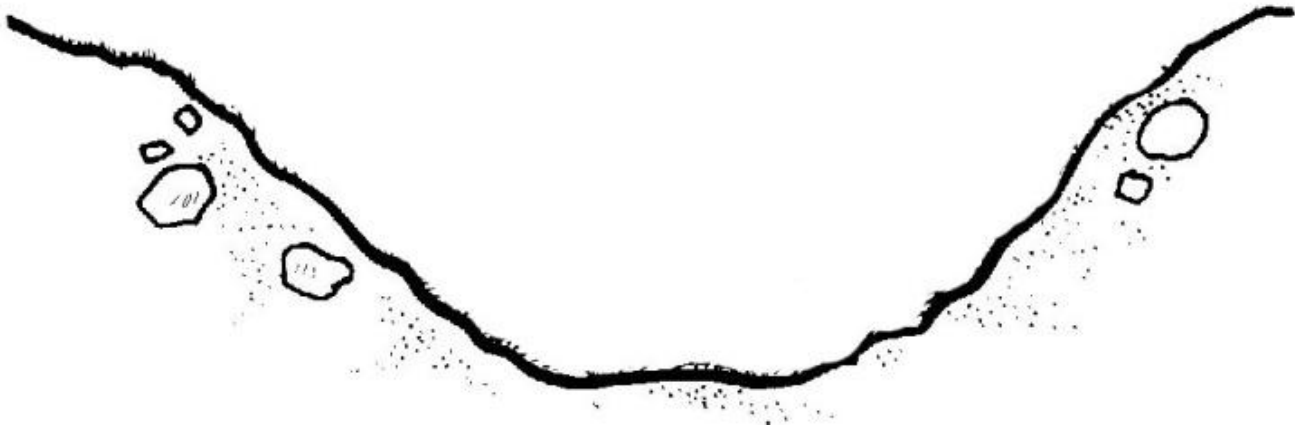
What water testing (measurements) will you do to help the living things survive in your pond?

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**3. Adding the living things:**

This is a drawing of a side view of a pond. Draw the living things you will have in and around the pond. Label the living things using vocabulary words from the unit.



How could you set up your pond so that you do not have to “feed” the living things?

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