



The Mud Puddle

Muskingum Soil and Water Conservation District
225 Underwood Street, Suite 100
Zanesville, OH 43701
www.muskingumswcd.org

Spring
Issue
2012

CRITTER CORNER

Our Fishy Friends in Winter

Fish, like reptiles and amphibians are “cold blooded” vertebrates, or poikilotherms. This means that their body temperature varies according to the temperature of their surroundings, unlike birds and mammals which can control their body temperature so it remains steady. When cold weather sets in, cold blooded animals are unable to move around and spend the cold months hibernating. Amphibians and reptiles both hibernate through the winter, but what about fish?

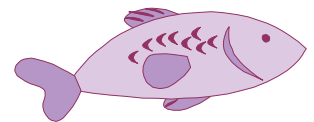
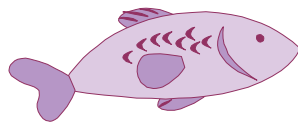
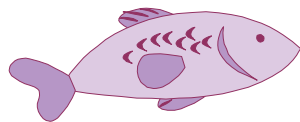
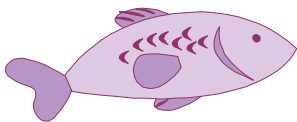
During the winter, fish stay deeper in the water where the temperature is above freezing so no ice forms inside their body. Some Antarctic fish even have their own “antifreeze” in their body tissues (wood frogs have this as well). Cold water holds more oxygen, so fish don’t need to be as active in the winter months. Like most other animals, fish prepare for winter by eating more in the fall to put on the needed weight to survive the cold. Fish don’t actually hibernate, instead they enter a state of metabolic inactivity, crucial to their winter survival because it decreases the amount of energy needed for everyday activity.

Fish are a class of aquatic vertebrates, the combination of gills, fins, and the fact that they only live in water make them different from other animals. Most fish belong to the class *Actinopterygians*, or “ray finned” fishes, which comprise the largest group of fishes, and make up half of all living vertebrates. There are approximately 24,000 known species in this class.

One feature that separates fish from other vertebrates is how they breathe. Most fish breathe with gills. Gills are made of thin sheets of tissue rich in blood vessels. As water passes over them, the dissolved oxygen is absorbed into the blood and waste material, such as carbon dioxide, pass out into the water. Very few fish actually have lungs and most have an air bladder which allows them to rise and lower in the water at will.

If you’ve ever handled a fish, you know they are quite slimy. A fish is slimy because they secrete a type of mucus from their skin. This slime coating protects the fish from parasites and disease, covers wounds to prevent infection, and helps the fish move faster through the water. It’s important to remember if you even need to handle a fish to wet your hands first. This protects the slime coating and helps keep the fish alive when returned to the water.

Still interested in fish? A scientist who studies fish is called an ichthyologist. Fish have been on earth for more than 450 million years and were well established long before dinosaurs roamed the planet. Fish also have a specialized sense organ called a lateral line, which they use like radar to navigate in dark or murky water. For more fascinating fish facts, visit the National Geographic website at: animals.nationalgeographic.com/animals/fish.

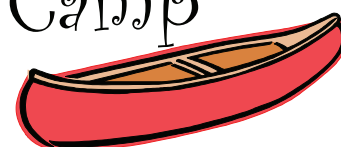


The Wonders of Water

In anticipation of our new aquatic education mobile exhibit, this issue of the Mud Puddle is dedicated to the wonders of water. Inside are fun and educational activities for discovering the numerous properties of water, including surface tension, density, buoyancy, light refraction, adhesion and cohesion. A list of great websites and free teacher resources are included, and of course, no edition of the Mud Puddle would be complete without animals! Check out Critter Corner on the front for some exciting facts about fish and how they spend the winter. Enjoy!

2012 Kids Conservation Camp

A Fun and Educational Summer Experience !!



Mondays & Wednesdays

June 4, 2012

through

August 15, 2012

9:00 a.m. to 4:00 p.m.

Registration begins April 4, 2012
Space is limited to 20 children per day.

REGISTRATION FEE:

\$35.00 per week for Y-Members

\$45.00 per week for Non-Members

Drop off and pick-up will be at
PARK CENTRAL (FORMALLY ARMCO PARK)
1861 ADAMS LANE
ZANESVILLE, OH 43701
(740) 453-9622

Z-Bus provides transportation to activities.

For More Information:

Muskingum SWCD 454-2027

Muskingum Family YMCA 453-9622



JUNE 6, DAWES ARBORETUM VERNAL POOL

Vernal pool life, amphibians of Ohio

JUNE 13, OLD MAN'S CAVE

Hiking, stream exploration, Ohio geology

JUNE 20, BURR OAK STATE PARK

Canoeing, swimming, water safety

JUNE 27, OHIO RIVER MUSEUM & CAMPUS MARTIUS

River history and ecology, pioneer life

JULY 5 (THURSDAY), THE RIDGE MUSEUM AND KRAMER NATURE CENTER

Archaeology and nocturnal animals

JULY 11TH, OSU AGRICULTURE RESEARCH STATION

Animals, agriculture and farm life

JULY 18TH, LAKE PARK IN COSHOCTON

Swimming, water slides and outdoor fun

JULY 25 - 26, YMCA/OUZ WEDNESDAY

CAMP OVERNIGHT AT BLUE ROCK STATE PARK -

Wednesday night through 4:00 p.m. Thursday

AUGUST 1, THE WORKS!

Hands-on science experiments

AUGUST 8, ROSCOE VILLAGE

Living history, canal boat presentation

AUGUST 15, ZANE STATE COLLEGE NATURAL RESOURCE CENTER

Fishing, archery, end-of-summer party!



Wonderful (and Educational) Water Experiments

Make a Lava Lamp

Materials:

- * Small Jar with Lid
- * Vegetable Oil
- * Food Coloring
- * Water

Procedure:

1. Fill a jar $\frac{3}{4}$ of the way with vegetable oil.
2. Fill the remainder of the jar with colored water

Tightly close the lid and move the jar slowly back and forth as you watch the liquid move.

The oil and water don't mix because water has more density than oil.

Dancing Raisins

Materials:

- * Tall, Clear Glass
- * Raisins
- * Club Soda (can't be flat)

Procedure:

1. Pour soda in the glass, about $\frac{1}{2}$ full.
2. Drop in $\frac{1}{2}$ of a raisin. What happens?

The raisin floats to the top because the bubbles in the soda stick to the sides of the raisin like a life jacket, which makes the raisin more buoyant so it floats.

What else can you float in club soda? Try nuts, paperclips, grapes, popcorn and chocolate chips. Remember, it's the bubbles that make different objects float, the more bubbles that stick to the sides; the more easily an object floats.

Visit pbskids.org/zoom/activities for more information, games, experiments and teacher/parent resources.



Make An Egg Float

Materials:

- * Water
- * Cooking Oil
- * A Tall, Clear Glass
- * Liquid Soap
- * 2 Eggs
- * Salt
- * Tablespoon
- * Sugar

Procedure:

1. Fill the glass $\frac{1}{2}$ full of water and carefully place the egg in the water. The egg will sink because it is more dense than water.
2. Using the tablespoon, gradually add salt to the water and gently stir to help the salt dissolve. What happens? How much salt do you have to have to get the egg to float?

Empty the glass and rinse it out, then repeat the experiment using liquid soap, sugar and cooking oil. Are your results the same?

Adding salt to the water makes it more dense. When the water is more dense than the egg, the egg will float.

The Unspillable Water Experiment

Materials:

- * Clear Juice Glass
- * 4x6 index card
- * Water

Procedure:

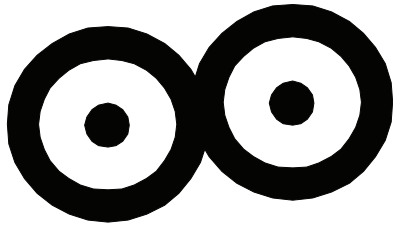
1. Fill the juice glass full of water, let the water run over so that the lip of the glass is wet. Fill all the way to the top.
2. Place a 4x6" index card on top of the full glass of water. Be sure to press down securely with your hand so it makes a good seal around the wet lip of the glass.

Working over the sink, hold the card in place with one hand as you turn over the glass. Carefully let go of the index card. The card will stay in place and the water will remain in the glass. How does this happen?

The force of air pressure against the card is stronger than the force of gravity on the water. It's the air pressure that holds the card in place.



Wonderful (and Educational) Water Experiments



The "Eyes" Have It

Materials:

- * Tall, Clear Glass
- * A Straw or Pencil
- * Water

Procedure:

1. Fill the glass at least $\frac{1}{2}$ full of water.
2. Place a straw or pencil in the glass

Look at the straw/pencil from the side of the glass and focus on the point where the straw enters the water. What is strange about what you see?

Our eyes use light to see at all times, but when light travels through different mediums, it changes direction slightly. Light refracts (or bends) when it passes from air to water. The straw looks bent because you are seeing the bottom part through air and water, but the top part through air only. Air has a refracting index of around 1.0003, water about 1.33.

Swimming Fish: A Lesson in Surface Tension

Materials:

- * Colored Cardboard (poster board works well)
- * Large bowl or Cake Pan
- * Dish Soap (Dawn works best)
- * Water

Procedure:

1. Cut the cardboard in the shape of a fish
 2. Fill the bowl/cake pan with water
 3. Place the fish on the surface, it will float
- Add one drop of dish soap just behind the fish's tail and watch it swim away!
- The surface tension allows the fish to float. When the surface tension is broken by the soap, it causes the fish to move forward.

Sugar Lumps and Matchsticks

Materials:

- * Sugar Cubes
- * Large Bowl or Cake Pan
- * Wood Matchsticks
- * Water

Procedure:

1. Fill the bowl/cake pan with water.
 2. Gently place the matchsticks on the surface so they float in a circle.
 3. Slowly dip the sugar cube into the center of the matchstick circle and observe what happens.
- The matchsticks should move closer together on the surface of the water as you dip the sugar cube and move back apart when you remove it.
- The matchsticks move in as the sugar cube absorbs some of the water and causes an increase in surface tension.



Understanding Buoyancy

Using an aquarium, cooler or sink, fill about $\frac{3}{4}$ of the way with water. Place several brands of unopened regular and diet sodas in the water. Which will float and which will sink? Why?

The soda cans all contain the exact same volume and are the same size, so why do some float and some don't?

It all depends on what's in the soda. Regular soda has a lot of sugar, so it's more dense, while diet soda has artificial sweeteners that affect its density. Try this experiment with other canned beverages.

2012 Camp Adventure

"Got H2O?"

This year our Camp Adventure theme is "Got H2O?". Join us for two fun filled days of hands-on learning. Camp Adventure is a great way to meet new friends, learn new things and spend some quality time outside!

Camp will be held at Friendly Hills Grange Camp, 5882 Friendly Hills Rd. in Zanesville. Lunch will be provided by the camp and we have indoor facilities in the event of inclement weather.

Camp Adventure is made possible by the generous contributions of many area businesses and the Muskingum Soil and Water Conservation District.

Camp Activities

Life Underwater:

Walk through our new Aquatic Education trailer and learn about the amazing underwater world many animals call home.

Stream Exploration:

Go on a fabulous stream adventure! Learn about what the stream animals tell us about water quality and look for these elusive critters.

H2Olympics:

Discover the many amazing properties of water and compete in some fun team events.

Fish Identification:

Join members of the Ohio Division of Wildlife's fish management unit to see some live fish and learn to I.D. fish in Ohio streams.

Crafts:

Make a ship in a bottle and recycled bottle lantern.

Water Safety:

Learn about the many recreational activities available on Ohio waterways and how to stay safe when boating or swimming.

Watercraft:

Canoeing is a lot of fun, but if you don't know the dangers, you could get into trouble on the water! Learn tips for keeping dry and steering clear of danger.

Backyard Gardening:

What can you grow right on your patio, window sill or even your flower bed!

June 21 & 22, 2012
9:00 a.m. — 3:00 p.m.
Friendly Hills Grange Camp

Camp Adventure Registration

Camper's Name (Please Print)

Address

City _____ Zip _____

Grade of camper in Sept, 2012 _____

(Must be Entering 4th, 5th, 6th in Fall 2012)

Child is a resident or attends school in Muskingum County (circle one) Yes No

School Attending _____

T-SHIRT SIZE MUST BE MARKED: (circle one)

Youth: Small Medium Large

Adult: Small Medium Large X-Large

Name of Parent/Guardian

Address

City _____ Zip _____

Daytime Phone _____

Signature of Parent/Guardian

Completed registration includes this registration form, fee, and the permission and medical forms that will be mailed to you upon receipt of this registration. All medical forms must be received by May 21 for child to attend camp.

Return Registration & \$20 Registration Fee to:
Muskingum SWCD
225 Underwood Street, Suite 100
Zanesville, OH 43701

New Project WET Website!

Project Wet (watershed education for teachers) just launched a new, interactive website for students, parents and educators. *Discoverwater.org*, offers great resources for bringing water education to the classroom. The site has seven different topics including: watersheds, water cycle, oceans, fresh water and using water wisely. Each topic includes interactive videos, worksheets, games activities, take action suggestions and a section for educators and parents. You can download a science notebook and numerous other printable items, including posters. The site complements the Project WET curriculum guide, which has been correlated to the state science standards. If you or a group of fellow teachers would be interested in attending a Project WET workshop, please let me know and I'll set one up for you. Enjoy this excellent free resource.

Don't have time to develop a new activity for your classroom? The Muskingum SWCD offers several classroom presentations available to complement your curriculum. The Incredible Journey is a fun game where students travel through the water cycle, charting their journey on a bracelet they can take home. The presentation is for grades 3-12 and all ages love this activity. We also offer a program called H2Olympics. This presentation is comprised of several experiments students conduct to explore the properties of water set up in an Olympic event format. Students learn about adhesion, cohesion, surface tension, capillary properties and much more. For more information or to check scheduling availability, contact Nicole at 454-2027.



Celebrating Earth Day on the Muskingum

Yes! Muskingum is sponsoring an Environmental Fair to celebrate Earth Day. Events include: children's activities, educational booths, and vendors.

The Muskingum SWCD will display the posters entered in our soil and water stewardship poster contest. Updated information will be posted on our website.



Muskingum SWCD Needs:

Clean Peanut Butter Containers,
Clean Glass Jars with lids, and
Coffee Bags!

All Shapes, All Sizes Needed.
Drop off at our office anytime!

Thank You!



Encourage your students to enter:
Muskingum SWCD Poster Contest

See details on our website.



www.muskingumswcd.org/education/education.html