



a VERY COOL FIND!

Bucket Buddies Lab

Date:

***TQ:** Are the organisms found in pond water the same all over the world?

Independent Variable- Different samples of water from around the world

Dependent Variable- The biodiversity of pond water

***Gather Information:**

- Biodiversity- the amount of variation of life forms within a given ecosystem. Biodiversity can measure the health of an ecosystem.
- Macroinvertebrates are small organisms without a backbone that you can see without needing to use a microscope.
- Macroinvertebrates are bioindicators. This means that counting them can help scientists understand the health of an ecosystem.
- A nymph is a larva of an insect with incomplete metamorphosis.
- Many macroinvertebrates only spend part of their life living underwater. When they become adults they will come out of the water to live on land or in the air.
- Microcosm: (See Glossary # ____)
- _____
- _____
- _____
- _____

***Hypothesis:**

If we study samples of pond water from around the country, then _____

**STUDENTS
FOLLOWED
THE
SCIENTIFIC
METHOD BY
FILLING IN THIS
SHEET IN
THEIR
SCIENCE
JOURNALS.**

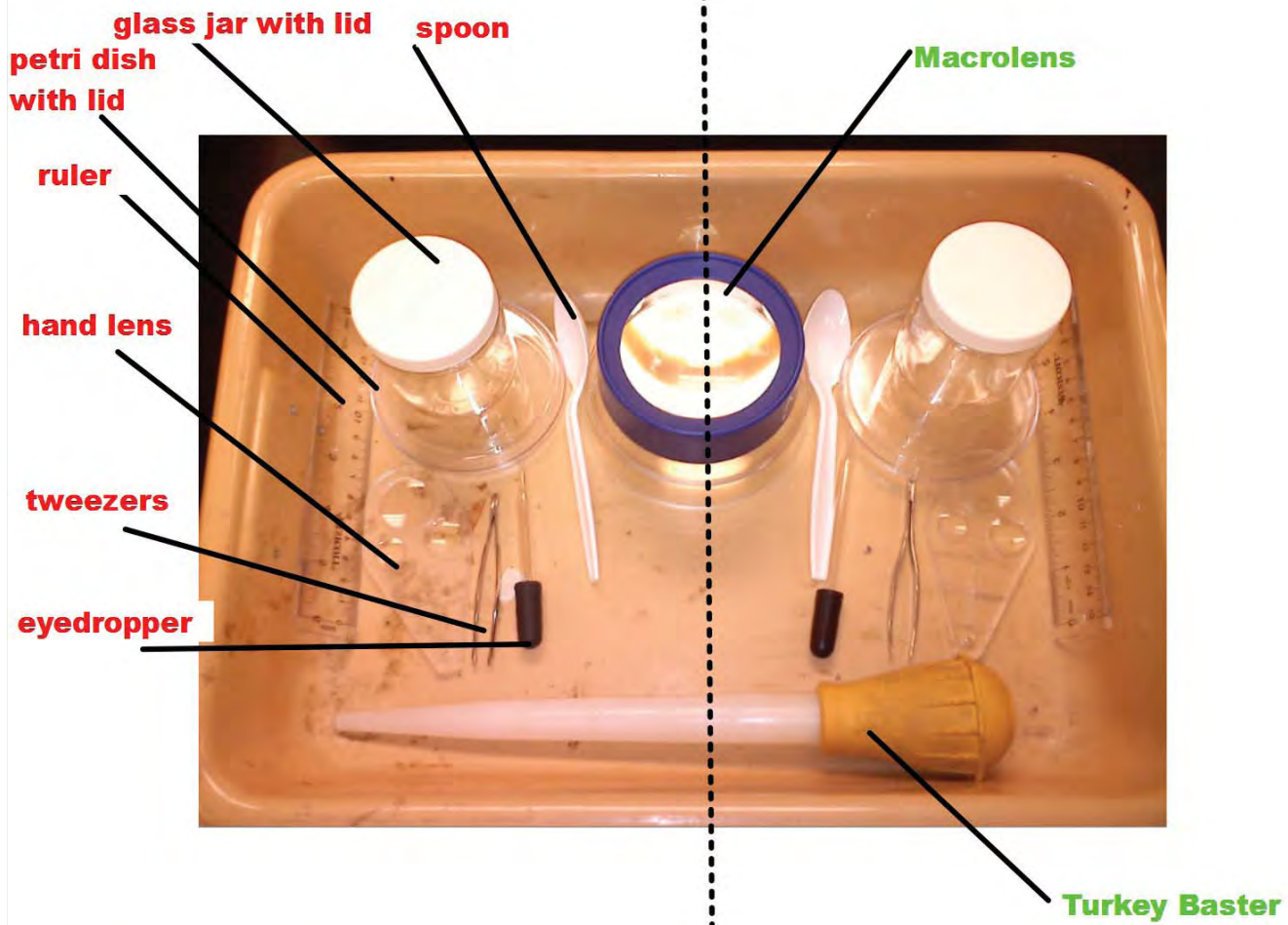
High level= lots of different creatures
Low level= not a lot of different creatures
CHOOSE ONE!

Materials:

Pond Water Microcosm	Small Glass Jar	White paper	Key to Life in a Pond Chart
Hand Lens	MacroLens	Tweezers	
Ruler	Turkey Baster	Computer	
Petri Dish	Eyedropper	<u>Pond Life</u> Golden Guide	
Science Journal	Plastic Spoon	Macroinvertebrate Identification Sheet	

Procedure:

1. Use a spoon, turkey baster or eyedropper to take a small sample from the pond microcosm to observe closely. Place the sample in a jar or petri dish on top of a white piece of paper for close examination.
2. Use a hand lens or MacroLens to view the sample.
3. Observe and identify any visible organisms using the resources on your ~~table~~ table.
4. If you feel that you have correctly identified an organism, you may show it to your teacher and then with permission, add your results to the class data chart.
5. ~~If you are unable to identify an organism~~, make a detailed sketch with descriptive labels. Make as many observations as possible such as color, size, shape, way of moving, number of legs. (We will be submitting these pictures with our results so make them your best work!)
6. **Do not return your animal to the pond microcosm.** "Used" samples will be gathered in an "already counted" bin so that we are able to keep accurate records of what we are finding. This will prevent an organism from being counted more than once by two different students.
7. Remember to use all available resources when you are trying to identify organisms including the Internet links found on your teacher's website.



Work in pairs. Each side of the table gets all the items in red. The green items are shared!

Observations:

You MUST fill in this chart completely with EACH organism that you find. Get it checked by your teacher before finding another creature!

Name	Enlarged Drawing & Labels		Specific Habitat
<p>Dragonfly Nymph</p> <p>Other names: Darners Clubtails Common Skimmers</p>			<p>Ponds, marshes, lake edges, shallow streams, slow rivers.</p>
Seen before? (tally)	Food Source	Coolest Adaptation	Tolerant? Sensitive?
			Some what tolerant

- ↓
- Insects + larvae
 - Other dragonfly nymphs
 - Worms
- ↓
- Scooplike lip to capture food

Requirements:

- 1) Colored, labelled diagram
- 2) Use of multiple resources
- 3) Accurate answers to each part
- 4) Completely filled!

TEACHERS COLLECTED POND WATER FROM A LOCAL POND AND CREATED CLASS MICROCOSMS FOR STUDENTS TO....

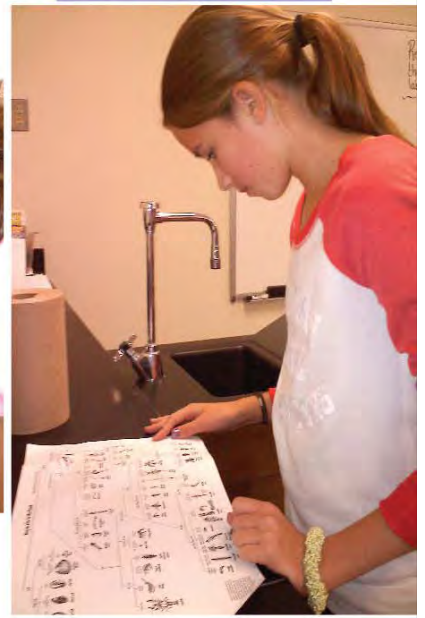
FIND....



OBSERVE....




IDENTIFY!




STUDENTS DOCUMENTED THEIR FINDINGS IN THEIR SCIENCE JOURNALS.

Observations


Name	Enlarged Drawing & Labels	Specific Habitat
Small orange mayfly nymph		Bottom stream in flowing water, usually under shallow rocks
Seen before? (tally)	Food Source	Coolest Adaptation
	algae, detritus, plant matter	fast to get up

Observations

Name	Enlarged Drawing & Labels	Specific Habitat
Gilled Snail Prosobranchis		Pond Surface Ponds, streams and wet rocks
Seen before? (tally)	Food Source	Coolest Adaptation
11	Plants, Algae, detritus	Muscular foot

Name	Enlarged Drawing & Labels	Specific Habitat
Old snail		Same as bottom in dip
Other Names	Helminth, annelids	Sit on floating vegetation
Seen before? (tally)	Food Source	Coolest Adaptation
1	algae	red algae

Name	Enlarged Drawing & Labels	Specific Habitat
Tube worm (tubifer)		at surface
Seen before? (tally)	Food Source	Coolest Adaptation
	plant matter	fast to get up

Name	Enlarged Drawing & Labels	Specific Habitat
Water Scorpion		Makes close to the surface for quick
Seen before? (tally)	Food Source	Coolest Adaptation
	algae, detritus	fast to get up

Name	Enlarged Drawing & Labels	Specific Habitat
Crawling Water Beetle		Shallow water areas plant matter (algae)
Seen before? (tally)	Food Source	Coolest Adaptation
	plants and animals	thick body for wings that control in the water

HERE ARE THE RESULTS FOR ALL 6TH GRADE SCIENCE CLASSES.....

Macro-Invertebrates Collected From Tillman Pond in Clarence, NY		
Name:	Total #	Tolerant/Sensitive
Damselfly Nymph	49	Semi-Sensitive
Orb Snail	35	Semi-Tolerant
Pond Snail	69	Semi-Tolerant
Mosquitoes Larva	10	Tolerant
Dragonfly Nymph	26	Semi-Sensitive
Scavenger Beetle	2	Semi-Tolerant
Giant Water Beetle	14	Semi-Tolerant
Thread Worm	10	Tolerant
Nematode	11	Tolerant
Tubifex	11	Tolerant
Predacious Diving Beetle Larva	2	Semi-Tolerant
Predacious Diving Beetle	1	Semi-Tolerant
Backswimmers	19	Tolerant
Water boatman	35	Tolerant
Flatworm	5	Semi-Tolerant
Water Scorpions	3	Semi-Tolerant
Gilled Snail	54	Semi-Tolerant
Caddisfly Larva	1	Sensitive
Scud	42	Semi-Tolerant
Midge Larva	7	Tolerant
Springtail	9	Semi-Sensitive
Mayfly Nymph	29	Semi-Sensitive
Water mites	10	Semi-Tolerant
Riffle Beetle Nymph	1	Sensitive
Clam Shrimp	2	Semi-Sensitive
Aquatic Sow Bug	1	Tolerant
Pill Clam	1	Semi-Tolerant
Water Penny Beetle	1	Semi-Sensitive
Stonefly Nymph	1	Sensitive
Dobsonfly Larva	1	Semi-Tolerant
Horsehair Worm	1	Tolerant

Compiled Data: Mrs. Hanlon, Mr. Kowalski,
Mrs. Wehrin and Mrs. Wright's Classes