



BUG PICKING



1. Hypothesis:

Based on our first impressions, we think this water is:
(Pick one)

CLEAN

SLIGHTLY POLLUTED

POLLUTED

2. Discuss the students hypothesis.

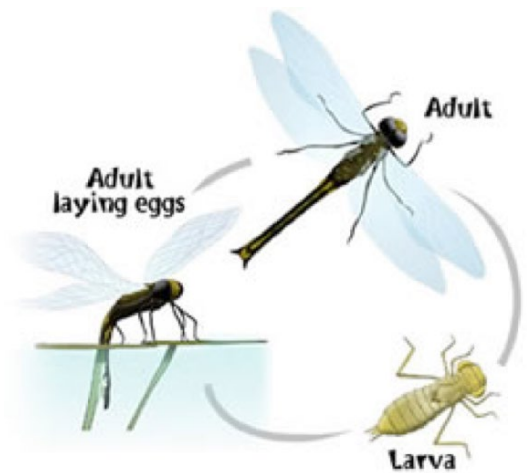
3. Temperature of water: _____ degrees Celsius.

4. Name one bug that lives in the water as a larva and a flies in the air as an adult insect when it is older.

5. Procedures:

Using the identification key, note the different kinds of and macro-invertebrates that you find in your water sample. How many of each kind did your group find? What groups were they in?

Science TEKS: Kinder: (b) 1C; 2A, 2B, 2C, 2D, 2E; 3A, 3B, 3C; 4A, 4B; 5A; 7B, 7C; 9A, 9B; 10A, 10B; **Grade 1:** (b) 1A, 1B, 1C; 2A, 2B, 2D, 2E; 3A, 3B, 3C; 4A, 4B; 9A, 9B, 9C; 10A, 10B, 10C, 10D; **Grade 2:** (b) 1A, 1B, 1C; 2A, 2B, 2C, 2D, 2E 2F; 3A, 3B, 3C; 4A, 4B; 9A, 9B, 9C; 10A, 10B, 10C; **Grade 3:** (b) 1A, 1B; 2A, 2D, 2F; 3D, 4A, 4B; 9A, 9B, 9C; 10A, 10B, 10C; **Grade 4:** (b) 1A, 1B; 2A, 2D; 2F; 3A; 4A, 4B; 9A, 9B; 10A, 10B, 10C; **Grade 5:** (b) 1A, 1B; 2B, 2C, 2D, 2F; 3A; 4A, 4B; 9A, 9B, 9C, 9D; 10A, 10B, 10C; **Grade 6:** (b) 1A, 1B; 2A, 2B, 2E; 3A, 4A, 4B; 12A, 12B, 12C, 12D, 12E, 12F; **Grade 7:** (b) 1A, 1B; 2A, 2B, 2E; 3A; 4A, 4B; 10A, 10B, 10C; 11A, 11B, 11C; 13A, 13B, **Grade 8:** (b) 1A, 1B; 2A, 2B, 2E; 3A; 4A, 4B; 9B; 11A, 11B, 11C, 11D; **HS: Aquatic Science:** (c) 1A, 1B; 2B, 2E, 2F, 2G, 2H, 2J; 9A, 9B, 9C; 10A, 10B, 10C, **Biology:** (c) 2B, 2C, 2D, 2E, 2F, 2G, 2H; **Environmental Systems:** (c) 9A, 9B, 9D



Group A: NOT able to live in polluted water

Mayfly Nymph (Insect): often greenish in color, 6 large hooked legs, 2 antennae, 2 or 3 long hair-like tails. ¼"-1"



Nymph



Adult

Caddisfly Larva (Insect): 6 hooked legs on upper body, 2 hooks on back, lives in a case made of rocks or leaves. Up to 1½" long.



Nymph



Adult

Riffle Beetle (Insect): Oval body covered with tiny hairs. 6 legs, 2 antennae, ¼"



Adult

Stonefly Nymph (Insect): 6 legs with hooked tips, long antennae, two hair-like tails. ½"-1 ½"



Nymph



Adult

Gilled Snail (Gastropod): Shell opens on right, opening covered by thin plate.



Water Penny (Insect): Flat saucer-shaped body, 6 tiny legs on underside. ¼"



Larva



Adult

Dobsonfly Larva (Insect): Be careful! It can bite you with its large pincers! 6 legs on upper body, many long feelers on lower body, short antennae. 1"- 4"

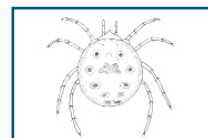


Larva



Adult

Aquatic Mite (Arachnid): Tiny, pinhead-size. Bright red or blue-green. 8 legs. Less than ¼"



Group B: Able to live in a SMALL AMOUNT of pollution

Scud (Malacostracan): a curved body that resembles a small shrimp. White to clear color, swims sideways. 7 pairs of legs, 2 pair of antennae.



Crayfish (Malacostracan): 2 large claws, 8 legs, 2 or 4 antennae. Body is covered in a hard shell, from red to Brown in color. Up to 6".



Damselfly Nymph (Insect): Large eyes, 6 thin hooked legs, 3 oar-shaped tails. 1/4" - 1".

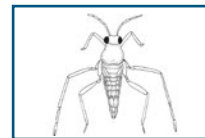


Nymph



Nymph

Water Strider (Insect): 2 short front legs, 4 long legs form an X, surface dweller, 1/4".



Clam (Bivalve): 2 sided shell, muddy bottom dweller.



Dragonfly Nymph (Insect): Large eyes, 6 hooked legs, green or brown in color. Round abdomen. 1/8" - 2".



Nymph



Nymph



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FOR WATER AND THE ENVIRONMENT
TEXAS STATE UNIVERSITY

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Group C: ABLE to live in polluted water conditions

Leech (Clitellate): Brown slimy body, suction pads.
1/4" - 2"



Aquatic Worm (Clitellate): Thin worm like segmented body, from 1" - 5". Often resemble hairs.



Pouch Snail (Gastropod): shell opens on left; unlike the Gilled Snail it doesn't have a cover over the opening.



Giant Ramshorn Snail (Gastropod): Up to 2" in diameter



Water Scorpion (Insect): Actually a relative of the walking stick insect. Breathes air through its tail. Up to 4"



Planarian (Turbellarian): Flat, soft body. Brown to grey color. Spade-shaped head with 2 eyes. Less than 1/4"



Mosquito Larva (Insect): Dangles from directly below water's surface with head hanging down. Wiggles if disturbed. Up to 4"



6. Conclusion:

Based on our findings, we now think the water is (Pick one):

CLEAN

SLIGHTLY POLLUTED

POLLUTED



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