Creek Critters!

Science With Spokane County Water Resources

This belongs to: _____

Aquatic Macroinvertebrates

Fish, like the Redband Trout, eat aquatic bugs known as AQUATIC MACROINVERTEBRATES (macros for short). Macros live at the bottom of streams, rivers and lakes for most of their lives; some even live several years! Many of the macros you see in the water are larvae that look different from adults. When they have their final molting, their exoskeleton will crack open and wings will emerge. They will spend the last part of their life cycle as flying adult insects. Can you think of some macros you've seen before?

In the pink box, number the life cycle 1 - 5 in the order they happen.

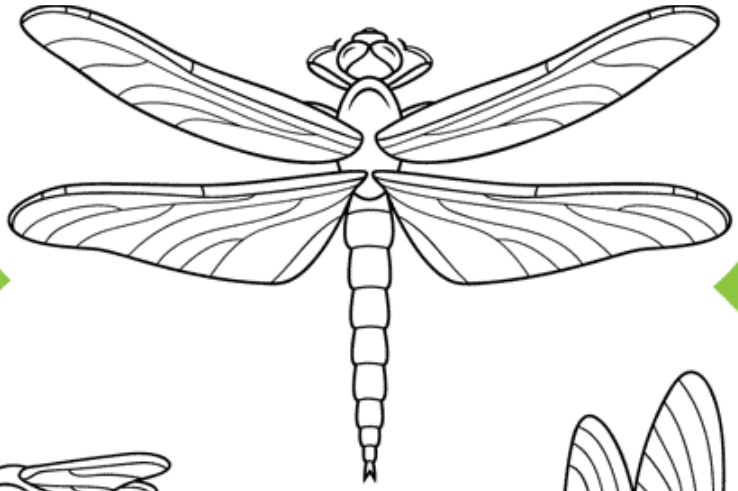
aquatic = live in water

macro = large enough to see by the naked eye

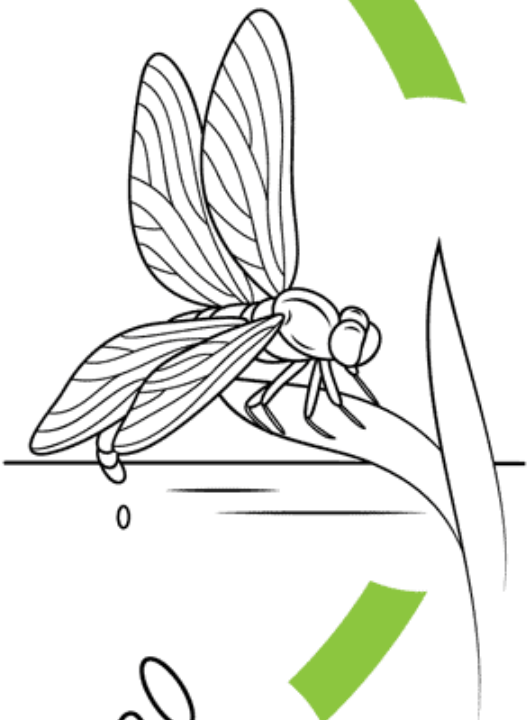
invertebrate = animals with no backbone

DRAGONFLY LIFE CYCLE COLOR ME!

Adult
2-3 months



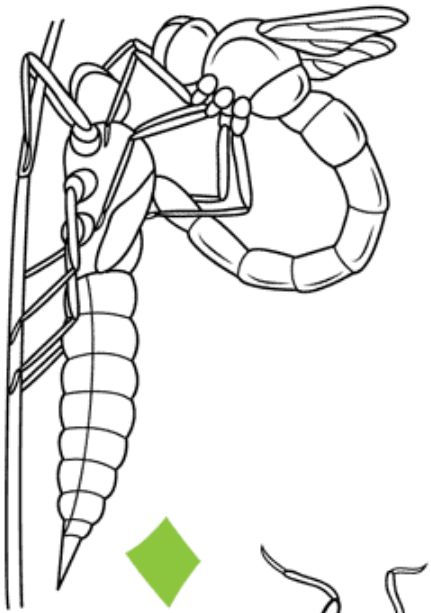
Laying Eggs
Late Summer



Eggs
6 months

Larva/ Nymph
3-4 years underwater

Molting
1-3 hours



paint the world SUPER COLORING

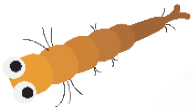
RIVER FOOD CHAIN

Draw arrows to show who eats who!

Sun

Minnow

Heron



Mosquito Larvae

Adult Trout

Dragonfly Nymph

Algae

Help the fish find the caddisfly larva.

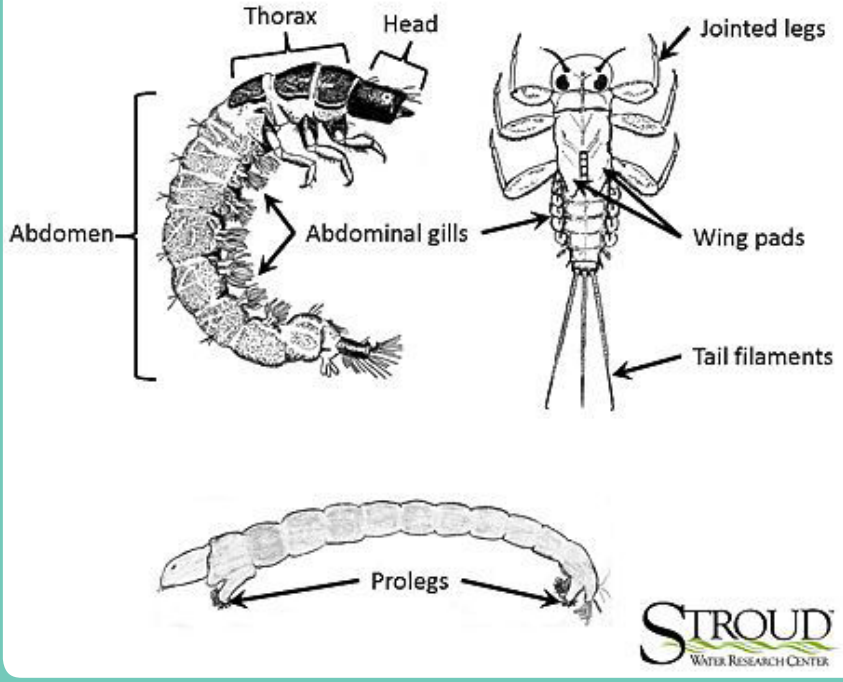
Collect Your Own Macros!

We've included a net, laminated field guide, and magnifying glass so you can do your own collection at a local creek, lake or pond! Just bring any container or bucket, light-colored is best so you can see the macros. An old ice cube tray and white spoon works great for sorting the different types you find. Always go with an adult.

Visit our website for step-by-step instructions on how to collect your own macros!

www.spokanecounty.org/wrc
Go to Resource Library > Teacher / Parents > Water Science Kits

BODY PARTS OF MACROS



Food Chain: algae to sun, mosquito larvae to algae, dragonfly to mosquito larvae, minnow to dragonfly, trout to minnow and dragonfly, Heron to Trout

INSTRUCTIONS (For Cut-out Bug Pieces) GRADES K - 2

Creek Critter Game!

Hello Stream Scientist, yes, YOU! We need YOUR help. We are about to release Red Band Trout that we've raised over the winter. We've narrowed down our release to two streams. Your job is to identify the macroinvertebrates in both creeks to determine which is healthier, and better for our fish release. Are YOU ready?

1 Start with Cricket Creek (red pieces). Use the laminated Dichotomous Key and pictures to identify each cut-out bug. Keep track of what you find using your data sheet ***(on the back)***. Repeat with Crooked Creek.

- **CREEK 1 = CRICKET CREEK**

COLLECT AND IDENTIFY ALL OF THE RED MACRO PIECES

- **CREEK 2 = CROOKED CREEK**

COLLECT AND IDENTIFY ALL OF THE GREEN MACRO PIECES

2 Use the data sheet ***(on the back)*** to count the macros you find in each group to decide if the creek is healthy or not.

3 **ANSWER:** Which creek is the healthiest for our trout?

DICHOTOMOUS

This is a BIG word but it just means that when things are very different, we will divide them into groups to organize them.

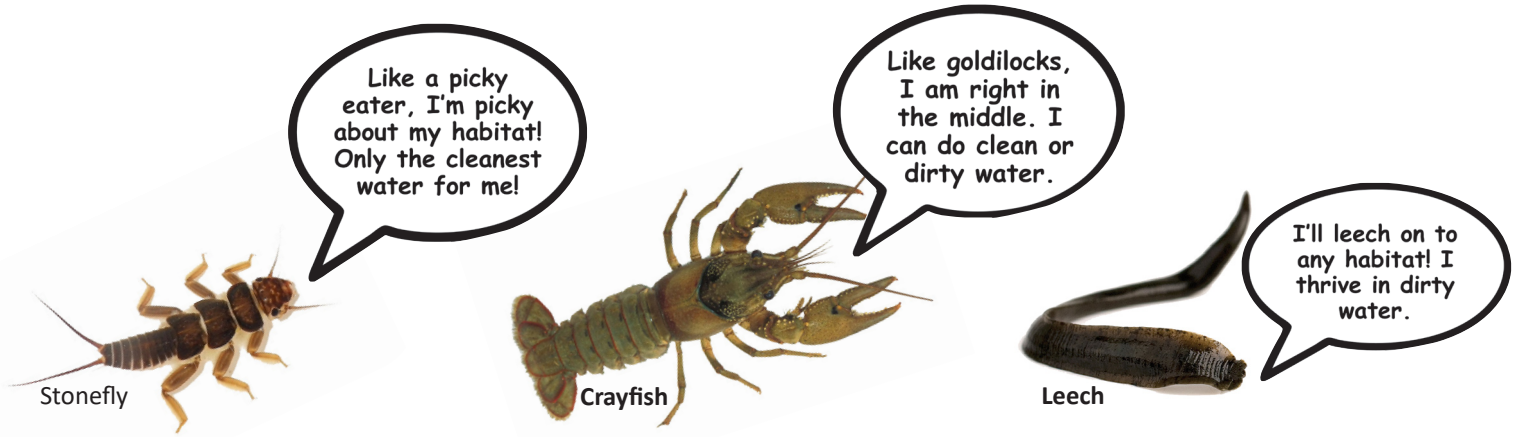
KEY

A guide with pictures to help you.

WHOA, COOL! *Background info. to help with the game.*

Macros Tell Us How Healthy Water Is!

Since macros live most or all of their lives underwater, the types and amounts we find can tell us how healthy or unhealthy the water is. All macros get sorted into three groups based on how sensitive they are to unhealthy water.



Creek Critter Game! Data Sheet GRADE K-2

INSTRUCTIONS

1. Circle the macros you find
2. Count up the ones you found in each group and write how many.
3. Circle the star in the box for the group that had the most.
4. Look at the *Water Health Key* to see how healthy the creek is.
5. Which creek is healthiest for the trout? *Answer on the front.*

WATER HEALTH KEY

IF YOU FOUND THE MOST IN... ★	THE CREEK HEALTH IS:
Group 1	Excellent
Group 2	Good to Fair
Group 3	Poor

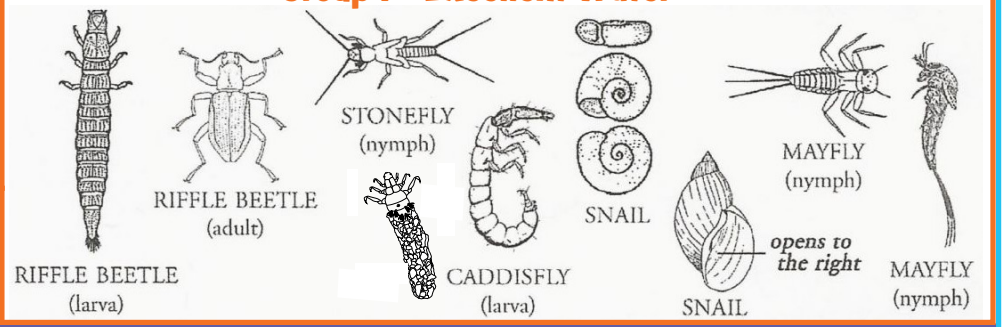
CREEK 1 CRICKET CREEK

The Water Health is: _____

Number Found in GROUP 1 _____

★

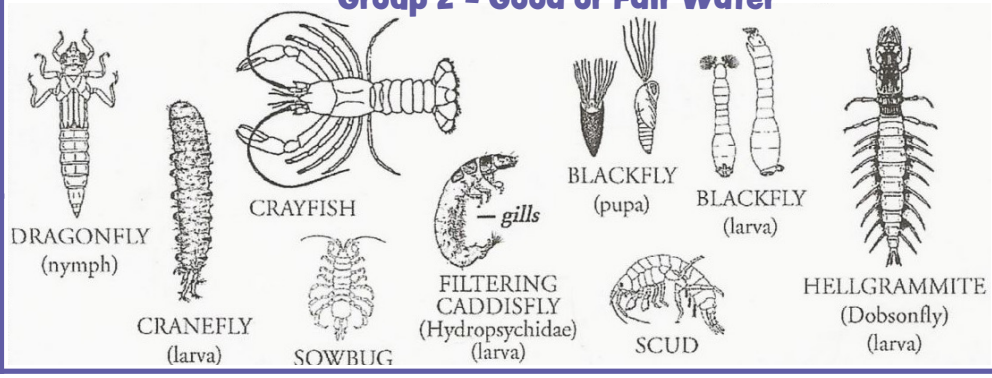
Group 1 – Excellent Water



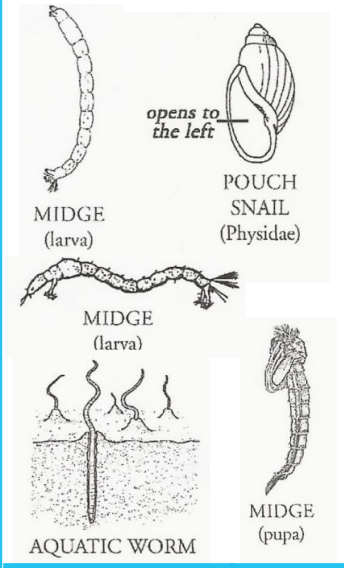
Number Found in GROUP 2 _____

★

Group 2 – Good or Fair Water



Group 3 – Poor Water



Number Found in GROUP 3 _____

★

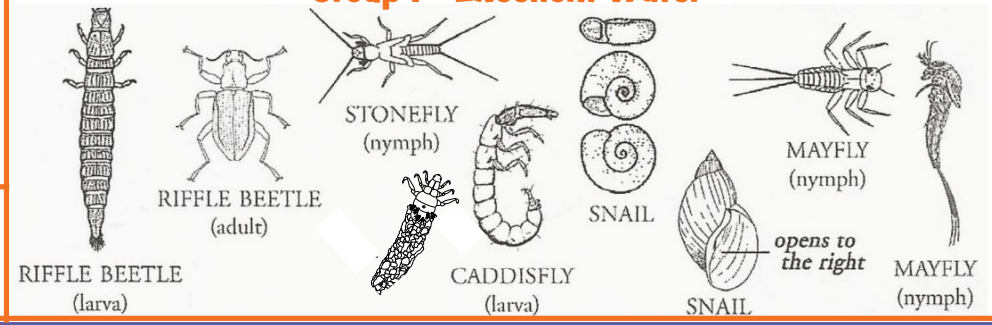
CREEK 2 CROOKED CREEK

The Water Health is: _____

Number Found in GROUP 1 _____

★

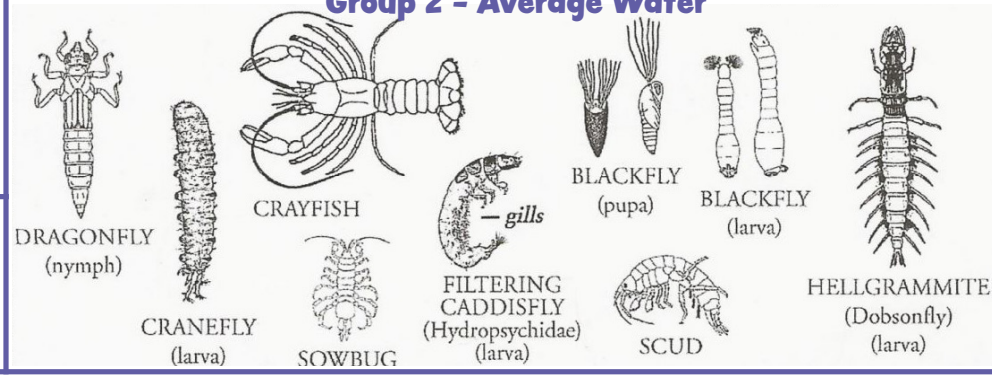
Group 1 – Excellent Water



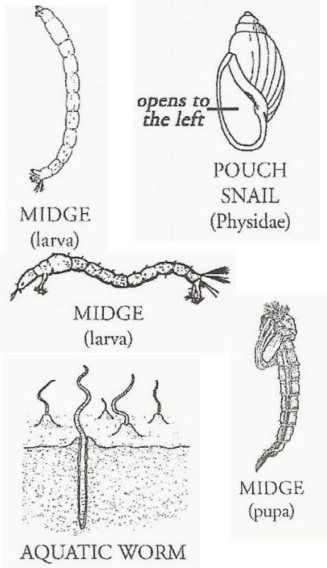
Number Found in GROUP 2 _____

★

Group 2 – Average Water



Group 3 – Poor Water

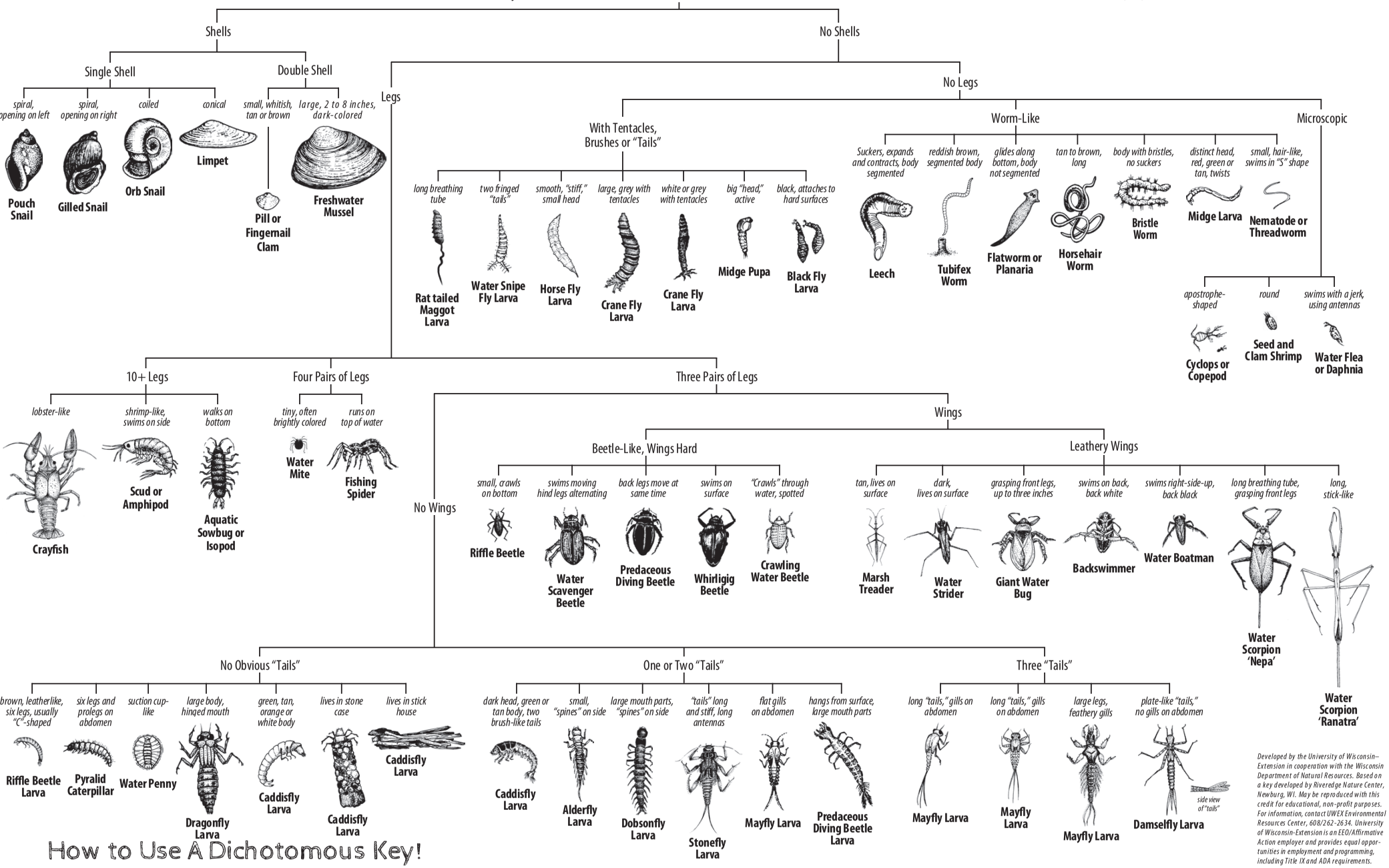


Number Found in GROUP 3 _____

★

Key to Macroinvertebrate Life in the River

(Sizes of illustrations are not proportional.)



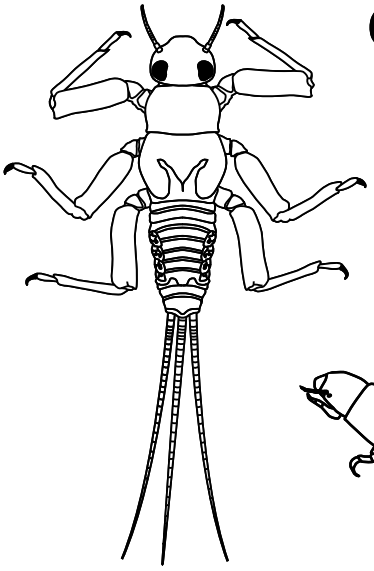
How to Use A Dichotomous Key!

1. Start at the top. 2. At each "T" or intersection, stop as though it's a stop sign and answer the question. For example, the first question is Shell or No Shell. If your macro has a shell, follow that line to the next question. 3. When you get to the bottom of the lines, whatever image you see is the name of your macro!

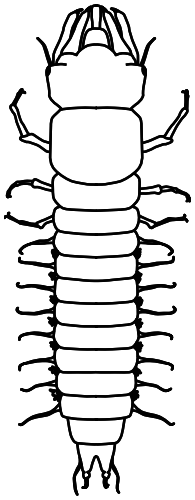
For detailed instructions, visit ***www.spokanecounty.org/wrc*** **> Go to Resource Library > Teacher / Parents > Water Science Kits**

Common Stream Critters

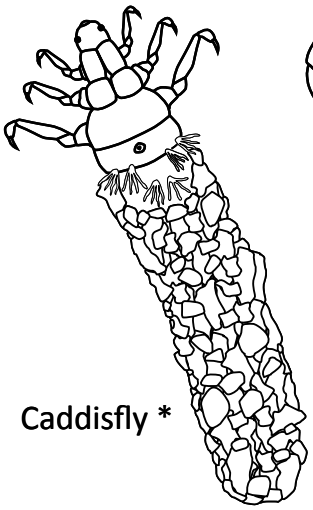
* These insects will transform into winged fliers when they mature



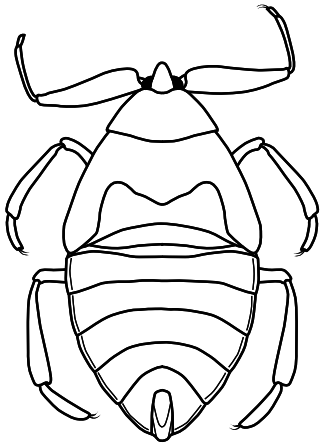
Mayfly *



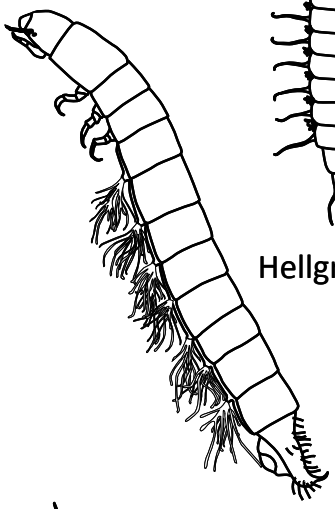
Hellgrammite *



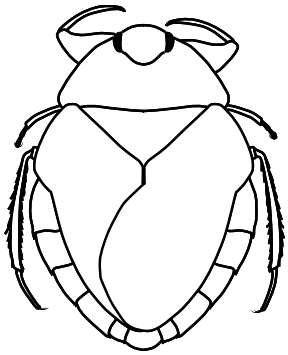
Caddisfly *



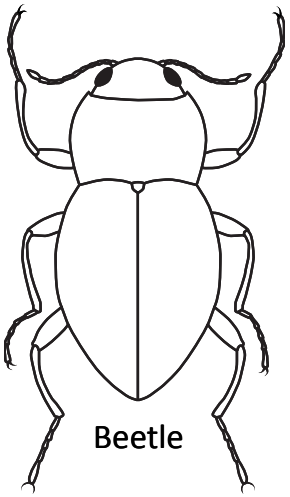
Giant Water Bug



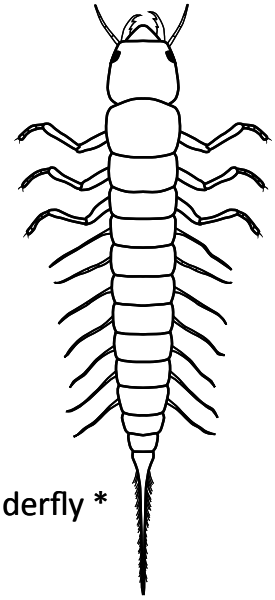
Beetle Larvae



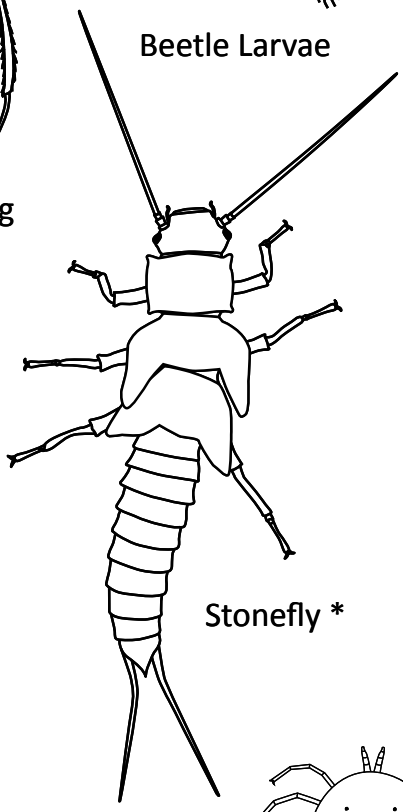
Creeping Water Bug



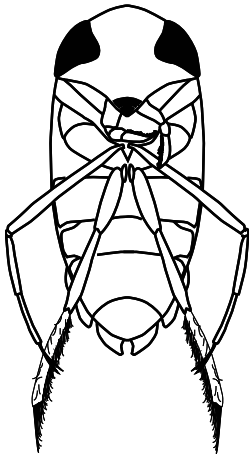
Beetle



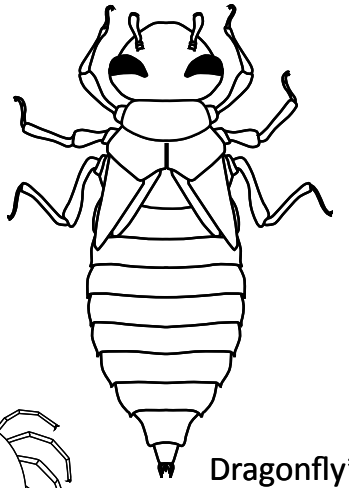
Alderfly *



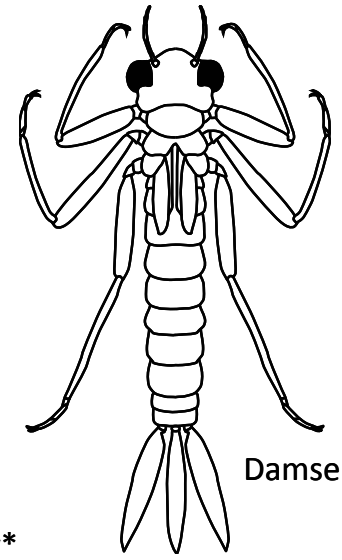
Stonefly *



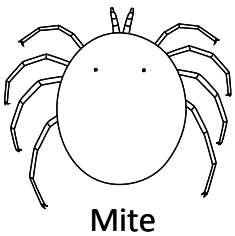
Water Boatman



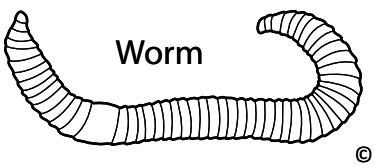
Dragonfly*



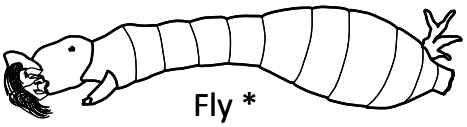
Damselfly *



Mite



Worm

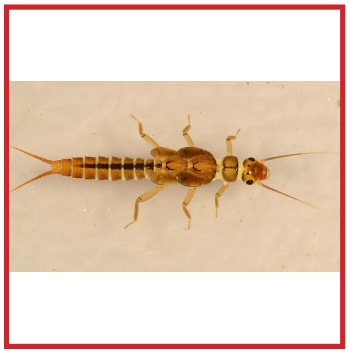


Fly *

K-2 Creek Critters Game Pieces

Print and cut out the pieces below. Identify all the red bugs. Use your data sheet to keep track of what you find. Then, repeat for the green pieces . Then decide: Which creek has the best water quality for the trout release?

Cricket Creek Pieces



Crooked Creek Pieces