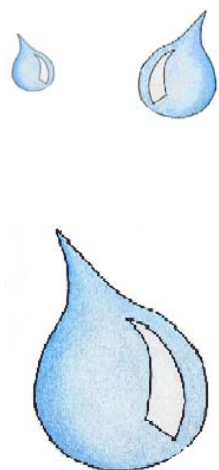


Lesson 5

Ooh Bugs!



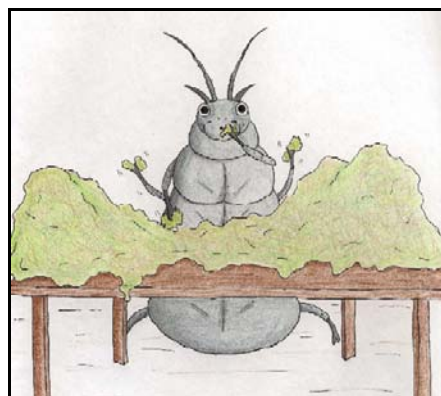
Did you know that there are many more kinds of insects on earth than any other kind of living creature?



Insects date back to over 300 million years!



Different insects live in different types of water. Some live only in clean water while others live in dirty polluted water! The different insects that live in streams can tell us how healthy that stream is! Many insects need clear, cool water, lots of oxygen and lots of food to stay alive. BUT some like to live in polluted water and even like to eat dirty smelly sewage! Insects are also food for many other animals like birds and fish!



Excellent Stream Site

Here you can find lots of different types of insects with very different body shapes! If lots of different insects are found in the stream it means that the stream is healthy and has not been polluted. Stoneflies, Mayflies and Caddisflies love clean water! BUT some Caddisflies also like polluted streams!

Moderate Stream Site

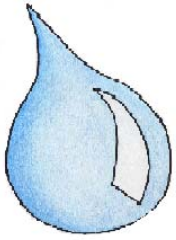
In a slightly polluted stream you can still find a variety of insects! You shouldn't see as many Stoneflies as you would in an excellent stream. You should still see some Mayflies and Caddisflies. You may also see some worms and beetles!

Poor Stream Site

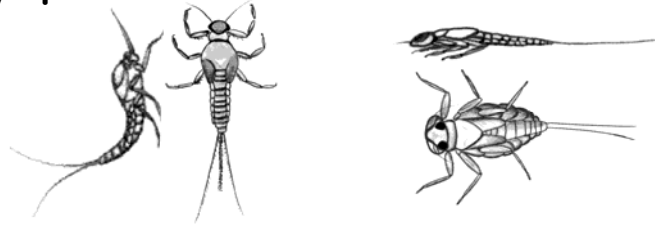
In badly polluted water, there are fewer types of insects. You will probably find lots of worms and fly larvae. You may



see some Caddisflies and some Amphipods (like freshwater shrimp)



Mayfly Nymphs



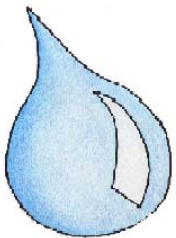
Mayflies are insects that spend most of their lives in streams. If an insect has three tails it's a Mayfly! BUT some Mayflies have two tails. They are also very strong swimmers!



Stonefly Nymphs



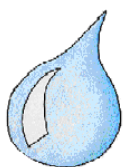
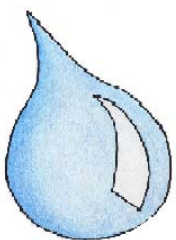
Stonefly Nymphs can be found on or near stones in the stream. They move like turtles and many are predators that hide and stalk their prey between the stones! They look a bit like Mayflies but are stockier.



Caddisfly Larvae



Caddisflies use silk (like butterflies) to build cases from gravel, twigs or sand. They emerge as winged adults. Many are predators and have to move quickly to catch other animals for food.



Adult Mayfly, Stonefly, Caddisfly



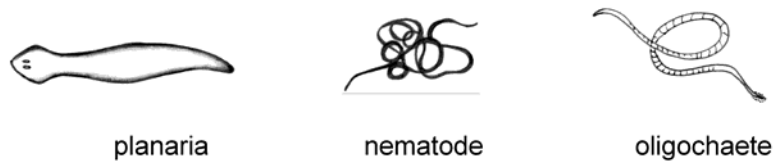
All three of these flies leave the water as winged adults.

Riffle Beetles



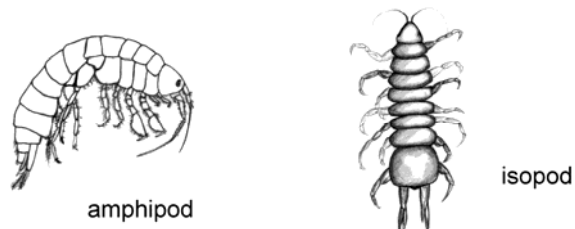
Riffle Beetle Larvae can cling to smooth rocks in fast-flowing water. Adults can fly but return to the water to feed. The adults and larvae are quite small and dark coloured.

Worms



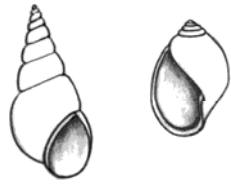
For example: Flatworms, Roundworms, and Freshwater earthworms! Roundworms and Earthworms are long and thin and move like snakes! They do not have legs!

Crustaceans

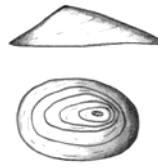


Amphipods are very fast swimmers that look like shrimp. They have lots of legs and look fuzzy!

Molluscs (Snails)



snails



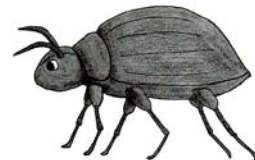
limpet



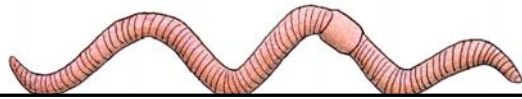
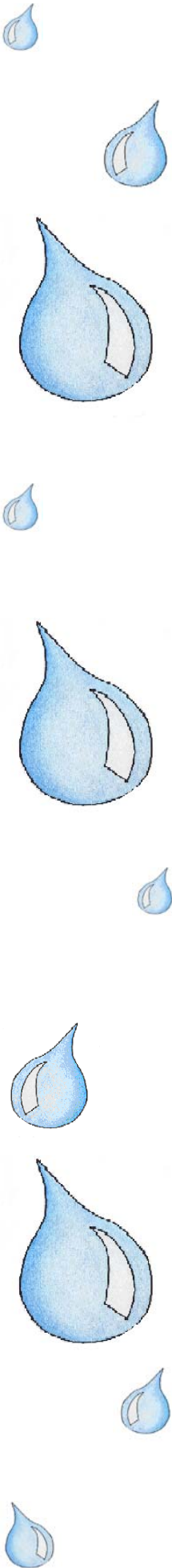
clam

Using the keys provided try and decide if your water sample is clean or polluted! Draw one of the insects that you have seen!

Sample 1



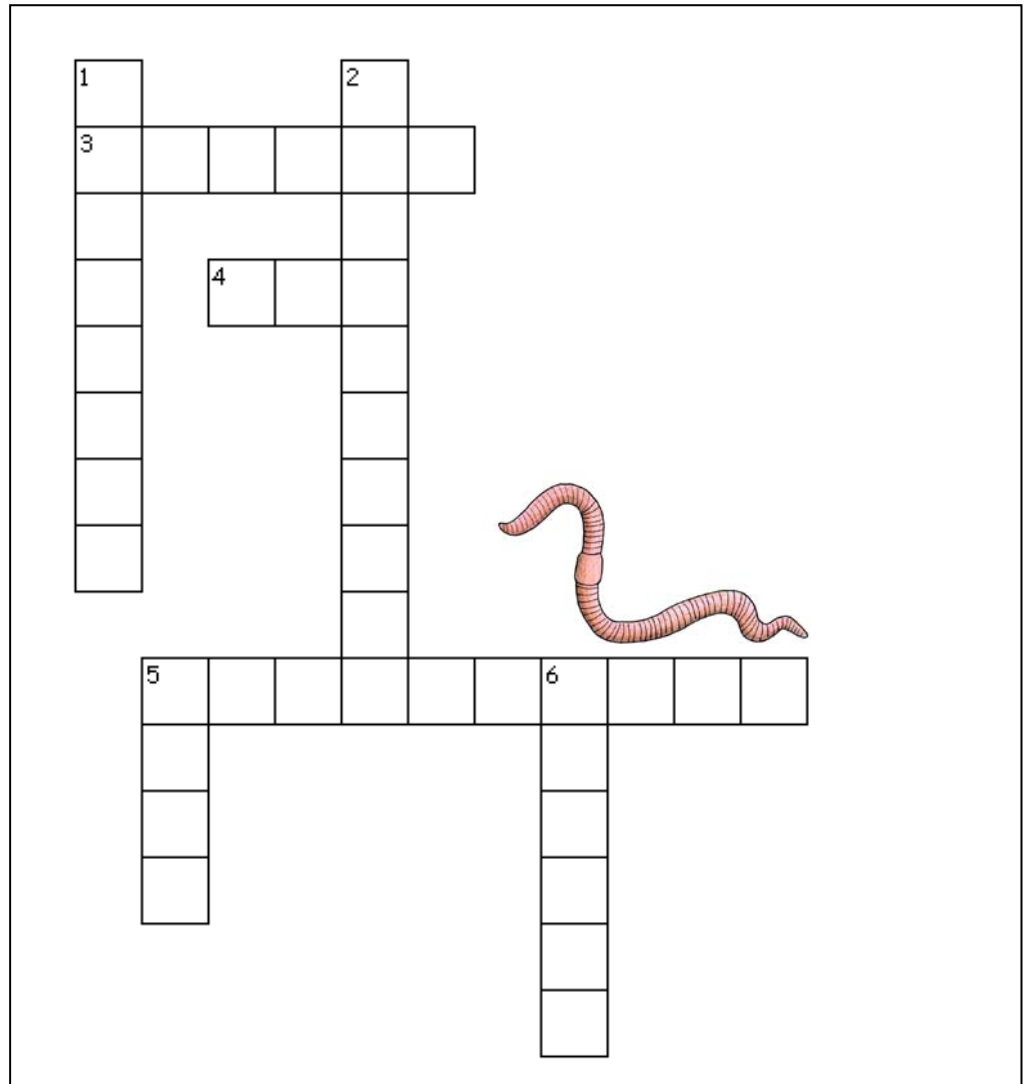
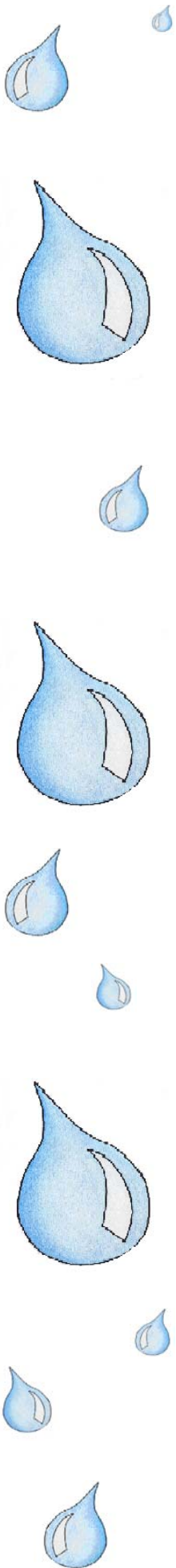
Creatures	0-5	5-20	More than 20
Mayfly nymph			
Stonefly Nymph			
Caddis fly larvae			
Adult Flies			
Freshwater shrimp			
Snail			
Worm			
Beetle			



E I K X D U A N Z P W V V Z I M T C M M
Y W X E Q N P G O A R U Z L R O N O I V
N Y C G C W M L T I U A N U G F A N V H
N A E L C B I E U L T X H G C J T T L F
Y T N D B S R O T H Z U A A U H U A A W
J K K X D L H N B L J M L R F C L M E I
I Z F J O D S C E J D V C L E G L I A M
M F E U B T R Q G E G G A S O Q O N N J
N C S O G T E A L S E W A G E P P A U Q
A E Z A N Q T I G K C E I O A G Z T K I
D L X K H W A B P O S A G R V K A I Y S
T B O Q C T W G U I N A Z P Y E Q O G F
C H L J T N H R D V K F V U X Q A N L M
S T T A R X S F O A Z T L R Q G L Z J V
G I R I D A E F M P B H V Y D Y G I P X
R L M W B O R K Q L W N D M N H A S N H
Z V V O V T F Y S C Y Q I R R Y E T X H
C A D D I S F L Y L A R V A A O M U A E
M N L L G S E D I C I T S E P I W P Y D
U E G A Q I E U I O S Q M F T R N F H W

ALGAE	CADDIS FLY LARVA
CLEAN	CONTAMINATION
DECAY	DISEASE
DRAGONFLY NYMPH	DRAIN
FRESH WATER SHRIMP	PESTICIDES
POLLUTANT	POLLUTION
RATTAILED MAGGOT	SEWAGE
WATER LOUSE	WORM





Across

- 3. Algae bloom can cause problems for water creatures when the _____ level drops
- 4. It is important to pick up _____ waste so bacteria from it does not get into the water
- 5. The only thing that should go down a _____ is water because it leads to a nearby waterbody

Down

- 1. Water can become _____ by some of the actions people do every day!
- 2. When _____ gets into water it can cause algae bloom
- 5. Washing a car can cause water pollution because _____ can end up in nearby waterbody
- 6. Water moving over the surface of the ground is called _____.

