WHAT IS THAT IN MY WATER?  
AN INTRODUCTION TO 
FRESHWATER MACROINVERTEBRATES

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WHAT ARE MACROINVERTEBRATES?

- Macro- Visible to naked eye
- Invertebrate- No backbone
- Excellent indicator of water quality
- Baseline for water quality over time
- Help identify pollution problems
WHY STUDY MACROINVERTEBRATES?

TO IDENTIFY THE VARIOUS SPECIES & THEIR ROLE.

ASSESS THE HEALTH OF THE FRESHWATER ENVIRONMENT.

THEY SERVE AS FOOD FOR FISH, AMPHIBIANS & BIRDS.

EASY TO COLLECT & OBSERVE- USEFUL IN EDUCATIONAL PROGRAMS.
WHY ARE MACROINVERTEBRATES BIOINDICATORS OF STREAM HEALTH?

- IN THE STREAM. SPEND UP TO ONE YEAR OR MORE
- HAVE LITTLE MOBILITY.
- GENERALLY ABUNDANT.
- PRIMARY FOOD SOURCE FOR MANY FISH.
- GOOD INDICATORS OF LOCALIZED CONDITIONS.
- EASY TO CATCH
- SAMPLING TECHNIQUES

DIVERSITY = HEALTHY STREAM

POTENTIAL THREATS TO MACROINVERTEBRATE DIVERSITY:

- *SEDIMENTATION.
- *HABITAT LOSS.
- *CHEMICAL POLLUTION.
AQUATIC ORGANISM KEY

{SEE HANDOUT}
A KEY IS A WAY TO IDENTIFY ORGANISMS

IT IS BASED ON YES OR NO ANSWERS

EACH QUESTION LEADS TO ANOTHER
FAN (OAR)  BLUNT (3)  HAIR LIKE
COMPARISON DRAGONFLY & DAMSELFLY TAILS
WATERBOATMAN NYMPH
MAYFLY NYMPH
CADDISFLY NYMPH CASEBUILDER
CADDISFLY ADULT
Dobsonfly Larva (Hellgrammite)
DOBSONFLY
MALE/FEMALE
DRAGONFLY NYMPH NEWLY HATCHED
Predatory mouthparts: the dragonfly larva

- Mandible
- Labrum
- Labium, or "mask"

Predatory larva

Prey

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DAMSELFLY NYMPH
GIANT WATER BUG
WATER SCORPION
Water Penny
WATER PENNY BEETLE
PREDACIOUS DIVING BEETLE NYMPH
PREDACIOUS DIVING BEETLE
PREDACIOUS DIVING BEETLE W/EGG CASE
GRASS SHRIMP  (FRESHWATER SHRIMP)
IDENTIFY
WHIRLIGIG LARVAE
WHIRLIGIG BEETLES
WHIRLIGIG BEETLE
FRESHWATER CLAM
FLATWORM
LEECH
WATERMITES