Macroinvertebrate Stream Study
Together, we are going to conduct scientific research on our local creek
But first, we need to learn about the creek as a HABITAT.

A HABITAT is the natural environment in which an organism lives.
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*Cities can be habitats too!!*
How many different habitats are there in a stream ecosystem?
What is a **MICROHABITAT**?
Pools, Riffles, Runs

http://ag.arizona.edu/watershedsteward/resources/module/Stream
Anatomy of a stream
How are Pools and Riffles different

- Speed of water
- Oxygen levels
- Temperature
- Depth of water
- Size of rocks
- Amount of detritus
Our Goal

Together, we will answer the question:

Do different organisms live in pools than in riffles?

WHY? What are characteristics of the physical environment that might cause these differences?
How will we answer this question?

LEAF PACKS!!
Streams depend on the trees around them for inputs in the form of leaves and wood material. Scientists call this **detritus**.
Why are these leaves important to the stream?
The detritus has many roles in the stream ecosystem, including providing habitat and food for stream organisms.
A few examples of the macroinvertebrates you might collect...
Group 1: These are sensitive to pollutants. Circle each animal found.

- Stonefly Larva
- Damselfly Larva
- Alderfly Larva
- Water Scorpion Fly Larva

No. of group 1 animals circled:

Relative Size Key:
- Larger than picture
- Smaller than picture

Group 2: These are semi-sensitive to pollutants. Circle each animal found.

- Caddisfly Larva
- Dragonfly Larva
- Water Penny
- Crawfish
- Green Fly Larvae
- Freshwater Mussel or Fingernail clam
- Mayfly Larva
- Damselfly Larva
- Damselfly tail (side view)
- Riffle Beetle larva
- Riffle Beetle adult

No. of group 2 animals circled:

Group 3: These are semi-tolerant of pollutants. Circle each animal found.

- Black Fly Larva
- Non-Rot Midge Larva
- Non-Rot Midge Larva
- Snails: Orb or Gillied (right side opening)
- Amphipod or Snail

No. of group 3 animals circled:

Group 4: These are tolerant of pollutants. Circle each animal found.

- Pousa Oonas (left side opening)
- Isopod or Aquatic Scavenger
- Bloodworm Midge Larva
- Leech
- Tabifax Worm

No. of group 4 animals circled:

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It’s time to make a prediction or hypothesis for our experiment:

• Will there be different organisms living in the leaf packs that were placed in different microhabitats (riffle vs. pool)?

• What are characteristics of these microhabitats that might affect what lives there?

• *Why do you think so? What might be important to consider when you make this prediction?*
Remember to think like a scientist!

• Take complete and descriptive data
• Follow directions
• Have fun!

Dr. Dave Strayer of the Cary Institute conducting research in the Hudson River