Sedimentation

Lesson three:
Ecosystems

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Let's look at the jars of "dirty" water again

- Do they look the same today as it looked when you left yesterday?

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Particle size

- Which particles settled out the most rapidly?

The larger particles or the smaller ones?

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Why is sedimentation viewed as a nonpoint source of pollution?

Review: What is sedimentation?
What is pollution?

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To answer the question of *why* sedimentation (soil particles going into water and settling down) is a source of nonpoint source pollution (pollution is anything in the water that harms life), we must first review ***ecosystems***.

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Ecosystems

- An ecosystem is a biological environment consisting of plants and animals living in balance in a specific nonliving (abiotic) environment
  - What are the factors that make up the nonliving or abiotic part of the environment?

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A prairie is an example of an ecosystem

- What kinds of plants and animals are in a prairie?
- How does the amount of rainfall in a prairie compare to a desert (a different ecosystem)?
- How does prairie temperature compare to an arctic tundra?
- How does prairie soil compare to an beach?

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In a prairie:

- What kinds of plants and animals are in a prairie?
- How does the amount of rainfall in a prairie compare to a desert (a different ecosystem)?
- How does prairie temperature compare to an arctic tundra?
- How does prairie soil compare to an beach?
- What three abiotic (nonliving) factors are mentioned above?
- What are the four ecosystems listed above?

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Aquatic Ecosystem

- What types of plants and animals would you find in an aquatic ecosystem?
- What types of abiotic factors?
- Ecosystems are really a web of parts

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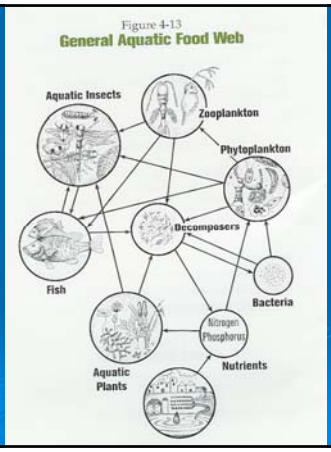
Ecosystem Food Web



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Every ecosystem has an energy source.

What is the energy source for ecosystems on earth?

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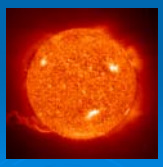
The SUN

- The sun is the source of energy for the many different ecosystems of the earth
- Does the energy of the sun cycle?



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Energy

- In the rock and water cycle, energy comes from the sun, but energy does NOT cycle back to the sun
- The atoms in rock and water move by the force of energy. There is a big difference between matter and energy.

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Energy

- Every ecosystem has a source of energy
- How is this energy absorbed into the ecosystem?
  - Hint: this is an essential part of every ecosystem

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Plants

- Plants absorb the sun's energy through the process of photosynthesis
- Who eats the plants?
  - Hint: this is another essential part of every ecosystem

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Essential parts of every ecosystem:

- Source of energy
- Plants
- Animals
- Abiotic (nonliving) factors
  - Water
  - Soil
  - Temperature
- Decomposers (to return atoms to system from wastes and death of living things)

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What do we mean by essential?

- Can an ecosystem survive if we take away:
  - Plants?
  - Animals?
  - Decomposers?
  - Energy source?
  - Abiotic factors?

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Essential

- Plants, animals, source of energy, decomposers and abiotic factors are all necessary for an ecosystem, therefore they are ALL essential!
- They live in a balanced web

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Back to sedimentation…

- Why is sedimentation viewed as a nonpoint source of pollution?
- Sedimentation is detrimental to life. How?
- Tomorrow we will examine how sediment harms the aquatic ecosystem. Start thinking about this.

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Important terms and concepts:

- Ecosystem
- Essential parts of the ecosystem
  - Plants
  - Animals
  - Decomposers
  - Source of energy
  - Abiotic factors

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Time to observe and learn

- You will be determining how much water can be stored in soil
- You will need to read and follow the instructions carefully

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