

# Critical Thinking Skills

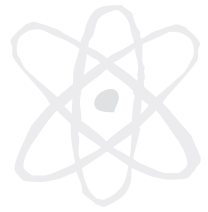
## Ecosystems

Skills For Critical Thinking		Reading Comprehension								Hands-On Activities	
		Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8		
<b>LEVEL 1</b> Knowledge	<ul style="list-style-type: none"> <li>List Details/Facts</li> <li>Recall Information</li> <li>Match Vocab to Definitions</li> <li>Define Vocabulary</li> <li>Label Diagrams</li> <li>Recognize Validity (T/F)</li> </ul>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>LEVEL 2</b> Comprehension	<ul style="list-style-type: none"> <li>Demonstrate Understanding</li> <li>Explain Scientific Causation</li> <li>Rephrasing Vocab Meaning</li> <li>Describe</li> <li>Classify into Scientific Groups</li> </ul>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>LEVEL 3</b> Application	<ul style="list-style-type: none"> <li>Application to Own Life</li> <li>Model Scientific Process</li> <li>Organize &amp; Classify Facts</li> <li>Utilize Alternative Research Tools</li> </ul>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>LEVEL 4</b> Analysis	<ul style="list-style-type: none"> <li>Distinguish Roles/Meanings</li> <li>Make Inferences</li> <li>Draw Conclusions Based on Facts Provided</li> <li>Classify Based on Facts Researched</li> </ul>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>LEVEL 5</b> Synthesis	<ul style="list-style-type: none"> <li>Compile Research Information</li> <li>Design &amp; Application</li> <li>Create &amp; Construct</li> <li>Imagine Self in Scientific Role</li> </ul>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>LEVEL 6</b> Evaluation	<ul style="list-style-type: none"> <li>State &amp; Defend an Opinion</li> <li>Justify Choices for Research Topics</li> <li>Defend Selections &amp; Reasoning</li> </ul>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Based on Bloom's Taxonomy



# Ecosystems



## What Is an Ecosystem?

**C**an you find two words in the bigger word, “**ECOSYSTEM**”? “Eco” means life forms and the environment in which they live. A “system” is a group of things that work together. Now put the two words back together.

An **ecosystem** is a group of things that work and live together in an environment. An example of an ecosystem is a rainforest, a pond, a city or even our Earth!

## What Is an Ecosystem Made Of?

Everything we see can be put into two groups. If you look around, you will see both **biotic** and **abiotic** things. **Biotic** describes something that is living or was once alive. **Biotic** things include frogs, leaves, dead trees and humans. **Abiotic** means everything else that is not living. **Abiotic** things include rocks, cars, computers, and gold.



**Describe your own example of an ecosystem. What BIOTIC and ABIOTIC things would you find in your ecosystem?**

\_\_\_\_\_  
\_\_\_\_\_

SAMPLE

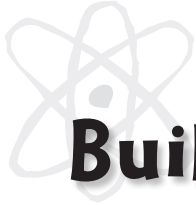


## How Big is an Ecosystem?

Ecosystems can be as big as a planet. They can also be as small as a puddle! Plants and animals live in ecosystems. Things that are too small to see also live in ecosystems. Everywhere you look, you can find an ecosystem.

Even a handful of soil is an ecosystem. There are many things living in soil. You may think that soil is just dirt. If you looked closely, you would find worms, bugs, sand and many more things. They are all part of the soil’s ecosystem.

All parts of an ecosystem work and live together. They are just like people who live in the same neighborhood or city. Humans have jobs and so do things in an ecosystem. They need to work together to live and be happy. This makes the ecosystem balanced. Without a balance, the ecosystem will not work!



# Build Your Own Ecosystem!



We have talked and read about so many ecosystems.  
Now it is time to build your own!

## COLLECT THE FOLLOWING MATERIALS:

- Gravel or small rocks
- Soil/dirt
- A jar or bottle (with a large enough top to put your hand into)
- A lid for your jar or bottle to seal it  
(you can seal it with tape if you think air can get into the jar)
- A few plants from the school yard or a garden
- Small animals from the garden  
(worms, snails, slugs, etc.)
- Wood, garden rocks or branches to make it look like a real ecosystem



## WHAT YOU WILL DO:

1. Put a large handful of gravel or small rocks in the bottom of your jar.
2. Add a large handful of soil.
3. Plant the plants into the soil. Try to choose plants that fit into your jar. If it's a small jar, only use small plants. If you put too many plants in, they will not survive!
4. If you think your ecosystem needs water, add a bit of water. Don't over water your ecosystem though!
5. **This is the fun bit...** choose some animals. Use anything you can find in the school yard or garden. Remember, choose small animals. You want these animals to survive!
6. Close your ecosystem. Put the lid on or use tape to seal it.

Now it's time to record your observations!

## ON A PIECE OF PAPER, record the following things:

- Size of your container (you may want to draw a picture of your ecosystem)
- Number and type of plants and animals you used
- How much soil you used
- What is happening in your system? Count your animals and record if your plants are growing. Have all of your plants and animals survived?

Have fun building your own ecosystem!

# An Ecosystem

