



Natural or Not?

Subjects: Environmental Science

Grade Level: 6th – 12th Grades

Objectives:

Students will be able to...

- 1) Identify natural items vs. un-natural items in nature
- 2) Provide an explanation and provide examples of camouflage, decomposition, pollution, and reusable items
- 3) Explain why recycling, reducing, and reusing items is important
- 4) Determine what some non-natural items are made of and the impacts those materials have on the environment
- 5) Research some environmentally friendly options in place of some products that have negative impacts on the environment.
- 6) Determine if plants outside are truly natural to the region of the world they are in- native vs. non-native plants

Materials:

- Paper
- Pen
- Clipboard or a book to use as a firm surface behind the paper
- Computer with online access

Any of the items below that you have available to you:

- | | |
|------------------------------------------------|-----------------------------------------------------------|
| <input type="checkbox"/> Plastic Bag | <input type="checkbox"/> Clothing Item |
| <input type="checkbox"/> Paper Bag | <input type="checkbox"/> Leather Item |
| <input type="checkbox"/> Aluminum Can | <input type="checkbox"/> Painted Wood Item |
| <input type="checkbox"/> Plastic Bottle or Cup | <input type="checkbox"/> Fruit peel or vegetable skin |
| <input type="checkbox"/> Styrofoam Item | <input type="checkbox"/> Seeds |
| <input type="checkbox"/> Shoe | <input type="checkbox"/> Other man-made and natural items |

Vocabulary:

Natural- Coming from nature or earth

Un-natural- Something that is man-made, not natural

Recycle- To change trash into new objects and materials

Reuse- To use an item again for another purpose

Reduce- To buy or use less

Camouflage- When an item, animal, or plant blends in with its surrounding or background using colors and patterns

Decompose- To break down naturally with wind, water, weathering, or from animals

Pollution- Man-made materials that cause harm to nature

Native Plants- Plants that are originally from that region of the world. They are natural and belong there.

Non-native Plants- Plants that have been introduced to an area by people. They are natural, but do not belong there.

Invasive Plants- Plants that can be native or non-native and cause harm to the area they are growing in due to rapid and dense growth, outcompeting native plants.

Activity

Set-Up:

1. Place the items above around an outside space you have access to.
2. Do not completely hide the objects, only obscure them from plain view.

Directions:

1. Fold a piece of paper in half, length-wise/vertically.
2. On one side at the top, write Un-natural, and the other side at the top, write Natural.
3. Share the words **natural and un-natural** and some examples.
4. Have your child walk around outside, writing down lists of what they find as natural and un-natural.
5. Share the word **camouflage**, ask them if they know what it means, and discuss some examples.
6. Inform your child that they can note on their list if an item is camouflaged by putting a dash and a C next to the item, like this. – C
7. Ask them why a camouflaged un-natural item is a bad thing?
 - a. Because an animal may eat it, thinking it is a food item
 - b. Because it is well hidden and gets missed during clean up
8. Ask them why a well camouflaged natural item is a good thing?
 - a. Because it will help the plant or animal survive if it is not seen by a predator.
9. Use the document, “How Long Does It Take to Decompose,” to understand how long it takes un-natural items to **decompose**.
10. Share this document, and talk about some of the implications these items have on the environment when they are left out in nature. Share the word **pollution**. Ask them how pollution harms nature:
 - a. Animals may mistake them for food, eat them, and not survive.
 - b. As they slowly breakdown, chemicals from them enter the dirt and water.
 - c. Animals can mistake these items for a home to live inside of.
 - d. Nest making animals can gather pieces of these items to put in their nest, which is unsafe for their young.
 - e. Animals can get stuck inside of these items or entangled in them, making it difficult or impossible for them to move.
 - f. Natural food items that don't belong in that area can become a new food source to an animal, which causes them to depend on humans to feed them, rather than allowing them to survive on their own natural diet.
11. Inform your child that some of the natural items outside may not belong in this environment. If they think the natural item, ie: plants in your outside area, belong there, they can write a B next to it, like this – B. This may help them later with researching if the plants are **native or non-native**.
12. Have your child research **native plants vs. non-native plants** of California.

- a. Have them check to see if the plants growing in your outside space are native or non-native.
 - b. <https://www.cnps.org/plant-science>
 - c. <https://www.ncrs.usda.gov>
13. Have your child research the impacts of pollution on wildlife, and have them come up with...
- a. A poster to educate people about these impacts
 - b. A solution to the problem besides or in addition to **recycling, reducing and reusing**.
14. Extensions:
- a. Have your child take step 12 further and research **invasive** plants of California. Have them check to see if any of the plants in your yard are invasive.
 - b. Have your child research what the pollution items you used are made of, what those items can do to the environment chemically, and other environmentally friendly options to use instead. Have them create a table that lists:
 - i. Item
 - ii. Material components
 - iii. Effects on the environment
 - iv. Environmentally friendly options

How Long Does It Take to Decompose...?

Aluminum cans	200 – 500 years
Plastic six-pack holders	450 years
Plastic film containers	20 – 30 years
Plastic bags	10 – 20 years
Paper bag	1 month
Glass bottles	1,000,000,000 years
Plastic coated paper	5 years
Plastic bottles/jug	forever
Styrofoam (cups, plates)	forever
Cigarette butts	1 – 5 years
Orange and banana peels	2 - 5 weeks
Painted wood	13 years
Nylon fabric	30 – 40 years
Leather	up to 50 years
Wool clothing	1 – 5 years
Cotton rag or clothing	1 – 5 months
Rubber boot/shoe sole	50 – 80 years

- Recycling 1 ton of paper saves 17 trees, 6,953 gallons of water, and 463 gallons. (Recycling 1 ton of paper is also the amount that only 4 households or 5 office workers typically recycle in one year, eliminates 60 pounds of air pollutants, and saves enough energy to power the average home for 6 months and 3 cubic years of landfill space.)
- Recycling 1 aluminum can saves enough electricity to run a TV for 3 hours.
- Recycling 1 glass bottle or jar saves enough electricity to light a 100-watt bulb for 4 hours.
- Recycling 1 ton of plastic saves the equivalent of 1,000–2,000 gallons of gasoline.
- More than 30 million trees are cut down to produce a year’s supply of newspapers.
- Over 1 billion trees are used each year to make disposable diapers (550 years to decompose).
- **REDUCE, REUSE, AND RECYCLE!** Reduce the amount you buy or use, reuse the things you can, recycle to the best of your ability.

Sources:

<http://www.dot.state.mn.us/adopt/facts.html>

<http://www.charmeck.org/Departments/LUESA/Solid+Waste/Home.htm>

<http://webs.anokaramsey.edu/waite/decomposition%20time%20of%20products.htm>

<http://www.zerowaste.ca.gov/3Rs>