



DAY OF THE LIVING, NON-LIVING, AND DEAD* 2012

Grade Level: 4th Grade

Setting: Prairie, field trip

Theme/Bottom Line: The living things in nature would not exist without the non-living elements.

Description: Students identify living/biotic and non-living/abiotic elements of nature through an investigation and game, and learn the important difference between non-living and dead.

BIAS: [Interconnection](#)

Time- 30-45 minutes

Recommended Group Size: up to 30

FOSS Kit Correlations: **Environments**

State Standards: Life Science: Explain and illustrate with examples how living systems interact with the biotic and abiotic environment. There is interaction and interdependence between and among living and nonliving components of ecosystems.

Materials list

- (Journals handed out at the beginning of the day)Worksheets, clipboards, pencils (one per student)
- 15 flags: numbered with 1-15 written on them, extra un-numbered flags (suggestions for flags: animal holes, seed pods, bird droppings, stone walls, wood structures, animal tracks, spider webs, bird nests, puddles, mud, dew, pine needles, tree bark, found items from people, galls.....)
- Yosemite photo, Living...Non-Living...Dead Diagram, Biotic/Abiotic photo
- Props: water bottle, wind wheel, beehive pieces, snake skin, rodent skull, horsehair, picture frame to use to look at whatever is chosen
- Pack of pictures

Living (alive now)	Dead/Not living (was alive, part of a living thing at one time)	Non- Living (never alive, never will be alive)
Living plants	Dead plant parts	Rocks
Insects	Remains of animals (skulls, hair, feathers, scat)	Water (bring a water bottle and place flag inside) or drought (lack of water)
Any creature/ animal	Parts of students' lunches (veggies, meat)	Temperature/ air/ wind
People		Elevation, aspect (N/S/E/W facing slope)
	Soil: decayed matter from plants and animals, scat/fertilizer	Soil: broken up rocks

Biotic: of or relating to life, produced by living things. This includes the “dead” elements
Abiotic: not biotic; non-living past, present, future

Introduction:

1. Welcome students, introduce yourself.
2. Ask students if they have studied environments in school; do they know the words biotic and abiotic? Have them give the definitions or if they do not know them use the photo to define and give an example of each. Practice with a few examples from them. Now make the connection of biotic to living and abiotic to non-living.

Nat Note: *This seems quite clear and obvious to everyone until you start trying to apply the concept. The difference between non-living and NOT living is confusing. Expect to have to repeat the definitions often as you go through this activity. Notice that **Soil is in both (not living and non-living) categories.** This is a good example of how confusing this concept can be.*

3. Now pose the question what about things that WERE alive in the past or WILL be alive in the future. Are they Living or Non-Living? There is another category that we can call “dead” for these things. They are technically in the biotic or living category but are not alive at this moment. Give some examples of these. (see the chart for ideas)
4. After some practice with this new category, present the students with the “curious case of the fence post.” Is it living, non-living or dead? Continue with the “case of Frosty the snowman.” Is a snowman living, non-living or dead? How about extinct animals? The black-footed ferret was thought to be extinct but now has recovered. What category was he in and what category is he in now?
5. In nature we have living things, and we have dead things, and we also have non-living things. Some of the non-living things, air, temperature, water, gravity turn out to be very important in nature. Can students think of how a non-living element such as air, water, temperature or gravity might be important? (lack of water makes a place lack trees; angle of sunlight creates seasons, which trigger plants to grow and animals to migrate; rocks crumble into the soil, etc).

Body:

1. Today they are going to identify some of the living, dead and non-living parts of this environment. Then you are going to discover how they interact. Explain that students will be visiting several specific spots that are marked with numbered flags and deciding whether what is flagged is living, dead or non-living. Give an example using a photo (such as Yosemite waterfall) point out the living elements, the dead elements and the non-living elements. Go to an example flag and discuss with the group- what is it marking? Is this something that is living or dead or non-living?
2. Show the worksheet and explain how to fill it out, logistics of flags (students can do them in any order, if another pair is at the flag they should move on, etc). Establish a call back signal and boundaries. Pair up students (they may choose their own partners or you can pair them up)
3. While students are working, circulate around the flags to help students and keep them on task. This investigation portion should take about 10 minutes.
4. Call students back and go over the worksheet, comparing answers. Give the correct answers and explain why. The application of this concept is very important.
5. Next, hand out the picture cards and ask students to look at their pictures and decide if they have a living, non-living or dead component. Randomly choose 2 students and challenge them to think of an interaction that could occur between the two elements (for

example, a fox may drink water, a mouse might eat grass). Whatever category they are in they should be able to think of an interaction. This interaction factor is what makes the individual parts into an ecosystem. After a couple of examples, allow the group to circulate and find as many interactions as they can. Challenge students to find another pair to interact with (for example grass/rabbit pair might connect with mouse/hawk pair because mouse also eats grass and hawk also eats rabbit). Give them 3-5 minutes to make their connections.

Conclusion:

1. Ask students to explain what are living, dead and non-living things in nature. Emphasize that although we think about the living parts of nature more often, none of the living would exist without the non-living parts!
2. This is why people are concerned about pollution in the air, water and soil, even though these are non-living elements. They can help protect the living by protecting the non-living!

This lesson was written by Zoë Whyman and Dolores Daniels of the City of Fort Collins Master Naturalist Department.



naturally yours