

# TRB 3:2 - Investigation 1 - Intro: Living & Nonliving

## Summary

Students learn to distinguish between living and nonliving things.

## Group Size

Large Groups

## Materials

- small, flat-bottomed, clear glass baking dish
- overhead projector
- pepper shaker
- liquid dish soap
- [word cards](#) (pdf)
- File Folders (2)

## Background for Teachers

Your students may have trouble distinguishing between living, nonliving, and once-living things. Children may consider everything that moves to be alive, including cars and clouds. Often children pretend that objects are alive so that they can talk to them. Children also have difficulty comparing once-living objects with objects that have never lived. Living and nonliving are scientific terms. Children are more used to hearing living or dead. By exploring various objects and organisms, your students can begin to distinguish between things that are living, things that were once-living, and things that are nonliving.

## Intended Learning Outcomes

- Use a Science Process and Thinking Skills
- Manifest Science Interests and Attitudes
- Understand Science Concepts and Principles
- Communicate Effectively Using Science Language and Reasoning

## Instructional Procedures

### Pre-Assessment/Invitation to Learn

Tell the class that you are going to do two demonstrations. You want them to make close observations and to be prepared to explain what they saw happen during each demonstration.

### Demonstration 1

Fill the baking dish with about 1/2 inch of water and place it on the overhead projector. Use 2 opened file folders as a screen to block students' view of the baking dish sitting on the projector. Out of view of the students, behind the screen made from the file folders, sprinkle enough pepper onto the surface of water so that it is pretty well covered. Turn on the overhead projector. Your students will see the paper as shadows on the screen.

Place a drop of liquid dish soap on the surface of the water. Your students should see the shadows of the pepper flakes immediately move away from the soap toward the sides of the dish.

Ask students to explain what they observed happening and what they think the little things floating on the water are. Why did they move away? Do they think the little things are alive?

## Demonstration 2

Thoroughly rinse out the dish before beginning the second demonstration.

Place the dish on the overhead and fill it with 1/2 inch of water. Again use the folders to screen your actions from you students.

After the water has stopped moving, place a shape similar to the one shown below cut from oaktag, on the surface of the water.

Place a drop of liquid dish washing soap in the center hole. Your students will see the shape move quickly across the water.

Discuss with the class what happened to the shape. Why do they think the shape moved? Is the shape alive?

Explain to the class that the demonstrations did not have any living things in them. Show them the pepper, oaktag shape, and soap. Explain that the pepper and the shape moved away from the soap because it broke the surface tension of the water. Not everything that moves is alive.

Have the class list things that move that are not alive.

## Instructional Procedures

### *Materials*

Various objects and organisms, such as the following:

- rocks
- empty aluminum can
- nails
- sand
- water
- zip-lock bag with air sealed inside
- seeds
- apple
- paper
- wooden objects
- potted plants
- live animals (insects, fish, hamster, dog, cat, etc.)

This activity can be done with the whole class working together or in groups if enough objects can be obtained (see materials list). Students could work in cooperative teams of 3 to 5 students.

Begin by showing the students the objects. Allow students a few minutes to share observations and information about the objects.

Invite a student to move the objects into two different groups (or have each team arrange their objects into two groups). Have class members see if they can guess why the objects were grouped the way that they were.

Allow a few more students to form groups with the objects. Hopefully someone will group them as living and nonliving. If not, suggest that someone try grouping them as living and nonliving.

Discuss with the class what all living things have in common. (They are able to grow, reproduce, and move.) Make sure students understand that just because an object moves, does not mean it is alive. Also, something may grow and not be alive. To be alive, an object must do all three.

Discuss the difference between nonliving and once-living. Ask the students which objects were once-living or were once a part of a living object, but are no longer alive. (wood, paper, apple, etc.) What is the difference between these objects and the nonliving objects such as the nail, rock, or aluminum can?

Give each team a set of the [Word Cards](#) (pdf) and ask them to arrange them into three groups; living, once-living, and nonliving.

Discuss team responses. Give students an opportunity to explain why they grouped the cards

they way they did.

Make an overhead or chart of the [Vocabulary Sheet for "Living Things"](#) (pdf) or copy it onto the board. Also provide a copy for each student. Working with the students, fill in the sheet. Some possible responses are listed below.

Provide copies of the vocabulary sheets for ["Nonliving Things"](#) (pdf), ["Once-Living Things"](#) (pdf), and ["Organisms"](#) (pdf) to students. (Or, make larger copies that teams could fill out together.)

Have students work with their team and fill out the vocabulary sheets.

Go over the vocabulary sheets with the class. Have student save the sheets in their journal so they can add the them as they gain more knowledge about living and nonliving things.

## Extensions

### *Science -*

Take the class outside for a walk around the neighborhood. Challenge students to find living, nonliving and once-living things. Have students make lists and drawings of things they find to add to their journals. *(ILO1>*

### *Art -*

Have students make a collage of living and nonliving things by folding a paper in half and writing "Living Things" at the top of one half and "Nonliving Things" at the top of the other half. Students will cut pictures from old magazines of living and nonliving things to glue onto the paper. Remind students that in a collage, pictures are overlapped and displayed in a creative way. *(Standard III, Objective 1)*

### *Language Arts-*

Have students create an imaginary animal including the characteristics of movement, growth and reproduction. Then have them write and illustrate a story about their imaginary animal. *(Standard VIII, Objective 6)*

## Homework & Family Connections

Ask students to look around their homes, yards, and neighborhoods and take notes on the living, once-living, and nonliving things they can find. Have students add their notes to their science journals and share what they learned with their teams.

## Assessment Plan

Have students divide a piece of paper into three columns and title each column with "Living", "Nonliving", or "Once-living". Challenge the students to list as many things as they can for each category.

## Authors

[Utah LessonPlans](#)