



GRADE LEVEL

3rd

STUDENT OUTCOMES

-Identify relationships among trees and other living things

-Understand that trees provide habitat, food, and shelter for many species

TIME FRAME

Year-round
45 minutes

LOCATION

English Woodland Garden

KEY TERMS

Habitat
Forest ecosystems
Mutualism
Habitat Loss
Conservation
Restoration
Sustainability

TREES AS HABITATS

Topic: Nature Homes

MATERIALS NEEDED

For each small group:

- Leader sheet: "Trees as Habitats"
- Ranger Rick NatureScopes "Trees are Terrific" picture
- Pencils
- Clipboards (recommended)
- Binoculars or magnifying glasses (optional)

For each student:

- Student sheets: Living Things Interacting with Trees

PRE-VISIT ACTIVITY

Show students the image of Ranger Rick's Nature Scopes "Trees are Terrific." Allow them time to see all of the different animals, insects, and fungi that live upon the tree in the drawing.

Then ask your students brainstorming questions:
What different living things do you see on this tree?
Why do you think they are on the tree?
What do you think they are doing?
Are they helping the tree in any way? How so?
Is the tree helping them in any way? How so?

Provide your students books and resources that discuss different habitats. Let your students have time to read about these habitats and explore the living beings that live within them. If some of the literature mentions habitat loss, look for patterns with your students about what might be causing the loss of different habitats. Talk with your students about what kinds of things you can do in your daily life to live more sustainably and help conserve natural habitats.

BACKGROUND INFORMATION

Habitats are places where living things get all that they need to survive, such as food, water, shelter, and space to grow and produce offspring.

A tree may serve as only part of an organism's habitat, or it may be the organism's entire habitat. For example, a tree may provide food for squirrels and a nesting site for birds. But moss and mushrooms might get all they need living their entire life right on the tree. Sometimes, these other organisms also provide helpful benefits for the tree as well. Woodpeckers eat pests that bore into the trunks of trees. Squirrels spread the tree's seeds around, which help the seeds disperse and grow in new areas. Fungi have tiny hair-like "roots" called mycelium that help transport nutrients, sugar, and water to the underground roots of trees. This kind of beneficial relationship between trees and other living things is called mutualism. **Mutualism** occurs where two or more species benefit from one another and help the other to survive. It is a relationship that many living things in nature share and is an amazing way of seeing how living things work together and rely on each other.

Forest ecosystems, places characterized by a dense community of trees, are great examples of where mutualism occurs. Unfortunately, many forests around the world are being cut - down in order to build cities, create more agricultural land, or to use the trees themselves as resources. This **habitat loss** results in many living creatures suffering because they can no longer get the things that they need to survive—food, water, shelter, safety, and space. Some living things become endangered or even go extinct if too much habitat loss occurs.

Each one of us can do our part to help. Many **conservation** and **restoration** efforts are trying to combat habitat loss and preserve and restore natural habitats. We can all do our part to try and live more **sustainably** and care for this one amazing planet.

POST-VISIT ACTIVITY

Talk with your students about their experiences learning about living things depending upon trees. Ask your students if they feel like humans also depend upon trees. How so? Hopefully, they know that we need oxygen to survive and we get most of our oxygen from plants like trees. They may also share how trees help them to feel more peaceful, which emphasizes the intrinsic value of trees for their aesthetic nature. Ask your students if there might be ways that they can help to conserve trees? Are there other ways that, as a class, we can all live more sustainably? Brainstorm together some ideas, and see if you can put any of them into practice at home or at school.

TREES AS HABITATS

LEADER SHEET

Page 1 of 2

1. English Woodland Garden

Walk with students to the English Woodland Garden. The English Woodland Garden is large and there is plenty of space for each small group to find a spot away from the other groups to start the lesson.

Today, we are going to explore the English Woodland Garden at the Missouri Botanical Garden. You will notice that there are many trees located here. Trees make up a vital part of a woodland habitat.

1. Question for students

- How do you think that these trees in the English Woodland Garden help the animals, insects, and fungi to survive?

2. Encourage observation






- Within this area where we are standing, use your eyes (or binoculars or magnifying glasses) and look for evidence of animals, insects, or fungi that rely on these trees for survival.
- Examples could be acorns with squirrel's teeth marks on them, leaves chewed by insects, bird or squirrel nests in the trees.

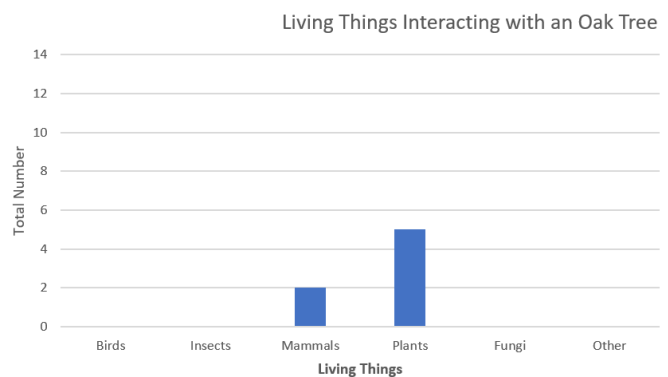
3. Recording data

- Ask students to pull out their recording data sheets "Living Things Interacting with Trees."
- Have them make tally marks in the appropriate boxes whenever they observe interactions between the trees and other living things.

4. Graphing

- After recording the information, they can make a bar graph using the information that they recorded.
- Examples of student work could look like this:

Living Things	Tally Marks	Total
Birds 		
Insects 		
Mammals 		2
Plants 		5
Fungi 		
Other		



5. Share

- Allow students time to share their bar graphs with each other to compare and contrast their observations and the data that they recorded.

Teacher Notes

6. Make a claim

- Ask students to apply what they have learned about squirrel and tree interactions to predict what habitat the squirrel would survive less well in or cannot survive in at all. For example, could a squirrel survive in a habitat like Antarctica? Why or why not?
- Encourage students to infer through their previous observations along with prior knowledge of different habitats to decide if a squirrel could survive a change in its habitat.
- Ask students, "If a botanical garden had a problem with an overpopulation of having too many squirrels, would cutting down all of the oak trees and replacing them with a different species of tree fix this problem?"
- Ask students, "Would cutting down all of the oak trees create other problems? What would happen to the other living things if all the oak trees were cut down?"
- The goal is to help students understand that there is an important and complex web of interconnected relationships among living things in nature, and that one change can lead to other changes.

2. Conclusion

We have seen interactions today among trees and living things. Remember that all living things depend upon one another and that we, humans, are connected with nature in very deep ways too. We need to do our best to be respectful of other living things and try to live our lives sustainably.







TREES AS HABITATS

STUDENT SHEET: RECORDING DATA

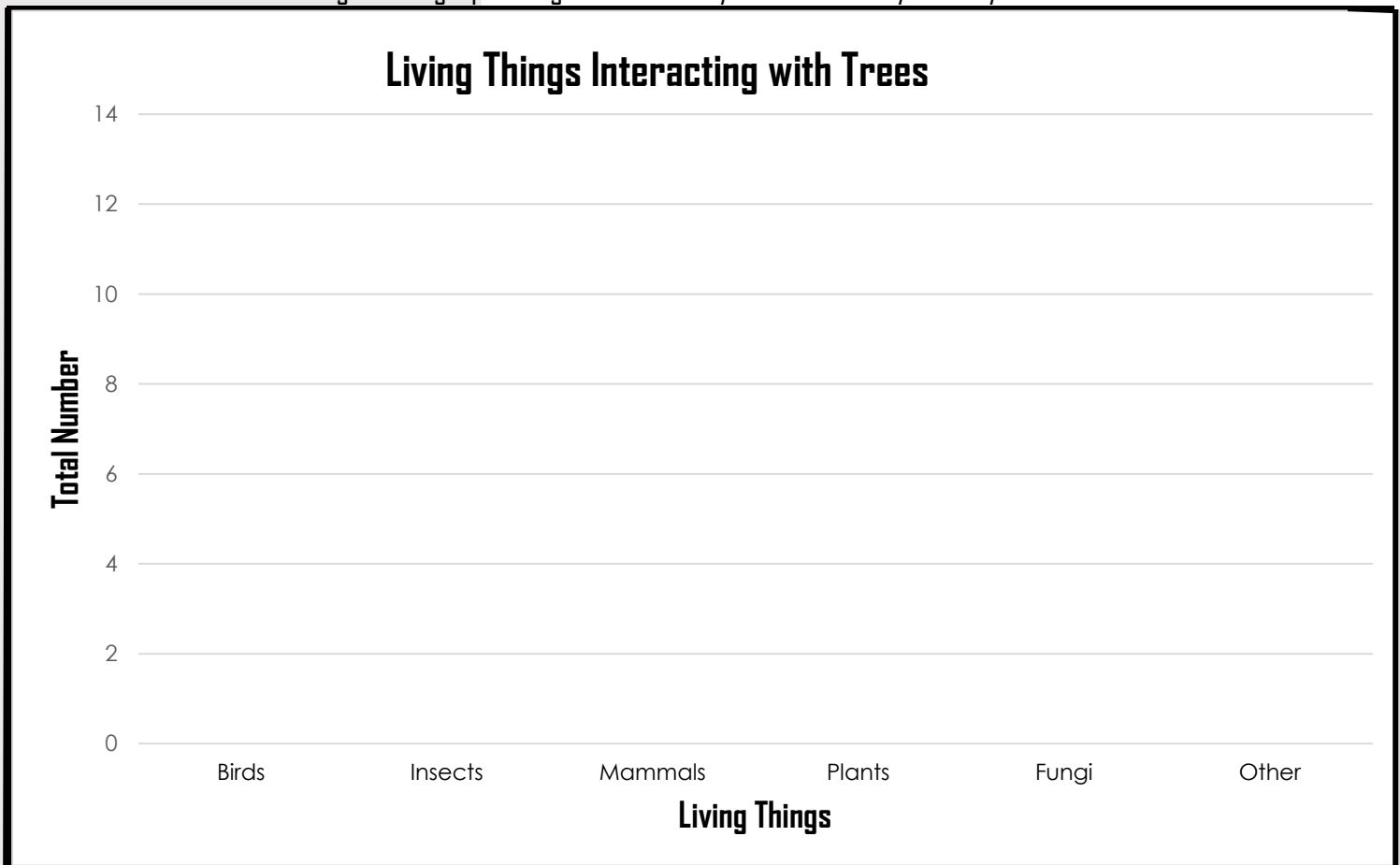
Page 1 of 2

Living Things Interacting with Trees

Create a tally chart for all the interactions with trees that you find.

Living Things	Tally Marks 	Total
Birds 		
Insects 		
Mammals 		
Plants 		
Fungi 		
Other		

Design a bar graph using the data that you collected in your tally chart.



TREES AS HABITATS

STUDENT SHEET: RECORDING DATA

Page 2 of 2

Name: _____

Date: _____

Some **animal** interactions that I see are: _____

Some **insect** interactions that I see are: _____

Some **fungi** interactions that I see are: _____

Other things I saw are: _____

Ranger Rick NatureScopes "Trees are Terrific"

