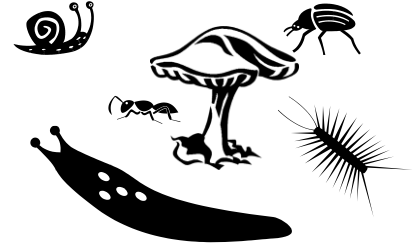


Lesson: Bugs and Slugs**Topic/Essential Question:** How are bugs nature's recyclers?**Unit:** "Why Are Trees Terrific?" Kindergarten Environmental Literacy**Content Standards:**

- NGSS K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.
- NGSS K-ESS3-1. Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.
- SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.
- SL.K.6 Speak audibly and express thoughts, feelings, and ideas clearly.
- Foundation for EL Standards 2.0 Interaction of Earth's Systems, 3.0 Flow of Matter and Energy, and 4.0 Populations, Communities, and Ecosystems

Length of Lesson: 30 minutes (*This lesson is split into two 15-minute activities that are taught simultaneously. The group splits in half for the lesson and swaps after their first activity.*)

Student Outcome: The student will

- Describe how forests provide food and homes for insects and other creatures.
- Explain how dead trees and logs decompose.

Knowledge of the Learner:

- Prerequisite knowledge, skills and processes: trees and animals are living things with basic needs; listening, observing, following instructions.
- Students' needs, interests, and previous learning will vary. It may be difficult for students to understand decomposition.
- The instructor may pace the lesson according to the responses and participation of the students.

Knowledge of Content:

- Content knowledge for instructor: Provided in the text of the lesson.
- Vocabulary: Decompose, recycle
- Resources:

Buggo game boards

Buggo critter cards

Small rocks as game pieces

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Fresh piece of wood
Jar of decomposed log
material
Magnifying lenses

Bug jars
Hand rakes
What Grows on a Log/Log
Life sheets

Hand sanitizer
Song poster

Pre-Assessment: During the opening at the beginning of the field trip, Camp Woodlands staff will invite students to share what they have learned at school about trees including trees as living things, trees as plants, parts of a tree, and what is a forest.

Activity A: BUGGO Game

Set Up Before Students Arrive:

1. Set out the appropriate number of game boards.
2. Set out bowls where students can reach them and fill them with game pieces (rocks).
3. Place the stack of critter cards face down on the table for the instructor.

Motivation/Warm-up:

1. Have students sit at the table.
2. Welcome students to the activity and introduce yourself.
3. Ask them if they have ever played Bingo. Tell them they are going to play a similar game called "Buggo."

Procedure:

1. Have students look at their game boards. Ask them where they think they could find all the things on the card? *In the forest.*
2. Have students place a rock on their "free space" in the middle of their game board.
3. Explain the rules of Buggo:
 - a. We will take turns choosing a critter card. I will show the card to everyone. If you have that picture on your game board, put a rock on it. We will read it and discuss it.
 - b. When you get three rocks in a row (up and down, sideways, or diagonally), call out "Buggo!"
 - c. Don't clear your game boards; we will keep playing until other people get Buggo.
4. Play the game:
 - a. Hold the critter cards face down, fanned out, and have a student draw a card.
 - b. Show the card to the group. Have students mark their game board if they have it.
 - c. Read the information on the back of the critter card aloud to the group.

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- d. Continue this process until someone gets Buggo. Once you have a winner, continue the game. **DO NOT** clear the game boards. If possible, continue playing until everyone gets Buggo at least once. If time permits, have students trade game boards and play again.
5. Sing “All the Little Bugs” song with the students. Students can echo the instructor singing.

Assessment: Ask students, “Why do these things live in the forest?” *They find food and shelter there.*

Activity B: How Does a Log Decompose?

Set Up Before Students Arrive:

1. Identify a log with soft, decomposed parts to use as your “Learning Log” during your introduction. Place fresh piece of wood there, too.
2. Set out the hand rakes, hand lenses, bug jars and “What Grows on a Log/Log Life” sheets.
3. Find several locations that different groups could explore.

Motivation/Warm-Up:

1. Welcome students and introduce yourself.
2. Gather students at the “Learning Log.” Ask them what part of a tree it used to be. *Trunk or branch.* Ask them if it is dead or alive. *The log is dead but it is full of living things that find food and shelter (homes) here.*
3. Allow students to look at, feel, smell and describe some of the decaying material from the Learning Log. Then show them a new piece of wood. How are they different? Why? *One is hard, one is soft, broken into smaller pieces; the soft one is “decomposing” or breaking down. It will get recycled into the soil.*
4. Explain that many living things help decompose/break down/recycle the logs. Tell students that they are going to look for living things on/near a log. Tell them these rules:
 - a. Be gentle; **DO NOT** squish or kill any bugs.
 - b. Scoop up bugs with bug jars for observation. **DO NOT** touch or collect spiders.
 - c. Don’t pick mushrooms, other fungus or moss from where they are growing.

Procedure:

1. Have students explore the logs in the area using the materials provided. Remind them of the rules as needed. Use the “What Grows on a Log/Log Life” to identify the things they find.

2. After a time of collecting and identifying living things, have students release the living things, push the leaf litter back into place and roll any logs back where they were originally. Collect materials.

Assessment: Ask students, “Why are things living on/near the logs?” *The logs provide food and shelter (homes).* Ask students, “How are bugs and slugs nature’s recyclers?” *As bugs and slugs eat the log and/or build their homes in the log, they break the log down and recycle it into the soil.*

All the Little Bugs

To the tune of “Frère Jacques”

When a tree gets old, When a tree gets old
It falls down, It falls down
All the little bugs, All the little bugs
Help the tree break down, Help the tree break down

Bring out the termites, Bring out the termites
Bring out the worms, Bring out the worms
All the little bugs, All the little bugs
Help the tree break down, Help the tree break down

All the little bugs, All the little bugs
Help the cycle work, Help the cycle work
Trees turn to soil, Trees turn to soil
Leaves turn to dirt, Leaves turn to dirt

Actions:

Stand tall and pretend to fall/Wiggle fingers out in front and then fall down /Pretend to toss bugs into air/Wiggle fingers around in a circle/Stand straight and crouch/Float leaves down and crouch.