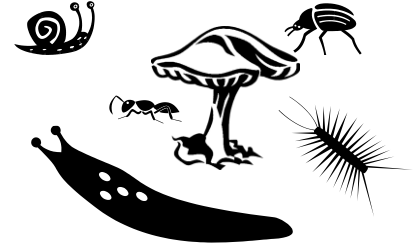


Lesson: Bugs and Slugs**Topic/Essential Question:** How are bugs nature's recyclers?**Unit:** "Why Are Trees Terrific?" Kindergarten Environmental Literacy**Content Standards:**

- Science 3.0 Life Science F. Ecology 1. Describe ways that animals and plants interact with each other and with their environment, such as birds nesting in trees, deer eating plants, bees pollinating flowers, spiders eating insects, etc.
- 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 trees provide food and homes for insects
- 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, compost, recycle
- Resources:

Buggo game boards

Wet erase markers

Markers

Buggo critter cards

Magnifying lenses

Clip boards

Game pieces (Natural Items, i.e. stones)

Bug jars

Hand rakes

"What Grows on a Log"/"Log Life" sheets

Paper towels

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 Log Game

Set Up Before Students Arrive:

1. Set out the appropriate number of game cards.
2. Set out the four bowls near the game cards and fill with game pieces.
3. Set the stack of critter cards face down close to where the instructor will be.

Motivation/Warm-up:

1. Have students sit at a table. Ask them to please not touch the game cards or pieces.
2. Welcome students to the activity and introduce yourself.
3. Inform the students that they are going to learn about the many different insects (bugs), plants and animals that use logs for food and shelter.

Procedure:

1. Have the students look at their game card. Ask students, "What do you see?"
2. Ask the students where they think they can find all the things on the card? *A log*
3. Explain to the students the rules of bingo.
 - a. 1 game card consisting of 9 squares, 1 square as a free spot.
 - b. At the start put a game piece on the free spot. (*Use natural items from woods as game pieces, i.e. rock, leaf, bark, etc.*)
 - c. Each turn consists of the instructor holding the critter cards upside down and allowing a student to pull a card for the instructor to read aloud (*Have a different student pick a card each time.*)
 - d. The students put a game piece onto the game card matching the critter card that is pulled.
 - e. Winning involves marking 3 consecutive spots on the game card in a horizontal, vertical, or diagonal line.
 - f. The student must shout BUGGO! when they've won.
4. Have the students start the game.
 - a. When a critter card is selected, have the student's mark their board with a game piece if they can, and then ask them how they think this animal uses a log Ex: A spider gets shelter by having a place to build its web. It gets food by catching other insects in its web.
 - b. Once they've given their answer read the information on the back of the critter card aloud to the group.
 - c. Continue this process until someone gets 3 spots marked in a row.
 - d. Once you have a winner, continue the game, DO NOT clear the game boards.
 - e. Continue to play for the time that remains.

- f. Before switching activities, sing the “All the Little Bugs” song with the students.

Assessment: Ask students, why are logs important? *They provide food and shelter to many different insects, animals and plants.*

Activity B: How Does a Log Decompose?

Set Up Before Students Arrive:

1. Place hand rakes, hand lenses, bug jars and “What Grows on a Log” and “Log Life” sheets near the log(s) where students will be exploring.
2. Identify a log to use as your “Learning Log.”

Motivation/Warm-Up:

1. Welcome students and introduce yourself.
2. Show students a log and ask them what part of a tree it used to be. The trunk. Refer to this log as the “Learning Log.” Ask the students what they think they will find on, around or under a log.
2. Have students gather around a log. The instructor will grab a handful of decaying material off of or in the log and give each student a sample of the “material” to investigate.
3. Have the students look, feel and smell the “material” and ask them where do they think it came from and what do they think it is?
4. Tell the students, “Today we will discover what helps to break down trees into soil.”
5. Explain that many plants and animals help “recycle” the log back into the soil. This is called decomposition. Decomposition means breaking down into smaller pieces and becoming part of the soil. This is good for what? Trees.
6. Explain to students that even though logs are dead, they are full of life.
7. Gather students around and take a look under the Learning Log as an introduction to what they may see.
8. Remind students **NOT TO squish** or **kill** any bugs and to be **gentle**, that the logs are homes for many living things.

Procedure:

1. Have students explore the log(s) in the area using the materials provided. The “What Grows on a Log” and “Log Life” sheets can be used by students to help identify the things they find.
2. When students find living things:
 - a. They may be scooped up with bug jars for observation.
 - b. Invite students to handle the earthworms gently.
 - c. Leave spiders in place. **DO NOT** touch or collect them.
 - d. Do not allow students to pick mushrooms or fungus from where they are growing.

3. Ask students why are these living things here? Explain that the log is their habitat (home). Their food is here, too.
4. Have students return the living things to the soil, push the leaf litter back into place and roll any logs back where they were originally found.
5. Return hand rakes and any bug containers back to where they found them.

Assessment: Ask students, how are bugs nature's recyclers? *Bugs and slugs build their homes in dead trees and logs and break it down turning it into soil, which helps trees grow*

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.