

Insects to Academics

**From Natural Curiosity
to
Engagement
to
Science and Math
Learning Standards
to
Self-Directed Learning**

**Outdoor Learning at
Thompson Island Outward Bound Education Center**



Outward Bound®
Thompson Island

A search for insect specimens activates the essence of childhood.... *natural curiosity.*



Outward Bound®
Thompson Island

Natural curiosity channels students into **engagement with learning**... and learning becomes joyful!













Outward Bound®
Thompson Island

Engagement pulls students into activities directly focused on **standards-based learning**.



Identifying a specimen and how it feeds






Common Name	Feeding group	Identification	What to look for
Pill bug			<ul style="list-style-type: none"> Grayish oval body Seven pairs of short legs
Click beetle			<ul style="list-style-type: none"> Narrow torpedo-shaped body Pointed corners on thorax
Flower fly			<ul style="list-style-type: none"> Black and yellow body, like a bee Large eyes One pair of wings Very short antennae
Snail-eating ground beetle			<ul style="list-style-type: none"> Dark, shiny, purplish body Long legs and antennae Large
Ground beetle			<ul style="list-style-type: none"> Brown or black body SMALLER SIZE

Classifying Specimens by Feeding Group

Team ^{Ariston} Deanna Michelle Testinee (Fab Fingers)

INSECT INVENTORY

1. Identify 2. Record 3. Sort

	 Decomposers	 Herbivores	 Pollinators	 Predators	 Scavengers
1				Centipede	
2		Stink Bug			
3			Sweat Bee		
4				Woodlouse Spider	
5					Ear Wig



Massachusetts Life Science Learning Standards

LS.13 (Gr7) Classify organisms into the currently recognized kingdoms according to characteristics that they share. Be familiar with organisms from each kingdom.

LS.25 (Gr8) Give examples of ways in which organisms interact and have different functions within an ecosystem that enable the ecosystem to survive.

LS.26 (Gr8) Explain the roles and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.






LS.27 (Gr8) Explain how dead plants and animals are broken down by other living organisms and how this process contributes to the system as a whole.



Quantifying and Analyzing a Collection

INSECT TALLY

Team: Dearna, Michelle, Destinee, Arista

Symbol	Feeder Group	Number in this Group	Fraction	Decimal	Percent
	Decomposers	2	$\frac{2}{10}$	0.2	20%
	Herbivores	2	$\frac{2}{10}$	0.2	20%
	Pollinators	3	$\frac{3}{10}$	0.3	30%
	Predators	2	$\frac{2}{10}$	0.2	20%
	Scavengers	1	$\frac{1}{10}$	0.1	10%
	TOTAL NUMBER of Insects:	10	$\frac{10}{10} / 1$	1.0	100%



Massachusetts Mathematics Learning Standards

M.6.N4 (Gr5-6) Demonstrate an understanding of fractions as a ratio of whole numbers, as parts of unit wholes, as parts of a collection, and as locations on the number line.

M.6.N5 (Gr5-6) Identify and determine common equivalent fractions, mixed numbers, decimals, and percents.

M.8.N.1 (Gr7-8) Compare, order, estimate, and translate among integers, fractions and mixed numbers (i.e., rational numbers), decimals, and percents.

M.8.N.3 (Gr7-8) Use ratios and proportions in the solution of problems, in particular, problems involving unit rates, scale factors, and rate of change.



Opportunities for Self-Motivated Learning



A Field Cricket Named “Moses”

- “Moses” was captured after the insect classification activities.
- He was quickly identified as a field cricket.
- Eric knew Moses was an herbivore and decided to find out how much he ate.
- Eric made a mini-habitat from found materials and kept track of how much of a blade of grass Moses ate in a day.
- Moses quickly became the group’s gently nurtured pet.

