



# INTEGRATED PEST MANAGEMENT

## Unit 3 Lesson 1 A Picture is Worth 1,000 Words

**Focus Areas:** Biodiversity; Science,  
Language Arts, Art

**Focus Skills:** Gathering, organizing and  
analyzing information, creating a visual  
aid, understanding and synthesizing  
information, graphing statistical data

**Level of Involvement:** AVERAGE

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Unit 3 Lesson 1: A Picture is Worth 1,000 Words





*Dedicated  
to Reducing  
Pesticides*

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### Objectives

- \* To define biodiversity
- \* To aid understanding of biodiversity through the creation of a visual aid

### Essential Question

What is biodiversity?

### Essential Understanding

Biodiversity is a term used to describe the variety of life forms on earth. Biodiversity is based on ecosystems, classification of species and variations in genetic structure.

### Background

In a mere handful of earth's soil more living things exist than are known on all other planets combined! To date we have classified 1.4 million species. The largest group, 751,000, is insects. This number is followed by higher plants with 250,000 representatives, then 19,000 fish, 10,000 amphibians and reptiles, and 4,000 mammals. The remaining numbers include species of worms, mollusks, spiders, fungi, molds and microorganisms. The list continues to grow, and scientists now believe unclassified species rank in the millions.

This incredible variety gave rise to the term biodiversity, and involves three levels of classification. In addition to the most familiar, i.e. classification by species, scientists also group life forms in a broader spectrum based on ecosystems and also the most narrow category, genetic, which encompasses the variety of behaviors and characteristics within a species based on DNA mapping.



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### Vocabulary



#### biodiversity

the variability among living organisms on the earth, including the variability within and between species and within and between ecosystems

#### ecosystem

an interactive community of plants, animals and microorganisms linked by energy and nutrient flow

#### genetic

referring to characteristics and behaviors transmitted from one generation to the next at a cellular level

#### species

the most specific subdivision of the classification system for plants and animals

### Challenge

Create a visual aid to illustrate biodiversity

#### Logistics

**Time:** 45 to 60 minutes

**Group size:** 2 to 30

**Space:** seating room and table/desk area for each participant

#### Materials

video: WWF *Exploring the Web of Life*  
TV/VCR

Handout 1 Key \*

arts and craft supplies to accommodate group size  
*National Geographic* and/or other nature oriented magazines (optional)

K-W-L chart \*

\* single copy provided





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### Preparations

1. Set up VCR, TV and video
2. Procure arts and crafts supplies

### Activity

#### Introduction

Group watches video (first half, 15 minutes as far as Fungi; Finding the Connections).

#### Follow Up

1. Discussion questions: Is it surprising that no one's really sure how many species exist on the planet? Why or why not?
2. What are the pros and cons of Terry Erwin's method of finding new species?
3. Create a group list of what the participants learned from the film.
4. Generate a list of questions they have after viewing the film.
5. Create a K-W-L chart based on the video.

#### Involvement

1. Distribute Handout 1 Key .



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### Activity

#### Involvement (continued)

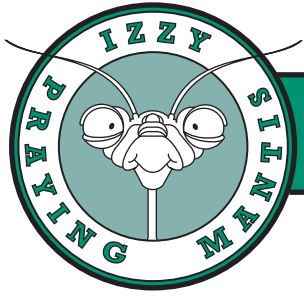
2. Allow time for participants to develop a plan and rough draft for a visual representation (chart, bar graph, circle graph, etc.) to illustrate the Earth's biodiversity. (**Note:** If individuals choose to create a bar graph, the vertical axis should increase in increments of no less than 5,000.) As individuals complete their rough drafts, make materials available.
3. Have participants complete their illustration.

### Answer Key

1. Opinions will vary.
2. While certainly effective, this method was not exactly the scientific method put into practice.
3. Lists will vary from group to group.

### Assessment

Have participants create a Quick Quiz (5 to 8 questions) for another member of the group. Quizzes are exchanged and completed. The individuals then correct the quiz they created by writing the correct answer to any question they feel is answered incorrectly or incompletely.



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### Follow Through

**Focus Areas:** Language Arts

**Focus Skills:** Observation, writing a journal entry

Have participants keep a biodiversity journal. For a 24-hour period, participants should record each time they experience a connection to biodiversity. The food they eat, medicine they take, first hand encounters with plants and animals, TV they watch, etc. Entries must be specific as well as diverse. Offer a prize for the most extensive (correct) list. Compare results.



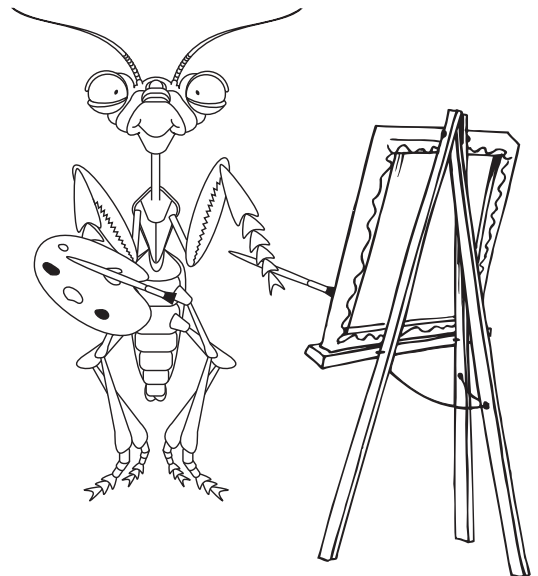
## Unit 3 Lesson 1: A Picture is Worth 1,000 Words

### Notes



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**Unit 3 Lesson 1: A Picture is Worth 1,000 Words**

**K-W-L Chart**

<b>What we Know</b>	<b>What we Want to Know</b>	<b>What we Learned</b>



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Handout 1

### Key

1. Bacteria (4,800)
2. Scarlet waxy cap mushrooms (Fungi - 69,000)
3. Sea colander (Algae - 26,900)
4. Trees, shrubs, and other higher plants (248,400)
5. Amoeba (Protozoa - 30,800)
6. Yellow tube sponges (Sponges - 5,000)
7. Compass jellyfish (Corals, jellyfish, and relatives - 9,000)
8. Leopard flatworm (Flatworms - 12,200)
9. Roundworms (12,200)
10. Earthworm (Earthworms and relatives - 12,000)
11. Scallop (Clams, squids, and other mollusks - 50,000)
12. African seastar (Seastars and relatives 6,100)
13. Dragonfly (Insects - 751,000)
14. Jumping spider (Spiders, crustaceans, and other non-insect arthropods - 123,400)
15. Regal angelfish (Fishes, tunicates, and lancelets - 18,800)
16. Leopard frog (Amphibians - 4,200)
17. Scarlet king snake (Reptiles - 6,300)
18. Tree swallow (Birds - 9,000)
19. Giraffe (Mammals - 4,000)



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