



NATURE JOURNAL

AN ALABAMA OUTDOOR CLASSROOM PROGRAM

2ND GRADE

SAMPLE

This Teacher's Guide Belongs To:



Junior Wildlife Scientist

Level 3: Entomologist

The Study of Insects

The Alabama Wildlife Federation created the Junior Wildlife Scientist program to:

- ✓ Educate our children about the wise use and conservation of our wildlife and natural resources;
- ✓ Introduce children to the outdoors so they will have an appreciation for Alabama's great natural diversity; and
- ✓ Provide hands-on, inquiry-based outdoor activities that help teach the Alabama Department of Education Course of Study Standards using a schoolyard wildlife habitat as an outdoor classroom.



The **JWS Teacher's Guide** for the 2nd grade JWS nature journal includes background information, educational resources, lesson plans, and activity answers.

To become a **JWS Entomologist**, the student must earn the two badges below and take the JWS Pledge on page 3. For each badge, the student must complete at least three of the JWN nature journal activities (total of six activities). ***See REQUIRED and Suggested activities below.**

1 Beneficial Pollinators Badge

2 Nature's Biodiversity Badge

Table of Contents:

What Does an Entomologist Do?	2
Junior Wildlife Scientist Pledge *REQUIRED	3
Explore Nature with Your Senses.	4
Field Investigation: How Pollinators Pollinate *REQUIRED	5
How a Flower Creates a Seed *Suggested	7
Wonders of Wildlife: Eastern Bumble Bee *Suggested	9
Butterfly Word Art	11
Alabama Ecology: Alabama's Amazing Biodiversity *REQUIRED	13
Field Investigation: Evidence of Wildlife *Suggested	15
Dig Into Plants: Is it Really a Plant? *Suggested	17
STEAM Activity: Design A Seed	19
Seasonal Plant and Animal Observations.	21
Explore Outdoors: Visit a Botanical Garden or Arboretum	22

What Does an Entomologist Do?



RED-LEGGED GRASSHOPPER

An entomologist (en-to·mol·o·gist) is a scientist who studies insects – small animals that have six legs, three body parts, and no backbone (invertebrates).

There are more insects (10 quintillion) in the world than all of the other groups of animals combined – including humans!

Insects that are harmful to humans, crops, or forests are called pests.

Entomologists may study groups of insects like bees or a specific type (species) like the mason bee. They may also study other types of arthropods (the larger group of invertebrates in which insects belong).

Insect:
Bees



Mason Bee

Insect:
Beetles



Bess Beetle

Insect:
Butterflies



Common Buckeye

Arthropods:
Spiders



Yellow Garden Spider

Arthropods:
Crustaceans



Pillbug or Rolly-Poly

Arthropods:
Myriapods



Millipede



Did You Know?

People who study entomology can become a(n)...

- **Agricultural Entomologist**
(protects crops from pests)
- **Apiologist**
(studies bees)
- **Lepidopterist**
(studies butterflies)
- **Taxonomic Entomologist**
(discovers new species)
- **Medical Entomologist**
(researches spread of diseases from pests)
- **Urban Entomologist**
(studies insects found in homes and businesses)
- **Veterinary Entomologist**
(protects animals from diseases from pests)



COMMON WHITETAIL SKIMMER
BRUCE MARLIN

Junior Wildlife Scientist Pledge

I want to be a JWS Entomologist.

I want to study the insects and bugs in
our outdoor classroom.

I pledge to follow the JWS rules below.



Follow and listen
to my teacher.



Be quiet so we
can see wildlife.



Take care of
flowers and do
not pick them.



Look at animals
but do not touch
them.



Provide food and
water for wildlife.



Provide shelter
and habitat for
wildlife.



Appreciate insects
and other bugs.



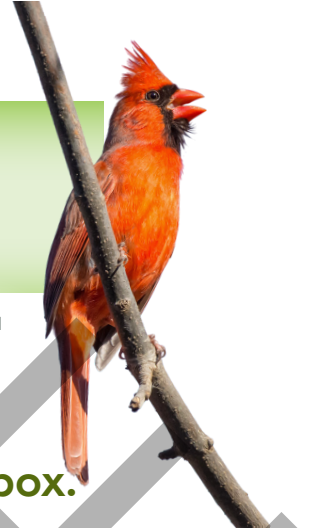
Throw away trash
and do not litter.

Print Your Name

Date

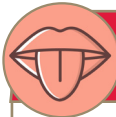
Search for Wildlife Using Your Senses

NORTHERN
CARDINAL



DATE: _____

 Explore your outdoor classroom.
Draw or describe your observations in each box.



Taste mint, a fruit, or a vegetable.

(only taste mint or a vegetable)



Feel a leaf.



Smell a flower or an herb.



Listen for a bird.



Look for bugs.



Bug Hunting Tips



- Search in the grass.
 - Look inside flowers.
 - Flip over rocks.
 - Roll over logs.
- (Move the rocks & logs back since they are animals' homes.)





HONEY BEE COLLECTING POLLEN

Field Investigation: How Pollinators Pollinate

DATE: _____

Pollination is the process of moving pollen from the male part of a plant's flower to the female part of a plant's flower to create "baby plants".



Use the Alabama Wildlife Federation's "Ecosystem Investigations: Pollinators & Their Habitat" webpage to answer the questions below.

Read about **Alabama's Pollinators** on the webpage.

1. What is an animal that carries pollen from one flower to another flower called?

2. What is the sugary liquid (produced by plants and found inside flowers) that pollinators eat?

3. List a common pollinator other than bees and butterflies.

Read the **Interesting Facts** about pollinators.

4. How many different food crops that we eat require pollination?

5. List another way that pollinated plants help us.



Did You Know?

A ruby-throated hummingbird uses a proboscis (a long, thin, straw-like tongue) that splits into two pieces as it laps up the nectar in flowers.



View this PBS video to see how a hummingbird's proboscis works:
www.pbs.org/video/nature-secret-hummingbirds-tongue/



Explore your outdoor classroom.
Look for a flower with pollinators
visiting it.



CLOUD SULFUR BUTTERFLY
ON NEW ENGLAND ASTER

RECORD YOUR OBSERVATIONS BELOW.

6. What type of plant is the flower on?
a. bush b. tree c. vine d. wildflower

7. Draw the flower.

8. Draw the pollinator.

9. Collect or draw the pollen.

10. Draw and describe the four steps of the pollination process you observed including the flower, the pollen and the pollinator.

