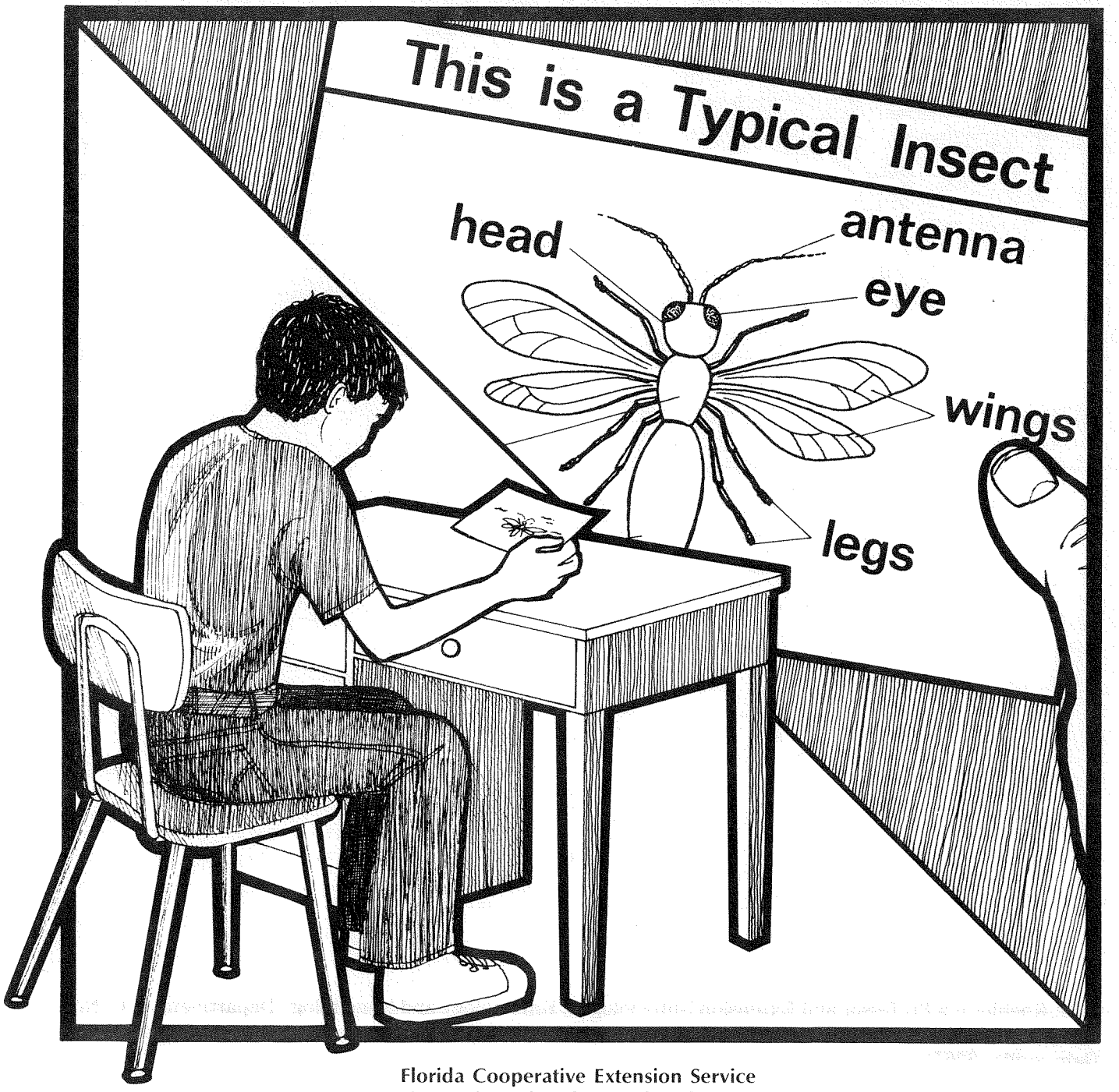
4-H 450
4HENM 10

4-H ENTOMOLOGY PROJECT

BEGINNING LEVEL

Getting Started In Entomology

P. G. Koehler and J. C. Northrop



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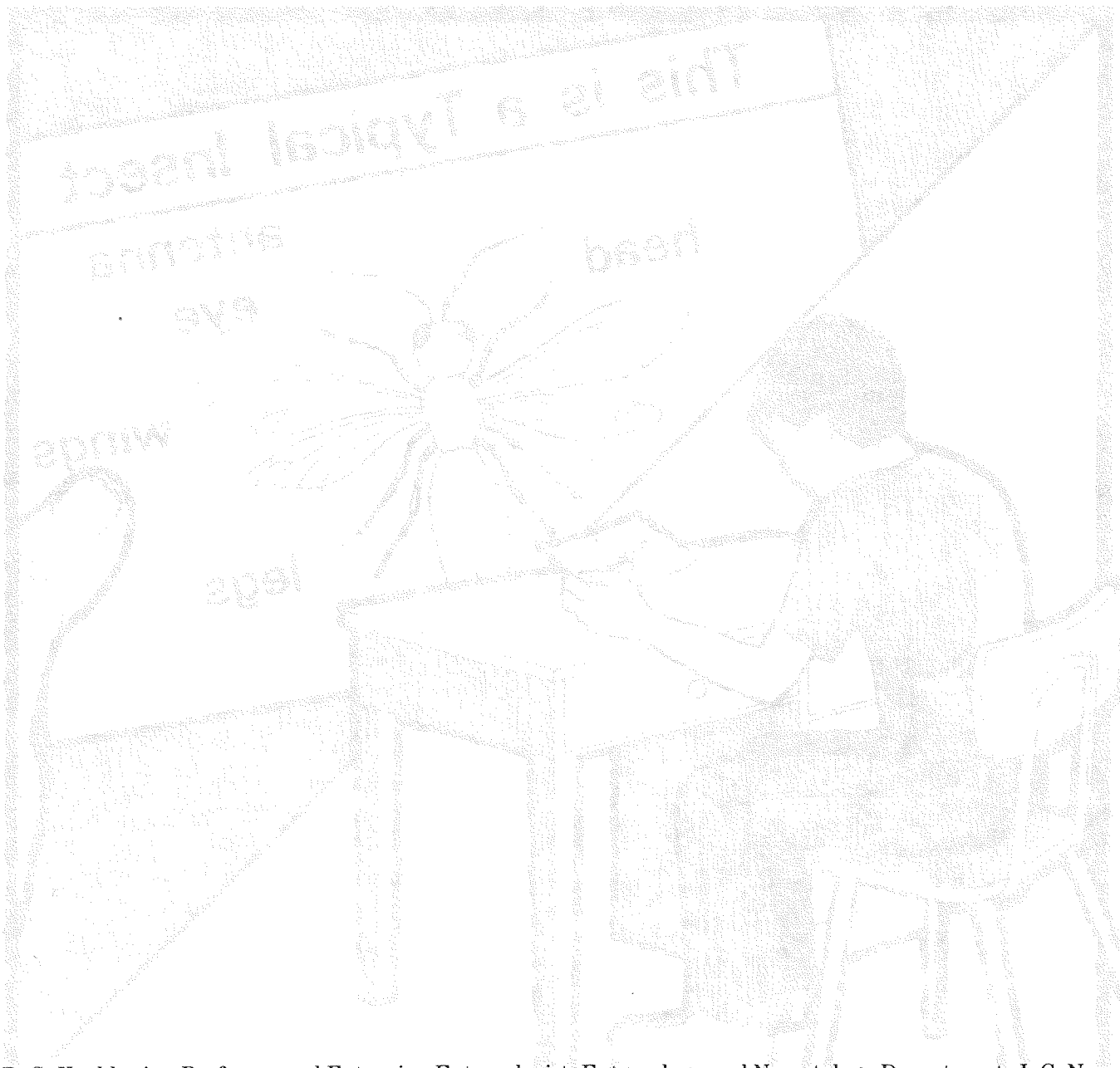

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4-H ENTOMOLOGY PROJECT

BEGINNING LEVEL

Getting Started In Entomology

BEFORE YOU START

Please complete the following questions before you begin **Getting Started in Entomology.** Answer each question as well as you can, but don't worry if you can only answer a few. This is not a test, and you will not receive a grade for it. When you finish this book, complete the questions at the end. Your leader will help you compare them so you can see how much you have learned.

NAME _____

DATE _____

1. Make a simple drawing of an insect and label these parts: head, thorax, abdomen, legs, wings, antennae, eyes.
   (Make your drawing on the back of this page)

2. What are the three stages of growth for an insect with gradual metamorphosis?

   _____ _____ _____

3. List 10 common insects:

   _____ _____

   _____ _____

   _____ _____

   _____ _____

   _____ _____

4. What are the four stages of growth for an insect with complete metamorphosis?

   _____ _____

   _____ _____

5. Insects are classified into large groups called: _____

6. Bonus:
   The exoskeleton of an insect is _____

   _____

   _____

BEGINNING INSECT — COLLECTING PROJECT

Many 4H'ers are interested in science. Collecting and studying insects is one area of science that can be fun. This project has been designed for you to use whether you live in town or in the country. Do the work as well as you can. You will enjoy collecting insects in your 4-H project.

Objectives — By completing this project you will learn:

- The parts of an insect
- The names of some common insects
- The life cycles of some insects
- Where common insects are found
- A simple way to display insects

Supplies — To complete this project, you will need:

- Glue
- Scissors
- Poster-board (one layer piece)
- A pen or pencil

What is an Insect?

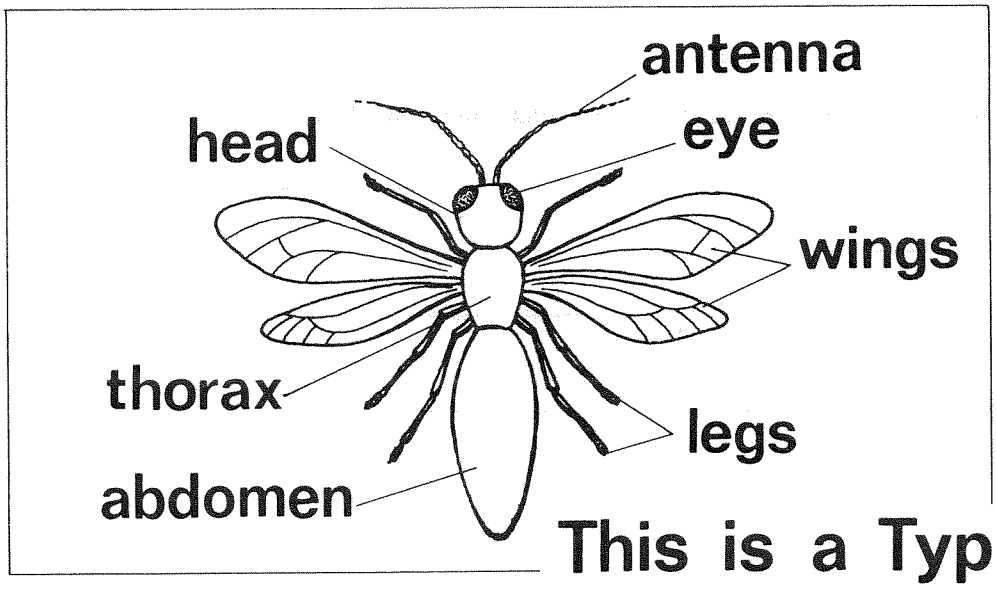
Insects are found just about everywhere. About 80 percent of all animals are insects. The skin of an insect is hardened into a stiff skeleton called the exoskelton. The body of an insect is divided into 3 parts — the head, thorax and abdomen.

The head of an insect has mouthparts, antennae, and eyes. Mouthparts are used by the insect for feeding. There are many kinds of mouthparts. Insects with chewing mouthparts chew and bite solid food. Grasshoppers, cockroaches, and beetles are examples of insects with chewing mouthparts. Insects with sucking mouthparts puncture tissues and suck fluids. Mosquitoes, true bugs, and horse flies are examples of insects with sucking mouthparts. Other common types of mouthparts are sponging mouthparts (on house flies and flesh flies) and siphoning mouthparts (on butterflies and moths).

Insects have two kinds of eyes. There are two large compound eyes on most insects. Some insects also have simple eyes called ocelli. Insects have one pair of feelers or antennae on the head. Antennae help insects smell and taste.

The thorax is used for moving the insect from place to place. Most insects have wings on the thorax. There may be one or two pairs of wings. Some insects do not have wings at all. The legs of insects are on the thorax also. The legs may be long and muscular for running and jumping, or short and strong for digging.

The insect's abdomen is used for breathing, reproduction, and digestion.

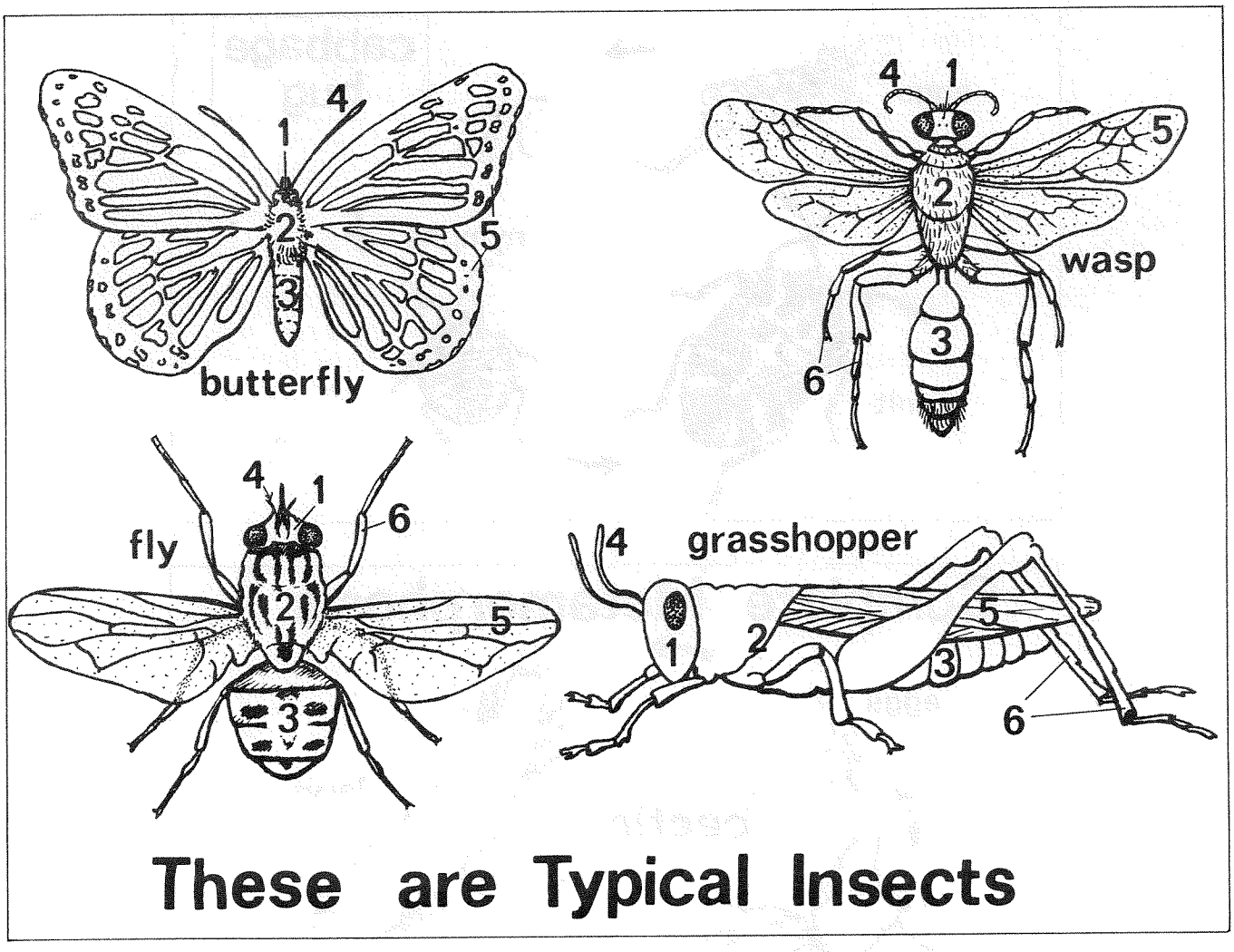


This is a Typical Insect

Fill in the Blanks

Insects can be classified into large groups called "orders." The insects in each order have certain characteristics in common. Can you see what they are? Study the insects drawn in this section. Compare them with each other and with the illustrations. Try to find the parts. Notice how these parts differ in size and shape. These differences are largely a result of "environmental adaptations" which have taken place over millions of years.

What is an Insect?



1 _____ 4 _____

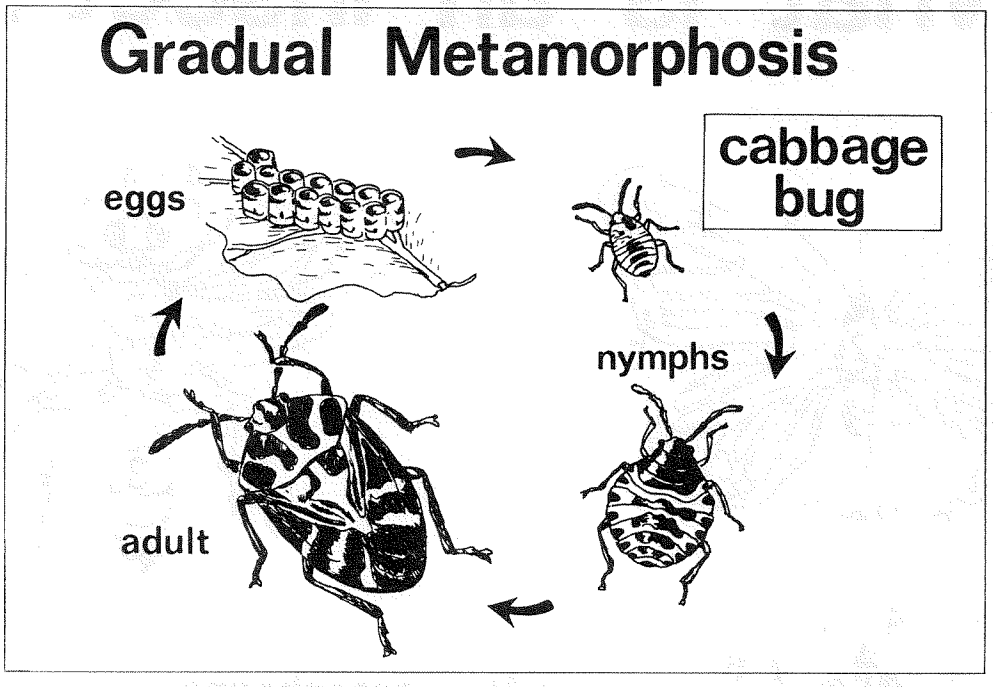
2 _____ 5 _____

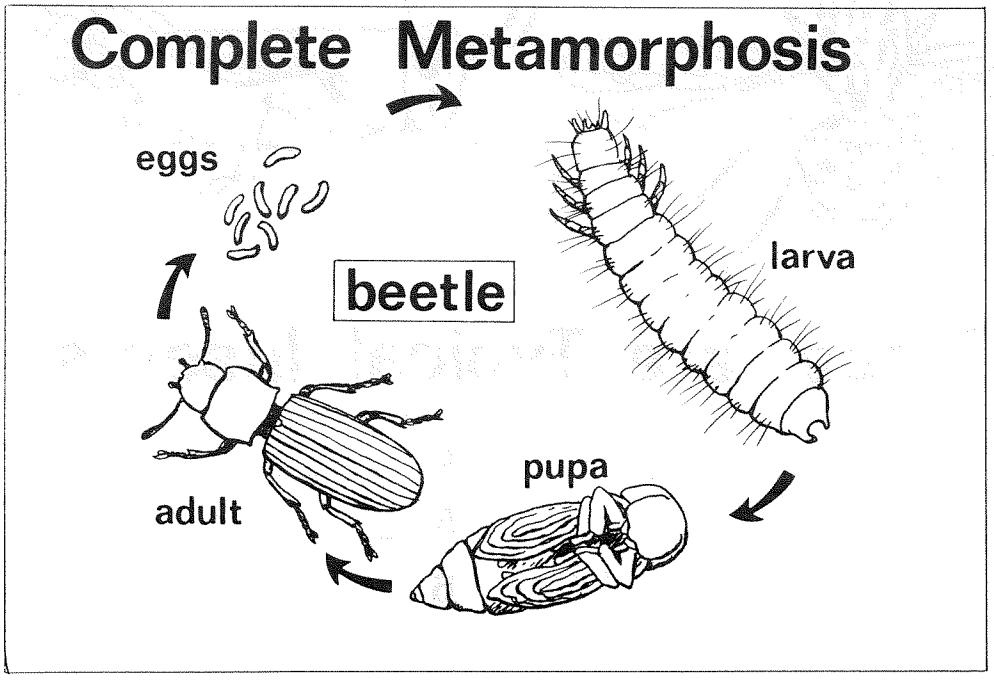
3 _____ 6 _____

Insect Growth and Development

The way insects develop is called metamorphosis. Generally, there are two important kinds of metamorphosis. Gradual metamorphosis has three stages of development: egg, nymph, and adult. Cockroaches, crickets, true bugs, earwigs and grasshoppers are examples of insects with gradual metamorphosis. Complete metamorphosis has four stages of development: egg, larva, pupa, and adult. Beetles, butterflies, moths, wasps, flies, and fleas have complete metamorphosis. Some insects have no metamorphosis; others may have incomplete metamorphosis.

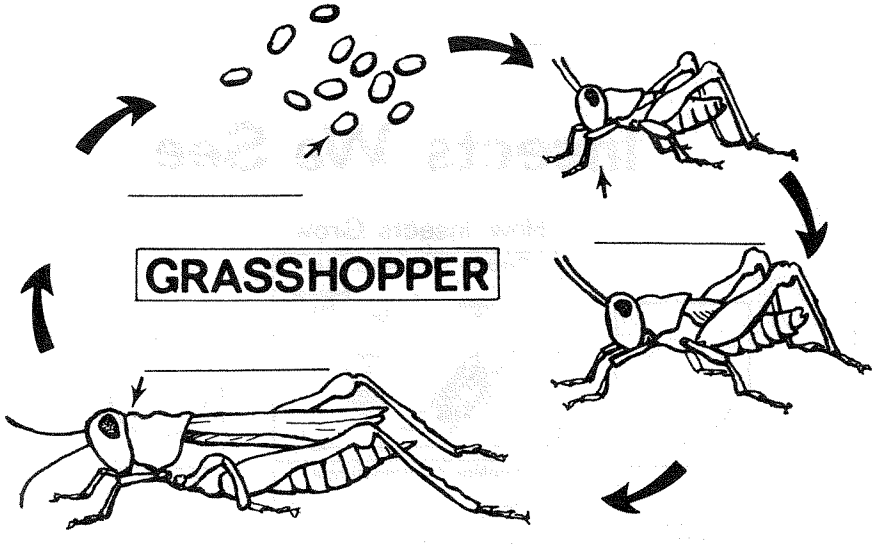
How Insects Grow



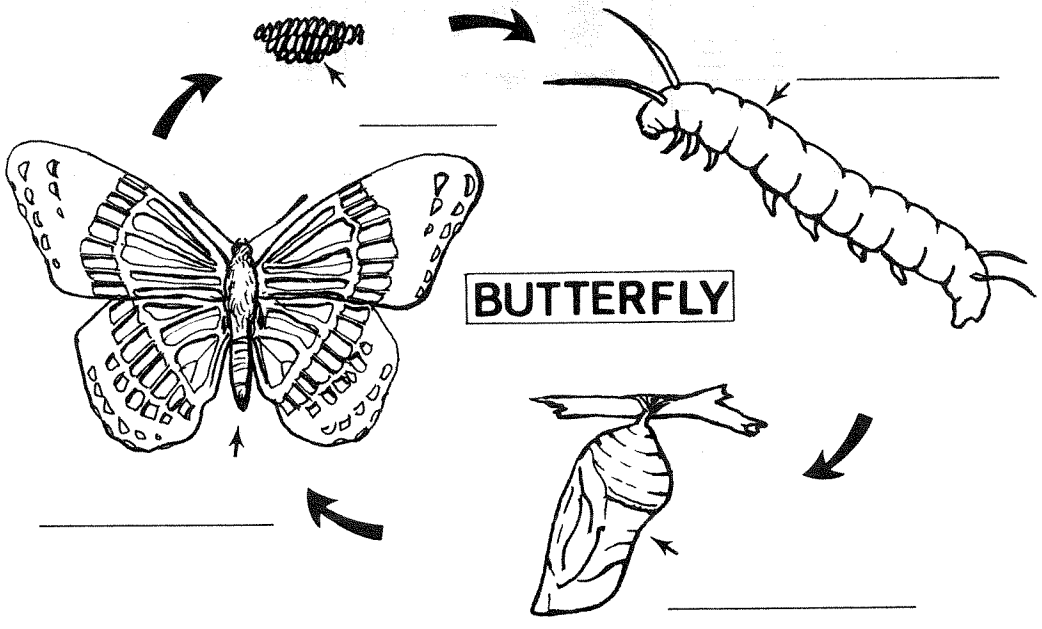


Fill in the Blanks

Gradual Metamorphosis

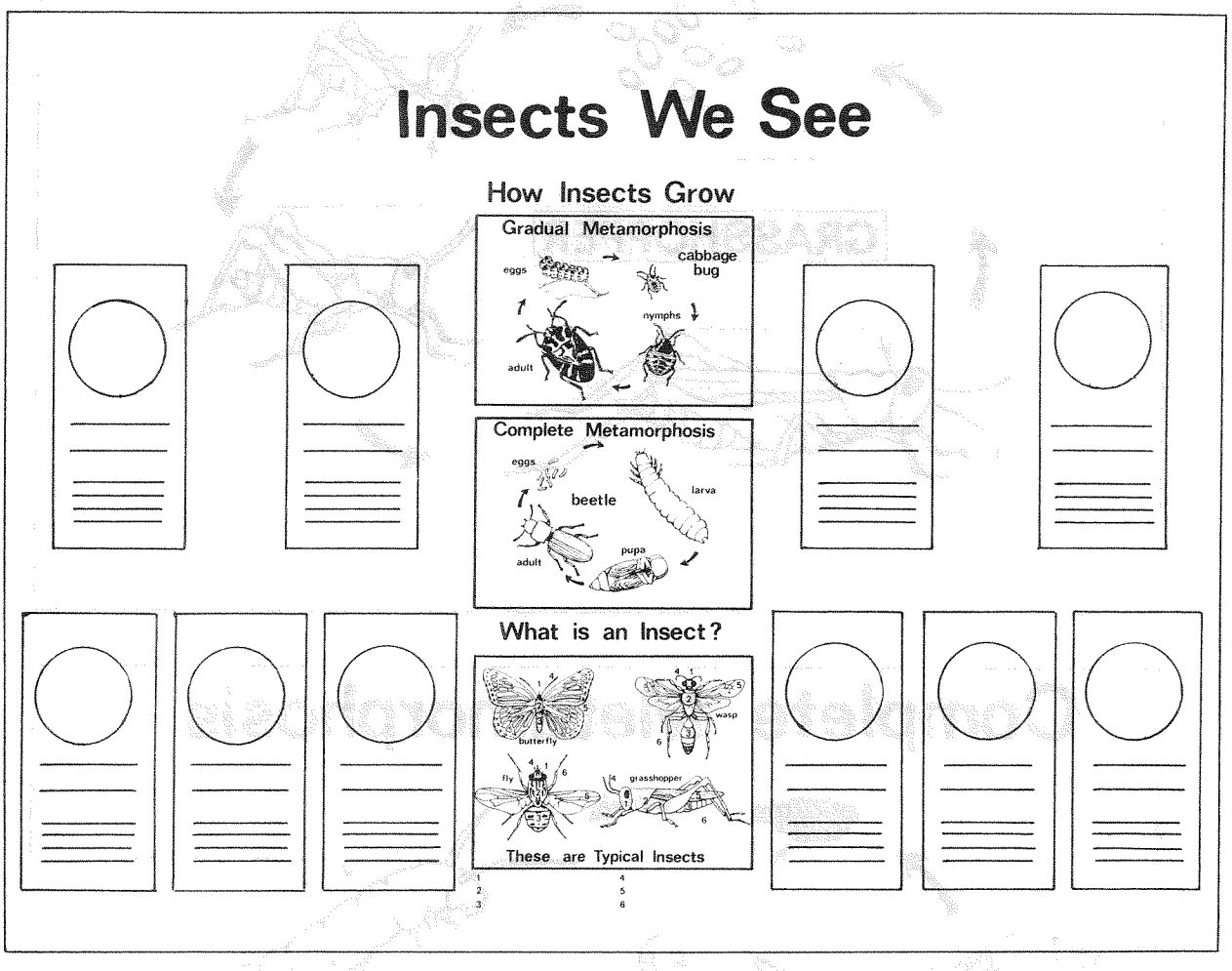


Complete Metamorphosis



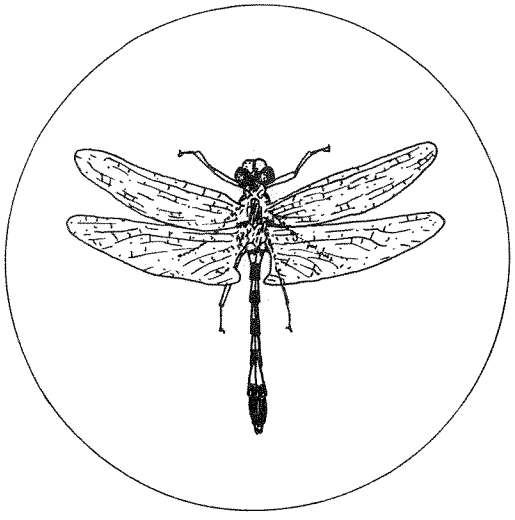
Insect Collection

Collect any 10 insects. For each insect, fill out a card. Glue the insect in the center of the circle on the card. Cut out the name label from the list and glue it to the card above the circle. You do not have to spread the wings of moths and butterflies. Glue them to the cards so they will be pleasing and attractive. You can glue the cards and the heading "INSECTS WE SEE" on a poster board for display.



EXAMPLES

DRAGONFLY



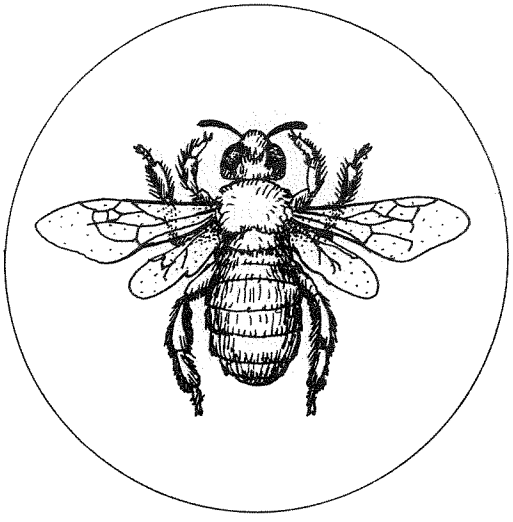
Common Name

Date Collected County

What I have learned about this insect:

My Name

BEE



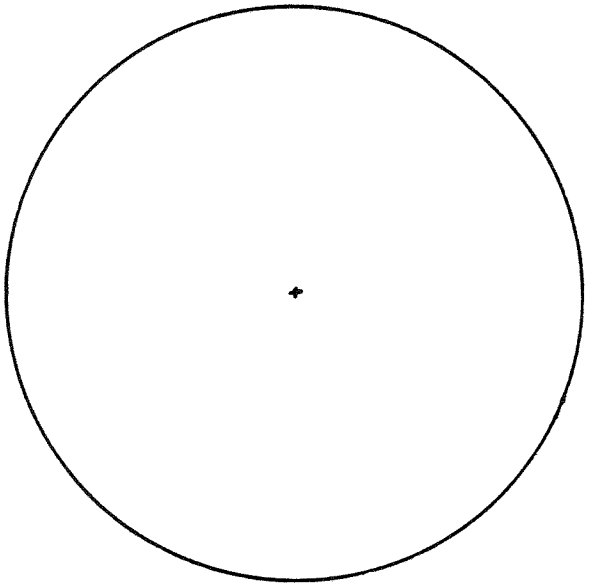
Common Name

Date Collected County

What I have learned about this insect:

My Name

Place name label here.



Common Name

Date Collected

County

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My Name

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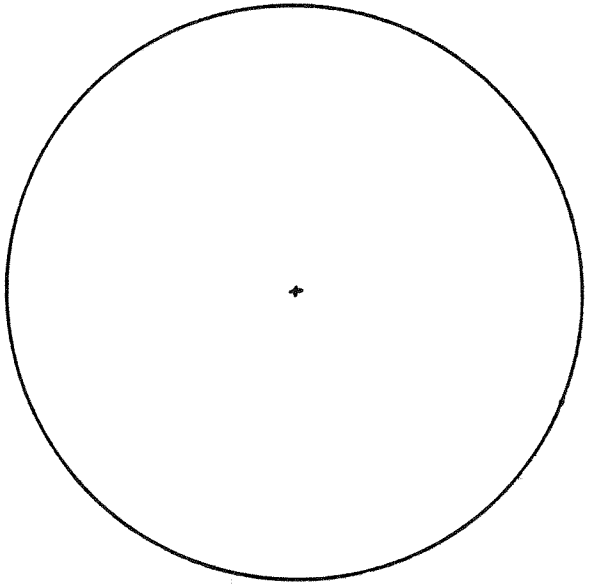

Common Name

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County

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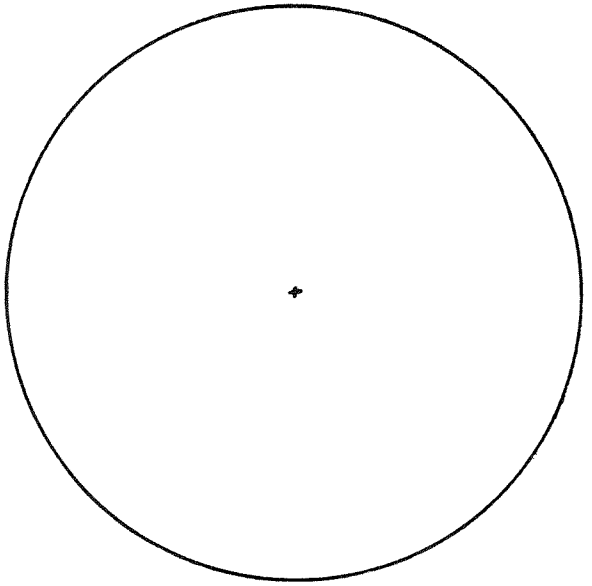

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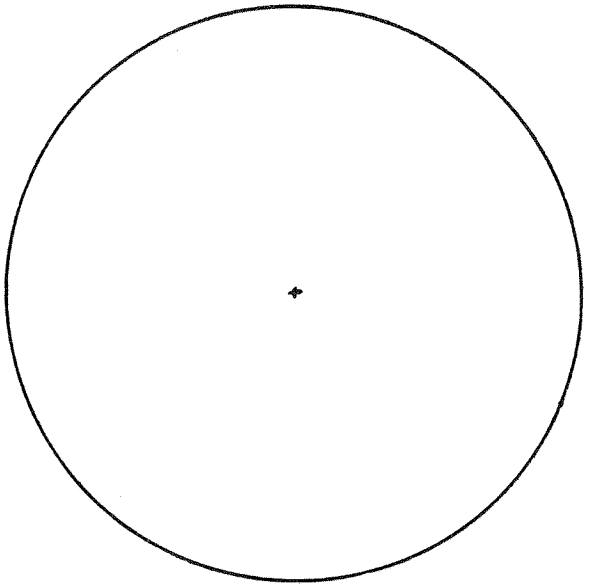

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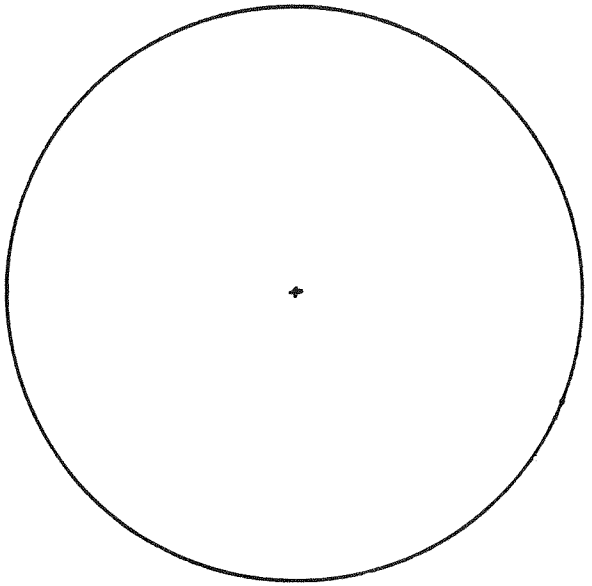

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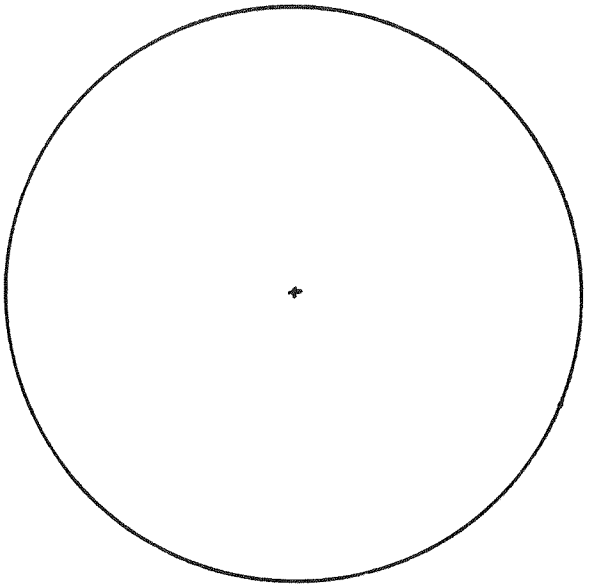

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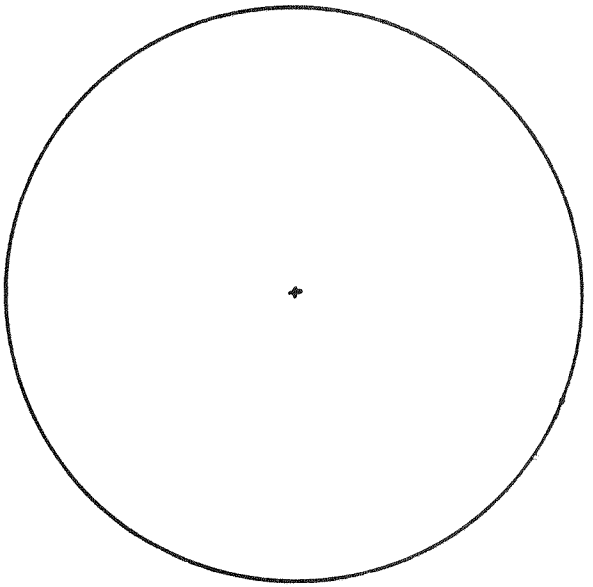

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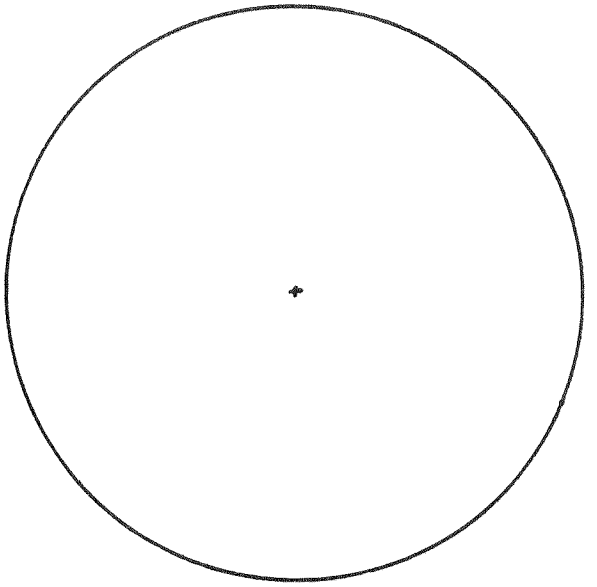

Common Name

Date Collected

County

What I have learned about this insect:

My Name

Insects We See –

BUTTERFLY

MOTH

FLY

WASP

BEE

GRASSHOPPER

CRICKET

TRUE BUG

BEETLE

COCKROACH

DRAGONFLY

ANT

TERMITE

CICADA

LACEWING

LEAFHOPPER

PREYING MANTIS

DAMSELFLY

Suggestions for Making a Blue Ribbon Collection

1. The following scoring procedure is recommended for The Beginning Insect Collection:

	POINTS
Accuracy of statements telling what was learned about the insect	40
Identification	30
Condition of specimens	30
Total	100

2. Use only undamaged insects.

3. Collect a variety of insects.

4. Write statements that tell something interesting and important about the insects.

NOW THAT YOU ARE FINISHED

Now that you are finished with this book, please answer the following questions. They are the same questions you answered when you began. You are not going to receive a grade. Your leader can help you compare your answers to see how much you have learned.

NAME _____

DATE _____

1. Make a simple drawing of an insect and label these parts: head, thorax, abdomen, legs, wings, antennae, eyes.
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5. Insects are classified into large groups called: _____

6. Bonus:
The exoskeleton of an insect is _____

_____

_____

4-H CLUB RECORD

NAME _____ AGE _____ YEAR _____

NAME OF CLUB _____

COUNTY _____

DATE RECORD STARTED _____ COMPLETED _____

1. Did you fill in all the blanks for:

What Is An Insect? _____

How Insects Grow? _____

2. Did you display your answers in class or at a fair?

_____

3. How many insects did you collect and glue onto the cards?

_____

List their names:

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

1. This document is 4HENM10 of the Florida 4-H Youth Development Program, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Reviewed June 2002. Please visit the EDIS website at http://edis.ifas.ufl.edu.

2. P.G. Koehler and J.C. Northrop Publication contact: Nancy Johnson, 4-H Publication Specialist Department of Family, Youth and Community Sciences, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville 32611.