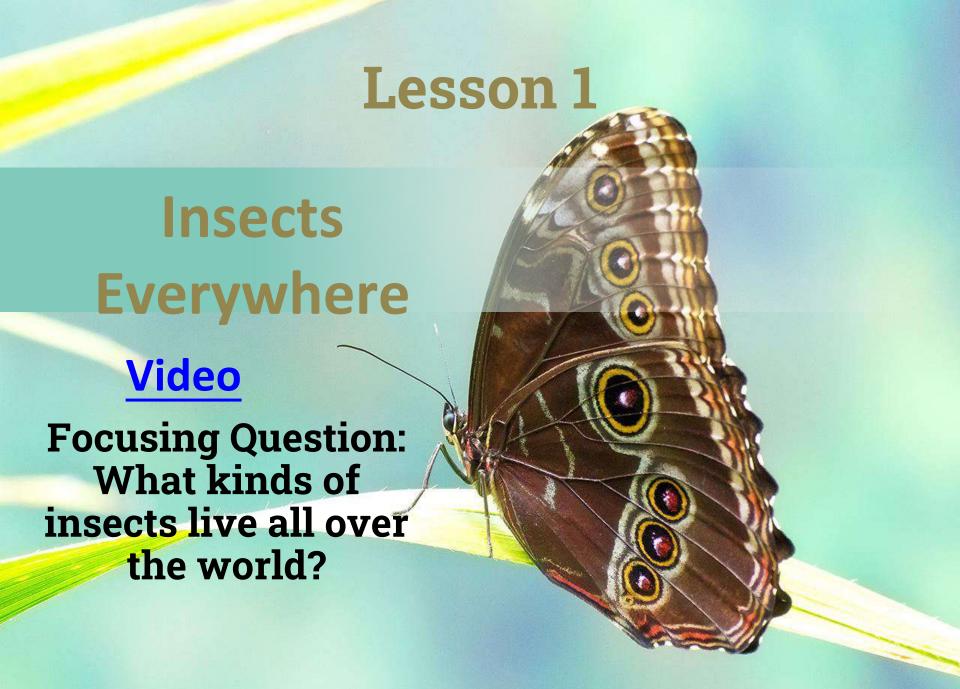


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| Link to Lesson Slides | Youtube Video Links |
|---|--|
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| Lesson 2 What Makes an Insect | Lesson 2 What Makes an Insect |
| Lesson 3 Life Cycles of Insects | Lesson 3 Life Cycles of Insects |
| Lesson 4 Social Insects: Bees and Wasps | Lesson 4 Social Insects: Bees and Wasps |
| Lesson 5 Social Insects: Ants and Termites | Lesson 5 Social Insects: Ants and Termites |
| Pausing Point | |
| Lesson 6 Insects that Glow and Sing | Lesson 6 Insects that Glow and Sing |
| Lesson 7 Armored Tanks of the Insect World | Lesson 7 Armored Tanks of the Insect World |
| Lesson 8 Friend or Foe? | Lesson 8 Friend or Foe? |
| Domain Review | |

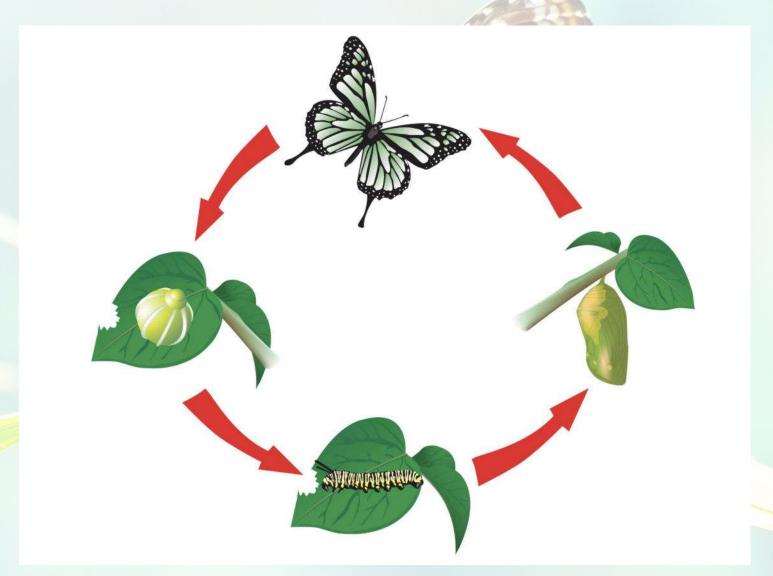


Lesson Objectives

Students will be able to:

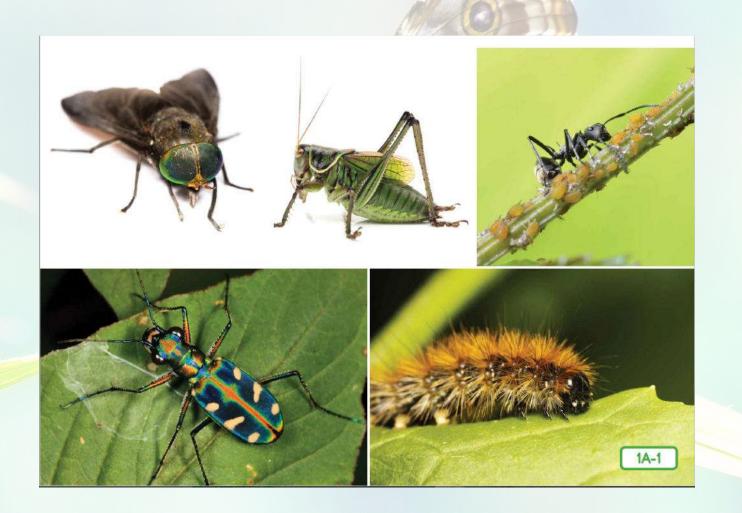
- Explain that insects are the largest group of animals on Earth
- Explain that there are many different types of insects
- Explain that most insects live solitary lives, but some are social
- Explain that insects live in almost every habitat on Earth

Life Cycle of a Butterfly





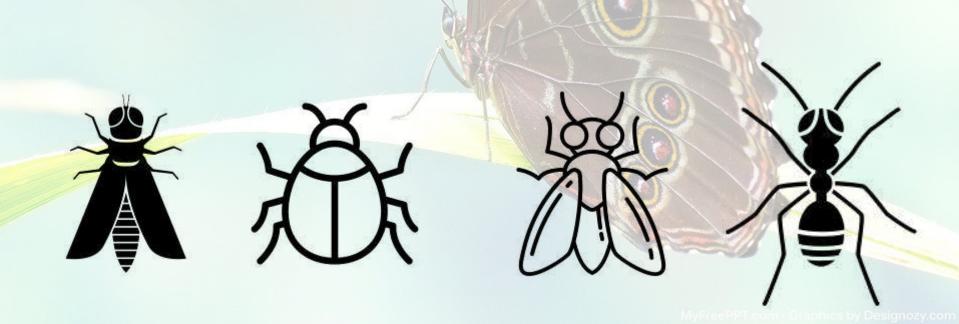
What do we know about insects?



habitats - the specific environments in which plants and animals live and thrive



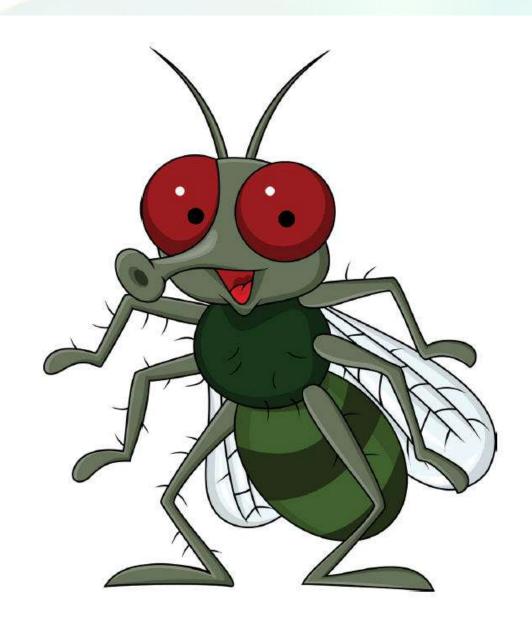
insects- small animals with six legs and three main body parts



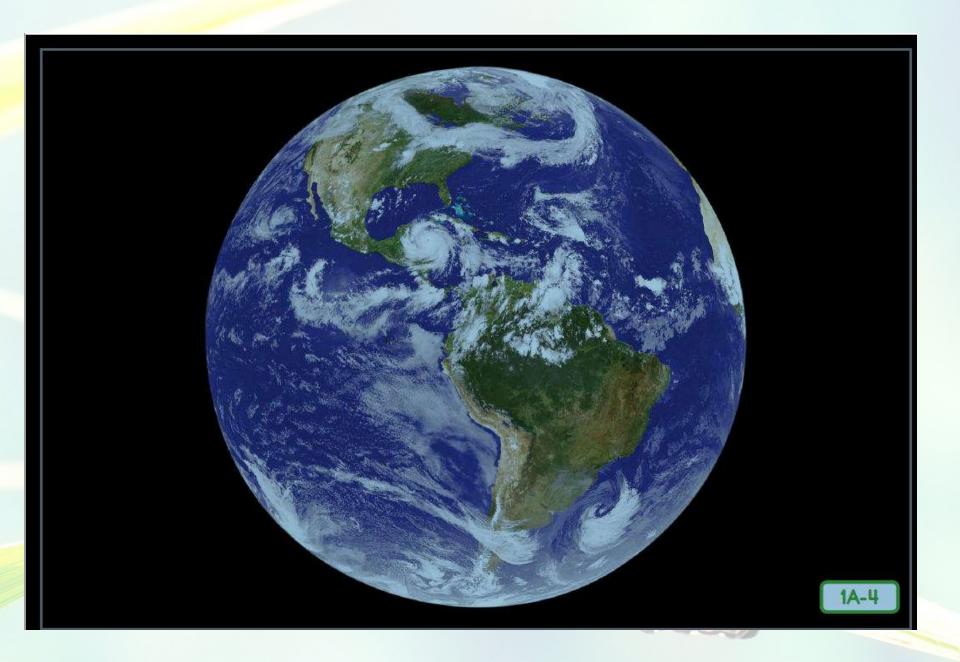
social- living together in organized communities

solitary- living alone or in pairs

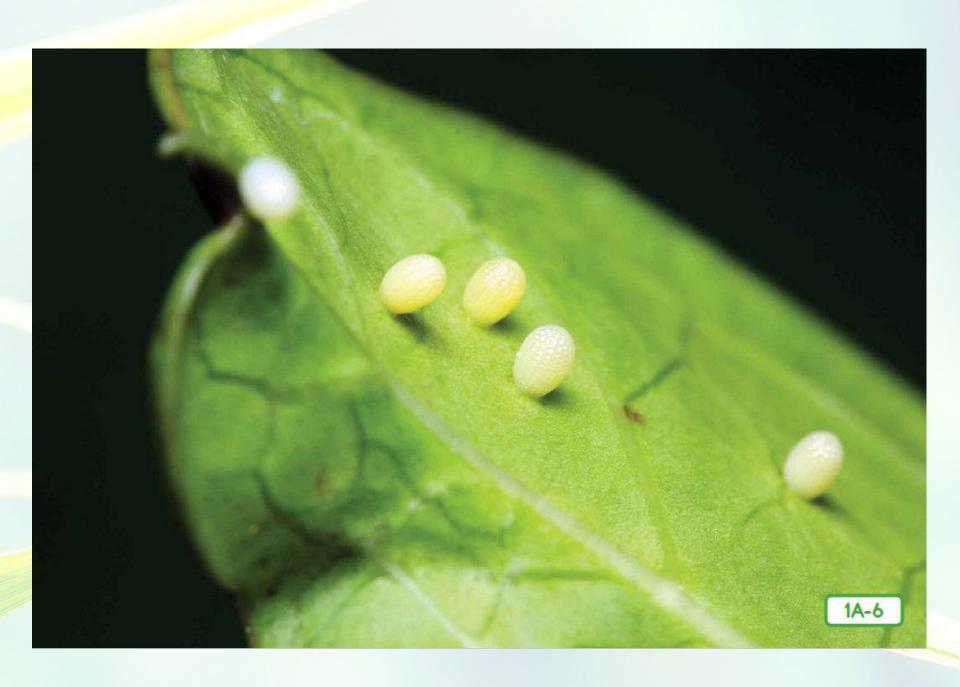


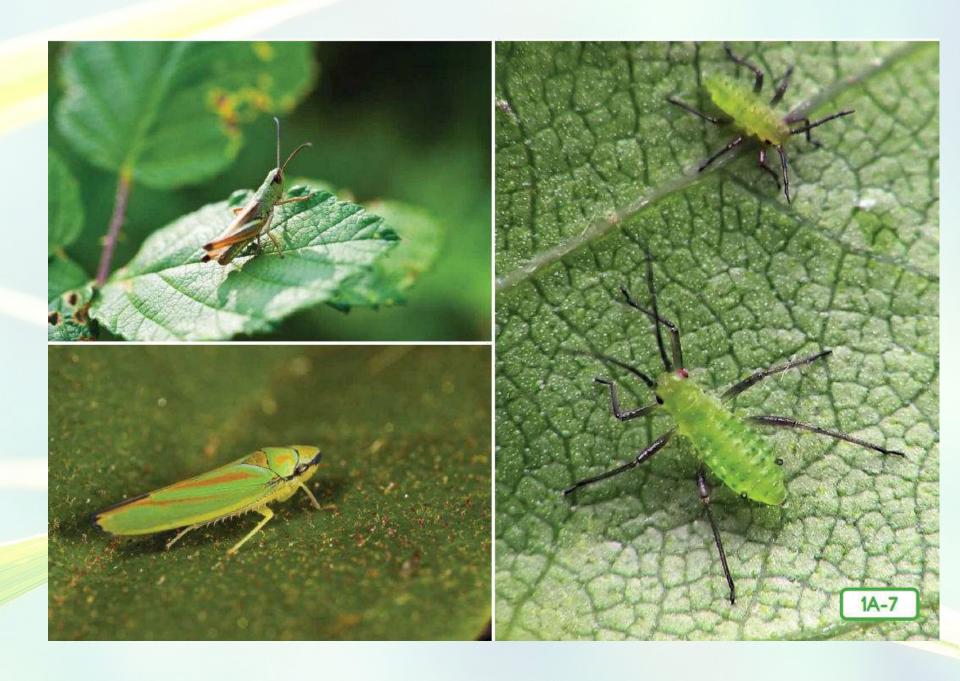




















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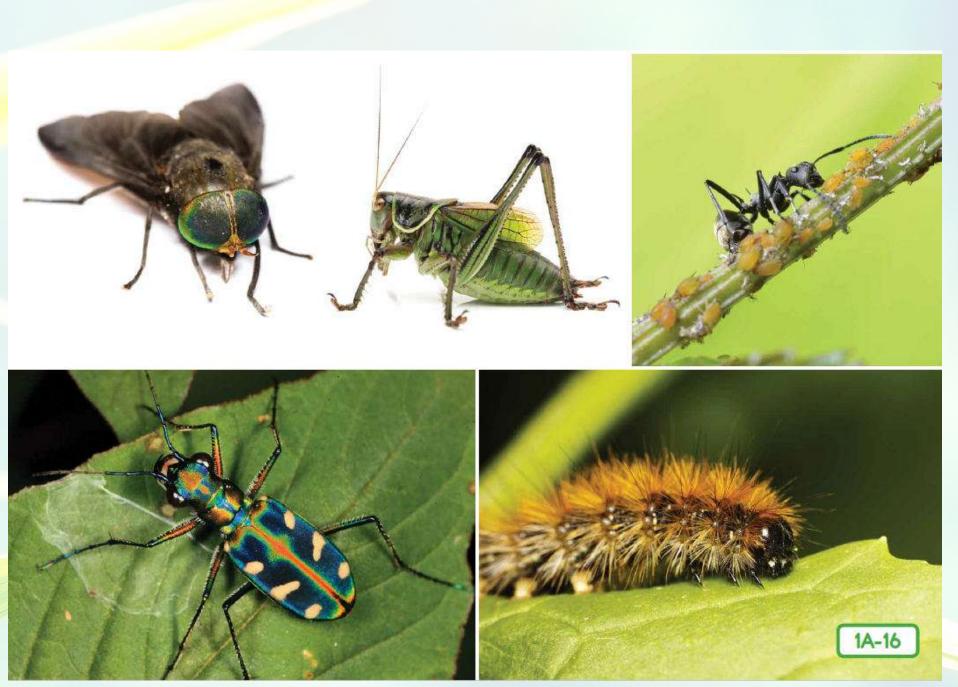








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To Table of Contents

Comprehension Questions

What is the largest group or category of animals on Earth?

In what large water habitat are insects unable to survive?

Comprehension Questions

Many insects depend upon host plants to stay alive. In what ways do these host plants help the insects?

If you were a farmer, which would you rather see on your crops: a ladybug or a grasshopper? Why?

Word Work: Habitats

"We flies are insects, and we share the planet with millions of other insects in many different *habitats.*"

habitats - the specific environments in which plants and animals live and thrive



habitat

"environment"

ion

S



CO

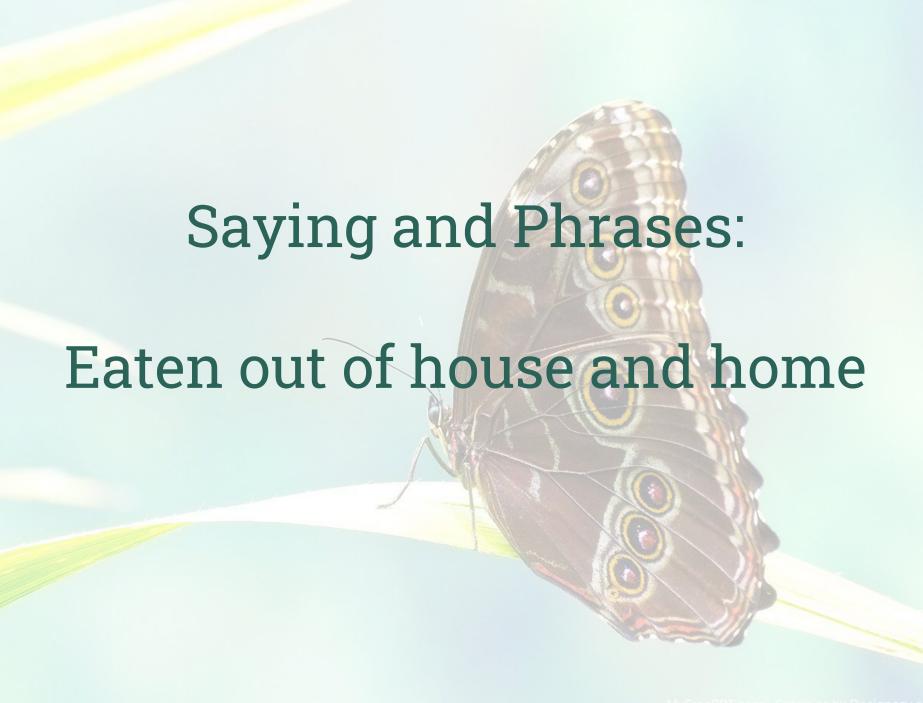
Word Work: Habitats

 Name an insect and the habitat it lives in. Now describe how the insect lives in that habitat.

"____live in habitats called ____."

- desert
- rainforest
- tundra
- ocean
- grassland





Insect Journal

- How did the insect look?
- Where did you see the insect?
- What did you do?
- · What did the insect do?

Now draw a picture of that insect.



Take-Home

NAME: ______

1.1

Take-Hom

Dear Family Member,

Over the next few days, your child will be learning about the largest group of animals on Earth, insects. Below are some suggestions for activities you can do at home to reinforce your child's learning about insects.

1. Insect Hunt

Talk about where you may find insects at home and on outings together. Look for them together; it may be fun to go out after dark with a flashlight when some insects come out to feed. Use a field guide or the Internet to identify the insects you observe.

2. Examining Insects Closely

If possible, find informational videos about insects. Watch them with your child and discover interesting facts about insects together.

3. Words to Use

Below is a list of some words that your child will be using at school. Try to use these words as they come up in everyday speech with your child.

- · Social-Olivia's birthday party was the biggest social event of the week.
- · Solitary-Reading to oneself is a fun way to spend solitary time.
- Cooperate—Please cooperate by helping to fold the laundry before we go for a walk.
- Microscopic—The germs that cause a virus like the common cold are microscopic.

4. Draw an Insect Colony

Have your child draw a picture of an ant or bee colony and then tell you about it. Ask your child to identify the different members of the colony and tell you how they cooperate through performing different roles.

Knowledge 8 Insects

7

Lesson 2

What Makes an Insect

Video

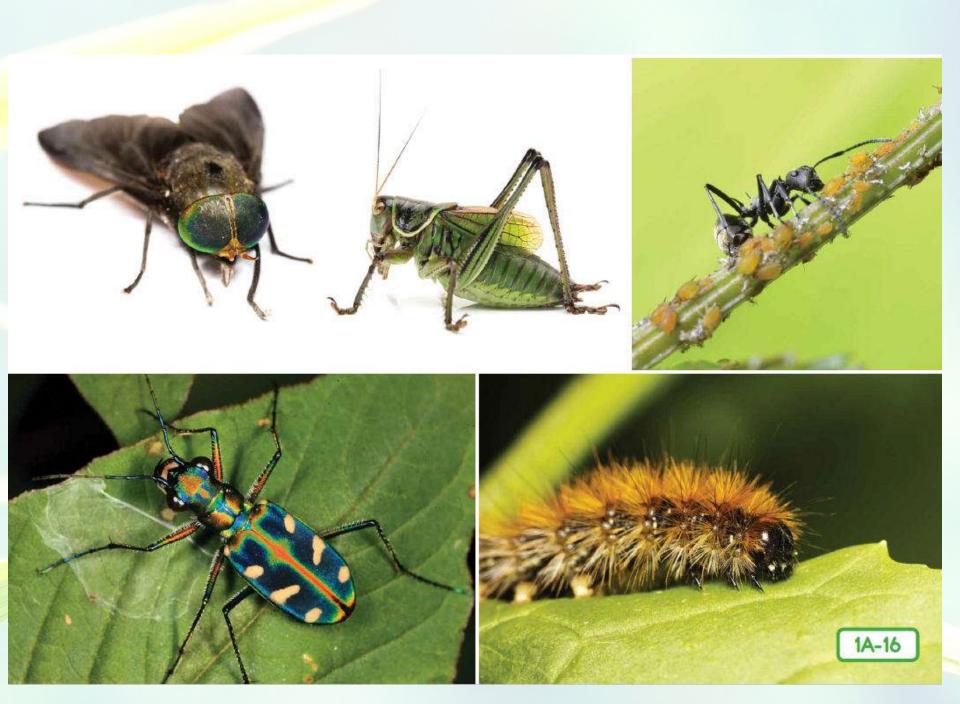
Focusing Question:
What characteristics
are the same for
insects? How are
some insects
different from each
other?



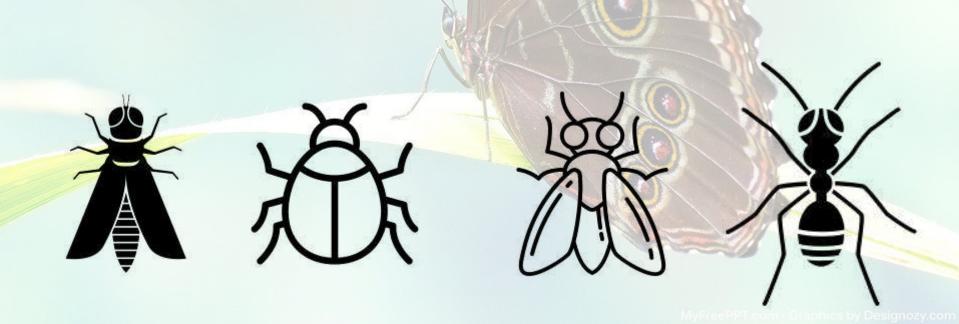
Lesson Objectives

Students will be able to:

- Explain that insects are the largest group of animals on Earth
- Explain that there are many different types of insects
- Classify and identify particular insects as small, sixlegged animals with three main body parts
- Identify and describe an insect's three main body parts: head, thorax, and abdomen
- Identify the placement and purpose of an insect's body parts
- Describe an insect's exoskeleton
- Explain why spiders are not insects



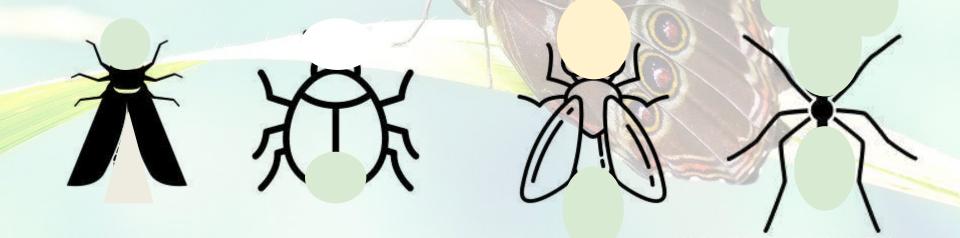
insects- small animals with six legs and three main body parts



antennae- feelers on the heads of insects



thorax- the middle part of an insect's body between its head and abdomen; contains the heart and the leg attachments



abdomen- the end part of an insect's body that contains the digestive and reproductive structures

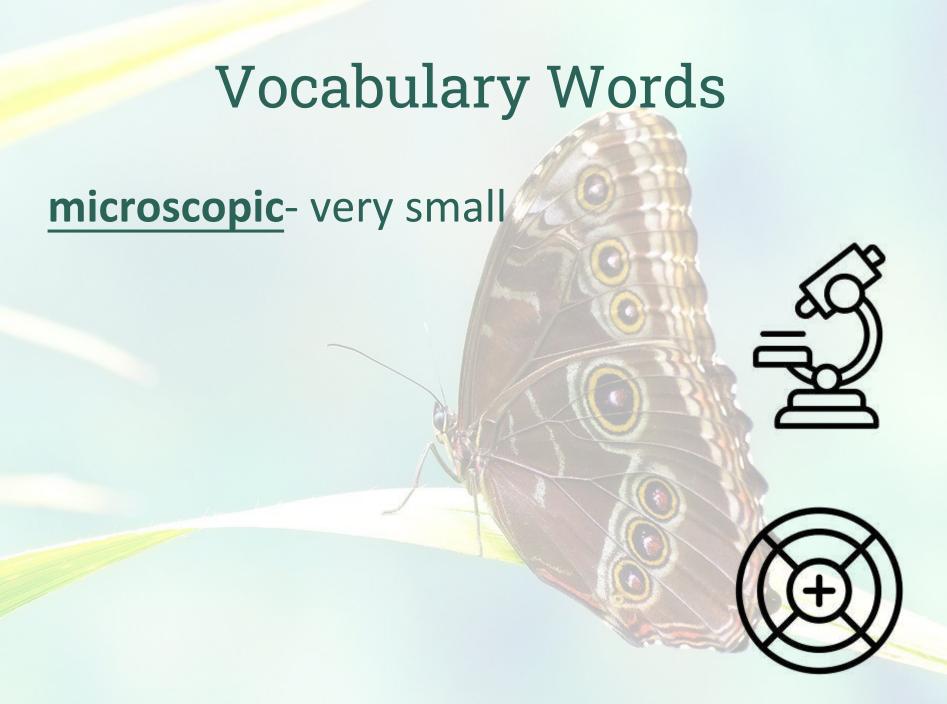




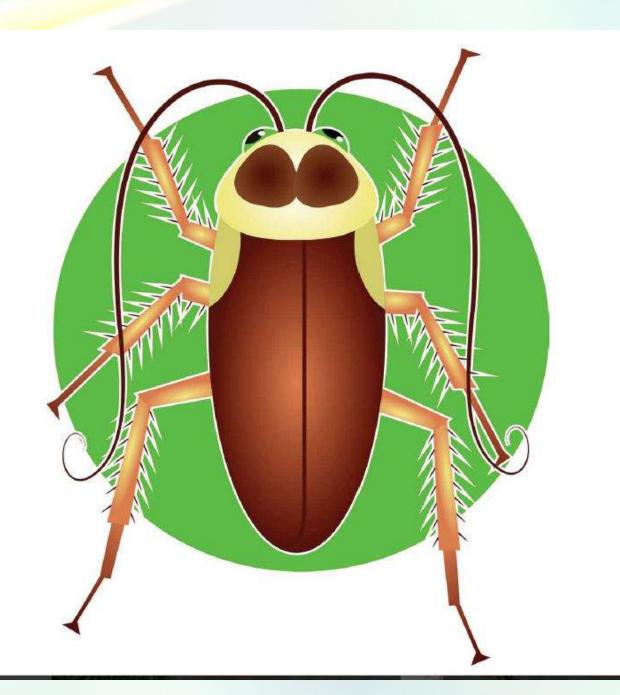




<u>exoskeletons</u> - the hard body coverings of insects



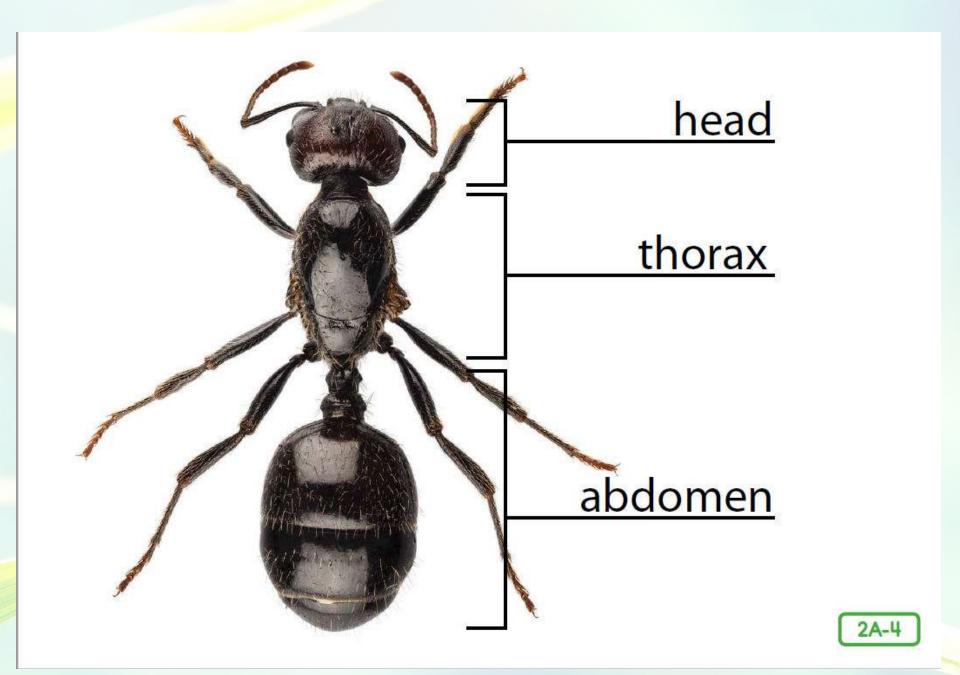


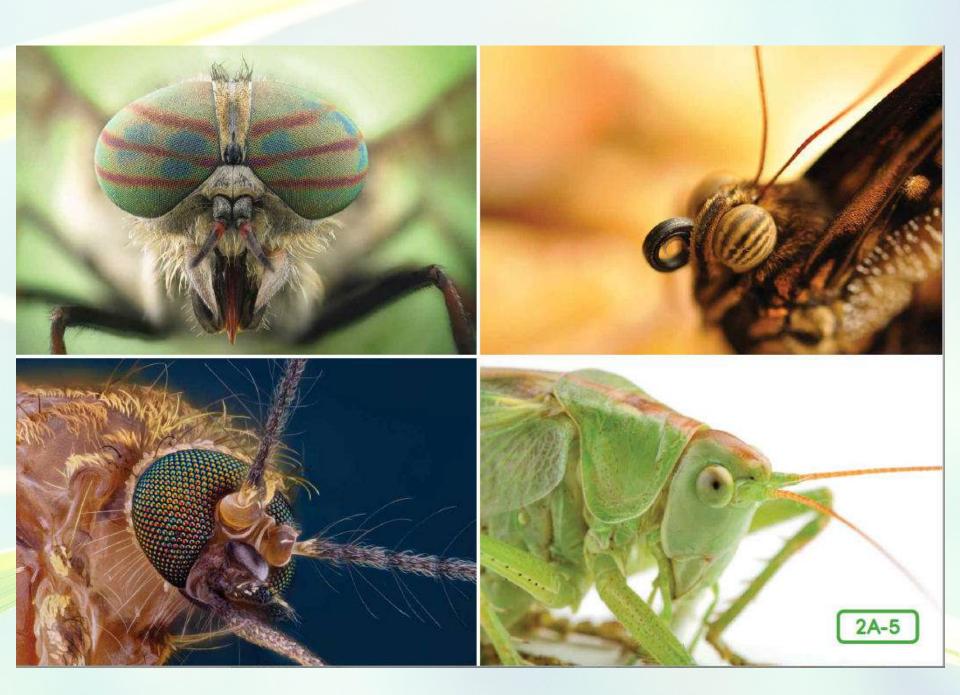






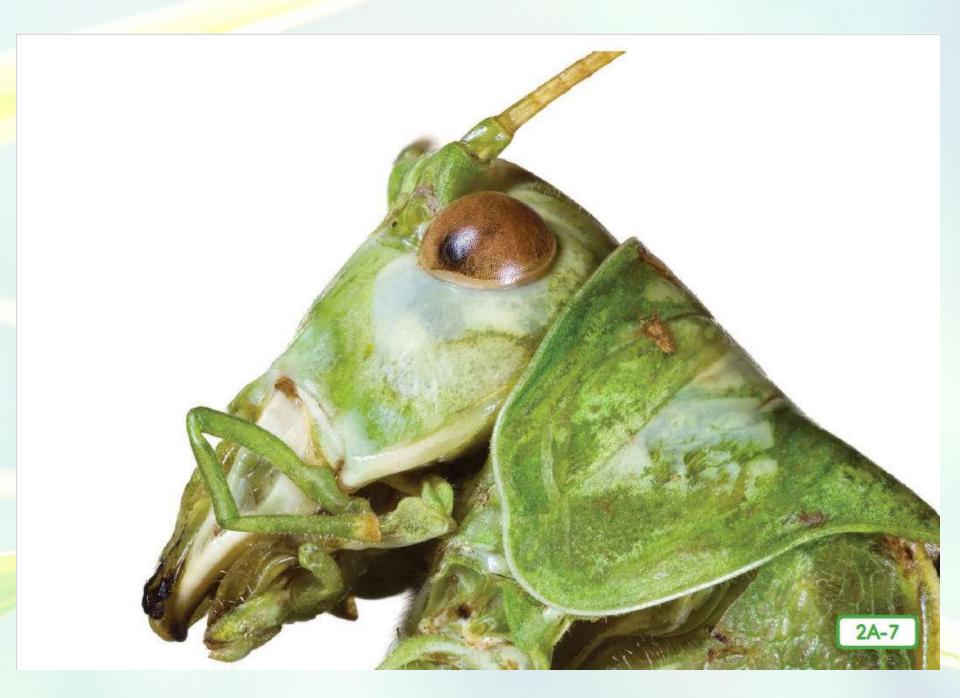






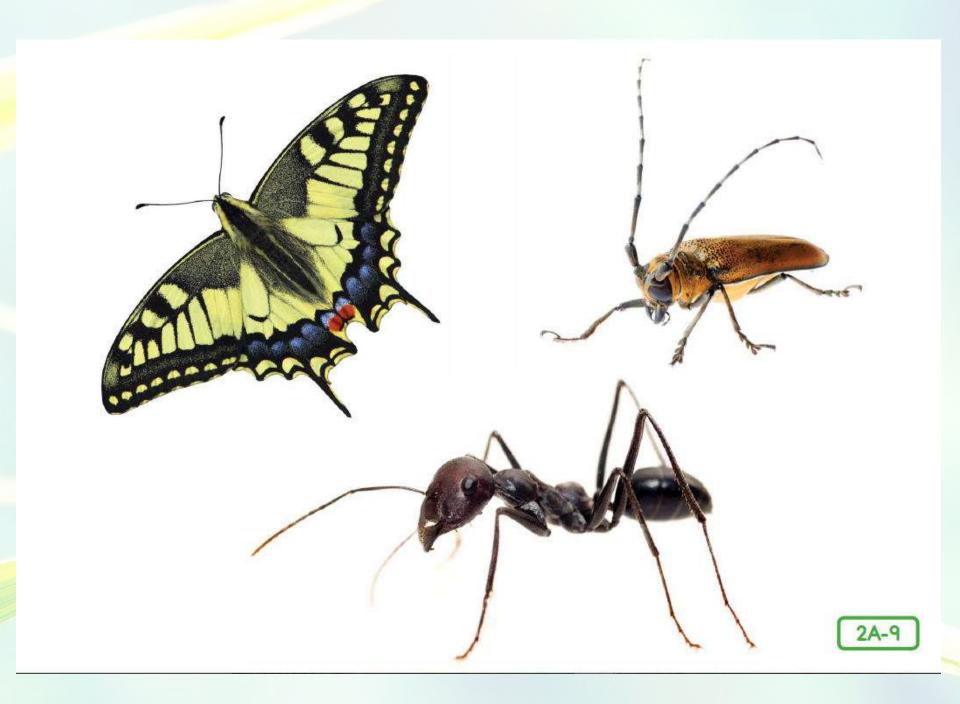
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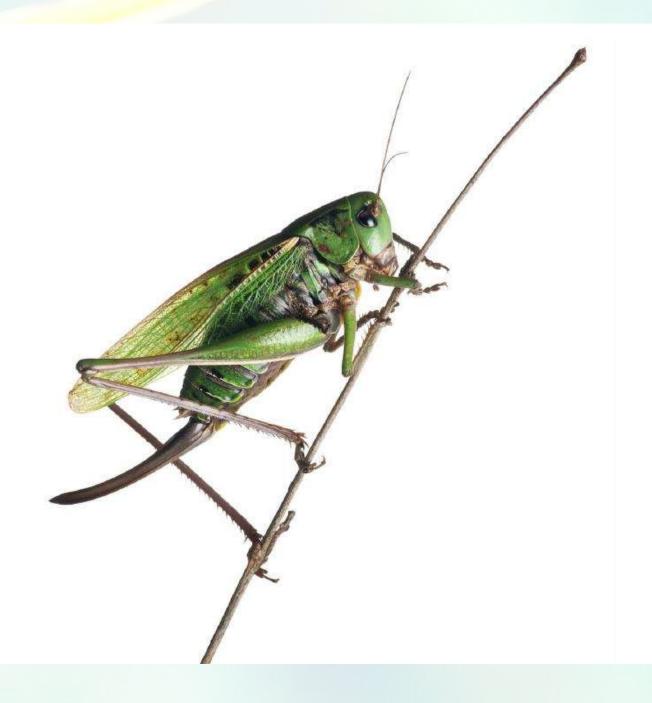






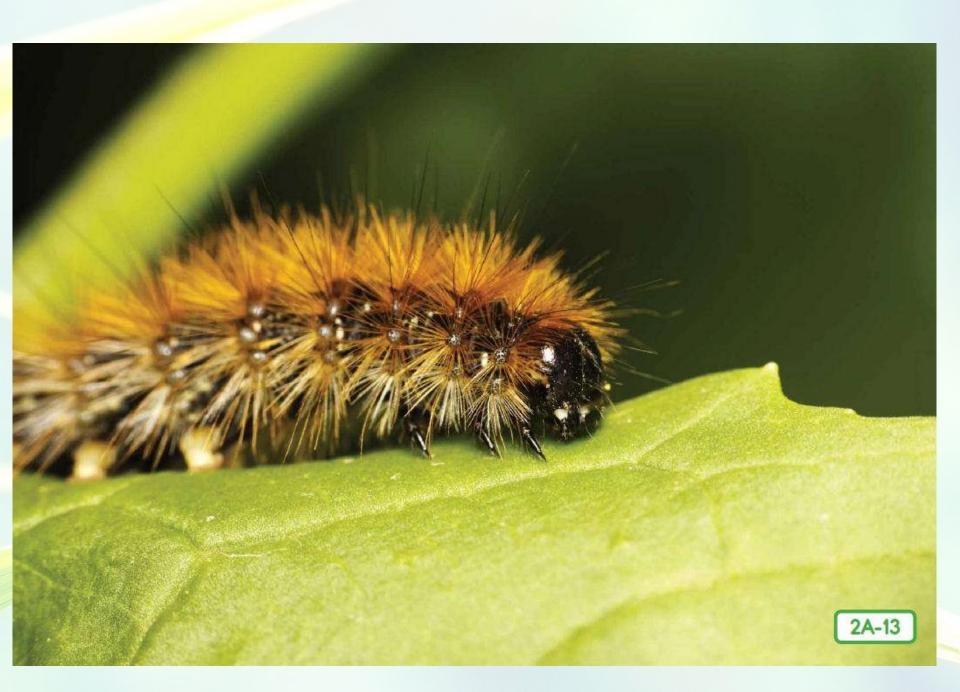






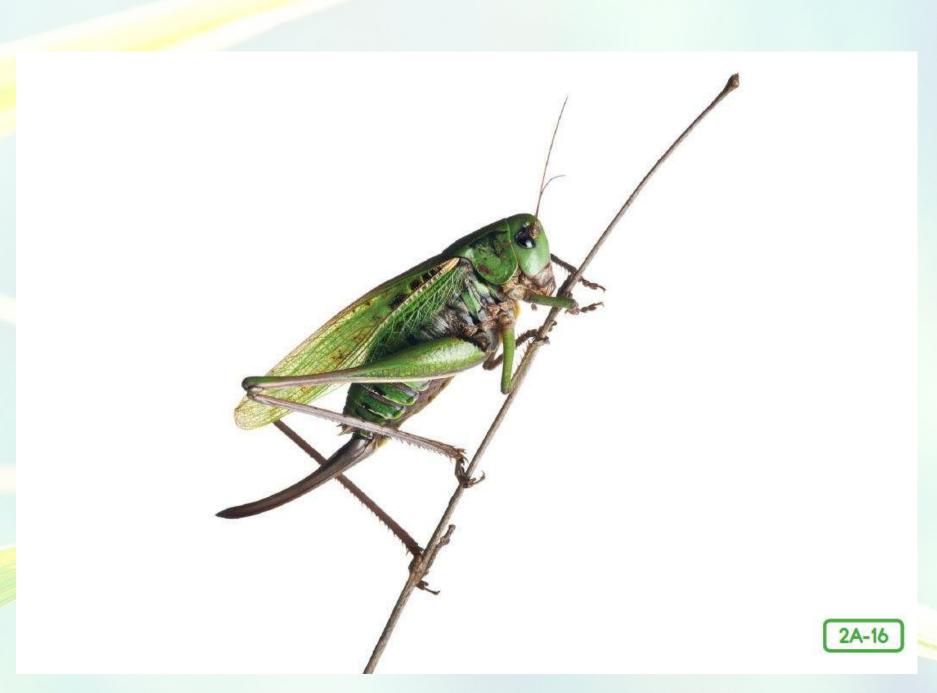


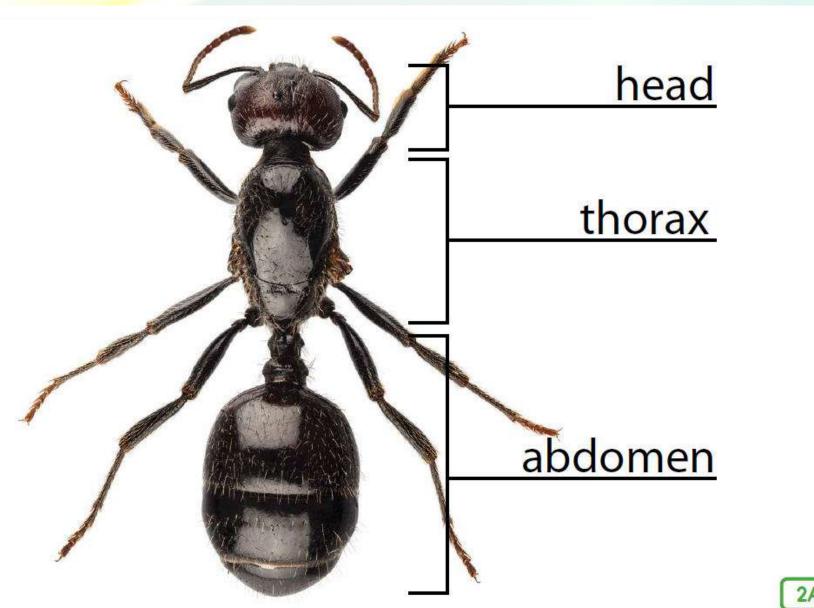






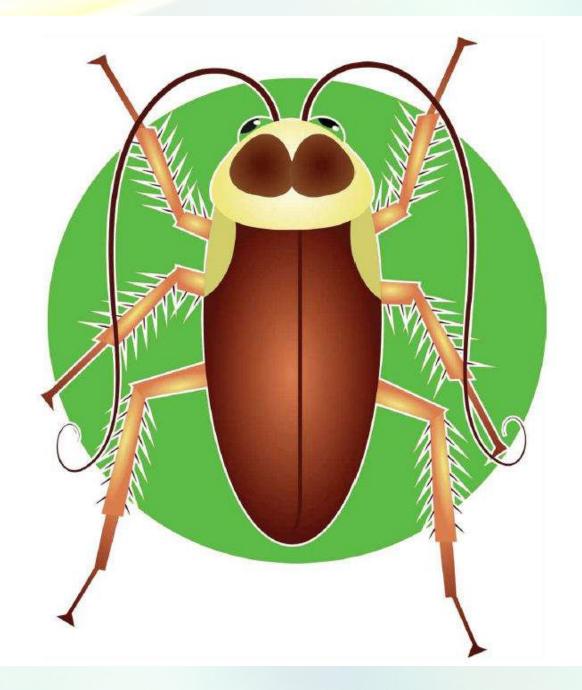












Comprehension Questions

Based on what you heard and the pictures you saw, what do you think the author was trying to explain in this read-aloud?

Make a list: What do all insects have, or what makes an insect an insect?

Comprehension Questions

In what ways is an insects skeleton different from yours? In what ways is it the same?

How many legs do insects have? This caterpillar has many more legs than that.

Is it an insect?

Think Pair Share

• If you could choose any insect feature (antennae, special mouthparts, more legs, wings, etc.) to add to your own body, what would it be?

Word Work: Microscopic

 "Some insects, like butterflies and grasshoppers, have wings whereas others, like fleas and microscopic lice, don't."

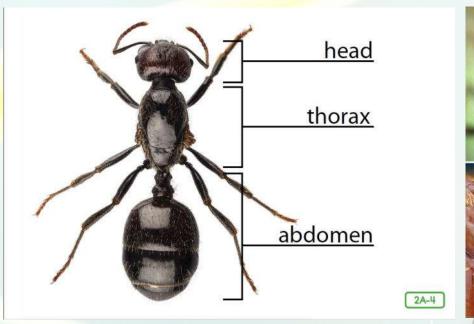
Something microscopic is....



| micro | | | ٤ | |
|---|--------------------------------|---------------------|----|----|
| gyro horo kaleido micro oscillo peri | scope "instrument used to see" | ed ing s y | | |
| spectro stereo stetho tele | | ic | al | ly |

Antonyms Gigantic or Microscopic?

- A building that is forty stories tall
- An insect that we can't see crawling through the soil
- The Sun
- The Pacific Ocean
- A single grain of sand on the beach













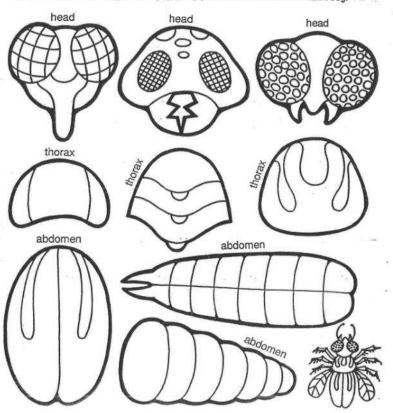


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Insect Journal

Build A Bug

An insect has three body parts—head, thorax, and abdomen. On the head are two antennae, two eyes, and mouthparts. On the thorax are four wings and six legs. Cut out the insect body parts. Glue a head, a thorax, and an abdomen together on one half of a folded sheet of paper. Draw the antennae, wings, and legs. Color and name your insect. With the leftover body parts, create another bug with many body parts. Color and label it "mutant bug."



BUICD A BUG

| My bug has | main body parts. |
|------------|------------------|
| | |
| My bua has | antennae. |

My bug has _____legs.

My bug's name is ______.

My bug lives in ______

My bug likes to eat ______.

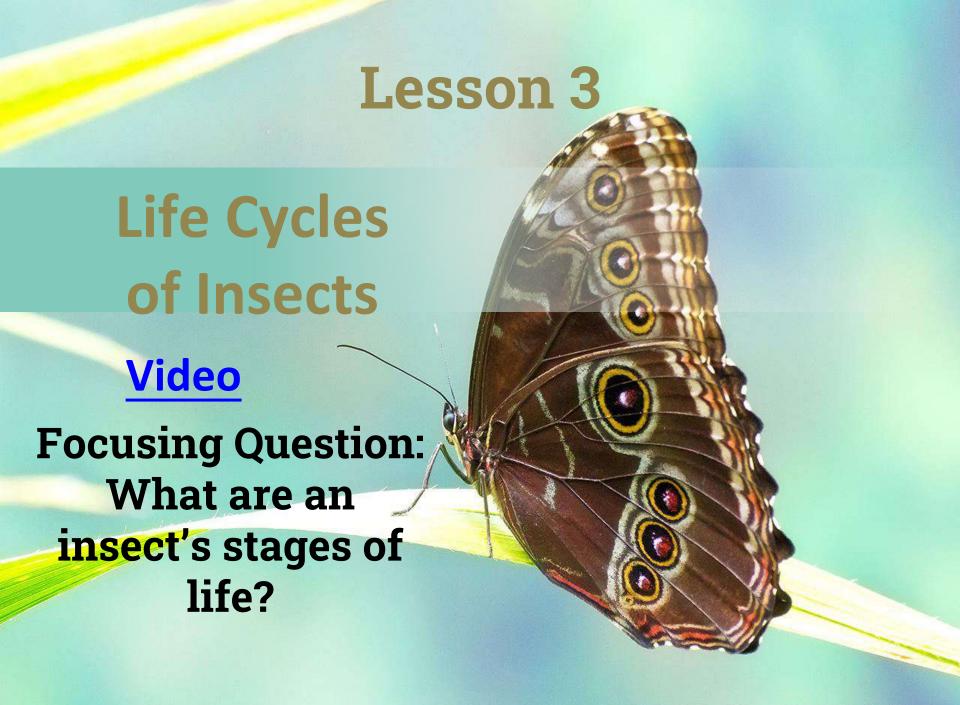
May/June 93 Correct Q

Extra Resources

Grasshopper Drawing
https://www.youtube.com/watch?v=mfr6booZqjw

Classifying Animals BrainPop Jr.

https://jr.brainpop.com/science/animals/classifyinganimals/



Lesson Objectives

Students will be able to:

- Describe the insect life cycle and the process of complete and incomplete metamorphosis
- Describe how many insects look like mini versions of adults when they are born as eggs
- Explain why some insects molt
- Describe how some insects go through four stages of development, including egg, larva, pupa, and adult

Insect Characteristics

- 3 body parts: head, thorax, abdomen
- six legs
- exoskeletons
- are invertebrates
- some have wings



larva- the immature stage of an insect's complete metamorphosis, between egg and pupa, not resembling the adult insect



pupa - the inactive, immature stage of an insect, between larva and adult





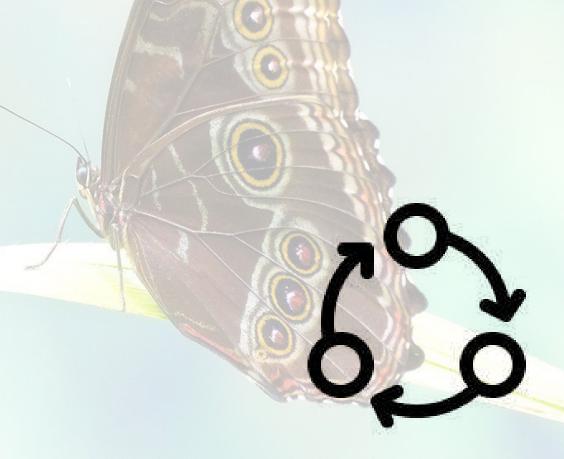
molt- to shed old feathers, hair, skin, or shells, making way for new growth

nymph- the immature stage of an insect that does not go undergo a complete metamorphosis, between egg and adult, resembling the adult insect

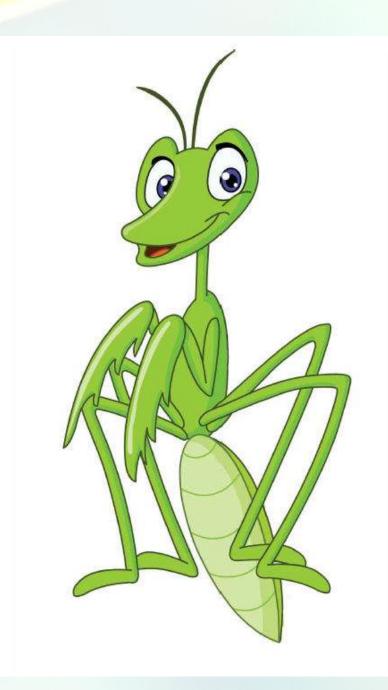




progression- a continuous series of events





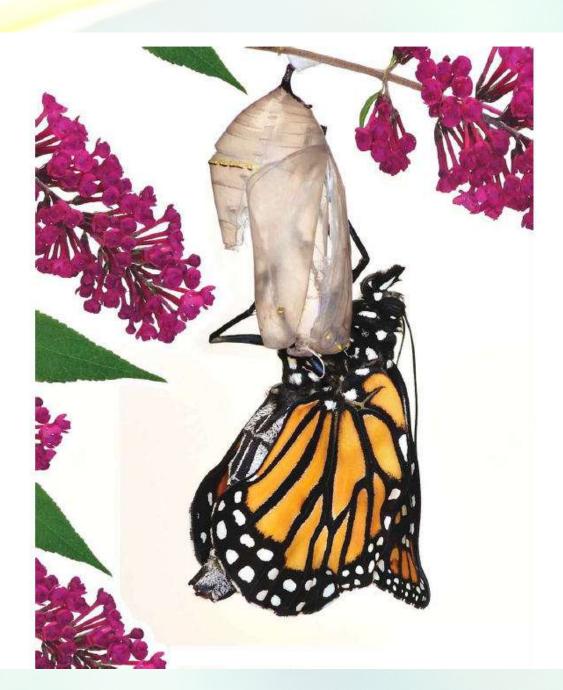










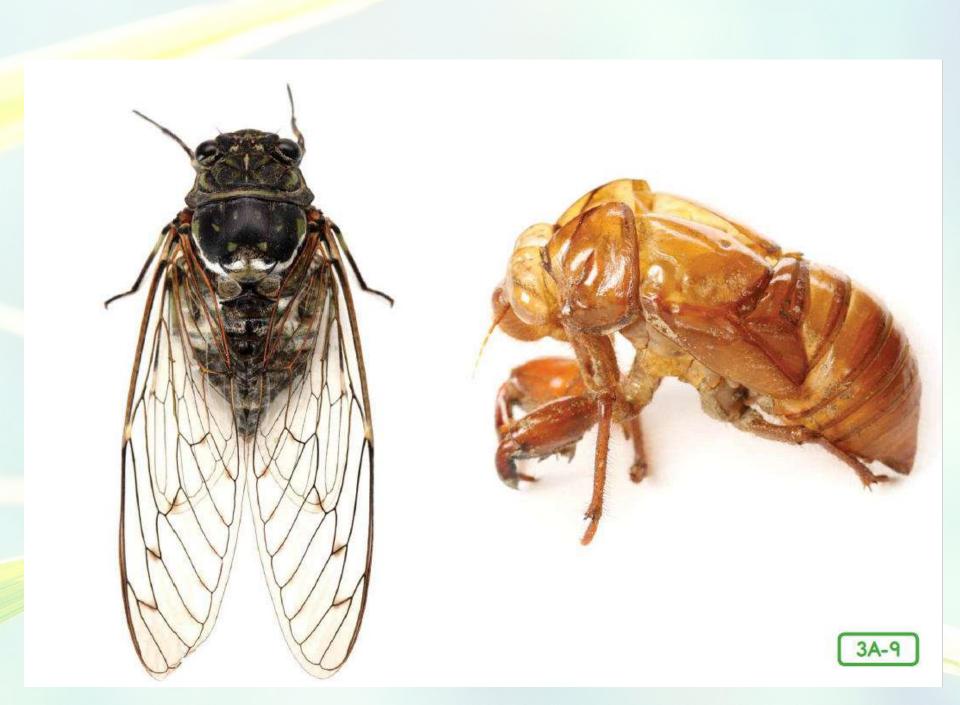




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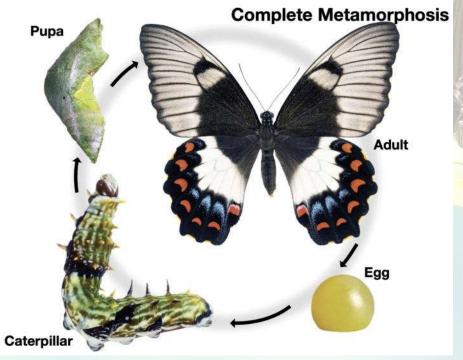


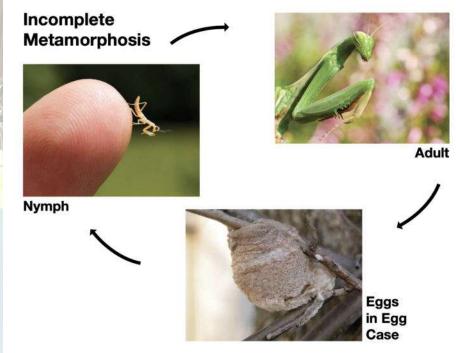


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Comprehension Questions

What word is used to describe the **progression** of event, or change, that occurs in an insect's life?





Comprehension Questions

Why do insects **molt** or shed their exoskeletons?

In which season(s) of the year would you expect to see the most insects? Why?

Think Pair Share

Is the change that takes place in the growth of human beings more like that of complete or incomplete metamorphosis? Why?

Word Work: Progression

• "Scientists call the *progression* through four separate stages, a complete metamorphosis."

progression- a continuous series of events

 What other things go through a progression?





"move forward"

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Word Work: Progression

What is the progression of actions you take to get ready for school in the morning?

Extra Resources

Insects BrainPopJr.

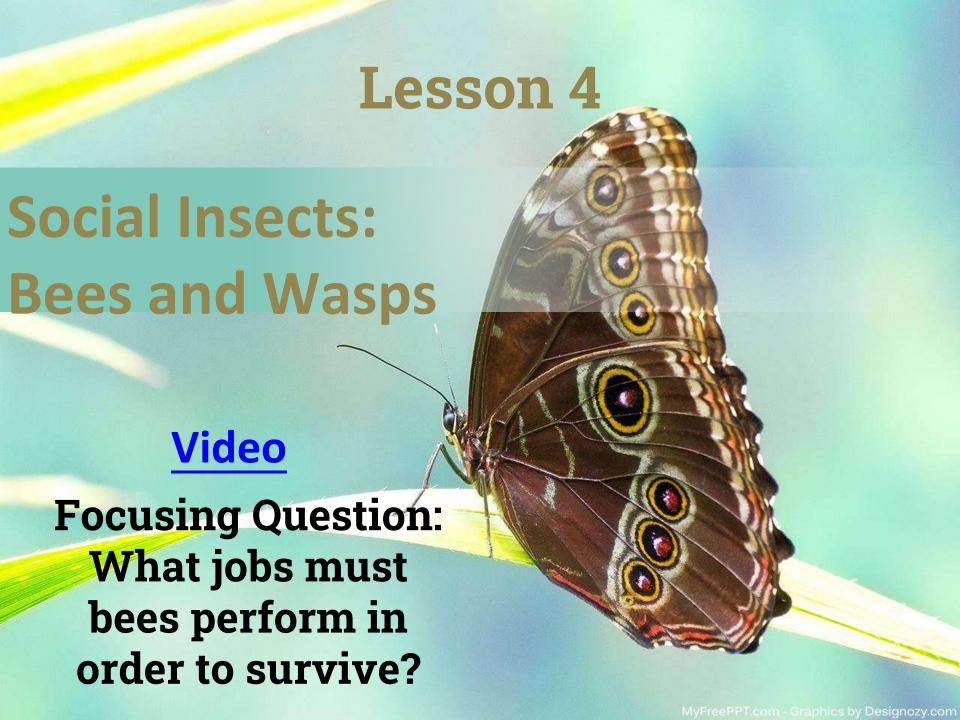
https://jr.brainpop.com/science/animals/insects/

Butterfly Life Cycle Timelapse

https://www.youtube.com/watch?v=7AUeM8Mbalk

Praying Mantis Drawing

How To Draw A Praying Mantis



Lesson Objectives

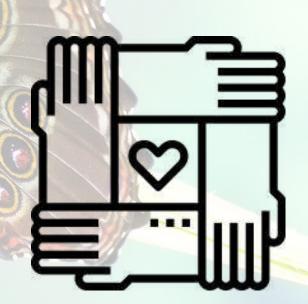
Students will be able to:

- Explain that most insects live solitary lives, but some, such as honeybees and paper wasps, are social
- Distinguish between social and solitary insects
- Describe how all members of a social insect colony come from one queen
- Describe the roles of the honeybee workers, drones, and queens
- Describe how honeybees communicate with one another through "dances"

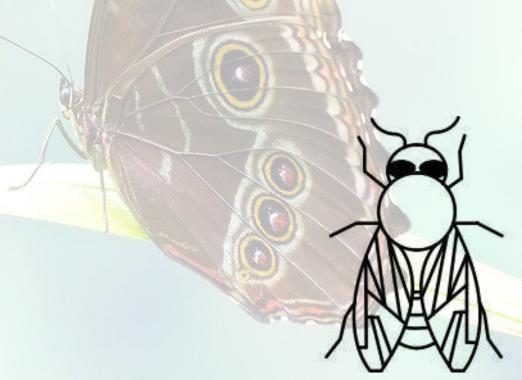
colonies - communities of animals living close together, often sharing a shelter, such as a beehive



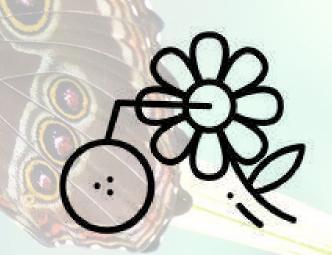
cooperate - to work together for the good of everyone



drones - male bees in social bee colonies whose job is to fertilize the queen's eggs



pollen- a powder produced by flowers that must be transported from flower to flower for new flower seeds to grow



















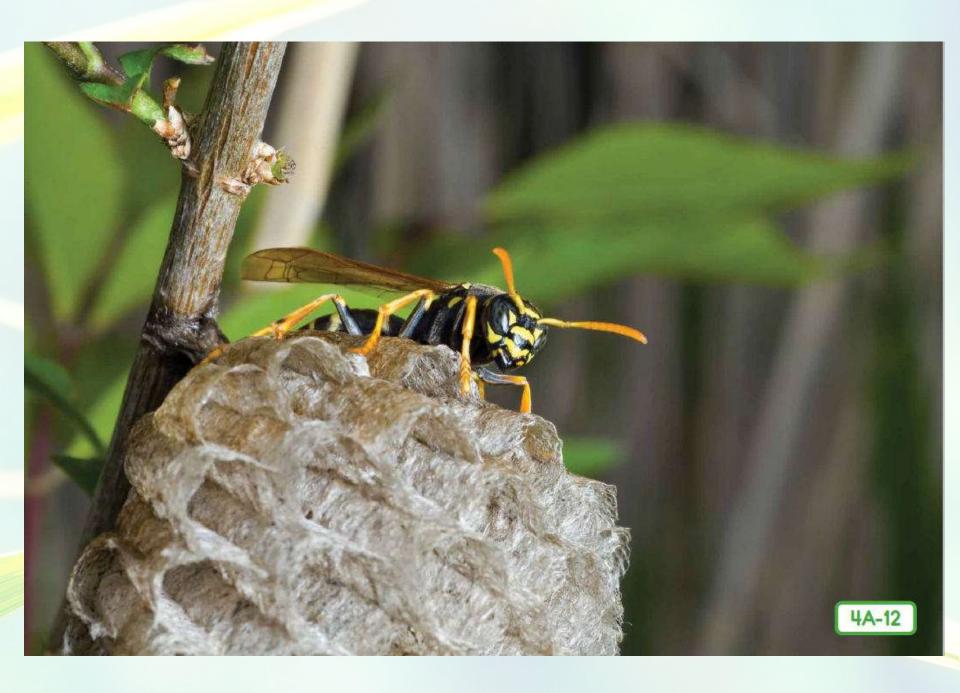


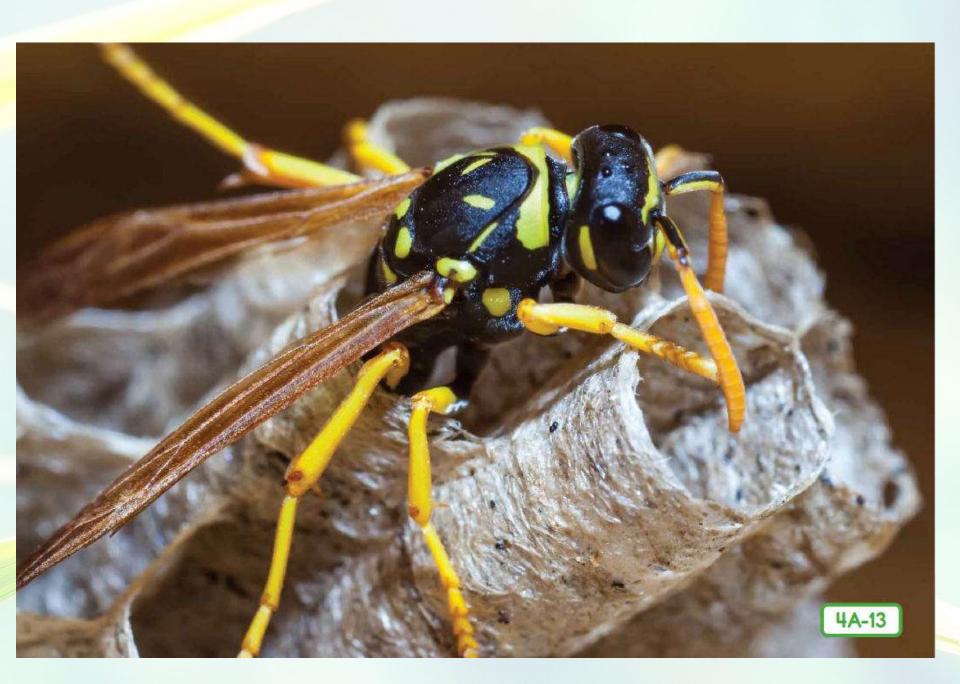














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Are honeybees and paper wasps social or solitary insects?

If honeybees and paper wasps have larvae and pupa stage, do they go through complete or incomplete metamorphosis?

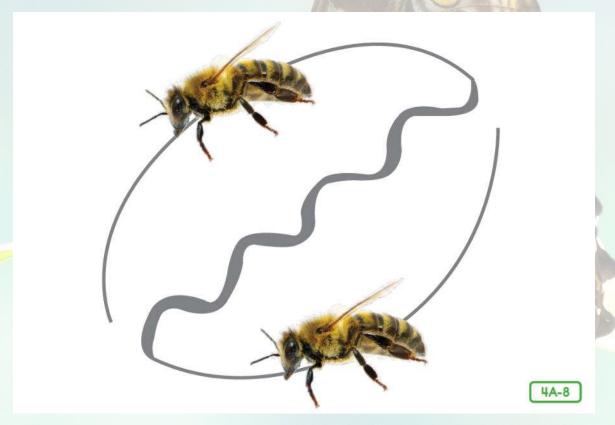
The queen honeybee performs a very important job that keeps the life cycle of the bee going. What is it?



What other jobs do honeybees have to help keep the colony alive?



Why do honeybees perform the waggle dance?



Why do you think these wasps are called paper wasps?

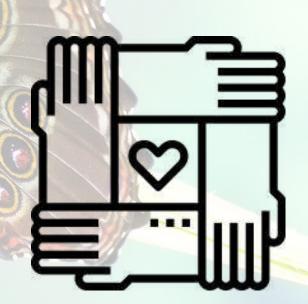
How do paper wasps build their nests?

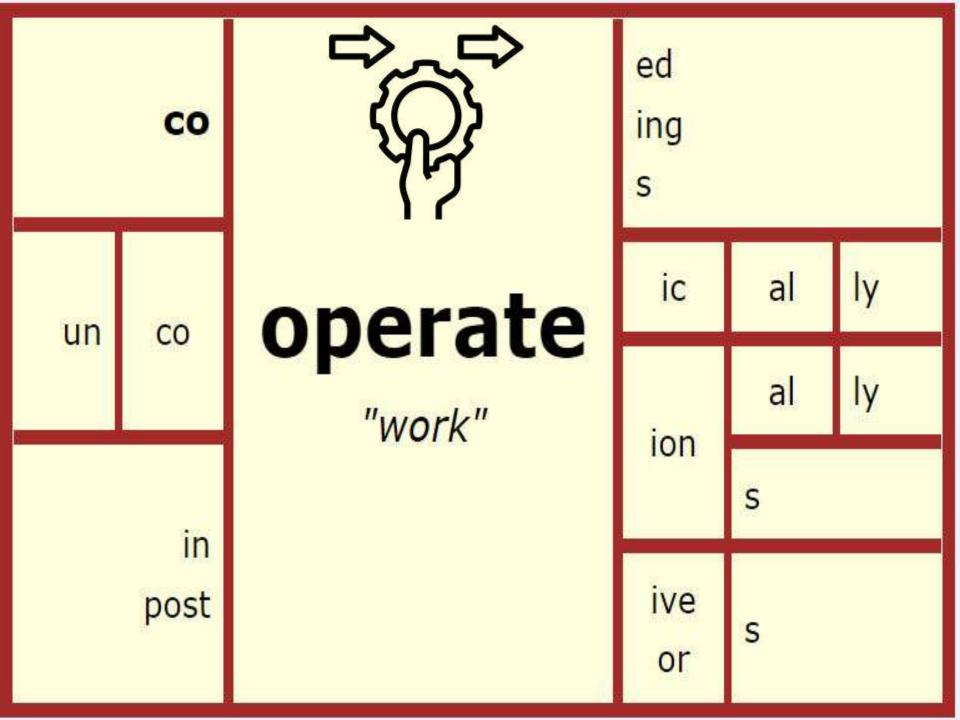


Think Pair Share

Which members of the hive do you think are most important to the hive's survival?

cooperate - to work together for the good of everyone





Word Work: Cooperate

 "We gather and share food, build nests together, cooperate to raise our young, and help protect one another from enemies."

 One time my classmates and I had to cooperate was when...



Extra Resources

Bee Life Cycle

https://www.youtube.com/watch?v=f6mJ7e5YmnE

https://www.youtube.com/watch?v=ta154f5Rp5Y

Wasp Life Cycle

https://www.youtube.com/watch?v=VQCCR4uRwcc

Bee Drawing

https://www.youtube.com/watch?v=Ho4aUHY6fss



Pausing Point

National Geographic Honey Bees - On Epic!

https://www.getepic.com/app/read/46904

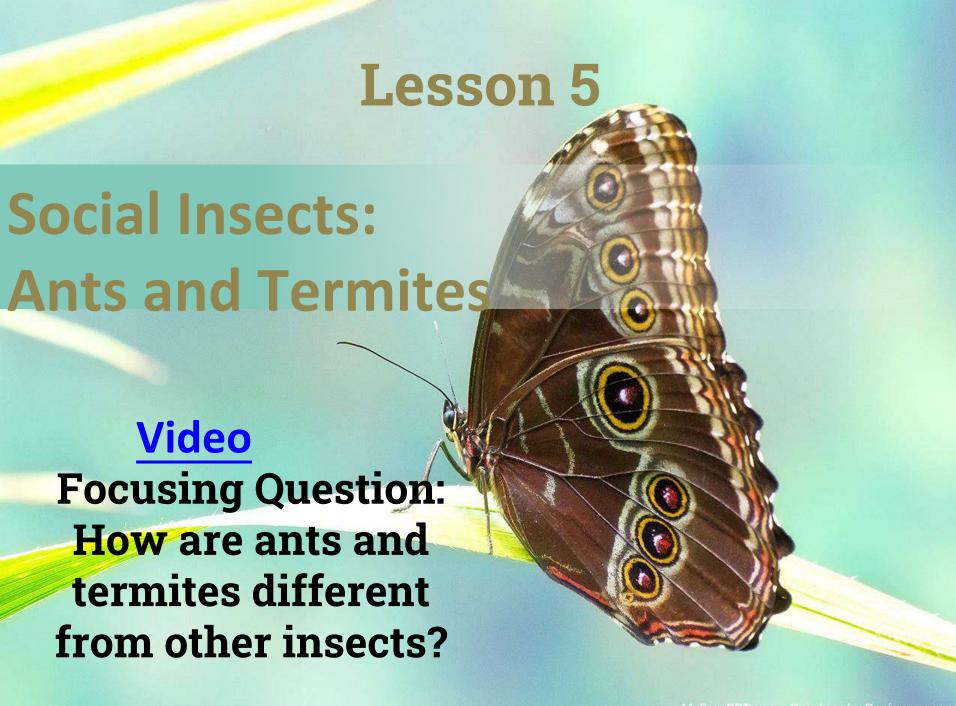
Can You Tell a Bee from a Wasp? - On Epic!

https://www.getepic.com/app/read/6137



Pausing Point Activities

- Class book about insects learned so far.
- Drawing insects
- Insect research
- Insect videos
- Insect Hunt
- Insect Writing



Lesson Objectives

Students will be able to:

- Explain that most insects live solitary lives, but some, such as honeybees and paper wasps, are social
- Distinguish between social and solitary insects
- Describe how all members of a social insect colony come from one queen
- Describe the social behavior of ants and ant colonies
- Describe the roles of worker ants, males, and queens

aggressive- forceful or ready to attack



chambers - empty, enclosed spaces; rooms



destructive- causing a large amount of damage or harm

emit- to send out or give off

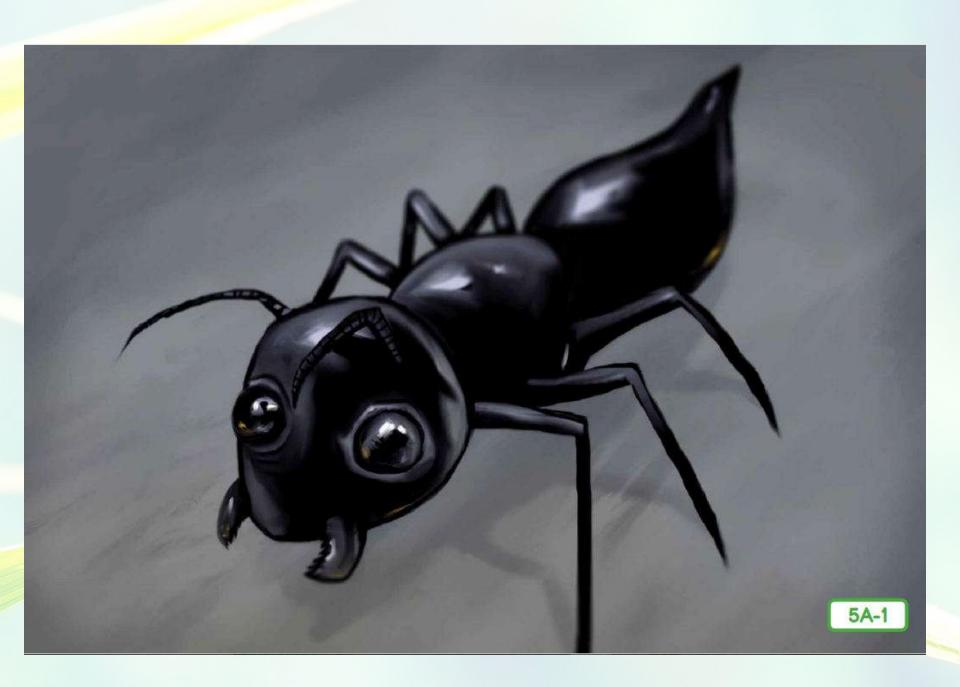
Vocabulary Words

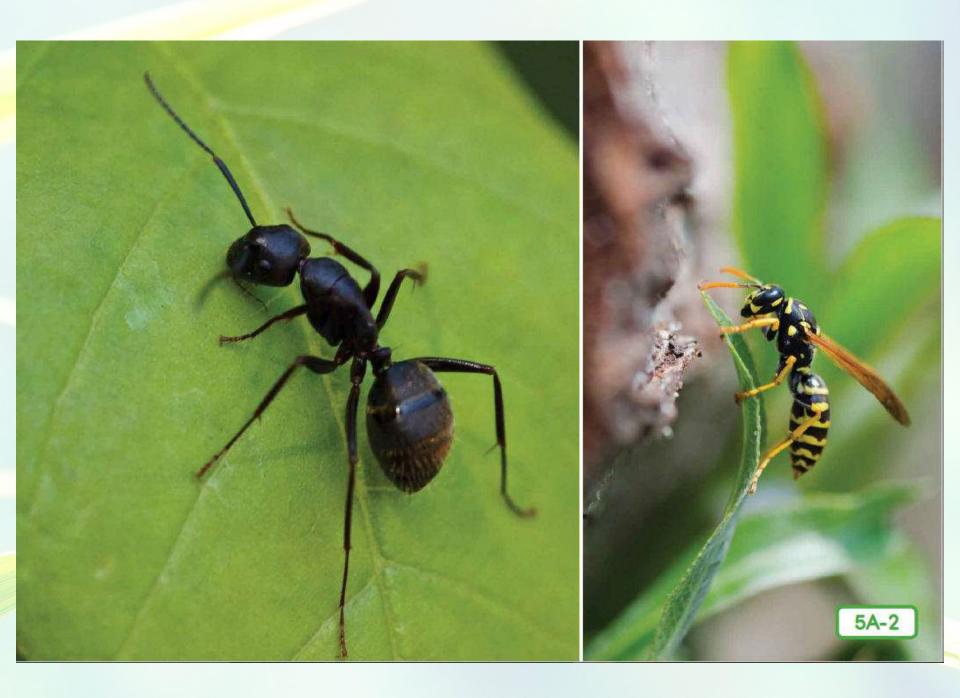
nurseries - places to breed and care for young animals or plants







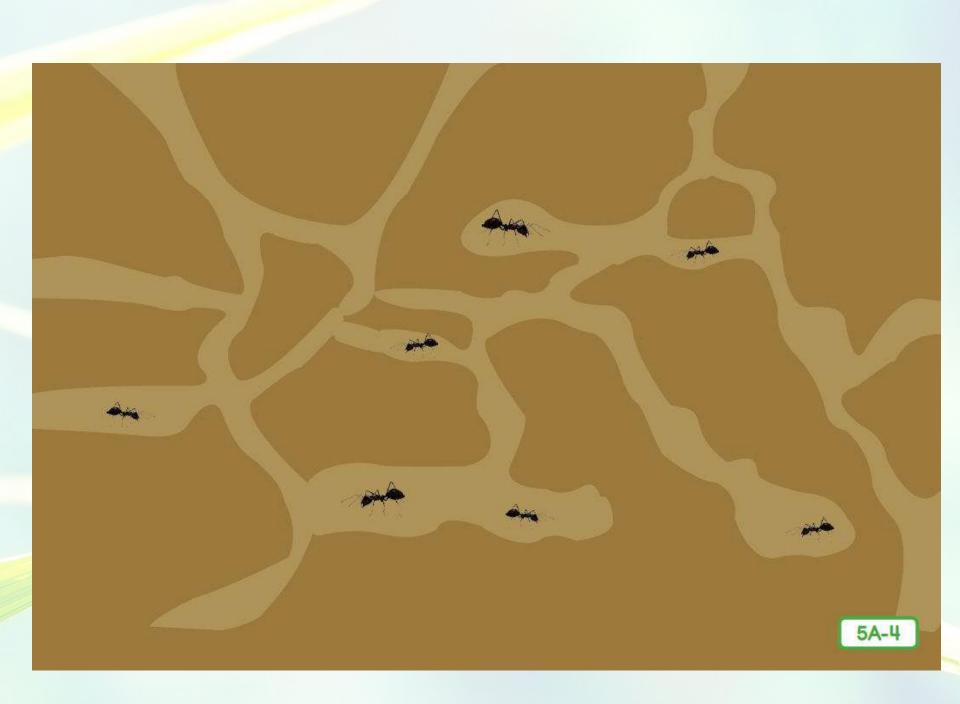


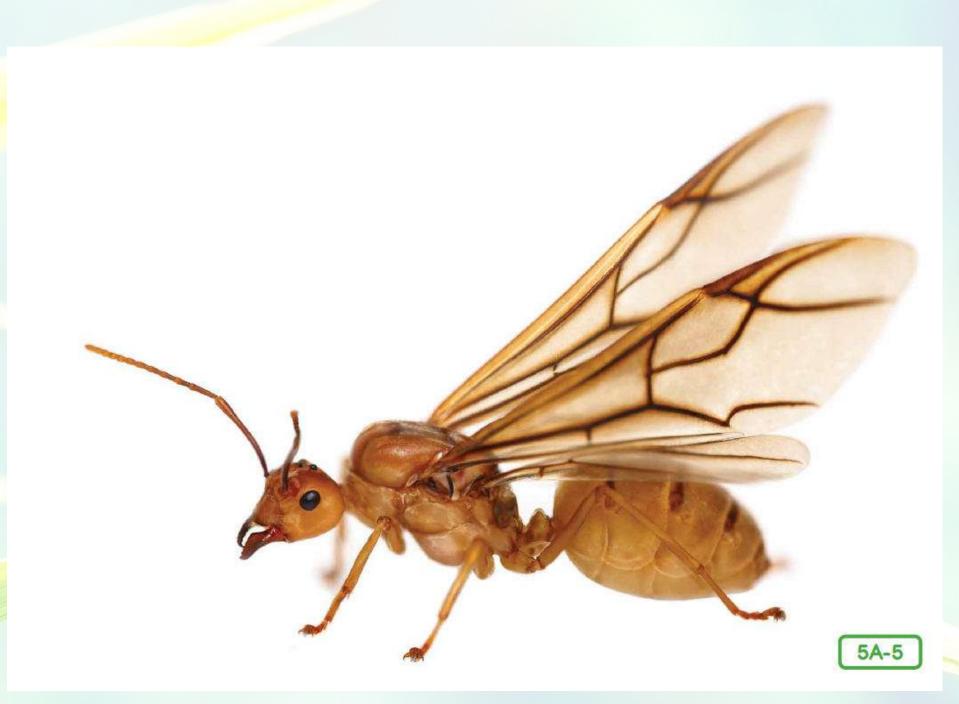


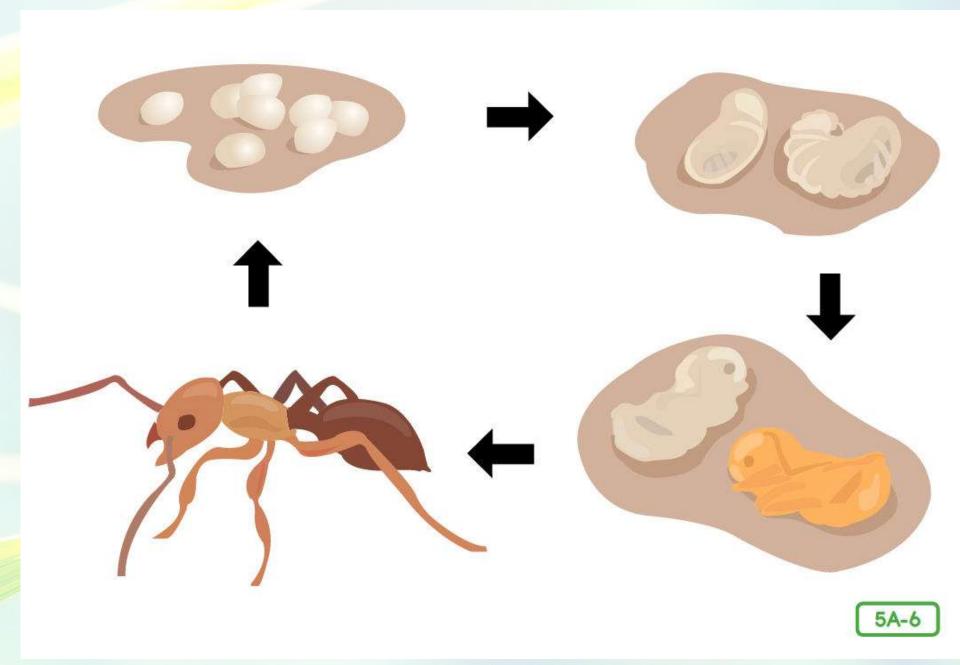
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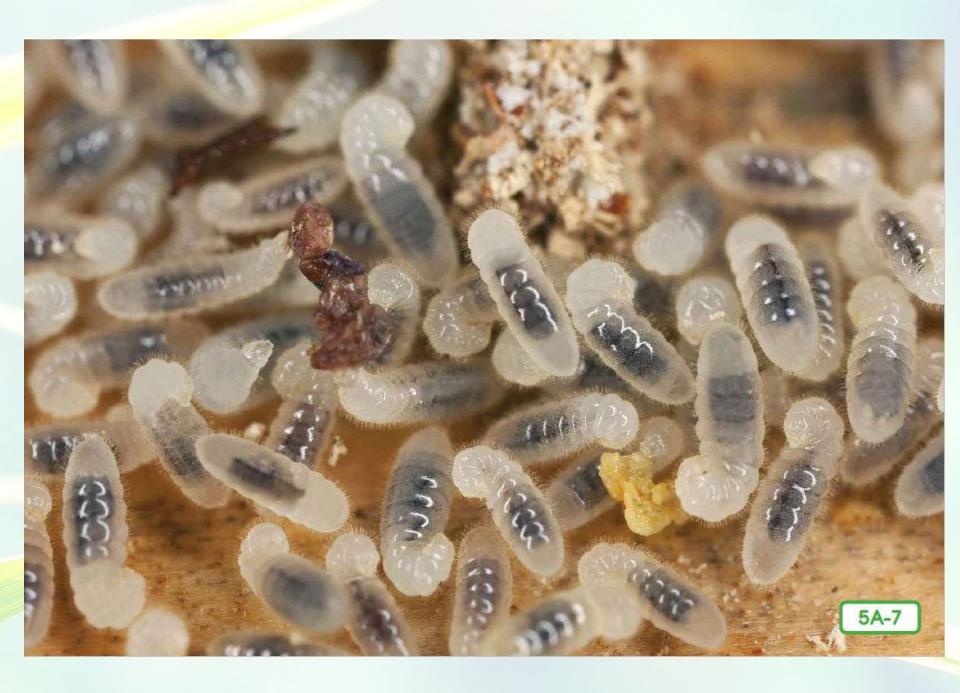


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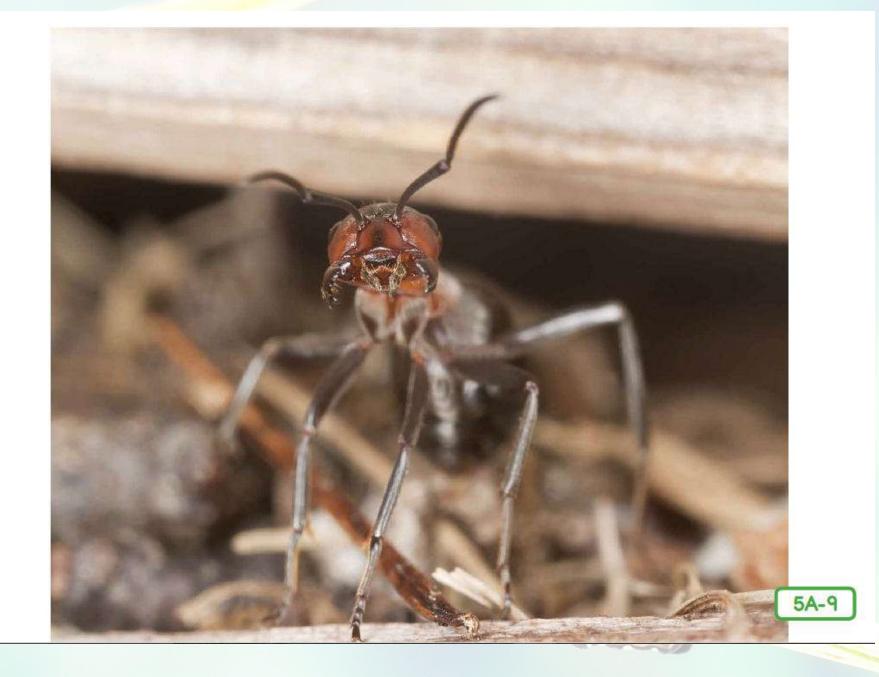


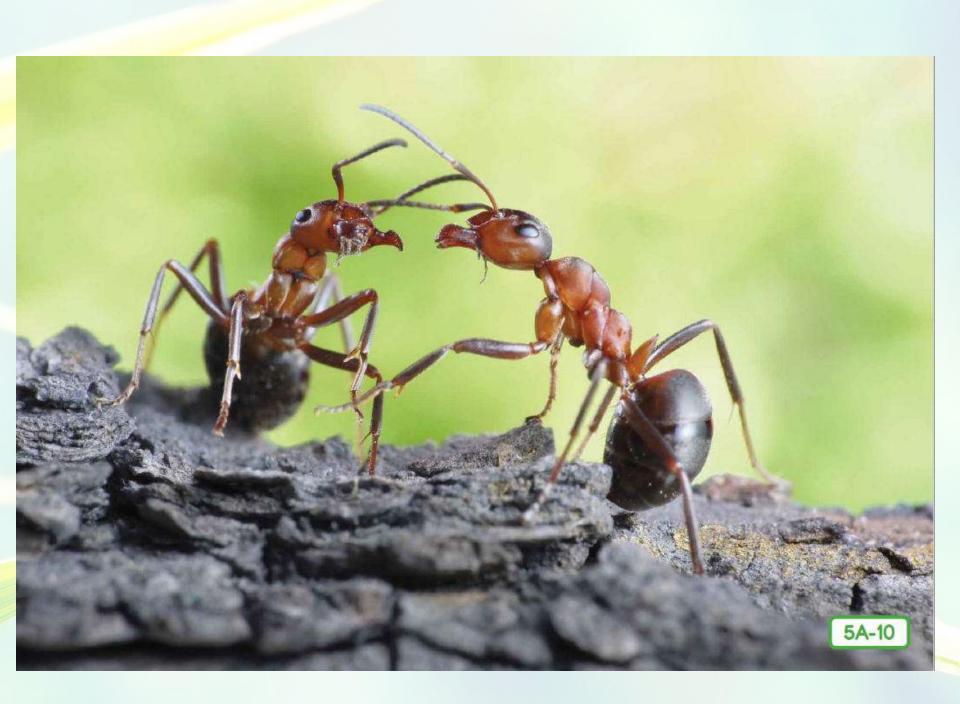




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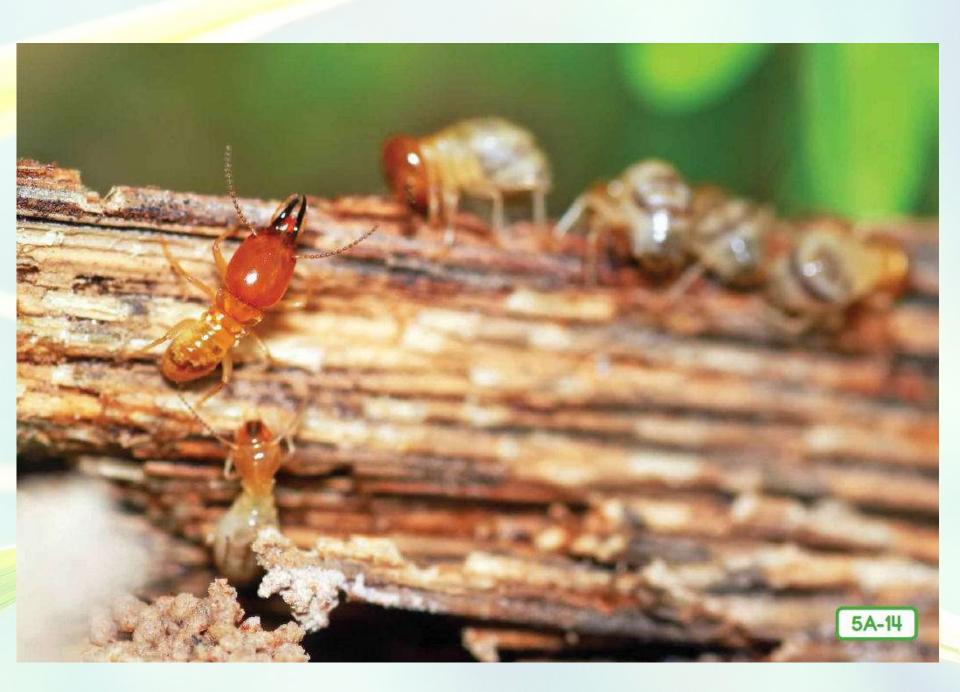




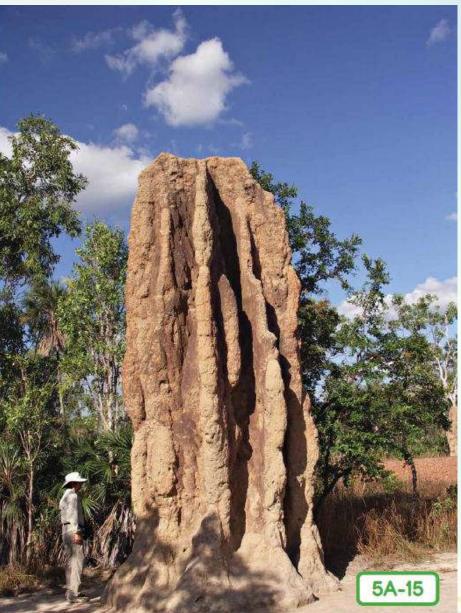
5A-11











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Comprehension Questions

The author of this read-aloud made the statement that ants are social insects. What reasons, or facts, did the author give to support this statement?

Make a list: What jobs do ants and termites have that contribute to the colony?

Comprehension Questions

How are termites and ants different?

Think Pair Share

 Many people stack firewood on their wooden porches so that it is handy to transport into the house to make fires when it is cold outside. Given what you know about the termite's eating habits, do you think this is a good idea? Why or why not?

Word Work: Destructive

 "Termites can be very destructive if they choose to eat through the walls of a house!"

· _____is destructive.



Word Work: Destructive

destructive- causing a large amount of damage or harm



"destroy"

ibility

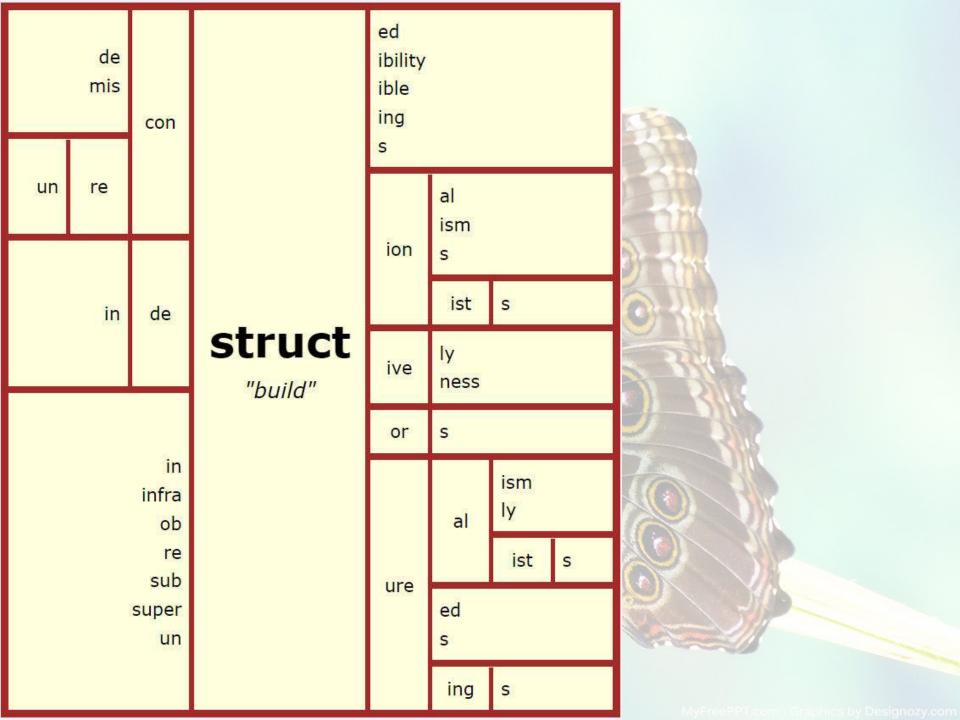
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Word Work: Destructive

- The engineers built a new bridge over the river.
- I helped my little sister learn to tie her shoe.
- The puppy chewed through my mother's new shoes.
- The ocean wave destroyed the sand castle I built.
- We helped plant flowers in the garden.



Extra Resources Ant Life Cycle

https://www.youtube.com/watch?v=ujwsDwKJfHg

Termite Life Cycle

https://www.youtube.com/watch?v=ta2rF6Syi0U

Ant Drawing

https://www.youtube.com/watch?v=3AYB6JNHM0c

Termite Drawing

https://www.youtube.com/watch?v=4g6Adt4zSjA

5.1 Activity Page NAME: DATE: Directions: Write the type of insect you have chosen to write your informational narrative about on the first blank in the "Character(s)" box, write any words or phrases you can use to describe your insect. Use the other boxes to describe the setting(s) and the plot. Title Character(s) Setting(s) Insect: Name: Beginning Middle Plot End

Knowledge 8 Insects

49

Take-Home

| NAME: | | | | |
|-------|--|--|--|--|
| DATE: | | | | |

5.2

Take-Home

Dear Family Member,

I hope your child is enjoying learning about the fascinating world of insects. Over the next few days s/he will learn more about how insects communicate with one another, as well as ways in which insects are both helpful and harmful to our planet. Below are some suggestions for activities that you can do at home to reinforce your child's learning about insects.

1. What's a Bug?

Your child will learn that "all bugs are insects, but not all insects are bugs." Ask him/her to explain why. Then, try to use the word *insect* instead of *bug* when talking to your child about common household creepy-crawlers.

2. Examining Insects Closely

If possible, search for or rent videos/DVDs about insects. Watch them with your child and discover interesting facts together.

3. Words to Use

Below is a list of some of the words that your child will be using at school. Try to use these words as they come up in everyday speech with your child.

- · Communicate—Honeybees to a waggle dance to communicate with each other.
- · Destructive-Some hurricanes can be very destructive.
- · Entomologist—An entomologist is a person who studies insects.

4. Read Aloud Each Day

It is very important that you read to your child each day. Please refer to the list of books and other resources, sent home with the previous family letter, recommending resources related to insects.

Knowledge 8



Lesson Objectives

Students will be able to:

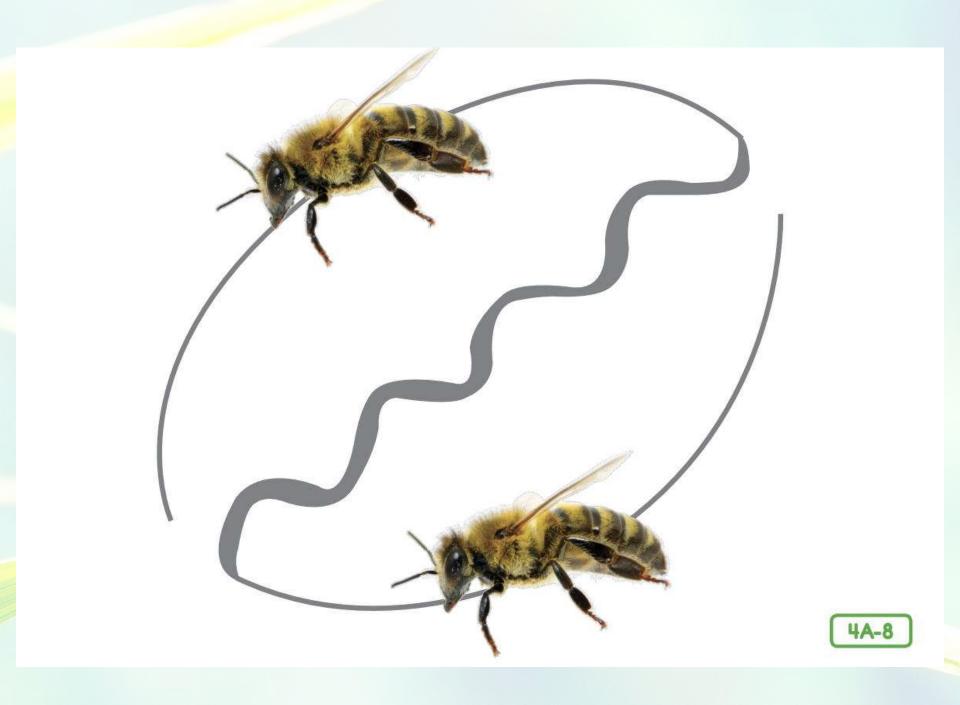
- Classify and identify insects as small six-legged animals with three body parts
- Identify and describe the three main body parts of insects: head, thorax, and abdomen
- Identify the placement and/or purpose if an insect's body parts
- Describe an insect's exoskeleton
- Compare and contrast grasshoppers and crickets

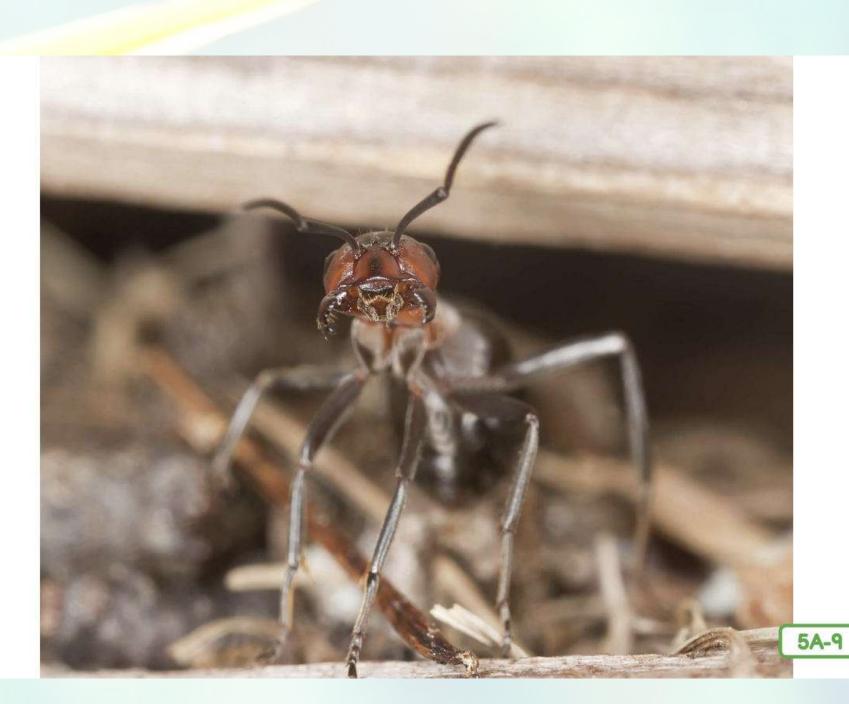
What have we learned...

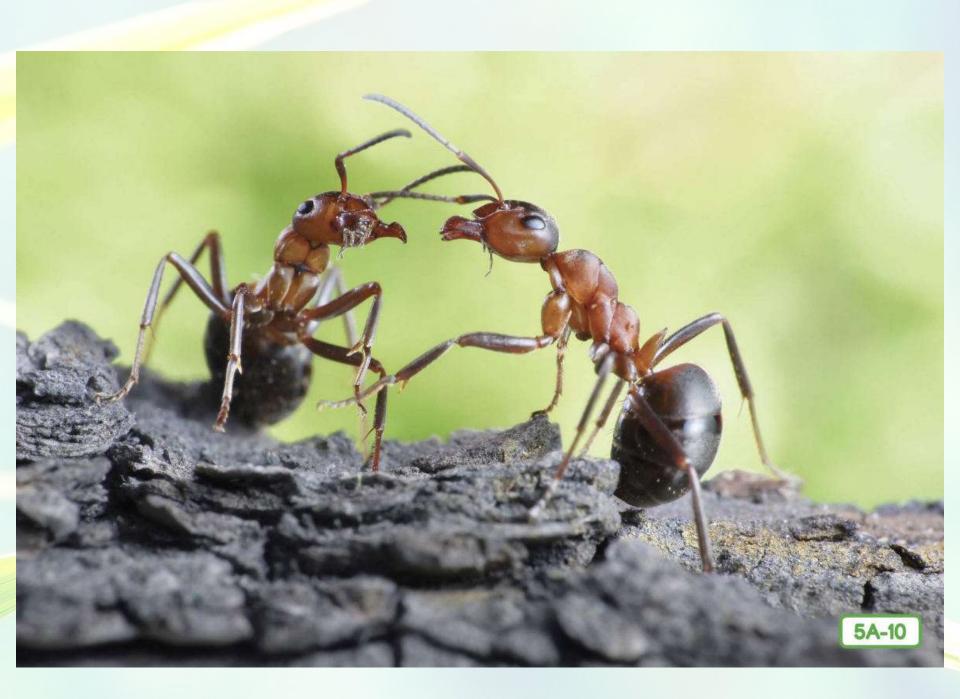
Name the characteristics of ALL insects.

• Share about the insects you've learned about so far.









bioluminescence- light given off by some plants and animals, such as fireflies, caused by a biochemical reaction

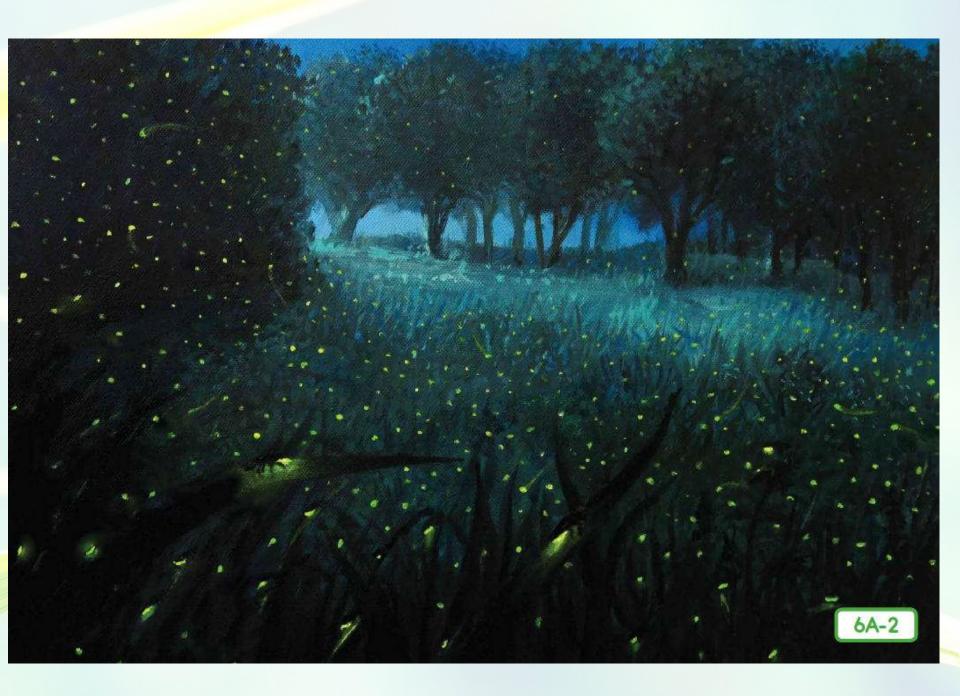


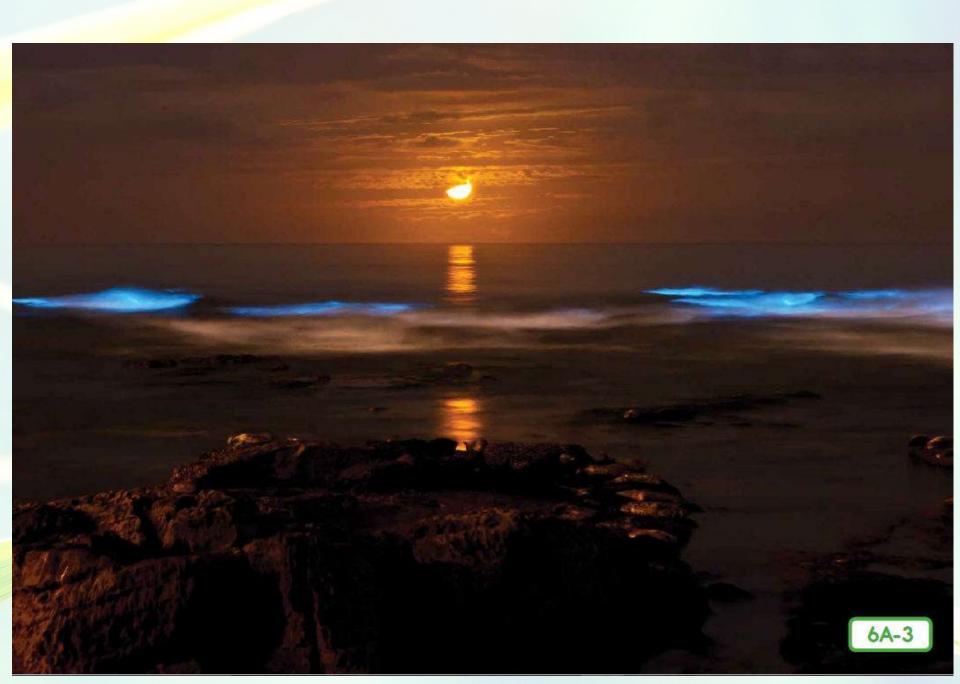
communicate - to share or exchange information

lanterns- the part of a firefly's abdomen that produces light



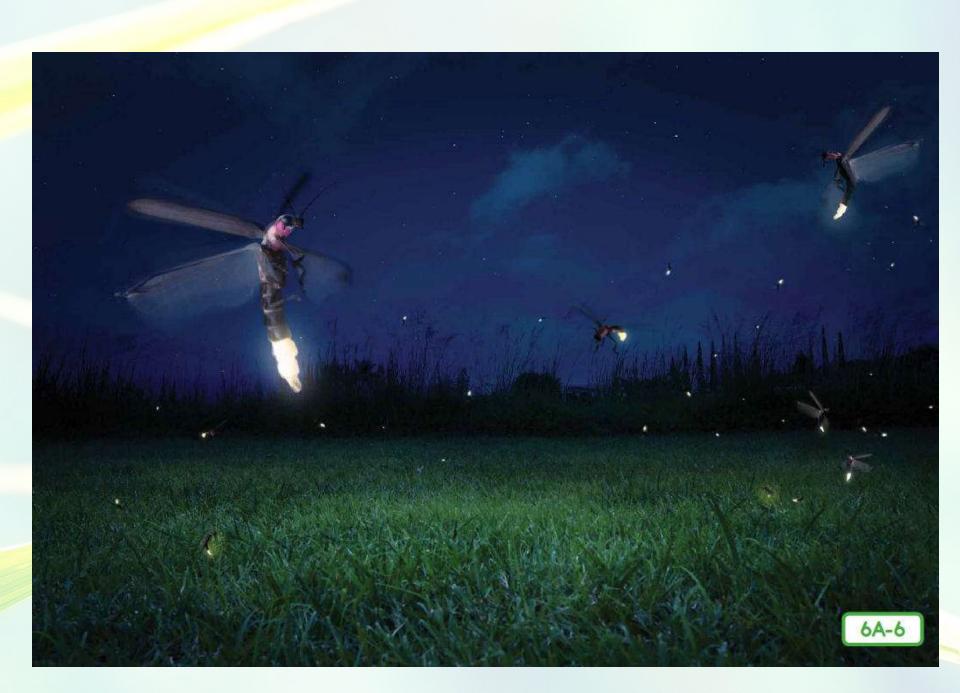


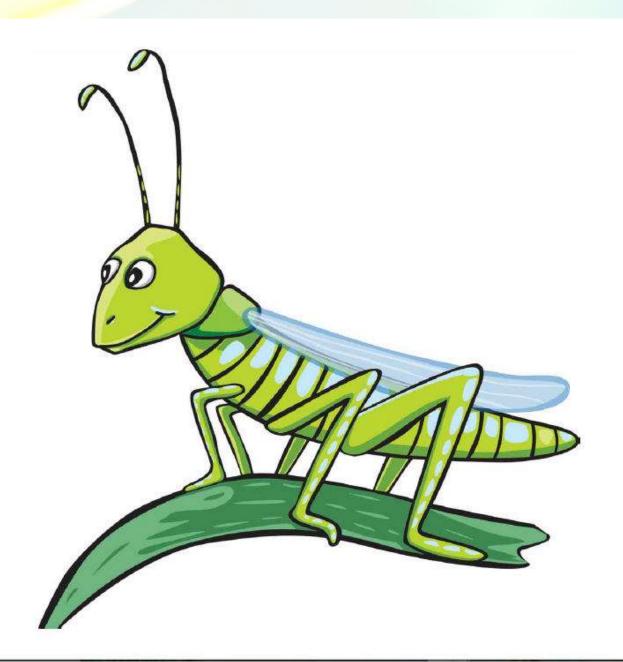




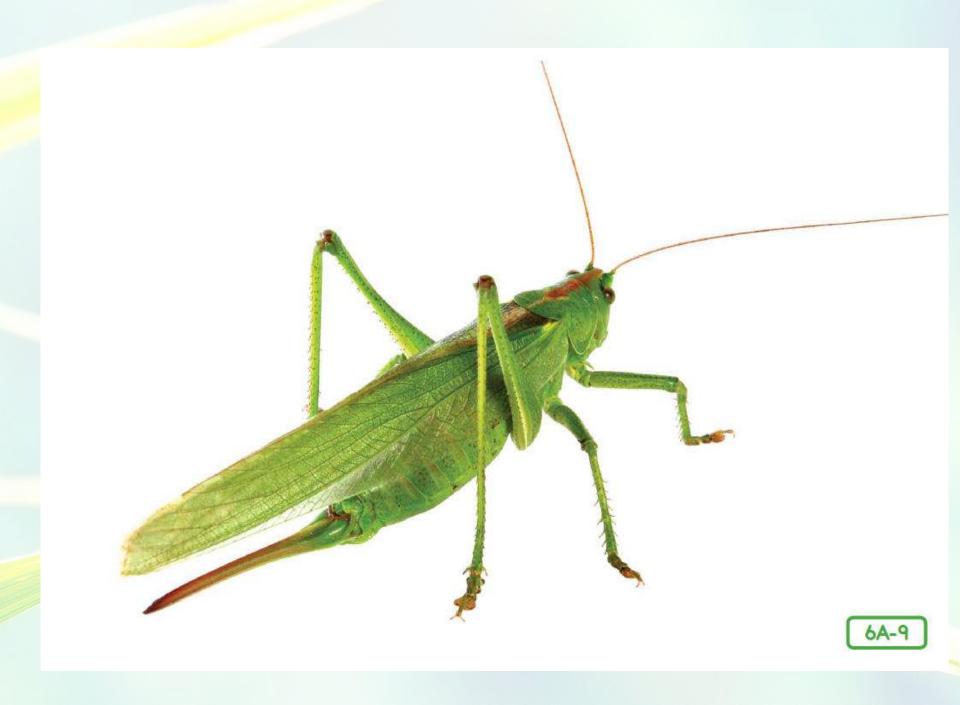


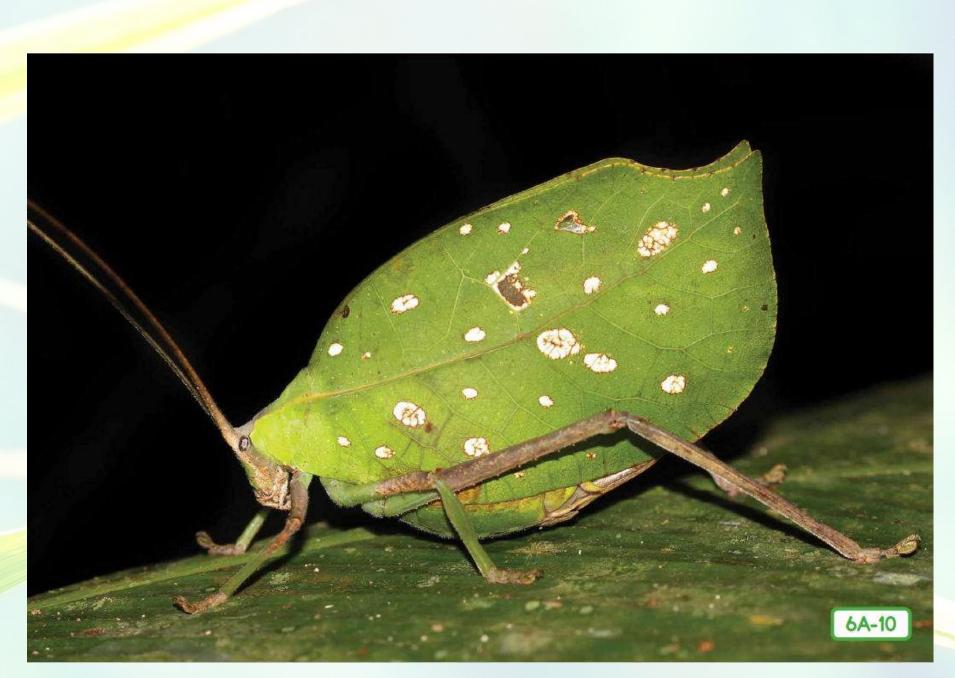












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How do fireflies communicate with one another?

In what body part is the firefly's lantern located?

In which section of the grasshopper are the hearing organs located? Head, thorax, or abdomen?

The female grasshoppers use their tympanum, or eardrums on the side of their **abdomens**, to listen to the male grasshoppers. Why do the males sing to the females?

The female grasshoppers use their tympanum, or eardrums on the side of their **abdomens**, to listen to the male grasshoppers.

Why do the males sing to the females?

How do the male grasshoppers make their singing sounds?

Where are a cricket's hearing organs located? Abdomen, forelegs, or wings?

You heard in the read-aloud about a tradition in some Asian countries where crickets are kept in cages.

Is it males or females that are caged?

Why are they caged?

Do grasshoppers, crickets, and fireflies all have exoskeletons?

How do you know?



communicate - to share or exchange information

ed ing ex communicate ive inter tele "share or exchange information" un ion

• It is important to communicate with your teacher when you need something.

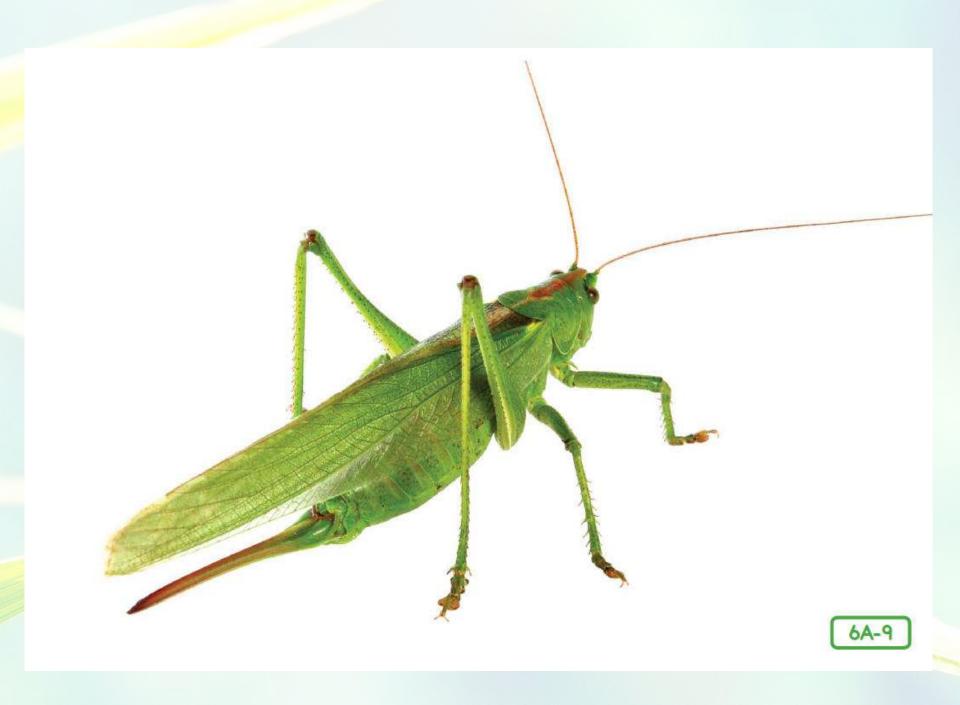
 Think of all the different ways humans communicate with one another. Then, think of other animals and how they communicate

with one another.

Name the insect and describe how that insect communicates.

- firefly
- grasshopper
- katydid
- cricket
- cicada





Extra Resources

Fireflies

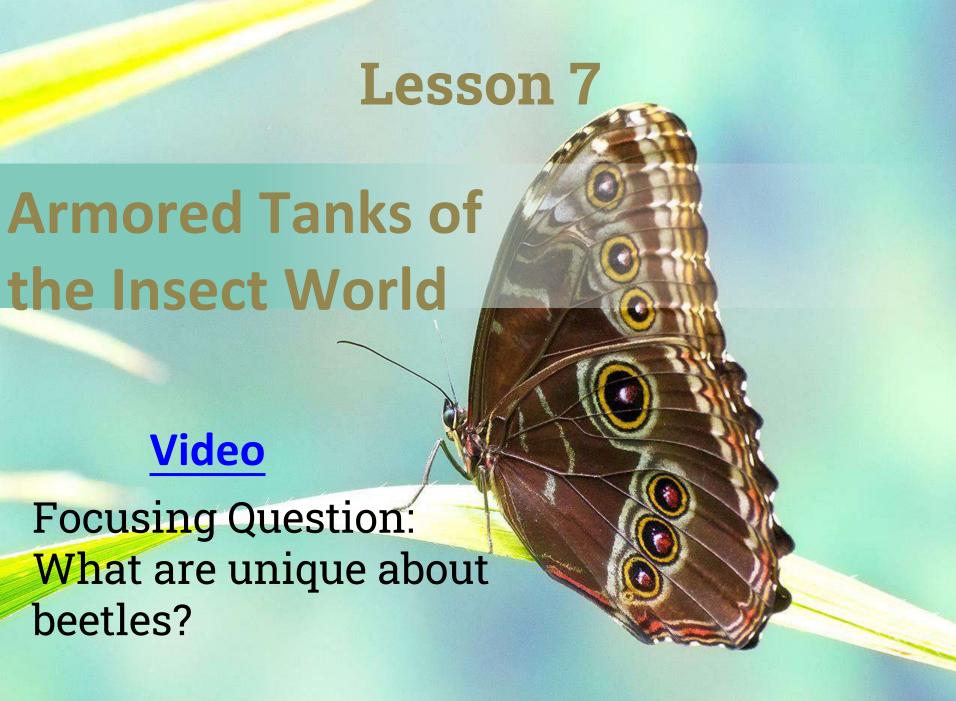
https://www.youtube.com/watch?v=Ts7JIS3M2S4

Firefly Direct Drawing

https://www.youtube.com/watch?v=mjqv6tpH_Qw

| Character(s) Setting(s) | |
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| Insect: | |
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| | Knowledge 8 |
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Lesson Objectives

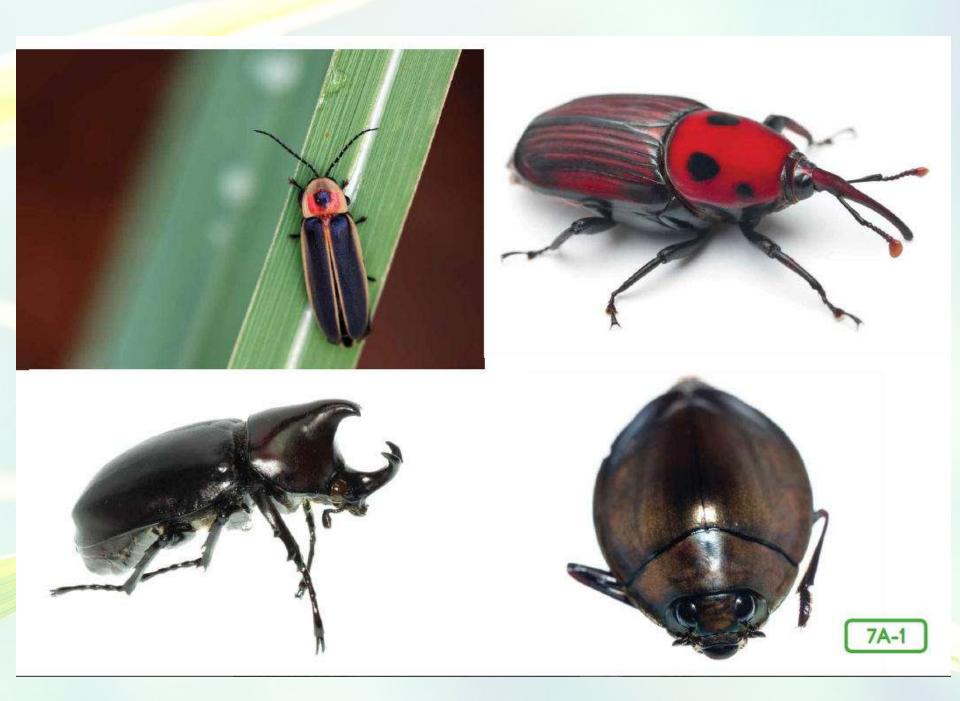
Students will be able to:

- Classify and identify insects as small six-legged animals with three body parts
- Identify and describe the three main body parts of insects: head, thorax, and abdomen
- Identify the placement and/or purpose if an insect's body parts
- Describe an insect's exoskeleton

What have we learned...

Name the characteristics of ALL insects.

• Share about the insects you've learned about so far.





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adapt- change in order to adjust to new conditions

armor - protective layer or shell



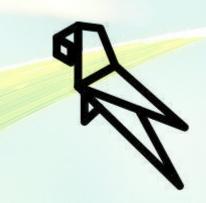
beetles- insects with tough outer coverings and hard forewings







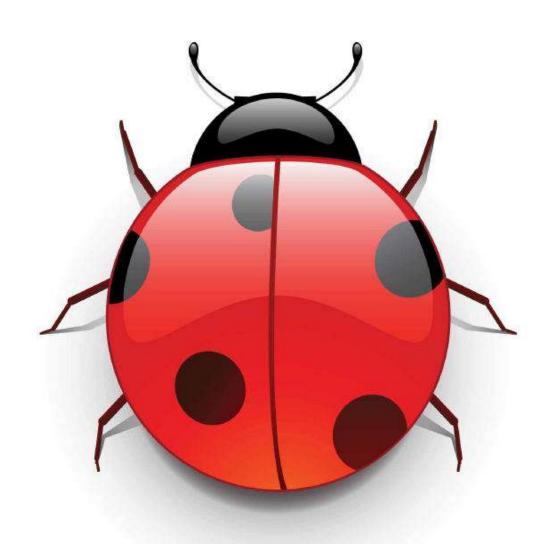
mimicry- the close resemblance of one plant or animal to another







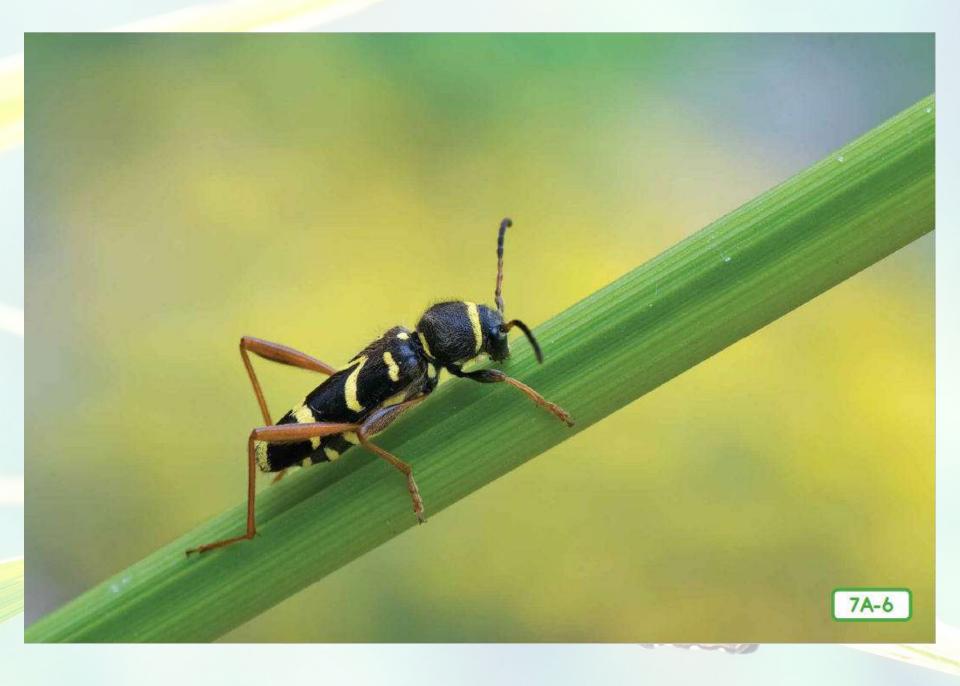














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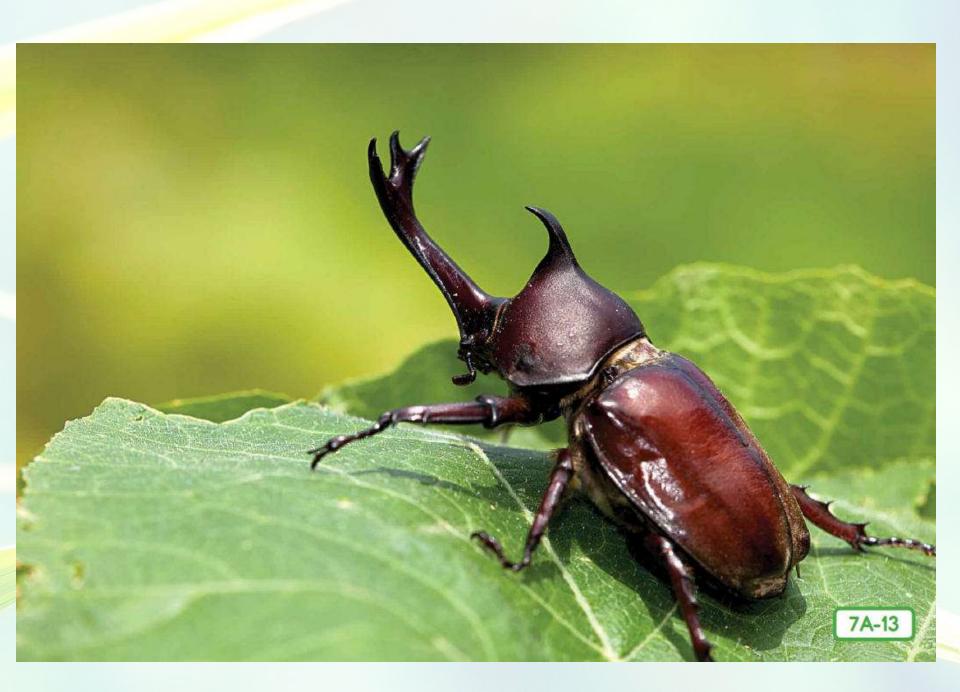


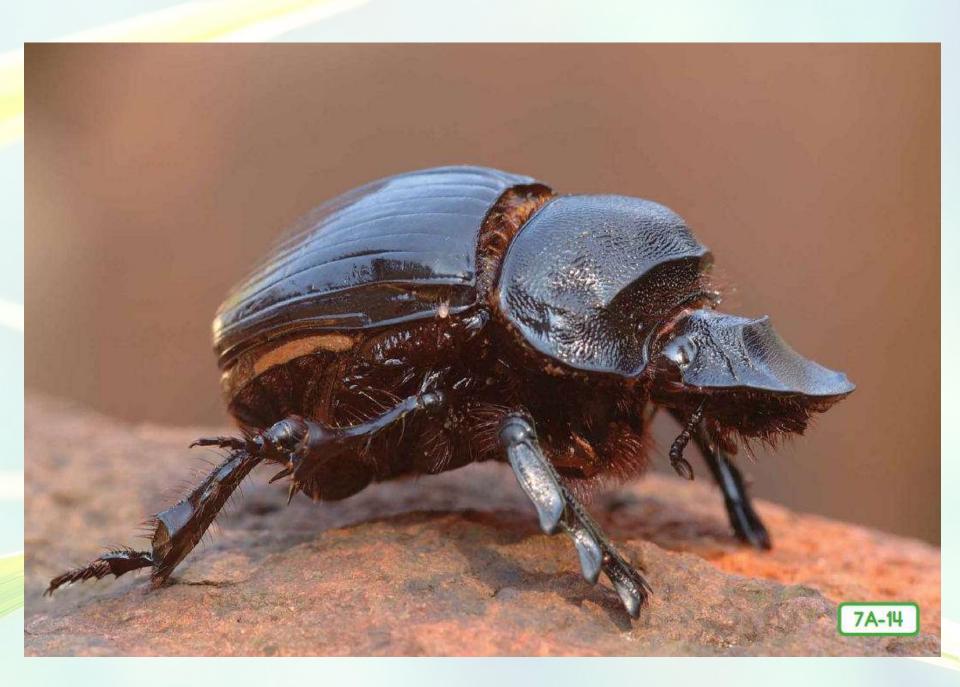


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Comprehension Questions

The beetle's front wings are called **elytra**. How do beetles' front wings differ from those of other insects? (**Compare** & **Contrast**)

Why is it important for beetles to have two sets of wings?

Comprehension Questions

According to the author, what is one big reason that beetles have survived so long and are so numerous?

How do beetles protect themselves?

Comprehension Questions

What do dung beetles do with the dung that they collect?



Think Pair Share

Which of the beetles that you heard about today is your favorite?

Why? Be sure to tell your partner one fact about it.

Word Work: Mimicry

- "Mimicry, or animal look-alikes, is another way beetles protect themselves."
- mimicry- the close resemblance of one plant or animal to another
- itself from predators.

mimic



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S

| Title | | 5-Min-(c) |
|--------|--------------|-------------|
| Insect | Character(s) | Setting(s) |
| Name | | Knowledge 8 |
| | Beginning | |
| Plot | Mi | iddle |
| | | End |

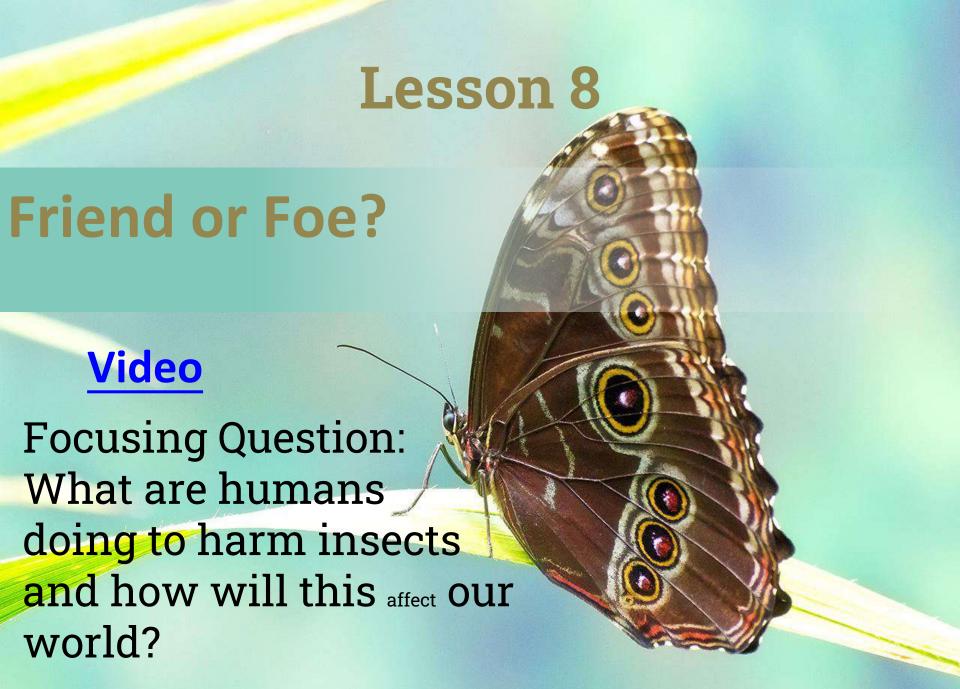
Knowledge 8 Insects

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Beetle Direct Drawing

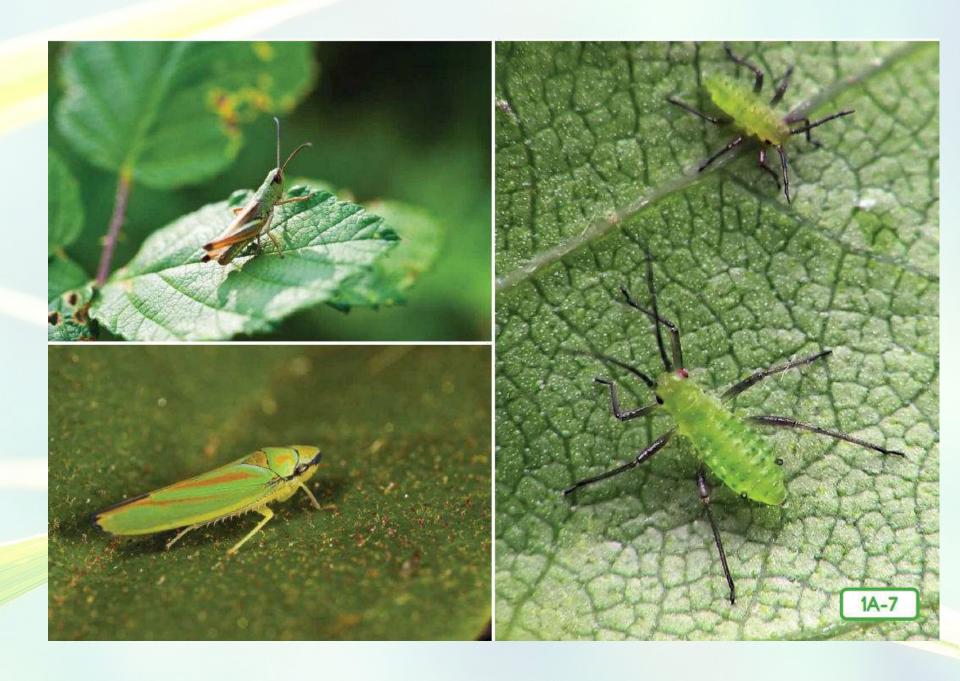
https://www.youtube.com/watch?v=pivOejD3A5w



Lesson Objectives

Students will be able to:

- Explain that insects are the largest group of animals on Earth
- Explain that there are many types of insects
- Identify ways in which insects can be helpful to people
- Identify ways in which insects can be harmful to people









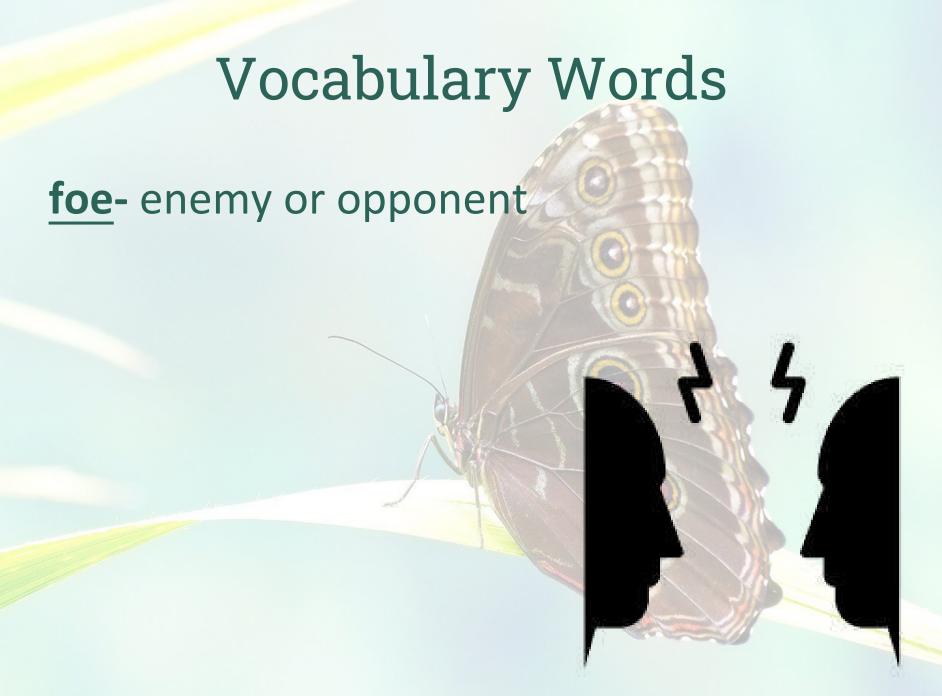
Turn and Talk

Name one way insects are harmful to other plants and animals, and name one way insects can be helpful to other living things.

entomologist- a person who studies insects



extinction - the dying out of a species until it no longer exists



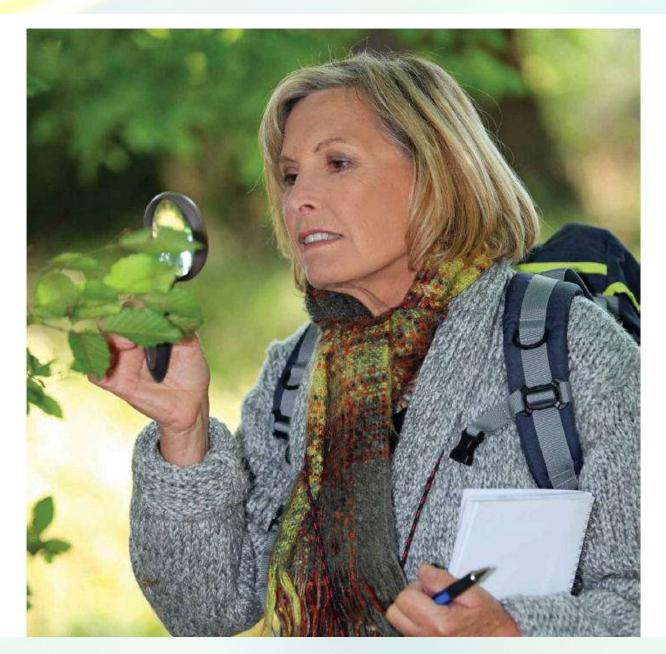
pesticides - substances used to destroy insects that threaten the life or health of plants and animals



Vocabulary Words

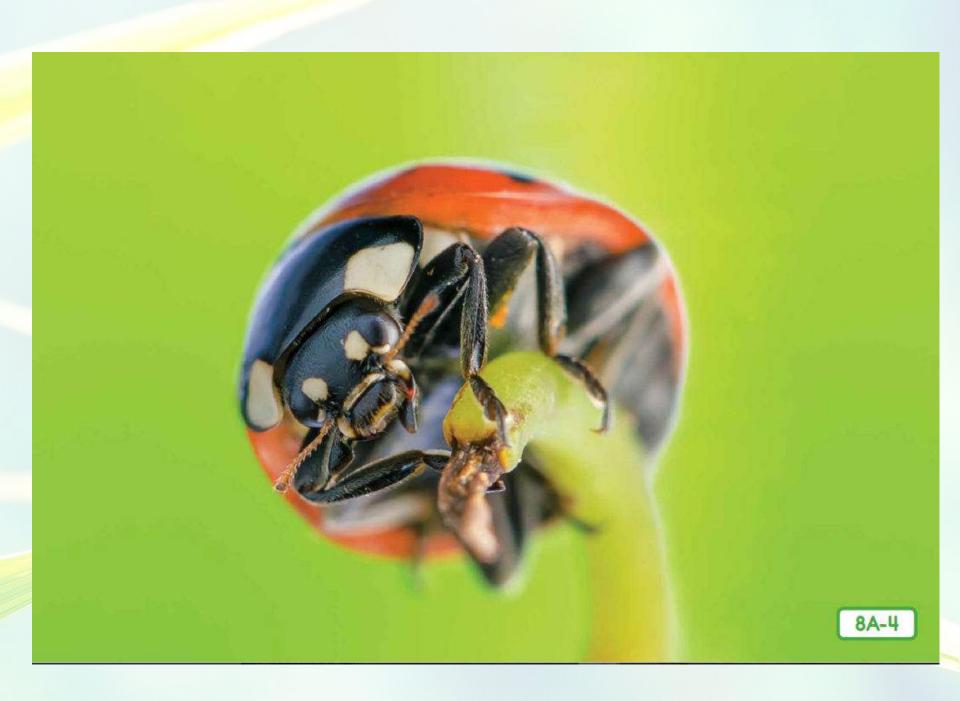
pollinators- insects that carry pollen from one plant to another

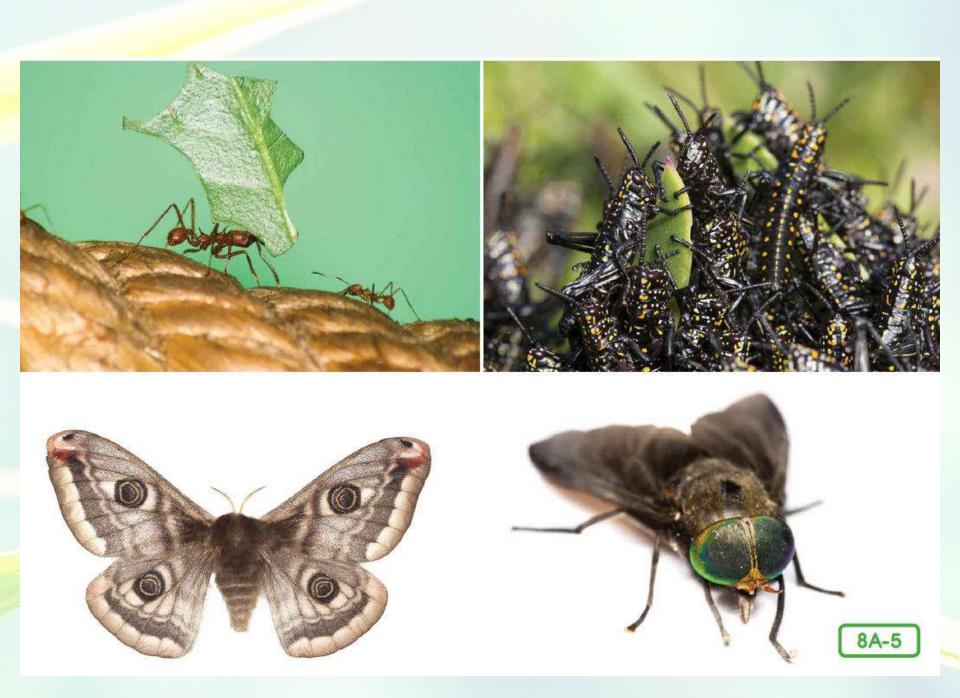


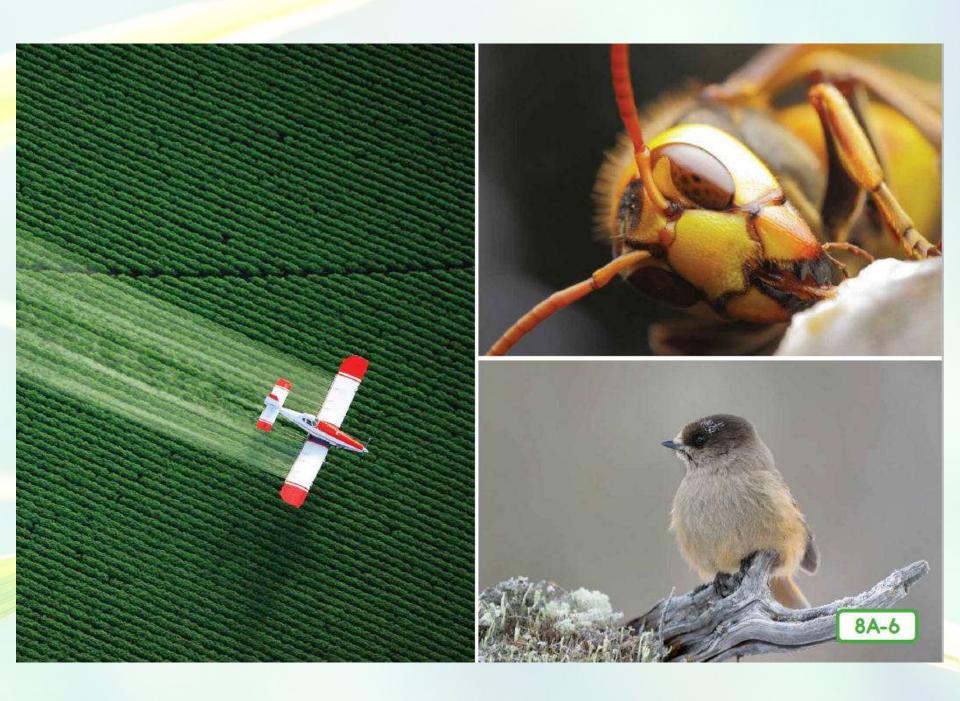






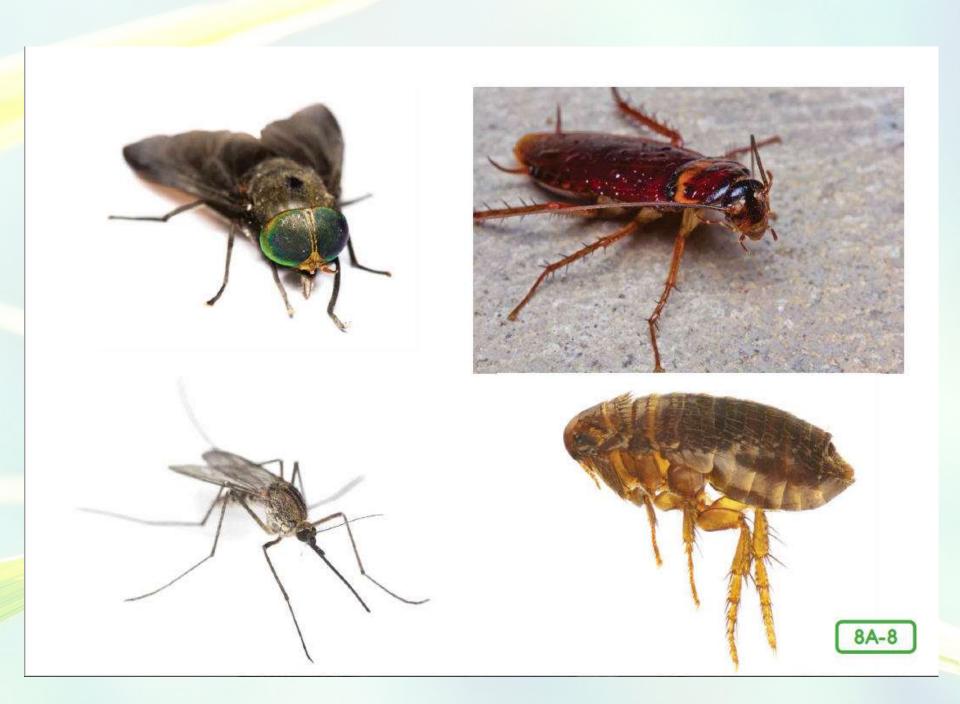








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Comprehension Questions

Which one of these two insects is also a bug? How do you know?





Comprehension Questions

You heard that insects can be friends to humans.

How do insects help humans?

Name one of the many useful products that are produced by insects.

Comprehension Questions

You heard in the read-aloud that insects can be foes, or enemies, to people. How?

You heard that humans can be foes to insects. How?

Turn and Talk

If you had to choose one word to describe the relationship between insects and humans, would you say they are foes or they are friends? Why?

Word Work: Foe

 "Because of this, you can see how a person can be a *foe*, or enemy, of insects."

 An insect can become a foe to people by...

Word Work: Foe

foe
"enemy"

S



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Word Work: Foe

- The tiger attacked the antelope.
- The mother cuddled her newborn baby.
- The boys and girls played on the playground together.
- The Persians battled the Spartens in ancient Greece.
- Sallie gave Issac a balloon on his birthday.

Writing Project

Publish a final copy of your insect writing project. Be sure to include a lifelike illustration (with labels) and five interesting facts about your chosen insect.

| NAME: | | 8.1 | Activity Page |
|---|--------------|-----|---------------|
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| | The cat ran. | | |
| this checklist. | | | |
| Directions: Listen to your teacher's directions about this checklist. | | | |
| sten to your teache | - | | |
| Directions; Li: | | | |

Knowledge 8 Insects

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Extra Resources

Conservation

https://jr.brainpop.com/science/conservation/extinctandend angeredspecies/

