

Words

A Read the clues. Complete the crossword puzzle.

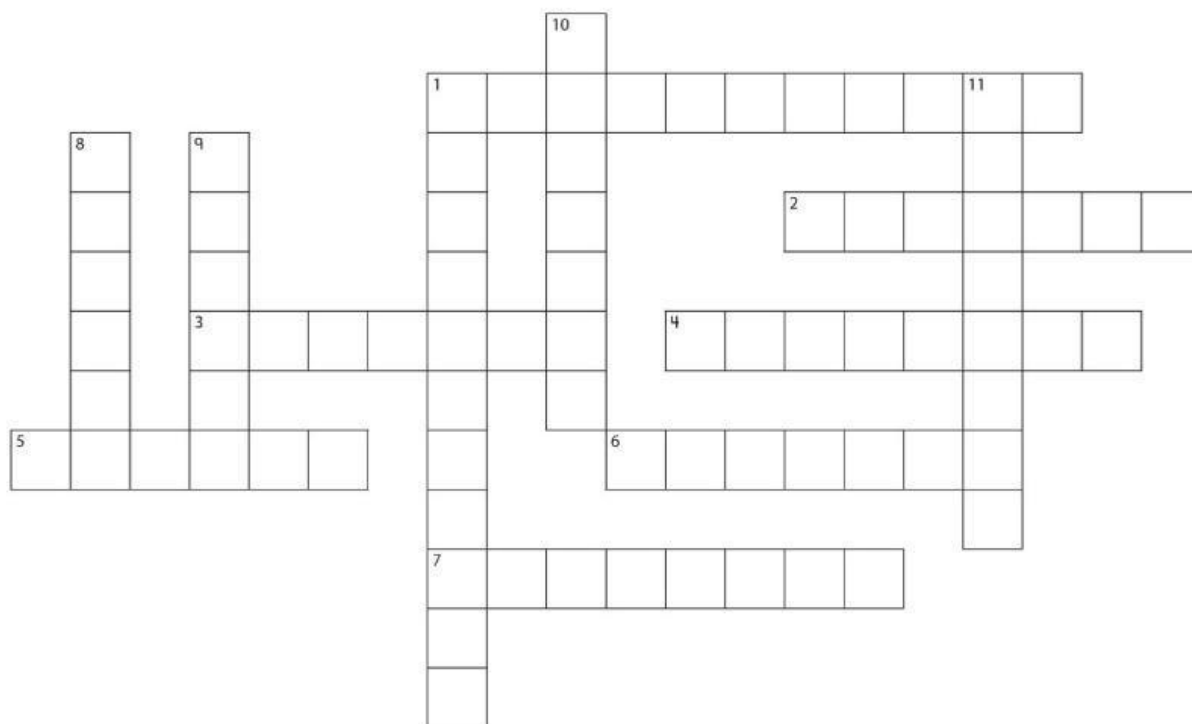
communicate locate collaborate imitate attract threaten defend
approach express produce behave indicate

Across

- 1 Animals _____ in many ways to tell each other what they need to know.
- 2 People talk or use their hands to _____ themselves.
- 3 A flower's bright colors _____ insects and birds to it.
- 4 A bee needs to show, or _____, the location of the flowers to the other bees.
- 5 Sometimes animals are in danger. They need to _____ themselves.
- 6 Bees use the nectar from flowers to _____ honey.
- 7 If a cat is very quiet, it can _____ a bird and catch it.

Down

- 1 Bees are social animals. They work together, or _____.
- 8 Animals _____ in many different ways to communicate with each other.
- 9 Bees look for flowers. When they _____ them, they can collect nectar to make honey.
- 10 Many animals act the same way as each other. They _____ behavior.
- 11 A bear can be a danger to a beehive. It can _____ the hive.



B Choose a word and fill in the blank.

- 1

indicate
imitate

 When you show something, you indicate where it is.
 When you copy what someone does, you imitate them.
- 2

threaten
defend

 When you cause danger, you _____.
 When you protect from danger, you _____.
- 3

communicate
collaborate

 When you work together, you _____.
 When you say something, you _____.
- 4

locate
approach

 When you find something, you _____ it.
 When you go near something you _____ it.
- 5

attract
behave

 When you cause something to come to you, you _____ it.
 When you act a certain way, you _____.
- 6

express
produce

 When you make something, you _____ it.
 When you show feelings, you _____ them.

C Look at the pictures. Write the word.



A Read the article. Why do bees dance?

B Read the article again. Remember: When you read, ask yourself questions.

How Do Bees Communicate?

There are many things honeybees need to know in order to **collaborate**, or work together, to keep the beehive alive. They need to make honey, so they need to tell each other how to **locate** flowers to find nectar. If an animal **threatens** the hive, all the bees need to know so they can **defend** their home.

Honeybees make buzzing sounds when they fly, but that is not how they **communicate** these things. Instead, they do some amazing things to tell other bees things they need to know.

So, how do bees know where to find the flowers?

For many years, people asked this question. Then, in 1943, Karl von Frisch, a scientist, discovered something about bee behavior. When bees return to the hive, they often crawl around, shaking their bodies in a pattern. He told people he had discovered two kinds of “bee dances.” He said bees were communicating by dancing. Here’s how it works: Bees fly around looking for flowers. A flower’s strong smell and bright colors **attract** the bee. When a bee **locates** those flowers, it returns to the hive and does a special “dance.” For a bee, a dance means moving in a certain way as it crawls around. There are “round dances” that bees do when the flowers are close to the hive. There

Think

How do you think bees communicate with each other?

are also “waggle dances,” which the bees do when the flowers are farther away. The bee **behaves** in one of these ways

to indicate to other bees where the flowers are, and how far away they are. More bees crawl around in this pattern, **imitating** the dance to tell other bees about the flowers. Then all the bees fly toward the flowers to collect nectar for their honey.



Bee dances are not the only way a bee communicates. Bees also **produce** chemicals called pheromones. If an animal like a bear **approaches** the beehive, the honeybees’ bodies start to make these special chemicals. Other bees sense these pheromones and know that an animal is **threatening** the hive. They all start to fly out to try to sting the animal and scare it away.

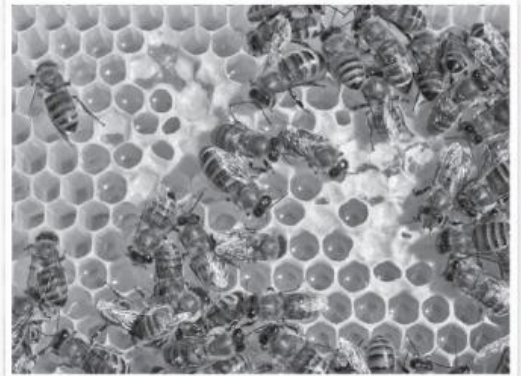
You can see there are many ways to communicate that are different from what people do. Imagine doing a dance to tell someone something! The next time you see a honeybee on a flower, think about the bee that did its special dance to tell other bees where to go.

Understand

Comprehension

A Choose the correct answer.

- 1 Why do honeybees dance?
 - a Honeybees dance to use up extra energy.
 - b They dance to communicate with other bees.
 - c They dance to express if they feel angry or happy.
- 2 What do bee dances indicate to other bees?
 - a They indicate that the bees are happy.
 - b Bee dances indicate if flowers have a lot of nectar in them.
 - c They indicate where the flowers are and how far away they are.
- 3 What are two ways that bees communicate?
 - a They fly, and they buzz.
 - b They do bee dances, and they produce pheromones.
 - c They produce honey, and they fly to flowers.



B Bees are collaborative insects. They work together. Write about how a honeybee dance helps bees to collaborate.

C Words in Context Fill in the blanks.

territory decibel difficulty signal alarm underwater

- 1 Hippos can communicate _____ and on land.
- 2 The space where an animal lives and hunts is its _____.
- 3 Hippos can be as loud as a jet plane. The volume of their bellows can reach 115 _____.
- 4 Vervet monkeys have special _____ signals to communicate to other monkeys that they are threatened by predators.
- 5 When vervet monkeys hear the _____ for eagle, they hide on the ground.
- 6 A honeyguide can find a beehive, but it has _____ getting into the hive.

Grammar in Use



A Study the grammar.

Learn Reported Speech: Told and Asked

Direct Speech	Reported Speech
"Bees are communicating by dancing," he said.	He said that bees were communicating by dancing.
People asked, "How do bees know where to find the flowers?"	People asked how bees knew where to find the flowers.
"Bees are doing a dance," the scientist told them.	The scientist told them that bees were doing a dance.

B Read each sentence. Unscramble the reported speech.

- The article said, "Scientists are discovering how bees communicate."
how / bees / communicate. / were / discovering / scientists / The / article / said / that
The article said that
- "I want to go home," the girl told her mother.
wanted / told / girl / her / mother / that / The / go / home. / to / she

- "What do you want to eat?" asked the boy's mother.
mother / The / boy's / what / he / to / eat. / wanted / asked

- "Honeybees are very interesting insects," our teacher told us.
insects. / interesting / very / Our / honeybees / told / that / were / teacher / us

- "Are honeybees very important to the world?" asked the scientist.
if / asked / The / honeybees / important / to / world. / scientist / the / were / very

- "How do honeybees communicate?" asked the student.
how / asked / communicate. / The / honeybees / student

C Complete the sentences.



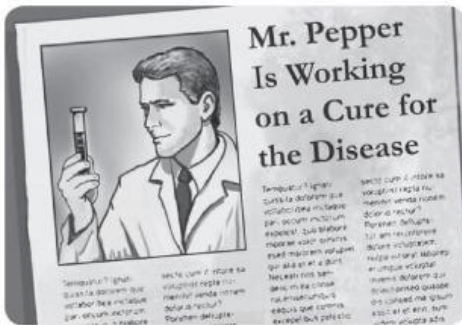
I see a new
kind of flower.

1 The scientist told us that he



Does the parrot
talk?

2 The girl asked if



3 The article said



What are we
learning this
week?

4 He asked me

D Write sentences. Put words in the bubbles for each boy or girl. Then use reported speech to tell what they said.



I like

1



I'm working on

2



I want

3



I'm going to the

4

Word Study

A Add *-ion* to change the words. If the word ends in *e*, drop the *e* first.

- 1 *protect* → + *-ion* → protection
- 2 *migrate* → *migrate* + *-ion* → migration
- 3 *connect* → + *-ion* → _____
- 4 *imitate* → + *-ion* → _____

B Fill in the chart.

Verb	Noun
connect	connection
educate	
	migration
locate	
decorate	
	protection
prevent	
collaborate	
	communication
	imitation

C Change the word to complete the sentence.

- 1 (educate) My mother said that it is very important to get a good _____.
- 2 (migrate) Butterflies travel thousands of miles every year during their _____.
- 3 (collaborate) In beehives, _____ is very important.
- 4 (locate) The bees do a dance to indicate the _____ of the flowers.
- 5 (prevent) The most important cure for diseases is _____.
- 6 (communicate) There are many different forms of animal _____.

D Use three *-ion* words to make sentences of your own.

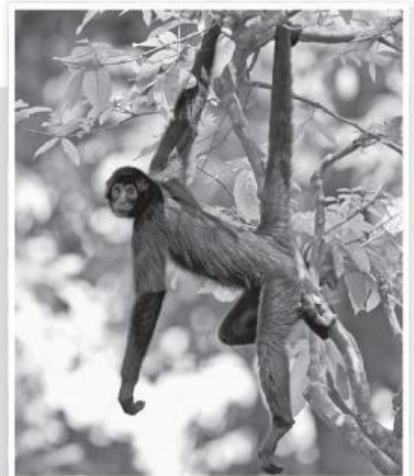
Writing Study

A Write the word to complete the sentence. Change the verb if you need to.

- 1 How do ants communicate? _____ anybody know?
- 2 Everybody _____ honey, but nobody _____ to get stung by bees.
- 3 Parrots imitate human speech. They _____ a lot of words that they hear.
- 4 A dog can communicate by barking. It barks when it _____ to warn people about danger.
- 5 Do you know anyone who _____ the piano?
- 6 All my friends _____ to the same school.

B Write a paragraph about a place you have seen animals. Or write about animals you have studied. Use pronouns *it*, *they*, *he*, and *she*. Make sure that you use correct forms of verbs with your pronouns. Use reported speech or direct speech to write about what someone says.

I like to go to the zoo. I like all the animals, but my favorite animals there are the spider monkeys. They like to swing on the trees, and they look like they're having so much fun. The zookeeper told us that some spider monkeys swing up to 40 feet! The last time I was there, he showed us a little baby spider monkey. It was so cute! I'd like to learn more about monkeys. Maybe one day I'll work in a zoo. That would be fun!



Writing



- A** Read this descriptive essay. Label the different sections of the essay.

_____ Last year, my family went to Morelia, Mexico, to see monarch butterflies. These butterflies migrate very long distances, and you can see them in the mountains when they rest. We went to the butterfly reserve. A guide met us there and took us on a trip on horses up the mountain. At first we only saw a few butterflies, but when we got further into the woods, we looked around us. There were millions of butterflies hanging from the branches and flying around us and in the sky. There were so many butterflies that we could actually hear the sound of their wings.

_____ The guide told us a lot about the monarchs. They travel long distances when they migrate every year. They start up north in the fall and travel all the way down to Mexico and back in the spring. A butterfly migration can be over 2,000 miles! A single butterfly does not make that whole trip, because it only lives about two months. The female butterflies lay eggs during the trip, and the new butterflies continue the trip. The cycle repeats 3 or 4 times so that more new butterflies keep flying. Finally the butterflies return to where they started.

_____ The guide also told us that there are still a lot of things scientists don't know about monarchs. How do butterflies know the path of migration and come back to the same place? Scientists also want to know more about how monarch butterflies communicate.

_____ The butterflies were so beautiful and interesting, and I want to go back someday to see them again. I want to read a lot more about monarch butterflies. Maybe someday I will be a scientist who learns their secrets!

- B** Match the questions and the correct answers.

1 What is the introduction of the essay about?

2 What is the body of the essay about?

3 What is the conclusion of the essay about?

☐ a It gives details that the guide told the family.

☐ b It's about the essay writer's dream to become a scientist.

☐ c It's about a trip to see the monarch butterflies in Mexico.

Write a Descriptive Essay

A You're going to write a descriptive essay. Brainstorm. Write your ideas in the word web below.

Adjectives

What interests me

Ideas for pictures

B Outline your ideas by filling in the chart.

Topic:	
Detail 1:	Detail 2:
Detail 3:	Detail 4:
Conclusion:	

C Now write the first draft of your descriptive essay in your notebook.

D My Writing Checklist

Did you...

- | | |
|---|--|
| ☐ choose a topic that interests you? | ☐ draw and label pictures to share with the class? |
| ☐ write a sentence in your first paragraph that clearly states your topic? | ☐ finish your essay with something that reminds the reader of how you started it? |
| ☐ use adjectives to describe people and things? | |

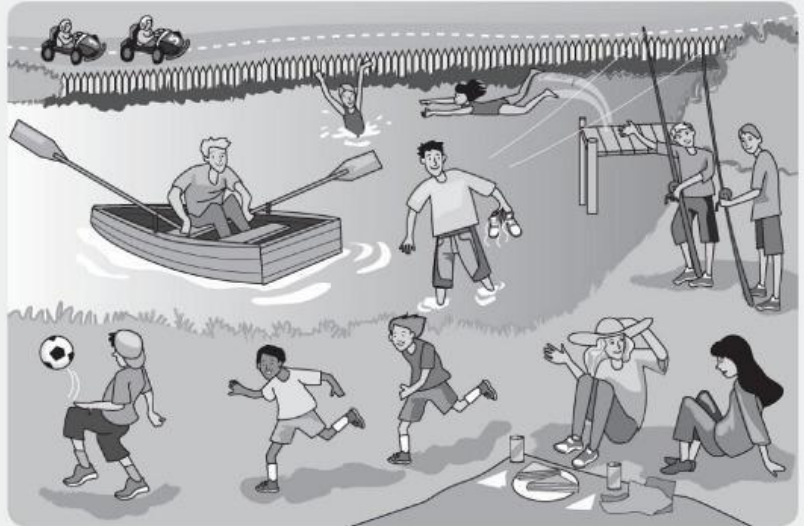
E Now write the final draft of your descriptive essay in your notebook.

What have you learned?

Review

- A** Write sentences to describe the picture. Use as many words as you can.

race wade paddle dive splash float jog plod
chuckle fishing rod hook grin



- B** Write the reported speech.

1 "I want to see the monkeys," she said.

2 "The dolphins need help!" said Lucas.

3 "What do you like to do?" asked Susan.

4 "I am learning about monkeys," she told her mother.



BIG QUESTION 4

How do animals communicate?

C Look at **A**. Write what you think two people in the picture are saying. Use direct and reported speech.

- 1 Direct speech: _____
Reported speech: _____
- 2 Direct speech: _____
Reported speech: _____
- 3 Direct speech: _____
Reported speech: _____
- 4 Direct speech: _____
Reported speech: _____

D Choose a word from the box to complete each sentence.

communication location collaboration imitation attraction production
indication migration education prevention decoration protection

- 1 The _____ of honey is the job of the bees.
- 2 _____ of the human voice is something a parrot knows how to do.
- 3 The _____ of monarch butterflies covers thousands of miles from Canada to Mexico.
- 4 A bee does a dance to tell other bees about the _____ of flowers.
- 5 When the hive is threatened, bees can sting animals. This is for the _____ of the hive.
- 6 My _____ this week includes learning how animals communicate.
- 7 We have learned about many forms of animal _____.
- 8 For bees, _____ is important, but working together is also important for people.
- 9 We use flowers for _____ in our homes, but bees need flowers to survive.
- 10 When a dog wags its tail, it's an _____ that it is happy.
- 11 The _____ of the loss of the bees' habitat is very important.
- 12 Animals have different ways to show _____ to another animal.

E Write sentences. Use some of the words above. You may use a different form of the word (for example, *educate* instead of *education*).

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____