

READING COMPREHENSION

Big Picture

A Read the following pairs of sentences for each section of Reading 1. In each pair, write *MI* next to the main idea and *SD* next to the supporting detail.

1. Chilean Flamingoes

SD a. Flamingoes help each other look after their babies.

MI b. Flamingoes live in very large groups in order to protect each other.

2. Gray Wolves

SD a. The leaders of the wolf pack make all the decisions for the group.

MI b. Wolves live together in groups and do many things together.

3. Spotted Hyenas

MI a. Spotted hyenas live in large groups headed by females.

SD b. Hyenas eat very quickly.

4. Tufted Gray Langurs

SD a. Male langurs kill babies in order to become the new leader.

MI b. Gray langurs live together in three types of groups called troops.

B Compare answers to Exercise A with a partner.

Close-Up

A Decide which of the following statements are true or false according to the reading. Write *T* (True) or *F* (False) next to each one.

T 1. Flamingoes live in groups of at least a dozen members.

T 2. Flamingoes are in danger when they eat.

F 3. Flamingo groups are so large that parents can never find their offspring.

T 4. Wolf packs can include individuals that are not related to each other.

F 5. A wolf pack consists of several adult males.

F 6. Low-ranking male hyenas have power over low-ranking female hyenas.

F 7. Hyenas don't hunt together.

F 8. Females are the leaders in langur troops.

F 9. High-ranking female langurs are the best fighters.

T 10. Low-ranking langur males in mixed troops cannot breed.

B Work with a partner or in a small group. Change the false statements in Exercise A to make them true.

C Scan the fact boxes in Reading 1 to answer the following questions.

1. Which animals are mammals? wolf, hyena, langur
2. Which animal lives in Africa? hyena
3. Which animals eat only meat? wolf

Reading Skill

Organizing Information in a Chart

When you organize information in a chart, it helps you to understand the ideas in the reading. It also helps you to recognize relationships among the ideas, such as similarities and differences.

A Complete the chart below with information from Reading 1. If there is no information in the reading for an item in the chart, write *no information*. One answer for each category is done for you.

Animal	Size of Group	Who Raises the Offspring	Group Leader	Process to Choose Leader
Chilean Flamingoes	dozens to 1 million +	all adults (in nurseries)	no info	no information
Gray Wolves	6-15	all adults	one male	oldest, best hunters
Spotted Hyenas	up to 80	only females	females	no info
Tufted Gray Langurs	11-60 individuals	no info	1 male	fighting

B Use the chart in Exercise A to write short answers to the following questions.

1. Which animal group can have the most members? Flamingos
2. Which animal group can have the fewest members? wolves
3. In which animal groups do both males and females take care of the young? Flamingos, wolves
4. In which animal group is a female the group leader? hyenas
5. In which group does the winner of a fight get selected as leader? langurs

VOCABULARY PRACTICE

Academic Vocabulary

A Find the words in bold in Reading 1. Use the context to help you match sentence parts to create definitions.

- | | |
|---|--|
| <u>D</u> 1. To protect (Par. 2) someone | a. it is sudden or surprising. |
| <u>E</u> 2. To determine (Par. 4) something | b. is his or her position in a group. |
| <u>C</u> 3. If something is dominant (Par. 5), | c. it is more powerful, successful, or noticeable than other things. |
| <u>F</u> 4. To cooperate (Par. 5) | d. is to keep someone safe. |
| <u>B</u> 5. An individual's status (Par. 6) | e. is to make a decision about it. |
| <u>A</u> 6. If something is dramatic (Par. 7), | f. is to work together or help each other. |

B Read the following sentences and choose the correct word to complete each one. The correct word often appears with the academic word in bold.

- Certain factors **determine** b a new male will become the leader in a chimpanzee group.
a. which b. whether
- Penguins often swim in large groups. This helps **protect** them a predators.
a. from b. to
- When the leader of a wolf pack dies, there are often **dramatic** a in the group. There can be a lot of fighting until a new leader emerges.
a. changes b. forces
- Even weaker female hyenas have a **dominant** b over male hyenas. One reason may be because female hyenas are larger than males.
a. top b. role
- Trina, a young female gorilla, **cooperates** b the zookeepers.
a. to b. with
- Unrelated adult wolves don't have a **status** in their packs. Even though they are old, they don't have any power.
a. high b. strong

Multiword Vocabulary

A Find the words in the box below in Reading 1. Then use the words from the box to complete the multiword vocabulary.

along comes to in numbers keep over time

- | | |
|--|--|
| 1. safety <u>in numbers</u> (Par. 2) | 4. when it <u>comes to...</u> (Par. 5) |
| 2. <u>keep</u> _____ watch over (Par. 2) | 5. get <u>along</u> with (Par. 6) |
| 3. from <u>time</u> _____ to time (Par. 4) | 6. takes <u>over</u> _____ (Par. 7) |

B Complete the following sentences with the correct multiword vocabulary from Exercise A.

1. Some animals do not feel protected unless they live in large groups. They find safety in numbers. Zebras are a good example of this.
2. It is unusual for males in many animal groups to keep watch over their young. It is usually the females who take care of their offspring.
3. When it comes to removing the leader of a troop, gray langurs can be very aggressive.
4. Most wolf packs do not have any unrelated adult males, but from time to time an unrelated adult male is accepted into a group.
5. Once a new wolf takes over the group, he has the dominant role and is the only male that can breed.
6. Young wolves sometimes don't get along with their brothers and sisters very well when they are young. They often fight.

Use the Vocabulary

Write answers to the following questions. Use the words in bold in your answers. Then share your answers with a partner.

1. Which professions in your community have the highest **status**? Why do they have high **status**?
2. Do you like to **cooperate** with other students on group projects? Or do you prefer to work alone? Give examples.
3. How do you feel when a **dominant** individual in a group **takes over**? Does it bother you? Why, or why not?
4. Do you **take over** group situations **from time to time**? Why, or why not?
5. Is there anyone you don't **get along with**? Explain your answer.
6. How do you **determine** which classes you will take each term? What factors do you consider?

THINK AND DISCUSS

Work in a small group. Use the information in the reading and your own ideas to discuss the following questions.

1. **Summarize.** What did you learn about the behavior of animals in groups? Did any information surprise you? Explain.
2. **Identify similarities.** How is animal behavior in groups similar to human behavior in groups?
3. **Express an opinion.** Is it useful to study animal behavior? What can we learn from animal behavior?

Note: This activity asks you to connect several readings. The final exam will do the same.

B Read the following statements. Check (✓) the one that expresses the author's purpose for writing Reading 2.

- 1. To describe the intelligence of ants
- 2. To show what we can learn from swarm intelligence
- 3. To show how ants and bees are similar

Close-Up

A Choose the answer that best completes each of the following sentences.

1. Ants, bees, pigeons, and herrings B.
 - a. are the smartest swarming animals
 - b. are examples of swarming animals
 - c. behave the same way as humans
2. One of the characteristics of swarm intelligence is A.
 - a. that there are no leaders
 - b. that individuals don't work together as a group
 - c. that individuals understand the big picture
3. Individual ants A.
 - a. interact using pheromones
 - b. are intelligent
 - c. don't have roles
4. Bees communicate A.
 - a. by dancing
 - b. by touching each other
 - c. by making more noise
5. Thomas Seeley thinks that swarm intelligence can help humans B.
 - a. improve their intelligence
 - b. improve their decision making
 - c. increase conflict

B Compare answers to Exercise A with a partner. Then answer the questions you wrote for Exercise A on page 116.

Reading Skill

Recognizing Facts and Theories

Good readers notice the difference between facts and theories presented in a reading. In academic writing, authors use facts to support their main ideas or to report on the ideas of others. Authors also include theories or ideas that they believe are true, but that they are not yet certain about. When they aren't certain about something, they use words like *seem*, *appear*, and *suggest*.

Fact: *Swarming occurs when large numbers of individual animals move, work, or cooperate as a group.*

Theory: *Swarms appear to know exactly where they are going, what they are doing, and why they are doing it.*

3. To solve a problem, it can be helpful to talk to friends / take a break.
4. It's difficult to follow the rules when you disagree / are upset / are young.

D Work with a partner and write four sentences that include any four of the vocabulary items below. You may use any verb tense and make nouns plural if you wish.

cooperate with furthermore in search of
 from time to time interactions between keep watch over

could be on the final!!

Connect the Readings

A Look back at Readings 1 and 2 to complete the chart below. Put a check (✓) in the boxes to show which topics appeared in each reading. Note that some topics appeared in both readings.

	Reading 1	Reading 2
1. Family groups	✓	✓
2. Group behavior	✓	✓
3. Leadership	✓	✓
4. Breeding and parenting	✓	
5. Cooperation between individuals	✓	✓
6. Competition between individuals	✓	
7. Intelligence	✓	✓
8. Female and male roles	✓	
9. Communication between individuals	✓	✓
10. Using knowledge of animal behavior to help humans		✓

- B** With a partner or in a small group, compare answers to Exercise A. Then discuss the following questions.
1. Find the topics that appear in both readings. In which reading was each topic more important?
 2. Of all of the topics listed in Exercise A, which was the most interesting to you? Why?
- C** Discuss the following questions with a partner. Use your understanding of the readings and your own ideas.
1. Which group of animals discussed in Reading 1 have swarm-like behavior as described in Reading 2?
 2. Which of the animals discussed in Readings 1 and 2 sound the most intelligent to you? Give reasons for your answers.
 3. Think about cooperation and competition in your classroom. In which situations do you cooperate with other students? In which situations do you compete with other students?



Vocabulary Review

A Complete the paragraphs with the vocabulary below that you have studied in the unit.

dominant role	is in charge	reduce conflict	take over
high status	key component	suitable location	when it comes to

Chimpanzees live in groups of several dozen members. Each group has a strict hierarchy with one male having the dominant role¹. This individual is in charge of² of the group. One of his roles is to reduce conflict³ and maintain order, especially when there are problems within the group. Also, he can mate with any female he wants.

A male chimpanzee can often become a leader without using physical force. In fact, when it comes to⁴ group leadership, the dominant male does not even have to be the largest or strongest individual in the group. This is because a chimpanzee leader can take over⁵ a group just by creating relationships with allies—other members of the group who support him.

Female chimpanzees have their own hierarchy within the group. In some groups, a daughter of a high-ranking mother will inherit her mother's high status⁶. A key component⁷ of a female's high status is being able to make decisions about food. Her responsibility is to make sure that the group will go to a suitable location⁸ for finding food.

B Compare answers to Exercise A with a partner. Then discuss the following question.

What is the difference between male and female chimpanzee hierarchies?

C Complete the following sentences in a way that shows that you understand the meaning of the words in bold.

- Parents often want to **protect** their children from danger/harm/trauma/conflict.
- The most **dramatic** changes in my life happened when I was 20.

5. A **key component** (Par. 4) of group decision making is discussing all of the possible results of the decision with the group members.
 - a. one of the steps
 - b. an important part
6. When bees go in search of (Par. 4) a new home, they often send scouts to go ahead of the group to find a good location.
 - a. to look for
 - b. to choose

B Compare your answers to Exercise A with a partner.

Use the Vocabulary

Write answers to the following questions. Use the words in bold in your answers. Then share your answers with a partner.

1. What are some positive ways to avoid **conflicts** with friends or family members?
2. What animal is the most **intelligent**, in your opinion? Give examples of this animal's intelligence.
3. How important is body language in human **interaction**? Is it a **key component**? Why, or why not?
4. Libraries and study rooms should be in quiet places so students won't be distracted by noise. Is the library and/or study area in your school in a **suitable location**? Why, or why not?
5. What is the best way to **solve serious problems** in your community?
6. How do you feel when you have to be very **close together** with many other people in a public place such as in an elevator, on the subway, or at a concert?



THINK AND DISCUSS

Work in a small group. Use the information in the reading and your own ideas to discuss the following questions.

1. **Summarize.** How do bees decide where the best place to move their hive is?
2. **Apply knowledge.** Why do you think swarms might be more efficient if the individuals aren't particularly intelligent?
3. **Make connections.** In what situations do you think humans might behave like swarms?

This may be related to the final reading

- A** Read the following paragraph. Decide if the sentences are presented as facts or theories. Then write *Fact* or *Theory* on the lines below.

How does an ant colony decide what to do without a leader? (1) Ants communicate by touch and smell. (2) When one ant bumps into another, they sniff each other with their antennae. (3) The ants seem to be sniffing to find out if the other ant belongs to the same nest or not. (4) The ants also appear to be using their antennae to figure out where the other ants have been working. (5) Ants that work outside the nest smell different from those that stay inside. (6) In addition, every morning, some ants go out and return to the nest before the others leave. (7) As the first group enters the nest, the ants touch antennae briefly with the ants about to go out. (8) This suggests that some ants wait for the other ants to find a food source for them. (9) After the others return, it appears that they use their antennae to discover where the first group of ants found the food source.

- | | | |
|------------------|------------------|------------------|
| 1. <u>Fact</u> | 4. <u>Theory</u> | 7. <u>FACT</u> |
| 2. <u>FACT</u> | 5. <u>FACT</u> | 8. <u>Theory</u> |
| 3. <u>Theory</u> | 6. <u>FACT</u> | 9. <u>Theory</u> |

- B** Reread paragraph 1 in Reading 2. Find the one theory and write it below.

Theory: * Look for ["appear that" (P.2)], ["appears to be" (P.3)], ["seem to have" (P.3)]
 & "appear to be"

- C** Read the following statements from paragraph 2 in Reading 2. Write *Fact* or *Theory* next to each one.

- FACT 1. Swarms of ants can do many difficult tasks.
FACT 2. For example, they can find the shortest path to the best food source.
Theory 3. It may appear that individual ants build nests and defend their homes, . . .
FACT 4. . . but ants aren't clever architects or soldiers—at least not as individuals.

- D** Read the following sentences from paragraph 3 in Reading 2. Write *Fact* or *Theory* on the lines before each sentence.

- FACT₁ Swarm intelligence is the collective behavior of large groups.
Theory₂ The key feature of swarm intelligence seems to be that no one is in charge.
Theory₃ In the case of ants, there appear to be no leaders. Theory₄ No ant seems to be telling any other ants what to do. FACT₅ There is a queen ant, but her only role is to lay eggs. FACT₆ Yet, a colony of half a million ants functions perfectly without any managers at all. Theory₇ Furthermore, no single ant seems to have any knowledge about the big picture—the main goals or objectives.

* Look at the highlighted verbs!