Rising 3Rd Grade Scholars Summer Packets

Reading Practice Pages

Lesson 8
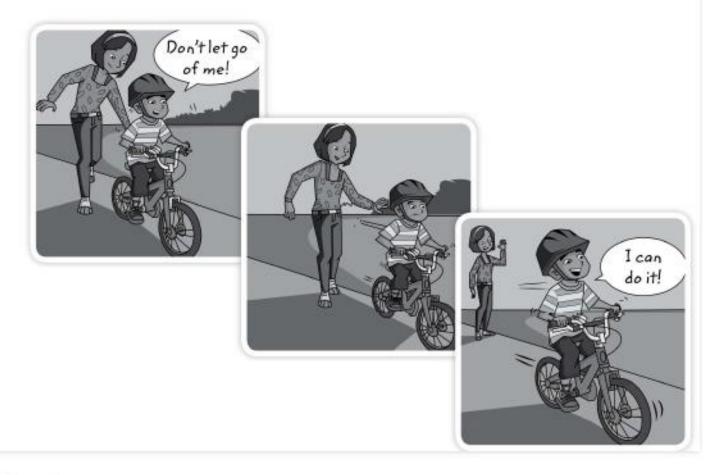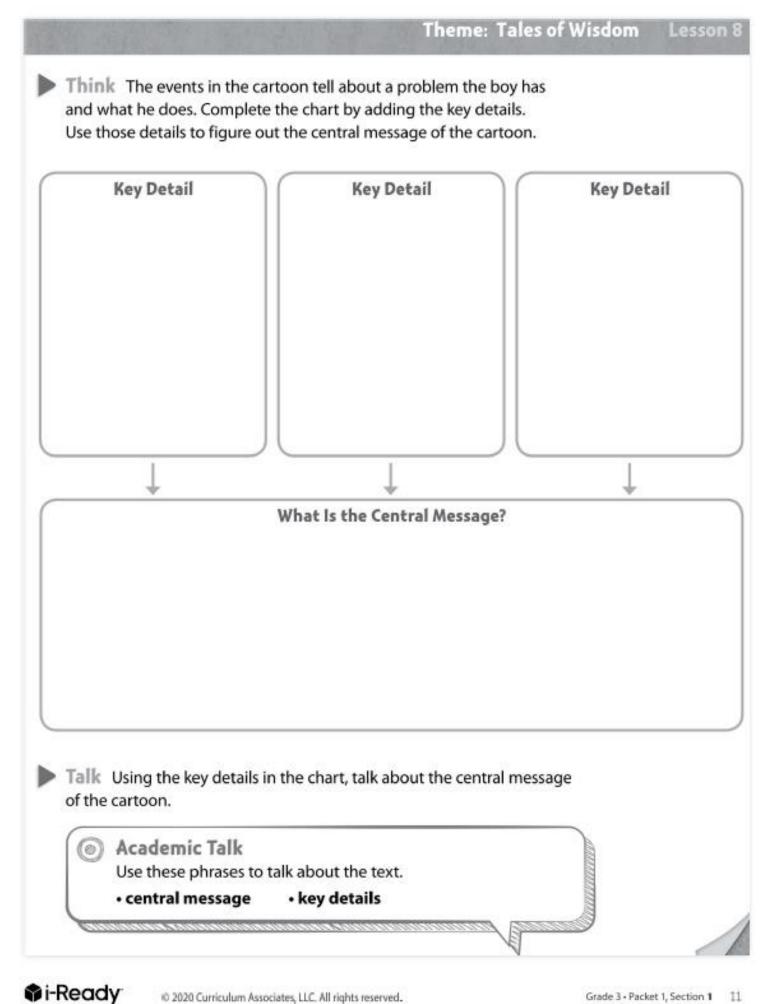# Determining the Central Message

Learning Target ➤ Use the key details and events of a story to figure out the central message, or lesson, that the author wants to share with readers.

▶ **Read** Many stories have a **central message,** or lesson, the author wants to share. The story teaches the lesson through the characters, the events that happen, and what the characters learn.

As you read, looking for the **key details** will help you to find the central message and understand what you read.

Look at the cartoon. Think about a lesson the boy learns by the end.

▶ **Think** The events in the cartoon tell about a problem the boy has and what he does. Complete the chart by adding the key details. Use those details to figure out the central message of the cartoon.

Key Detail	Key Detail	Key Detail

↓ ↓ ↓

What Is the Central Message?

▶ **Talk** Using the key details in the chart, talk about the central message of the cartoon.

⊙ **Academic Talk**
Use these phrases to talk about the text.
- **central message**
- **key details**
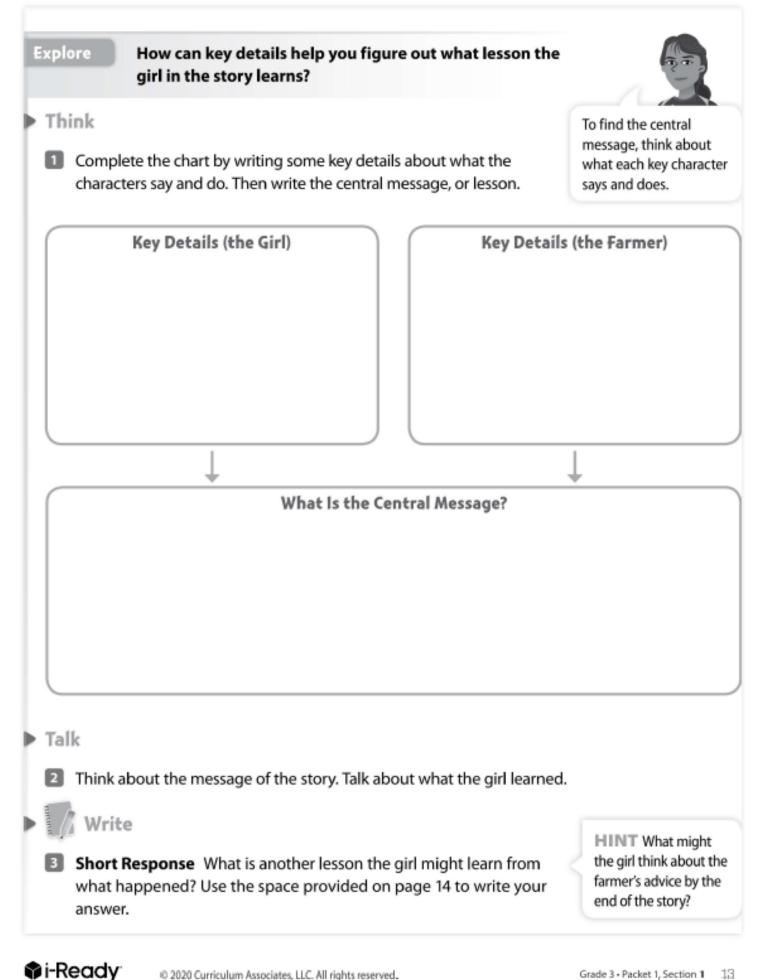
The Girl and the Apples

by Tala Rutchel

1   One fall afternoon, a girl went to a farm to pick apples. She was in a hurry, so she picked carelessly both ripe apples and unripe ones. When she finished, her wagon was filled with a small mountain of apples.

2   The girl asked the farmer, "Quick, tell me how long you think it will take me to get back home."

3   The farmer thought carefully. Then he said, "Be patient. If you go slowly, you will be back soon. If you go fast, you will not get back until night. It's your choice."

4   The girl thought, "How can that be? How can it take so long if I go fast?"

5   The girl wanted to get back home as soon as possible, so she rushed her horse and wagon onto the road. She made her horse walk very fast.

6   And suddenly . . . bump! Off fell some apples.

7   Every time she hit a bump, more apples rolled off her wagon. Then she had to stop and put them back on the wagon. Because of all the delays, it was night before she got home.

Close Reader Habits

Underline key details that help you figure out the central message.

How can key details help you figure out what lesson the girl in the story learns?

▶ **Think**

> To find the central message, think about what each key character says and does.

1 Complete the chart by writing some key details about what the characters say and do. Then write the central message, or lesson.

Key Details (the Girl)	Key Details (the Farmer)

↓ ↓

What Is the Central Message?

▶ **Talk**

2 Think about the message of the story. Talk about what the girl learned.

▶ 📓 **Write**

> **HINT** What might the girl think about the farmer's advice by the end of the story?

3 **Short Response** What is another lesson the girl might learn from what happened? Use the space provided on page 14 to write your answer.

The Girl and the Apples

HINT What might the girl think about the farmer's advice by the end of the story?

3 **Short Response** What is another lesson the girl might learn from what happened?

Don't forget to check your writing.

Sharing the Crops

a folktale from England

1   Once a farmer rented some land. "How much does it cost to use this land?" the farmer asked the landowner.

2   The owner wanted to get the better part of the deal. So he said, "I'll take the top half of the crop, and you can take the bottom half."

3   But the farmer was clever. He planted potatoes because they grow in the ground. At harvest time, he gave the owner the potato tops, which are not good for anything.

4   The owner knew he had been outsmarted. He said, "Next year, I want the bottom half of your crops."

5   So the next year the farmer planted oats, which grow at the top of long grasses. The bottom half is useless grassy straw. That's what the farmer gave to the owner.

6   This time the owner said, "Next year, I'll take the top and the bottom. You can have the middle."

7   So this time, the farmer planted corn. At the top of each corn stalk are tassels. At the bottom are woody stalks. In the middle is where the tasty sweet corn grows.

8   For a third time, the owner had been outsmarted. Now it was the farmer's turn to suggest a deal. "From now on," he said, "why don't you take half of whatever I grow? Whatever I get, you will get the same."

9   This was a fair deal at last. From that day on, the owner and the farmer shared the crops equally.

Close Reader Habits

Why does the landowner keep changing the deal he made with the farmer? **Underline** the key details about the first deal between the landowner and the farmer.

▶ Think

1 This question has two parts. Answer Part A. Then answer Part B.

Part A
What is the central message of "Sharing the Crops"?

    A It is wrong to try to cheat others.

    B Never make a deal with a clever farmer.

    C The best part of a crop is usually at the top.

    D If a plan doesn't succeed, keep trying.

Part B
Which sentence from the story **best** supports the answer you chose for Part A above?

    A "Once a farmer rented some land."

    B "The owner wanted to get the better part of the deal."

    C "This was a fair deal at last."

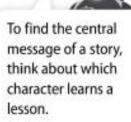   **D** "So this time, the farmer planted corn."

> To find the central message of a story, think about which character learns a lesson.

▶ Talk

2 Using key details from the text, talk to your partner about how the farmer outsmarts the landowner.

▶ 📓 Write

3 **Short Response** Explain which character in "Sharing the Crops" learns a lesson. Use one detail from the folktale to support your response. Use the space provided on page 19 to write your answer.

> **HINT** Reread to look for the character who learns a lesson.

Sharing the Crops

3 **Short Response** Explain which character in "Sharing the Crops" learns a lesson. Use one detail from the folktale to support your response.

> **HINT** Reread to look for the character who learns a lesson.

_____

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Check Your Writing

☐ Did you read the prompt carefully?

☐ Did you put the prompt in your own words?

☐ Did you use the best evidence from the text to support your ideas?

☐ Are your ideas clearly organized?

☐ Did you write in clear and complete sentences?

☐ Did you check your spelling and punctuation?

Real-Life Connections

Introduction When reading, you can connect the words on the page to your own life or to the wider world. Connecting words with real-life events can make their meaning clearer.

- What do you think of when you read the word *friendly*? You might remember a time when a friendly classmate smiled at you.
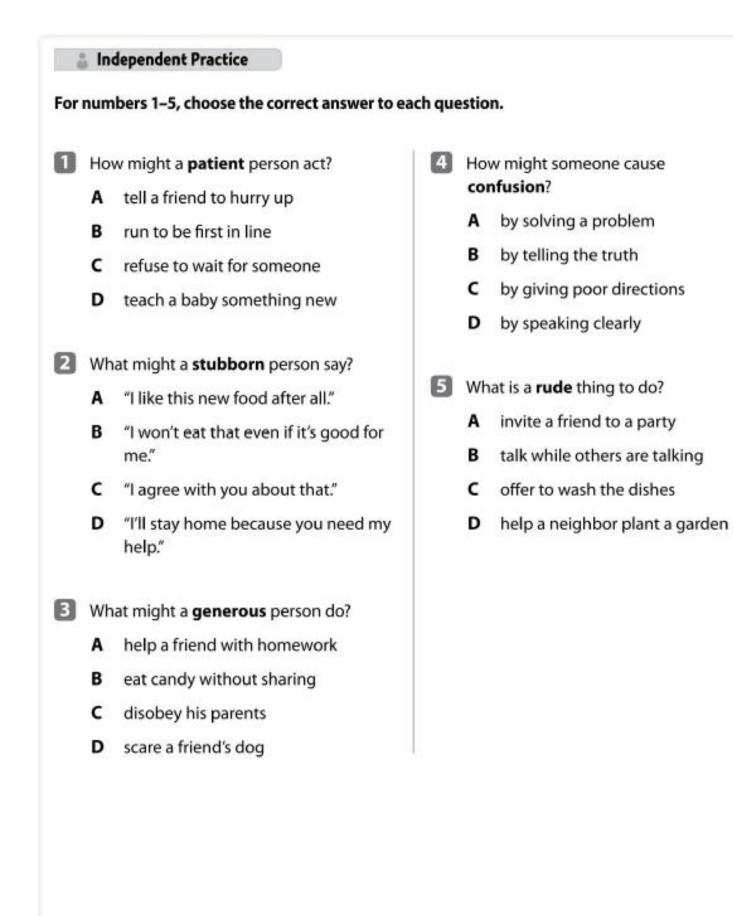
  A friendly classmate smiled and said, "Hi."

- When you think about the word *friendly*, you might also remember what friendly people and animals in your town or city have done.

  A friendly lady in town gives neighbors vegetables from her garden.

  Friendly dogs wag their tails and want to be patted.

Guided Practice Circle the correct words to complete each sentence. Then work with a partner to think of more ways to complete each sentence.

HINT To help think of more ways to complete each sentence, ask your partner questions like these.
- When were you helpful?
- What do you do when you are curious about something?

1 A helpful person might _____ .

  do chores   **break a glass**   **trip and fall**

2 If a person is curious, she might _____ .

  go to sleep   **read a book**   **wrap a gift**

3 It would be selfish to _____ .

  take all the toys   **give presents**   **help others**

4 A student could interrupt a class by _____ .

  writing a story   **doing math**   **talking loudly**

For numbers 1–5, choose the correct answer to each question.

1 How might a **patient** person act?

   A tell a friend to hurry up

   B run to be first in line

   C refuse to wait for someone

   D teach a baby something new

2 What might a **stubborn** person say?

   A "I like this new food after all."

   B "I won't eat that even if it's good for me."

   C "I agree with you about that."

   D "I'll stay home because you need my help."

3 What might a **generous** person do?

   A help a friend with homework

   B eat candy without sharing

   C disobey his parents

   D scare a friend's dog

4 How might someone cause **confusion**?

   A by solving a problem

   B by telling the truth

   C by giving poor directions

   D by speaking clearly

5 What is a **rude** thing to do?

   A invite a friend to a party

   B talk while others are talking

   C offer to wash the dishes

   D help a neighbor plant a garden

WORDS TO KNOW
As you read, look inside, around, and beyond these words to figure out what they mean.

- **trotted/trotting**
- **stall**

ZEL,
the Gentle Donkey

A FOLKTALE FROM HAITI

1 Long ago, there was a gentle donkey named Zel. Everyone in town loved Zel because she was so pleasant and kind. But Zel's owner, Madame Charity, was angry and mean. She was so mean that she threw rocks at birds for singing too loud. She yelled at little boys when they laughed. But she was the meanest of all to poor Zel.

2 Every Saturday, Madame Charity sold sugar and rice at a market. Whoever arrived earliest sold the most. But Madame Charity always woke up late. Then she got angry and yelled at Zel, who had done nothing wrong.

3 In a huff, Madame Charity would then load heavy bags of rice and sugar onto Zel's back. Last, she climbed on top of it. "Hurry, Zel!" she yelled. "Get me to market as fast as you can!" Although Zel always trotted as fast as she could, it was never fast enough for Madame Charity.

4   One day, Zel's friend Touloulou the crab visited. "Did you have a good day at the market?" asked Touloulou.

5   "Madame Charity was mad at me all day. I work as hard as I can, but she is always mean to me."

6   "Madame Charity is always late. She won't blame herself, so she blames you," said Touloulou.

7   "Yes," said Zel. "And because everyone is afraid of her angry tongue, she never sells much at the market."

8   "I will help you," said Touloulou.

9   The next Saturday, Madame Charity woke up at 9 a.m. "Oh, no! I'm late again!" she yelled. As she tossed her heavy bags onto Zel's back, Touloulou the crab grabbed onto the hem of her long skirt. Madame Charity climbed on Zel's back. Touloulou held tightly to her skirt.

10   Zel started trotting. Madame Charity remembered how late she was. She opened her mouth to speak angrily, but Touloulou pinched her ankle.

11   "Ouch!" Madame Charity rubbed her ankle. She forgot how late she was. But soon she remembered. "Faster, Zel! Faster!" she yelled.

12   Again Touloulou pinched Madame Charity's ankle.

13   "Ouch!" shouted Madame Charity.

14   When they got to the market, Madame Charity saw that someone had taken the stall she liked to use. In a fit of rage, Madame Charity opened her mouth to yell. For the third time, Touloulou pinched her ankle. Madame Charity screamed.

15   "What's wrong?" people asked.

16   "Hurrying to get to market, I must have hurt my ankle. It's very painful. Ouch! Ouch! Ouch!"

17   The fish seller said, "Madame Charity, you should get up earlier. Then you will not have to rush. Next week, I will wake you at 6 a.m."

18   "Thank you," said Madame Charity. She was surprised at the man's kindness.

19   "Let me fix your ankle," said the fruit seller. In the past, the fruit seller had not talked to Madame Charity. Today he felt sorry for her.

20   When Madame Charity saw how kind everyone was, she smiled. For the first time, she sold all of her rice and sugar. At the end of the day, she saddled Zel gently and rode quietly home.

21   From that day on, Madame Charity tried not to raise her voice in anger. Sometimes she got angry, but she kept it to herself. And Zel the gentle donkey was happy at last.

▶ **Think** Use what you learned from reading the selection to respond to these questions.

1 Which detail in the first part of the story explains why Madame Charity is cruel to Zel?

    A Zel does not walk to the market as fast as she is able to.

    B Madame Charity is always angry and mean.

    C Madame Charity does not have enough sugar and rice to sell.

    D Everyone in town loves Zel because she is pleasant and kind.

2 Describe how Touloulou helps Zel.

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_____

_____

_____

3 This question has two parts. First, answer Part A. Then answer Part B.

Part A
What is the central message of this story?

    A Honesty is the best policy.

    B Kindness gets better results than anger.

    C Things are not always as they appear.

    D Beware of strangers.

Part B
Which sentence from the story is **most** important to the central message of the story?

    A "'Madame Charity, you should get up earlier.'"

    B "Then she got angry and yelled at Zel. . . ."

    C "From that day on, Madame Charity tried not to raise her voice in anger."

    D "Today he felt sorry for her."

4 What is the meaning of the word *market* as it is used in this sentence from the story?

> **Every Saturday, Madame Charity sold sugar and rice at a market.**

    A a store where food and spices are bought

    B a place where people buy and sell things

    C a street fair where people gather

    D a bank where money is exchanged

▶ **Write** A central message of "Zel, the Gentle Donkey" is that being kind to others can cause good things to happen. Explain how the actions of the characters in the story show this central message.

5 **Plan Your Response** Make a list of things from the story that tell about the kindness of some of the characters.

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6 **Write an Extended Response** Review the central message of "Zel, the Gentle Donkey." Explain how the characters in the story help deliver this message. Use details from the story to support your answer.

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Learning Target

Explain why understanding the central message of a story will help you understand the text you read.

Lesson 1
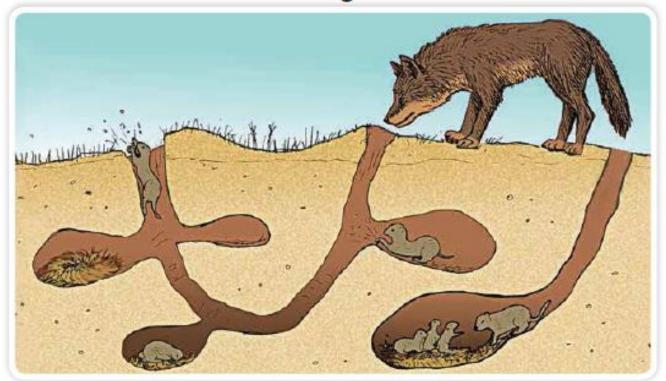# Ask and Answer Questions About Key Ideas

Learning Target ➤ Asking and answering questions about what you read will help you understand the text.

▶ **Read** We ask questions to get information or to understand something. Often questions begin with words such as *who, what, when, where, why,* and *how.* As you read, ask yourself questions about the text. Then look for **key details** in the text to answer your questions. Asking and answering questions will help you understand the **topic** of the text.

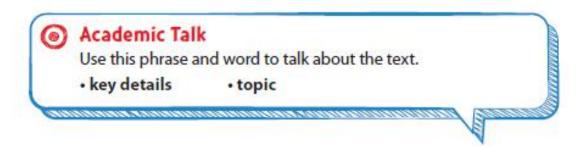**Look at this picture. What questions do you have about what you see?**

Prairie Dog Homes

▶ **Think** What are some questions you could ask about the picture? Read the questions in the first column. Then use key details from the picture to answer these questions.

Question	Answer	Key Details
1 What are most of the animals in the picture called?		The title of the picture is "Prairie Dog Homes."
2 Where do these animals live?		
3 Why do these animals live underground?		

▶ **Talk** Take turns with your partner asking and answering questions about the picture.

◎ **Academic Talk**
Use this phrase and word to talk about the text.
- **key details**
- **topic**

BEAVER LODGES
by Bryan Davis

1   Do you know the saying "busy as a beaver"? People say this because beavers are always working. These crafty creatures spend a lot of time building their homes.

2   Beaver homes are called lodges. Lodges are found along streams, rivers, ponds, and lakes. Beavers build these homes from branches and rocks. They use mud to hold them together.

3   When they can, beavers build their homes into the banks along the water. Other times, they need to make a safe spot, first. To do this, they build a dam from logs, branches, and mud. They get the logs by gnawing at trees until they fall down. A dam is like a wall that blocks water from flowing. It then forms a pond. Once the dam is built, beavers can get to the business of building their lodge.

4   Beaver lodges are shaped like a dome. They are usually about 10 feet high and 20 feet across. Most lodges have at least one underwater opening. To get inside, the beavers must swim underwater. These "secret" openings keep out unwanted predators.

5   Inside the beaver lodge are different "rooms." There is an eating room and a nesting room. The floor of the lodge is built up out of the water. It is also made from rocks, branches, and mud. It is covered with plants and other soft materials.

6   A family of beavers lives in a lodge. Two parents and two sets of their offspring often live together.

Close Reader Habits

Think of two questions to ask about beaver lodges. Then **underline** words and phrases that help you answer your questions.

How can asking and answering questions as you read help you learn more about beavers and their homes?

Think

You can ask questions that begin with *what, where, why,* and *how.*

1 Complete the chart by asking questions about the passage. Then answer your questions with key details from the text.

Question	Answer	Key Details
What do beavers use to build their lodges?		

Talk

2 What does a beaver lodge look like? Using key details from the text, discuss the answer to the question.

Write

3 **Short Response** Why are the beaver lodge openings underwater? Use key details from the text in your response. Use the space provided on page 16 to write your answer.

HINT Reread the passage to find key details.

Termite Mounds

by Madeline Clark

1   Termites are insects that live together in nests. Some termites are called mound builders. They build their nests from mounds of clay. Some of these mounds are more like towers. They stand almost 35 feet tall!

2   Mound builders are found in Africa and Australia. They are also in parts of South America. Other animals in these areas use termite mounds, too. Some wait until the termites move away. Others ignore the termites and use the mound anyway.

3   Termite mounds are usually the highest place around. Cheetahs often use the mound as a lookout point. They climb to the top of the mound. There, they keep an eye out for their next meal.

4   Sometimes the termites move on to a new nest. That's good news for many of the other animals. These animals know how to put an empty termite mound to good use.

5   Some animals make the empty nest their new home. Mongooses are small animals in Africa. They make a hole in the mound to get inside. The termite mound keeps them safe from other animals. Snakes also use an empty termite mound as a home.

6   Termite mounds also come in handy for large animals. Elephants and rhinos use them as scratching posts. Bug bites and dry mud can make any creature itchy. These large animals stand near a mound and rub against them. Sometimes they even stand over a mound to scratch their bellies!

Close Reader Habits

How do other animals use termite mounds? **Underline** some of the different ways.

▶ **Think**

1 This question has two parts. Answer Part A. Then answer Part B.

Part A
Why do cheetahs climb up termite mounds?

    A   They can see farther to find animals to hunt.

    B   They can sleep safely on top of termite mounds.

    C   They use termite mounds as scratching posts.

    D   They can call to each other more easily.

Part B
Which sentence from the passage **best** supports the answer you chose for Part A above?

    A   "Other animals in these areas use termite mounds, too."

    B   "There, they keep an eye out for their next meal."

    C   "Some animals make the empty nest their new home."

    D   "Others ignore the termites and use the mound anyway."

> Good questions often begin with the words *why, when, where,* and *how.*

2 Which question can be answered by reading paragraph 5?

    A   How tall is a termite mound?

    B   Why do mongooses move into termite mounds?

    C   What large animals use termite mounds?

    D   What animals are mound builders?
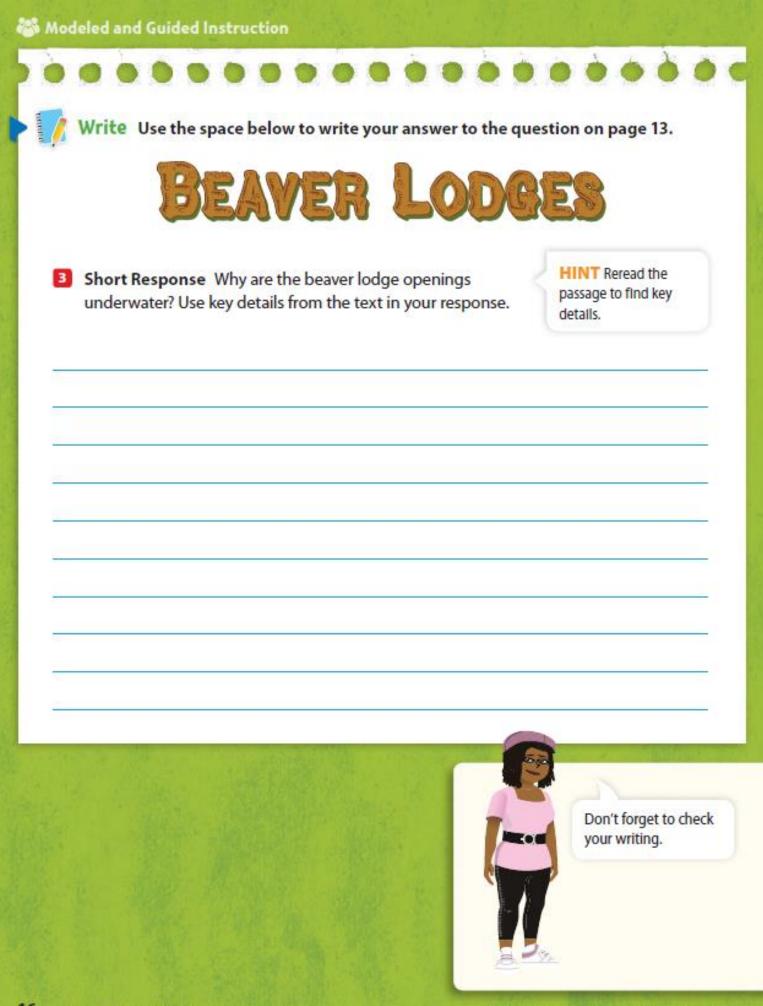
▶ **Talk**

3 How do large animals use termite mounds? Refer to specific details from the article as you talk with your partner.

▶ **Write**

4 **Short Response** Why are termite mounds important to so many animals? Include details from the passage in your response. Use the space provided on page 17 to write your answer.

> **HINT** What did you underline when you read the article?

Write Use the space below to write your answer to the question on page 13.

BEAVER LODGES

3 **Short Response** Why are the beaver lodge openings underwater? Use key details from the text in your response.

HINT Reread the passage to find key details.

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Don't forget to check your writing.

▶ 📝 **Write** Use the space below to write your answer to the question on page 15.

Termite Mounds

4 **Short Response** Why are termite mounds important to so many animals? Include details from the passage in your response.

> **HINT** What did you underline when you read the article?

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Check Your Writing

☐ Did you read the prompt carefully?

☐ Did you put the prompt in your own words?

☐ Did you use the best evidence from the text to support your ideas?

☐ Are your ideas clearly organized?

☐ Did you write in clear and complete sentences?

☐ Did you check your spelling and punctuation?

▶ **Read**

Teeny Tiny Tardigrades

by **Mary Reina**, *Highlights*

1   What would you say if someone asked you to name Earth's toughest survivor? Camels can go a week without drinking. A cockroach can survive more radiation than a person. But there is a teeny tiny creature that can go without food or water for years. It is so small that it can be seen only under a microscope. Its real name is tardigrade. Most people call it a water bear.

→ Surviving Everything

2   Water bears look like soft, squishy bugs. People call them bears because they walk the way bears do. Most water bears are smaller than the period at the end of this sentence. Don't let their size fool you. They are found in places that would kill most living things.

3   Some water bears survive in the boiling water found in hot springs. Others live miles below the ocean surface. They survive with tons of water pressing down on them.

4   Not all water bears live in extreme places. They can be found in parks, forests, and gardens. They thrive in damp, woody areas where mosses and other plant life grow. Many feed by sucking juices out of plants. Others eat creatures that are smaller than they are.

This photograph of a water bear was taken with a microscope. A *microscope* is a tool that lets you see tiny objects or creatures.

→ Drying Up

5   Water bears must have water to stay active. It helps them eat, move, and breathe. So what happens when the water around one of these tiny creatures dries up? First, it pulls in its eight legs. Then it curls its body into a barrel shape called a tun. It loses 99 percent of its water. Then every single life function of the water bear stops.

6   When conditions get better, the water bear stretches its little legs and starts moving and eating again.

7   Water bears can survive the extreme cold and radiation of outer space. Scientists sent some water bears into space as part of an unmanned mission. They came back fine!

8   Not so long ago, most scientists believed life did not exist beyond Earth. Now, many think it is possible. If water bears can survive a visit to outer space, who knows what other creatures might live there?

Thousands of water bears spent more than a week in space before they were returned to Earth.

▶ **Think** Use what you learned from reading the selection to respond to these questions.

1 Which **two** questions can be answered by reading paragraph 2?

    A How do water bears survive in extreme surroundings?

    B What do tardigrades look like?

    C What do water bears need to stay active?

    D How and what do water bears eat?

    E How large are water bears?

    F Why does a tardigrade need water?

2 Why are tardigrades called "water bears"?

    A They have sharp claws like bears.

    B They are named after a type of bear.

    C They walk like bears.

    D They look something like bears.

3 Read the sentence from paragraph 4.

    Not all water bears live in extreme places.

Based on how it is used in the passage, what does the word *extreme* mean? Use key details from the text in your response.

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4 Based on details in the passage, what **three** types of places is this sentence talking about?

> **They are found in places that would kill most living things.**

    A damp woody areas

    B the boiling water of hot springs

    C the deepest parts of the ocean

    D parks and gardens

    E inside volcanoes

    F outer space

5 This question has two parts. First, answer Part A. Then answer Part B.

Part A

Read these sentences from paragraph 5.

> **Water bears must have water to stay active. It helps them eat, move, and breathe.**
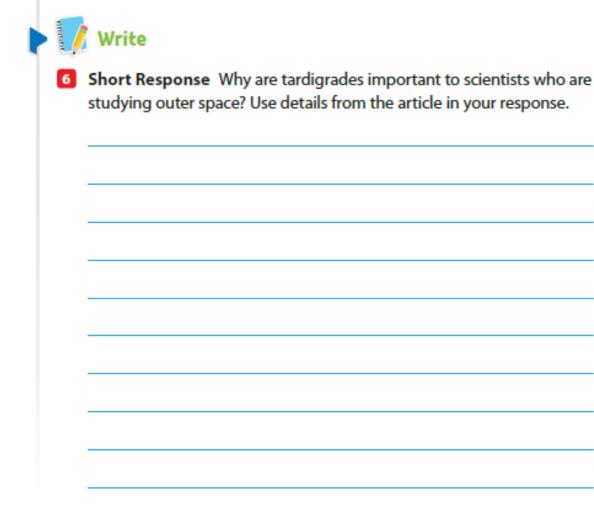
Which question can be answered after reading these sentences?

    A How long can a water bear survive without water?

    B What types of food do water bears eat?

    C Where do water bears get their water?

    D Why is water so important to water bears?

Part B
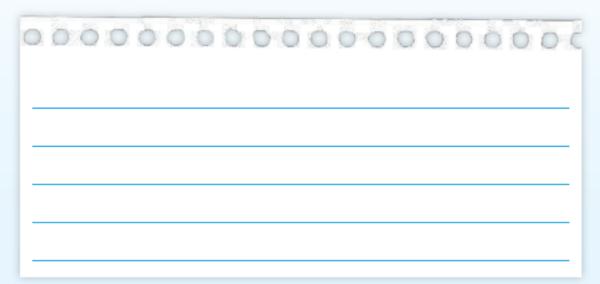
Which other sentence from the text also helps answer the question you chose in Part A?
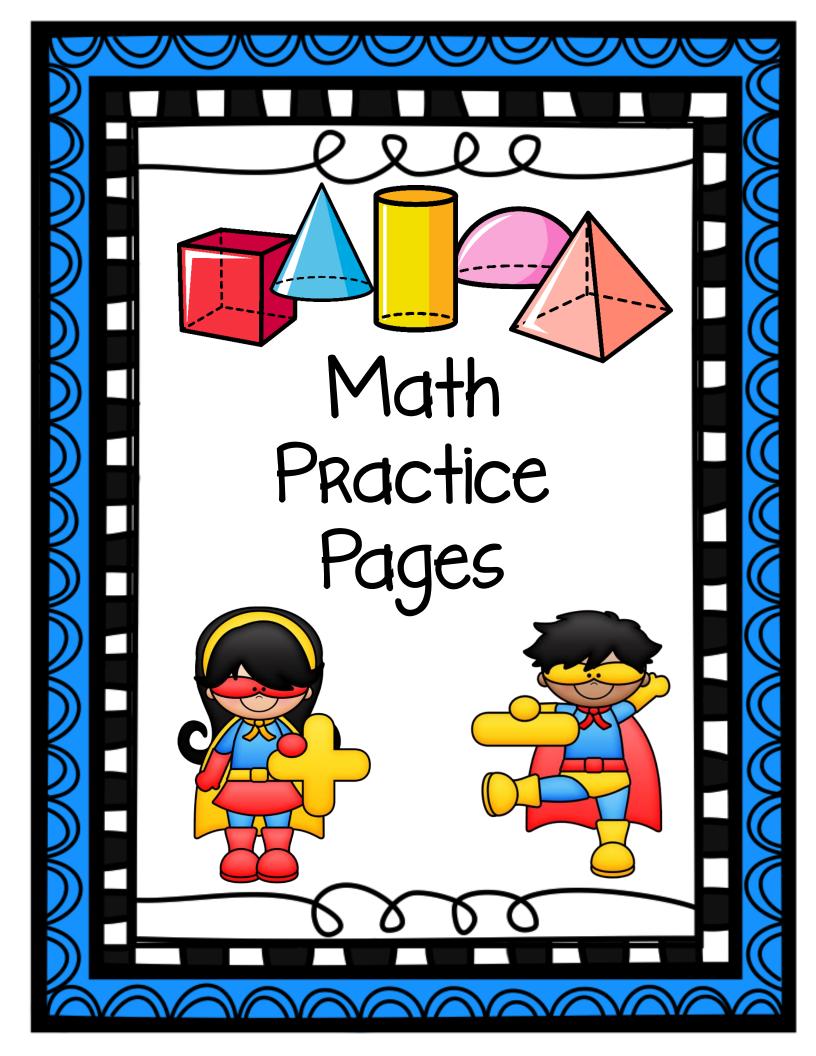
    A "Then every single life function of the water bear stops."

    B "Some water bears survive in the boiling water found in hot springs."

    C "When conditions get better, the water bear stretches its little legs and starts moving and eating again."

    D "But there is a teeny tiny creature that can go without food or water for years."

▶ ✏️ **Write**

6 **Short Response** Why are tardigrades important to scientists who are studying outer space? Use details from the article in your response.

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🎯 **Learning Target**

Explain how asking and answering questions can help you better understand any text.

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Math
Practice
Pages

Name: _____

Addition

Find the sums.

a.
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  7 2
+ 1 9
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b.
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  4 6
+ 2 7
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c.
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  1 4
+ 3 3
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d.
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  8 3
+ 3 6
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e.
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  5 0
+ 5 7
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f.
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  6 7
+   8
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g.
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  5 6
+ 6 5
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h.
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  4 4
+ 4 6
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i.
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    5
+ 2 9
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j.
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  3 8
+ 2 7
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k.
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  9 9
+ 9 9
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l. Sam has 29 books.
   Jan has 44 books.
   How many books do they have altogether?   _____

m. Nate has 47 chapter books.
   He buys 13 more.
   How many chapter books does he have in all?   _____

Addition Word Problems

Answer the questions. Show your work.

1. Gina picks 28 flowers.
    Hannah picks 36 flowers.
    How many flowers did they pick in all?

    Answer: _____

2. Kyle has 45 rocks.
    Leo has 39 rocks.
    How many rocks do they have in all?

    Answer: _____

3. Patty has 64 crayons.
    She buys 8 more.
    How many crayons does she have now?

    Answer: _____

4. Matt sees 29 ducks.
    14 more fly in.
    How many ducks does Matt see now?

    Answer: _____

Name: _____

Addition

Find the sums.

a.
```
    3 5 7
  + 2 0 8
  _____
```

b.
```
    2 9 9
  + 2 3 4
  _____
```

c.
```
    4 8 3
  +   9 5
  _____
```

d.
```
    2 5 0
  + 5 9 0
  _____
```

e.
```
    7 7 4
  + 5 2 6
  _____
```

f.
```
    8 7 8
  + 3 1 6
  _____
```

g.
```
    6 8 7
  + 6 7 8
  _____
```

h.
```
    1 6 0
  +   7 4
  _____
```

i.
```
  $ 8 1 6
+ $ 9 0 5
_____
```

j.
```
  $ 9 9 9
+ $ 7 7 7
_____
```

k. Mr. Sanford bought a new grill and picnic table for his backyard. He spent $178 on the grill and $467 on the picnic table. How much did he spend in all?

_____

k. Mr. Sanford had a huge outdoor party. He grilled 145 hamburgers and 247 cheeseburgers for his guests. How many burgers did he grill in all?

_____
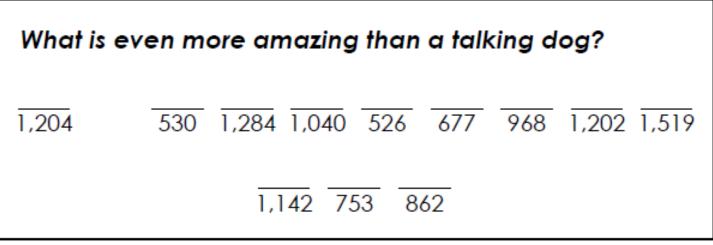
The Amazing Talking Dog

Add to find the sums. Then solve the riddle by matching the letters to the blank lines below.

P 745
  +539

A 429
  +775

G 639
  +880

B 899
  +243

E 753
  +287

I 523
  +445

S 432
  + 98

N 326
  +876

L 456
  +221

E 326
  +427

L 428
  + 98

E 331
  +531

What is even more amazing than a talking dog?

___   ___ ___ ___ ___ ___ ___ ___ ___
1,204   530 1,284 1,040 526 677 968 1,202 1,519

___ ___ ___
1,142 753 862
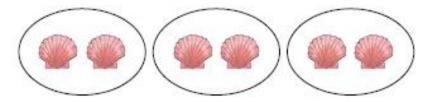
Understand the Meaning of Multiplication

Think It Through
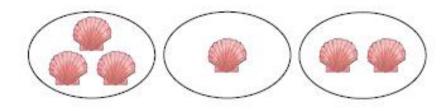
What is going on when you multiply numbers?

When you multiply, you work with equal groups.

These groups of shells are equal.
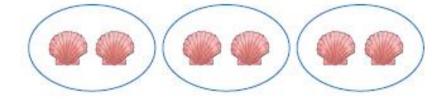
These groups of shells are NOT equal.

Think Multiplication is a way to find how many in all.

When you have equal groups of objects, you can **multiply** to find a total.

Groups are called equal groups when they all have the same number of objects.

There are **3 groups**. There are **2 shells** in each group.

You can write this as **3 × 2**. Think of 3 × 2 as "3 groups of 2."

3 groups of 2 shells is 6 shells in all. 3 × 2 = 6

✏️ **Underline** the sentence that tells you what equal groups are.

A picture can help you see what **multiplication** means.

3 groups of 4 balls is 12 balls in all.

One factor tells how many groups. → $3 \times 4 = 12$ ← the **product** is the result. It tells how many in all.

The $\times$ means "groups of." The other factor tells how many are in each group.

$3 \times 4 = 12$ is a multiplication equation. The numbers you multiply are called **factors**.

When you see $3 \times 4 = 12$, you say, "Three times four equals 12."

You can arrange the equal groups into rows and stack them on top of each other. This is called an **array**.

3 rows with 4 balls in each row is 12 balls in all.

$3 \times 4 = 12$

▶ Reflect
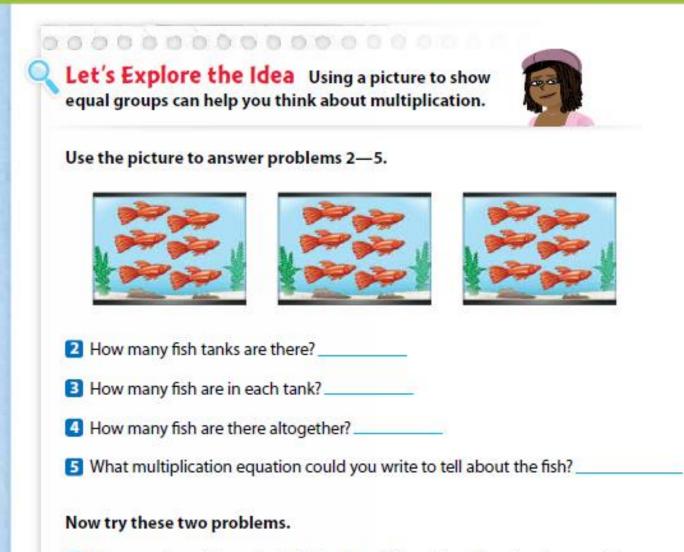
1 Do the chairs in your classroom make an array? Explain why or why not.
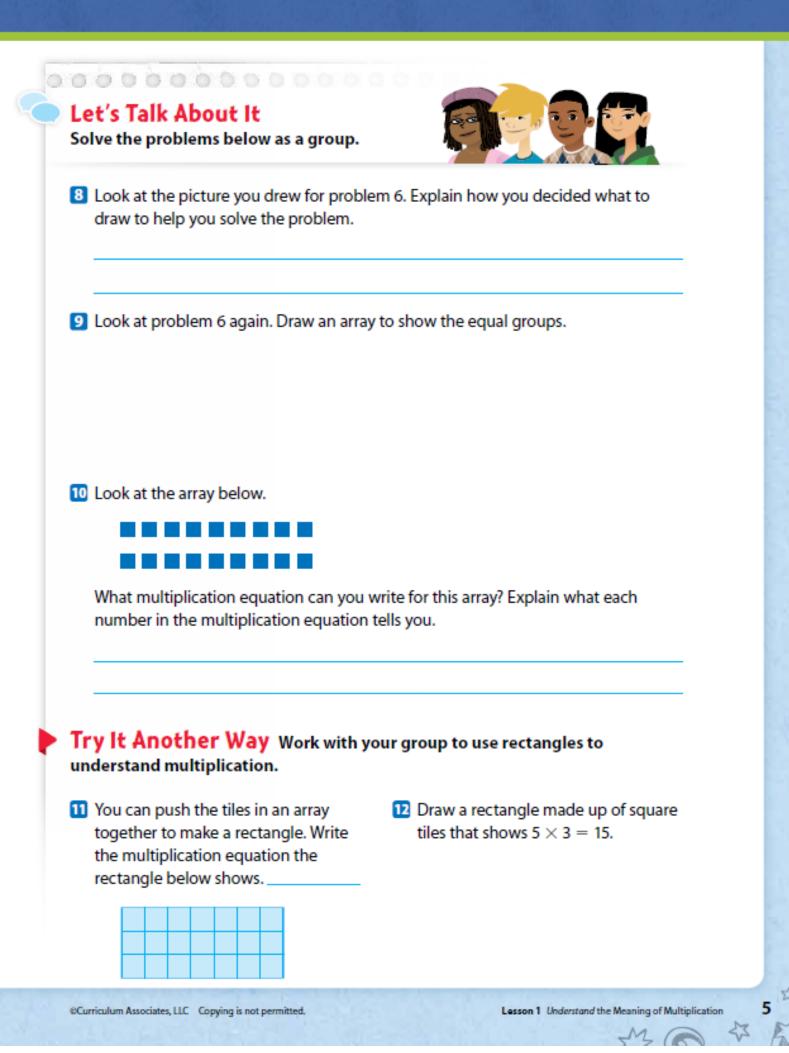
_____

_____

_____

Think About ▶ **Equal Groups in Multiplication**

🔍 Let's Explore the Idea   Using a picture to show equal groups can help you think about multiplication.

Use the picture to answer problems 2—5.

2 How many fish tanks are there? _____

3 How many fish are in each tank? _____

4 How many fish are there altogether? _____

5 What multiplication equation could you write to tell about the fish? _____

Now try these two problems.

6 There are 4 apple trees in Nell's backyard. She picked 5 apples from each tree. Draw a picture to show the equal groups.

7 What multiplication equation could you write about the apples? _____

Let's Talk About It

Solve the problems below as a group.

8 Look at the picture you drew for problem 6. Explain how you decided what to draw to help you solve the problem.

_____

_____

9 Look at problem 6 again. Draw an array to show the equal groups.

10 Look at the array below.

■ ■ ■ ■ ■ ■ ■ ■ ■
■ ■ ■ ■ ■ ■ ■ ■ ■

What multiplication equation can you write for this array? Explain what each number in the multiplication equation tells you.

_____

_____

▶ Try It Another Way Work with your group to use rectangles to understand multiplication.

11 You can push the tiles in an array together to make a rectangle. Write the multiplication equation the rectangle below shows. _____

12 Draw a rectangle made up of square tiles that shows $5 \times 3 = 15$.

Lesson 1 _Understand the Meaning of Multiplication_

Connect ▶ **Ideas About Equal Groups in Multiplication**

Talk through these problems as a class, then write your answers below.

13 **Explain** Travis used the picture below to write the multiplication equation $4 \times 6 = 24$.

What did he do wrong?

_____

_____

14 **Create** Write a problem that could be solved using the multiplication equation $9 \times 4 = 36$.

_____

_____

_____

15 **Analyze** Amelia used the array at the right to write the multiplication equation $3 \times 2 = 6$.

What multiplication equation would Amelia write if she added another row of 2 triangles to the bottom of the array?

_____

_____

Look at the array above. How would it change if Amelia added 1 more triangle to each row? What multiplication equation would she write?

_____

_____

Apply ▸ **Ideas About Equal Groups in Multiplication**

16 **Put It Together** Use what you have learned to complete this task.

Tucker arranged his pennies in an array.

Part A Write the multiplication equation the array shows. Explain what each number means.

_____

_____

_____

_____

Part B Draw a model for the multiplication equation. Show equal groups.

Use Order and Grouping to Multiply

🄶 Use What You Know

In Lesson 1, you learned about the meaning of multiplication. This lesson will help you solve multiplication problems using what you already know. Take a look at this problem.

> Ava's mom bought 2 packs of 3 T-shirts. Her dad bought 3 packs of 2 T-shirts. How many T-shirts did each of Ava's parents buy?
>
> **Mom**   **Dad**

a. How many packs of T-shirts did Ava's mom buy? _____

b. How many T-shirts were in each of her mom's packs? _____

c. What multiplication equation could you write to find out how many T-shirts Ava's mom bought? _____

d. How many packs of T-shirts did Ava's dad buy? _____

e. How many T-shirts were in each of her dad's packs? _____

f. What multiplication equation could you write to find out how many T-shirts Ava's dad bought? _____

g. Explain what is the same and what is different about the two multiplication equations you wrote. _____

_____

_____

On the previous page you saw that the order of the factors in a multiplication problem does not matter. If you know that 2 × 3 is 6, then you also know that 3 × 2 is 6.

Sometimes you need to multiply three numbers together. You can use parentheses ( ) to show which two numbers you want to multiply first. Look at the problem below.

Jayden bought 4 boxes of hot dogs. Each box has 2 packs. Each pack has 5 hot dogs. How many hot dogs did she buy?

- **One way** to think about this is to first find how many packs there are. Then multiply by the number of hot dogs in each pack, 5.

4 × 2 packs is 8 packs.

8 packs with 5 hot dogs each is 40 hot dogs.

(4 × 2) × 5 = 40

- **Another way** to think about this is to first find how many hot dogs are in each box. Then multiply by the number of boxes, 4.

2 × 5 is 10 hot dogs in a box.

4 boxes with 10 hot dogs is 40 hot dogs.

4 × (2 × 5) = 40

▶ Reflect

1 What did you just learn that can help you with multiplication?
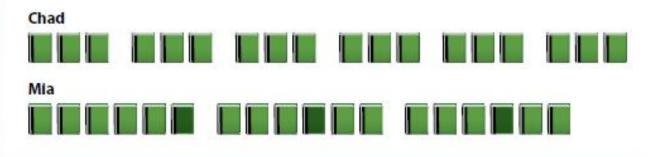
_____

_____

_____

Learn About ▶ **Using Order to Multiply**
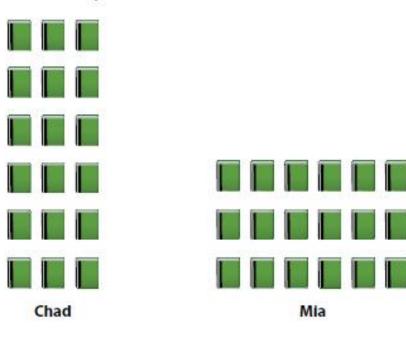
Read the problem below. Then explore ways to show you can multiply factors in a multiplication equation in any order.

> Chad read books at the library each week for 6 weeks. He read 3 books each week. Mia read books at the library each week for 3 weeks. She read 6 books each week. Who read more books at the library, Chad or Mia?

▶ **Picture It** You can use equal groups to help you understand the problem.

Chad

Mia

▶ **Model It** You can also use arrays to help you understand the problem. Each row in the arrays shows the number of books Chad or Mia read each week.

Chad   Mia

Connect It Now you will solve the problem from the previous page using equations.

2 What multiplication equation could you write to find the number of books Chad read? _____

3 What multiplication equation could you write to find the number of books Mia read? _____

4 Who read more books? _____

5 Explain how you could know that Chad and Mia read the same number of books without finding the product in each multiplication equation.

_____

_____

_____

6 Your teacher tells you that $8 \times 9 = 72$. Explain how you know what 9×8 equals.

_____

_____

Try It Use what you just learned about the order of factors to solve these problems. Show your work on a separate sheet of paper.

7 Josie has 5 cups with 4 tokens in each cup. Ian has 4 cups with 5 tokens in each cup. Draw a model to show that Josie and Ian have the same number of tokens.

8 Ashish has 6 drawers in his dresser. He puts 8 shirts in each drawer. Gita has the same number of shirts in all as Ashish. She has 8 dresser drawers. She wants to put an equal number of shirts in each drawer. How many shirts should Gita put in each drawer? _____

Learn About ▶ **Using Grouping to Multiply**

Read the problem below. Then explore different ways to group factors to help you multiply three numbers.

Nykole decorates her gloves with plastic jewels. She glues 3 jewels onto each finger and thumb. How many jewels does she use?

▶ **Picture It** **You can multiply 5 fingers × 3 jewels on each finger to find that she has 15 jewels on each glove. Then multiply the 15 jewels × 2 to find how many jewels on both gloves altogether.**

You could also multiply 2 gloves × 5 fingers on each hand to show there are 10 fingers, including thumbs. Then multiply 10 fingers × 3 jewels to find how many jewels she uses.

▶ **Model It** **You can write the multiplication problem and use parentheses to show which two numbers you will multiply first.**

$(3 \times 5) \times 2 \longrightarrow 15 \times 2 = 30$

You could also choose to multiply different numbers first.

$3 \times (5 \times 2) \longrightarrow 3 \times 10 = 30$

Connect It Now you will solve the problem from the previous page using equations.

9 Use parentheses to show one way to group $3 \times 5 \times 2$. _____

10 Use parentheses to show a different way to group $3 \times 5 \times 2$. _____

11 Which way would you choose to find the product? Explain why.

_____

_____

_____

12 Explain how you can use grouping to make multiplying three factors easier.

_____

_____

_____

Try It Use what you just learned about grouping factors to solve these problems. Show your work on a separate sheet of paper.

13 Use parentheses to show two different ways to group $7 \times 2 \times 4$. Then choose one of the ways and show the steps to finding the product.

_____

_____

14 Use parentheses to show two different ways to group $2 \times 4 \times 3$. Then choose one of the ways and show the steps to finding the product.

_____

_____

Learn About ▸ **Using Order and Grouping to Multiply**

Read the problem below. Then explore different ways to order and group factors to make multiplication easier.

> Joelle bought 2 bags of bananas. There are 9 bunches in each bag, and there are 5 bananas in each bunch. How many bananas did Joelle buy?

▶ **Model It** **Think of the multiplication problem you can write: $2 \times 9 \times 5$.**

You can use what you have learned about multiplying in any order and grouping to help make the problem easier.

Start with $2 \times 9 \times 5$.

First, change the order of the numbers. Switch the 2 and the 9.

Now you have $9 \times 2 \times 5$.

Then, group it like this: $9 \times (2 \times 5)$.

Multiply the numbers in parentheses: $2 \times 5 = 10$.

Then do the last multiplication: $9 \times 10 = 90$.

▶ **Model It** **You can use diagrams to help you understand the problem.**

The first two diagrams show two ways you can solve the problem using just grouping. The third diagram shows how you can solve the problem by changing the order of the numbers before using grouping.

```
  2 × 9 × 5          2 × 9 × 5          9 × 2 × 5
   \  /  |            |   \  /            |   \  /
   18  × 5            2  × 45            9  × 10
     \   /              \   /              \   /
      90                 90                 90
```

Connect It Now you will choose which way to solve the problem from the previous page.

15 You can order and group the factors in the multiplication expression $2 \times 9 \times 5$ in different ways. Look at the ways shown below. Fill in the missing numbers.

$(9 \times 2) \times$ _____ $= 90$ $(5 \times 2) \times$ _____ $= 90$ _____ $\times (9 \times 5) = 90$

16 Remember that you must multiply numbers inside parentheses first. Look back at the multiplication equations in problem 15. Multiply the numbers in the parentheses, then fill in the missing numbers below.

$($_____$) \times$ _____ $= 90$ $($_____$) \times$ _____ $= 90$ _____ $\times ($_____$) = 90$

17 Which of the three multiplication equations in problem 15 do you think is the easiest to solve? Explain why you think so.

_____

_____

_____

18 Explain how you can use grouping and multiplying in any order to make multiplying three numbers easier.

_____

_____

_____

Try It Use what you just learned about ordering and grouping factors to solve these problems. Show your work on a separate sheet of paper.

19 Change the order of the factors and use parentheses to show one way to solve $3 \times 7 \times 3$. Then show the steps to finding the product.

_____

20 Change the order of the factors and use parentheses to show one way to solve $4 \times 9 \times 2$. Then show the steps to finding the product.
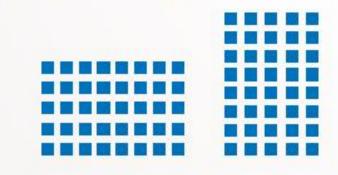
_____

Practice ▷ **Using Order and Grouping to Multiply**

Study the example below. Then solve problems 21–23.

Example

There are 8 rows of tables in the cafeteria. Each row has 5 tables. Maria knows that 5×8 is 40. How can she use this to figure out how many tables there are?

Look at how you could show your work using arrays.

> The first array shows 5×8. The second array looks the same, just turned on its side. It shows 8×5.

Solution You can multiply numbers in any order.

$5 \times 8 = 40$, so $8 \times 5 = 40$. There are 40 tables.

> **Pair/Share**
> If two arrays have the same total, how do they show two different multiplication facts?

---

21 There are 2 classes of third graders. In each class, there are 3 rows of desks, with 7 desks in each row. Write a multiplication expression to find the number of desks in both classes. Show how to group the factors to find the product. Then write the answer.

Show your work.

> Which two numbers have a product that would be easy to multiply by in your head?

> **Pair/Share**
> How would solving the problem be different if you grouped the factors another way?

Solution

22 AJ needs to solve $3 \times 8 \times 2$. Show one way to find the answer. Use parentheses to show how you grouped the numbers.

Show your work.

> I think it would be easiest if you changed the order of the factors before you grouped them.

Solution _____

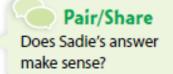**23** Matt knows $4 \times 6 = 24$. What other math fact does this help Matt remember? Circle the letter of the correct answer.

A $6 + 4 = 10$

B $8 \times 3 = 24$

C $24 - 6 = 18$

D $6 \times 4 = 24$

Sadie chose **A** as the correct answer. How did she get that answer?

_____

_____

_____

_____

> What have you learned about the order of factors in multiplication?
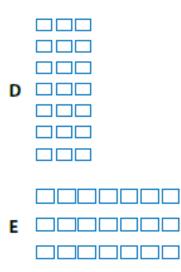
Practice Using Order and Grouping to Multiply

Solve the problems.

1 Jackson knows $9 \times 7 = 63$. He needs to solve ____ $\times 9 = 63$. What number goes in the blank?

A 5

B 6

C 7

D 8

2 Which of the following is NOT true?

A $3 \times 6 \times 3 = 6 \times 3 \times 3$

B $3 \times 6 \times 3 = 9 \times 3$

C $3 \times 6 \times 3 = 9 \times 6$

D $3 \times 6 \times 3 = 3 \times 18$

3 Gisell's service group is making sandwiches for a community picnic. There are 7 children in the service group. Each child is making 5 sandwiches. It takes 2 slices of bread to make a sandwich. What is the total number of slices of bread the children need to make the sandwiches?

Answer _____ slices of bread

4 Lyn's mom has pictures arranged on her refrigerator in rows. There are 3 rows of pictures. There are 7 pictures in each row. Which of the following expressions or arrays could be used to find the total number of pictures? Circle the letter for all that apply.

A 3×7

B 7×3

C $7 \times 7 \times 7$

D
□□□
□□□
□□□
□□□
□□□
□□□
□□□

E
□□□□□□□
□□□□□□□
□□□□□□□

5 Dan has 2 photo albums. Each photo album has 8 pages. Dan can fit 4 pictures on each page. How many pictures can Dan fit in the albums?

Show your work.

Answer _____ pictures

✔ **Self Check** Go back and see what you can check off on the Self Check on page 1.

G Use What You Know

In Lesson 2, you learned some ways to make multiplying numbers easier.
Take a look at this problem.

> Ty has 6 bunches of carrots. There are 3 carrots in each bunch. How many carrots does Ty have altogether?

a. Circle 5 of the bunches.
What multiplication equation can you write to find how many carrots are in 5 bunches? _____

b. Circle the 1 bunch that is left.
What multiplication equation can you write to find how many carrots are in 1 bunch? _____

c. Look at the two sets of bunches you circled. You found the number of carrots in each set.
Explain how you could use those two numbers to find the total number of carrots.

_____

_____

_____

▶▶ Find Out More

You can break apart numbers to help you figure out multiplication problems you do not know.
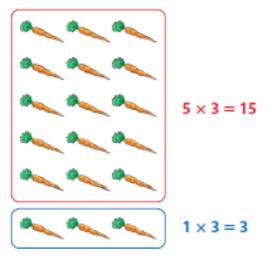
Ty did not know what 6 groups of 3 were, but he did know what 5 groups of 3 were. That left 1 group of 3.

Ty broke apart **6** into **5 + 1**. Then he multiplied each part by 3 and added the products together.

You can write 5 bunches of 3 carrots plus 1 bunch of 3 carrots like this:
(5 × 3) + (1 × 3)

The parentheses show you that you multiply each set of numbers first, and then add the products together.

You can also show this using an array.

5 × 3 = 15

1 × 3 = 3

You can write what the array shows three ways:
6 × 3   or   (5 + 1) × 3   or   (5 × 3) + (1 × 3)

▶ Reflect

1 What if Ty had 4 carrots in each bunch instead of 3? Explain how he could break apart the numbers to find the product of 6 × 4.

_____

_____

Read the problem below. Then explore different ways to break apart one of the numbers to solve the problem.

Mario has 6 vases of flowers. There are 4 flowers in each vase. How many flowers does Mario have in all? Break apart one of the numbers to find the answer.

▶ **Picture It** **You can use equal groups to help understand the problem.**

Mario chose to break apart the number of groups to find the answer.

▶ **Model It** **You can also use an array to help understand the problem.**

Mario made an array and then broke apart the rows to show the new groups.

▶ **Solve It** **You can also use words to help understand the problem.**

6 vases of 4 flowers is the same as 4 vases of 4 flowers plus 2 vases of 4 flowers.

Connect It Now you will explore different ways to solve the problem from the previous page.

2 What numbers did Mario break 6 into to help him solve the problem?

_____

3 What two multiplication equations did Mario use then?

_____

4 What is another way you could break apart 6?

_____

_____

5 What numbers could Mario break 4 into to help him solve the problem?

_____

6 What two multiplication equations would Mario use if he broke apart the 4?

_____

7 Explain why Mario's way of solving the problem is not the only way.

_____

_____

_____

Try It Use what you just learned to solve this problem.

8 Show two different ways to break apart the numbers to solve 4 × 3. Draw models and show the math equations you used.

_____

_____

Learn About ▶ Using Grouping to Multiply
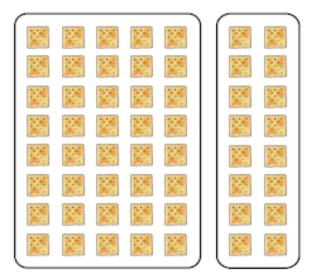
Read the problem below. Then explore ways to break apart a number to make one hard multiplication equation into two easier multiplication equations.

> Matt shared some crackers with 8 friends. He gave each friend 7 crackers. How many crackers did Matt give away? Break apart one of the numbers to find the answer.

▶ **Model It** You can use an array to help understand the problem.

Instead of breaking apart the rows (the number of friends), Matt broke apart the columns (the number of crackers).

▶ **Solve It** You can also use words and multiplication expressions to help understand the problem.

Giving 8 friends 7 crackers is the same as giving 8 friends 5 crackers each, then giving each of them 2 more crackers. You can write the multiplication three ways:

$$8 \times 7 \quad \text{or} \quad 8 \times (5 + 2) \quad \text{or} \quad (8 \times 5) + (8 \times 2)$$

► **Connect It** Now you will think more about the problem from the previous page.

9 What numbers did Matt break 7 into to help him solve the problem? _____

10 What two multiplication expressions did Matt use then? _____

11 Show how to use the two multiplication expressions to find the answer.

_____

12 Madison knows the answer to 4 × 7. How can this help her multiply 8 × 7?

_____

_____

13 Explain why someone might want to break apart one of the numbers in a multiplication equation.

_____

_____

_____

► **Try It** Use what you learned about breaking apart numbers to solve these problems.

14 Alice knows the answer to 5 × 7. How can that help her find the answer to 6 × 7? Draw a model and show the math equations you used.

_____

15 Tim knows the answer to 6 × 7. How can that help him find the answer to 6 × 9? Draw a model and show the math equations you used.

_____
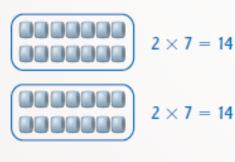
Practice ▶ **Breaking Apart Numbers to Multiply**

Study the example below. Then solve problems 16–18.

Example

Stacy is making 4 bracelets. Each bracelet uses 7 silver beads. How many silver beads does Stacy need? Show how to break apart one of the numbers to make the problem easier to solve.

Look at how you could show your work using an array.

$2 \times 7 = 14$

$14 + 14 = 28$

$2 \times 7 = 14$

Solution _28 silver beads_

> The student broke apart the 4 into $2 + 2$ and then added the two products together.

> **Pair/Share**
> How else could you have broken apart one of the numbers to solve this problem?

---

16 There are 6 bowls of apples. There are 6 apples in each bowl. Show how to break apart the number 6 to make the problem easier to solve.

> What ways do you know to break apart the number 6? Which way do you think is easiest?

> **Pair/Share**
> What is another model you could have used to show how to break the number apart?

17 Joe has 8 shelves with 9 books on each shelf. How many books does Joe have altogether? Show how to break apart one of the numbers to make the problem easier to solve.

> You can break apart the number 9 many different ways.

Pair/Share
How did you and your partner decide how to break apart one of the numbers?

Solution _____

---

18 Jordan found 6×8 by breaking apart the 6 into $5 + 1$. Which of the following correctly shows the next step in finding the result? Circle the letter of the correct answer.

A $(5 \times 6) + (1 \times 6)$

B $(6 \times 8) + (1 \times 8)$

C $(5 + 8) \times (1 + 8)$

D $(5 \times 8) + (1 \times 8)$

Avery chose **A** as the correct answer. How did she get that answer?

> Jordan broke apart the 6 in 6×8. What will he do with the 8?

_____

_____

Pair/Share
Does Avery's answer make sense?

_____

_____

Practice **Breaking Apart Numbers to Multiply**

Solve the problems.
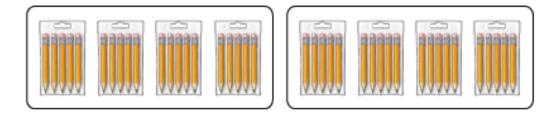
1 Tucker solved 7 × 5 by breaking it apart as shown below.

(7 × 3) + (7 × _____)

What number belongs in the blank?

A 1

B 2

C 4

D 8
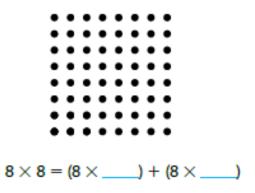
2 Cole has 8 packs of pencils. There are 5 pencils in each pack. He wants to know how many pencils he has in all. The model below shows how he breaks apart one number in the problem.
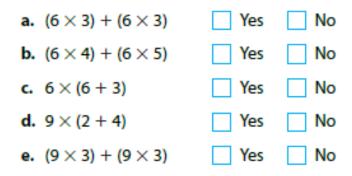
Which expression shows how Cole solves the problem?

A (4 × 5) + (4 × 5)

B (8 × 2) + (8 × 2)

C (4 × 2) + (4 × 2)

D (3 × 5) + (5 × 5)

3 Use the array below to solve 8×8. First draw circles to break the array into two groups. Then fill in the blanks to show how you broke the numbers apart.

$$8 \times 8 = (8 \times \underline{\hspace{1cm}}) + (8 \times \underline{\hspace{1cm}})$$

4 Is each expression equivalent to the product of 6 and 9? Choose *Yes* or *No*.

a. $(6 \times 3) + (6 \times 3)$ ☐ Yes ☐ No

b. $(6 \times 4) + (6 \times 5)$ ☐ Yes ☐ No

c. $6 \times (6 + 3)$ ☐ Yes ☐ No

d. $9 \times (2 + 4)$ ☐ Yes ☐ No

e. $(9 \times 3) + (9 \times 3)$ ☐ Yes ☐ No

5 There are 9 rows in Mrs. Mitchell's flower garden. Each row has 9 flowers planted in it. How many flowers are planted in the garden? Show how to break apart the numbers to find the answer.

Answer There are _____ flowers in the garden.

✔ **Self Check** Go back and see what you can check off on the Self Check on page 1.

Multiplication Facts Tables

Multiplying by 1	Multiplying by 2	Multiplying by 3	Multiplying by 4	Multiplying by 5	Multiplying by 6
1 × 1 = 1	1 × 2 = 2	1 × 3 = 3	1 × 4 = 4	1 × 5 = 5	1 × 6 = 6
2 × 1 = 2	2 × 2 = 4	2 × 3 = 6	2 × 4 = 8	2 × 5 = 10	2 × 6 = 12
3 × 1 = 3	3 × 2 = 6	3 × 3 = 9	3 × 4 = 12	3 × 5 = 15	3 × 6 = 18
4 × 1 = 4	4 × 2 = 8	4 × 3 = 12	4 × 4 = 16	4 × 5 = 20	4 × 6 = 24
5 × 1 = 5	5 × 2 = 10	5 × 3 = 15	5 × 4 = 20	5 × 5 = 25	5 × 6 = 30
6 × 1 = 6	6 × 2 = 12	6 × 3 = 18	6 × 4 = 24	6 × 5 = 30	6 × 6 = 36
7 × 1 = 7	7 × 2 = 14	7 × 3 = 21	7 × 4 = 28	7 × 5 = 35	7 × 6 = 42
8 × 1 = 8	8 × 2 = 16	8 × 3 = 24	8 × 4 = 32	8 × 5 = 40	8 × 6 = 48
9 × 1 = 9	9 × 2 = 18	9 × 3 = 27	9 × 4 = 36	9 × 5 = 45	9 × 6 = 54
10 × 1 = 10	10 × 2 = 20	10 × 3 = 30	10 × 4 = 40	10 × 5 = 50	10 × 6 = 60
11 × 1 = 11	11 × 2 = 22	11 × 3 = 33	11 × 4 = 44	11 × 5 = 55	11 × 6 = 66
12 × 1 = 12	12 × 2 = 24	12 × 3 = 36	12 × 4 = 48	12 × 5 = 60	12 × 6 = 72
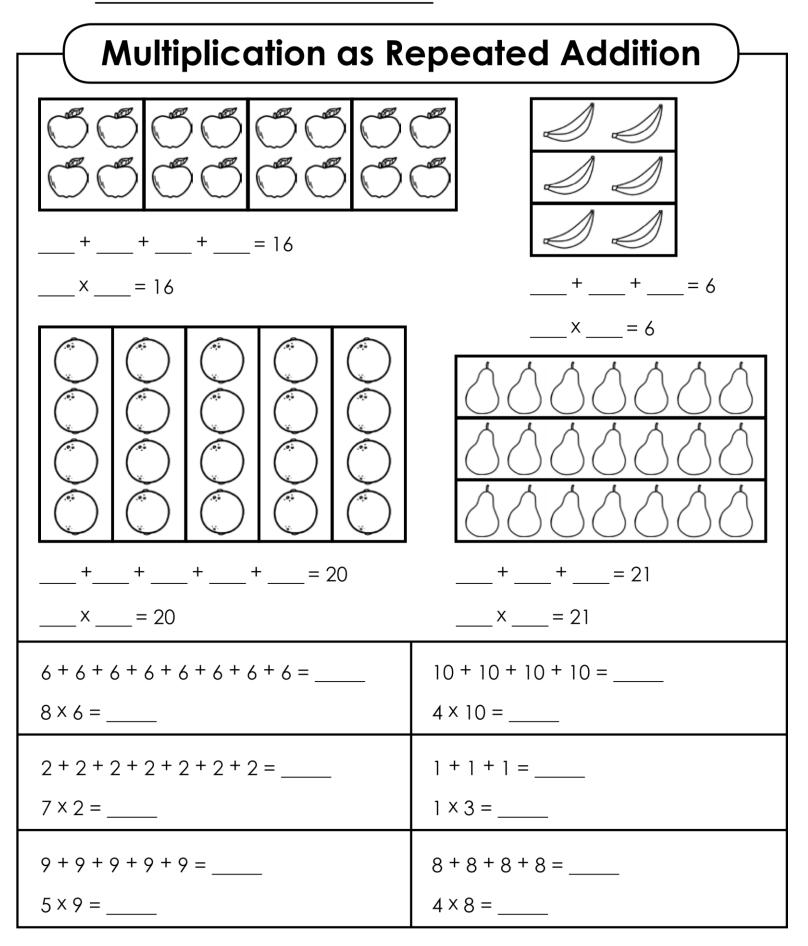
Multiplying by 7	Multiplying by 8	Multiplying by 9	Multiplying by 10	Multiplying by 11	Multiplying by 12
1 × 7 = 7	1 × 8 = 8	1 × 9 = 9	1 × 10 = 10	1 × 11 = 11	1 × 12 = 12
2 × 7 = 14	2 × 8 = 16	2 × 9 = 18	2 × 10 = 20	2 × 11 = 22	2 × 12 = 24
3 × 7 = 21	3 × 8 = 24	3 × 9 = 27	3 × 10 = 30	3 × 11 = 33	3 × 12 = 36
4 × 7 = 28	4 × 8 = 32	4 × 9 = 36	4 × 10 = 40	4 × 11 = 44	4 × 12 = 48
5 × 7 = 35	5 × 8 = 40	5 × 9 = 45	5 × 10 = 50	5 × 11 = 55	5 × 12 = 60
6 × 7 = 42	6 × 8 = 48	6 × 9 = 54	6 × 10 = 60	6 × 11 = 66	6 × 12 = 72
7 × 7 = 49	7 × 8 = 56	7 × 9 = 63	7 × 10 = 70	7 × 11 = 77	7 × 12 = 84
8 × 7 = 56	8 × 8 = 64	8 × 9 = 72	8 × 10 = 80	8 × 11 = 88	8 × 12 = 96
9 × 7 = 63	9 × 8 = 72	9 × 9 = 81	9 × 10 = 90	9 × 11 = 99	9 × 12 = 108
10 × 7 = 70	10 × 8 = 80	10 × 9 = 90	10 × 10 = 100	10 × 11 = 110	10 × 12 = 120
11 × 7 = 77	11 × 8 = 88	11 × 9 = 99	11 × 10 = 110	11 × 11 = 121	11 × 12 = 132
12 × 7 = 84	12 × 8 = 96	12 × 9 = 108	12 × 10 = 120	12 × 11 = 132	12 × 12 = 144
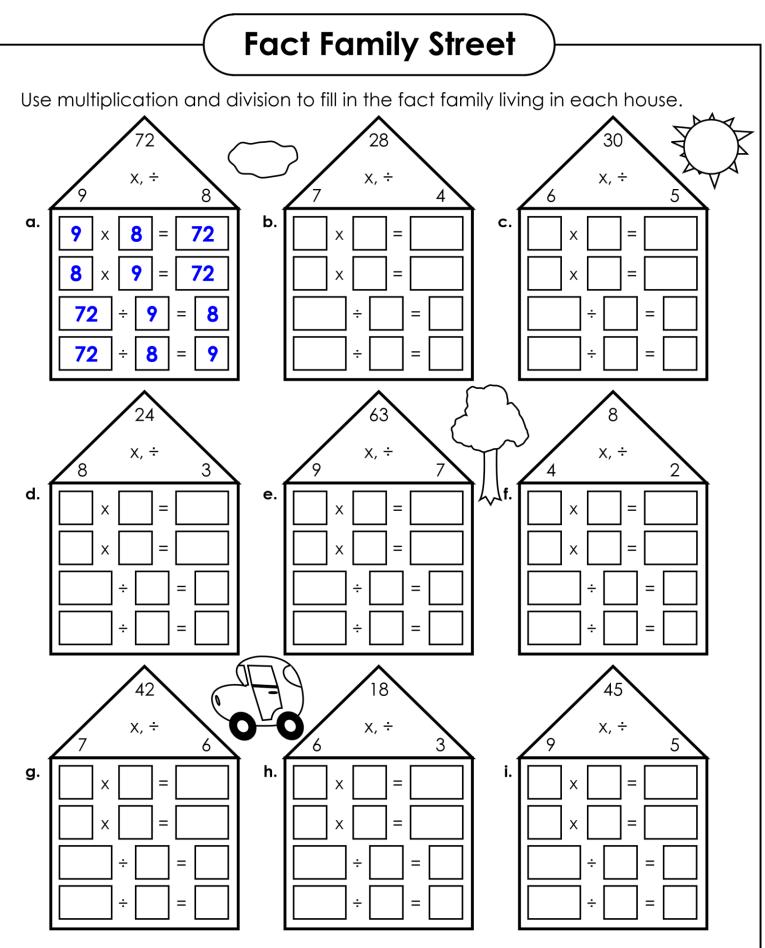
Skip Counting Cheat Sheet

	1	2	3	4	5	6	7	8	9	10	11	12
2's	2	4	6	8	10	12	14	16	18	20	22	24
3's	3	6	9	12	15	18	21	24	27	30	33	36
4's	4	8	12	16	20	24	28	32	36	40	44	48
5's	5	10	15	20	25	30	35	40	45	50	55	60
6's	6	12	18	24	30	36	42	48	54	60	66	72
7's	7	14	21	28	35	42	49	56	63	79	77	84
8's	8	16	24	32	40	48	56	64	72	80	88	96
9's	9	18	27	36	45	54	63	72	81	90	99	108
10's	10	20	30	40	50	60	70	80	90	100	110	120
11's	11	22	33	44	55	66	77	88	99	110	121	132
12's	12	24	36	48	60	72	84	96	108	120	132	144

Multiplication as Repeated Addition

___ + ___ + ___ + ____ = 16

___ x ___ = 16

___ + ___ + ____ = 6

___ x ___ = 6

___ + ___ + ___ + ___ + ____ = 20

___ x ___ = 20

___ + ___ + ____ = 21

___ x ___ = 21

6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 = _____ 8 x 6 = _____	10 + 10 + 10 + 10 = _____ 4 x 10 = _____
2 + 2 + 2 + 2 + 2 + 2 + 2 = _____ 7 x 2 = _____	1 + 1 + 1 = _____ 1 x 3 = _____
9 + 9 + 9 + 9 + 9 = _____ 5 x 9 = _____	8 + 8 + 8 + 8 = _____ 4 x 8 = _____

Name: _____

Repeated Addition

3 + 3 + 3 + 3 = _____

4 x 3 = _____

8 + 8 + 8 = _____

3 x 8 = _____

10 + 10 = _____

2 x 10 = _____

2 + 2 + 2 + 2 + 2 + 2 + 2 = _____

7 x 2 = _____

___ + ___ + ___ + ___ + ___ + ___ + ___ = ___

___ x ___ = ___

___ + ___ + ___ = ___

___ x ___ = ___

___ + ___ + ___ = ___

___ x ___ = ___

___ + ___ + ___ + ___ + ___ + ___ + ___ = ___

___ x ___ = ___

___ + ___ + ___ = ___

___ x ___ = ___

___ + ___ + ___ + ___ = ___

___ x ___ = ___

Name: _____

Fact Family Street

Use multiplication and division to fill in the fact family living in each house.

a. House: 72, ×, ÷, 9, 8

$9 \times 8 = 72$

$8 \times 9 = 72$

$72 \div 9 = 8$

$72 \div 8 = 9$

b. House: 28, ×, ÷, 7, 4

$\square \times \square = \square$

$\square \times \square = \square$

$\square \div \square = \square$

$\square \div \square = \square$

c. House: 30, ×, ÷, 6, 5

$\square \times \square = \square$

$\square \times \square = \square$

$\square \div \square = \square$

$\square \div \square = \square$

d. House: 24, ×, ÷, 8, 3

$\square \times \square = \square$

$\square \times \square = \square$

$\square \div \square = \square$

$\square \div \square = \square$

e. House: 63, ×, ÷, 9, 7

$\square \times \square = \square$

$\square \times \square = \square$

$\square \div \square = \square$

$\square \div \square = \square$

f. House: 8, ×, ÷, 4, 2

$\square \times \square = \square$

$\square \times \square = \square$

$\square \div \square = \square$

$\square \div \square = \square$

g. House: 42, ×, ÷, 7, 6

$\square \times \square = \square$

$\square \times \square = \square$

$\square \div \square = \square$

$\square \div \square = \square$

h. House: 18, ×, ÷, 6, 3

$\square \times \square = \square$

$\square \times \square = \square$

$\square \div \square = \square$

$\square \div \square = \square$

i. House: 45, ×, ÷, 9, 5

$\square \times \square = \square$

$\square \times \square = \square$

$\square \div \square = \square$

$\square \div \square = \square$

Name: _____

Multiplication with Arrays

When you multiply, think of the multiplication symbol as having the meaning "rows of."

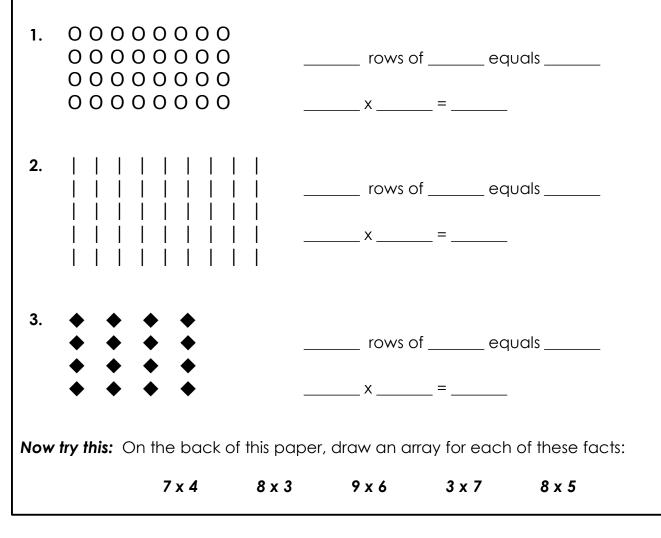The fact 3 x 6 would actually mean "3 rows of 6."

To solve this fact, draw 3 rows of 6 symbols.

    x x x x x x
    x x x x x x   3 rows of 6 symbols equals 18 symbols.
    x x x x x x   3 x 6 = 18

Symbols arranged in neat rows and columns are called arrays.

Look at each array. Count the symbols in each row and column carefully.
Write the multiplication fact for each.

1. O O O O O O O O
    O O O O O O O O   _____ rows of _____ equals _____
    O O O O O O O O
    O O O O O O O O   _____ x _____ = _____

2. | | | | | | | | |
    | | | | | | | | | | _____ rows of _____ equals _____
    | | | | | | | | |
    | | | | | | | | | | _____ x _____ = _____
    | | | | | | | | |

3. ◆ ◆ ◆ ◆
    ◆ ◆ ◆ ◆   _____ rows of _____ equals _____
    ◆ ◆ ◆ ◆
    ◆ ◆ ◆ ◆   _____ x _____ = _____

Now try this: On the back of this paper, draw an array for each of these facts:

7 x 4   **8 x 3**   **9 x 6**   **3 x 7**   **8 x 5**

Name: _____

Multiplication with Arrays

You can find the answer to basic multiplication facts by making a symbol picture called an array.

An array is a group of symbols arranged in straight rows and columns.

x x x x x x x
x x x x x x x   3 rows of 7 symbols equals 21 symbols.
x x x x x x x   3 x 7 = 21

Draw an array to find the answer to each multiplication fact below.
Be sure you draw your symbols in neat, straight rows and columns.

4 x 5 = _____   6 x 4 =   _____

3 x 8 = _____   3 x 9 = _____

5 x 8 = _____   7 x 4 = _____

4 x 9 = _____   5 x 5 = _____