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Teacher Created Materials

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Focused Mathematics Booster Pack—Level 5

This sample includes the following:

To Create a World in which Children Love to Learn!

Level 5

Focused Mathematics

Booster Pack

Management Guide

Teacher Created Materials
PUBLISHING

Table of Contents

Kit Components

High-Interest Books (six copies of six titles)

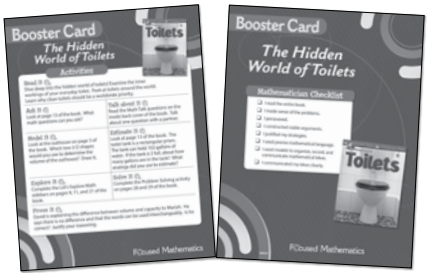
Books feature various, high-interest topics across content areas.

Overview Cards

Overview cards include a book summary, mathematics objective, reading levels, mathematics vocabulary, and cross-content connections.

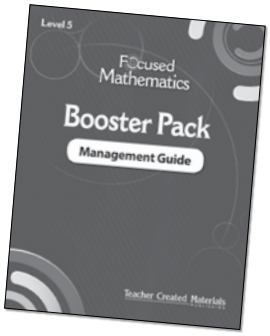
Booster Cards

Activities engage students in real-world mathematics and require students to demonstrate mathematical practices and processes.



Management Guide

The Management Guide includes a brief overview of the research, standards correlations, and instructional options and suggestions. Resources include student activity sheets, reproducible manipulatives, and rubrics.



Digital and Audio Resources

PDFs of the books, Booster Cards, Response pages, as well as professional audio recordings of the books are included. A complete list of available resources is listed on page 40.

Pacing and Instructional Setting Options

The following pacing and instructional setting options show suggestions for how to use this product. The *Focused Mathematics: Booster Pack* series is designed to be flexible and can be used in tandem with a core curriculum and a teacher's preferred instructional framework, such as Guided Math.

Pacing

Teachers should customize pacing according to student need. Each Booster Card includes 100 minutes of activities for a total of 600 minutes. Teachers may assign specific activities to meet instructional objectives or allow students to choose activities. Students may complete one activity or several activities to match the time available and their instructional needs.

Activity	Approximate Time
Read It	30 min.
Ask It	5 min.
Talk about It	5 min.
Model It	10 min.
Estimate It	5 min.
Explore It	20 min.
Solve It	15 min.
Prove It	10 min.

Instructional Setting Options

Whole-Class Instruction

Whole-class instruction is best suited for introducing each text to students or for teaching specific strategies or content-area concepts as they apply to instructional standards and objectives. In this setting, every student engages with the same text at the same time. PDFs of the books are available in the Digital and Audio Resources and are great for displaying to the whole class for a shared-literacy experience.

Small-Group Instruction

Instructional frameworks, such as Guided Math, support teachers who want to work with a specific group of students on a targeted comprehension or content skill. During small-group instruction, the teacher works with a select group of students with similar instructional needs. Students may sit with the teacher, either at a table or on the carpet. This setting promotes a sense of teamwork and collaboration and encourages participation in mathematical discussions. Working with students in small groups is also a great opportunity for teachers to informally assess student progress and make anecdotal notes.

Workstations or Centers

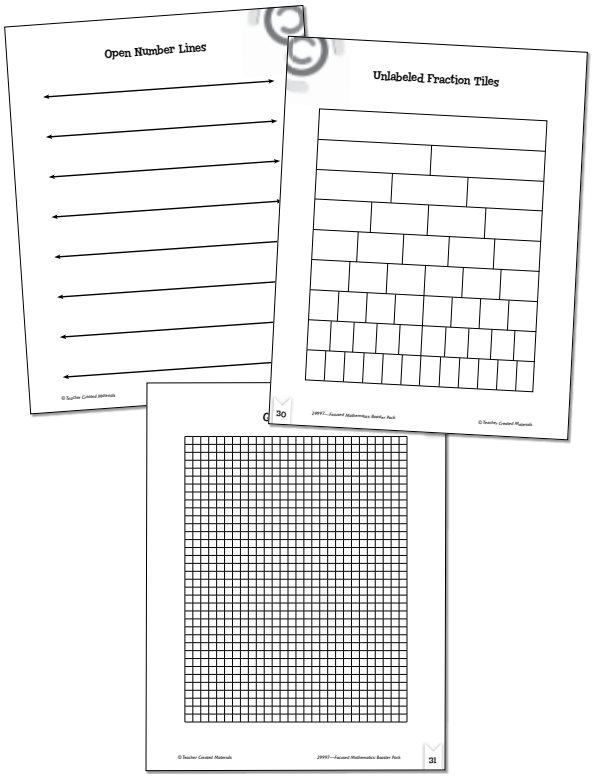
Students may engage independently or with partners at workstations or centers to build fluency, comprehension, and vocabulary, while applying math concepts and process skills. When working within this instructional setting, it is important that procedures and expectations are clear and students are able to complete the activities with little to no teacher guidance so that teachers can spend time with small groups.

Strategies for Differentiating Booster Card Activities

Below-Level Learners

You may choose to support below-level learners with some or all of these suggestions:

- **Manipulatives:** Provide below-level learners with concrete or representational manipulatives to help them explore the mathematics concepts. PDFs of reproducible open number lines, unlabeled fraction tiles, and graph paper (pages 29–31) are available in the Digital and Audio Resources.



- **Total physical response:** Challenge students to create hand motions to represent new math vocabulary.

Above-Level Learners

You may choose to support above-level learners with some or all of these suggestions:

- **New Booster Cards:** Have students create Booster Cards for books in your classroom library.
- **Multimedia Presentation:** Challenge students to create multimedia presentations to demonstrate what they learned from the *Focused Mathematics: Booster Pack*.

English Language Learners

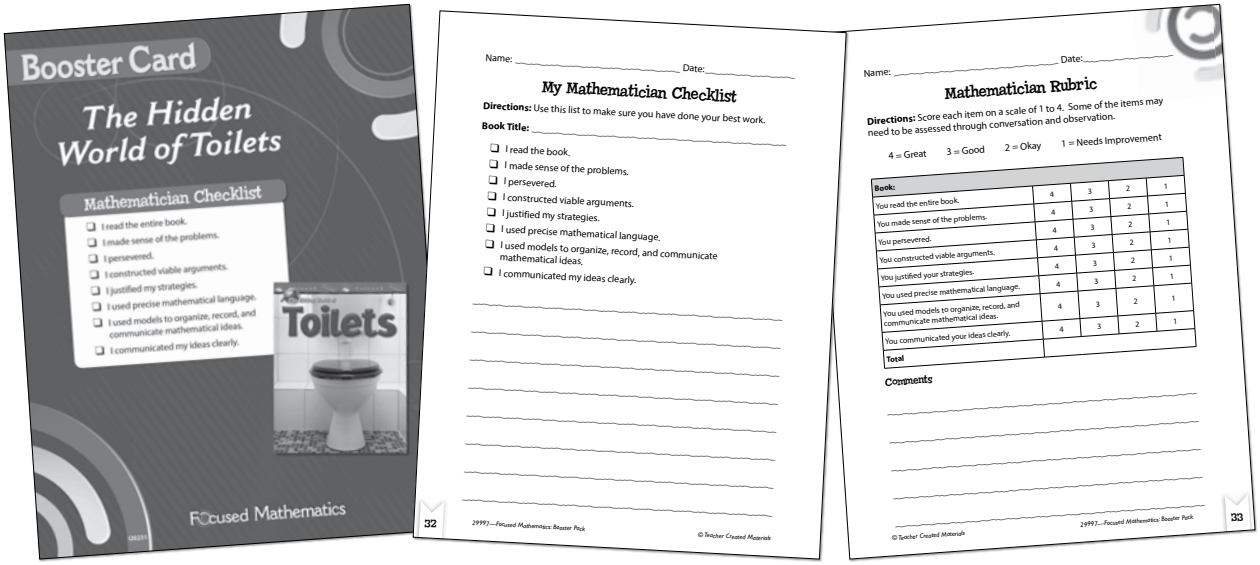
You may choose to support English language learners with some or all of these suggestions:

- **Professional Audio Recordings:** Model fluent reading by having English language learners listen to the professional audio recordings of the books that are available in the Digital and Audio Resources.
- **Sentence Frames:** Support language development and acquisition with sentence frames, such as the following: _____ *is a mixed number. The whole number is* _____. *The proper fraction is* _____.

Assessing Activities

Each *Focused Mathematics: Booster Pack* offers multiple assessment opportunities. Teachers can gain insight into student learning through small-group observations and analysis of student responses to the Booster Card activities. These formal and informal assessments provide teachers with additional data to help make informed decisions about what to teach and how to teach it. An answer key is provided (pages 34–37) to help evaluate student responses.

The Mathematician Checklist on the back of the Booster Cards provides an opportunity for students to reflect on their work. Distribute copies of the *My Mathematician Checklist* activity sheet (page 32) to students to guide self-reflection. Use the *Mathematician Rubric* (page 33) to assess students' mathematical practices and processes. These rubrics may be used in conjunction with each other to guide conversation during teacher-student conferences.



▲ Use the Mathematician Checklist on each Booster Card as a quick reference while completing activities.

▲ Distribute copies of the *My Mathematician Checklist* (page 32) to students as a way to encourage self-reflection and mathematical practices and processes.

▲ Complete the *Mathematician Rubric* (page 33) to give students feedback.

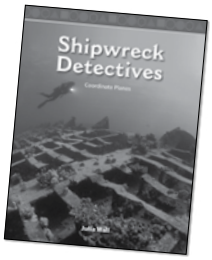
Book Summaries

Below are summaries of each book for teacher reference. This way, teachers can decide which books match the content that they would like to cover with their students. Also, teachers can use these summaries as a way to begin a group discussion with students about the books.

Fun and Games: Comic Conventions

Join Zach as he visits a comic convention and finds out why *fans* is short for *fanatics*! The crowds here love to show off their love for comic books, movies, and characters. Show off your strategies for division as Zach divides his attention among the exhibits, events, and people who bring comic books to life.

Shipwreck Detectives



Spend some time under the ocean as you explore the deep, deep blue while learning about graphing. Finding shipwrecks is much easier than ever before thanks to coordinate planes and technology!

The Hidden World of Toilets

Dive deep into the hidden world of toilets! Examine the inner workings of your everyday toilet, and peek at toilets around the world. Learn why clean toilets for developing countries should be a worldwide priority.

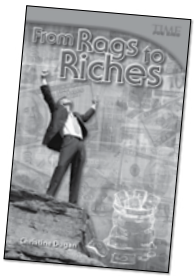
On the Job: Filmmakers

"Quiet on the set! And... ACTION!" Before a filmmaker can say these famous words, a lot of work takes place behind the scenes. Meet some of today's leading filmmakers, and find out how they tackle challenges and solve problems. Strategize as you add and subtract mixed numbers while learning about the art of filmmaking.

Where Does Your Money Go?

Read about the different ways people spend, save, and budget money. Find out the difference between buying something you want and buying something you need. Learn why being smart with money is an important skill for people of all ages.

From Rags to Riches



How do people become millionaires or even billionaires? Read how hard work and smart financial decisions can turn rags into riches. Learn how people can save and invest money. And, discover how to find true wealth no matter how much money you have!

Reading Levels and Content Areas

Teacher Created Materials takes great care to maintain the integrity of authentic informational text while leveling it to make the text accessible for all students. In this way, our content-area books provide rich informational reading experiences from which students can learn and be ready for the complexity of college-and-career level reading.

To preserve the authenticity of these reading experiences, it is crucial to maintain important academic and content vocabulary.

To support leveled instruction, new and challenging terms are used repeatedly and defined in text to promote understanding and retention.

The measures in this chart are for reference only. Books in the *Focused Mathematics: Booster Pack* series were chosen to include a range of grade-appropriate reading levels to support grade-level mathematics standards. **Note:** Reading levels vary from program to program and do not correlate exactly.

Title of the Book	Lexile® Level	Guided Reading
**Fun and Games: Comic Conventions*	790L	T
Shipwreck Detectives	760L	S
**The Hidden World of Toilets*	740L	S
**On the Job: Filmmakers*	740L	S
**Where Does Your Money Go?*	860L	U
**From Rags to Riches*	580L	U

**These titles have been officially leveled using the F&P Text Level Gradient™ Leveling System.*

Name: _____ Date:_____

Booster Card Workspace A

Directions: Complete the Booster Card activities in the workspaces. Circle the activity title(s) to label your work.

Book Title: _____

Ask It · Talk about It · Model It · Estimate It
Explore It · Solve It · Prove It

Ask It · Talk about It · Model It · Estimate It
Explore It · Solve It · Prove It

_____

_____

_____

_____

_____

Name: _____ Date:_____

Booster Card Workspace B

Directions: Complete the Booster Card activities in the workspace. Circle the activity title(s) to label your work.

Book Title: _____

Ask It · Talk about It · Model It · Estimate It
Explore It · Solve It · Prove It

Name: _____ Date:_____

Booster Card Workspace C

Directions: Complete the Booster Card activities in the workspace. Circle the activity title(s) to label your work.

Book Title: _____

Ask It · Talk about It · Model It · Estimate It
Explore It · Solve It · Prove It

Name: _____ Date:_____

My Mathematician Checklist

Directions: Use this list to make sure you have done your best work.

Book Title: _____

- ❑ I read the book.
- ❑ I made sense of the problems.
- ❑ I persevered.
- ❑ I constructed viable arguments.
- ❑ I justified my strategies.
- ❑ I used precise mathematical language.
- ❑ I used models to organize, record, and communicate mathematical ideas.
- ❑ I communicated my ideas clearly.

Name: _____ Date: _____

Mathematician Rubric

Directions: Score each item on a scale of 1 to 4. Some of the items may need to be assessed through conversation and observation.

4 = Great 3 = Good 2 = Okay 1 = Needs Improvement

Book:				
You read the entire book.	4	3	2	1
You made sense of the problems.	4	3	2	1
You persevered.	4	3	2	1
You constructed viable arguments.	4	3	2	1
You justified your strategies.	4	3	2	1
You used precise mathematical language.	4	3	2	1
You used models to organize, record, and communicate mathematical ideas.	4	3	2	1
You communicated your ideas clearly.	4	3	2	1
Total				

Comments

_____

_____

_____

_____

_____

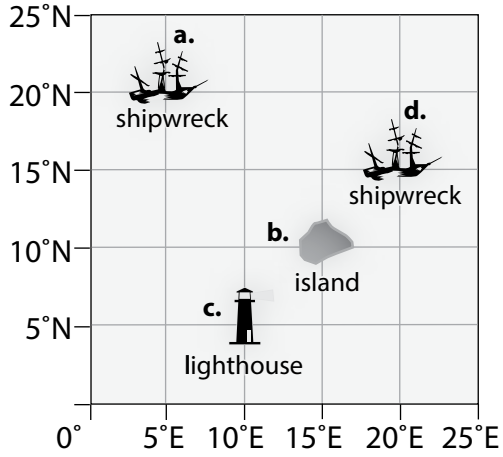
Answer Key *(cont.)*

c. (3, 2)

d. (4, 4)

page 18 sidebar:

Symbols will vary but layout should follow the format below.



page 25 sidebar:

a. (20°E, 40°N)

b. (40°E, 80°N)

c. (60°E, 20°N)

d. (80°E, 40°N)

Solve It

a. Wreck A: (21°E, 27°N); Wreck B: (27°E, 23°N); Wreck C: (23°E, 21°N); Wreck D: (26°E, 29°N); Wreck E: (24°E, 25°N); Wreck F: (29°E, 26°N); Wreck G: (28°E, 22°N); Wreck H: (23°E, 28°N)

b. Last Stand Island

c. Land's End Island

d. about 3 nautical miles

e. about 2 nautical miles

f. Ships G, C, and B were closest to the treasure. They were all about 3 nautical miles from the treasure.

g. Ship A was the farthest from the treasure. It was about 9 nautical miles away.

Prove It

Darnell is correct. Order matters when working with coordinate pairs. Coordinate pairs are written as (x, y). So, (2, 6) means 2 units on the x-axis and 6 units on the y-axis.

The Hidden World of Toilets

Ask It

Responses will vary but may include, "What is the formula to calculate the volume of a toilet tank?"

Talk about It

1. Responses will vary but may include, "Volume is found by multiplying the length, the width, and the height together."

2. Responses will vary but may include, "Solid volume is a certain shape that won't change. Liquid volume will take the shape of the container. They will be the amount of product that can be held in an object."

3. Responses will vary but may include, "The length, the width, and the height of a rectangular prism will be labeled."

4. No. Explanation responses will vary but may include, "The shape doesn't alter the volume. There is no one way a rectangular prism may be placed."

5. Responses will vary but may include, "Marcos can explain that the area of the base is length times width so they are both correct."

6. Responses will vary but may include, "Manufacturers need to calculate the volume of toilets so that they do not put too much water in the tank. By product will also be added so they will have to accommodate for the added volume."

Model It

The two 3-D shapes used to determine the volume of the outhouse are a triangular prism and a rectangular prism.

Estimate It

About 75 gallons of water.

Overview Card

Focused Mathematics

Fun and Games:
Comic Conventions

Book Summary

Join Zach as he visits a comic convention and finds out why *fans* is short for *fanatics*! The crowds here love to show off their love for comic books, movies, and characters. Show off your strategies for division as Zach divides his attention among the exhibits, events, and people who bring comic books to life!

Objectives

Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Mathematics Vocabulary

dividend division divisor quotient

Cross-Content Connections

(Social Studies) Storytelling is a form of entertainment that's been around since ancient times. Mythology is a collection of stories that explain nature, history, and the customs of a culture. Have students read myths from a particular culture to identify that culture's values and customs.

(Science) Division isn't just applicable at comic conventions. Mitosis is a process in which a cell's nucleus (the central part of a cell that contains genetic information) divides in two. These two new cells have the same genetic information. The process of cellular division helps cells multiply. Have students draw models of mitosis and emphasize how the two new cells have the same parts.

Reading Levels
Lexile®: 790L
Guided Reading: T

ISBN-13: 978-1-4938-8056-0
TCM 30031 (i20283)

Teacher Created Materials PUBLISHING

Booster Card

Fun and Games: Comic Conventions

Activities

Read It 30
Follow Zach as he takes you through a comic convention where you will learn all about comic books and the fans that adore superheroes. Show off your strategies for division as Zach divides his attention among the exhibits, events, and people who bring comic books to life.

Ask It 5
Look at pages 18 and 19 of the book. What division questions can you ask?

Talk about It 5
Read the Math Talk questions on the inside back cover of the book. Talk about one question with a partner.

Model It 10
Write a division story that goes with 1,008 ÷ _____ = 42. Solve the problem.

Estimate It 5
If comic books cost $5 each, about how many could you buy with $321? What strategy did you use to estimate?

Explore It 20
Complete the Let's Explore Math sidebars on pages 13, 21, and 27 of the book.

Solve It 15
Complete the Problem Solving activity on pages 28 and 29 of the book.

Prove It 10
Tyler thinks that whenever someone divides two numbers, the quotient is always less than the dividend. When might this not be true?

Booster Card

Fun and Games:
Comic Conventions

Mathematician Checklist

- ❑ I read the entire book.
- ❑ I made sense of the problems.
- ❑ I persevered.
- ❑ I constructed viable arguments.
- ❑ I justified my strategies.
- ❑ I used precise mathematical language.
- ❑ I used models to organize, record, and communicate mathematical ideas.
- ❑ I communicated my ideas clearly.

Focused Mathematics
i20229

FUN AND GAMES

COMIC CONVENTIONS

Division

Kristy Stark

Publishing Credits

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http://www.tcmpub.com

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Table of Contents

A Comic Obsession

The only thing Zach wants to do is read his comic books. He reads them while he eats breakfast. He daydreams about them while he's at recess. As soon as he gets home, he finishes his homework so he can read them while he has a snack. His mother jokes that he probably dreams about comic books, too. Even though Zach won't admit it, he actually does dream about comic book superheroes!

Zach plans to spend his entire summer vacation feeding his obsession. He'll read comic books and share them with his friends. He'll do small jobs for neighbors to earn money to buy tickets to Comic-Con®.

However, Zach's mom has different plans for his first day of summer vacation. "Mom, I just want to stay home to read my comic books!" whines Zach.

"I understand, Zach, but we are going to visit your uncle today. I haven't seen him in a long time, and he hasn't seen you since you were a baby. He's an interesting man who has lived an amazing life. I really think you will enjoy your time with him. He even knows a thing or two about comic books. You might learn something from him."

What on Earth am I going to learn about comics from my uncle? thinks Zach. But, he figures that it is pointless to argue with his mother. At least he can read some comics in the car while they travel.

When they arrive at Uncle Graham's house a few hours later, Graham greets Zach and his mother.

Zach is very surprised to see that Uncle Graham doesn't dress as professionally as his mom does. Uncle Graham wears sneakers, jeans, and a T-shirt. The most surprising part is that he's wearing a T-shirt with a comic character that Zach recognizes: Green Lantern!

"How do you know about Green Lantern?" asks Zach.

"Green Lantern has been my favorite comic book character since I was a kid, Zach. I've loved and collected comic books since I was around 10 years old. Did you know that my father, your grandfather, even attended the very first comic book **convention**?"

"Grandpa went to the first Comic-Con? I'm saving my money so I can hopefully go one day!"

"Yes, he attended the very first one, but it wasn't in San Diego like it is today. Let me get his old photo albums to show you pictures from that first convention."

LET'S EXPLORE MATH

Zach has 75 comic books. His mom wants him to store them in boxes instead of leaving them on the floor of his room. Each box holds 12 books. How many boxes does he need? Why?

The First Comic Convention

Zach is stunned to see Grandpa Al's photos. Graham tells him that the first convention was held in New York City on July 27, 1964. He shows Zach the photos and talks about the convention.

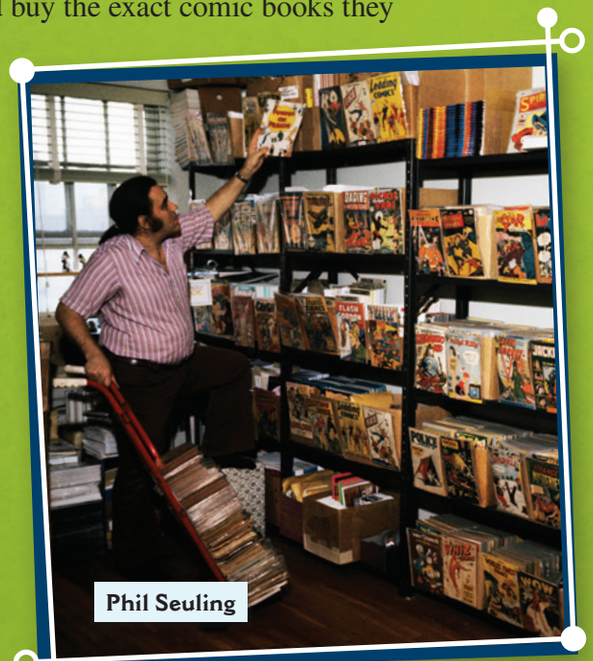
"The first convention was called *Comicon*. There were only about 100 people, and it was held on a hot day in July. Phil Seuling (SOO-ling) brought a case of soda to help the **attendees** cool down from the heat."

Zach's blank face indicates that he has no idea who Seuling was, so Graham decides that Zach needs to learn more about the history of the conventions.

How Collectors Got Their Comics

Seuling came up with the idea to have comic **publishers** sell directly to collectors and fans. This way, fans could buy the exact comic books they wanted from the publisher. Comics were previously sold like newspapers. They were sold at stands that had a new supply each day. The comic books that were not sold that day were returned to the publisher for a refund. The publisher recycled the returned books to make more books.

Seuling thought of a way to make sure that all comic books were sold. His idea would mean more money for the publishers. It would mean more comic books in the hands of fans, too.


Phil Seuling

Let's Explore Math

About 100 people attended the first comic convention in New York City. Now, about 180,000 tickets are sold! How many times greater is the attendance now? Choose your answer, and explain how you know it is reasonable.

A. 18
B. 180
C. 1,800
D. 18,000

Attendees look through boxes of comic books at a convention in New York City.

Seuling set up a system for collectors to preorder comic books. Collectors would give him their money to order what they wanted. He would place an order directly with the publishers. Then, he would distribute the comics to the people who ordered them.

Seuling had a huge impact on the future of publishers, collectors, and fans. His idea changed the way publishers sold comic books. It changed the format of comic conventions, too. At future conventions, the publishers would interact with the collectors. And, they would sell comics directly to the fans.

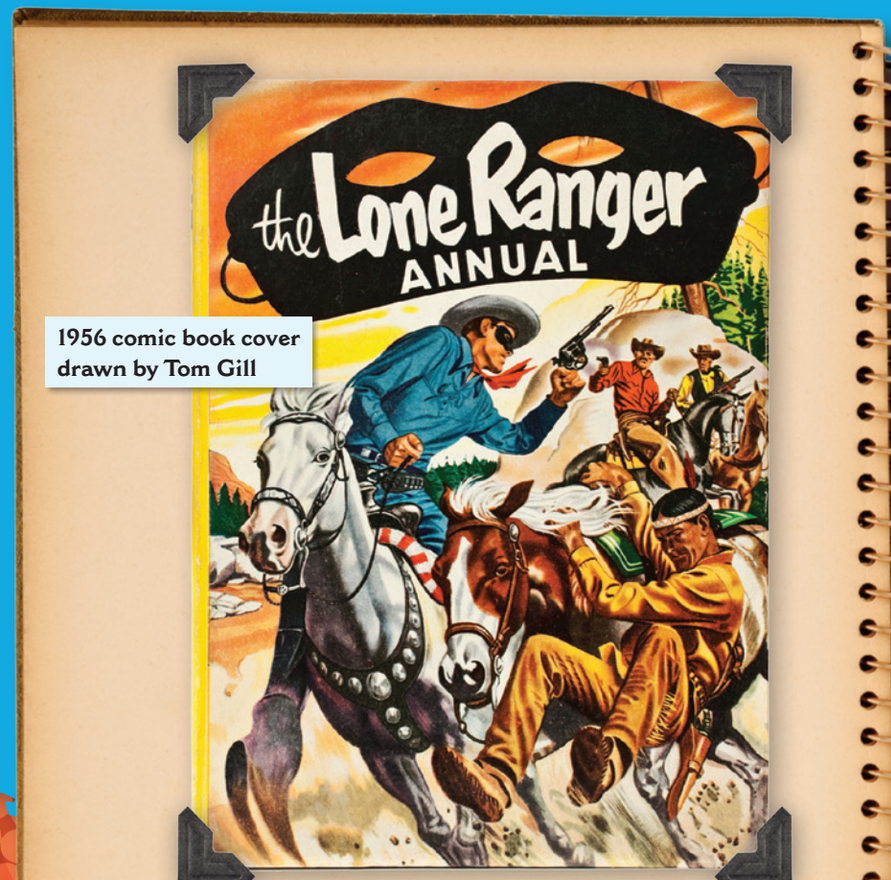
Fans and Creators Interact

Zach states, "So I guess we have Seuling to thank for the way we buy comics."

"You're right, Zach," says Graham. "But there are lots more people that helped shape the conventions."

Graham explains how the convention was the first time that fans met the creators and artists of their favorite comic books. Bernie Bubnis planned the event. He wanted fans to interact with artists and creators. So, he invited Tom Gill to talk about how to draw comics. Gill was the artist of a comic book series called *The Lone Ranger*.

Steve Ditko attended the first convention, too. He was the artist of the original Spider-Man comic books. Ditko drew the cover art on the **program** for the 1964 convention.



1956 comic book cover drawn by Tom Gill

Comic-Con International: San Diego

Zach is **reeling** after all the info Graham shared. "Wow, I didn't know any of this!" exclaims Zach. "Can you tell me more about the San Diego convention?"

"Of course! It is now the most famous comic event. It started in San Diego, California." Graham finds the photos of that day. "It happened on March 21, 1970. It was a one-day event." He tells Zach it was called the Golden State Comic-Minicon.

The event took place at the U.S. Grant Hotel in downtown San Diego. The goal was to raise money for a larger event. The event's planners, including Shel Dorf, Ken Krueger, and Richard Alf, hoped to get fans interested in a larger comic event, too. There were about 100 people at the first event. Films and science fiction books were included.

In 1972, the event's name was changed to San Diego's West Coast Comic Convention. It was renamed San Diego Comic-Con in 1973. All the name changes did not **deter** people from attending. The number of people increased each year. In 1995, planners changed the event's name one more time. It was named Comic-Con International: San Diego (CCI). This name is still used, and fans are still flocking to attend. In recent years, the event has hosted more than 135,000 fans.

U.S. Grant Hotel

LET'S EXPLORE MATH

The exhibit hall at Comic-Con has about 42,000 square meters of floor space. There are 728 exhibitors scheduled to display booths.

1. Imagine that each exhibitor will occupy the same amount of floor space. Convention planners want to estimate this amount. Which expression should they use to make their estimate? Explain your reasoning.

   A. 42,000 ÷ 700 **B.** 42,000 ÷ 800

2. Which of the following is the best estimate for the amount of floor space each exhibitor occupies? Explain your reasoning.

   A. about 6 square meters

   B. about 60 square meters

   C. about 600 square meters

   D. about 6,000 square meters

Attending Comic-Con

Zach is so happy that he was able to spend the weekend with his uncle. He plans to see much more of him in the summer.

After Zach returns home, he gets a text message from Graham. The text reads, "I've got a BIG surprise for you—call me ASAP!" Zach dials Graham's number excitedly.

A few minutes later, Zach runs out of his bedroom to tell his mother the great news! His uncle is taking him to Comic-Con for his birthday!

That night, Zach can barely sleep.

The next morning, Uncle Graham arrives early. "Are you ready to go, Zach?"

"Yes! I've been waiting my whole life to go! I'm more than ready!" replies Zach.

When they arrive at the convention, Zach can hardly believe he is there. There are so many things to see and do. Luckily, Uncle Graham is basically a **professional** when it comes to attending the convention.

Let's Explore Math

Comic-Con is so large that some events are held at a nearby theater instead of the convention center. Imagine that 4,000 convention-goers attend events at the theater. The theater hosts 16 events with the same number of people at each. Complete the partial products model to find out how many people attend each event at the theater.

$$
\begin{array}{r}
16\overline{)4,000} \\
-\underline{\qquad} \quad (200 \times 16) \\
800 \\
-\underline{800} \quad (\underline{\quad} \times 16) \\
0
\end{array}
$$

Tips and Tricks

Graham has learned that with careful planning, he can see and do as much as possible. He shares his tips with his nephew, so Zach can look like a pro, too.

Graham told Zach to wear comfortable shoes. They will do a lot of walking and standing in lines. Zach is grateful that his feet won't be sore.

They bring their own snacks and water, so they are not hungry or thirsty while waiting in long lines. They don't waste time trying to find food throughout the day, and they won't have to spend extra money on snacks.

Before arriving, Graham and Zach reviewed the convention schedule and decided exactly what they wanted to do. Graham warns that it is not possible to see everything, so they figure out which events are most important to Zach.

Zach wants to attend a few **panels**. Graham recommends that they get in line at least a couple hours before the panels start. He also informs Zach that some people have to get in line five to six hours before popular panels.

A comic fan dresses as a superhero to walk around the exhibit hall.

A long line forms for a comic convention.

A convention-goer pedals his way through the convention.

Crowds explore Comic-Con's exhibit hall.

An artist draws sketches for fans at a comic convention in Ireland.

What to See and Do

There is a huge **exhibit** hall that has a variety of booths set up.

Game companies and movie studios set up displays in the hall. Publishers of comic and science fiction books set up booths, too. They have information about their new products and movies that will come out soon. They often give fans free items with the company's name or movie title. Zach and Graham are prepared with tote bags to carry all of their loot from the exhibit hall.

Visitors can spend nearly an entire day looking at all of the booths in the hall. **Vendors** sell many different things for people to buy. They sell comic books and graphic novels. Some comic collectors visit many booths to find specific books they need for their collections.

There are vendors who sell costumes and T-shirts, too. Some vendors sell collectible **replicas** of characters or items from comics and movies. People can also buy art supplies, posters, and jewelry at the booths.

Graham points out Artists' Alley in the exhibit hall. He explains that this is where artists, actors, and authors have tables set up to meet fans. Zach spends lots of time exploring this area.

Actors Will Ferrell, Tina Fey, and Jonah Hill discuss their movie, *Megamind*, at the Comic-Con press panel.

The artists, authors, and actors sign autographs for fans. Zach waits in line to have his picture taken with his favorite artist. The artist draws a quick sketch for Zach. "I'm going to keep this forever," he tells Graham.

Panels are a huge part of the convention. A panel is a small group of people who gather together to discuss a particular topic. **Industry** professionals speak at the panels. Panels give fans a chance to learn and hear about topics related to comics, games, and movies. Some actors participate in **Q&A** (question and answer) sessions. They answer fan questions and speak about their experience filming the movie. In recent years, film studios have made movies based on Marvel Comics® and DC Comics™. People want to see the actors that have portrayed their favorite comic characters. There is a huge variety of panel topics. So, there is a topic for just about everyone at Comic-Con.

An artist sketches during an exhibition.

A huge part of the convention is the costumes! Lots of fans come dressed as their favorite characters. Other fans dress like video game or TV characters.

There is a **masquerade** costume contest on Saturday evening. All participants have costumes they have made themselves. Awards are given for many categories. The contest is always a **highlight** of the weekend. Zach wants to see the contest.

"We should get in line early to get seats for the contest," explains Graham.

LET'S EXPLORE MATH

Panels are held in 19 different rooms at the convention center.

1. Imagine that there are 3,192 folding chairs for panel attendees. Each room must have the same number of chairs. Estimate the number of chairs in each room. Do you think your estimate is greater than or less than the exact answer? Why?
2. Complete the area model to find the number of chairs in each room.

×	100	+ _____	+ ____	= _____
19	_____	1,140	_____	

A Comic-Con attendee dresses as superhero Black Canary.

More Comic Conventions

As they wait in line, Zach asks Graham if there are other comic conventions.

An Aquaman fan attends New York Comic-Con.

Graham tells Zach, "Conventions in San Diego and New York City are the most popular. They have the highest numbers of attendees. But, there are lots of comic conventions. They have costumes, artists, and fans, too." He tells Zach about other conventions as they wait in line.

New York Comic-Con® (NYCC) started in 2006. More fans than were expected showed up the first year of the event. NYCC's planners had to send away thousands of fans. They did not have enough space for them. In the years after that, planners were more prepared for large crowds. Numbers have increased each year. Around 180,000 fans now go to NYCC.

Lots of fans go to WonderCon®, too. This event started in 1987 in San Francisco. In 2012, it moved to Anaheim, California. The same group that puts on CCI now runs it. About 60,000 people go to this event in March or April of each year.

Emerald City Comic-Con® (ECCC) is also becoming a popular event. It began in Seattle, Washington in 2003. Jim Demonakos created the event. He owned a comic book store and attended other comic events. He wanted to bring a large comic event to the United States's northwest. So, he decided to start ECCC. Lots of comic fans and creators show up each year. About 70,000 people now attend the event.


Two fans pose in costume at WonderCon in Anaheim.

In 2011, Comikaze Expo® began in Los Angeles. It was modeled after CCI. Comic creator Stan Lee noticed the event. Lee is one of the most famous names in comic books. He used to be the president of Marvel Comics. During his career, he worked with artists to create Spider-Man and the Hulk. He created Iron Man, Fantastic Four, and X-Men, too.

So, when Lee wanted to partner with Comikaze planners in 2012, they agreed. They even added his name to the event, calling it Stan Lee's Comikaze Expo. Then, in 2016 it was renamed again as Stan Lee's L.A. Comic Con. About 75,000 fans attend each year in October.

Stan Lee (right) welcomes fans to his Comikaze Expo with comic book artist and entrepreneur Todd McFarlane (left) in 2012.

As the name suggests, Megacon® is a big comic event. It is held in Orlando, Florida, every May. It is one of the largest events in the southeastern United States. It includes comics, **sci-fi**, **anime** (AH-neh-may), horror films, and gaming. Crowds usually exceed 100,000 fans.

"For comic book lovers like us, there are so many events to choose from!" says Graham.

"We'll have to find another event to attend soon," says Zach.

Fans at Stan Lee's Comikaze Expo dress as characters from *Peter Pan* and *Hook*.

Lifetime Memories

Zach's experience at Comic-Con is one that he will never forget. Throughout the event, Uncle Graham taught him so many things about comic conventions and their histories.

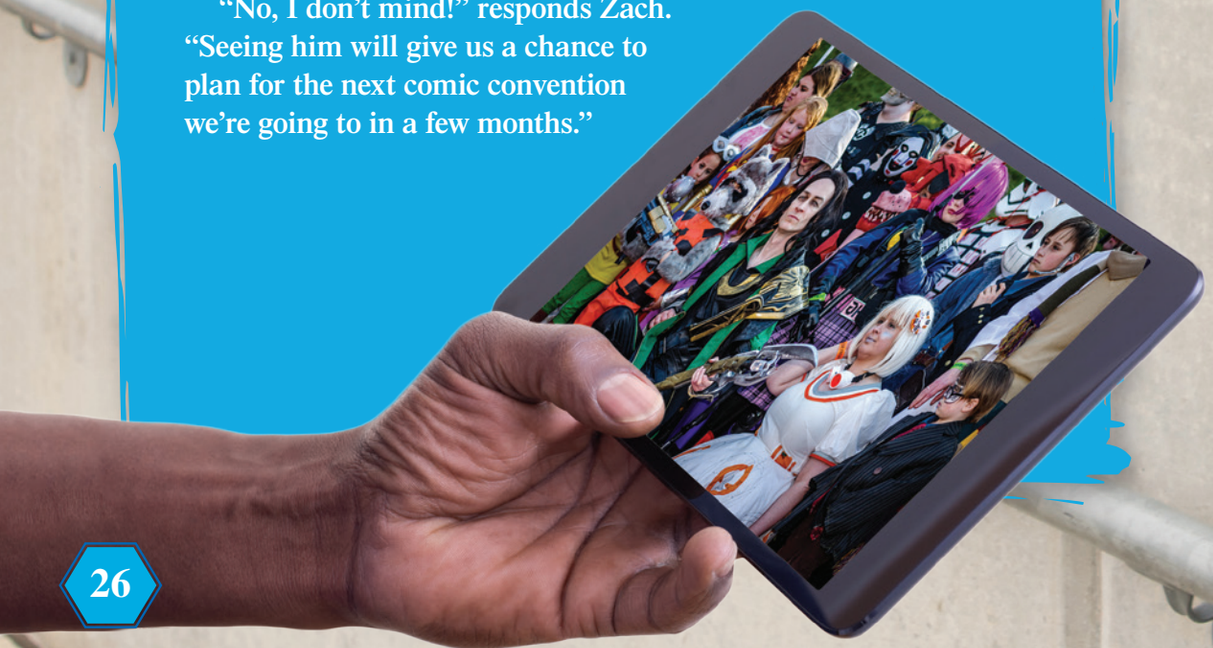
When he gets home, Zach shows his mom photos that he took at the convention. He shows her the autographs that he collected from famous comic artists and actors, too. He tells her about everything they did and saw throughout the multi-day convention.

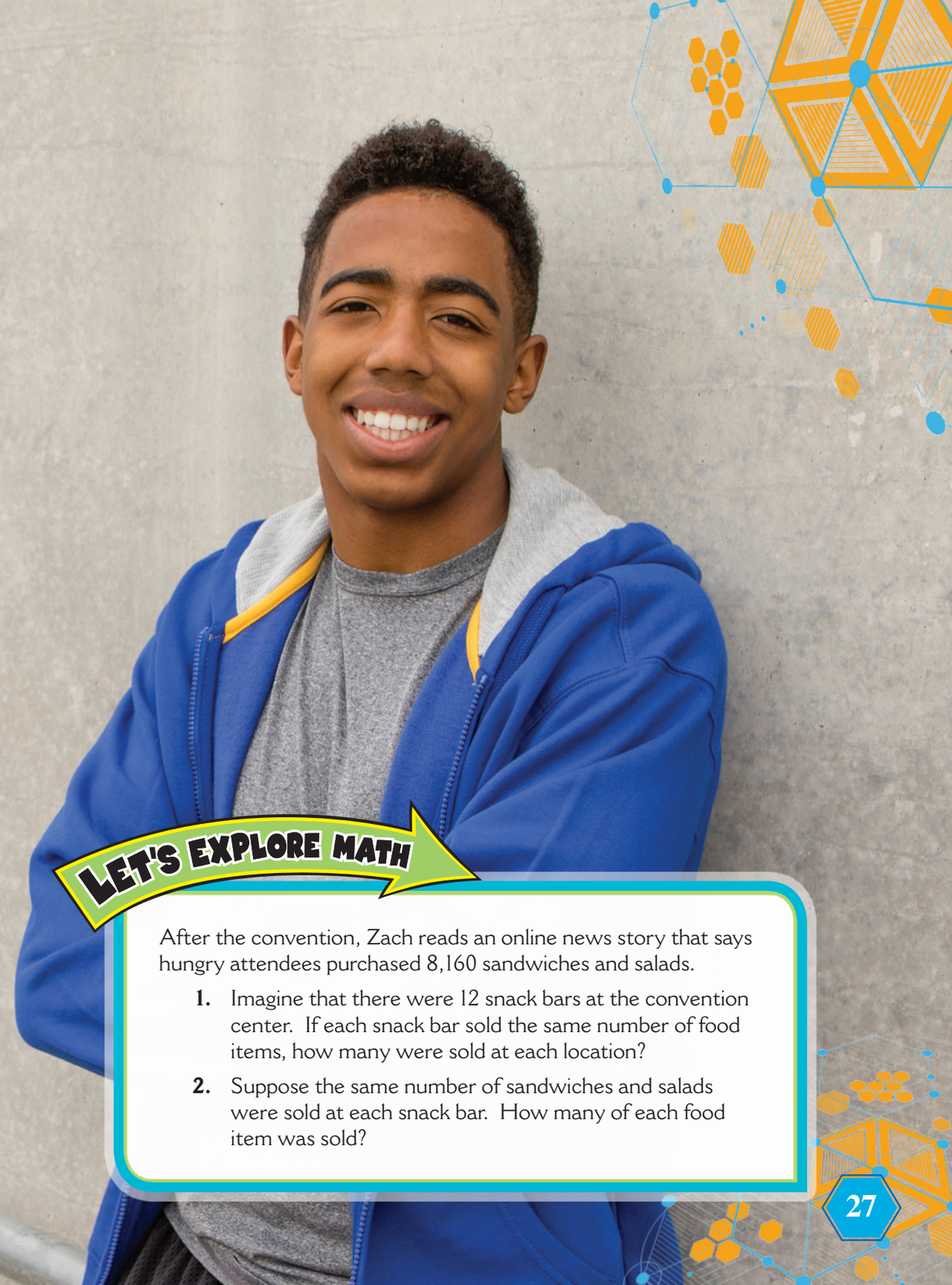
"What was your favorite part, Zach?" his mom asks.

"Well, I loved every part of the event, that's for sure. If I had to pick one thing, my favorite part would be spending time with Uncle Graham. He knows about comics, artists, and books. It was so much fun to hear about each convention. I will never forget this weekend as long as I live!"

"So, you won't mind visiting Uncle Graham again next month?" Mom asks.

"No, I don't mind!" responds Zach. "Seeing him will give us a chance to plan for the next comic convention we're going to in a few months."





Let's Explore Math

After the convention, Zach reads an online news story that says hungry attendees purchased 8,160 sandwiches and salads.

1. Imagine that there were 12 snack bars at the convention center. If each snack bar sold the same number of food items, how many were sold at each location?
2. Suppose the same number of sandwiches and salads were sold at each snack bar. How many of each food item was sold?

Problem Solving

Comic convention attendees see the fun. But, the good times are only possible when planners pay attention to details. Convention-goers rely on planners to arrange seating for panels, organize exhibitors, order enough food, and so much more. Imagine that you are the lead planner at a convention center hosting a one-day comic convention. Prove that you understand the planning process by using the information sheet to answer the questions.

1. How much will you suggest charging attendees for tickets if the convention center needs to make $200,000 from hosting the event?

2. Each exhibitor occupies the same amount of floor space in the exhibit hall.

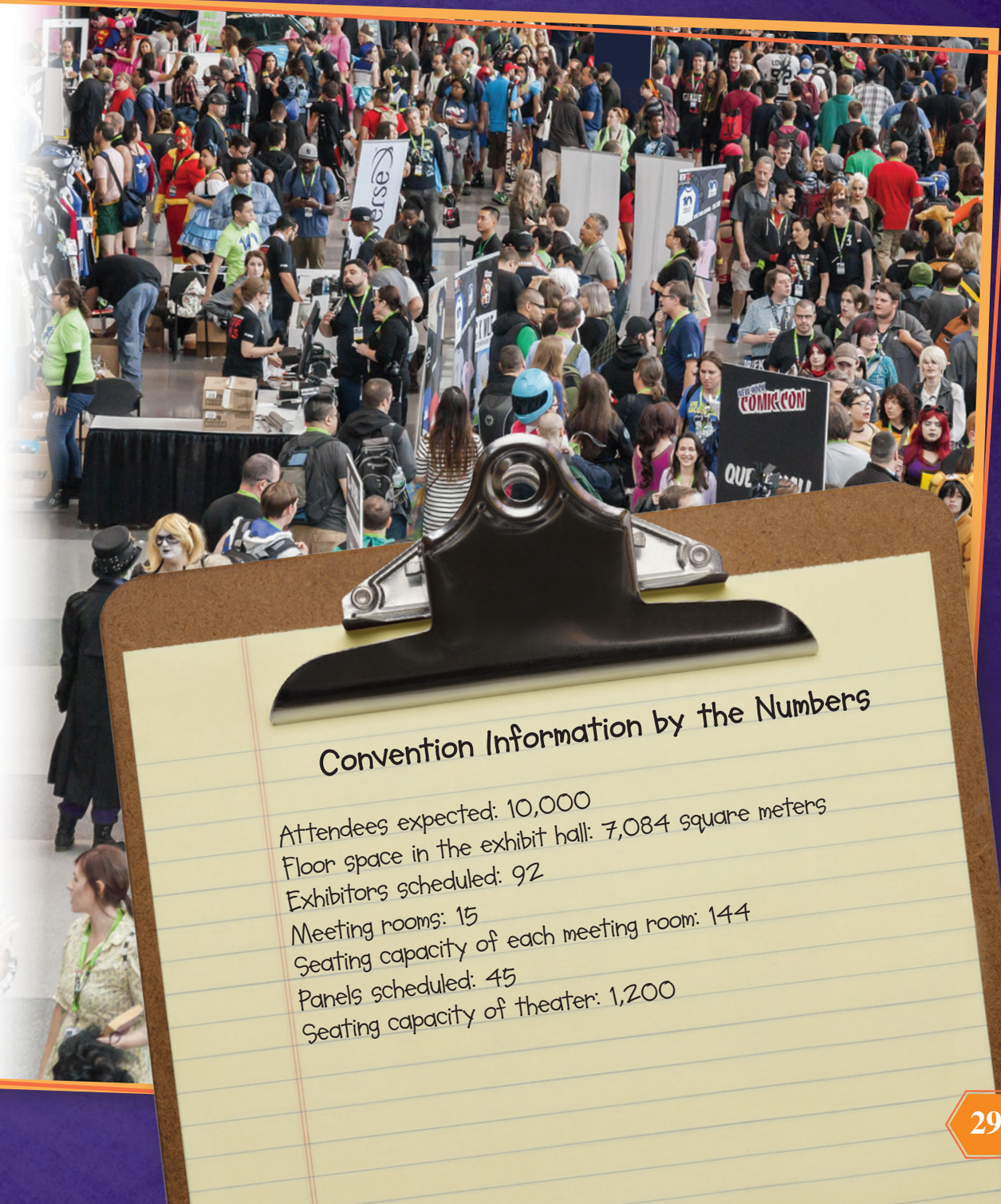
   a. The brochure advertising the event will only list estimates. Estimate how much floor space each exhibitor occupies.

   b. The workers setting up exhibitor booths need exact numbers. Exactly how much floor space will each exhibitor occupy?

3. You realize that not all panels can meet at the same time. How many times will each meeting room be used during the day?

4. The convention center has 2,200 folding chairs. Is this enough for all the meeting rooms to have the maximum number of seats? Why or why not?

5. There is a sold-out movie screening in the theater. The filmmaker wants to serve popcorn to everyone. The convention center's popcorn machine can make 72 servings of popcorn at a time. How many times must workers run the machine so that each moviegoer gets a serving?



Convention Information by the Numbers

Attendees expected: 10,000
Floor space in the exhibit hall: 7,084 square meters
Exhibitors scheduled: 92
Meeting rooms: 15
Seating capacity of each meeting room: 144
Panels scheduled: 45
Seating capacity of theater: 1,200

Glossary

anime—Japanese animation

attendees—people who attend a convention, meeting, or conference

convention—a large meeting of people who share a common interest

deter—to prevent from happening

exhibit—display of objects

highlight—the best part of something

industry—a group of businesses that provide the same service

masquerade—a party where people wear masks and costumes

panels—groups of people who answer questions or give information about a subject

professional—someone who has special training, skills, or education on a particular subject

program—a small book that gives information about an event

publishers—companies that produce books, magazines, and newspapers

Q&A—question-and-answer session

reeling—feeling confused

replicas—exact or very close copies

sci-fi—short for science-fiction; imaginary stories about science

vendors—people who sell items

Index

Answer Key

Let's Explore Math

page 7:

7 boxes; 6 boxes can hold 72 books, so the 3 remaining books require an additional box.

page 9:

C; Explanations will vary but may include that 100 × 1,800 = 180,000.

page 13:

1. A; Explanations will vary but may include that 728 is closer to 700 than 800.
2. B; Explanations will vary but may include that 42,000 ÷ 700 is 60.

page 15:

Model shows quotient of 250; 3,200; 50

page 21:

1. Estimates will vary. Example: *Each room has about 160 chairs because 3,200 ÷ 20 = 160. I think my estimate is less than the exact answer because after rounding 3,192 to the nearest hundred, I divided by 20 rooms instead of 19.*
2. Model shows quotient of 168; 1,900; 60; 8; 152

page 27:

1. 680
2. 340

Problem Solving

1. $20
2. **a.** about 70 sq. m
   b. 77 sq. m
3. 3
4. Yes; 15 × 144 = 2,160
5. 17 times; 1,200 ÷ 72 = 16, remainder 48. Since 48 more servings are needed, the machine must be run 17 times.

Math Talk

1. What does it mean when a division problem has a remainder?
2. How can division help you find missing factors in multiplication problems?
3. How can estimation help you decide whether a quotient is reasonable?
4. How can area models help you find quotients?
5. What patterns do you notice when dividing numbers by multiples of 10?
6. How might comic-convention planners use division?