

Welcome New Fourth Grade Students,

The summer is almost here!! We are all ready to relax and enjoy the warm weather. For the past 9 months you have been studying very hard and learning many new things. In light of this, I am assigning some summer work to keep your skills sharp.

LITERATURE:

You should be reading every day for at least 20 minutes. Please read the books listed in the **2017 Governor's Reading Challenge**. Some information is attached here, and more is available on the ct.gov website.:

(<http://www.sde.ct.gov/sde/cwp/view.asp?a=2683&q=320322>)

Please read and fill out the reading log for each book you complete. Also attached are the **2018 Nutmeg Award Nominees**. You may want to choose from these too.

*You are expected to complete 2 written or typed summaries based on 2 books from either of these lists.

MATH:

I have attached a Math packet which is a review of 3rd grade math and some topics which you will see in 4th grade.

*Please complete this math packet a little at a time.

Assignments will be due on the first day of school.

I am looking forward to being your teacher next year and I know we will have great year!

Sincerely,

Mrs. Bruckner

4th Grade Supply List 2017-2018

Notebooks:

2 Spiral notebooks (Spanish, Math)

4 Black and white Composition Notebooks (Math interactive work, LA)

2 Pocket folders (Take home, Spanish)

Pencils with a small pencil sharpener with receptacle

1 Large Eraser

Blue, Black and Red pens - prefer erasable

8-Pack Crayola water based markers

8 color pack colored pencils

3 glue sticks

1 Small box of crayons

Scissors

1 Clear tape

3 Boxes of tissues (to be shared)

2 Rolls of paper towels

2 large book covers

1 package of 35 lined index cards

2 packages of 3X3 post-it notes

1 Package of Wide Ruled loose leaf paper

1 permanent black marker

2 unscented dry erase markers and eraser (Expo)

2 Yellow highlighters

1 Protractor and 1 ruler (with mm and inches)

1 box of Clorox wipes

Mrs. Bruckner's wish list

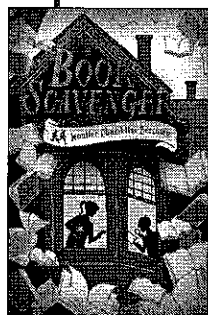
Plastic spoons and forks

AA Batteries

D Batteries

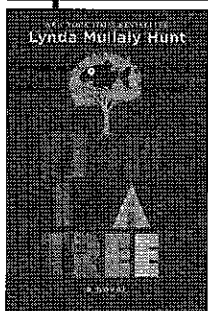
Extra Clorox wipes

2018 Nutmeg Book Award Intermediate Nominees



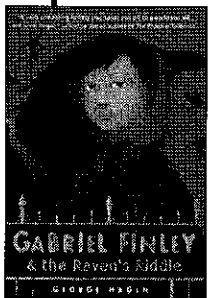
Book Scavenger by Jennifer Chambliss Bertman

"Book Scavenger" is an online game which has gone viral. Solving puzzle clues to find books hidden all over the world is the name of the game. When Emily moves to San Francisco, she discovers that the game's creator has been attacked and his new game is missing! Can she and her new friend James figure out what happened before the attackers find them?



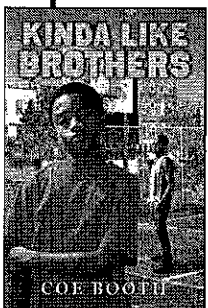
Fish in a Tree by Lynda Mullaly Hunt

Ally was a class jokester to hide the fact that she had trouble reading. When Ally's teacher goes on maternity leave, the substitute sees through her act and is determined to help her learn differently. As her reading skills improve and Ally's confidence grows, can the class clown become the class president?



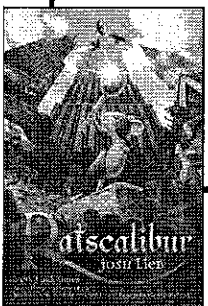
Gabriel Finley and the Raven's Riddle by George Hagen

When Gabriel rescues a baby raven, he discovers people in his family can bond with ravens in fantastic ways. He goes on a quest with three brave friends and his raven to try to rescue his missing father, solving riddles and avoiding flocks of vicious birds along the way.



Kinda Like Brothers by Coe Booth

Jarrett's plans for an amazing summer come crashing down when he realizes he not only has to go summer school, but his mom is fostering a new baby... and the baby comes with an older brother. Now Jarrett has to share his friends, his room, and his life with a complete stranger, Kevon. The two cannot get along: Kevon acts like he's better than Jarrett, and has been keeping some major secrets. Jarrett's got to do something about it. But what?

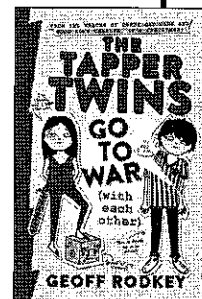


Ratscalibur by Josh Lieb

After being bitten by an elderly rat, Joey finds himself transformed from a 7th grade boy into a rat. After drawing the "spork from the scone," Joey goes on a quest into Central Park to find Squirrelin the Squagician, battling crows, rats and more with Ratscalibur, his sword, in order to save his new rat friends in this rodent retelling of the classic King Arthur story.

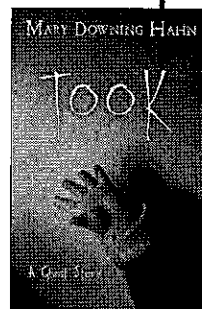
The Tapper Twins go to War (with Each Other) by Jeff Rodkey

It all started with a rumor (someone farted in the cafeteria) and twins Claudia and Reese were at war. Through text messages, interviews, photos, and screenshots, the series of events in the battle are retold. The pranks are all fun and games until they have to deal with the consequences of their actions.



Took: A Ghost Story by Mary Downing Hahn

Daniel is the new kid in a small town in West Virginia and isn't fooled by Brody trying to scare him with creepy ghost stories. When Daniel's little sister starts acting strange and distant, eventually disappearing into the woods, Daniel knows something is terribly wrong. Could the ghost stories be true? Has Erica been "took"?



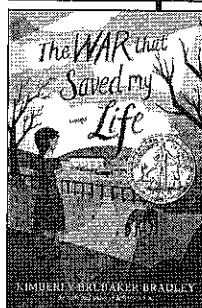
Under the Egg by Laura Marx Fitzgerald

Theodora Tenpenny's beloved Grandpa Jack has died and left her with a broken heart and a house full of responsibilities. Grandpa Jack's last words, telling Theo to look "under the egg," lead her and her quirky new allies on a chase from clue to clue across New York City.



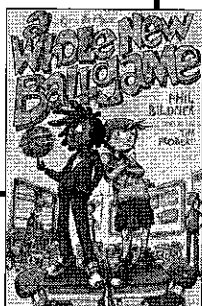
The War That Saved My Life by Kimberly Brubaker Bradley

Born with a twisted foot, Ada has never been allowed to leave her small London apartment. As the threat of bombs looms over London during World War II, Ada and her little brother Jamie escape to the countryside. Ada's world opens up as she gains confidence and learns to trust those around her... but is trust enough to keep her family safe?

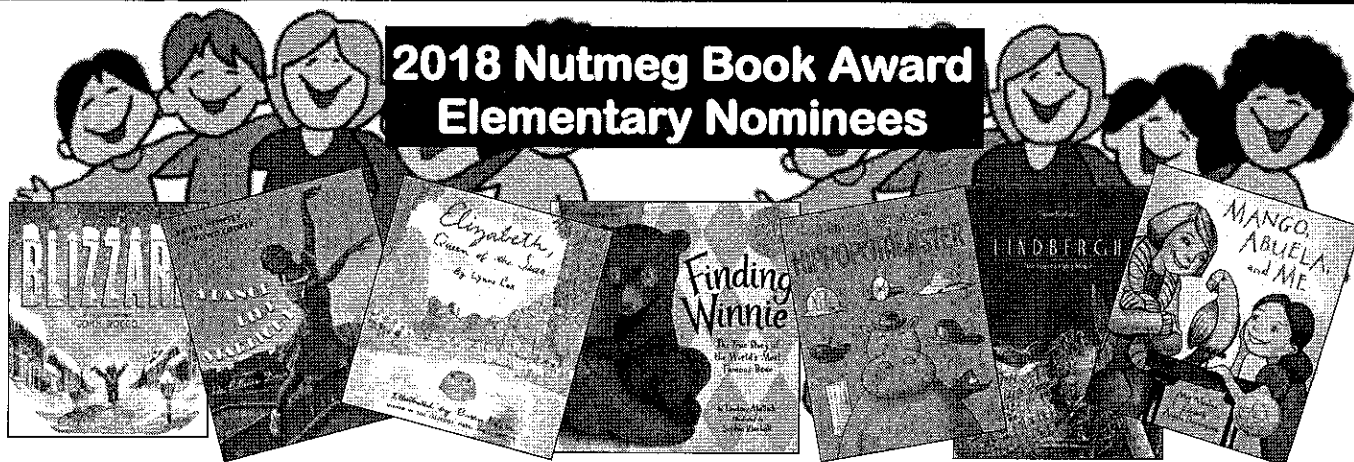


A Whole New Ballgame by Phil Bildner

5th grade is exciting and unpredictable for best friends Rip and Red. Their new teacher, Mr. Acevedo prefers eccentric out-of-the-box assignments that prove to be the opposite of boring test prep. When Mr. Acevedo turns out to be their new basketball coach, too, the boys realize they're along for a wild ride.



2018 Nutmeg Book Award Elementary Nominees



Blizzard by John Rocco

When a huge blizzard traps the neighbors in their homes for a week, one brave boy uses his knowledge of survival to embark on a memorable adventure to help them all.

A Dance Like Starlight by Kristy Dempsey & Floyd Cooper

Follow this inspirational story of one young girl's dream as she watches Janet Collins, the first African American prima ballerina, perform in the spotlight on center stage at the Met in the 1950s.

Elizabeth, Queen of the Seas by Lynne Cox

When a 1,000 pound elephant seal takes up residence in a coastal New Zealand city, will citizens welcome the enormous oceanic animal, or will they send her back to sea?

Finding Winnie by Lindsay Mattick

Join Cole and his mom for a cozy bedtime story within a story about Captain Harry Coleburn and his adopted bear cub in 1914. Just who is this special bear?

Hippopotamister by John Patrick Green

Poor Hippo. His zoo is falling apart and no one comes to visit. Will venturing out into the world to get a job find him happiness?

Lindbergh by Torben Kuhlmann

A mouse must flee from the dangers of his home city in Europe. Can he create a flying machine that will carry him safely across the ocean to America?

Mango, Abuela, and Me by Meg Medina

When Mia's abuela comes to live with her they are unable to communicate. A trip to a pet store introduces them to a feathery friend who will soon change their lives.

Miss Mary Reporting by Sue Macy

Petite Mary Garber brought a big revolution to the world of sports reporting in the 1940s. Against many odds, she devoted her life to equality in sportswriting.

My Pet Human by Yasmine Surovec

Stray cat Oliver loves his nomadic life and doesn't need a "forever home" - or so he thinks! When he meets a little human and begins to trust her, he may not be able to return to his cat-about-town lifestyle.

Pugs of the Frozen North by Philip Reeve

True winter comes once in a lifetime. Shea and Sika, along with 65 pugs, join zany and fierce competitors in a race to the Snowfather's palace at the top of the world for the prize of their heart's desire.

Tales of Bunjitsu Bunny by John Himmelman

The inspiring Isabel is the best bunjitsu artist in her school. She's not only skilled in punching and kicking, but also outsmarting and out-maneuvering even the toughest foes.

Upside-Down Magic by Sarah Mlynowski, Lauren Myracle & Emily Jenkins

Nory's magic is a little... wonky. She is sent to a special class with other magical misfits. Together they must learn how to best use their "upside-down magic".

Wet Cement by Bob Raczka

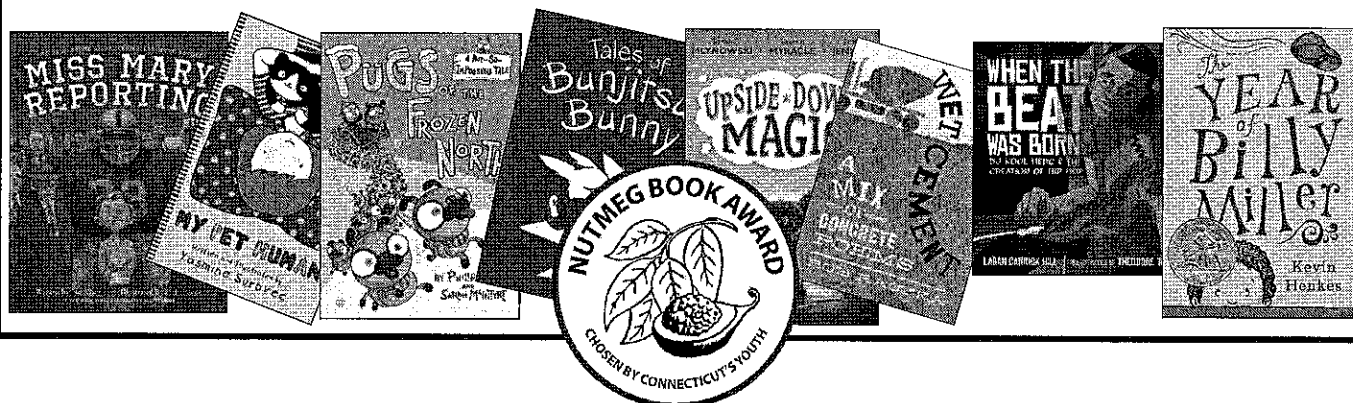
Did you know that poetry can have a physical shape? Check out this fun, varied collection of poems that play with words in more ways than one!

When the Beat Was Born by Laban Carrick Hill

Think you know all about hip-hop? This is the story of DJ Kool Herc, one of the pioneers of hip-hop music in the 1970s South Bronx. DJ Kool Herc's story is the story of hip-hop.

The Year of Billy Miller by Kevin Henkes

Billy Miller starts second grade with a spectacular bump on his head and full of worries. With the help of family, friends and a few poems, Billy ends up with a year filled with surprises and lessons learned.



Name _____

Arrays and Multiplying by 10 and 100

You can use addition to help you multiply.

Find 2×10 .



There are two groups of 10.

Add 10 two times.

$$10 + 10 = 20$$

or

Multiply 2 groups of 10.

$$2 \times 10 = 20$$

Find 2×100 .



There are two groups of 100.

Add 100 two times.

$$100 + 100 = 200$$

or

Multiply 2 groups of 100.

$$2 \times 100 = 200$$

Find each product.

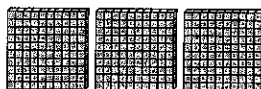
1. Find 4×10 .



$$\text{Add: } 10 + 10 + 10 + 10 = \underline{\hspace{2cm}}$$

$$\text{So, } 4 \times 10 = \underline{\hspace{2cm}}.$$

2. Find 3×100 .



$$\text{Add: } 100 + 100 + 100 = \underline{\hspace{2cm}}$$

$$\text{So, } 3 \times 100 = \underline{\hspace{2cm}}.$$

3. Reasonableness Michael used addition to find 8×100 and he said the product is 80. What did he do wrong?

4. Draw two sets of arrays to represent 6×10 and 5×100 . Then show how to use addition and multiplication to find each product.

Name _____

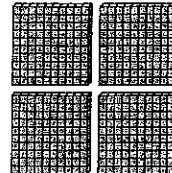
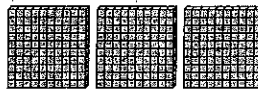
Arrays and Multiplying by 10 and 100

Find each product.

1. $4 \times 10 =$ _____ 2. $2 \times 100 =$ _____ 3. $2 \times 10 =$ _____



4. $6 \times 10 =$ _____ 5. $3 \times 100 =$ _____ 6. $4 \times 100 =$ _____



7. **Reason** What whole number could you use to complete $\square \times 100 = \square 00$ so that $\square 00$ is greater than 500 but less than 700?

8. Mr. Mitchell does 100 sit-ups every morning. How many sit-ups will he do in 9 days?

A 90 **B** 100 **C** 109 **D** 900

9. Jackie has 10 groups of pennies with 3 pennies in each group. Carlos has 5 groups of pennies with 100 pennies in each group. Who has more pennies? Explain how you know.


Name _____

Breaking Apart Arrays

You can use arrays of place-value blocks to multiply.

Find the product for 4×16 .

What You Show



$$4 \times 10 = 40 \quad 4 \times 6 = 24$$

$$40 + 24 = 64$$

Use the array to find the partial products and the product.

1. 

$$\begin{array}{r} 12 \\ \times 3 \\ \hline \end{array}$$

2. 

$$\begin{array}{r} 22 \\ \times 6 \\ \hline \end{array}$$

Complete the calculation.

3.
$$\begin{array}{r} 15 \\ \times 4 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 22 \\ \times 4 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 14 \\ \times 6 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 16 \\ \times 6 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 12 \\ \times 5 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 13 \\ \times 4 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 15 \\ \times 5 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 16 \\ \times 7 \\ \hline \end{array}$$


11. **Reason** What two simpler problems can you use to find 4×22 ?
(Hint: Think about tens and ones.)

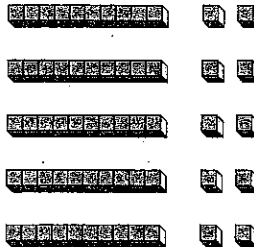
Name _____

Breaking Apart Arrays

Use the array to find the partial products and the product.

Complete the calculation.

1.  $\begin{array}{r} 14 \\ \times 4 \\ \hline \square \square \\ + \square \square \\ \hline \square \square \end{array}$

2.  $\begin{array}{r} 12 \\ \times 5 \\ \hline \square \square \\ + \square \square \\ \hline \square \square \end{array}$

3. $\begin{array}{r} 17 \\ \times 4 \\ \hline \square \square \\ + \square \square \\ \hline \square \square \end{array}$

4. $\begin{array}{r} 25 \\ \times 3 \\ \hline \square \square \\ + \square \square \\ \hline \square \square \end{array}$

5. $\begin{array}{r} 21 \\ \times 4 \\ \hline \square \square \\ + \square \square \\ \hline \square \square \end{array}$

6. $4 \times 17 =$ _____ 7. $5 \times 24 =$ _____ 8. $3 \times 18 =$ _____

9. $5 \times 29 =$ _____ 10. $23 \times 3 =$ _____ 11. $21 \times 6 =$ _____

12. Clyde planted 4 rows of tomato seeds. Each row has 12 seeds. How many tomato seeds did Clyde plant? _____

13. Find 7×22 .

A 54

B 144

C 152

D 154

14. Write a description of an array of stickers using the product of 3×15 .

Name _____


Step-Up 3

Practice

Using an Expanded Algorithm

Use the array to find the partial products. Add the partial products to find the product.

1.
$$\begin{array}{r} 42 \\ \times 6 \\ \hline \end{array}$$



2.
$$\begin{array}{r} 37 \\ \times 7 \\ \hline \end{array}$$



3.
$$\begin{array}{r} 21 \\ \times 4 \\ \hline \end{array}$$



4.
$$\begin{array}{r} 35 \\ \times 4 \\ \hline \end{array}$$



5. $8 \times 14 =$ _____

6. $5 \times 52 =$ _____

7. $8 \times 42 =$ _____

8. $7 \times 26 =$ _____

9. $4 \times 62 =$ _____

10. $9 \times 76 =$ _____

11. Rodney can type 62 words per minute. How many words can Rodney type in 5 minutes? _____

12. Find 8×34 .

A 172

B 262

C 272

D 372


13. Explain how you can use an array to find partial products and the product for 6×36 .

Name _____

Using an Expanded Algorithm

You can use arrays of place-value blocks to multiply.

Find the product for 4×14 .

What You Show	What You Write
$4 \times 10 = 40$ $4 \times 4 = 16$ $40 + 16 = 56$ 	$\begin{array}{r} 14 \\ \times 4 \\ \hline 16 \\ +40 \\ \hline 56 \end{array}$ <p>4 \times 4 ones 4 \times 1 ten</p>

Draw an array for each problem to find the partial products and the product. Complete the calculation.

1.
$$\begin{array}{r} 16 \\ \times 4 \\ \hline \end{array}$$



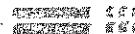
2.
$$\begin{array}{r} 21 \\ \times 6 \\ \hline \end{array}$$



3.
$$\begin{array}{r} 17 \\ \times 6 \\ \hline \end{array}$$



4.
$$\begin{array}{r} 13 \\ \times 2 \\ \hline \end{array}$$



5.
$$\begin{array}{r} 22 \\ \times 5 \\ \hline \end{array}$$



6.
$$\begin{array}{r} 14 \\ \times 3 \\ \hline \end{array}$$



7. **Reason** What two simpler problems can you use to find 7×38 ?
(Hint: Think about the tens and ones.)

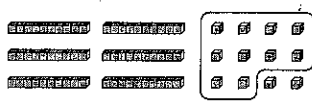

Name _____

Step-Up 4

Reteaching

Multiplying 2-Digit by 1-Digit Numbers

Here is how to multiply a 2-digit number by a 1-digit number using paper and pencil.

Find 3×24 .	What You Think	What You Write
Step 1 Multiply the ones. Regroup if necessary.	 $3 \times 4 = 12$ ones Regroup 12 ones as 1 ten 2 ones.	$\begin{array}{r} 1 \\ 24 \\ \times 3 \\ \hline 2 \end{array}$
Step 2 Multiply the tens. Add any extra tens.	 3×2 tens = 6 tens 6 tens + 1 ten = 7 tens	$\begin{array}{r} 1 \\ 24 \\ \times 3 \\ \hline 72 \end{array}$

Is your answer reasonable?

Exact: $3 \times 24 = 72$

Round 24 to 20.

Estimate: $3 \times 20 = 60$ Since 72 is close to 60, the answer is reasonable.

Find each product. Decide if your answer is reasonable.

1.
$$\begin{array}{r} 33 \\ \times 3 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 17 \\ \times 5 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 24 \\ \times 7 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 48 \\ \times 6 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 62 \\ \times 8 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 36 \\ \times 6 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 88 \\ \times 5 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 52 \\ \times 9 \\ \hline \end{array}$$

9. **Estimation** Use estimation to decide which has the greater product: 813×5 or 907×4 . _____

Name _____

Multiplying 2-Digit by 1-Digit Numbers

Find each product. Decide if your answer is reasonable.

1.
$$\begin{array}{r} 18 \\ \times 4 \\ \hline 7 \square \end{array}$$

2.
$$\begin{array}{r} 24 \\ \times 7 \\ \hline \square 6 \square \end{array}$$

3.
$$\begin{array}{r} 51 \\ \times 4 \\ \hline \square 0 \square \end{array}$$

4.
$$\begin{array}{r} 49 \\ \times 7 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 48 \\ \times 5 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 53 \\ \times 9 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 29 \\ \times 6 \\ \hline \end{array}$$

8. $81 \times 6 =$ _____

9. $89 \times 8 =$ _____

10. $77 \times 8 =$ _____

11. $94 \times 5 =$ _____

12. **Reason** Kendra says that $6 \times 65 = 390$. Estimate to check Kendra's answer. Is she right? Explain.

13. A large truck uses about 18 gallons of fuel in 1 hour of work. How many gallons of fuel are needed for 7 hours of work?

14. Which of the following is a reasonable estimate for 8×62 ?

A 48

B 480

C 540

D 660

15. Tyrone has 6 times as many marbles as his sister Pam. Pam has 34 marbles. Louis has 202 marbles. Who has more marbles, Tyrone or Louis? Explain how you found your answer.

Name _____

Step-Up 5

Practice

Using Models to Divide

Find how many are in each group and how many are left over.

1. 72 CDs in 5 organizers

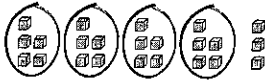
2. 54 stickers on 9 rolls

3. 62 plants in 7 rows

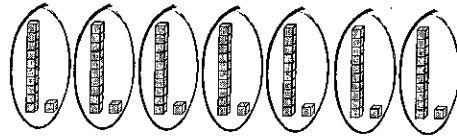
4. 98 chairs for 6 tables

In 5 through 8, use the model to complete each division sentence.

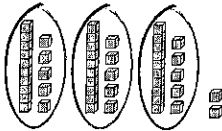
5. $23 \div \square = \square$ R3



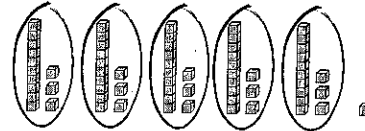
6. $\square \div 7 = \square$



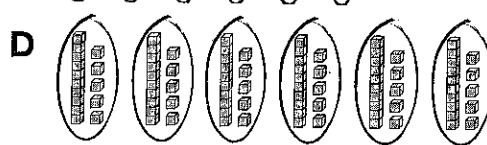
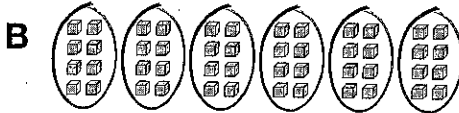
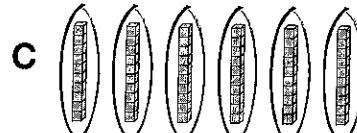
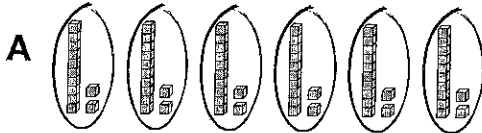
7. $\square \div \square = \square$ R2



8. $\square \div \square = \square$ R \square



9. Corey has 90 marbles. He decides to share them with his 6 friends so they can play a game. Which of the following models shows Corey sharing his marbles?



10. At Mr. Avery's farm there are 47 cows. There are 3 people who milk the cows each day. Does each person milk the same number of cows? Use a model to help you.

Name _____

Using Models to Divide

You can use models to help you solve division problems.

The models below can help you find $59 \div 4$.

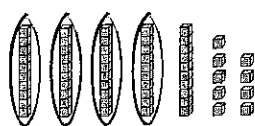
Find $59 \div 4$.

Estimate $60 \div 4 = 15$.

First divide
the tens.

$$\begin{array}{r} 1 \\ 4 \overline{)59} \\ \underline{-4} \end{array}$$

4 tens

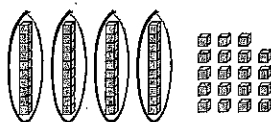


There is one tens block
in each of 4 groups.

Now, change the
tens into ones.

$$\begin{array}{r} 1 \\ 4 \overline{)59} \\ \underline{-4} \\ 19 \end{array}$$

4 tens
19 ones

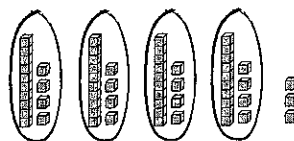


1 tens block and 9 ones
blocks are equal to 19 ones
blocks.

Next, divide
the ones.

$$\begin{array}{r} 14 \\ 4 \overline{)59} \\ \underline{-4} \\ 19 \\ \underline{-16} \\ 3 \end{array}$$

4 tens
19 ones

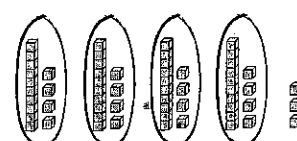


Each of the 4 groups has
1 tens block and 4 ones
blocks.

Write the
remainder.

$$\begin{array}{r} 14 \text{ R}3 \\ 4 \overline{)59} \\ \underline{-4} \\ 19 \\ \underline{-16} \\ 3 \end{array}$$

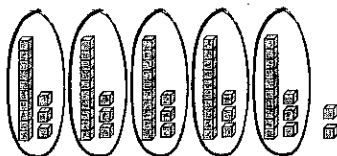
4 tens
19 ones



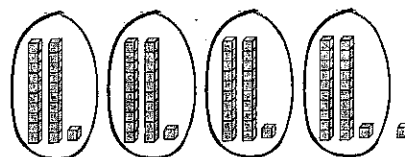
There are 3 ones blocks left.
 $59 \div 4 = 14 \text{ R}3$

Use the models below to help you fill in the boxes.

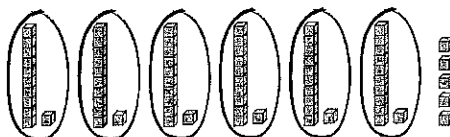
1. $67 \div \boxed{} = \boxed{} \text{ R}2$



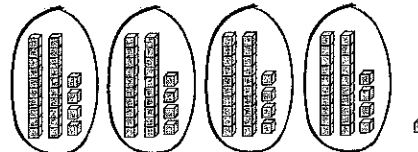
2. $85 \div 4 = \boxed{} \text{ R} \boxed{}$



3. $\boxed{} \div 6 = \boxed{} \text{ R}5$



4. $97 \div \boxed{} = \boxed{} \text{ R} \boxed{}$



Name _____

Step-Up 6

Practice

Dividing 2-Digit by 1-Digit Numbers

In 1 through 3, complete each division problem.

1.

$$\begin{array}{r} 2 \square \\ 3 \overline{) 81} \\ \underline{\square} \\ \square 1 \\ \underline{\square} \\ \square \square \\ \underline{\square} \\ 0 \end{array}$$

2.

$$\begin{array}{r} 1 \square \text{ R} 3 \\ 5 \overline{) 68} \\ \underline{\square} \\ \square 8 \\ \underline{\square} \\ \square \square \\ \underline{\square} \\ 3 \end{array}$$

3.

$$\begin{array}{r} \square 9 \\ 4 \overline{) 76} \\ \underline{\square} \\ \square \square \\ \underline{\square} \\ \square \square \\ \underline{\square} \\ 0 \end{array}$$

For 4 through 11, find each quotient. Check your answers.

4. $2 \overline{) 89}$

5. $5 \overline{) 68}$

6. $4 \overline{) 92}$

7. $3 \overline{) 63}$

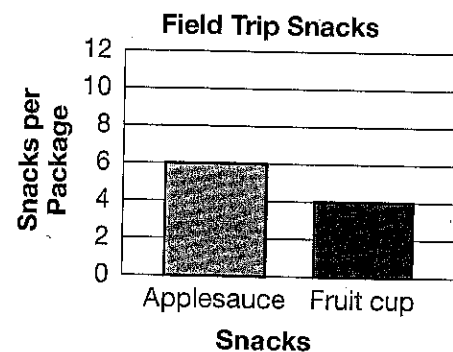
8. $6 \overline{) 96}$

9. $7 \overline{) 86}$

10. $2 \overline{) 92}$

11. $8 \overline{) 95}$

Mrs. Allen is planning to provide snacks for 72 fifth graders when they go on a field trip to the aquarium. Each student will receive 1 of each snack. Using the bar graph to the right, how many packages of each snack does Mrs. Allen need?



12. fruit cups _____

13. applesauce _____

14. **Reason** Which is the remainder of $37 \div 4$?

A 1

B 2

C 3

D 4

15. Explain how to find the number of left over pencils if Paula wants to give 25 pencils to 6 people.

Name _____

Dividing 2-Digit by 1-Digit Numbers

Find $92 \div 6$.

Step 1:

To decide where to place the first digit in the quotient, compare the first digit of the dividend with the divisor.

$$6 \overline{)92}$$

$9 > 6$, so the first digit in the quotient will go in the tens place.

Step 2:

Divide the tens. Use multiplication facts and compatible numbers.

$$\text{Think: } 6 \times ? = 6$$

$$\text{Multiply. } 6 \times 1 = 6$$

Write 1 in the tens place of the quotient.

$$\begin{array}{r} 1 \\ 6 \overline{)92} \\ - 6 \downarrow \\ \hline 32 \end{array}$$

$$\text{Subtract. } 9 - 6 = 3$$

$$\text{Compare. } 3 < 6$$

Bring down the ones.

Step 3:

Divide the ones. Use multiplication facts and compatible numbers.

$$\text{Think: } 6 \times ? \text{ is about } 32$$

$$\text{Multiply. } 6 \times 5 = 30$$

Write 5 in the ones place of the quotient.

$$\begin{array}{r} 15 \text{ R}2 \\ 6 \overline{)92} \\ - 6 \downarrow \\ \hline 32 \\ - 30 \\ \hline 2 \end{array}$$

$$\text{Subtract. } 32 - 30 = 2$$

$$\text{Compare. } 2 < 6$$

There are no more digits to bring down, so 2 is the remainder.

Step 4:

Check by multiplying and then adding the remainder.

$$6 \times 15 = 90$$

$$90 + 2 = 92$$

In 1 and 2 complete each division problem.

1.

$$\begin{array}{r} 1 \square \\ 6 \overline{)84} \\ - \square \\ \hline \square 4 \\ - \square \square \\ \hline 0 \end{array}$$

2.

$$\begin{array}{r} 3 \square \\ 2 \overline{)72} \\ - \square \\ \hline \square \square \\ - \square \square \\ \hline 0 \end{array}$$

Find each quotient. Check your answers.

3. $4 \overline{)86}$

4. $5 \overline{)91}$

5. $3 \overline{)76}$

Name _____

Factors

For 1 through 12, find all the factors of each number.

1. 28

2. 19

3. 8

4. 37

5. 25

6. 11

7. 36

8. 73

9. 15

10. 17

11. 7

12. 21

13. Tina buys 36 party favors to give out at a picnic. Which number will NOT let her divide the party favors evenly among the guests?

A 4

B 6

C 8

D 9

14. Mrs. Quinn wants to arrange her students' artwork in an array on the wall. If Mrs. Quinn has 21 pictures to hang, describe the arrays she can make.

15. Mrs. Barry has 27 watches on display at her store. Mr. Barry says that she can make only 1 row with all 27 watches. Is Mr. Barry right? Explain.

Factors

When multiplying two numbers, you know that both numbers are factors of the product.

Example 1

Find the factors of 24.

Factors Product



$1 \times 24 = 24$

$2 \times 12 = 24$

$3 \times 8 = 24$

$4 \times 6 = 24$

$6 \times 4 = 24$

$8 \times 3 = 24$

$12 \times 2 = 24$

$24 \times 1 = 24$

Factors of 24:

1, 2, 3, 4, 6, 8, 12, and 24

Example 2

Find the factors of 16.

$1 \times 16 = 16$

$2 \times 8 = 16$

$4 \times 4 = 16$

$8 \times 2 = 16$

$16 \times 1 = 16$

Factors of 16:

1, 2, 4, 8, and 16

List all the factors of each number. Use counters to help.

1. 16

2. 21

3. 13

4. 25

5. 3

6. 18

7. **Reason** Look at 2×7 and 3×6 . Are these numbers all factors of 18? Explain your answer.

Name _____

Modeling Addition of Fractions

Find each sum. Simplify if possible. You may use fraction strips.

1. $\frac{2}{4} + \frac{1}{4}$ _____ 2. $\frac{1}{5} + \frac{1}{5}$ _____ 3. $\frac{3}{12} + \frac{8}{12}$ _____

4. $\frac{2}{6} + \frac{2}{6}$ _____ 5. $\frac{1}{2} + \frac{1}{2}$ _____ 6. $\frac{3}{8} + \frac{2}{8}$ _____

7. $\frac{3}{8} + \frac{4}{8}$ _____ 8. $\frac{4}{10} + \frac{1}{10}$ _____ 9. $\frac{1}{6} + \frac{4}{6}$ _____

10. **Model** A rectangular garden is divided into 8 equal parts. Draw a picture that shows $\frac{3}{8} + \frac{3}{8} = \frac{6}{8}$, or $\frac{3}{4}$.

11. Each day, Steven walked $\frac{1}{12}$ mile more than the previous day. The first day he walked $\frac{1}{12}$, the second day he walked $\frac{2}{12}$ mile, the third day he walked $\frac{3}{12}$ mile. On which day did the sum of his walks total at least 1 complete mile?

12. Find the missing value in the equation.

$$\frac{2}{12} + \frac{2}{12} + \frac{?}{12} = \frac{1}{2}$$

A 1

B 2

C 3

D 4

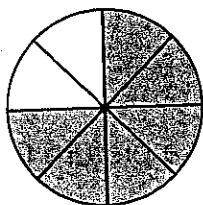
13. There are five people sitting around the dinner table. Each person has $\frac{2}{10}$ of a pie on their plate. How much pie is left? Explain.

Name _____

Modeling Addition of Fractions

Eight friends want to see a movie. Four of them want to see a comedy. Two want to see an action movie and two want to see a science-fiction movie. What fraction of the group wants to see either a comedy or a science-fiction movie?

You can use a model to add fractions.



Look at the circle. It is divided into eighths, because there are eight people in the group. Each person represents $\frac{1}{8}$ of the group. Four people want to see a comedy. Shade in four of the sections to represent $\frac{4}{8}$. Two people want to see a science-fiction movie. Shade in two more sections to represent $\frac{2}{8}$. Count the number of shaded sections. There are six. So, $\frac{6}{8}$ of the group wants to see either a comedy or a science fiction movie.

$$\frac{4}{8} + \frac{2}{8} = \frac{6}{8} \quad \text{Write the sum in simplest form.} \quad \frac{6 \div 2}{8 \div 2} = \frac{3}{4}$$

Find each sum. Simplify, if possible.

1. $\frac{3}{5} + \frac{1}{5}$ _____ 2. $\frac{4}{6} + \frac{2}{6}$ _____ 3. $\frac{3}{8} + \frac{3}{8}$ _____

4. $\frac{2}{6} + \frac{1}{6}$ _____ 5. $\frac{2}{5} + \frac{2}{5}$ _____ 6. $\frac{4}{10} + \frac{6}{10}$ _____

7. $\frac{5}{8} + \frac{3}{8}$ _____ 8. $\frac{4}{10} + \frac{1}{10}$ _____ 9. $\frac{3}{4} + \frac{1}{4}$ _____

10. $\frac{3}{10} + \frac{6}{10}$ _____ 11. $\frac{2}{6} + \frac{1}{6} + \frac{2}{6}$ _____ 12. $\frac{1}{12} + \frac{4}{12} + \frac{3}{12}$ _____

13. **Reason** We can express time as a fraction of an hour. For example, 15 minutes is $\frac{1}{4}$ hour. 30 minutes is $\frac{1}{2}$ hour. What fraction of an hour is 45 minutes? _____

Name _____

Step-Up 9

Practice

Modeling Subtraction of Fractions

Use fraction strips to subtract. Simplify if possible.

1. $\frac{9}{12} - \frac{5}{12}$ _____

2. $\frac{8}{12} - \frac{6}{12}$ _____

3. $\frac{2}{2} - \frac{2}{2}$ _____

4. $\frac{5}{6} - \frac{2}{6}$ _____

5. $\frac{6}{6} - \frac{5}{6}$ _____

6. $\frac{10}{10} - \frac{4}{10}$ _____

7. $\frac{7}{8} - \frac{4}{8}$ _____

8. $\frac{7}{8} - \frac{2}{8}$ _____

9. $\frac{4}{4} - \frac{3}{4}$ _____

10. $\frac{3}{5} - \frac{1}{5}$ _____

11. $\frac{3}{5} - \frac{2}{5}$ _____

12. $\frac{9}{12} - \frac{2}{12}$ _____

13. Find $\frac{13}{16} - n$ if $n = \frac{8}{16}$. _____

14. **Model** Harriet has $\frac{4}{5}$ tank of gas left in her car.
If she needs $\frac{2}{5}$ tank to go to her friend's house and another $\frac{1}{5}$ tank to get back home, does she have enough gas?
Draw a diagram and explain your answer.

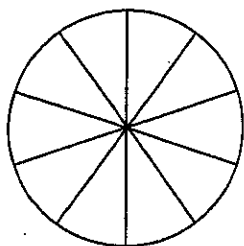
15. Alicia had $\frac{9}{12}$ yard of fabric. She used $\frac{6}{12}$ for a pillow. How much fabric does she have left? Explain how you found your answer.

Name _____

Modeling Subtraction of Fractions

Karla made a pizza and cut it into 10 slices. She ate four slices. What fraction of the pizza is left?

You can use a model to subtract fractions.



Karla's pizza is divided into 10 slices. One way to show this is $\frac{10}{10} = 1$ whole pizza. Karla ate four slices of the pizza. Cross out four of the slices. Count the number of slices left. There are 6 slices or $\frac{6}{10}$ of the pizza left.

$$\frac{10}{10} - \frac{4}{10} = \frac{6}{10}$$

Write the answer in simplest form, if possible.

$$\frac{6 \div 2}{10 \div 2} = \frac{3}{5}$$

Use fraction strips or models to subtract. Simplify if possible.

1. $\frac{4}{5} - \frac{1}{5} =$ _____ 2. $\frac{8}{10} - \frac{3}{10} =$ _____ 3. $\frac{4}{4} - \frac{3}{4} =$ _____

4. $\frac{6}{10} - \frac{2}{10} =$ _____ 5. $\frac{3}{6} - \frac{2}{6} =$ _____ 6. $\frac{11}{12} - \frac{9}{12} =$ _____

7. $\frac{6}{6} - \frac{3}{6} =$ _____ 8. $\frac{8}{8} - \frac{6}{8} =$ _____ 9. $\frac{15}{16} - \frac{7}{16} =$ _____

10. $\frac{9}{12} - \frac{7}{12} =$ _____ 11. $\frac{9}{10} - \frac{7}{10} =$ _____ 12. $\frac{10}{12} - \frac{7}{12} =$ _____

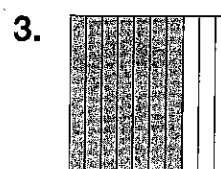
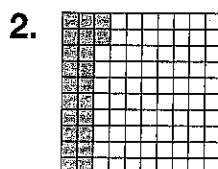
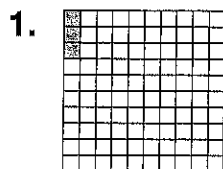
13. Find n .

$$n - \frac{2}{6} = \frac{2}{6}$$

Name _____

Fractions and Decimals

Write a fraction and a decimal to show how much is shaded.



Draw a model that shows each decimal.

4. 0.78

5. 0.16

6. 0.3

Write each fraction as a decimal.

7. $\frac{165}{1,000}$

8. $\frac{17}{100}$

9. $\frac{1}{100}$

10. $\frac{4}{10}$

Write each decimal as a fraction.

11. 0.03

12. 0.036

13. 0.5

14. 0.78

15. In the decimal models, how many strips equal 10 small squares?

A 7

B 1

C 70

D 10

16. Explain the steps you would take to write $\frac{19}{100}$ as a decimal.

Name _____

Fractions and Decimals

Fractions with a denominator of 10, 100, or 1,000 can be written as a decimal. Tenths, hundredths, and thousandths are written as digits to the right of the decimal point.

The shaded part is $\frac{2}{10}$.

Write it as a decimal: 0.2

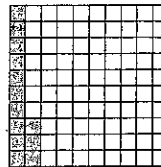
Word form: two tenths



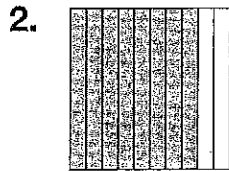
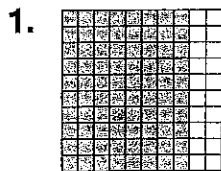
The shaded part is $\frac{13}{100}$.

Write it as a decimal: 0.13

Word form: thirteen hundredths



Write a fraction and a decimal to tell how much is shaded.



3. How are the two shaded grids alike?
How are they different?

Write each fraction as a decimal.

4. $\frac{9}{100}$

5. $\frac{275}{1,000}$

6. $\frac{3}{10}$

7. $\frac{9}{10}$

Write each decimal as a fraction.

8. 0.148

9. 0.07

10. 0.40

11. 0.76
