

Destination Math™

Mastering Skills and Concepts: Course II

Print Activities



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Introduction

The print activities that follow are intended for classroom use, away from the computer. These activities reinforce the math skills and concepts taught in *Destination Math: Mastering Skills and Concepts Course II (MSC II)*.

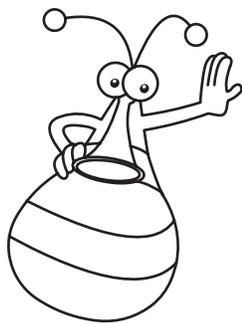
Each activity consists of a reproducible blackline master and accompanying instructions for the teacher. Choose from individual and group activities including games, hands-on tasks, and work with manipulatives. As students complete the activities, they have fun and enhance their understanding of math concepts.

We recommend that you do each print activity after students complete the corresponding software session. Some print activities can be used beforehand, at the teacher's discretion.

The base-10 blocks manipulative activities can be used in a similar way. Each is associated with a particular session or part of a session; correlations to sessions are provided on the teacher instruction sheets.

Note: For the *MSC II* sessions (pages 4-51), each activity is set up with the teacher instructions on the left and corresponding blackline master on the right. For the base-10 blocks manipulative (pages 52-89), some activities contain multi-page blackline masters. To preserve the left/right pattern of instructions and blackline masters, some left-hand pages in the base-10 blocks section are intentionally left blank.

Print Activities

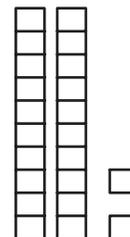


Counting Groups

Students examine groups of tens and ones left over to name a number less than 100.

Warm-up

- Use base-10 blocks for this warm-up. Show students 2 groups of 10 and 2 ones left over. Ask them to identify the number represented by the blocks. [22] Repeat this exercise for other 2-digit numbers, emphasizing the terminology: “groups of 10 and ones left over.”
- Write a 2-digit number on the chalkboard. Have students tell how many groups of 10 and how many ones left over are in this number. For example, in the number 18 there is 1 group of 10 and 8 left over. Repeat this exercise for other 2-digit numbers.



Introducing the Activity

1. Distribute copies of the blackline master, “Counting Groups,” and direct students’ attention to the first problem. Have them look at blocks that represent the number 23. Ask them to identify how many groups of 10 are in 23 [2] and how many ones are left over. [3] Then, have students write the digits 2 and 3 in the appropriate boxes.
2. Direct students’ attention to the second problem and have them notice that no numbers are visible. Have them count how many groups of 10 there are [4] and how many ones are left over. [6] Then, invite them to write a 4 and a 6 in the boxes below the blocks. Then, identify the 2-digit number shown by the blocks [46] and write it in the box above the blocks.
3. Have students work independently to complete the rest of the problems.

Assessment Tip

Observe students as they complete the activity. Find out if they can:

- Identify how many groups of 10 and how many ones left over are in a 2-digit number.
- Write the 2-digit number that corresponds to a given number of groups of 10 and ones left over.

Try this, too!

- Challenge students to use base-10 blocks, popsicle sticks, bean sticks, or other such manipulatives to see how many different ways they can show a 2-digit number as groups of tens and ones left over. For example, there are 6 ways to show the number 53: as 5 groups of 10 and 3 left over, or 4 groups of 10 and 13 left over, etc.
- Work backwards. Give students a non-standard representation of a 2-digit number, such as 4 groups of 10 and 27 ones left over. Have them give you the standard representation of this number and the corresponding numeral. [67] You might also want students to work in pairs and challenge each other in a similar way.

Students will need

- blackline master: “Counting Groups”—1 copy per student

Approximate Time

- 20 minutes

Grouping

- individual

NCTM Standards

- Number & Operations
 - Representation
-

Name _____

Counting Groups

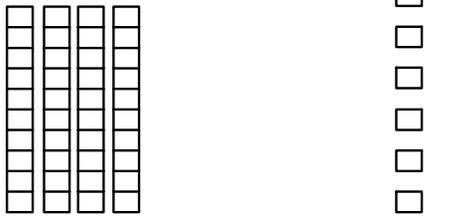
How many groups of ten? How many ones left over?

Write the 2-digit number.

23



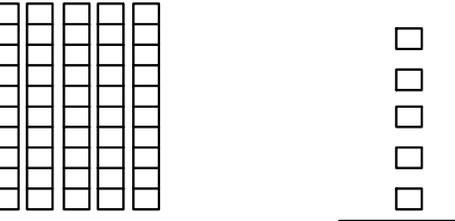
groups of ten left over



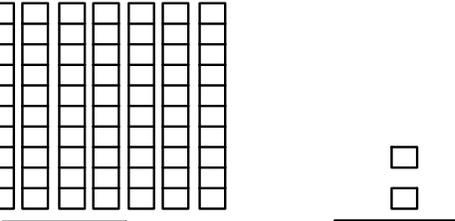
groups of ten left over



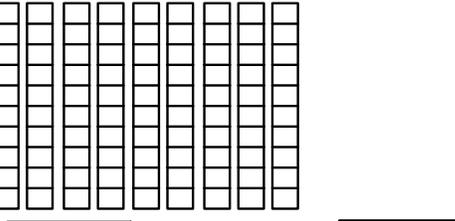
groups of ten left over



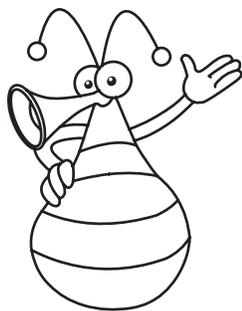
groups of ten left over



groups of ten left over



groups of ten left over



Puzzle Fun!

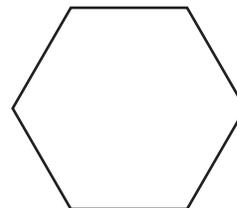
Students put puzzle pieces together by matching 2-digit numbers and base-10 representations.

Warm-up

- You will need base-10 blocks (or other base-10 manipulatives) for this warm-up. Invite a student to write a 2-digit number on the chalkboard. Have another student come to the front of the class and use the manipulatives to represent the number. Challenge students to find more than one way of showing the number. For example, 30 can be represented as 3 groups of 10 and 0 ones, or 2 groups of 10 and 10 ones.
- Invite a student to come to the front of the class and think of a 2-digit number. Then, without revealing the number, have the student use base-10 blocks or other manipulatives to represent it. Have another student write the number on the chalkboard. Although a representation can be in standard or non-standard form, the written number must be in standard form. Repeat this activity several times using different 2-digit numbers and representations.

Introducing the Activity

1. If possible, use heavy copy paper or oak tag when copying the blackline master, “Puzzle Fun!” Then, distribute copies to the students. Show students a drawing of a regular hexagon and read aloud the directions.
2. Have students cut out the puzzle pieces and mix them up. Tell them to find the puzzle piece with the number 14 on it. Then, have them find the puzzle piece that shows a representation of the number 14 in blocks. Invite students to put the two pieces together to form a hexagon.
3. Have students continue matching puzzle pieces until they have created 5 hexagons.



Assessment Tip

Observe students as they put the puzzle pieces together. Find out if they can:

- Recognize a 2-digit number when represented as tens and ones.
- Recognize the base-10 representation of a 2-digit number.

Try this, too!

1. You will need base-10 blocks (or other base-10 manipulatives) and index cards, 1 per student. Ahead of time, write a 2-digit number on each index card. Give one card to each student, along with a set of base-10 blocks (tens and ones). Working at their desks, have the children use the blocks or other manipulatives to represent the numbers on their cards. Walk around the room and check to see if the representations match the numbers.
2. Collect the index cards and any leftover manipulatives. Mix up the cards and pass them back to the students. Then invite the students to walk around the room and find the representations that match the numbers on their index cards.

Students will need

- blackline master: “Puzzle Fun!”—1 copy per student
- scissors

Approximate Time

- 20 minutes

Grouping

- individual

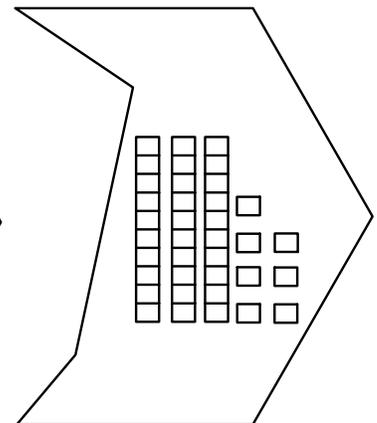
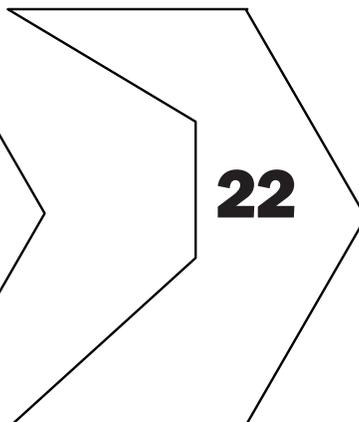
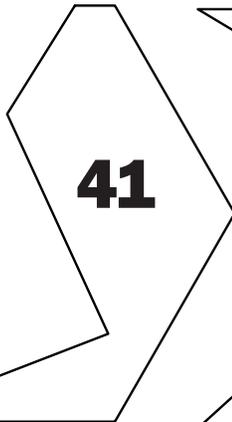
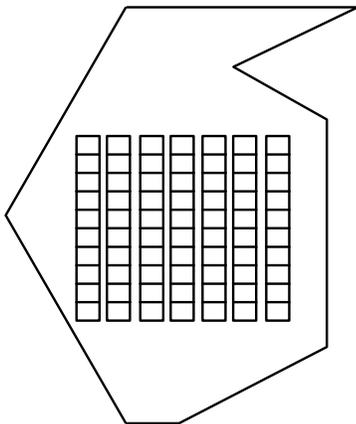
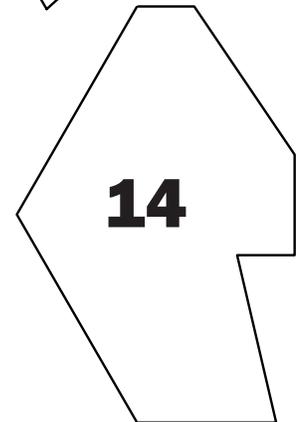
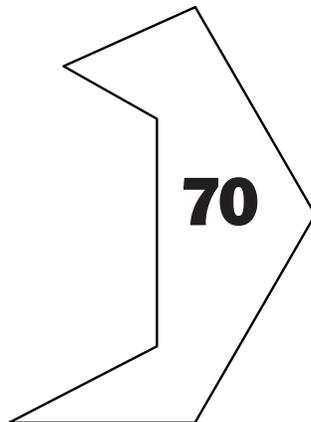
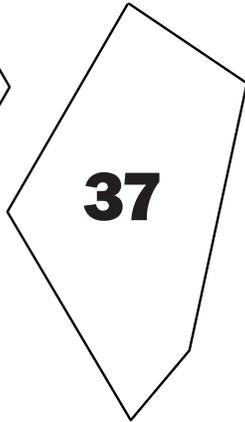
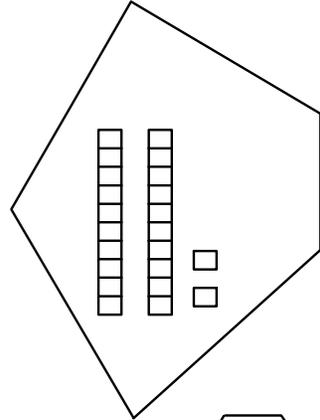
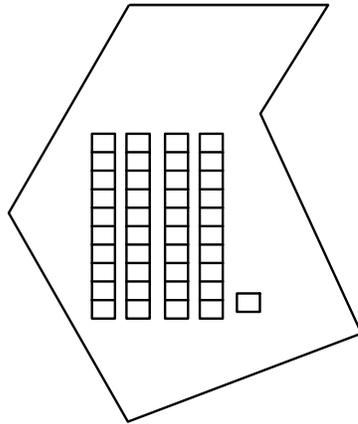
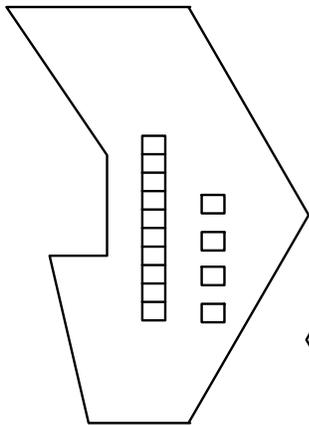
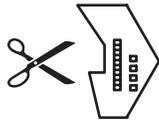
NCTM Standards

- Number & Operations
 - Representation
-

Name _____

Puzzle Fun!

Cut out the 10 pieces. Then match numbers and blocks to make hexagons.





Numbers, Please!

Students count hundreds, tens, and ones in a place value mat and identify the number.

Warm-up

- You will need base-10 blocks (or other base-10 manipulatives) for this activity. Invite a student to write a 3-digit number on the chalkboard. Have another student come to the front of the class, give the word name of the number, and use the manipulatives to represent the number. Challenge students to find more than one way to show the number.
- Invite another student to come to the front of the class and think of a 3-digit number. Then, without revealing the number, have the student use manipulatives to represent it. Have another student identify the standard form of the number and give its word name. Repeat this activity several times using different 3-digit numbers and representations.

Introducing the Activity

1. Distribute copies of the blackline master, “Numbers, Please!” and read aloud the directions. Then, look at the blocks on the place value mat in the first example. Have students count the blocks in each place and trace over the digits 2, 4, and 6.
2. Have students decide what 3-digit number is equal to 2 hundreds, 4 tens, and 6 ones, and write it in the space above the mat. Encourage students to explain the relationship between the digits in each place and the 3-digit number. Lastly, have them write the word name of the number, 246.
3. Next, ask students to count the blocks in each place of the second example and trace over the numbers in each place. Ask, “What 3-digit number is equal to 2 hundreds, 6 tens, and 14 ones?” Have students write the number in standard form above the place value mat and then write its word name.
4. Have students work independently or in small groups to complete the rest of the examples on the worksheet as you circulate among the groups.

Assessment Tip

Observe students as they complete the activity. Find out if they can:

- Recognize a 3-digit number represented by a set of base-10 blocks.
- Regroup ones and/or tens to write a number in standard form and write its word name.

Students will need

- blackline master: “Numbers, Please!”—1 copy per student

Approximate Time

- 20 minutes

Grouping

- individual or small groups

NCTM Standards

- Number & Operations
 - Problem Solving
 - Reasoning & Proof
 - Representation
-

Try this, too!

Group students into pairs to play “Biggest and Smallest.” Ahead of time, prepare sets of 10 index cards, writing one of the digits from 0 to 9 on each card. Give a set of 10 cards and a timer to each pair of students and have players lay the cards facedown in a pile. As one player draws 3 cards, the other player starts the timer. The player who draws the cards is asked to form the biggest and smallest numbers possible using the 3 digits drawn. The timer records the two numbers formed and how long (minutes or seconds) it took to form them. Then, the players switch roles. The player who correctly identifies the “biggest and smallest” 3-digit numbers in the shortest amount of time wins that round. Repeat the game as time permits, with the final winner being the player whose overall time was shorter.

Name _____

Numbers, Please!

How many hundreds, tens, and ones? What are the numbers and their names?

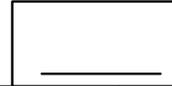
1.



hundreds	tens	ones
⠠⠠⠠	⠠⠠⠠	⠠⠠⠠

Word Name: _____

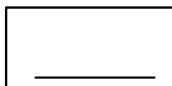
2.



hundreds	tens	ones
⠠⠠⠠	⠠⠠⠠	⠠⠠⠠

Word Name: _____

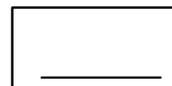
3.



hundreds	tens	ones
⠠⠠⠠		⠠⠠⠠

Word Name: _____

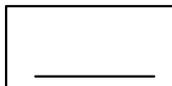
4.



hundreds	tens	ones
⠠⠠⠠	⠠⠠⠠	⠠⠠⠠

Word Name: _____

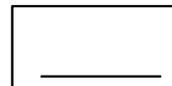
5.



hundreds	tens	ones
⠠⠠⠠	⠠⠠⠠	⠠⠠⠠

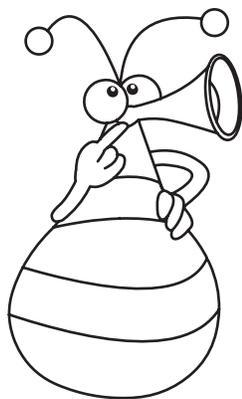
Word Name: _____

6.



hundreds	tens	ones
⠠⠠⠠	⠠⠠⠠	

Word Name: _____



Jars of Jellybeans

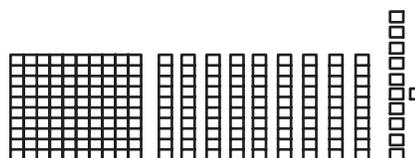
Students regroup in the ones and tens places to identify 2- and 3-digit numbers.

Warm-up

- Tell students that this arrangement of base-10 blocks represents a 2-digit number. Ask students to count the number of blocks in each place, and have them explain how they can regroup ten of the 15 ones into one 10 and show the 2-digit number, 25.



- Show students this arrangement of base-10 blocks and have them note the number of hundreds, tens, and ones. Point out that since there are more than 10 ones, they can group 10 ones together



to make one group of 10. Then, since there are 10 tens in the tens place, they can be regrouped to form 100, which when added to 100, is the number 201.

Introducing the Activity

1. Distribute copies of the blackline master, “Jars of Jellybeans” and read aloud the directions.
2. Direct students’ attention to the place value mat in the first problem. Have them count how many blocks are in each place and the numbers in each place. Ask students what 2-digit number equals 3 tens and 12 ones and have them explain their answers. Have them draw a ring around that number in the box next to the jar.
3. Have students examine each set of blocks in the remaining problems and decide what number is represented. Remind students that they will have to regroup ones and/or tens to identify the numbers.

Assessment Tip

Observe students as they complete the activity. Find out if they can:

- Use regrouping to identify equivalent representations of 2- and 3-digit numbers.

Try this, too!

1. Organize students into pairs to play “One Hundred.” Each pair will need one place value mat that can accommodate hundreds, tens, and ones. Create the mats ahead of time using sturdy construction paper or poster board. Pairs of students will also need 2 number cubes, base-10 blocks (1 hundred, 10 tens, and 10 ones), paper, and pencil.
2. The first player in each pair rolls the number cubes, and on a sheet of paper, records the sum of the numbers thrown. Then the player uses ones and/or tens, if necessary, and represents that number on the place value mat. There should be no more than 9 blocks in any place. If the player adds incorrectly or doesn’t show the correct number of blocks for a number, he or she loses a turn.
3. The next player rolls the cubes to produce the next number, and on a sheet of paper, adds it to the number shown on the mat. The player then must place additional blocks to those already on the mat to show the total (accumulated) sum of both players’ numbers. Again, there should be no more than 9 blocks in any place. The first player to reach 100 is the winner.

Students will need

- blackline master: “Jars of Jellybeans”—1 copy per student

Approximate Time

- 15 minutes

Grouping

- individual or pairs of students

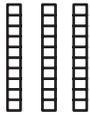
NCTM Standards

- Number & Operations
- Algebra
- Representation

Name _____

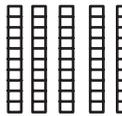
Jars of Jellybeans

How many jellybeans? Draw a circle around the correct number.

tens	ones
	

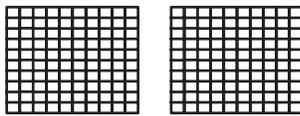
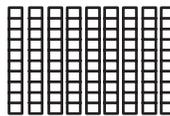
- 32
42
312



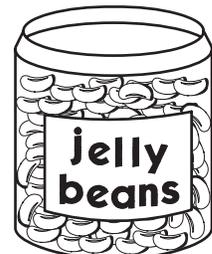
tens	ones
	

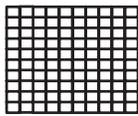
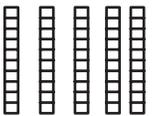
- 68
78
618



hundreds	tens	ones
		

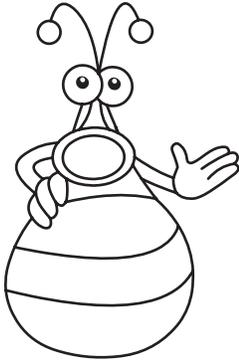
- 306
316
2916



hundreds	tens	ones
		

- 255
165
1515





What's My Sign?

Students use number cubes to play a game and compare numbers using the $<$, $>$, or $=$ sign.

Getting Ready

1. Group students in pairs. Distribute a copy of the blackline master “What’s My Sign?” to each pair.
2. Give each pair of students 3 number cubes. Tell students that they are going to roll 2 or 3 cubes at a time. Then they are to form the greatest number possible using the digits that turn up on each cube.

How to Play

1. Direct students’ attention to the two pairs of number cubes in the first example. One pair of cubes shows the digits 4 and 5, which can be arranged to form the numbers 45 or 54. Since 54 is the greater number, this number is written in the boxes under the cubes on the left. The other pair of cubes shows the digits 4 and 2. The greatest 2-digit number that can be formed from these digits is 42, so this number is written in the boxes under the cubes on the right. Between the numbers 54 and 42 are three signs. Because 54 is greater than 42, a ring is drawn around the “is greater than” sign.
2. To begin play, have the students in each pair write their names in the spaces provided.
3. In each round, depending on whether 2- or 3-digit numbers are to be formed, each player in a pair rolls either 2 or 3 cubes. Each player uses the digits that turn up to form the greatest 2- or 3-digit number possible, and then writes this number into the boxes provided. Then, the players compare the two numbers formed and draw a ring around the correct sign. The player who has the greater number wins the round. The overall winner of the game is the student who formed the greater number most frequently.

Assessment Tip

Observe the pairs of students as they play the game. Find out if they can:

- Choose the correct sign to compare pairs of 2- or 3-digit numbers.

Try this, too!

1. Ahead of time, assemble a stack of index cards so that there is one card for each child. Write a 2- or 3-digit number on each card. No two cards should have the same number. Then, divide the class into 2 teams. (If there is an odd number of students in your class, one team can have an extra player.)
2. Give each child on both teams an index card. Tell students that when you blow the whistle (or make a suitable sound), the children on each team must rearrange themselves so that the numbers on the index cards held by each child are in order, from least to greatest. When a team has accomplished this goal, the team members are to sit down. The first team to perform the task correctly is the winner.

Students will need

- blackline master: “What’s my sign?”— 1 copy per student
- 3 number cubes per pair of students

Approximate Time

- 30 minutes

Grouping

- pairs of students

NCTM Standards

- Number & Operations
 - Representation
-

Name _____

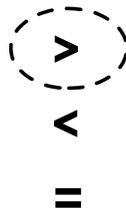
What's My Sign?

Roll 2 number cubes. Write the largest 2-digit number possible using the digits. Compare the numbers and draw a ring around the correct sign.



Example

tens	ones
5	4



54 is greater than 42. We can draw a circle around this sign.

tens	ones
4	2

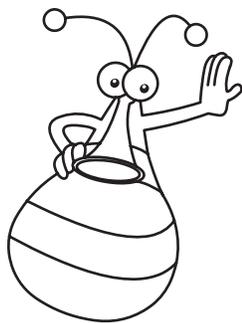
Player 1 _____

Player 2 _____

1.	<table border="1"> <thead> <tr> <th>tens</th> <th>ones</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	tens	ones			<p>></p> <p><</p> <p>=</p>	<table border="1"> <thead> <tr> <th>tens</th> <th>ones</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	tens	ones		
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tens	ones										
tens	ones										

Roll 3 number cubes. Write the largest 3-digit number possible using the digits. Compare the numbers and draw a ring around the correct sign.

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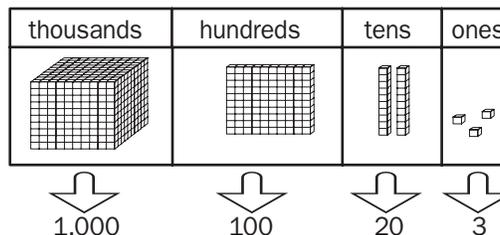


Riddle Me This!

The students match 4-digit numbers to their expanded form to answer a silly riddle.

Warm-up

1. Use base-10 blocks and a place value mat to do this warm-up. Call out the name of a 4-digit number, such as 1,123. Invite a student to come to the front of the class and use blocks to represent the number. Write the value of each place beneath each group of blocks, as shown here.
2. Using these place values, have students write the number in expanded form: $1,000 + 100 + 20 + 3$.
3. Repeat the activity several times using different 4-digit numbers.



Introducing the Activity

1. Distribute a copy of the blackline master “Riddle Me This!” to each student. Have students cut out the 12 squares at the bottom of the page that contain the expanded form of a number and a word.
2. Now, read aloud the riddle at the top of the page. Tell students that they can find the answer to the riddle by matching each of the given numbers to its expanded form. Have them find the square that contains the expanded form of the first number, 2,526, and paste it into the box. They now have the first word of the answer to the riddle, “The”.
3. Have students work independently, or in pairs, to complete the activity. The words on the cutouts, when read from left to right, and from top to bottom, answer the riddle.

Assessment Tip

Observe students as they complete the activity. Find out if they can:

- Recognize 4-digit numbers written in expanded form.

Try this, too!

Play a fast-action game called “Winning Number!” with the whole class. To play the game, write a 4-digit number on a piece of paper and fold the paper in half. Tell students that you have a secret number, and that you will give them clues about each digit in the number to help them guess it correctly. For example, if your secret number is 1,448, you might give clues such as: the digit in the hundreds place is 4; the digit in the tens place is one less than 5; the digit in the thousands place is 1; the digit in the ones place is equal to the sum of the digits in the tens and hundreds places. Let students use pencil and paper to record the digits as each clue is given. The first person that thinks he or she knows the number should call out, “Winning Number!” and name the number. If it is not correct, the student must sit out the rest of the round. If you wish, the student who guesses the number correctly can choose the next secret number and make up the clues to help other students identify it.

Students will need

- blackline master: “Riddle Me This!”—1 copy per student
- scissors
- paste

Approximate Time

- 20 minutes

Grouping

- individual or pairs of students

NCTM Standards

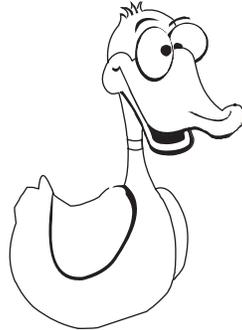
- Number & Operations
- Representation

Name _____

Riddle Me This!

Why did Billy the Duck want to be a banker?

Paste the expanded form of each number into a box. Then, read the words to find the answer.



2,526

3, 159

8,611

1,799

9,122

7,227

4,414

6,763

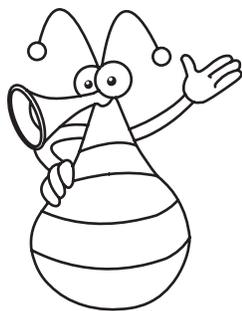
2,928

9,298

6,401

4,012

$1,000 + 700 + 90 + 9$ a	$3,000 + 100 + 50 + 9$ duck	$9,000 + 100 + 20 + 2$ lot	$7,000 + 200 + 20 + 7$ of
$4,000 + 10 + 2$ bills	$2,000 + 900 + 20 + 8$ had	$8,000 + 600 + 10 + 1$ had	$2,000 + 500 + 20 + 6$ The
$9,000 + 200 + 90 + 8$ very	$6,000 + 400 + 1$ big	$6,000 + 700 + 60 + 3$ that	$4,000 + 400 + 10 + 4$ friends



Grand Winner

Students use number cubes to play a game, and compare 4-digit numbers using $<$, $>$, or $=$ signs.

Getting Ready

1. Organize students into pairs and give 1 copy of the “Grand Winner” blackline master to each pair. Have the players in each pair write their names on the “Grand Winner” game sheet.
2. Now, give each pair of students a number cube. Tell them that they are each going to roll the cube four times to form two 4-digit numbers. Then they are going to compare the two numbers.
3. Direct students’ attention to the example on the game sheet. Four cubes show the digits 2, 3, 4, and 5 that form the number 2,345. The other four cubes show the digits 4, 2, 1, and 5 that form the number 4,215. Because 2,345 on the left, is less than 4,215 on the right, a ring is drawn around the “is less than” sign ($<$).

How to Play

1. The first player in each pair rolls the number cube four times. The number that turns up each time makes up one of the digits of a 4-digit number, starting in the thousands place. After each roll, the player records the digit on the game sheet. When all four digits are in place, the other player takes a turn.
2. After players have recorded their numbers, they compare them and draw a ring around one of the three signs that lies between them. The player who has the greater number wins the round. (Put a check mark next to the player’s name to keep track.)
3. After completing all of the problems, the player who has won the most rounds is the “grand winner.”

Variation: After a student rolls a number cube, allow him or her to decide which box (place) they want to put the digit into. One word of caution: a player may not change the order of the digits once each has been recorded.

Assessment Tip

Observe students as they play the game. Find out if they can:

- Use inequality or equality symbols to express the relationship between two 4-digit numbers.

Try this, too!

Students can practice comparing and ordering 4-digit numbers by creating and reading secret messages. Give each student 5 blank index cards and a paper bag. Have each student write a different 4-digit number on each card. Next, have students arrange their cards in order from left to right, starting with the card that has the least 4-digit number written on it. Ask each student to think of a 5-word secret message, and have them write one word of their message on each card, putting the first word on the first card, the second word on the second card, and so on. Tell students to put their 5 cards into the bag, shake it up, and swap bags with another student. Students decode the secret message inside each bag by ordering the numbers correctly. Let students trade bags until every student has decoded several messages.

Students will need

- blackline master: “Grand Winner”— 1 copy per student
- 1 number cube per pair

Approximate Time

- 30 minutes

Grouping

- pairs of students

NCTM Standards

- Number & Operations
- Problem Solving
- Reasoning & Proof

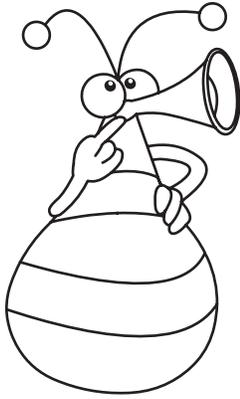
Name _____

Grand Winner

Roll a number cube. Write a 4-digit number using the digits. Compare the numbers and draw a ring around the correct sign.

2	3	4	3	>	4	2	1	5
2	3	4	3	=	4	2	1	5

Player 1 _____ <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="padding: 2px;">thousands</td> <td style="padding: 2px;">hundreds</td> <td style="padding: 2px;">tens</td> <td style="padding: 2px;">ones</td> </tr> <tr> <td style="height: 30px;"></td> <td></td> <td></td> <td></td> </tr> </table>	thousands	hundreds	tens	ones					> < =	Player 2 _____ <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="padding: 2px;">thousands</td> <td style="padding: 2px;">hundreds</td> <td style="padding: 2px;">tens</td> <td style="padding: 2px;">ones</td> </tr> <tr> <td style="height: 30px;"></td> <td></td> <td></td> <td></td> </tr> </table>	thousands	hundreds	tens	ones				
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Gigantic Sums

Students arrange 4 digits to form two 2-digit numbers that have the largest sum.

Getting Ready

1. Distribute 1 copy of the “Gigantic Sums” blackline master to each student. Students should also have sheets of paper and pencils on which to record their numbers and keep score.
2. Have students cut out the 10 game pieces and then fold each piece along the dotted line. Then, open each piece, place it face down and apply paste along its edges. Gently press the pasted sides together to form a rectangular game piece. The name of the game (Gigantic Sums) will be on one side, and a digit will be on the other side.

How to Play

1. Organize students into pairs and have each pair place their game pieces digit-side down, in a pile between them and mix them up.
2. Invite one player in each pair to draw 4 game pieces and turn them over. Tell the players that the object of the game is to arrange the 4 digits so that they form two 2-digit numbers that have the greatest possible sum.
3. In the first round of play, one student draws 4 game pieces and forms two 2-digit numbers and records them on a sheet of paper. Then, he or she writes their sum. Tell the other player to check that the sum is correct. If the sum is incorrect, the player who added incorrectly returns the game pieces to the pile and loses that round of play. (You should be prepared to act as mediator if there is a dispute.)
4. If the sum is correct, the 4 used game pieces are returned to the pile and mixed in with the others. The other player in the pair now takes a turn. If the second sum is also correct, the player with the greater sum wins the round. Have students circle the winning sum.
5. Each game consists of 5 rounds. Count the number of circled sums. The player who wins three or more rounds wins the game.

Assessment Tip

Observe students as they form their two-digit numbers. Find out if they can:

- Find the sum of two 2-digit numbers.

Try this, too!

Have students work in pairs. Have each student create an addition problem involving two 2-digit numbers and their sum. Have the student tape colored squares over any two digits in the problem, as shown here. Then, have the students in each pair trade papers and identify the covered digits.

$$\begin{array}{r} 3 \square \\ + 4 5 \\ \hline \square 7 \end{array}$$

Students will need

- blackline master: “Gigantic Sums”— 1 copy per student
- scissors
- paste
- paper & pencil

Approximate Time

- 30 minutes

Grouping

- pairs of students

NCTM Standards

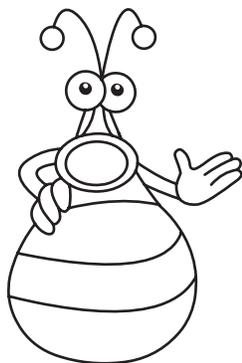
- Number & Operations
- Problem Solving
- Reasoning & Proof

Name _____

Gigantic Sums

Cut out each game piece. Fold each piece along the dotted line. Open the pieces and paste the inside edges together.

Gigantic Sums	0	Gigantic Sums	1
Gigantic Sums	2	Gigantic Sums	3
Gigantic Sums	4	Gigantic Sums	5
Gigantic Sums	6	Gigantic Sums	7
Gigantic Sums	8	Gigantic Sums	9



Sum Fun

In this fast-paced game, students find and compare the sums of two pairs of 3-digit numbers.

Getting Ready

1. Organize students into pairs and distribute 1 copy of the blackline master “Sum Fun” to each pair. Be sure that students have paper and pencils on which to record their numbers and sums.
2. Have each pair of students cut out the 36 game pieces. Then, turn them over and put them in a pile between each pair. (If necessary, color the back of each game piece, so that the number on the front doesn’t show through.)

How to Play

1. Invite each player to draw 2 game pieces from the pile. Have each player record the numbers written on their game pieces on a piece of paper, and then find the sum of these numbers. Next, have the players in each pair compare sums. The player with the larger sum gets to keep all of the game pieces.
2. If one of the sums is incorrect, the player who found that sum loses that round of play, and the other player keeps the 4 game pieces. If both sums are incorrect, the players return the 4 game pieces to the pile and draw again.
3. Play continues until there are fewer than 4 game pieces left in the draw pile. The winner is the player who has collected more game pieces.

Variation: Once again, have pairs of students draw 2 numbers each, and, rather than find the sum, have them estimate the sum to the nearest hundred. The student who has the greater estimate keeps all 4 game pieces. If the estimates are equal, the students return the game pieces to the draw pile and draw again.

Assessment Tip

Observe students as they play the game. Find out if they can:

- Find the sum of two 3-digit numbers.

Try this, too!

Give students a 3-digit number greater than 200 and have them choose two 3-digit numbers whose sum is that number. For example, if you give students the number 921, then two possible 3-digit addends are 321 and 600. Challenge the students to find as many pairs of 3-digit addends as they can in 4 minutes. The winner gets to choose a new 3-digit number that is the sum for a new game. (Be sure that you and your students check all sums before declaring a winner!)

Students will need

- blackline master: “Sum Fun”—1 copy per student
- scissors
- paper and pencils

Approximate Time

- 30 minutes

Grouping

- pairs of students

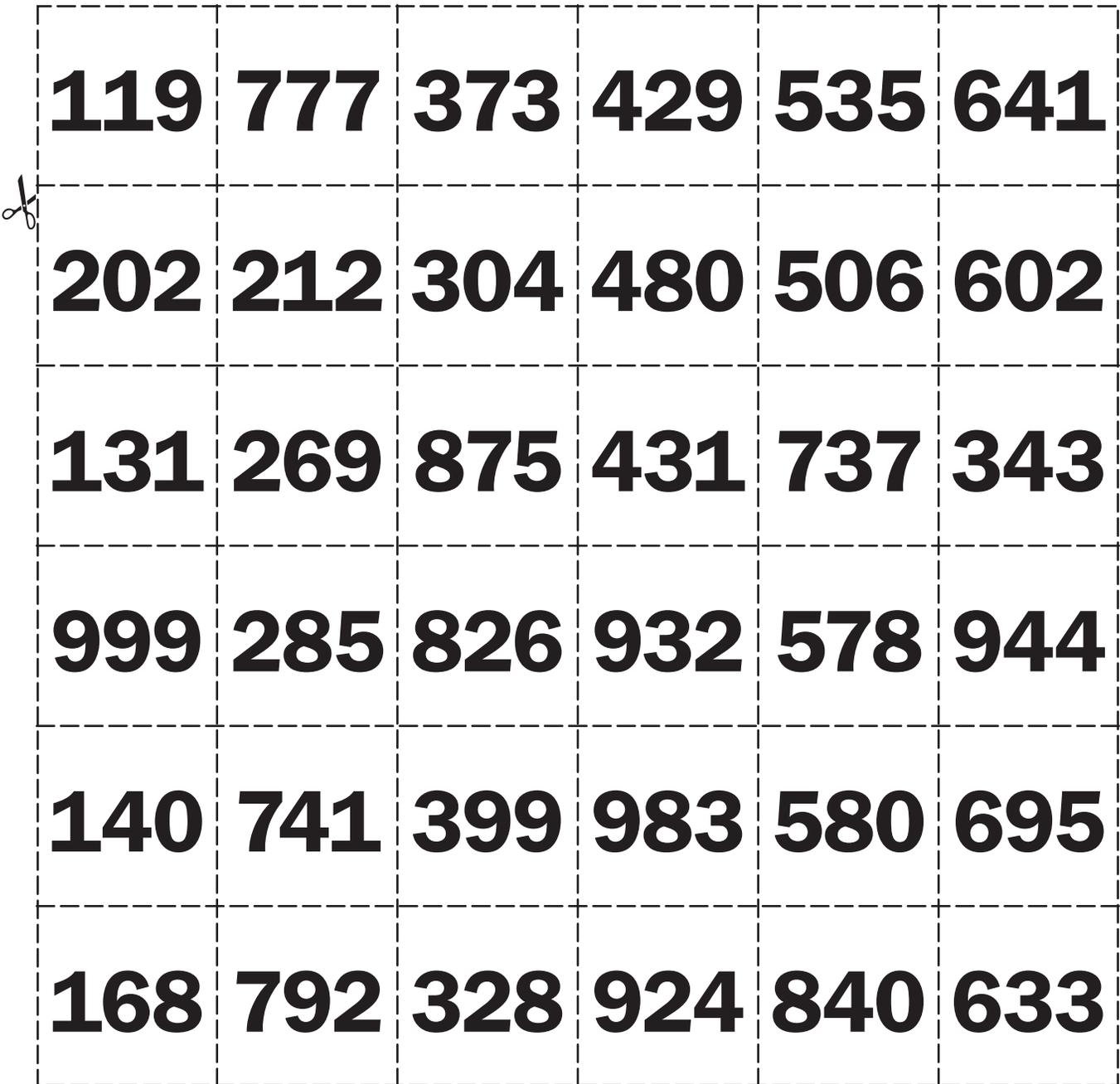
NCTM Standards

- Number & Operations
 - Problem Solving
-

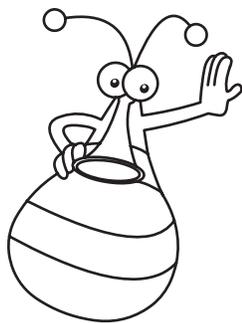
Name _____

Sum Fun

Cut out the 36 game pieces. Place them number side down in a pile and mix them up.



119	777	373	429	535	641
202	212	304	480	506	602
131	269	875	431	737	343
999	285	826	932	578	944
140	741	399	983	580	695
168	792	328	924	840	633



What's the Difference?

Students play a game using number cubes and base-ten cutouts to subtract from 99.

Getting Ready

1. Before you start, use poster board or construction paper to create place value mats made up of tens and ones. (See below.) You will need 1 mat for each pair of students. The mats should be large enough to fit 9 tens in the tens place, and 9 ones in the ones place. (Make the tens place larger than the ones place.)

tens	ones

2. Organize students into pairs and give each pair 1 copy of the blackline master, "What's the Difference?," a place value mat, 2 number cubes, and scissors.
3. Have students cut out the 9 tens and 21 ones from their copy of the blackline master. (If you use base-ten blocks instead of paper cutouts, you can eliminate this step.)

How to Play

1. Ask each pair of students to use the base-10 cutouts to show the number 99 on their place value mat. (Students should represent 99 using the greatest number of tens.) Set the extra ones aside. Students will use them to regroup from the tens place as they play the game.
2. The first player in each pair rolls the number cubes and calculates the sum of the faces that turn up. The player then subtracts that many ones and/or tens from 99 by removing the appropriate number of cutouts from the mat. For example, if the faces show 6 and 5, the player must remove 11 ones from the mat. To do this, 1 ten must be regrouped as 10 ones. (You may want to guide students through a trial run before the game begins.)
3. The second player then rolls the number cubes, adds the numbers of the faces that turn up, and then removes that many tens and/or ones from the cutouts on the mat.
4. Play continues until there are no cutouts in the tens place, and there is only 1 or 0 cutouts in the ones place. The last player who leaves either 0 or 1 cutout in the ones place is the winner.

Students will need

- blackline master: "What's the Difference?"—1 copy per student
- 2 number cubes per pair of students
- scissors

Approximate Time

- 30 minutes

Grouping

- pairs of students

NCTM Standards

- Number & Operations
- Representation

Assessment Tip

Observe students as they manipulate the base-10 cutouts. Find out if they can:

- Use regrouping to subtract 1- and 2-digit numbers from a 2- or 1-digit number.

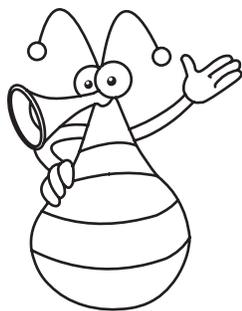
Try this, too!

Call out four 1-digit numbers, including the number 0, and have students create pairs of 2-digit numbers and as many subtraction problems as possible using only those numbers.

Name _____

What's the Difference?

Cut out the 9 tens and the 21 ones.



Snake Subtraction

Students solve a cross-number puzzle by completing subtraction sentences.

Warm-up

1. Copy the information in this table about snakes onto the chalkboard.

Snake	Length (in)
Eastern Kingsnake	72
Timber Rattlesnake	54
Northern Copperhead	41
Bullsnake	50
Boa Constrictor	126
Indian Python	164

2. Ask students to find the difference in length between an Indian Python and an Eastern Kingsnake. Have a student come to the chalkboard, write the problem, and solve it, as shown below on the left. Point out the regrouping in the hundreds place.
3. Have another student use addition to check the subtraction, as shown below on the right:

$$\begin{array}{r}
 \overset{16}{164} \\
 - 72 \\
 \hline
 92
 \end{array}
 \qquad
 \begin{array}{r}
 92 \\
 + 72 \\
 \hline
 164
 \end{array}$$

4. Ask students to compare the lengths of other snakes in the table. Have them write the subtraction problems on the board, find the differences, and check them using addition.

Introducing the Activity

1. Distribute 1 copy of the blackline master, “Snake Subtraction,” to each student. Direct their attention to the first clue in 1-Across, 641 – 61. Ask students to find the difference and write it in the 3 spaces provided.
2. Next, have them look at the clue for 2-Down. Ask students to find the difference and fill in those spaces in the puzzle.
3. Students should work independently or in pairs to complete the puzzle.

Assessment Tip

Observe students as they complete each subtraction sentence. Find out if they can:

- Subtract 2- and 3-digit numbers.

Try this, too!

Group students into pairs and have one student in each pair make up a subtraction problem that involves subtracting a 2-digit number from a 3-digit number. The student finds the difference between the numbers and then covers 2 of the digits with pieces of paper, as shown on the right. The student then gives the problem with the missing digits to the other student in the pair to complete. Then, the players switch roles.

$$\begin{array}{r}
 24\ \square \\
 - \quad 51 \\
 \hline
 \square 92
 \end{array}$$

Students will need

- blackline master: “Snake Subtraction”—1 copy per student

Approximate Time

- 25 minutes

Grouping

- individual or pairs of students

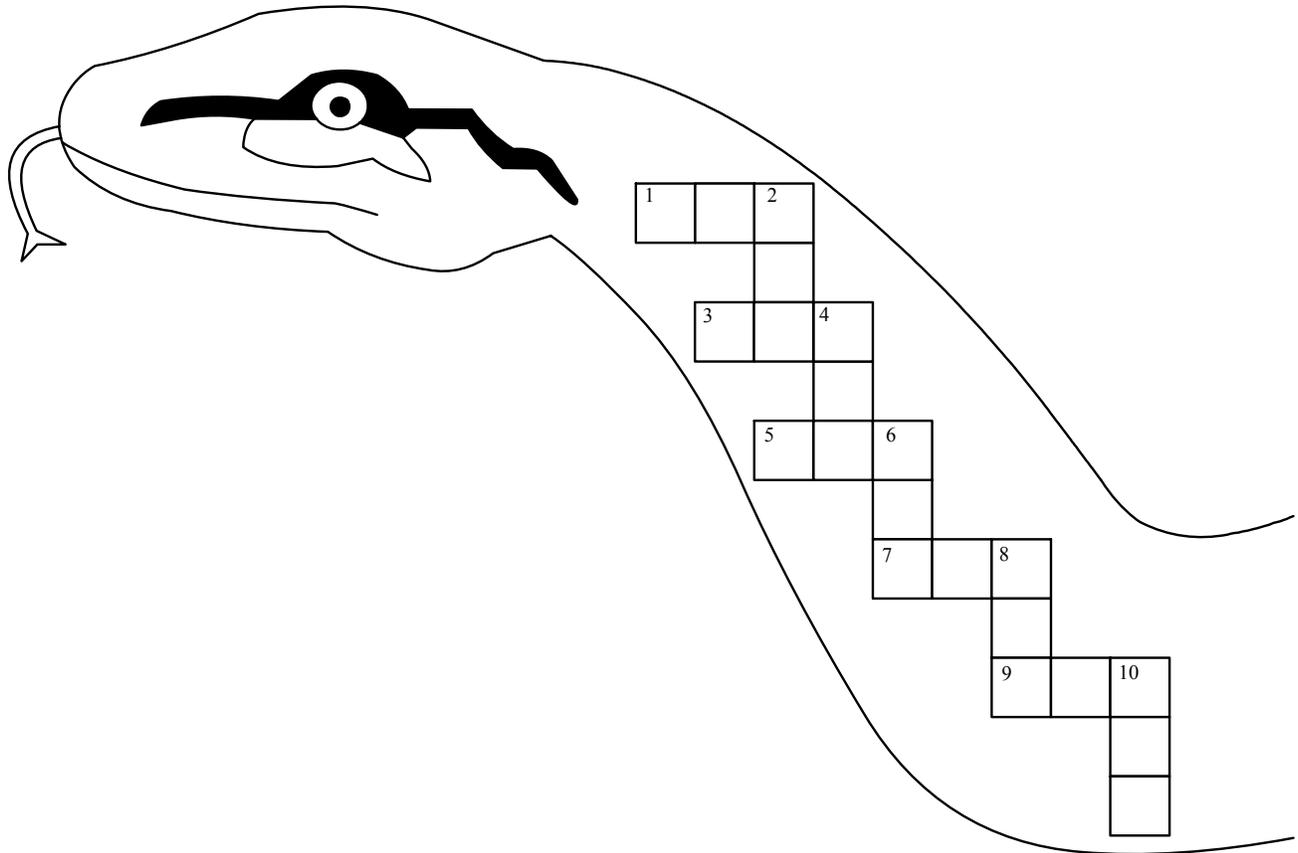
NCTM Standards

- Number & Operations
- Connections

Name _____

Snake Subtraction

Complete this cross-number puzzle. Find the difference for each clue and write the answer in the space provided.



Across

1. $642 - 61$
3. $358 - 73$
5. $849 - 74$
7. $528 - 32$
9. $277 - 85$

Down

2. $279 - 81$
4. $638 - 71$
6. $607 - 43$
8. $757 - 66$
10. $343 - 51$

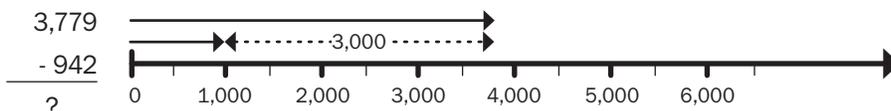


Ring an Answer

Students estimate and find the difference between 4-digit and 3-digit numbers.

Warm-up

- On the chalkboard write a subtraction problem having a 4-digit minuend and a 3-digit subtrahend, such as the example shown below. Draw a number line and have students show the approximate locations of each number, and then estimate the difference between the numbers to the nearest thousand. The difference between them is about 3,000.



- Have one student complete the subtraction on the chalkboard as you use base-10 blocks to model any regrouping that might be necessary. Then, compare the actual difference to the estimate to verify that the answer seems reasonable. [2,837 is very close to 3,000.]
- Create other subtraction problems involving 3- and 4-digit numbers and repeat this activity several times.

Introducing the Activity

- Distribute 1 copy of the “Ring an Answer” blackline master to each student and read aloud the directions for the first 2 problems on estimation. Invite students to mark the approximate location of the minuend and subtrahend on each number line. Then, estimate each difference to the nearest thousand and draw a ring around the best estimate.
- Next, have students look at the 6 subtraction problems in the lower part of the worksheet. Tell them to find each difference and draw a ring around the correct number in each case.

Assessment Tip

Observe students as they complete the problems. Find out if they can:

- Estimate the difference between two numbers.
- Use regrouping to find the difference between a 4-digit number and a 3-digit number.

Try this, too!

Prepare a set of index cards, one for each student, on which you have written a problem, such as the example shown here. In this case, digits in the minuend and subtrahend are missing, and the difference is complete. (You could also have missing digits in the difference.)

Distribute the cards to your students and challenge them to find the missing digits to complete the subtraction.

$$\begin{array}{r}
 \square, 4 \quad 7 \quad \square \\
 - 6 \quad \square \quad 2 \\
 \hline
 3, 8 \quad 4 \quad 5
 \end{array}$$

Students will need

- blackline master: “Ring an Answer”—1 copy per student

Approximate Time

- 20 minutes

Grouping

- individual

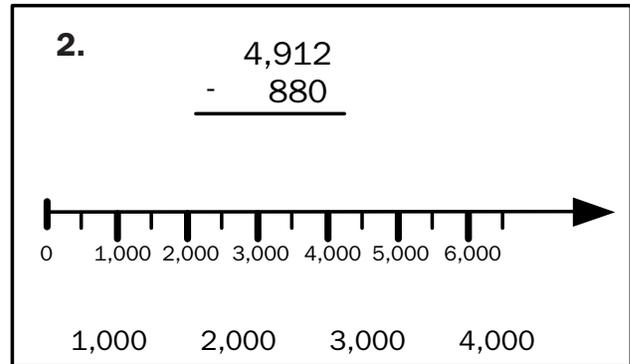
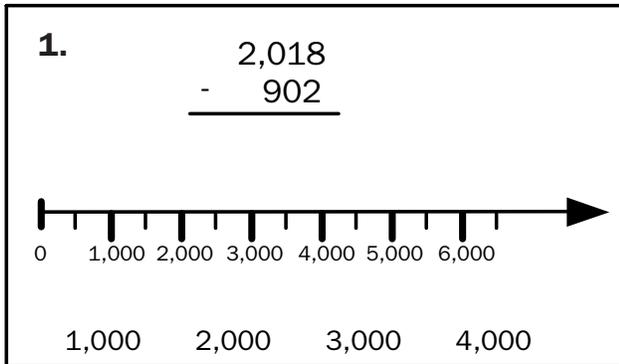
NCTM Standards

- Number & Operations
- Representation

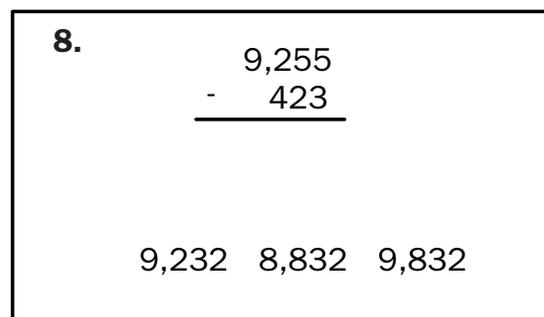
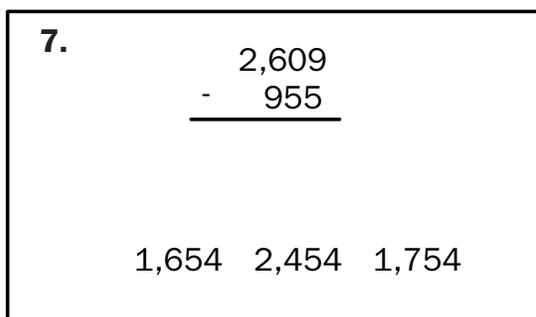
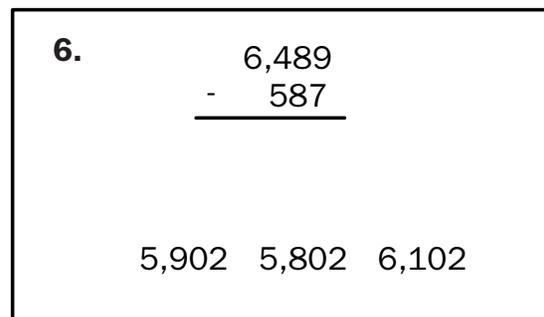
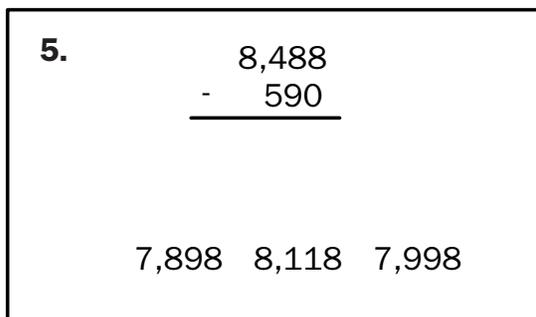
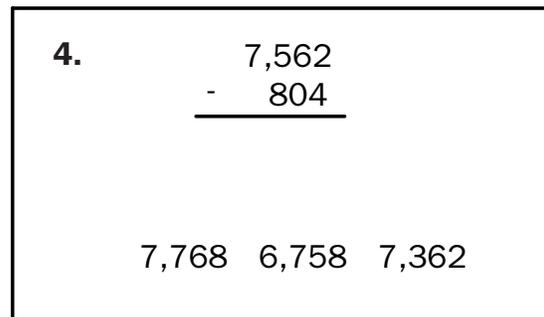
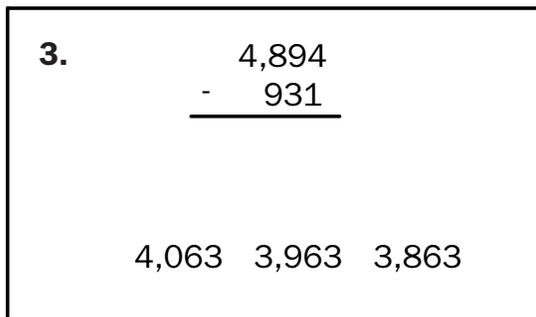
Name _____

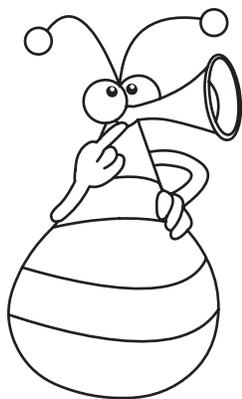
Ring an Answer

Find each number on the number lines and estimate each difference. Then draw a circle around the best estimate of their difference.



Complete each subtraction. Then draw a circle around the difference.





Sum Fun and Factors

In this concentration game, students match factors, addends, and pictorial representations.

Getting Ready

1. Organize students into pairs and distribute one copy of the blackline master, “Sum Fun and Factors,” to each pair.
2. Have students in each pair cut out the 18 game pieces, turn them over, and if necessary, color the back of each game piece to insure that the pictures and text will not show through.

How to Play

1. Direct the student pairs to place the 18 game pieces face-side down in front of them, and mix them up. Then, arrange the game pieces in 3 rows of 6.
2. Have students alternate turning over 3 game pieces at a time. The goal is to find 3 matching game pieces—an indicated product, a corresponding repeated addition, and a pictorial representation of the two mathematical expressions. If a player finds 3 matching game pieces, the matching pieces can be removed and placed in the player’s own pile, and the player has another turn. If a player doesn’t match all 3 game pieces, the pieces are turned over again, and the other player takes a turn.
3. Play continues until there are no more game pieces left to choose. The player with the greater number of game pieces is the winner.
4. For an added challenge, have student pairs combine two sets of 18 game pieces and play using 36 pieces. The same rules apply.

Assessment Tip

Observe students as they play the game. Find out if they can:

- Recognize equivalent addition and multiplication expressions and their representations.

Try this, too!

Have students choose two numbers from 1 to 9 and write a multiplication sentence that shows their product. For example, if the numbers are 4 and 5, then either $4 \times 5 = 20$ or $5 \times 4 = 20$ are correct multiplication sentences. Then, challenge students to make up a corresponding multiplication story problem and draw a picture illustrating that multiplication problem. (You may need to remind students that the meaning of an expression like 4×5 is “4 groups of 5 objects.”) For example, if the original multiplication sentence was $4 \times 5 = 20$, then a corresponding story problem and picture could be as follows:

There were 4 baskets, with 5 apples in each basket.

How many apples were there altogether?

Math Focus

- Understanding multiplication

Students will need

- blackline master: “Sum Fun and Factors”—1 copy per student
- scissors
- crayons or colored pencils

Approximate Time

- 30 minutes

Grouping

- pairs of students

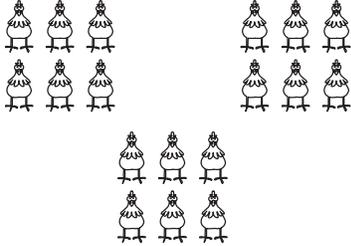
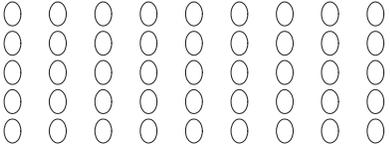
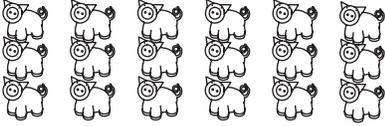
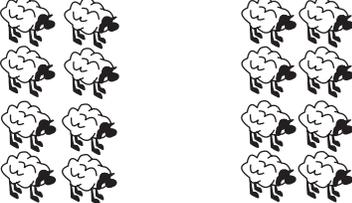
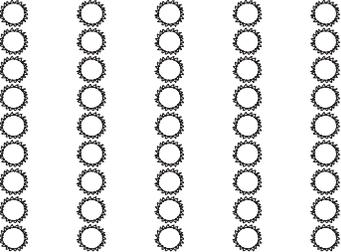
NCTM Standards

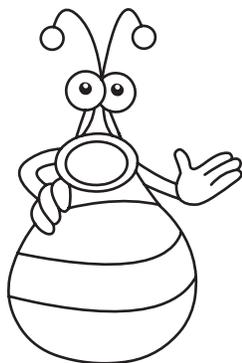
- Number & Operations
 - Representation
-

Name _____

Sum Fun and Factors

Cut out the 18 game pieces.

	3×6	$6 + 6 + 6$
	8×2	$8 + 8$
	9×5	$5 + 5 + 5 + 5 + 5$ $+ 5 + 5 + 5 + 5$
	6×3	$3 + 3 + 3$ $+ 3 + 3 + 3$
	2×8	$2 + 2 + 2 + 2 + 2$ $+ 2 + 2 + 2$
	5×9	$9 + 9 + 9$ $+ 9 + 9$



Deep Sea Life

Students solve multiplication problems by skip counting along a number line.

Warm-up

1. On the chalkboard draw a number line, scaled in units from 0 to about 20. Invite a student to come to the front of the class and hold up his or her little finger. Use a piece of string to measure the length of the finger. Place one end of the string at 0 and extend its length along the number line. Place a mark on the number line to show the length of the student's little finger.
2. Next, tell students that a giant has a little finger that is about 3 times longer than the student's finger. Ask students how they might show the length of the giant's finger. Then, invite a student to use the string that represents the length of the student's little finger, and starting at 0, extend its length three times along the number line to represent the length of the giant's finger. Place a mark on the number to show the length of the giant's little finger.
3. Repeat the activity several times comparing the lengths of various objects.

Introducing the Activity

1. Distribute 1 copy of the blackline master, "Deep Sea Life," to each student and direct students' attention to the first problem. Read the problem aloud.
2. Have students note that the length of the hatchet fish is 4 inches, (here shown as 4 units), and the angler fish is 2 times longer than the hatchet fish. Invite them to find the length of the angler fish, by starting at 0 on a number line and showing the length of the hatchet fish 2 times. Have students trace over the dotted lines above the number line, which show that the angler fish is 2 times longer than the hatchet fish. Point out that the length of the angler fish can be expressed as $4 + 4 = 8$ and $2 \times 4 = 8$. Have students trace over the answers in the first problem. Encourage them to finish the other problems in a similar manner.

Assessment Tip

Observe students as they complete the problems. Find out if they can:

- Solve comparison problems by skip counting by numbers less than 10 along a number line.

Try this, too!

Play a whole class game called "Skip and Count." Use chalk to draw a number line on the playground with numbers from 0 to 36. Have students take turns rolling two number cubes each. The first number cube will tell them what number to skip count by. The second number cube will tell them how many times to skip count. For instance, if a student rolls a "4," and a "3," the student will skip count by 4s three times, and hop above the numbers 4, 8, and 12. If a student rolls a "2" and a "6," the student will skip count by 2s six times, and hop above the numbers 2, 4, 6, 8, 10, and 12.

Students will need

- blackline master: "Deep Sea Life"—1 copy per student

Approximate Time

- 15 minutes

Grouping

- individual

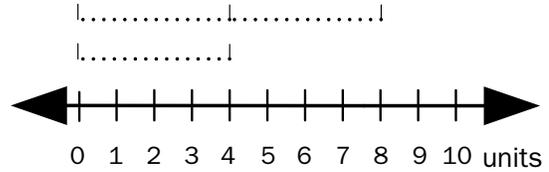
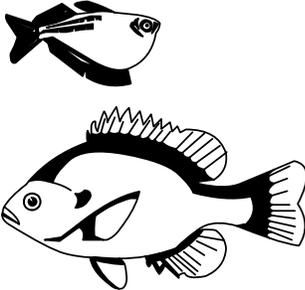
NCTM Standards

- Number & Operations
 - Measurement
-

Name _____

Deep Sea Life

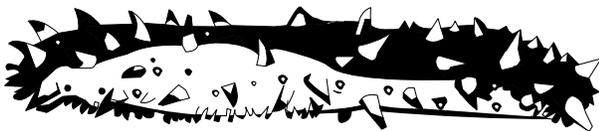
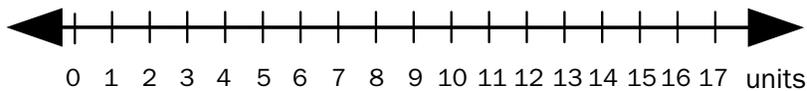
1. The length of an angler fish is 2 times the length of a hatchet fish. A hatchet fish is 4 units long. Draw lines to show the lengths of the two fish. Then, find the length in units of the angler fish.



$$4 + 4 = \underline{8}$$

$$2 \times 4 = \underline{8}$$

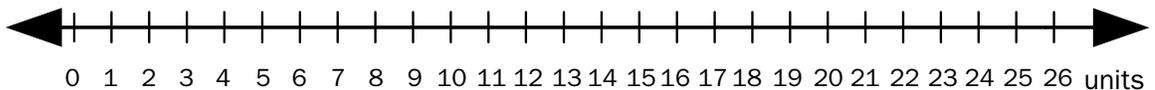
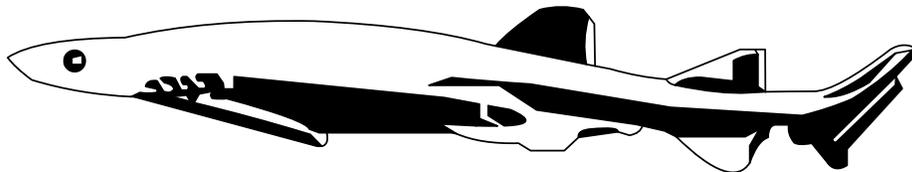
2. A hatchet fish is 4 units long. A sea cucumber is 4 times longer than a hatchet fish. Draw lines to show the length of the hatchet fish and the sea cucumber. Then, find the length in units of the sea cucumber.



$$4 + 4 + 4 + 4 = \underline{\quad}$$

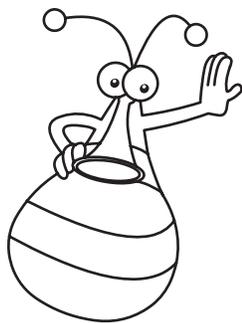
$$4 \times 4 = \underline{\quad}$$

3. A filetail catshark is 6 times longer than a hatchet fish. Draw lines to show the lengths of the two fish. Then, find the length in units of the catshark.



$$4 + 4 + 4 + 4 + 4 + 4 = \underline{\quad}$$

$$6 \times 4 = \underline{\quad}$$

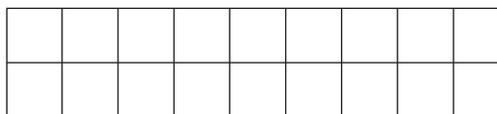


Tiles, Factors, and Products

Students use tiles and rectangular arrays to find products less than 100.

Warm-up

1. On the chalkboard, draw a rectangular array such as the one below that represents the expression 2×9 . Point out to students that this array consists of 2 rows of 9 tiles, and can be written as 2×9 . Invite a student to come to the chalkboard and count each tile to find the product of 2 and 9.



2. Rearrange the 18 tiles to form an array consisting of 9 rows and 2 columns. Then, ask students to give you the multiplication sentence that corresponds to this array. [$9 \times 2 = 18$]
3. Ask students to discuss the relationship between a 2×9 and a 9×2 array and their products. Repeat the activity several times modeling other equivalent multiplication sentences.

Introducing the Activity

- Distribute 1 copy of the blackline master, “Tiles, Factors, and Products,” to each student and direct the students’ attention to the first problem. Point out that in this array, there are 3 rows of 4 tiles. Invite students to fill in the blanks underneath the array, and show the multiplication 3×4 .
- Next, to verify that the product of 3 and 4 is 12, have students count the tiles. They can color them if they wish. Then, write the number 12 in the space to complete the number sentence, $3 \times 4 = 12$.
- Have students complete the remaining number sentences under each array by writing the factors and their product. Be sure that the order of the factors reflects the number of rows times the number of columns.

Assessment Tip

Observe students as they complete the activity. Find out if they can:

- Write the multiplication sentence that corresponds to a given rectangular array.

Try this, too!

- Give each student a sheet of 1-inch graph paper and invite students to model multiplication sentences using the unit squares on the graph paper. Direct them to first write a multiplication sentence, such as $3 \times 2 = 6$. Then, below the sentence, have them outline and color the rectangle that shows the product. Remind students that the first factor represents the number of rows in the array.
- Read these books that focus on multiplication to your students: *Too Many Kangaroo Things to Do* by Stuart J. Murphy, *Under the Sun and Over the Moon* by Kevin Crossley-Holland, and *Each Orange Had 8 Slices* by Paul Giganti.

Students will need

- blackline master: “Tiles, Factors, and Products”—1 copy per student
- crayons or colored pencils

Approximate Time

- 20 minutes

Grouping

- individual

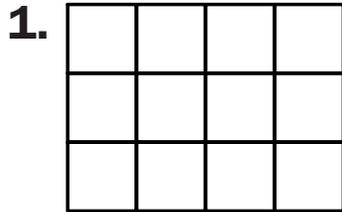
NCTM Standards

- Number & Operations
- Geometry
- Representation

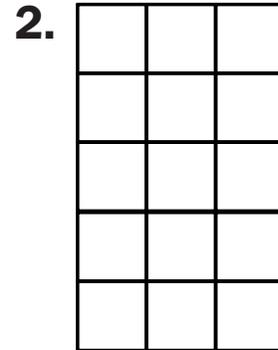
Name _____

Tiles, Factors, and Products

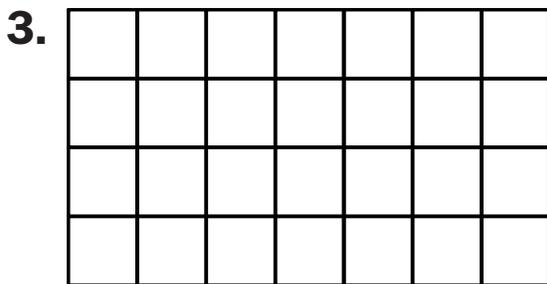
What multiplication sentences do these 8 groups of tiles show? Write the factors and then write the product for each group of tiles.



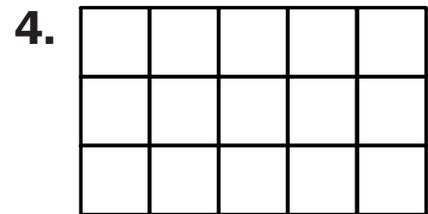
___ x ___ = ___



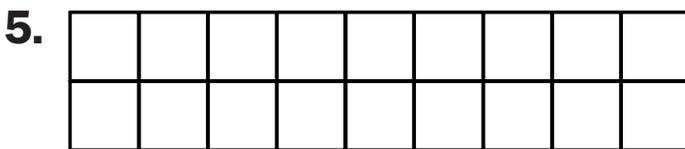
___ x ___ = ___



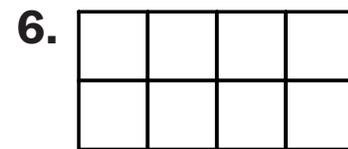
___ x ___ = ___



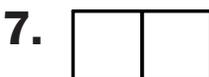
___ x ___ = ___



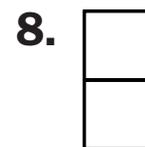
___ x ___ = ___



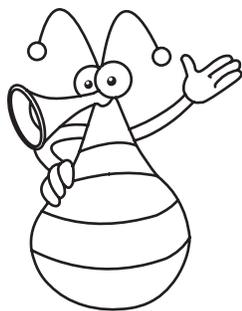
___ x ___ = ___



___ x ___ = ___



___ x ___ = ___



Flower Shop Division

Students form equal groups from a given number of flowers.

Warm-up

1. Draw 12 squares on the chalkboard and ask students how many equal groups of 6 squares there are in 12 squares. Invite a student to come to the chalkboard and draw a ring around each group of 6 squares.
2. Then, explain that when we create equal groups, we can write a number sentence to represent them. On the chalkboard write the division sentence, $12 \div 6 = 2$, to show that there are 2 groups of 6 squares in 12 squares.
3. Remind students that 2 groups of 6 squares can be written as 2×6 . Ask a student to come to the chalkboard and under the division sentence, complete the multiplication sentence, $2 \times 6 = 12$. Explain that this shows that we can use multiplication to check our division.
4. Repeat the activity several times using dividends and divisors that leave no remainders.

Introducing the Activity

1. Distribute 1 copy of the blackline master, “Flower Shop Division,” to each student and direct students’ attention to the first problem. Read aloud the directions.
2. Have students draw a ring around 3 groups of tulips so that each group has the same number of tulips. Count how many tulips are in each group. Then, have students complete the division sentence to show that there are 3 equal groups of 6 in 18. Below that sentence, complete the multiplication sentence to check the division.
3. Have students complete the remaining problems as you circulate among them.

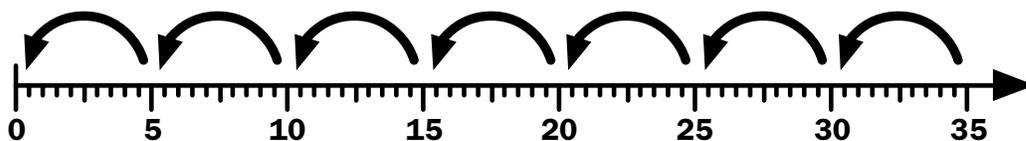
Assessment Tip

Observe students as they solve the problems. Find out if they can:

- Divide a number by the number of equal groups to determine how many are in each group.

Try this, too!

Division is also a way to find how many equal groups of a certain size are in a number. To show this meaning of division, draw a number line on the chalkboard, such as the one below. Ask students, “How many 5-inch segments are in 35 inches?” Then, starting at 35, have a student count backwards by 5 to 0. Keep track of the number of subtractions: $35 - 5 = 30$, $30 - 5 = 25$, etc. The number of subtractions is the quotient of 35 and 5. Repeat with other convenient numbers, counting backward on the number line.



Students will need

- blackline master: “Flower Shop Division”—1 copy per student

Approximate Time

- 25 minutes

Grouping

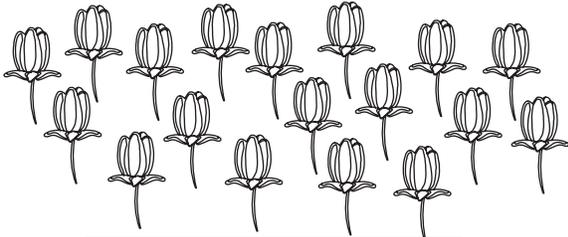
- individual

NCTM Standards

- Number & Operations
- Representation

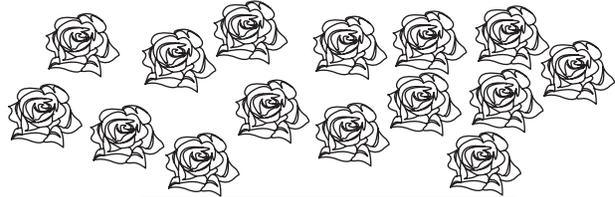
Flower Shop Division

1. Divide these 18 tulips into 3 equal groups. Circle the groups. Then, complete the division sentence and its check.



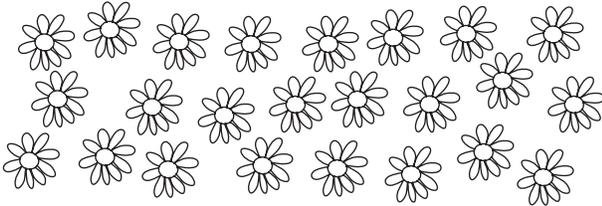
$18 \div 3 = \underline{\quad}$
$3 \times \underline{\quad} = 18$

2. Divide these 15 roses into 5 equal groups. Circle the groups. Then, complete the division sentence and its check.



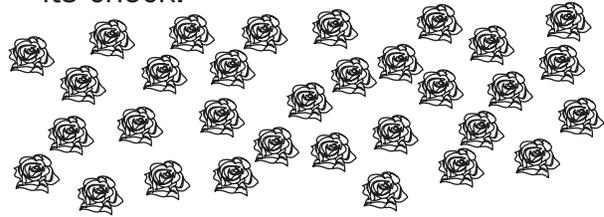
$15 \div 5 = \underline{\quad}$
$5 \times \underline{\quad} = 15$

3. Divide these 24 daisies into 6 equal groups. Circle the groups. Then, complete the division sentence and its check.



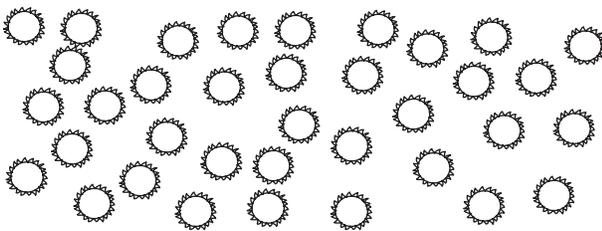
$\underline{\quad} \div \underline{\quad} = \underline{\quad}$
$\underline{\quad} \times \underline{\quad} = \underline{\quad}$

4. Divide these 32 roses into 8 equal groups. Circle the groups. Then, complete the division sentence and its check.



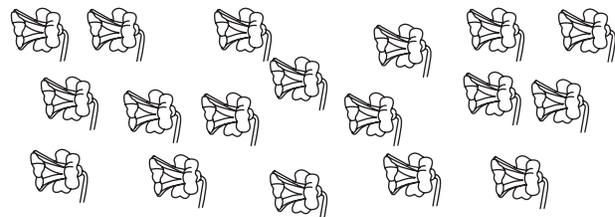
$\underline{\quad} \div \underline{\quad} = \underline{\quad}$
$\underline{\quad} \times \underline{\quad} = \underline{\quad}$

5. Divide these 36 sunflowers into 6 equal groups. Circle the groups. Then, complete the division sentence and its check.

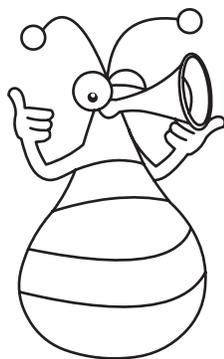


$\underline{\quad} \div \underline{\quad} = \underline{\quad}$
$\underline{\quad} \times \underline{\quad} = \underline{\quad}$

6. Divide these 18 daffodils into 9 equal groups. Circle the groups. Then, complete the division sentence and its check.



$\underline{\quad} \div \underline{\quad} = \underline{\quad}$
$\underline{\quad} \times \underline{\quad} = \underline{\quad}$



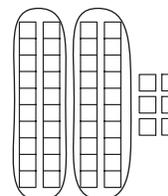
Grocery Store Math

Students divide 2-digit numbers by 1-digit numbers using models and numbers.

Warm-up

Use an overhead projector and base-10 blocks for this activity. Tell students that you are going to show them how to use blocks to divide 46 by 2.

1. Start by having a student come to the front of the classroom and use blocks to show the number 46.
2. Because you want to divide 46 by 2, group the 4 tens into 2 equal groups of 20 by drawing rings around each group.
3. On a transparency, draw a place value grid and write a 2 in the tens place of the quotient to show that there are 2 groups of 20 in 46. Subtract 4 tens from 46, and bring down the 6 in the ones place.
4. Next, group the 6 ones into 2 groups of 3. Then write a 3 in the ones place of the quotient to show that there are 3 groups of 2 in 6. Complete the division to show a remainder of 0.
5. Repeat the activity several times, modeling similar division problems.



	tens	ones
	2	3
2	4	6
	-4	0
		6
		-6
		0

Introducing the Activity

1. Distribute 1 copy of the “Grocery Store Math” blackline master to each student and read the directions aloud. Direct students’ attention to the first problem. Have them create 2 equal groups of ten by coloring each group of tens in a different color. Next, using numbers, have them show dividing the 2 tens in 26 by 2 and write a 1 in the quotient and subtract 2 in the tens place.
2. Then, in a similar way, have them divide the ones into 2 equal groups, color each group of ones with a different color, and show the corresponding division using numbers. Check to make sure that all of the students have 13 as the quotient.
3. Have students work independently and complete the remaining problems in a similar way.

Assessment Tip

Observe students as they complete the activity. Find out if they can:

- Use blocks and the division algorithm to divide a 2-digit number by a 1-digit number.

Try this, too!

Give each student a sheet of 1-inch graph paper, copy paper, colored pencils, and paste. Have them color and cut out and paste some 1-inch squares onto the copy paper to model a division, such as $36 \div 6$. Encourage them to write the division expression next to the model. On the other side of the copy paper, have them write the quotient. Have students swap papers and solve each other’s problems.

Students will need

- blackline master: “Grocery Store Math”—1 copy per student
- crayons or colored pencils

Approximate Time

- 20 minutes

Grouping

- individual

NCTM Standards

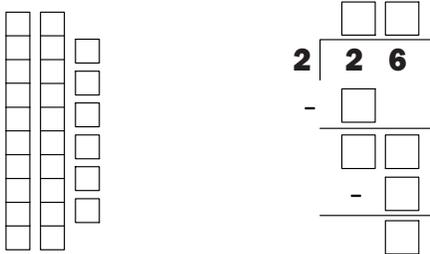
- Number & Operations
- Problem Solving
- Representation

Name _____

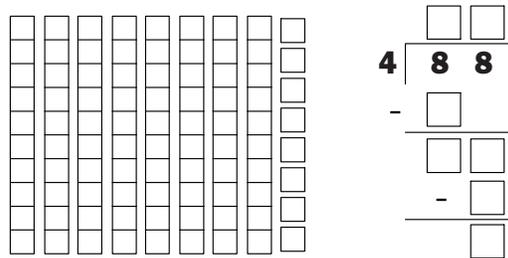
Grocery Store Math

The blocks show how many of each grocery item is in the store. Color the blocks to create equal groups. Then, find the quotient using numbers.

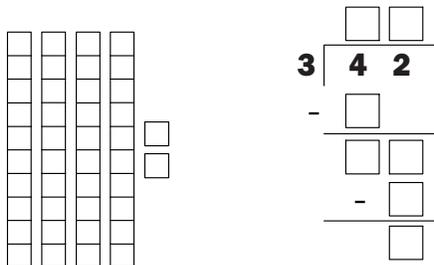
1. A grocer puts 26 ears of corn into 2 boxes. If each box has the same number of ears of corn, how many ears of corn are in each box?



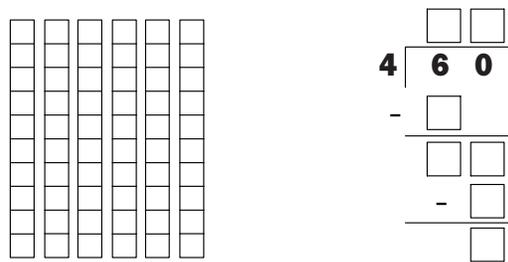
2. A grocer has 88 bags of candy to put onto 4 shelves. If he puts the same number of bags on each shelf, how many bags are on each shelf?



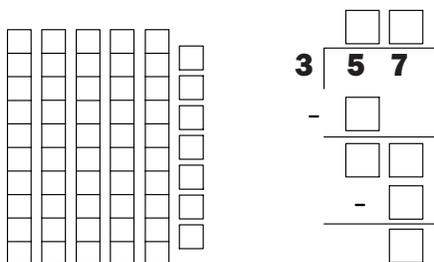
3. A grocer has 42 potatoes. He packs them so that there are 3 potatoes in each package. How many packages of potatoes are there all together?



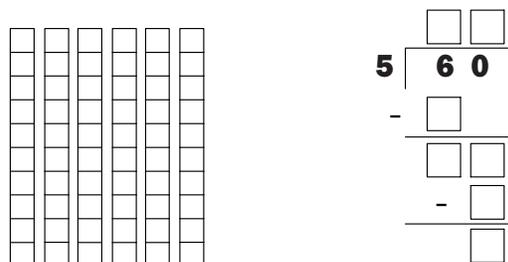
4. A grocer has 60 pizzas, and she can fit 4 pizzas on one tray. How many trays does she need for all 60 pizzas?

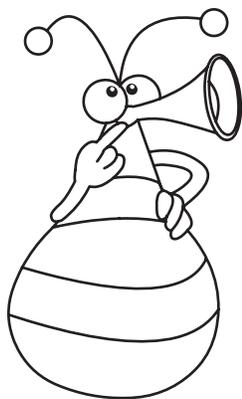


5. A grocer divides 57 apples equally among 3 bags. How many apples are in each bag?



6. A grocer has 60 green peppers. She packs them so that each package has 5 peppers. How many packages of peppers does she have?





Yummy Fractions!

Students identify and compare fractional parts of a whole.

Warm-up

1. Give each student 5 blank index cards. Have them draw lines that divide the cards into halves, thirds, fourths, sixths, and eighths respectively.
2. Have students color one fractional part of each figure and label it with the corresponding fraction. Then, call out a riddle, such as: “I am one of four equal parts. What am I?” Have students hold up cards that show one-fourth.

Introducing the Activity

1. Distribute 1 copy of the “Yummy Fractions” blackline master to each student and read the directions aloud. Then, point out the 12 partially shaded circles at the bottom of the page and tell students that these represent 12 partially eaten pies. Then, invite students to cut out the 12 “pies.”
2. Now, direct students’ attention to the fractions beneath the pair of circles in the first problem. Tell them to find the pies that represent $\frac{3}{8}$ and $\frac{1}{8}$ of a circle, and paste each one into the circle that lies above the correct fraction. Then, have them write the correct inequality symbol that shows that $\frac{3}{8}$ is greater than $\frac{1}{8}$.
3. Have students work independently to complete the remaining problems.

Assessment Tip

Observe students as they work. Find out if they can:

- Express fractional parts of wholes as fractions.
- Compare fractional parts.

Try this, too!

- You will need one index card for each student in your class. Separate the cards into two sets. Use a marker to write a different proper fraction on one set of cards. On the other set, draw a representation that matches each fraction. Give one card to each student. At a given signal, invite the students to find the person with the card that matches the one they’re holding—either a fraction or a pictorial representation of the fraction. For even more fun, divide the students into two groups and see which group of students can find their matching partners first!
- Share these great books about fractions with your class: *Jump, Kangaroo, Jump!* by Stuart Murphy, *Fraction Action* by Loreen Leedy, or *Eating Fractions* by Bruce McMillan.

Students will need

- blackline master: “Yummy Fractions!”—1 copy per student
- scissors
- paste

Approximate Time

- 30 minutes

Grouping

- individual

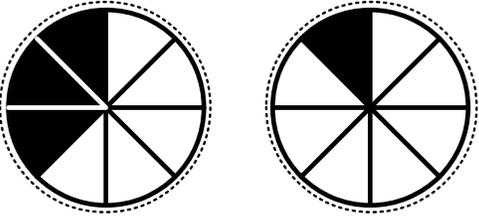
NCTM Standards

- Number & Operations
 - Representation
-

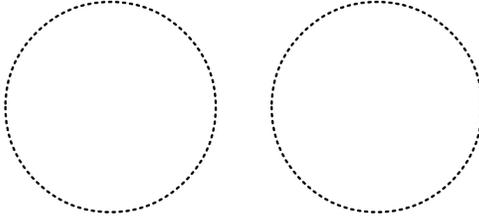
Name _____

Yummy Fractions!

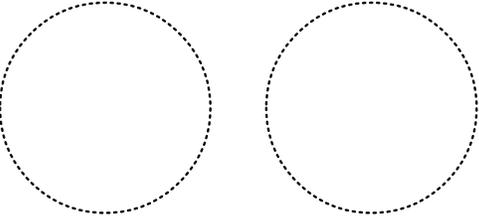
Cut out the 10 pies below. Paste each one into a circle above the fraction that shows how much pie is left. Write < or > in the box to compare the fractions.



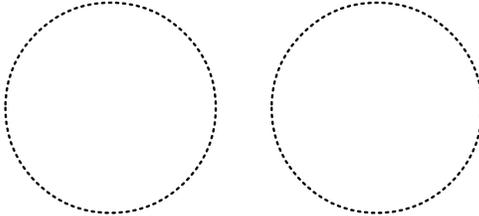
$\frac{3}{8}$ $\frac{1}{8}$



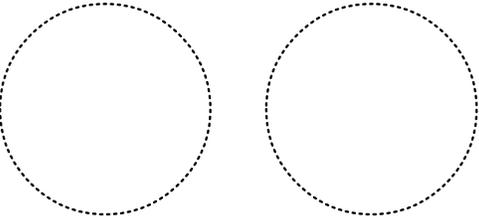
$\frac{1}{3}$ $\frac{2}{3}$



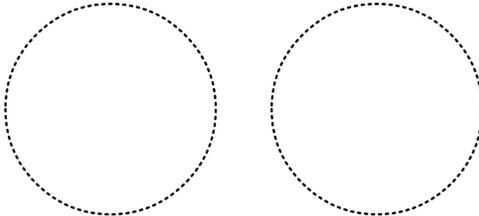
$\frac{4}{5}$ $\frac{1}{5}$



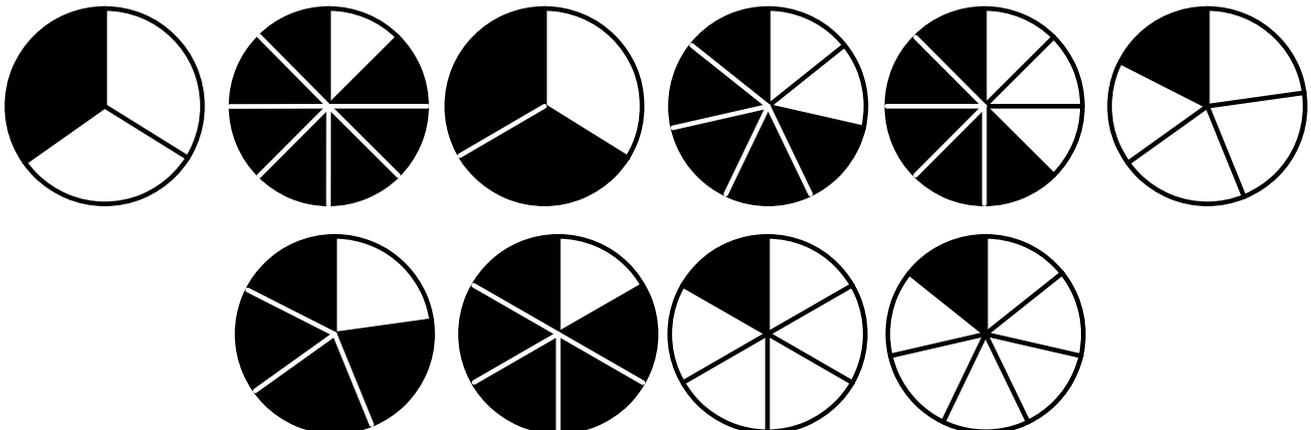
$\frac{1}{7}$ $\frac{5}{7}$

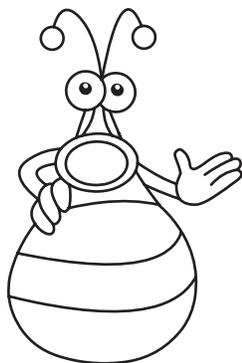


$\frac{5}{8}$ $\frac{7}{8}$



$\frac{5}{6}$ $\frac{1}{6}$



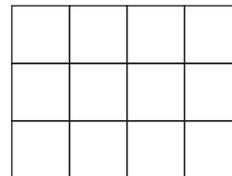


Squares and Areas

Students explore the areas of shapes using unit squares.

Warm-up

1. Draw a rectangle divided into 12 unit squares on the chalkboard, as shown here. Then, invite a student to come to the board and write the number of rows of squares [3] and the number of squares in each row. [4] Then, ask the student to count the number of squares in the rectangle to find its area. [12]
2. Remind students that 3 groups of 4 is written as 3×4 , and 3 times 4 is 12. Therefore, the area in square units of this rectangle can be expressed by the multiplication sentence, $3 \times 4 = 12$.
3. Repeat this exercise to find the area, in square units, of different rectangles.



Area: $3 \times 4 = 12$

Introducing the Activity

1. Distribute 1 copy of the “Squares and Areas” blackline master to each student and read aloud the directions for the first problem.
2. Have students determine the number of rows of unit squares in the first rectangle, and the number of squares in each row. Next, invite them to count the squares in the rectangle and then write the multiplication sentence that shows how to find the area of the rectangle. [$2 \times 2 = 4$] Repeat this exercise for the other three rectangles.
3. In the second problem, tell students that they are to identify the figure with the greatest area.
4. Finally, direct students’ attention to the third problem. Tell them to cut out the squares and on a clean sheet of paper, rearrange the squares to form a different shape. Then, ask students to find the area, in square units, of their shape and write it next to their shape.

Assessment Tip

Observe students as they complete the activity. Find out if they can:

- Find the area of a rectangle using unit squares.
- Compare the areas of two or more shapes using square units.

Try this, too!

- Each student will need one sheet of graph paper for this activity. Using the grid lines on the paper, have students create 4 different rectangles that each has an area of 30 square units. (Dimensions of the rectangles are 1 and 30, 2 and 15, 3 and 10, and 5 and 6.) Ask students if it is possible to draw a square whose area is also 30 square units and whose sides are whole numbers. Have them explain why this is impossible. [The sides of a square are equal, and no equal pair of whole number factors has a product of 30.]
- Read these books about area to your class: *Spaghetti and Meatballs for All: A Mathematical Story* by Marilyn Burns, and *Not Enough Room* by Joanne Rocklin.

Students will need

- blackline master: “Squares and Areas”—1 copy per student
- scissors
- paste
- paper

Approximate Time

- 20 minutes

Grouping

- individual

NCTM Standards

- Number & Operations
- Geometry

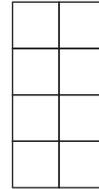
Name _____

Squares and Areas

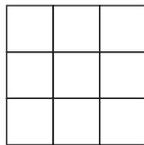
1. Each rectangle below is divided into unit squares. Write a multiplication sentence to find the area, in square units, of each rectangle.



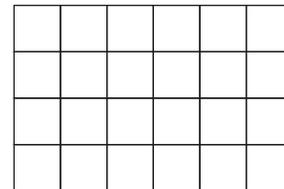
____ x ____ = ____



____ x ____ = ____

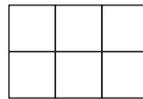
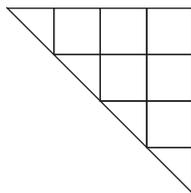


____ x ____ = ____

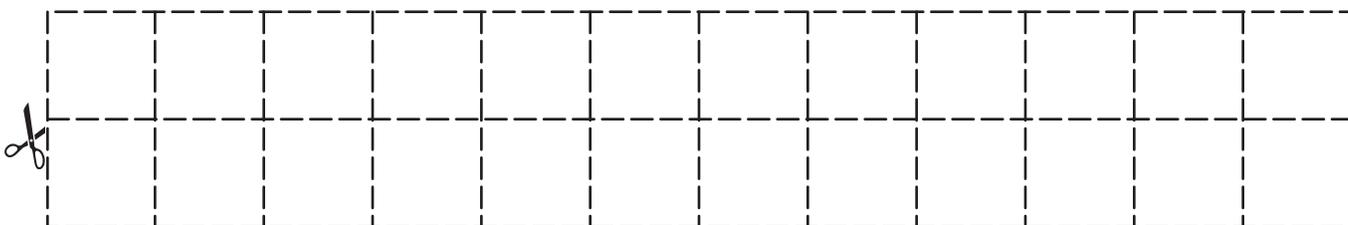


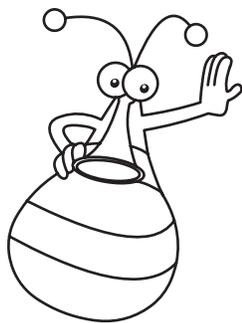
____ x ____ = ____

2. Each shape below is covered by as many unit squares as possible. Draw a ring around the shape that has the greatest area.



3. Cut out the squares inside this rectangle. Then, on a clean sheet of paper, paste the squares together to create a new shape. Be sure that no squares overlap. Next to the shape, write its area, in square units. Color the shape if you wish.





Capacity

Students compare the capacities of standard containers to identify which holds more or less than another.

Warm-up

1. Distribute 1 copy of the “Capacity” blackline master to each student.
2. Use the illustrations at the top of the page to help students identify the equivalences between standard measures: cups and pints, pints and quarts, and quarts and gallons. You may wish to provide students with cup, pint, quart, and gallon containers and a pourable substance, such as water, sand, or rice. Have students experiment by pouring the contents of one container into another to better understand the equivalences between these measures, and which holds more or less than another.

Introducing the Activity

1. Direct students’ attention to the first problem. Ask if the 1-gallon container has a greater or lesser capacity than 5 quarts. [lesser] Have them explain their reasoning and then invite them to complete the number sentence by writing the ‘is less than’ symbol [$<$] in the box.
2. Have students complete the remaining problems in a similar manner.

Assessment Tip

Observe students as they complete the activity. Find out if they can:

- Compare the capacities of two or more containers and identify which holds more or less than another.

Try this, too!

- Use a large, non-standard sized container (a pail, basin, jar, etc.) and challenge students to guess about how many cups it will take to fill the container. Have them write their guesses on a sheet of paper. Then, pour water, sand, or rice (whichever is easiest) into the container, 1 cup at a time, until the container is full. Announce the number of cups it took to fill the container, and see which students guessed this number. Repeat the activity using different containers.
- Read these books about capacity to your students: *Pigs in the Pantry* by Amy Axelrod and *Room for Ripley* by Stuart J. Murphy.

Students will need

- blackline master: “Capacity”—1 copy per student

Materials

- cup, pint, quart, gallon
- pourable material (water, sand, or rice)

Approximate Time

- 15 minutes

Grouping

- individual

NCTM Standards

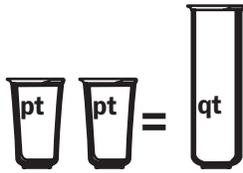
- Measurement
 - Representation
-

Name _____

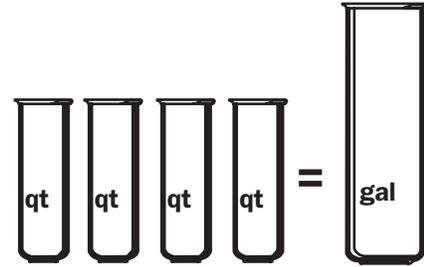
Capacity



2 cups = 1 pint

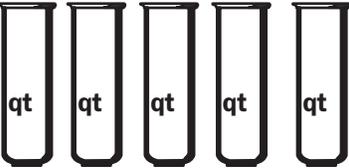


2 pints = 1 quart



4 quarts = 1 gallon

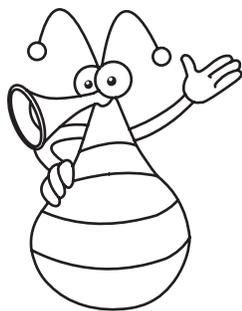
Compare the capacities of these containers. Then, write a < or a > sign to complete each number sentence.

1.  1 gallon 5 quarts 

2.  3 cups 1 pint 

3.  1 quart 1 pint 

4.  2 pints 5 cups 



It's About Time

Students rotate the hands of a clock to show time to the nearest minute.

Getting Ready

1. Distribute 1 copy of the blackline master “It’s About Time” to each student. Have students cut out the clock face and 2 hands. (To make a sturdier “clock,” have students paste the clock face onto a paper plate or piece of tag board.)
2. Tell students to align the filled circles on each hand with the filled circle in the center of the clock face. Then, insert a metal fastener through the circles on the hands and clock face. Turn the clock over and press the feet of the fastener flat against the back of the clock.

How to Play

1. Have students play this game in pairs. Each student in the pair has a clock and 2 number cubes.
2. Begin by having each player rotate the hands on his or her clock to show 12 o'clock. Next, invite each player to roll 2 number cubes and make the greatest 2-digit number less than 60. For example, if a player rolls a 4 and a 3, the player rotates the hands to show 12:43, since $43 > 34$. If a player rolls a 6 and a 5, the player rotates the hands to show 12:56, since the greatest 2-digit number less than 60 you can make using these two digits is 56. [Be sure that the players also rotate the hour hand to reflect time past the hour.]
3. The winner of the round is the player whose clock shows the greater elapsed time past the hour of 12. Players then rotate the hands back to show 12:00 and play another round. A game consists of 5 rounds, and the player in each pair who wins more rounds is the overall winner.
4. A variation of this game is to have players show the time before, rather than after, the hour. So, tossing a 3 and a 4, the student rotates the hands to show 12:43, rather than 12:34. The player whose time is closer to the hour wins the round.

Assessment Tip

Observe students as they play the game. Find out if they can:

- Show the correct time to the nearest minute past (or before) the hour.

Try this, too!

Invite your students to play a game called “It’s Time for Fun!,” to reinforce skills in telling time. Group students in pairs and give each pair a stack of 20 index cards that you prepared ahead of time. Ten cards show digital times, and the other 10 cards show corresponding analog times; e.g., 2:45 and 15 minutes before 3. Have each pair mix up the cards and place them face down in 4 rows on a table. One student turns over 2 cards trying to find matching times. If a match is found, the student keeps the cards and takes another turn. If not, the student returns the cards to the game board and the next player takes a turn. When all the cards have been matched, the player with the greater number of cards is the winner.

Students will need

- blackline master: “It’s About Time”—1 copy per student
- scissors
- metal fastener (1 per student)
- paper plates (optional)
- number cubes (2 per student)

Approximate Time

- 30 minutes

Grouping

- pairs of students

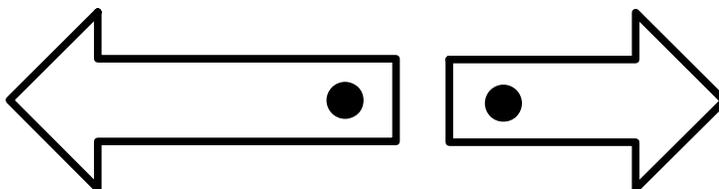
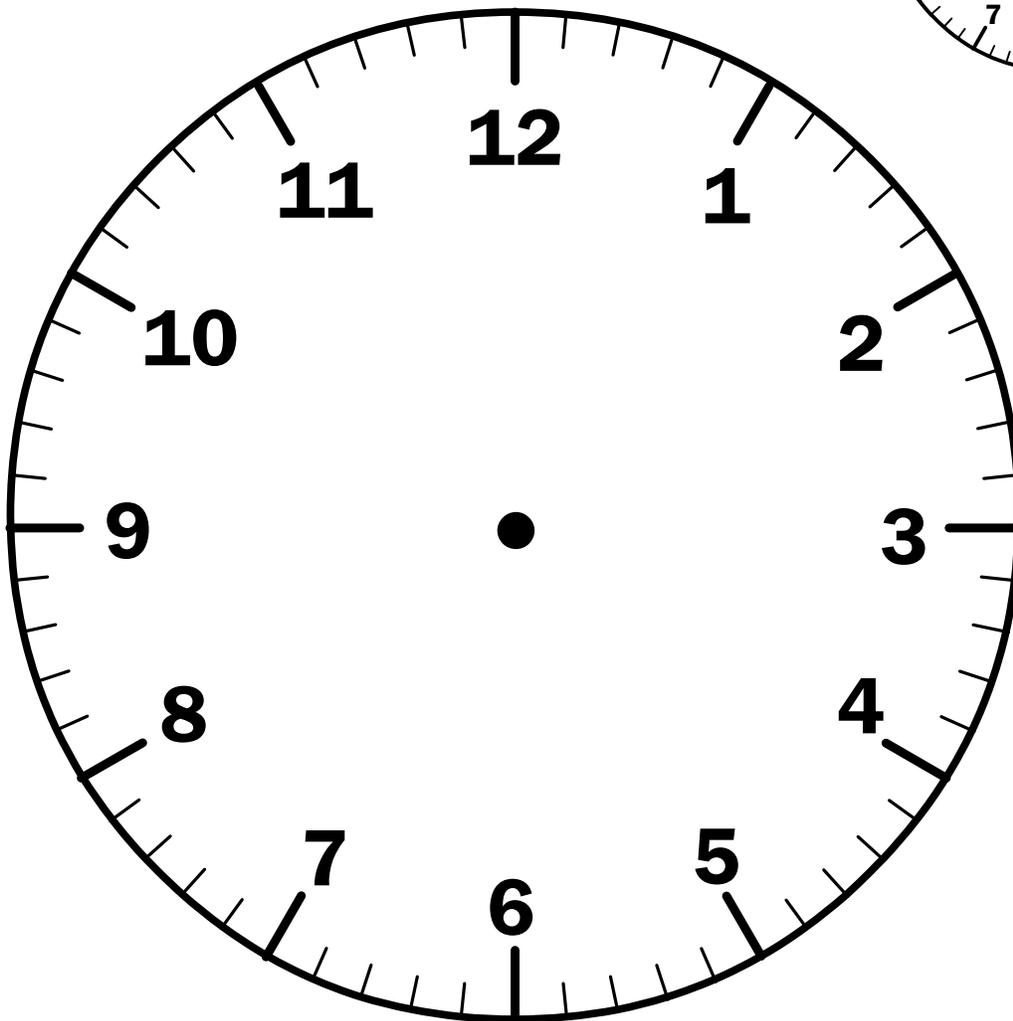
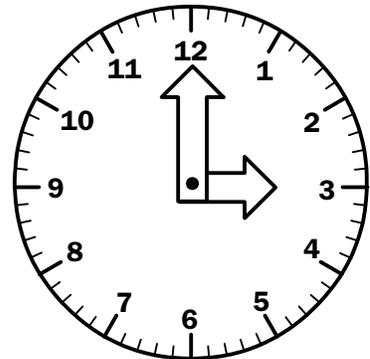
NCTM Standards

- Measurement
- Representation

Name _____

It's About Time

Cut out the clock face and the two hands. Place the hands above the center of the clock face so that the filled circles overlap. Then, use a metal clip to attach the hands to the clock face.





Making Change

Students count up to make change using the fewest number of bills and coins.

Getting Ready

1. Tell students that you have \$2.00 to pay for an item that costs \$1.65. Invite them to calculate the correct change by counting up from \$1.65 to \$2.00. Any correct combination of coins is acceptable.
2. Record on the chalkboard the various combinations of coins that students suggest. (35 pennies, 3 dimes and 1 nickel, 7 nickels, etc.) Then, ask students to identify the fewest number of coins possible that can be used to make up the correct change. [2 coins: 1 dime and 1 quarter.]
3. Repeat this activity using other amounts of money less than \$10.00.

Introducing the Activity

1. Have students work in pairs to complete this activity. Distribute one copy of the blackline master, “Making Change” to each pair, and read aloud the directions at the top of the page.
2. Direct students’ attention to the first problem and invite them to count up from \$1.73 to \$3.00 to determine the correct change. Then, have them determine the fewest number of coins that make up the change: 2 pennies [$\$1.73 + \0.02], 1 quarter [$\$1.75 + \0.25], and 1 dollar [$\$2.00 + \1.00].
3. Next, show students how to record the answer. Have them write 1 in the “dollar” column, 1 in the “quarter” column, and 2 in the “pennies” column. This shows that the fewest number of bills and coins needed to make the correct change in this example is 4.
4. Have students work together to complete the remaining problems.

Assessment Tip

Observe students as they calculate the change in each example. Find out if they can:

- Use a counting up strategy to make change within \$10.00.
- Determine the fewest number of bills and/or coins that can be used to make the correct change.

Try this, too!

- To challenge students to think about coin combinations, divide the class into groups so that there are 3 or 4 students in each group. Then, choose a value, such as 57¢, and ask each team to come up with as many combinations of coins that make 57¢. Have each team record the various combinations they come up with and then share their results with the whole class. Choose a different number and repeat this activity.
- Challenge students with coin riddles. For example, give students the value of an amount of money and the number of coins that make up that amount. Have students identify the bills and/or coins that make up the amount. For example, I have 2 coins and 30 cents in my pocket. What coins do I have? [1 quarter, 1 nickel]

Students will need

- blackline master: “Making Change”—1 copy per student

Approximate Time

- 30 minutes

Grouping

- pairs of students

NCTM Standards

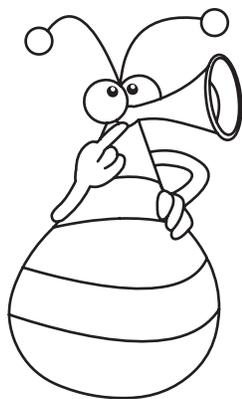
- Number & Operations
 - Measurement
 - Problem Solving
-

Name _____

Making Change

The numbers in the first column show the cost of different items. How much change will you get after giving a clerk the amount of money in the second column? Use the fewest number of bills and coins as you can to show the correct change.

Cost of Item	Amount given	Change				
		 Dollar	 Quarter	 Dime	 Nickel	 Penny
\$1.73	\$3.00					
\$1.20	\$5.00					
\$7.26	\$7.50					
\$8.14	\$10.00					
\$0.22	\$1.00					
\$0.11	\$0.25					
\$4.12	\$5.00					
\$5.80	\$10.00					
\$6.45	\$10.00					



What's My Temperature?

Students read and graph temperatures on a thermometer.

Getting Ready

Distribute 1 copy of the blackline master, "What's My Temperature?" to each student, along with scissors and colored pencils or pens.

Make a Thermometer

1. Direct students' attention to the 3 strips on the left side of the activity sheet. Have students color the middle strip red. This strip represents a column of liquid in a thermometer. Then, have students cut out the 3 strips.
2. Next, paste the short ends of the 3 strips together as shown on the right, to create one long strip, with the red strip in the middle.
3. Have students color the bulb (only) of the thermometer red. Finally, cut out the thermometer. Then cut along the dotted lines to make a slit at the top and bottom of the thermometer. Caution students not to cut through the sides of the thermometer.
4. Insert the top of the long strip through the top slit of the thermometer so that the red strip is in front. Then, insert the bottom of the strip through the bottom slit so it is behind the thermometer.



How to Play

1. Have students play this game in pairs. One player may either slide the strip to show a temperature in degrees Celsius on the thermometer and challenge the other player to read the temperature, or call out a temperature and challenge the other player to slide the strip to show that temperature.
2. Play continues with players alternating turns. The first player in a pair who stumps the other by either showing a temperature that the opponent cannot identify, or by calling out a temperature that the opponent cannot show on the thermometer, is the winner. Have students play multiple games, keeping track of how successful each player was overall.

Assessment Tip

Observe students as they play the game. Find out if they can:

- Read and graph temperatures on a thermometer.

Try this, too!

Use chalk to make an outline of a large thermometer on the playground. Create a scale from 0°C to 100°C, marked in increments of 5 degrees, if possible. Have one student hold one end of a (long) piece of red yarn and stand to the left of 0°. Call out a temperature. Another student must pick up the free end of the yarn and stretch it until it lies opposite the given temperature. Have students take turns using the yarn to show different temperatures.

Students will need

- blackline master: "What's My Temperature?"— 1 copy per student
- scissors
- red crayon or pencil
- paste

Approximate Time

- 30 minutes

Grouping

- pairs of students

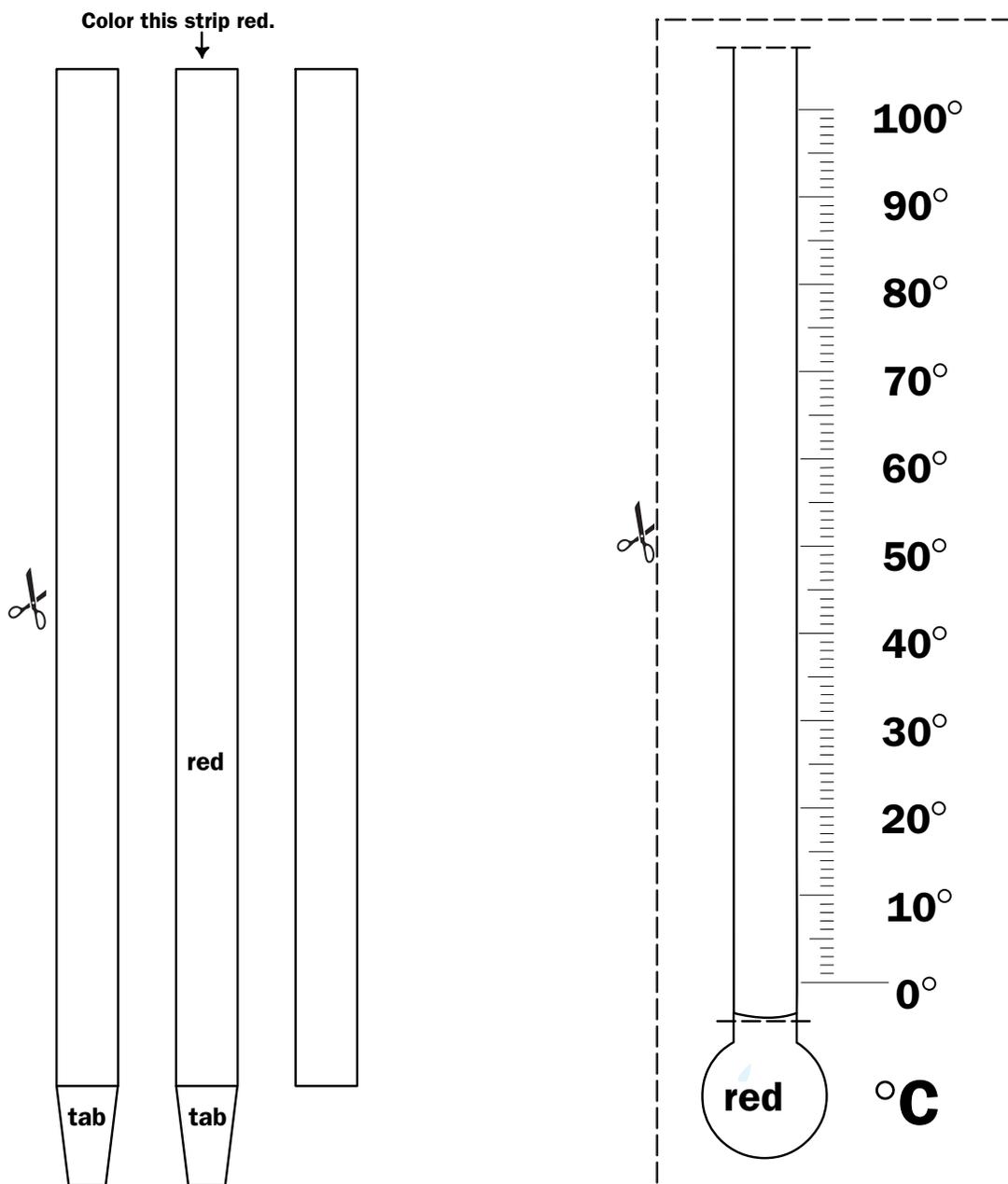
NCTM Standards

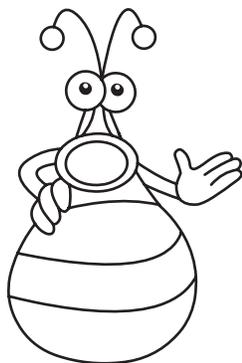
- Number & Operations
- Measurement
- Representation

Name _____

What's My Temperature?

1. Color the middle strip red. Color the circle on the bottom of the thermometer red.
2. Cut out the 3 strips. Then paste them together, end-to-end, with the red strip in the middle.
3. Cut out the thermometer. Cut slits along the dotted lines at the bottom and top.
4. Slide the top of the long strip through the top slit of the thermometer so that the red part is in front. Slide the bottom of the long strip through the bottom slit of the thermometer.
5. Slide the long strip so that the top of the red strip shows the temperature.





Find the Rule

Students identify rules that describe relationships between two quantities and apply the rules to calculate missing values.

Warm-up

1. Copy this table on the chalkboard:

Quarts	Gallons
4	1
8	2

2. Have students look at the headings of each column and then ask them to find a mathematical rule that describes how to find the number of gallons in a given number of quarts. [The number of gallons equals the number of quarts divided by 4.]
3. Add 4 more rows to the table and insert the numbers in the left column of the table as shown. Now, ask students to apply the rule to complete the table.

Quarts	Gallons
4	1
8	2
12	?
16	?
20	?
24	?

Introducing the Activity

1. Distribute 1 copy of the “Find a Rule” blackline master to each student. Group students into pairs and have them cut out the 8 expressions at the bottom of the page.
2. Now direct students’ attention to the numbers in the first table. Ask them to find the rule that they can use to find the number of feet in a given number of inches. Then have students paste the corresponding expression to complete the rule. [“divided by 12”]
3. Have students apply the rule and complete the table.
4. Have students work together to complete the remaining tables in the activity.

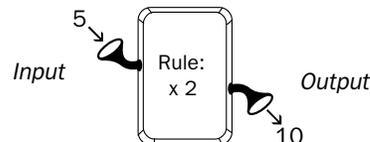
Assessment Tip

Observe students as they work. Find out if they can:

- Identify a rule that describes the relationship between numbers in a table.
- Apply a rule to calculate missing values in a table.

Try this, too!

1. Students enjoy solving function-machine problems. Draw a function machine on the chalkboard, as shown below. Then, choose a secret rule (e.g., “times 2”) and put a number (the input) into the function machine. When the machine applies the rule, a number (the output) comes out of the machine. Repeat for several numbers and then ask students to find the rule.
2. Invite students to make up their own function-machine problems and challenge each other to find the rule.



Students will need

- blackline master: “Find a Rule”—1 copy per student
- scissors
- paste

Approximate Time

- 30 minutes

Grouping

- pairs of students

NCTM Standards

- Number & Operations
- Algebra
- Problem Solving

Name _____

Find the Rule

Cut out the 8 expressions at the bottom of the page. Then examine the values in each table and paste the expression that completes the rule for the numbers in each table. Use the rule to find the missing numbers in each table.

1.

Inches	Feet
12	1
24	2
36	3
48	4
60	
84	
144	

$12 \div 12 = 1$
 $24 \div 12 = 2$
 $36 \div 12 = 3$

$60 \div 12 = ?$

2.

Yards	Feet
1	3
2	6
3	9
4	12
5	
9	
100	

$1 \times 3 = 3$
 $2 \times 3 = 6$
 $3 \times 3 = 9$

$5 \times 3 = ?$

The number of feet equals the number of inches

The number of feet equals the number of yards

3.

Cups	Pints
2	1
4	2
6	3
8	4
	12
28	
32	

The number of pints equals the number of cups

4.

Hours	Minutes
1	60
2	120
3	180
4	
	600
12	
24	

The number of minutes equals the number of hours

times 2.

times 60.

times 12.

times 3.



divided by 60.

divided by 12.

divided by 3.

divided by 2.

Introduction to the Base-10 Blocks: The Ones

Students learn how to use base-10 blocks to show ones in the online place-value mat.

Getting Ready

1. Assign students individually to an appropriate lesson in *Destination Math, Course I* or *Destination Math, Course II*.
2. Tell them to click the tool box button .
3. From the drop-down menu, click the base-10 blocks button .
4. Once students have opened the online blocks tool, distribute copies of the 2-page blackline master, “Introduction to the Base-10 Blocks: The Ones” to each student.

Introducing the Activity

1. Have students look at the first page of this activity and the picture of the place value mat at the top of the page. Ask them to point to each button as you say its name aloud.
2. Then, direct their attention to the instructions and read the first 3 steps aloud as students follow along silently. Have them click the ones block five times to place 5 ones in the ones place. (Alternatively, students can click and drag 5 ones onto the mat.) Circulate around the room to make sure that the each student understands what to do.
3. Read aloud the next set of instructions and have the students follow along, adding or removing ones to the place-value mat and completing each question.
4. When all students have completed the first page of the activity, have them turn to the second page. Read aloud the directions for the first problem, and have students place 4 ones in the ones place of the mat. Instruct them to remove 1 one. Then, ask students to look at the blocks that remain in the ones place and the digit below the place and tell how many ones are left. [3] Have them write the number “3” in the box beside the first problem. Remind students to clear all the ones by clicking the eraser.
5. Have students complete the remaining problems in a similar manner.

Try This Too!

Group students into pairs at each computer. Challenge them to use the online base-10 blocks to play “Take Away” and “It All Adds Up!”

Students will need

- blackline master: “Introduction to the Base-10 Blocks: The Ones”—1 copy per student

Approximate Time

- 30 minutes

Grouping

- individual students

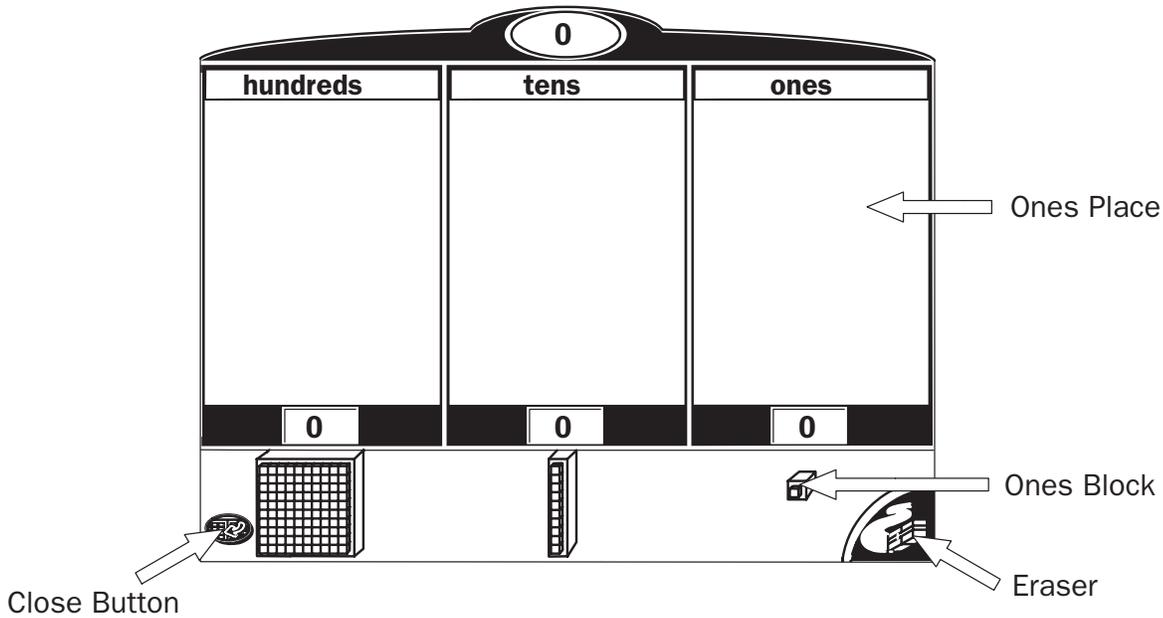
NCTM Standards

- Number & Operations
 - Representation
-

Take Away—Have one student in a pair place 10 ones in the ones place. Players take turns taking away either 1, 2, or 3 blocks at a time. The winner is the player who takes away the last block(s) so there are no ones in the ones place.

It All Adds Up!—Players take turns placing no more than 1, 2, or 3 ones in the ones place. The winner is the player who places the last block(s) in the ones place to make 10 ones in all.

Introduction to the Base-10 Blocks: The Ones



1. At the computer, click the tools button.



2. Click the base-10 blocks manipulative button.



3. Click the ones block 5 times. How many ones are in the ones place?



Look at the number “5” in the ones place. This number tells you how many ones there are.



4. Click the ones block 3 times to add 3 more ones. How many ones are in the ones place now?



5. Click a ones block and drag it out of the ones place. (You can drag it onto the Eraser.) How many ones are left in the ones place?



6. Click the ones block 3 times to add 3 more ones. How many ones are in the ones place now?



7. Click the Eraser. How many ones are left in the ones place?

Name _____

Introduction to the Base-10 Blocks: The Ones

Open the base-10 blocks manipulative and follow the instructions below. Then, write your answers to the questions in the boxes.

<p>1. Place 4 ones in the ones place. Take away 1 one. How many ones are in the ones place now? Click the Eraser to remove all blocks from the mat.</p>	
<p>2. Place 13 ones in the ones place. Take away 2 ones. How many ones are in the ones place now? Click the Eraser to remove all blocks from the mat.</p>	
<p>3. Place 10 ones in the ones place. Take away 4 ones. How many ones are in the ones place now? Click the Eraser to remove all blocks from the mat.</p>	
<p>4. Place 7 ones in the ones place. How many ones will you take away to have 3 ones in all? Click the Eraser to remove all blocks from the mat.</p>	
<p>5. Place 10 ones in the ones place. How many ones will you take away to leave exactly 2 ones? Click the Eraser to remove all blocks from the mat.</p>	
<p>6. Place 3 blocks in the ones place. How many more ones will you need to add to have 7 blocks in all? Click the Eraser to remove all blocks from the mat.</p>	
<p>7. Place 5 blocks in the ones place How many more blocks will you need to add to have 9 blocks in all? Click the Eraser to remove all blocks from the mat.</p>	

Detective Math

Students use clues to identify 2-digit numbers and use the online base-10 blocks to check their answers.

Getting Ready

1. This activity reinforces concepts taught in the lesson “Place Value: Tens and Ones” in Unit 1 of *Destination Math, Course II*, Module 1. However, be sure that students have completed the first base-10 activity, “Introduction to the Base-10 Blocks: The Ones,” so that they are familiar with the on-line manipulatives.
2. Assign students individually to a lesson in *Course II* and have them click the tool box button  and from the drop-down menu, click the base-10 blocks manipulative button .

Introducing the Activity

1. Distribute copies of the blackline master, “Detective Math” to each student or pair of students. Read the directions aloud as students read them silently. Direct students’ attention to the first problem. Invite them to read the clues, identify the number described [25], and write it in the box.
2. Have students check the answer they wrote on the worksheet by using the online base-10 blocks. They can either click on the blocks or drag them into the corresponding place on the mat.
3. Then, direct students to look at the number above the mat. This number represents the set of blocks in the ones and tens places of the number. Tell students that this number should match the number they wrote in the box on the worksheet. If it does not match, they should reread the clues on the worksheet and change their answer, or check to make sure that they have placed the correct number of blocks on the place value mat.
4. Have students complete the remaining 3 problems in a similar manner.
5. Lastly, have students consider the Think About It question. On the lines provided, have them write their answers to the question posed.

Try This Too!

Challenge students to create a secret 2-digit number. Then, invite them to write as many clues as necessary to describe the number, as shown on the right. Have one student at a time read the clues he or she has written and have other students go to the computer and use the base-10 blocks to show the number. See which student(s) can discover the secret number first.

Clues:

My number has 1 ten.

My number has more than 7 ones but fewer than 9 ones.

What is my number?



Students will need

- blackline master: “Detective Math”—1 copy per student
- online base-10 blocks

Approximate Time

- 20 minutes

Grouping

- individual or pairs of students

NCTM Standards

- Number & Operations
- Reasoning & Proof
- Representation

Comparing 2-Digit Numbers

Students use the online base-10 blocks to represent and compare 2-digit numbers.

Getting Ready

1. This activity reinforces place value concepts taught in the lesson “Comparing and Ordering” in Module 1, Unit 1 of *Destination Math, Course II*. Before beginning this activity, have students complete activities 1 and 2 that introduce the on-line manipulatives.
2. Assign students individually to a lesson in *Destination Math, Course II*. Tell them to click the tool box button. From the drop-down menu, click the base-10 blocks manipulative button.
3. Distribute a copy of the 2-page blackline master, “Comparing 2-Digit Numbers” to each student.

Introducing the Activities

1. Read aloud the directions for the first problem. Direct students to use the online base-10 blocks to show how many tens and ones are in 48. (Be sure that they show the maximum number of tens in the number.) Then, tell them to color the tens and ones on their activity sheets to show their on-line work.
2. Make sure that students click the eraser on the screen to clear all the blocks before going on. Then, invite them to follow the same procedure and show the number 84 in both the online place mat and color the blocks on their activity sheets.
3. Next, have students use the block representations on their activity sheets to complete the statements that follow.
4. Ask students to complete the problem on the second page of the activity sheet using both the online base-10 blocks and coloring the blocks to represent each number.

Try This Too!

1. Have students work in pairs to play a binary search game. One player on each team thinks of a secret 2-digit number and uses base-10 blocks either at the computer or at their desks to show the standard form of the number.
2. Without looking at the blocks, the second player tries to guess the number by asking comparative questions to identify the secret number. For example: “Is the number greater than 50?” and “Is the number less than 75?” Players keep track of the number of questions asked, and when the player thinks he or she knows the secret number, he or she can look at its representation to verify the guess.
3. Have players switch roles and play again. The player who guesses the other person’s secret number by asking a fewer number of questions wins the round.

Students will need

- blackline master: “Comparing 2-Digit Numbers”—1 copy per student
- online base-10 blocks
- colored pens or pencils

Approximate Time

- 20 minutes

Grouping

- individual

NCTM Standards

- Number & Operations
 - Representation
-

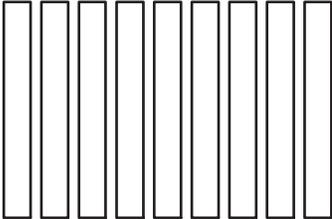
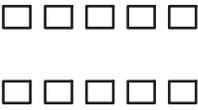
Name _____

Comparing 2-Digit Numbers

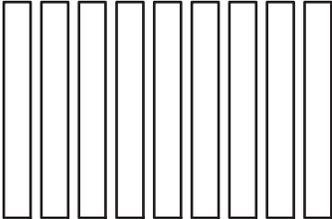
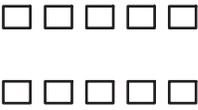
At the computer, open the base-10 blocks manipulative and follow the instructions for each problem.

Compare the numbers 48 and 84.

1. At the computer, use the base-10 blocks to show 48.
2. Then color the blocks below to show 48.

tens	ones
	

3. Click the eraser to clear all blocks from the place value mat.
4. Now, use the base-10 blocks again and show 84.
5. Color the blocks below to show 84.

tens	ones
	

6. How many tens are in 48? _____ How many ones are in 48? _____
7. How many tens are in 84? _____ How many ones are in 84? _____
8. Circle the greater number. 48 84
9. Circle the correct number sentence. 48 > 84 48 < 84

Tens and Ones

Students learn how to use the online base-10 blocks to regroup ones and tens.

Getting Ready

1. This activity corresponds to the first part of the lesson “Expanded Form and Equivalent Representations” in Module 1, Unit 1 of *Destination Math, Course II*.
2. Assign students individually to a lesson in *Course II* and have them click the tool box button . From the drop-down menu, click the base-10 blocks manipulative button .
3. Distribute a copy of the 3-page blackline master “Tens and Ones” to each student.

Introducing the Activity

1. Have students look at the graphic of the online place value mat and point to each button on the graphic as you read the labels out loud.
2. Then, read the first 3 instructions aloud as students follow along silently. Have them click on the tens block 5 times to place 5 tens in the tens place, or have them click and drag 5 tens into the tens place. Circulate around the room to make sure that each student understands what to do.
3. Read aloud the remaining directions and questions on this page. Have students click the arrows to regroup blocks from the ones to the tens place and back again. Point out that the number at the top of the place value mat does not change as the ones and tens are regrouped.
4. Now, have students turn to the problems on the second page of the activity sheet. Read aloud the directions for the first problem, and have students place 14 ones on the mat. Have them record on their activity sheets how many tens and ones there are. [0, 14]
5. Then, have them click the regrouping arrow that points from the ones place to the tens place and record how many tens and ones there are. Point out that the number did not change as the blocks were regrouped.
6. Invite students to work independently and complete the remaining problems.

Try This Too!

Have students work in pairs either at the computer or using a set of base-10 blocks at their desks. Have one student in each pair call out a 2-digit number, such as 46. The other student must show at least two representations of the number using unique combinations of ones and tens, as shown in this table. Then, have the players switch roles and repeat the exercise with a different 2-digit number.



tens	ones
4	6
3	16
2	26
1	36
0	46

Students will need

- blackline master: “Tens and Ones”—1 copy of each per student

Approximate Time

- 30 minutes

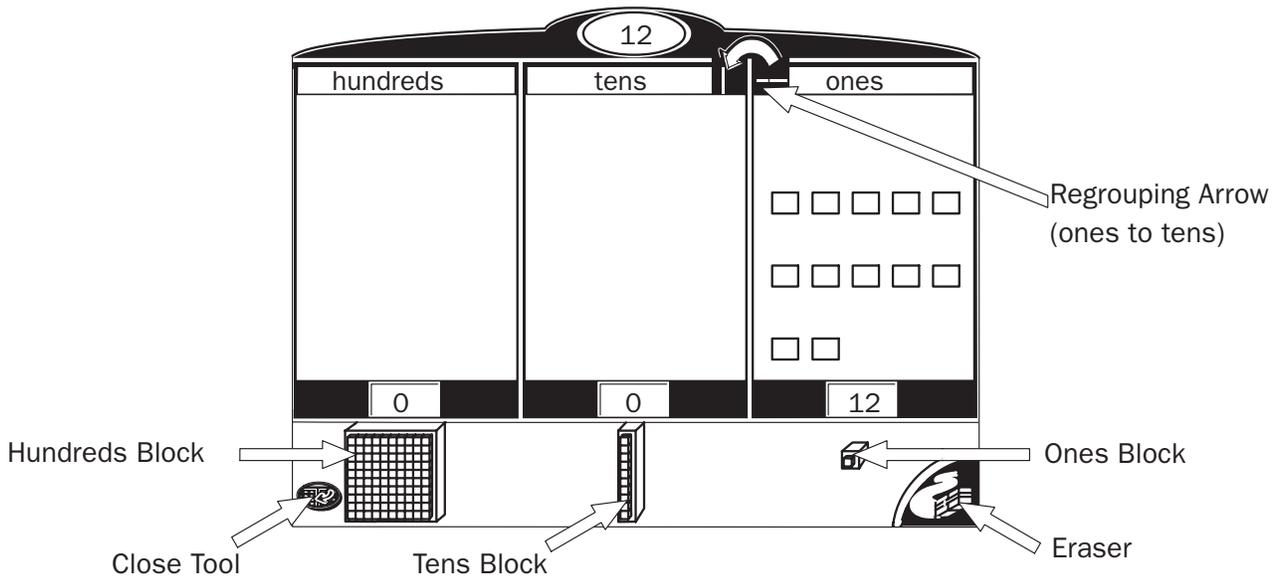
Grouping

- individual students

NCTM Standards

- Number & Operations
- Representation

Tens and Ones



1. At the computer, click the tools button.



2. Click the base-10 blocks manipulative button.



3. Click the tens block 5 times. How many tens are in the tens place?



4. Look at the number 5 in the box under the tens place. This number tells you how many tens there are.



5. Look at the number 50 above the tens place. This number tells you what number the blocks show.



6. Click the regrouping arrow that points from the tens space to the ones place. How many tens are in the tens place now?



7. How many ones are in the ones place now?



8. Click the regrouping arrow that points from the ones place to the tens place. How many tens are in the tens place now?



9. How many ones are in the ones place now?

Name _____

Tens and Ones

Open the base-10 blocks manipulative and follow the instructions below. Write your answers to the questions in the boxes.

Tens **Ones**

1. Put 14 ones in the ones place. How many tens and ones are there?

<input type="text"/>	<input type="text"/>
----------------------	----------------------

Click the purple arrow  that points to the tens place. How many tens and ones are there now?

<input type="text"/>	<input type="text"/>
----------------------	----------------------

Click the eraser button  to clear the mat.

2. Put 1 ten in the tens place and 9 ones in the ones place. How many tens and ones are there?

<input type="text"/>	<input type="text"/>
----------------------	----------------------

Click the purple arrow  that points to the ones place. How many tens and ones are there now?

<input type="text"/>	<input type="text"/>
----------------------	----------------------

Click the eraser button  to clear the mat.

3. Put 28 ones in the ones place. How many tens and ones are there?

<input type="text"/>	<input type="text"/>
----------------------	----------------------

Click the purple arrow that points to the tens place. How many tens and ones are there now?

<input type="text"/>	<input type="text"/>
----------------------	----------------------

Click the purple arrow that points to the tens place again. How many tens and ones are there now?

<input type="text"/>	<input type="text"/>
----------------------	----------------------

Click the eraser button  to clear the mat.

4. Put 3 tens in the tens place. Put 5 ones in the ones place. How many tens and ones are there?

<input type="text"/>	<input type="text"/>
----------------------	----------------------

Click the purple arrow that points to the ones place again. How many tens and ones are there now?

<input type="text"/>	<input type="text"/>
----------------------	----------------------

Click the purple arrow that points to the ones place. How many tens and ones are there now?

<input type="text"/>	<input type="text"/>
----------------------	----------------------

Click the purple arrow that points to the ones place one more time. How many tens and ones are there now?

<input type="text"/>	<input type="text"/>
----------------------	----------------------

Name _____

Tens and Ones

Show 4 ways to express the number 38. Use the online base-10 blocks and the regrouping arrows  and  to help you.

$$38 = \underline{\quad} \text{ tens } \underline{\quad} \text{ ones}$$

$$38 = \underline{\quad} \text{ tens } \underline{\quad} \text{ ones}$$

$$38 = \underline{\quad} \text{ tens } \underline{\quad} \text{ ones}$$

$$38 = \underline{\quad} \text{ tens } \underline{\quad} \text{ ones}$$

Representing 3-Digit Numbers

Student use base-10 blocks to represent 3-digit numbers in standard and expanded form.

Getting Ready

1. This activity supports concepts presented in the lesson “Place Value: Hundreds, Tens, and Ones,” in *Destination Math, Course II, Module 1, Unit 1*, and can be used either before or after students have completed the lesson.
2. Assign students individually to any lesson in *Destination Math, Course II*. Tell them to click the tool box button. From the drop-down menu, click the base-10 blocks manipulative button.
3. Once students have opened the online base-10 tool, distribute a copy of the 2-page blackline master “Representing 3-Digit Numbers” to each student.

Introducing the Activity

1. Read the directions aloud as students read them silently. Then, direct students to use the greatest possible number of hundreds, tens, and ones to show 326. Next, have them color the blocks on their activity sheets to show their online work. Then, in problem 2, have them write 326 in expanded form. [$300 + 20 + 6$]
2. Have students work independently to complete problems 3 and 4.
3. Direct students to look at problem 5 as you read the directions aloud. Have them use the online blocks to show $100 + 90 + 7$, the expanded form of 197. Tell them to color the base-10 blocks on their activity sheets to show their online work. Then, in problem 6, have them write the number represented by the blocks in standard form.
4. Have students work independently and complete the remaining problems.

Try This Too!

1. In this challenge, have students think of a secret 3-digit number and use base-10 blocks either at the computer or at their desks to represent it. Then, on one side of an index card, have students write their name and a set of clues that could be used to identify the number on the card.
2. Have students take turns reading their clues as others in the class use base-10 blocks to represent the number. See who can discover the secret number in the shortest amount of time.
3. To make the challenge more interesting, have students write clues for the number using expanded form or non-standard form. For example, “The expanded form of the number is $300 + 70 + 0$.” or “The number has 5 hundreds, 12 tens, and 15 ones.”

Students will need

- blackline master: “Representing 3-Digit Numbers”—1 copy per student
- online base-10 blocks
- colored pencils or crayons

Approximate Time

- 20 minutes

Grouping

- individual students

NCTM Standards

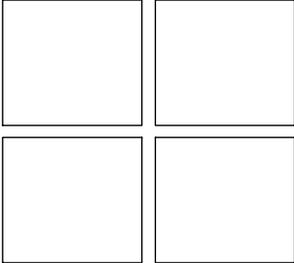
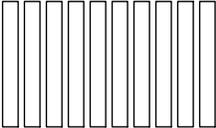
- Number & Operations
 - Representation
-

Name _____

Representing 3-Digit Numbers

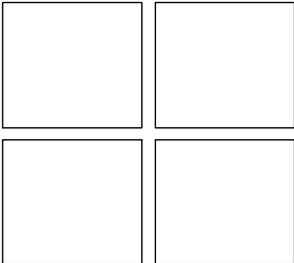
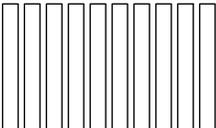
At the computer, open the base-10 blocks manipulative and follow the instructions below.

1. Use the online base-10 blocks to show 326. Then, color the blocks on the place mat below to show your online work.

hundreds	tens	ones
		

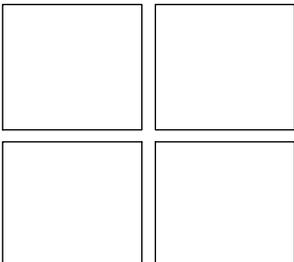
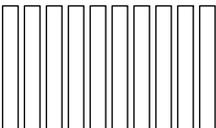
2. What is the number in expanded form? _____ + _____ + _____

3. Use the online base-10 blocks to show 208. Then, color the blocks on the place mat below to show your online work.

hundreds	tens	ones
		

4. What is this number in expanded form? _____ + _____ + _____

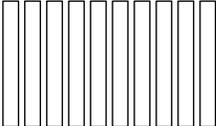
5. Use the online base-10 blocks to show $100 + 90 + 7$. Color the blocks on the place mat below to show your online work.

hundreds	tens	ones
		

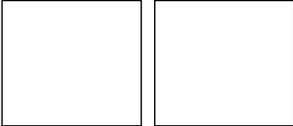
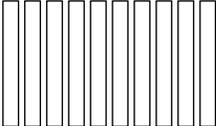
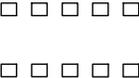
6. What is this number in standard form? _____

Name _____

7. Use the online base-10 blocks to show $100 + 0 + 1$. Color the blocks on the place mat below to show your online work.

hundreds		tens	ones
			

8. What is this number in standard form? _____
9. Use the online base-10 blocks to show $400 + 70 + 8$. Color the blocks on the place mat below to show your online work.

hundreds		tens	ones
			

10. What is this number in standard form? _____

Hundreds, Tens, and Ones

Students use the online base-10 blocks to represent 3-digit numbers in standard and non-standard form.

Getting Ready

1. This activity reinforces concepts taught in the second part of the lesson “Expanded Form and Equivalent Representations of a Number” in *Destination Math, Course II*.
2. Assign students to a lesson in *Destination Math, Course II*. Tell them to click the tool box button . From the drop-down menu, click the base-10 blocks manipulative button .
3. Distribute a copy of the 2-page blackline master “Hundreds, Tens, and Ones” to each student.

Introducing the Activity

1. Read aloud the directions for the first problem. Direct students to use the online base-10 blocks to show 1 hundred, 3 tens and 15 ones. Then, tell them to write the number shown in standard form [145] and have them color the blocks on the activity sheet to show their online work.
2. Next, ask students how they could use the blocks to show 145 in standard form. Have them click the purple arrow pointing from the ones place to the tens places to regroup 10 ones as 1 ten, and then identify the values in each place.
3. Finally, have students color the blocks on the activity sheet to show 145 as 1 hundred, 4 tens, and 5 ones. Then, have students work individually or in pairs to complete the remaining problems.

Try This Too!

1. Give each student an index card. On one side of the card have them write a 3-digit number in standard form. On the other side write its expanded form—for example, 426 and $400 + 20 + 6$. Collect the cards, mix them up, and redistribute one to each student. Have students turn the cards over so that the expanded form of the number is facing up.
2. Have students use the online base-10 blocks to represent the number written on the card. When they’re done, have students turn the cards over and see if the numbers written on the backs of the cards match the numbers displayed above the blocks in the online place value mat. Have them correct any discrepancies.
3. To provide another challenge, give students 3-digit numbers in which the value of one or more places is greater than 9 and have them use the blocks to regroup and identify the number in standard form.

Students will need

- blackline master: “Hundreds, Tens and Ones”—1 copy per student
- online base-10 blocks
- colored pens or pencils

Approximate Time

- 20 minutes

Grouping

- individual or pairs of students

NCTM Standards

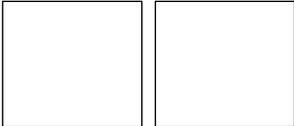
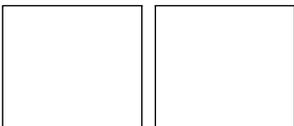
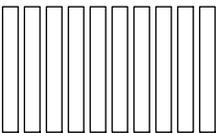
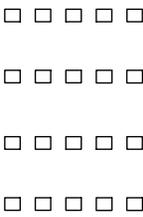
- Number & Operations
 - Representation
-

Name _____

Hundreds, Tens, and Ones

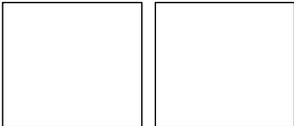
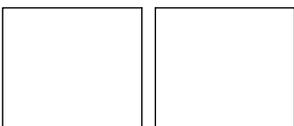
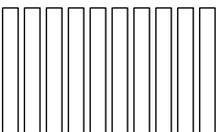
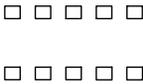
At the computer, open the base-10 blocks manipulative and follow the instructions below.

1. At the computer, put 1 hundred, 3 tens, and 15 ones on the mat. Then, color the blocks on the mat below to show your work.

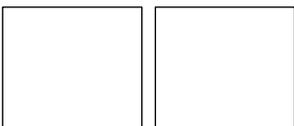
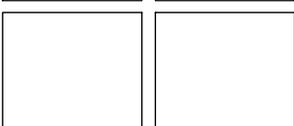
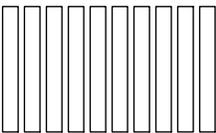
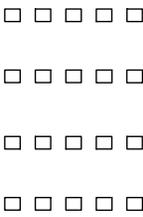
hundreds		tens	ones
			

2. What is the number in standard form? _____

3. Now, click  to regroup 10 ones. Then color the blocks below to show the greatest number of hundreds, tens, and ones in the number.

hundreds		tens	ones
			

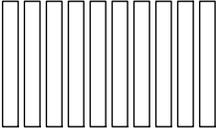
4. Click the eraser button  to clear the mat. Put 2 hundreds, 9 tens, and 19 ones on the mat. Then color the blocks on the mat below to show the number.

hundreds		tens	ones
			

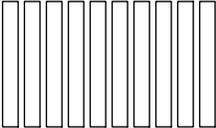
5. What is this number in standard form? _____

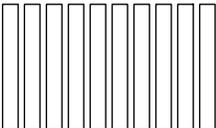
Name _____

6. Click  that points from the ones place to the tens place to regroup the ones.
7. Click  that points from the tens place to the hundreds place to regroup the tens. Then color the blocks to show the number.

hundreds		tens	ones
			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

8. Color the blocks on the mats below to show 156 in two different ways.

hundreds		tens	ones
			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

hundreds		tens	ones
			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
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			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Comparing 3-Digit Numbers

Students compare 3-digit numbers using online base-10 blocks.

Getting Ready

1. This activity reinforces the concepts taught in the lesson “Comparing and Ordering” in Module 1, Unit 1 of *Destination Math, Course II*.
2. Assign students to a lesson in *Destination Math, Course II*. Tell them to click the tool box button . From the drop-down menu, click the base-10 blocks manipulative button .
3. Distribute a copy of the 2-page blackline master “Comparing 3-Digit Numbers” to each student.

Introducing the Activities

1. Read aloud the directions for the first problem. Direct students to use the online base-10 blocks to show the number of hundreds, tens, and ones in 427. Then, tell them to color the base-10 blocks in the place value mat on their activity sheets.
2. Invite students to show how many hundreds, tens, and ones are in the number 304 and to color the blocks on the second place value mat on the activity sheet to show the number. Students can either clear the blocks showing 427 and start over, or remove blocks to show 304.
3. Then, have them complete the problems below the place-value mats and explain their answers. Have students complete the problem on the second page in a similar manner.

Try This Too!

1. Have students play a 3-digit number comparison game using number cubes. Organize students into pairs and give one number cube to each player in a pair. Each player tosses the cube three times to generate 3 digits to be used to form a 3-digit number; for example, 3, 4, 1 and 2, 6, 6. Have students write down their numbers.
2. At the start of each round of play, one student tosses a number cube to decide whether a greater number wins or loses the round. If the number tossed is even, then the greater number wins. If odd, the smaller number wins.
3. Depending on the outcome of the even/odd toss, players form their 3-digit numbers into either the greatest or smallest possible value and then compare the numbers. For example, if the even/odd toss were even, then the greatest number in each case would be 431 and 662. If the toss were odd, the smallest numbers would be 134 and 266. In the unlikely event that the two 3-digit numbers formed are the same, players toss again.
4. Play continues for 10 rounds (or as time permits) and the player with the greater number of wins overall, wins the game. (Have students use base-10 blocks either online or at their desks to resolve any disputes.)

Students will need

- blackline master: “Comparing 3-digit numbers”—1 copy per student
- online base-10 blocks
- colored pens or pencils

Approximate Time

- 20 minutes

Grouping

- individual

NCTM Standards

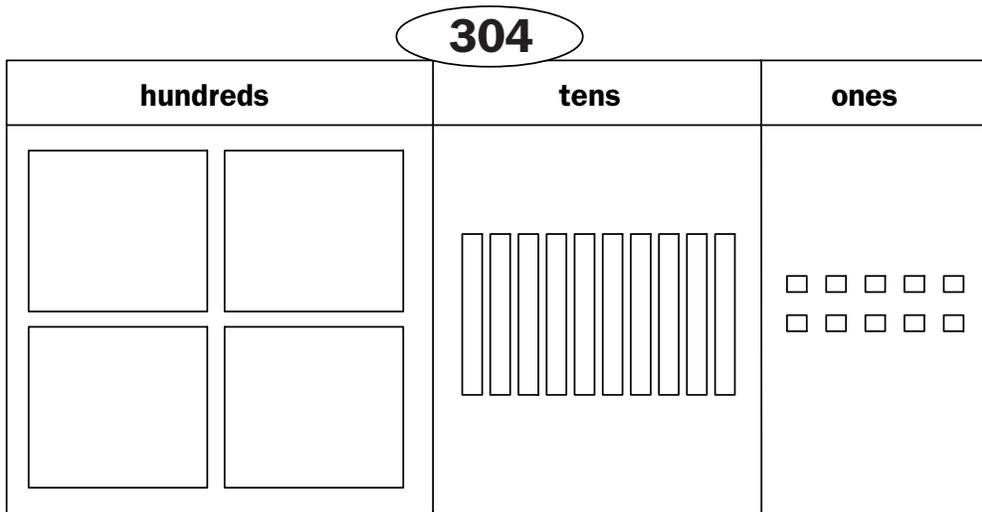
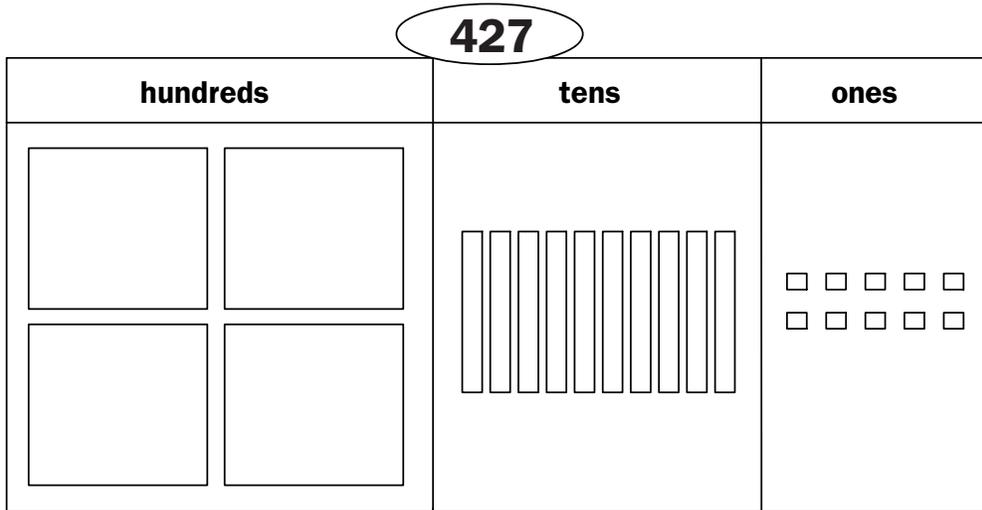
- Number & Operations
 - Representation
-

Name _____

Comparing 3-Digit Numbers

At the computer, open the base-10 blocks manipulative and follow the instructions below.

1. Use the online base-10 blocks to show 427 and 304 in standard form. Then color the blocks in the place value mats below to show your work.

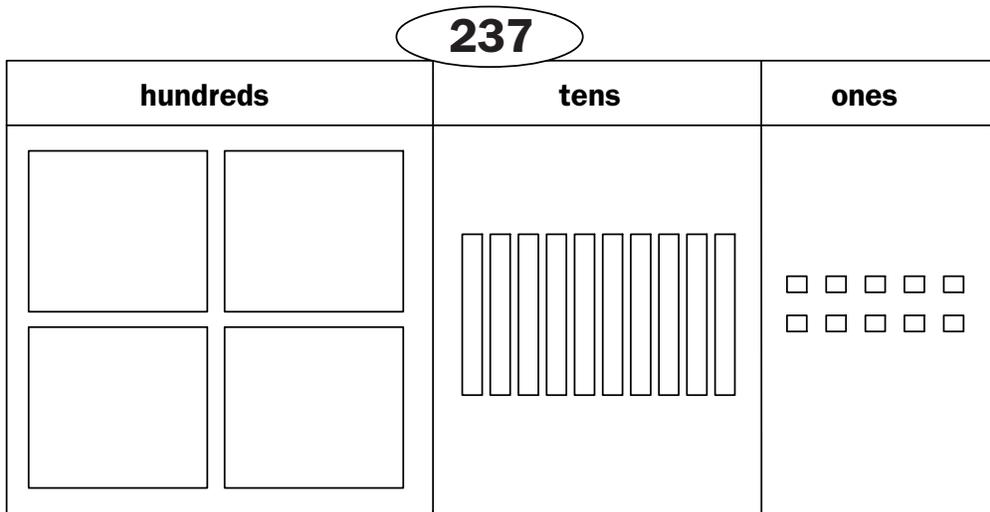
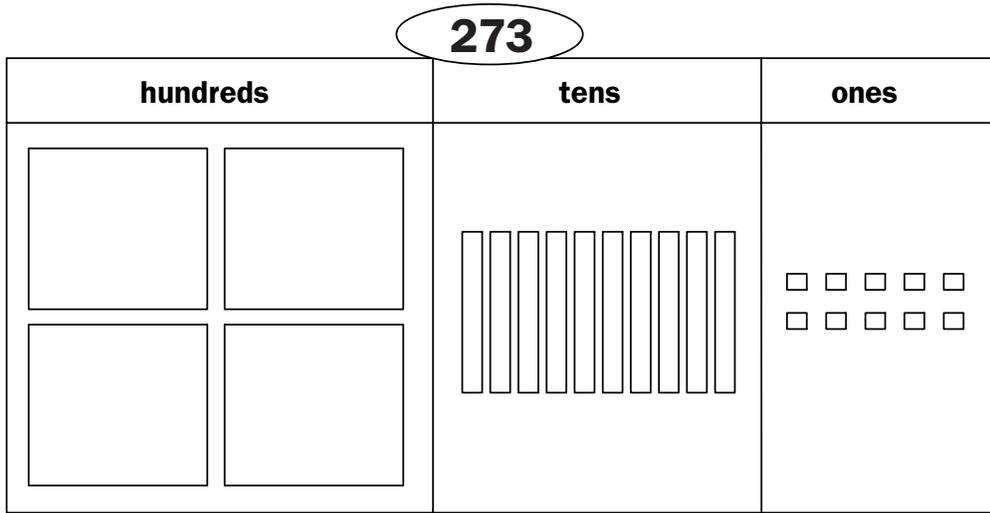


2. Now circle the correct number sentence. $427 > 304$ $427 < 304$

3. Look at the blocks that show both numbers and explain the answer you gave in problem 2.

Name _____

4. Use the online base-10 blocks to show 273 and 237 in standard form. Color the blocks in the place value mats below to show your work.



5. Now circle the correct number sentence. $273 > 237$ $273 < 237$
6. Look at the blocks that show both numbers and explain the answer you gave in problem 5.

It All Adds Up

Students use the online base-10 blocks in Destination Math to find sums of 3-digit numbers.

Getting Ready

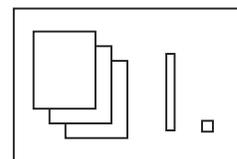
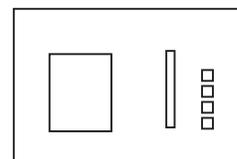
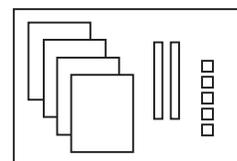
1. This activity reinforces concepts taught in the lesson “Estimating and Finding Sums Less than 1,000” in Module 2, Unit 2, of *Destination Math, Course II*.
2. Assign students to a lesson in *Destination Math, Course II*. Tell them to click the tool box button . From the drop-down menu, click the base-10 blocks manipulative button .
3. Distribute a copy of the 2-page blackline master “It All Adds Up” to each student.

Introducing the Activity

1. Read aloud the directions for the first problem. Direct students to use the online base-10 blocks to show 1 hundred, 3 tens, and 7 ones. Then, have them color the base-10 blocks on the activity sheet to show their online work.
2. Then, on the same mat in the online Base-10 Blocks Manipulative tool showing 137, have students add blocks to show the second addend, 129. Have them choose a different color and color the blocks on the activity sheet showing 137, to represent this second set of blocks. In the circles beneath the mat, write the total number of hundreds, tens, and ones in each place of the mat. [2, 5, 16].
3. Invite students to regroup the 16 ones on the on-line place-value mat by clicking the purple arrow that points from the ones place to the tens place. Then, on the second place value mat on the activity sheets, have them color the new configuration of blocks that shows the regrouping.
4. Finally, have them write the total number of hundreds, tens, and ones on the second mat. [2, 6, 6], and write the sum. [266]. Have students work in a similar way to complete the problem on the second page as you walk around checking their work. The desired sum is 312.

Try This Too!

1. Direct each student to write a 3-digit number on one side of an index card (for example, 425). Then, have each student use base-10 blocks to represent the standard form of the number.
2. Next, have students rearrange the blocks into two sets so that they represent two possible 3-digit addends—for example, 114 and 311 as shown on the right. Record the addends on the reverse side of the card and check that they are correct by finding their sum.



Students will need

- blackline master: “It All Adds Up”—1 copy per student
- online base-10 blocks
- colored pens or pencils

Approximate Time

- 20 minutes

Grouping

- individual students

NCTM Standards

- Number & Operations
- Representation

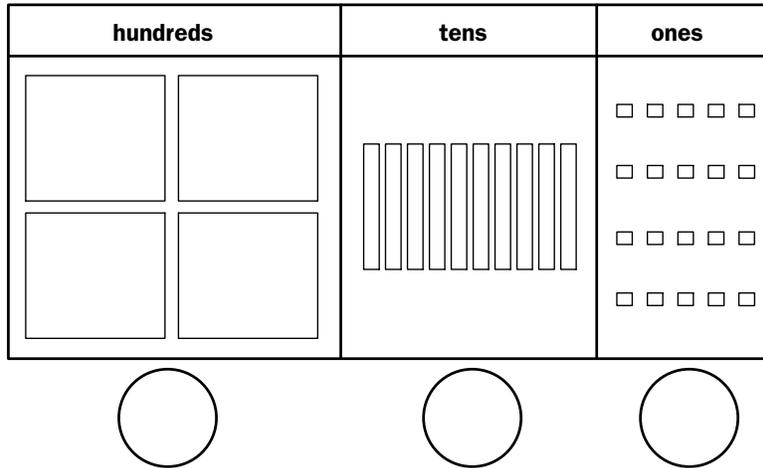
Name _____

It All Adds Up

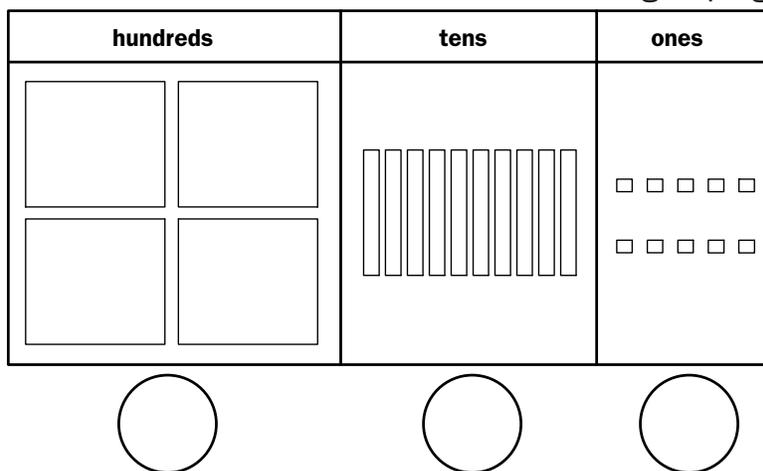
At the computer, open the base-10 blocks manipulative and follow the instructions below.

Find the sum of 137 and 129.

1. Put blocks that show the first addend, 137, on the online place value mat. Color the blocks on the place mat below to show your work.



2. Keep the blocks showing 137 on the online mat and add blocks to show 129 more. Use a different color to color the blocks on the mat above to show this number.
3. In each circle, write the total number of hundreds, tens, and ones in each place.
4. Now look at the blocks on the computer screen. The ones place has more than 9 ones, so you can regroup. Click  that points from the ones place to the tens place. Color the blocks on the mat below to show this regrouping.



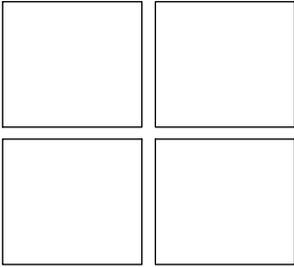
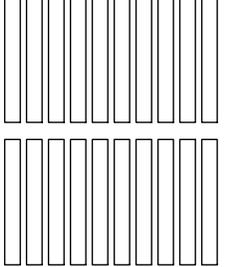
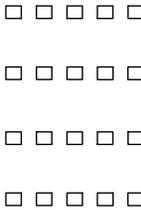
5. Write the digit in each circle that shows the value of each place.
6. What is the sum of 137 and 129? _____

Name _____

It All Adds Up

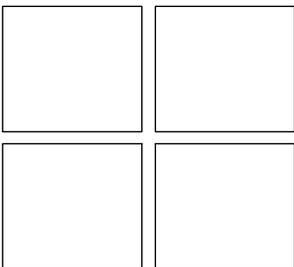
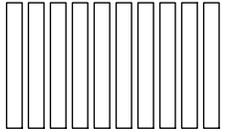
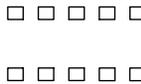
Find the sum of 195 and 126.

1. Put blocks that show the first addend, 195, on the online place value mat. Color the blocks on the place mat below to show your work.
2. Keep the blocks showing 195 on the online mat and show the second addend, 126. Use a different color to color the blocks below to show this number.
3. In each circle, write the total number of hundreds, tens, and ones in each place.

hundreds	tens	ones
		

○ ○ ○

4. Now look at the blocks on the computer screen. The ones and tens places have more than 9 ones, so you can regroup. Click the regrouping arrows to regroup the blocks in both places. Color the blocks on the mat below to show these regroupings.

hundreds	tens	ones
		

○ ○ ○

5. Write the digit in each circle that shows the value of each place.
6. What is the sum of 195 and 126? _____

What's Left?

Students use the online base-10 blocks to find the difference between two 3-digit numbers.

Getting Ready

1. This activity reinforces the concepts taught in the lesson “Estimating and Finding Differences within 1,000” in Module 2, Unit 2 of *Destination Math, Course II*.
2. Assign students to a lesson in *Destination Math, Course II*. Tell them to click the tool box button . From the drop-down menu, click the base-10 blocks manipulative button .
3. Distribute a copy of the 2-page blackline master, “What’s Left?” to each student.

Introducing the Activity

1. Read aloud the directions for the first problem. Direct students to use the online base-10 blocks to show 248. Then, tell them to color the blocks on the activity sheet to show their online work, and to write the number of hundreds, tens, and ones in the circle under each place. [2, 4, 8]
2. From the blocks showing 248 in the online tool, tell students that they are going to subtract 123 by removing blocks that represent 123. To reinforce the subtraction algorithm, have students work from right to left by starting in the ones place and removing 3 ones. Then, remove 2 tens from the tens place, and 1 hundred from the hundreds place. (To remove a block, click and drag it out of a place.)
3. Direct them to color the base-10 blocks on the second place value mat on the activity sheet to show how many blocks are left after removing blocks that show 123. Ask students to write the number of hundreds, tens, and ones in the circle beneath each place of the mat and to complete the corresponding number sentence.
4. Have students complete the second subtraction problem in a similar way. This problem requires regrouping. Circulate around the room making sure that students click the purple arrow that points from the tens place to the ones place to regroup 1 ten as 10 ones.

Try This Too!

1. Have students write a 3-digit subtraction problem on one side of an index card, and on the other side, have them write the difference. Collect the cards, mix them up, and redistribute them. Then, have students use base-10 blocks (either at the computer or at their desks) to represent the number being subtracted from (the minuend).
2. Direct students to remove hundreds, tens, and ones that represent the number they are subtracting (the subtrahend), regrouping as necessary. Then, have them compare the blocks that remain on the place value mat and the difference on the card to see if they match. If they don’t match, instruct students to correct either the difference or the model as necessary.

Students will need

- blackline master: “What’s Left?”— 1 copy per student
- online Base-10 Blocks Manipulative

Approximate Time

- 20 minutes

Grouping

- individual students

NCTM Standards

- Number & Operations
 - Representation
-

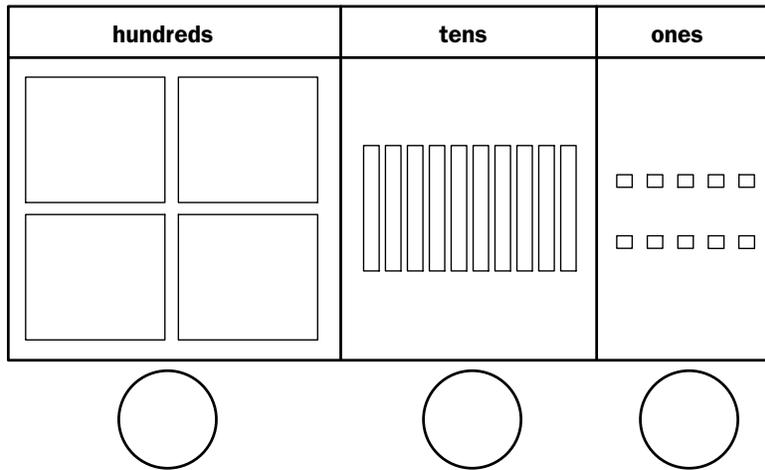
Name _____

What's Left?

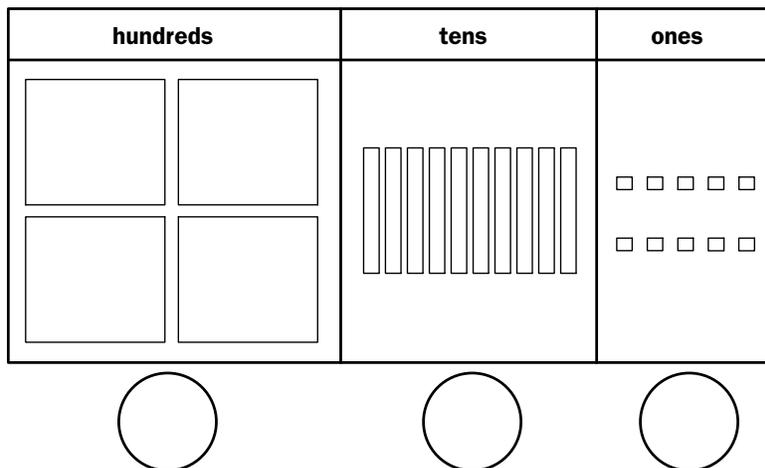
At the computer, open the base-10 blocks manipulative and follow the instructions below.

Subtract: 248 - 123.

1. Use the online base-10 blocks to show 248 on the place value mat.
2. Color the blocks below to show your online work. In each circle, write the number of hundreds, tens, and ones in each place.



3. Now, to subtract 123, start in the ones place and remove 3 ones. Next, remove 2 tens. Finally, remove 1 hundred. Color the blocks on the mat below to show the number of blocks that are left on the mat.
4. In the circles below the each place on the mat below, write the number of hundreds, tens, and ones in each place.

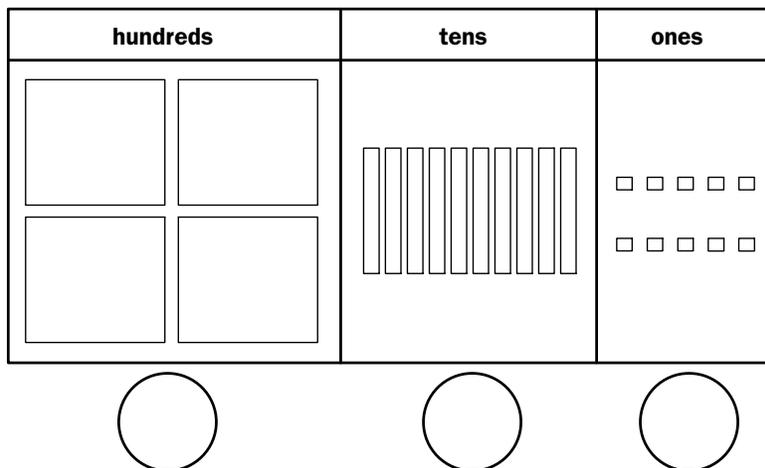


5. Complete the number sentence. $248 - 123 = \underline{\quad}$

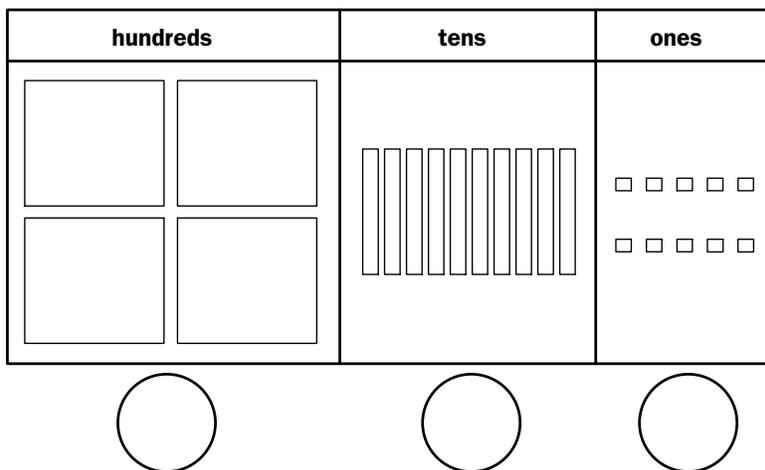
Name _____

Subtract: 342 - 227.

1. Use the online base-10 blocks to show 342 on the place value mat.
2. Color the blocks below to show your online work. In each circle, write the number of hundreds, tens, and ones in each place.

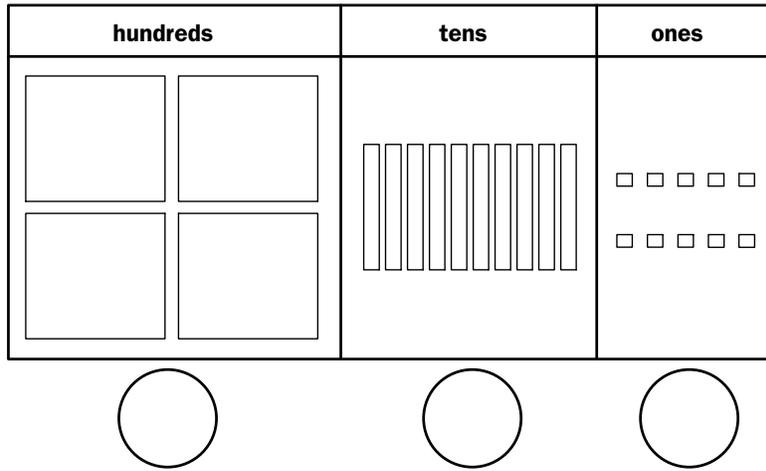


3. Now, to subtract 227, start in the ones place. You cannot take 7 ones away from 2 ones. So, click the purple arrow pointing from the tens place to the ones place to regroup 1 ten. Then, remove 7 ones. Color the blocks on the mat below to show $342 - 7$ and write a number in the circle under each place.



Name _____

4. Now, remove 2 tens and 2 hundreds. Color the blocks below to show what's left and write a number in the circle under each place.



5. Complete the number sentence. $342 - 227 = \underline{\quad}$

Answer Keys

Counting Groups: Answer Key

How many groups of ten? How many ones left over?

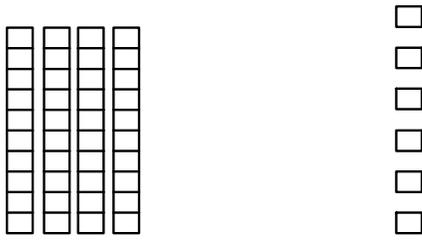
Write the 2-digit number.

23



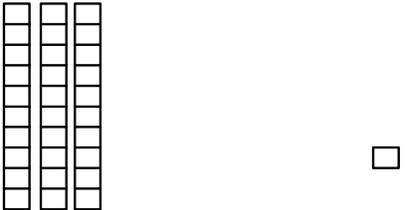
2 groups of ten **3** left over

46



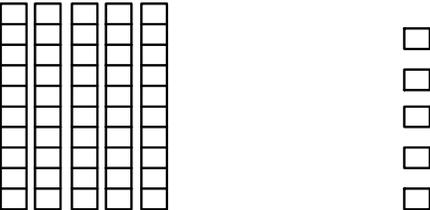
4 groups of ten **6** left over

31



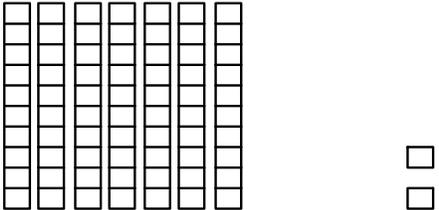
3 groups of ten **1** left over

55



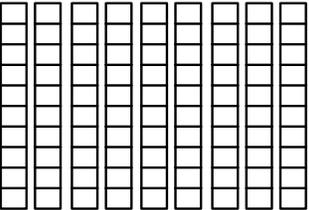
5 groups of ten **5** left over

72



7 groups of ten **2** left over

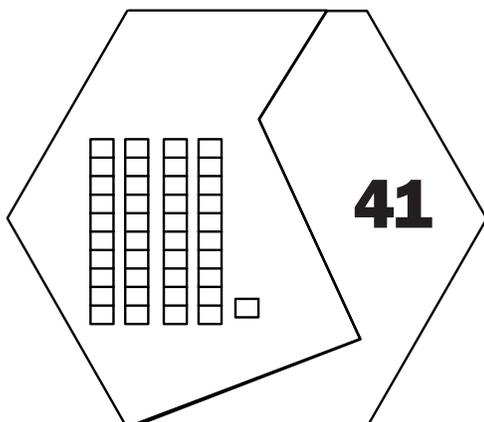
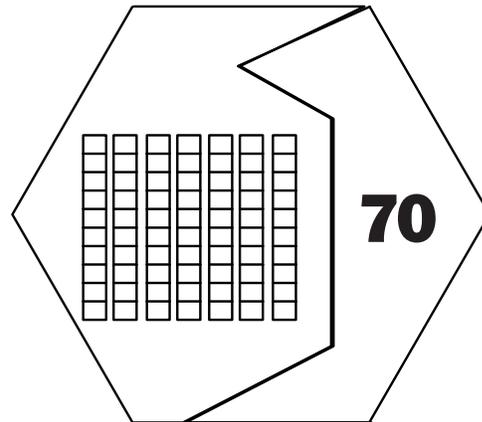
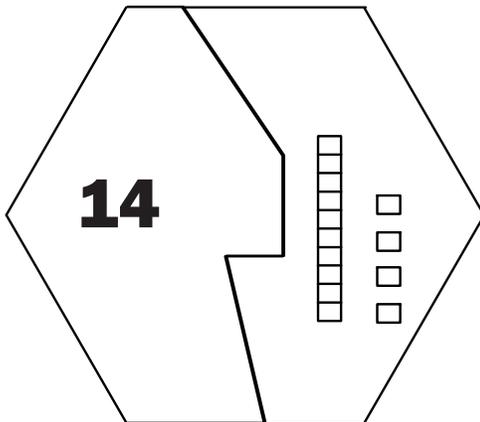
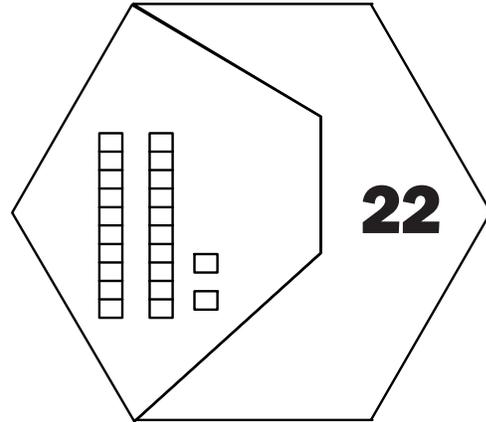
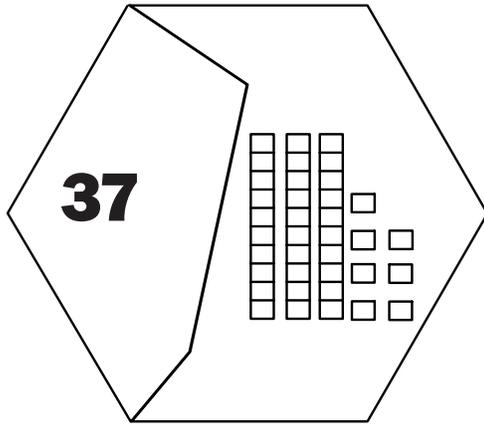
90



9 groups of ten **0** left over

Puzzle Fun!: Answer Key

Cut out the 10 pieces. Then match numbers and blocks to make hexagons.



Numbers, Please!: Answer Key

How many hundreds, tens, and ones? What are the numbers and their names?

1.



hundreds	tens	ones
2	4	6

Word Name: two hundred forty-six

2.

274

hundreds	tens	ones
2	7	4

Word Name: two hundred seventy-four

3.

111

hundreds	tens	ones
1	0	11

Word Name: one hundred eleven

4.

169

hundreds	tens	ones
1	6	9

Word Name: one hundred sixty-nine

5.

518

hundreds	tens	ones
5	11	8

Word Name: five hundred eighteen

6.

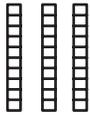
300

hundreds	tens	ones
3	10	0

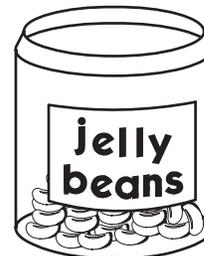
Word Name: three hundred

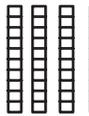
Jars of Jellybeans: Answer Key

How many jellybeans? Draw a circle around the correct number.

tens	ones
	
3	12

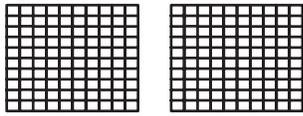
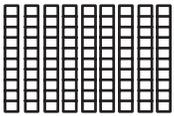
32
42
312



tens	ones
	
6	18

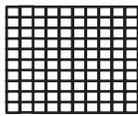
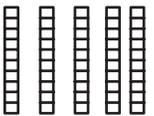
68
78
618



hundreds	tens	ones
		
2	9	16

306
316
2916



hundreds	tens	ones
		
1	5	15

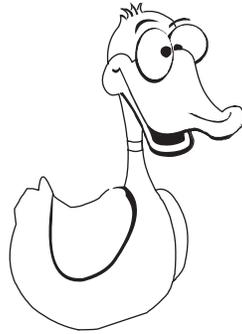
255
165
1515



Riddle Me This!: Answer Key

Why did Billy the Duck want to be a banker?

Paste the expanded form of each number into a box. Then, read the words to find the answer.



2,526

$2,000 + 500 + 20 + 6$

The

3, 159

$3,000 + 100 + 50 + 9$

duck

8,611

$2,000 + 900 + 20 + 8$

had

1,799

$1,000 + 700 + 90 + 9$

a

9,122

$9,000 + 100 + 20 + 2$

lot

7,227

$7,000 + 200 + 20 + 7$

of

4,414

$4,000 + 400 + 10 + 4$

friends

6,763

$6,000 + 700 + 60 + 3$

that

2,928

$8,000 + 600 + 10 + 1$

had

9,298

$9,000 + 200 + 90 + 8$

very

6,401

$6,000 + 400 + 1$

big

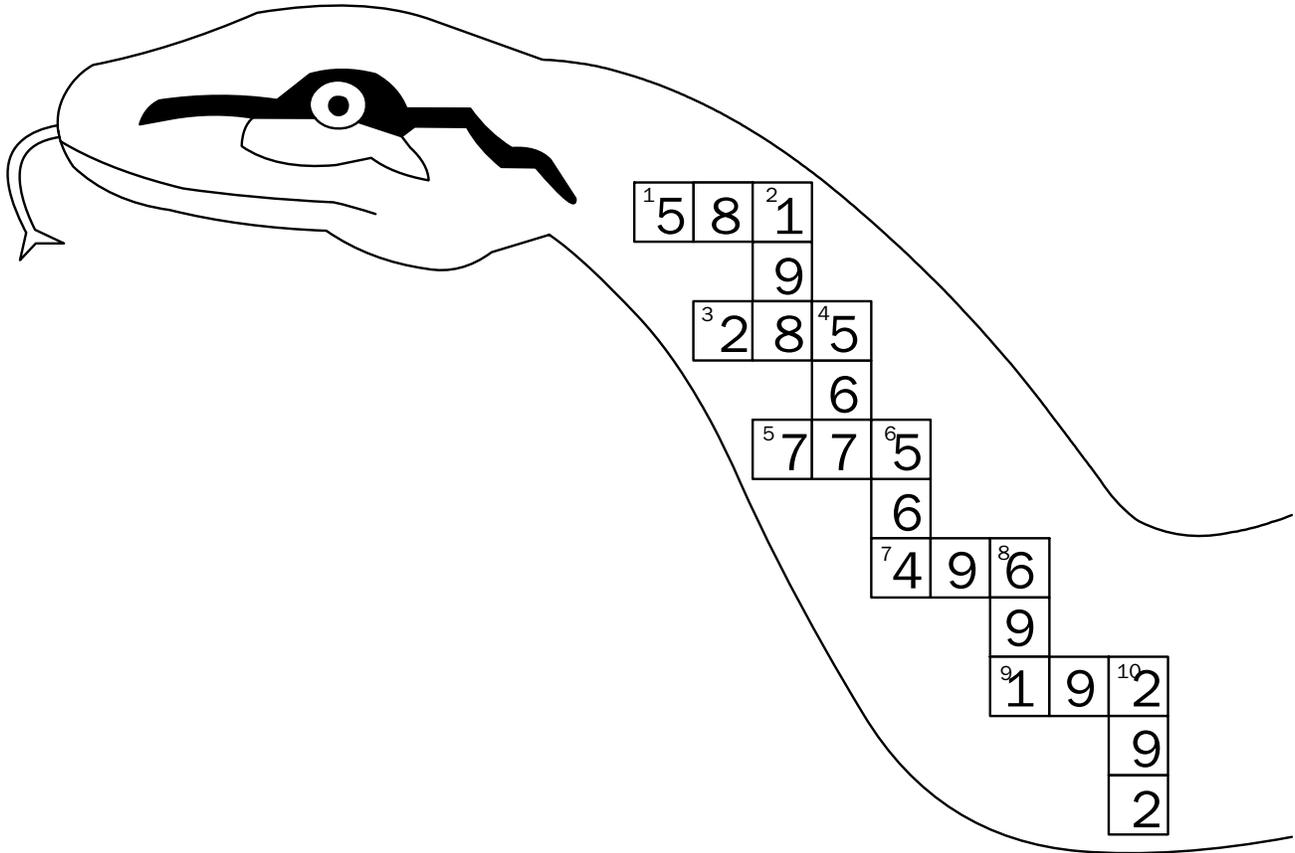
4,012

$4,000 + 10 + 2$

bills

Snake Subtraction: Answer Key

Complete this cross-number puzzle. Find the difference for each clue and write the answer in the space provided.



Across

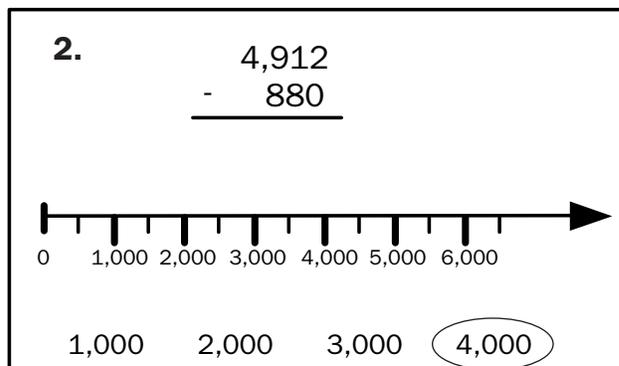
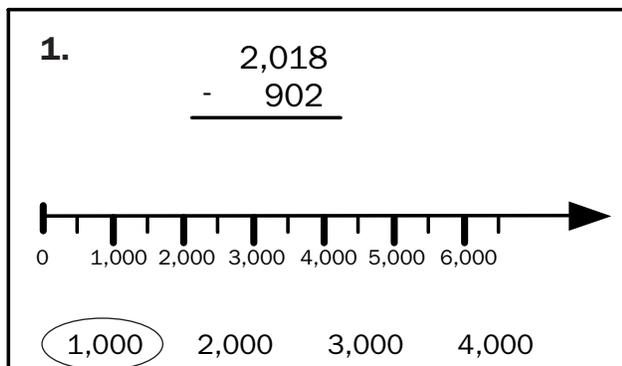
1. 642 - 61
3. 358 - 73
5. 849 - 74
7. 528 - 32
9. 277 - 85

Down

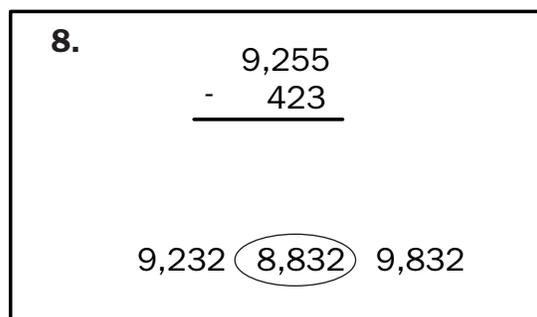
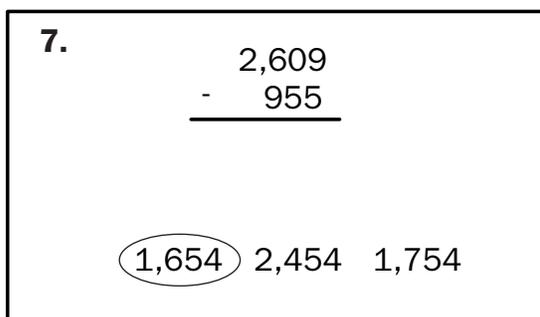
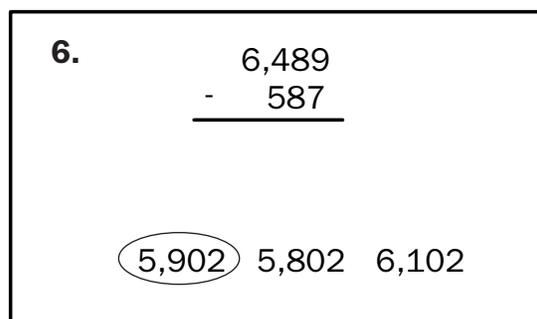
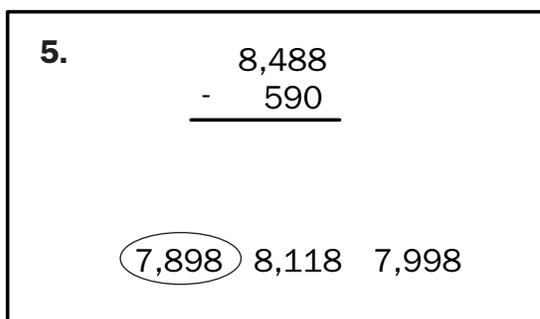
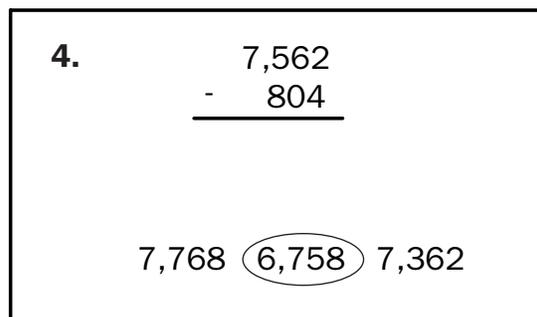
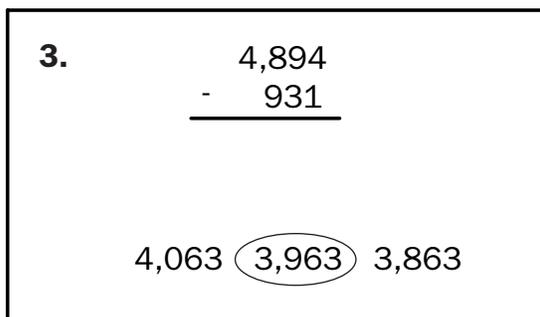
2. 279 - 81
4. 638 - 71
6. 607 - 43
8. 757 - 66
10. 343 - 51

Ring an Answer: Answer Key

Use the number lines and estimate each difference. Then draw a circle around the best estimate.

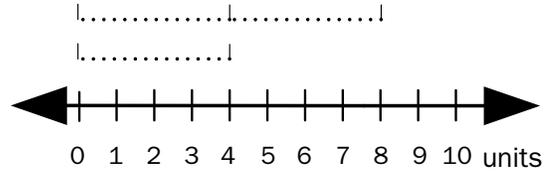
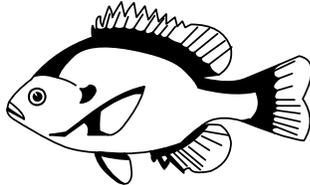


Complete each subtraction. Then draw a circle around the difference.



Deep Sea Life: Answer Key

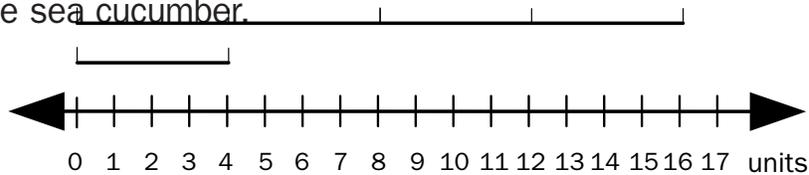
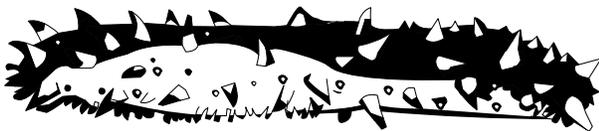
1. The length of an angler fish is 2 times the length of a hatchet fish. A hatchet fish is 4 units long. Draw lines to show the lengths of the two fish. Then, find the length in units of the angler fish.



$$4 + 4 = \underline{8}$$

$$2 \times 4 = \underline{8}$$

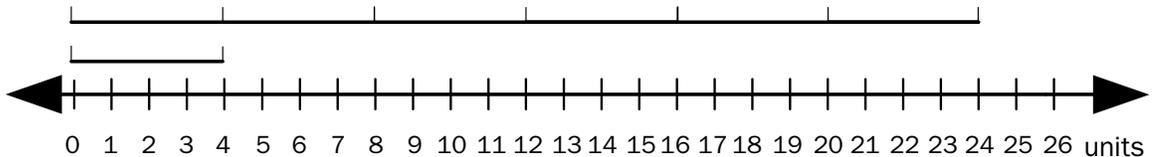
2. A hatchet fish is 4 units long. A sea cucumber is 4 times longer than a hatchet fish. Draw lines to show the length of the hatchet fish and the sea cucumber. Then, find the length in units of the sea cucumber.



$$4 + 4 + 4 + 4 = \underline{16}$$

$$4 \times 4 = \underline{16}$$

3. A filetail catshark is 6 times longer than a hatchet fish. Draw lines to show the lengths of the two fish. Then, find the length in units of the catshark.

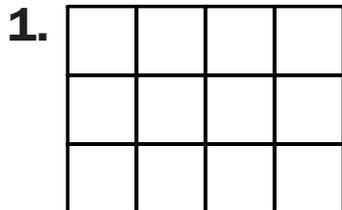


$$4 + 4 + 4 + 4 + 4 + 4 = \underline{24}$$

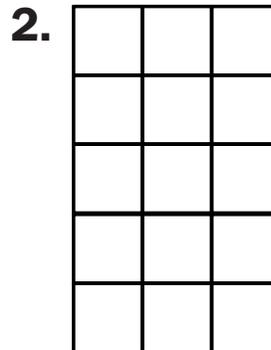
$$6 \times 4 = \underline{24}$$

Tiles, Factors, and Products: Answer Key

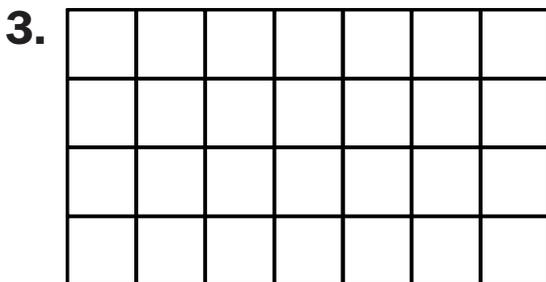
What multiplication sentence do these 8 groups of tiles show? Write the factors and then write the product for each group of tiles.



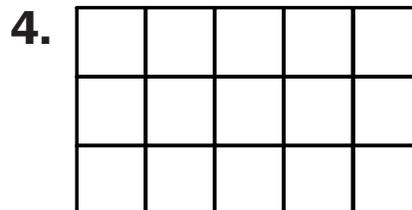
$$\underline{\mathbf{3}} \times \underline{\mathbf{4}} = \underline{\mathbf{12}}$$



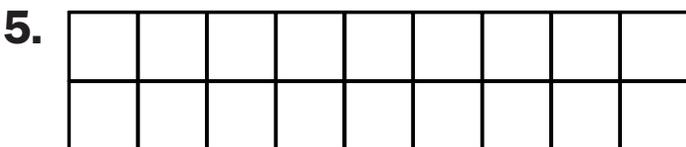
$$\underline{\mathbf{5}} \times \underline{\mathbf{3}} = \underline{\mathbf{15}}$$



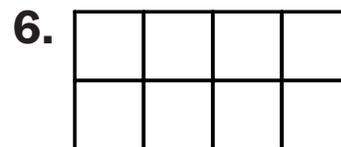
$$\underline{\mathbf{4}} \times \underline{\mathbf{7}} = \underline{\mathbf{28}}$$



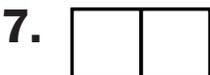
$$\underline{\mathbf{3}} \times \underline{\mathbf{5}} = \underline{\mathbf{15}}$$



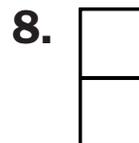
$$\underline{\mathbf{2}} \times \underline{\mathbf{9}} = \underline{\mathbf{18}}$$



$$\underline{\mathbf{2}} \times \underline{\mathbf{4}} = \underline{\mathbf{8}}$$



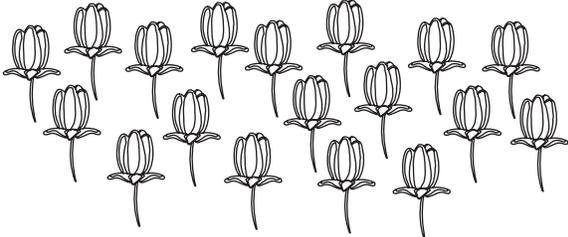
$$\underline{\mathbf{1}} \times \underline{\mathbf{2}} = \underline{\mathbf{2}}$$



$$\underline{\mathbf{2}} \times \underline{\mathbf{1}} = \underline{\mathbf{2}}$$

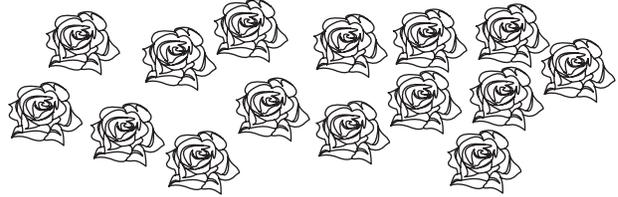
Flower Shop Division: Answer Key

1. Divide these 18 tulips into 3 equal groups. Circle the groups. Then, complete the division sentence and its check.



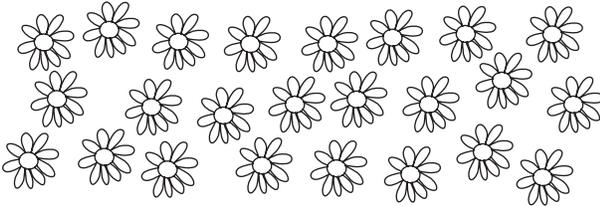
$18 \div 3 = 6$
$3 \times 6 = 18$

2. Divide these 15 roses into 5 equal groups. Circle the groups. Then, complete the division sentence and its check.



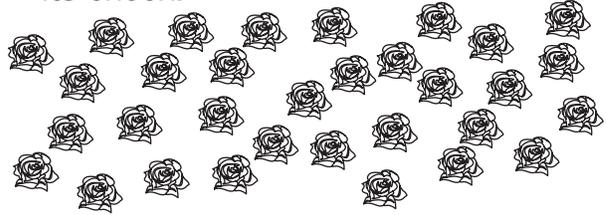
$15 \div 5 = 3$
$5 \times 3 = 15$

3. Divide these 24 daisies into 6 equal groups. Circle the groups. Then, complete the division sentence and its check.



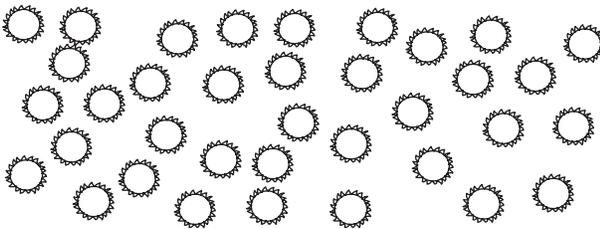
$24 \div 6 = 4$
$6 \times 4 = 24$

4. Divide these 32 roses into 8 equal groups. Circle the groups. Then, complete the division sentence and its check.



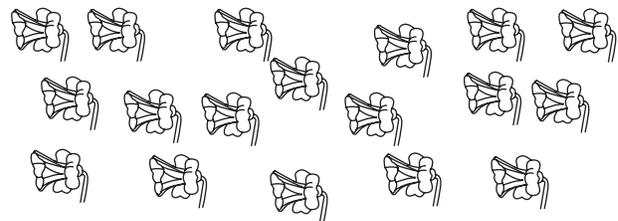
$32 \div 8 = 4$
$8 \times 4 = 32$

5. Divide these 36 sunflowers into 6 equal groups. Circle the groups. Then, complete the division sentence and its check.



$36 \div 6 = 6$
$6 \times 6 = 36$

6. Divide these 18 daffodils into 9 equal groups. Circle the groups. Then, complete the division sentence and its check.

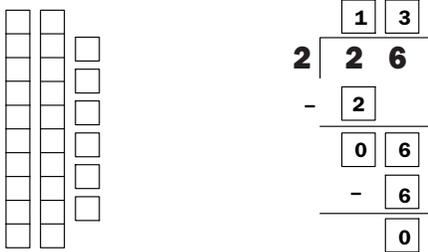


$18 \div 9 = 2$
$9 \times 2 = 18$

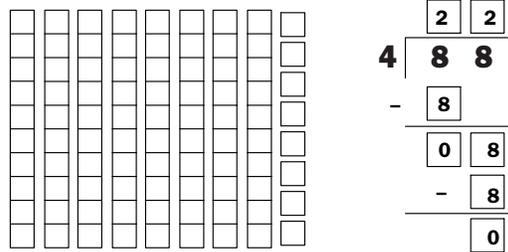
Grocery Store Math: Answer Key

The blocks show how many of each grocery item is in the store. Color the blocks to create equal groups. Then, find the quotient using numbers.

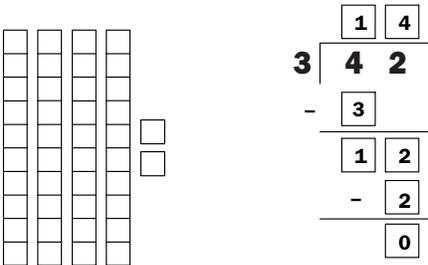
1. A grocer puts 26 ears of corn into 2 boxes. If each box has the same number of ears of corn, how many ears of corn are in each box?



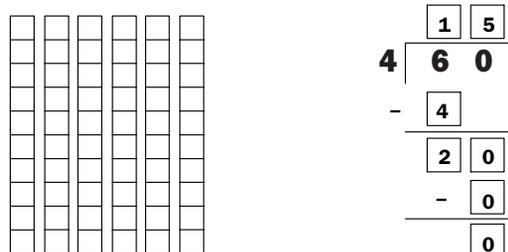
2. A grocer has 88 bags of candy to put onto 4 shelves. If he puts the same number of bags on each shelf, how many bags are on each shelf?



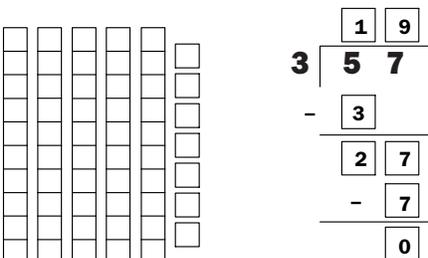
3. A grocer has 42 potatoes. He packs them so that there are 3 potatoes in each package. How many packages of potatoes are there all together?



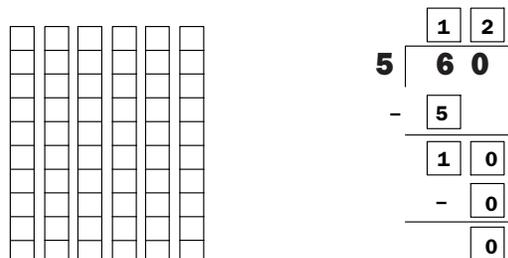
4. A grocer has 60 pizzas, and she can fit 4 pizzas on one tray. How many trays does she need for all 60 pizzas?



5. A grocer divides 57 apples equally among 3 bags. How many apples are in each bag?

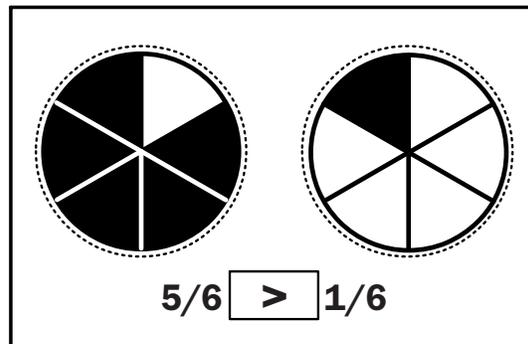
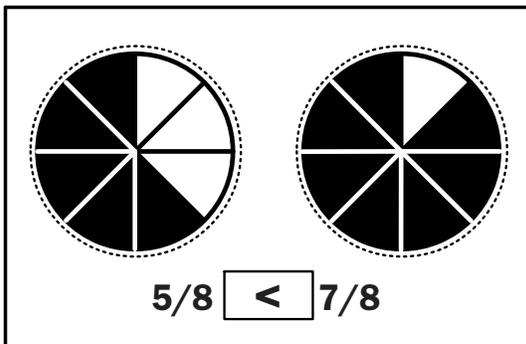
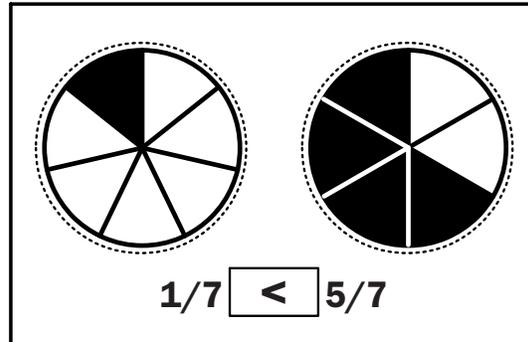
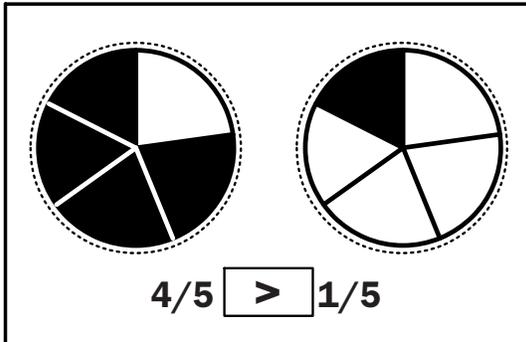
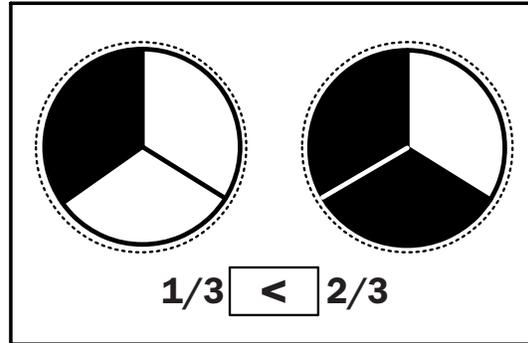
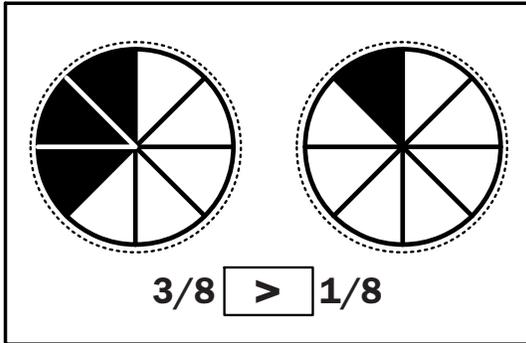


6. A grocer has 60 green peppers. She packs them so that each package has 5 peppers. How many packages of peppers does she have?



Yummy Fractions!: Answer Key

Cut out the 10 pies below. Paste each one into a circle above the fraction that shows how much pie is left. Write < or > in the box to compare the fractions.

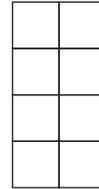


Squares and Areas: Answer Key

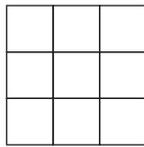
1. Each rectangle below is divided into unit squares. Write a multiplication sentence to find the area, in square units, of each rectangle.



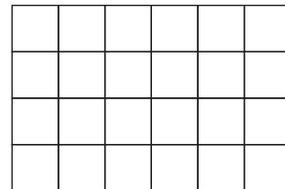
$$\underline{2} \times \underline{2} = \underline{4}$$



$$\underline{4} \times \underline{2} = \underline{8}$$

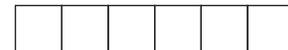
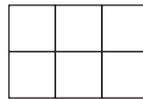
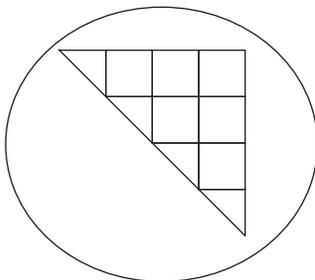


$$\underline{3} \times \underline{3} = \underline{9}$$

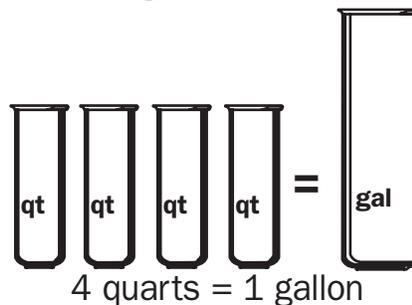
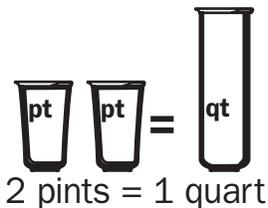
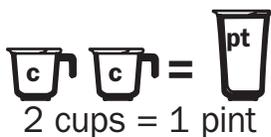


$$\underline{4} \times \underline{6} = \underline{24}$$

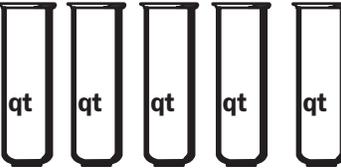
2. Each shape below is covered by as many unit squares as possible. Draw a ring around the shape that has the greatest area.



Capacity: Answer Key



Compare the capacities of these containers. Then, write a < or a > sign to complete each number sentence.

1.  1 gallon 5 quarts 

2.  3 cups 1 pint 

3.  1 quart 1 pint 

4.  2 pints 5 cups 

Making Change: Answer Key

The numbers in the first column show the cost of different items. How much change will you get after giving a clerk the amount of money in the second column? Use the fewest number of bills and coins as you can to show the correct change.

Cost of Item	Amount given	Change				
		 Dollar	 Quarter	 Dime	 Nickel	 Penny
\$1.73	\$3.00	1	1			2
\$1.20	\$5.00	3	3		1	
\$7.26	\$7.50			2		4
\$8.14	\$10.00	1	3	1		1
\$0.22	\$1.00		3			3
\$0.11	\$0.25			1		4
\$4.12	\$5.00		3	1		3
\$5.80	\$10.00	4		2		
\$6.45	\$10.00	3	2		1	

Find the Rule: Answer Key

Cut out the 8 expressions at the bottom of the page. Then examine the values in each table and paste the expression that completes the rule for the numbers in each table. Use the rule to find the missing numbers in each table.

1.

Inches	Yards
12	1
24	2
36	3
48	4
60	5
84	7
144	12

12 / 12 = 1
24 / 12 = 2
36 / 12 = 3

60 / 12 = ?

2.

Yards	Feet
1	3
2	6
3	9
4	12
5	15
9	27
100	300

1 x 3 = 3
2 x 3 = 6
3 x 3 = 9

5 x 3 = ?

The number of feet equals the number of inches

The number of feet equals the number of yards

3.

Cups	Pints
2	1
4	2
6	3
8	4
24	12
28	14
32	16

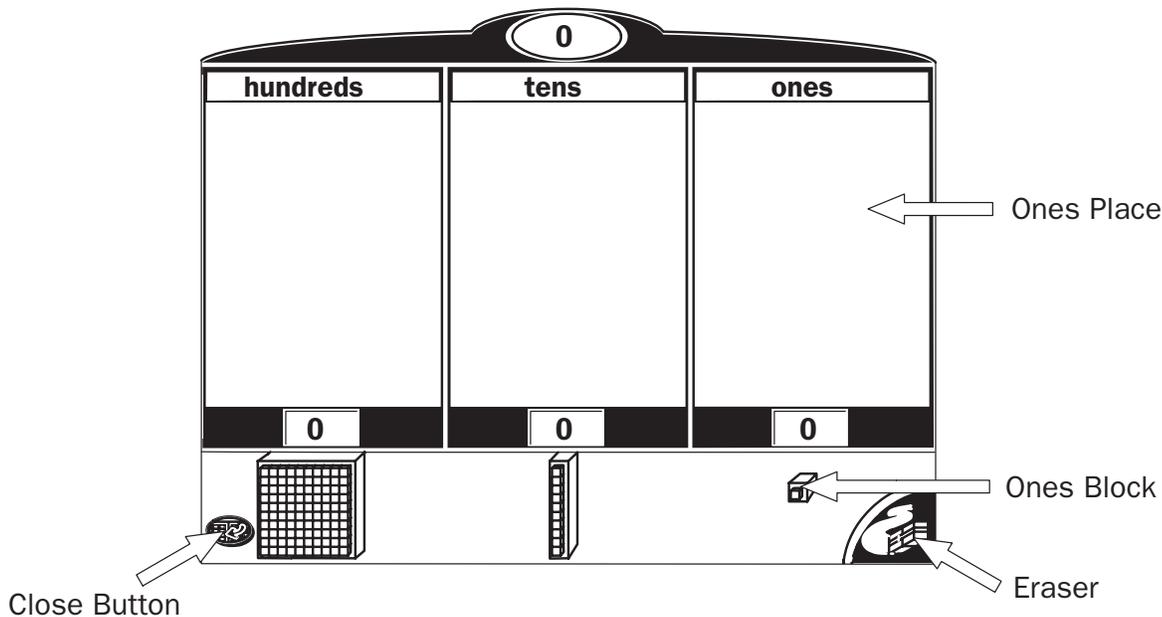
4.

Hours	Minutes
1	60
2	120
3	180
4	240
10	600
12	720
24	1,440

The number of pints equals the number of cups

The number of minutes equals the number of hours

Introduction to the Base-10 Blocks: The Ones: Answer Key



1. At the computer, click the tools button.



2. Click the base-10 blocks manipulative button.



3. Click the ones block 5 times. How many ones are in the ones place?

5



Look at the number “5” in the ones place. This number tells you how many ones there are.



4. Click the ones block 3 times to add 3 more ones. How many ones are in the ones place now?

8



5. Click a ones block and drag it out of the ones place. (You can drag it onto the Eraser.) How many ones are left in the ones place?

7



6. Click the ones block 3 times to add 3 more ones. How many ones are in the ones place now?

10



7. Click the Eraser. How many ones are left in the ones place?

0

Introduction to the Base-10 Blocks: The Ones: Answer Key

Open the base-10 blocks manipulative and follow the instructions below. Then, write your answers to the questions in the boxes.

<p>1. Place 4 ones in the ones place. Take away 1 one. How many ones are in the ones place now? Click the Eraser to remove all blocks from the mat.</p>	3
<p>2. Place 13 ones in the ones place. Take away 2 ones. How many ones are in the ones place now? Click the Eraser to remove all blocks from the mat.</p>	11
<p>3. Place 10 ones in the ones place. Take away 4 ones. How many ones are in the ones place now? Click the Eraser to remove all blocks from the mat.</p>	6
<p>4. Place 7 ones in the ones place. How many ones will you take away to have 3 ones in all? Click the Eraser to remove all blocks from the mat.</p>	4
<p>5. Place 10 ones in the ones place. How many ones will you take away to leave exactly 2 ones? Click the Eraser to remove all blocks from the mat.</p>	8
<p>6. Place 3 blocks in the ones place. How many more ones will you need to add to have 7 blocks in all? Click the Eraser to remove all blocks from the mat.</p>	4
<p>7. Place 5 blocks in the ones place How many more blocks will you need to add to have 9 blocks in all? Click the Eraser to remove all blocks from the mat.</p>	4

Detective Math: Answer Key

Read the clues for each number and write the number in the box. Then, go to the computer to check your answers using the base-10 blocks. Click  to open the tool box. Click  to open the place value mat and blocks.

<p>1. Clues: I have 2 tens and 5 ones. Who am I?</p> <p>Check: Create 2 tens and 5 ones. Check the number you wrote in the box.</p>	<div style="border: 1px solid black; padding: 10px; width: 80px; margin: 0 auto;">25</div>
---	--

<p>2. Clues: I have 4 tens and 0 ones. Who am I?</p> <p>Check: Create 4 tens. Check the number you wrote in the box.</p>	<div style="border: 1px solid black; padding: 10px; width: 80px; margin: 0 auto;">40</div>
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<p>3. Clues: I have 6 tens and 3 ones. Who am I?</p> <p>Check: Create 6 tens and 3 ones. Check the number you wrote in the box.</p>	<div style="border: 1px solid black; padding: 10px; width: 80px; margin: 0 auto;">63</div>
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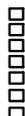
<p>4. Clues: I have 4 ones and 2 tens. Who am I?</p> <p>Check: Create 4 ones and 5 tens. Check the number you wrote in the box.</p>	<div style="border: 1px solid black; padding: 10px; width: 80px; margin: 0 auto;">24</div>
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Think About It

Do both pictures below show the same number? Why or why not?

(Answers will vary.) The first set of blocks shows one 10 and 7 ones, and $10 + 7 = 17$. The second

mat shows 17 ones, which is also 17.

tens	ones
	

tens	ones
	

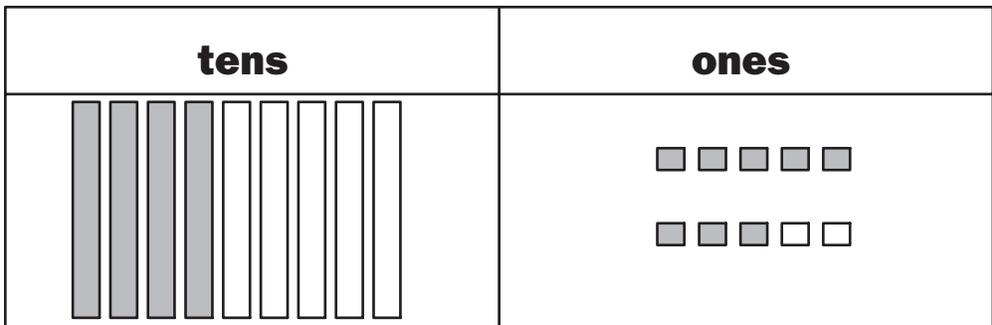
Comparing 2-Digit Numbers: Answer Key

At the computer, open the base-10 blocks manipulative and follow the instructions for each problem.

Compare the numbers 48 and 84.

1. At the computer, use the base-10 blocks to show 48.

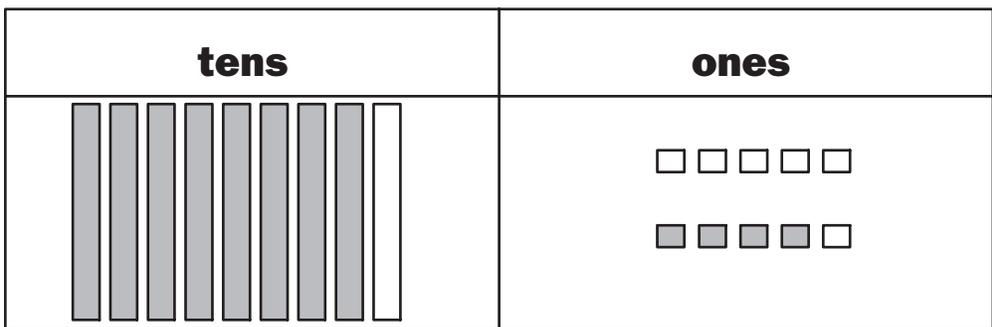
2. Then color the blocks below to show 48.



3. Click the eraser to clear all blocks from the place value mat.

4. Now, use the base-10 blocks again and show 84.

5. Color the blocks below to show 84.



6. How many tens are in 48? 4 How many ones are in 48? 8

7. How many tens are in 84? 8 How many ones are in 84? 4

8. Circle the greater number.

48

84

9. Circle the correct number sentence.

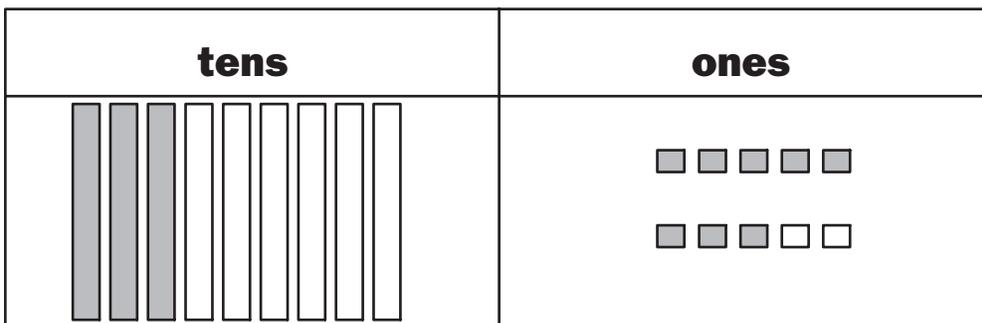
48 > 84

48 < 84

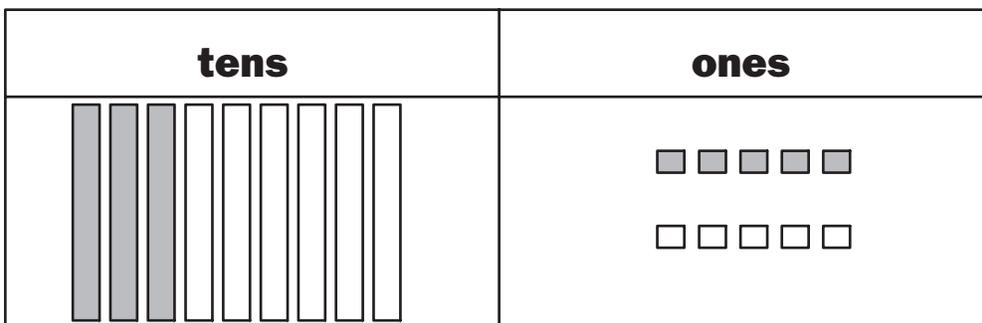
Comparing 2-Digit Numbers: Answer Key

Compare the numbers 38 and 35.

- At the computer, use the base-10 blocks to show 38.
- Color the tens and ones below to show 38.

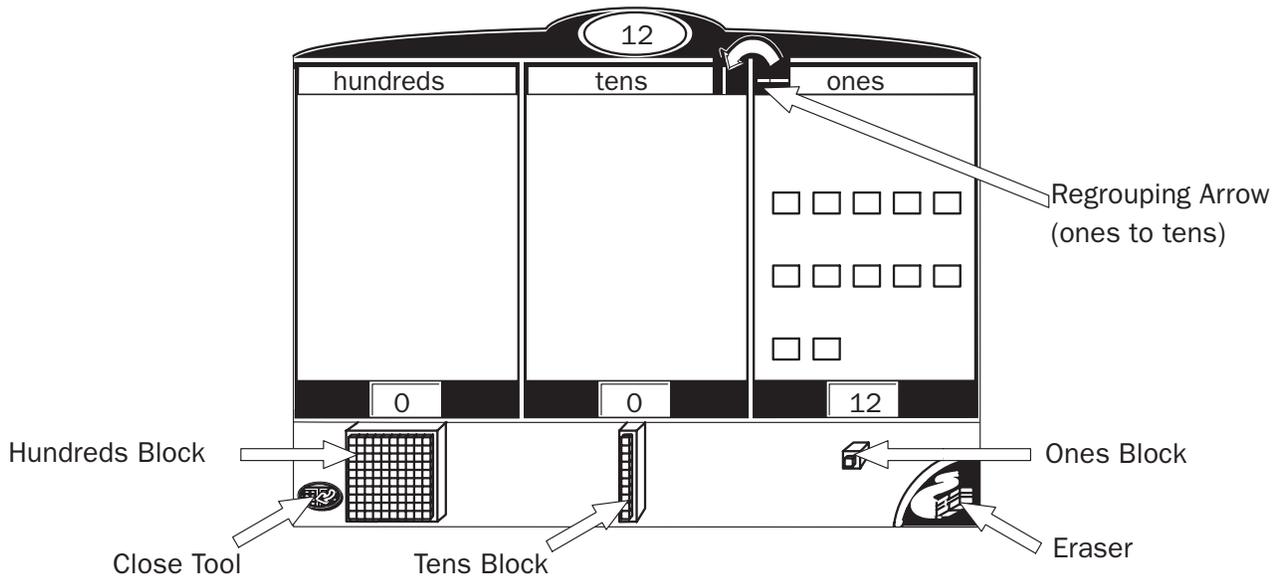


- Click the eraser to clear the place value mat.
- At the computer, use the base-10 blocks to show 35.
- Color the tens and ones below to show 35.



- How many tens are in 38? 3 How many tens are in 35? 3
- How many ones are in 38? 8 How many ones are in 35? 5
- Circle the greater number. 38 35
- Circle the correct number sentence. 38 > 35 38 < 35

Tens and Ones: Answer Key



1. At the computer, click the tools button.



2. Click the base-10 blocks manipulative button.



3. Click the tens block 5 times. How many tens are in the tens place?

5

5

4. Look at the number 5 in the box under the tens place. This number tells you how many tens there are.

50

5. Look at the number 50 above the tens place. This number tells you what number the blocks show.



6. Click the regrouping arrow that points from the tens space to the ones place. How many tens are in the tens place now?

4



7. How many ones are in the ones place now?

10



8. Click the regrouping arrow that points from the ones place to the tens place. How many tens are in the tens place now?

5



9. How many ones are in the ones place now?

0

Tens and Ones: Answer Key

Open the base-10 blocks manipulative and follow the instructions below. Write your answers to the questions in the boxes.

	Tens	Ones
1. Put 14 ones in the ones place. How many tens and ones are there?	0	14
Click the purple arrow  that points to the tens place. How many tens and ones are there now?	1	4
Click the eraser button  to clear the mat.		
2. Put 1 ten in the tens place and 9 ones in the ones place. How many tens and ones are there?	1	9
Click the purple arrow  that points to the ones place. How many tens and ones are there now?	0	19
Click the eraser button  to clear the mat.		
3. Put 28 ones in the ones place. How many tens and ones are there?	0	28
Click the purple arrow that points to the tens place. How many tens and ones are there now?	1	18
Click the purple arrow that points to the tens place again. How many tens and ones are there now?	2	8
Click the eraser button  to clear the mat.		
4. Put 3 tens in the tens place. Put 5 ones in the ones place. How many tens and ones are there?	3	5
Click the purple arrow that points to the ones place again. How many tens and ones are there now?	2	15
Click the purple arrow that points to the ones place. How many tens and ones are there now?	1	25
Click the purple arrow that points to the ones place one more time. How many tens and ones are there now?	0	35

Tens and Ones: Answer Key

Show 4 ways to express the number 38. Use the online base-10 blocks and the regrouping arrows  and  to help you.

$$38 = \underline{\mathbf{3}} \text{ tens } \underline{\mathbf{8}} \text{ ones}$$

$$38 = \underline{\mathbf{2}} \text{ tens } \underline{\mathbf{18}} \text{ ones}$$

$$38 = \underline{\mathbf{1}} \text{ tens } \underline{\mathbf{28}} \text{ ones}$$

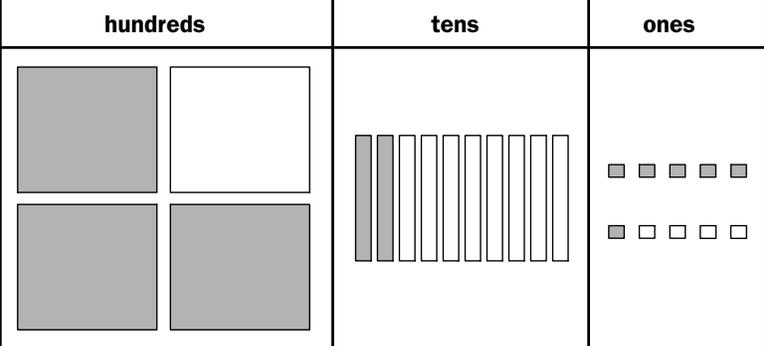
$$38 = \underline{\mathbf{0}} \text{ tens } \underline{\mathbf{38}} \text{ ones}$$

Note: The order of answers may vary, but the student should include the four answers shown here.

Representing 3-Digit Numbers: Answer Key

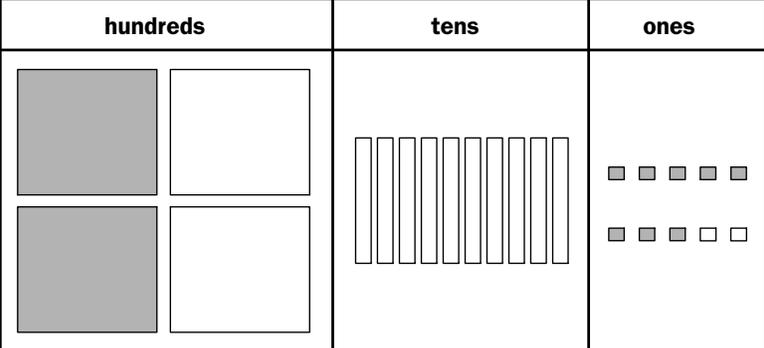
At the computer, open the base-10 blocks manipulative and follow the instructions below.

- Use the online base-10 blocks to show 326. Then, color the blocks on the place mat below to show your online work.

hundreds	tens	ones
		

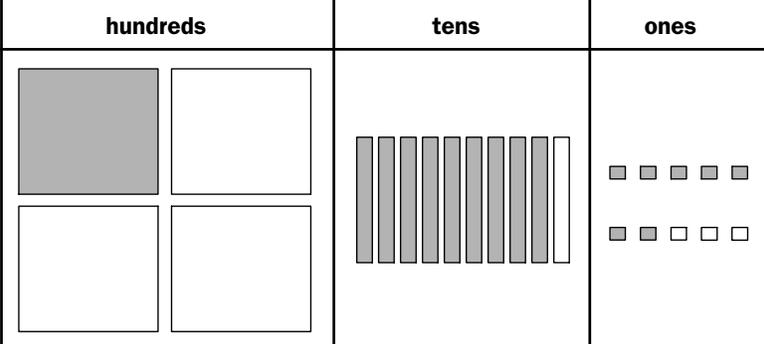
- What is the number in expanded form? 300 + 20 + 6

- Use the online base-10 blocks to show 208. Then, color the blocks on the place mat below to show your online work.

hundreds	tens	ones
		

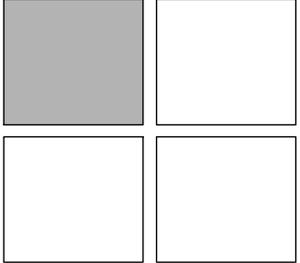
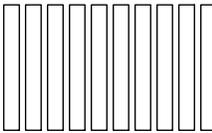
- What is this number in expanded form? 200 + 0 + 8

- Use the online base-10 blocks to show $100 + 90 + 7$. Color the blocks on the place mat below to show your online work.

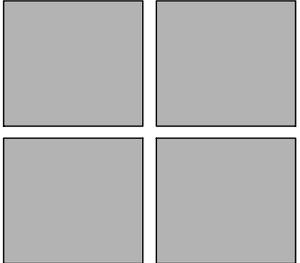
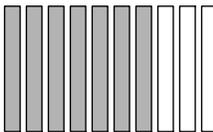
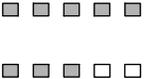
hundreds	tens	ones
		

- What is this number in standard form? 197

7. Use the online base-10 blocks to show $100 + 0 + 1$. Color the blocks on the place mat below to show your online work.

hundreds	tens	ones
		

8. What is this number in standard form? **101**
9. Use the online base-10 blocks to show $400 + 70 + 8$. Color the blocks on the place mat below to show your online work.

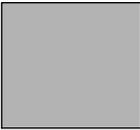
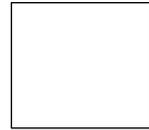
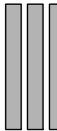
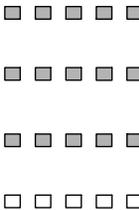
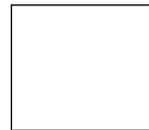
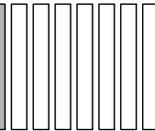
hundreds	tens	ones
		

10. What is this number in standard form? **478**

Hundreds, Tens, and Ones: Answer Key

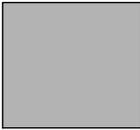
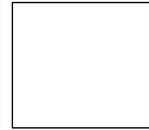
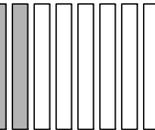
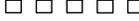
At the computer, open the base-10 blocks manipulative and follow the instructions below.

- At the computer, put 1 hundred, 3 tens, and 15 ones on the mat. Then, color the blocks on the mat below to show your work.

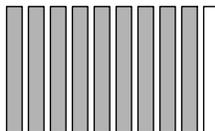
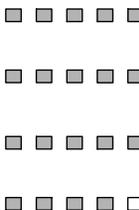
hundreds		tens	ones
			
			

- What is the number in standard form? 145

- Now, click  to regroup 10 ones. Then color the blocks below to show the greatest number of hundreds, tens, and ones in the number.

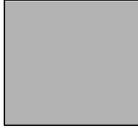
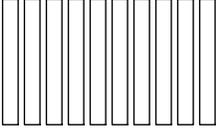
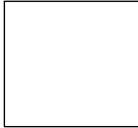
hundreds		tens	ones
			
			

- Click the eraser button  to clear the mat. Put 2 hundreds, 9 tens, and 19 ones on the mat. Then color the blocks on the mat below to show the number.

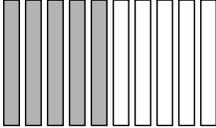
hundreds		tens	ones
			
			

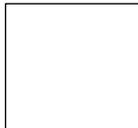
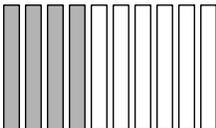
- What is this number in standard form? 309

6. Click  that points from the ones place to the tens place to regroup the ones.
7. Click  that points from the tens place to the hundreds place to regroup the tens. Then color the blocks to show the number.

hundreds		tens	ones
			
			
			
			

8. Color the blocks on the mats below to show 156 in two different ways.

hundreds		tens	ones
			
			
			
			

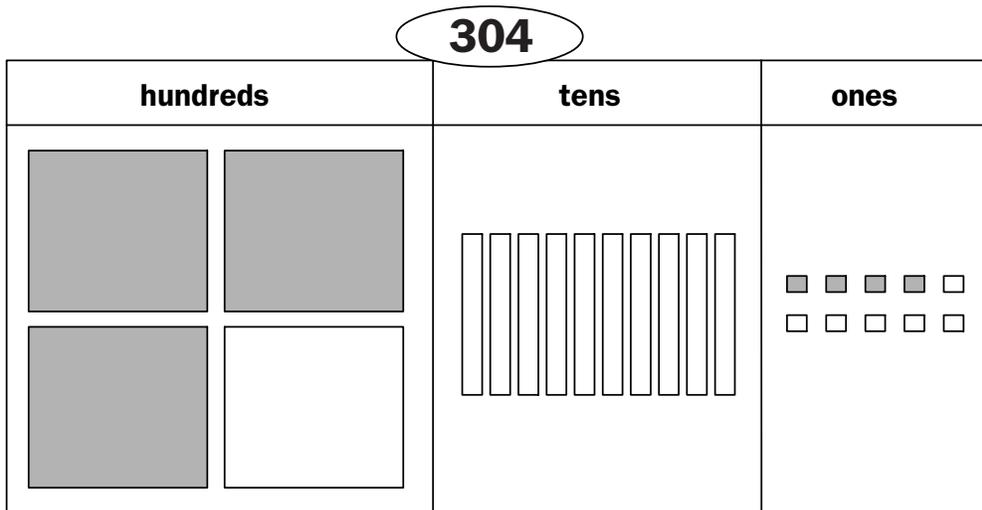
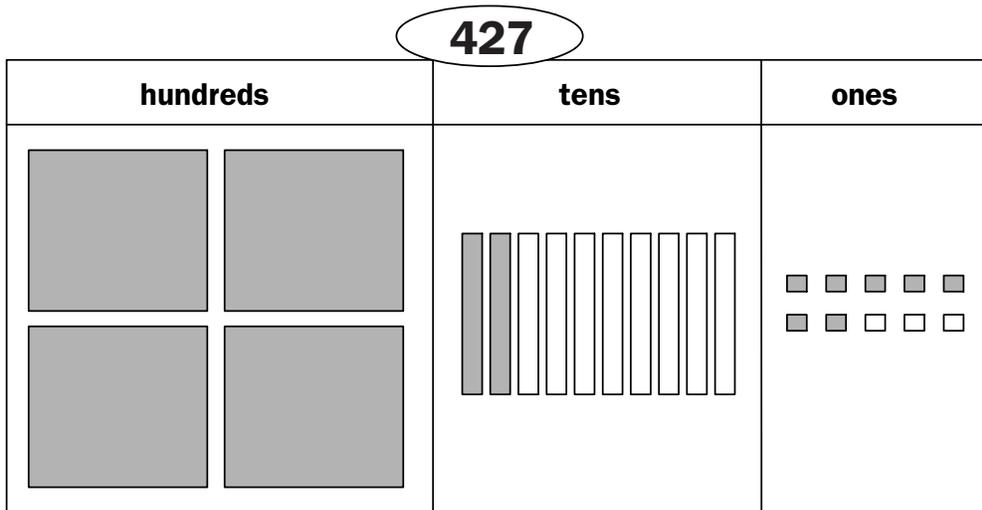
hundreds		tens	ones
			
			
			
			

Note: The order of the answers to problem 8 may vary, but the student should include the two answers shown above.

Comparing 3-Digit Numbers: Answer Key

At the computer, open the base-10 blocks manipulative and follow the instructions below.

- Use the online base-10 blocks to show 427 and 304 in standard form. Then color the blocks in the place value mats below to show your work.



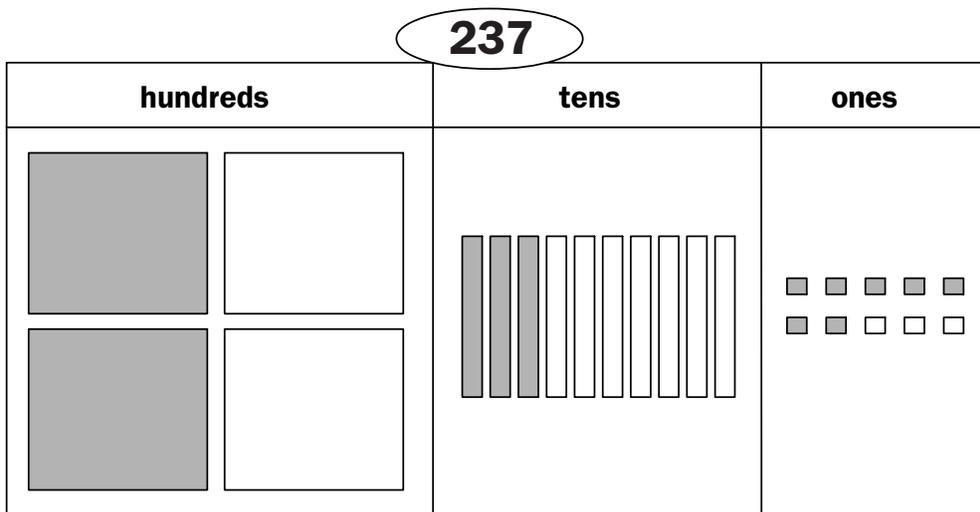
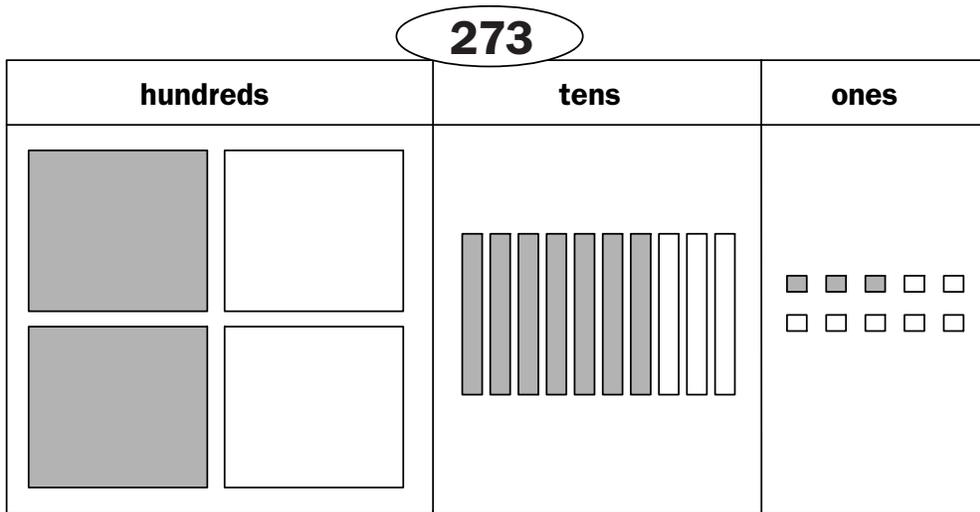
- Now circle the correct number sentence. **427 > 304** 427 < 304

- Look at the blocks that show both numbers and explain the answer you gave in problem 2.

(Answers may vary.) The number 427 has 4 hundreds, and the number 304 has 3 hundreds. Because

4 > 3, then 427 > 304.

4. Use the online base-10 blocks to show 273 and 237 in standard form. Color the blocks in the place value mats below to show your work.



5. Now circle the correct number sentence.

273 > 237

$273 < 237$

6. Look at the blocks that show both numbers and explain the answer you gave in problem 5.

(Answers may vary.) Both numbers have the same number of hundreds, but 273 has 7 tens and 237 has

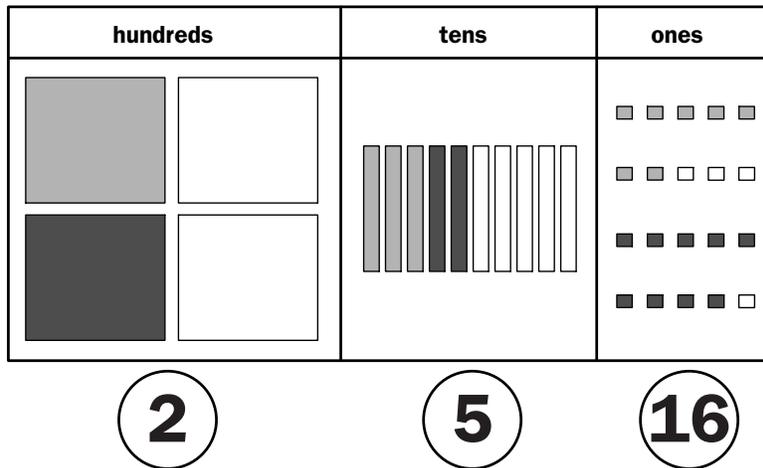
only 3 tens. Because $7 > 3$, then $273 > 237$.

It All Adds Up: Answer Key

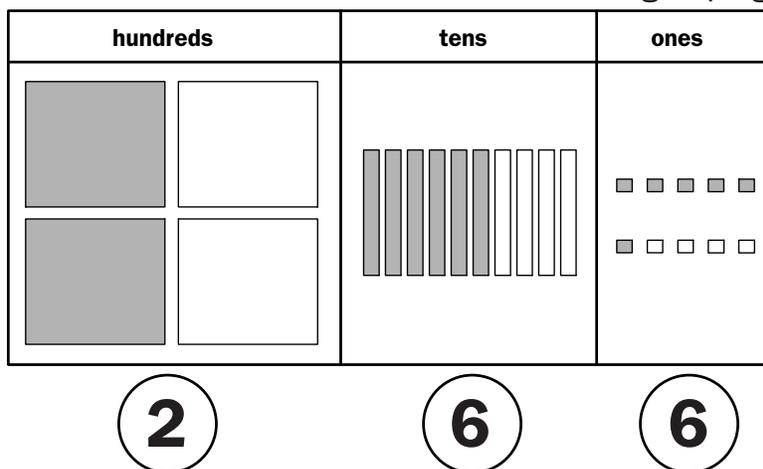
At the computer, open the base-10 blocks manipulative and follow the instructions below.

Find the sum of **137** and **129**.

- Put blocks that show the first addend, 137, on the online place value mat. Color the blocks on the place mat below to show your work.



- Keep the blocks showing 137 on the online mat and add blocks to show 129 more. Use a different color to color the blocks on the mat above to show this number.
- In each circle, write the total number of hundreds, tens, and ones in each place.
- Now look at the blocks on the computer screen. The ones place has more than 9 ones, so you can regroup. Click  that points from the ones place to the tens place. Color the blocks on the mat below to show this regrouping.

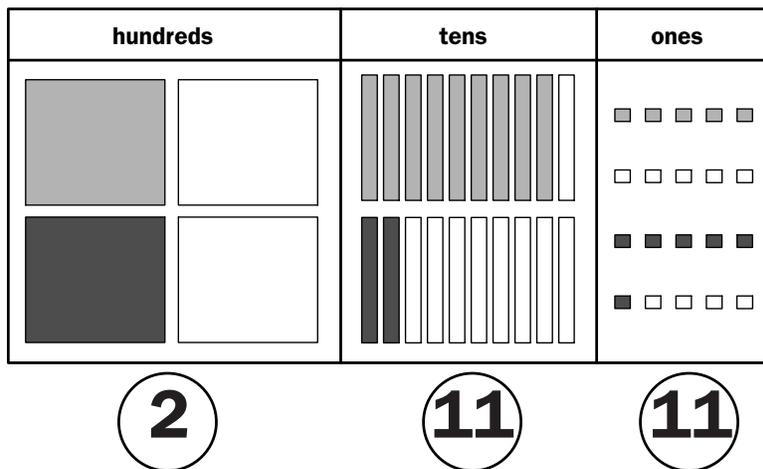


- Write the digit in each circle that shows the value of each place.
- What is the sum of 137 and 129? **266**

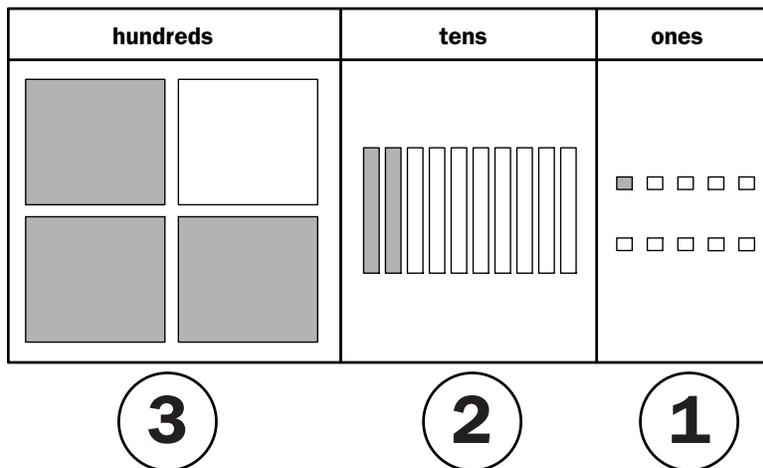
It All Adds Up: Answer Key

Find the sum of 195 and 126.

- Put blocks that show the first addend, 195, on the online place value mat. Color the blocks on the place mat below to show your work.
- Keep the blocks showing 195 on the online mat and show the second addend, 126. Use a different color to color the blocks below to show this number.
- In each circle, write the total number of hundreds, tens, and ones in each place.



- Now look at the blocks on the computer screen. The ones and tens places have more than 9 ones, so you can regroup. Click the regrouping arrows to regroup the blocks in both places. Color the blocks on the mat below to show these regroupings.



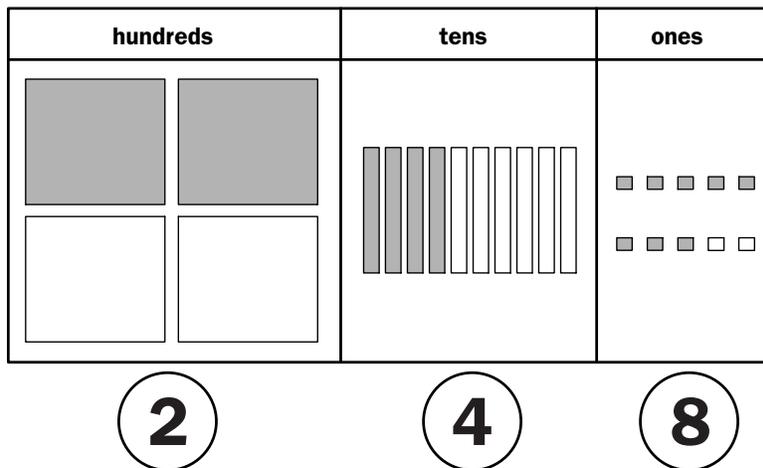
- Write the digit in each circle that shows the value of each place.
- What is the sum of 195 and 126? **321**

What's Left?: Answer Key

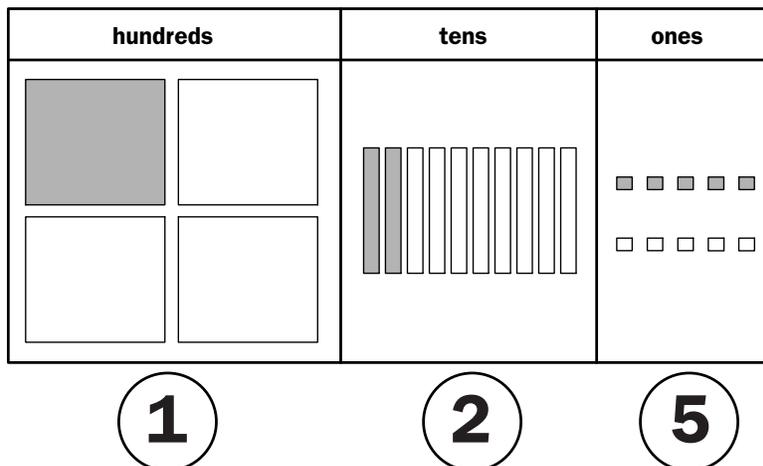
At the computer, open the base-10 blocks manipulative and follow the instructions below.

Subtract: 248 - 123.

1. Use the online base-10 blocks to show 248 on the place value mat.
2. Color the blocks below to show your online work. In each circle, write the number of hundreds, tens, and ones in each place.



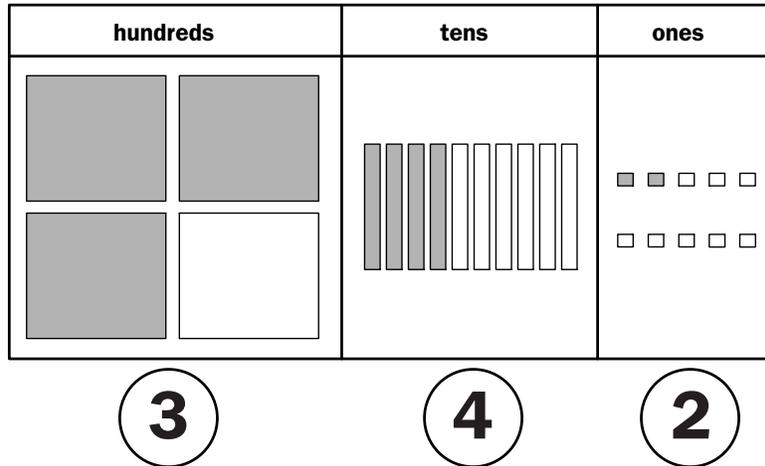
3. Now, to subtract 123, start in the ones place and remove 3 ones. Next, remove 2 tens. Finally, remove 1 hundred. Color the blocks on the mat below to show the number of blocks that are left on the mat.
4. In the circles below the each place on the mat below, write the number of hundreds, tens, and ones in each place.



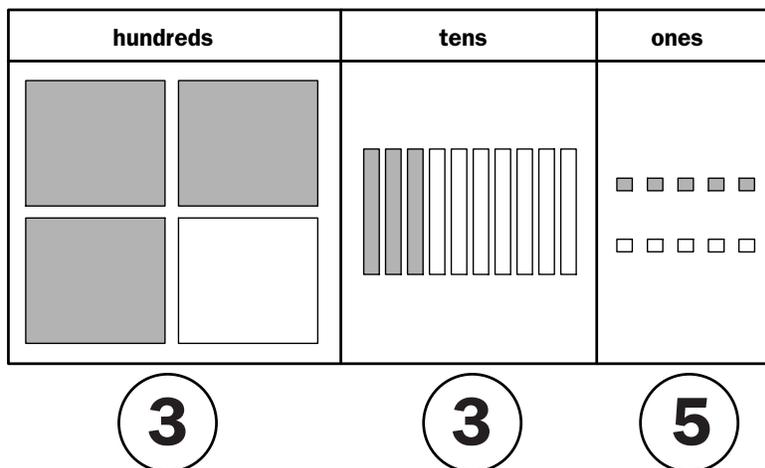
5. Complete the number sentence. $248 - 123 = \underline{125}$

Subtract: 342 - 227.

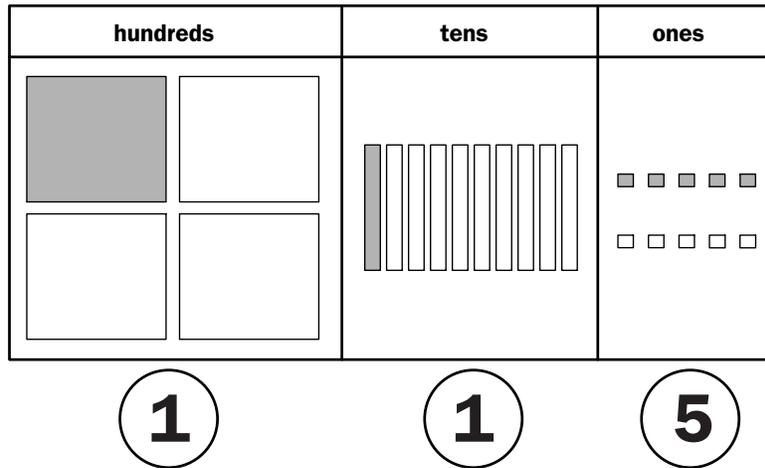
1. Use the online base-10 blocks to show 342 on the place value mat.
2. Color the blocks below to show your online work. In each circle, write the number of hundreds, tens, and ones in each place.



3. Now, to subtract 227, start in the ones place. You cannot take 7 ones away from 2 ones. So, click the purple arrow pointing from the tens place to the ones place to regroup 1 ten. Then, remove 7 ones. Color the blocks on the mat below to show $342 - 7$ and write a number in the circle under each place.



4. Now, remove 2 tens and 2 hundreds. Color the blocks below to show what's left and write a number in the circle under each place.



5. Complete the number sentence. $342 - 227 = \underline{115}$