

# **Lesson Plans from Brain POP Jr.**

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# Place Value

## Background Information & Activities



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Help your children understand the relationship between numbers and place value. Place value is the value of a digit depending on its position in the number, such as ones, tens, hundreds, and thousands places. Any number can be broken down by its place value. For example, 32 can be broken down into 32 ones or 3 groups of ten and 2 ones. We recommend giving your children plenty of manipulatives to explore and represent a variety of numbers.

Remind your children that a number is made up of digits or numerals. For example, the number 3 has one digit, while the number 987 has three digits, 9, 8, and 7. Discuss numbers with your children. What is the biggest number they can find in the room? What is the biggest number they can think of? Help children understand that numbers can be infinitely big or small. Each digit in a number stands for a group, called a place value. Our system of number or writing numbers is called a base-ten system because it is based on groupings of 10.

Show the numbers 1 through 9 to your children and name them out loud. We recommend watching the [Even and Odd](#) movie together as a review. You may also want to count different groups of items up to 9 and write the number on the board. We recommend demonstrating with base-ten blocks or connecting cubes. Numbers with one digit have only one place value, the ones place.

Remind your children that when you combine 10 ones, you get a group of ten. Write the number 10 on the board. The digit 1 shows that there is 1 one group of ten and 0 ones. Then show a two-digit number such as 36. The digit farthest to the right is the ones place. That number tells you how many ones are in the number. The digit to its left is the tens place. It tells you how many tens are in the number. Use base-ten blocks or connecting cubes to show that 36 can be shown with 36 ones or with 3 groups of ten and 6 ones.

When you are sure your children thoroughly understand tens and ones, explain that when you combine 100 ones, you get a group of one hundred. When you combine 10 tens, you get a group of one hundred. You can demonstrate different groupings using connecting cubes or base-ten blocks. The third digit

from the right shows how many hundreds are in the number. So the number 954 has 9 hundreds, 5 tens, and 4 ones. The number 520 has 5 hundreds, 2 tens, and no ones. You may want to explore using the blocks and writing out the numbers in expanded form:  $954 = 900 + 50 + 4$  and  $520 = 500 + 20 + 0$ . Remind your children that when they read a three-digit number, they must read the first digit, then say “hundred,” and then say the rest of the number, as in nine hundred fifty-four and five hundred twenty.

When you combine 1,000 ones, you get a group of one thousand. When you combine 100 tens, you get a group of one thousand. When you combine 10 hundreds, you also get a group of one thousand. When they are ready, model different groupings of a thousand for your children using blocks. The fourth digit from the right is the thousands place and tells how many thousands are in the number. So in the number 4,392 there are 4 thousands, 3 hundreds, 9 tens, and 2 ones. Children should know that when writing a four-digit number, they should place a comma after the thousands place. As they see bigger numbers, they should notice that commas are placed after every three digits from the right. Explain that when they read a number in the thousands, they should say the first digit, say the word “thousand,” and then say the rest of the three-digit number as usual, as in four thousand three hundred ninety-two.

Reading numbers with zeros or ones in the middle can be challenging for some students because they must remember to hold the place of the digit without saying its exact name. Demonstrate how to read numbers like three hundred eight, four thousand twenty one, six hundred twelve, or five thousand four hundred nineteen. It’s helpful to remind children to read the final two numerals together as a simple two-digit number.

Expose your children to a wide variety of numbers in different contexts, such as in books or on flyers and signs. Have them read different numbers out loud and explore how they can be divided into their place values. We recommend using number lines, connecting cubes, base-ten blocks, place value charts, and hundred charts to help children visualize numbers in different ways.



[See more lesson plans and resources: BrainPOP Educators.](#)

# Place Value Teacher Activities



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## Place Value Bingo

Make bingo cards using different numbers. You may want students to make their own bingo cards using one-, two-, or three-digit numbers and then have them swap cards with other students. Then call out different numbers or clues such as “any number with 3 in the ones place” or “any number with no tens.” The first person to get bingo can call out numbers in the next round.

## Bean Bag Number Toss

Take 10 separate pieces of paper and label them each from 0 to 9. Then give a student one, two, or three bean bags to throw at different numbers to create a number. For example, if a student throws bags on a 2 and a 3, he or she forms the number 23. Write the number on the board and have students say the number out loud and model the number using manipulatives. Have students take turn throwing bean bags.

## Number Clues

Model a number story for your students, such as “There are 7 tens, 1 one, and 9 hundreds.” Then have students write their answers. Divide the students into small groups and have them write or tell each other their own number stories. You may want them to use place value charts to help them solve.

## Roll to 100

Students work in pairs to play this collaborative game. They take turns rolling one or two dice and then showing the total of their roll with interlocking cubes or base-ten blocks. They keep rolling and amassing more cubes or blocks and when they have a group of 10 ones, they can swap it for a rod of 10. They can keep track of how many cubes they have by lining them up on or next to a hundred chart. When they have collected 100 cubes they can play again.

# Place Value Family Activities



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## Number Hunt

Take a walk with your child around the neighborhood. Look for one-, two-, three-digit numbers and have your child read them out loud. You may want your child to record the numbers that he or she sees. Discuss each number and ask how many ones, tens, or hundreds are in the number. What is the largest number you can find? What is the smallest number?

## Hat Trick

Write the numbers 0 through 9 on separate index cards or scraps of paper and place them in a hat. Have your child draw one, two, or three cards out of the hat. He or she can make different numbers. For example, if your child pulls the numbers 3, 6, and 9, he or she can make 3, 6, 9, 36, 39, 396, 693, etc. Challenge your child to make as many numbers as possible using the cards. What is the smallest number your child can make? What is the largest number? Help your child compare numbers by looking at the largest place values.

## Base Ten Strips

Make your own manipulatives with your child at home. On one-inch graph paper have your child color 20 single boxes and then color 20 strips of 10. Help your child cut out the strips and singles. Then you can keep them in a zip-top bag and use them to make numbers that you pick out of a hat or play other number games with them. Your child can even build his or her own 100 chart by gluing 10 strips of 10 onto a poster board and labeling the numbers.



Cut out and use the flash cards to make numbers!

Name: \_\_\_\_\_

1. Cut out each card.
2. Write the number each model shows on the back of the cards.
3. Place one, two, or three cards in the chart.
4. Ask a friend to tell you what number you made.

HUNDREDS	TENS	ONES

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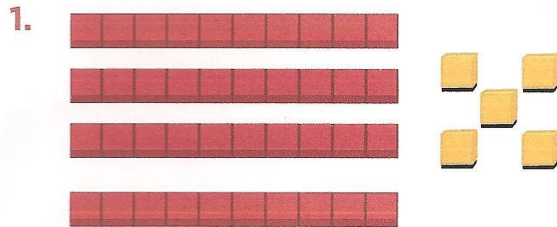
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# Place Value Easy Quiz

**DIRECTIONS:** Circle the best answer.

Name \_\_\_\_\_



How many blocks are there?

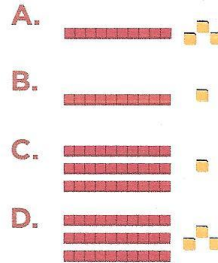
- A. 54
- B. 50
- C. 45
- D. 40



How do you write the number above using words?

- A. one sixteen seven
- B. sixty-seven one hundred
- C. sixteen hundred seven
- D. one hundred sixty-seven

3. Which set of blocks shows the number 13?



4. Which is the largest number?

- A. 98
- B. 103
- C. 75
- D. 22

5. Which number has 7 in the tens place?

- A. 17
- B. 7
- C. 701
- D. 73

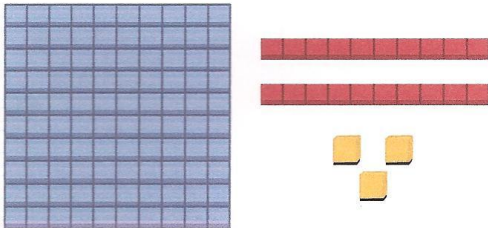


# Place Value Hard Quiz

**DIRECTIONS:** Circle the best answer.

Name \_\_\_\_\_

1.



How many blocks are there?

- A. 123
- B. 231
- C. 13
- D. 33

2.



Which number is in the hundreds place?

- A. 8
- B. 6
- C. 3
- D. 5

3. What is 100 MORE than 580?

- A. 590
- B. 680
- C. 780
- D. 508

4. Which sum is the greatest?

- A. 1 hundred + 23 ones
- B. 1 hundred + 2 tens
- C. 9 tens + 5 ones
- D. 7 tens + 55 ones

5. Which set of blocks shows the number 300?

- A.
- B.
- C.
- D.

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# Comparing Numbers

## Background Information & Activities



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When your children practice comparing numbers, they develop number sense and build number relationships. We recommend using plenty of counters, base-ten blocks, number lines, hundred charts, and place value charts to help them understand how numbers are ordered. In math, an inequality is a statement about the relative size or order of two objects, numbers, or values. Introduce your children to the three basic symbols used in inequalities: greater than ( $>$ ), less than ( $<$ ), and equal to ( $=$ ).

Show your class two small groups of cubes, pennies, or other small objects and ask them which group has the greater number. Explain that in math the word “greater” usually means “more”. Draw or show a number line from 0 to 10 to your children and pick a number, such as 4. Ask them to pick a number on the number line that is greater than 4. Children should pick 5, 6, 7, 8, 9, or 10. Explain that since these numbers come after 4 on a number line, they are larger or greater. Have children practice writing or saying a statement using the term “greater than.” For example, a student might say that “5 is greater than 4.” Try the activity again using a hundred chart and broadening the range of numbers they can choose. Review with your children that  $>$  is the greater than sign. Have them rewrite their sentences using the symbol, as in “ $5 > 4$ ”. The wider part of the symbol faces the bigger number. Repeat these same activities, starting with the number line, to introduce the symbol for “less than”. Show your students that the corner, or point, of the symbol faces the smaller number.

Many children become confused with the direction the greater than and less than signs should face. It is helpful for many children to imagine that the symbol is a mouth of a hungry alligator or duck. It always wants to eat the bigger number! Have children practice writing different inequalities using the symbols. Point out how if you reverse the positions of a number in an inequality, the sign reverses direction too, as in  $3 < 4$  and  $4 > 3$ .

Together, create a number sentence, such as  $2 + 3 = 5$ . Point out the equal sign and remind them that the equal sign means that the values on either side are equal, or the same. You may want to use counters to demonstrate that a group of 2 and a group of 3 have the same number of counters in all as a group of 5,

and show the corresponding number sentence on a chart. Both sides of the equal sign are the same value. Pick a number on a number line or hundred chart and ask them what number is equal.

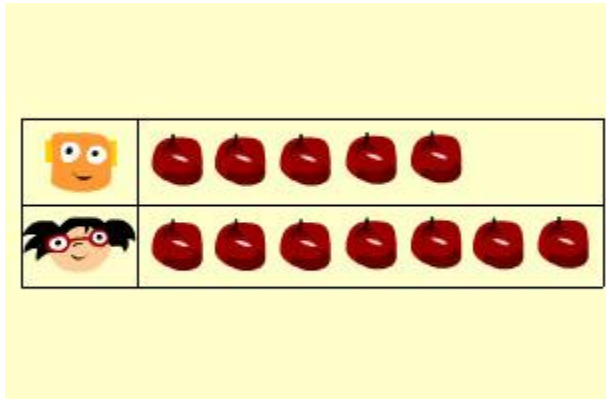
When children must compare larger numbers that are two or three digits long, they should look at the highest place value. So 138 is greater than 41 because 138 has one hundred while 41 has no hundred. If numbers have the same number of places, children should compare the highest and then go down by place to compare the numbers. So while 245 and 238 both have two hundreds, 245 has four tens while 238 only has three tens. Therefore, 245 is greater than 238. Remind them to look carefully and make sure they compare the same place values in each number. For example, just because 245 has more tens than 327, doesn't mean that it is a larger number.

Expose your children to number lines and hundred charts and give them plenty of manipulatives so they can have hands-on experience working with numbers. Concrete examples help children develop strong number sense and allow them to see patterns and understand how numbers are connected.



[See more lesson plans and resources: BrainPOP Educators.](#)

# Comparing Numbers Teacher Activities



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## Class Hundred Chart

Using hundred pieces of scrap paper, index cards, sticky notes, or chalk, have your whole class create a large hundred chart on the floor. Then have a few student volunteers pick a number and stand on it. Each student should call their number out. Then give different directions, such as “Find a number that is greater than the number you are standing on” or “Find a number that is 10 less than the number you are standing on.” Take turns so every student gets to stand and move on different numbers.

## Rocking Out

Have your students collect small rocks from their homes or around the schoolyard. Then have students bring in their rocks and count them. Then divide the class into small groups and have them make inequalities using their collections. Have them write their number sentences in words and using numbers and symbols. As an extension you can ask them to figure out how many more or less rocks they have than another member of their group.

## Secret Number

Have partners each think of a secret number. Then have each person write down or say different clues to help the partner find the secret number. For example, one person might say “This number is less than 9, but greater than 3.” The partner can write down possible answers and then the person can give more clues to help narrow the number down. When the secret number is found, partners can switch roles.

# Comparing Numbers Family Activities



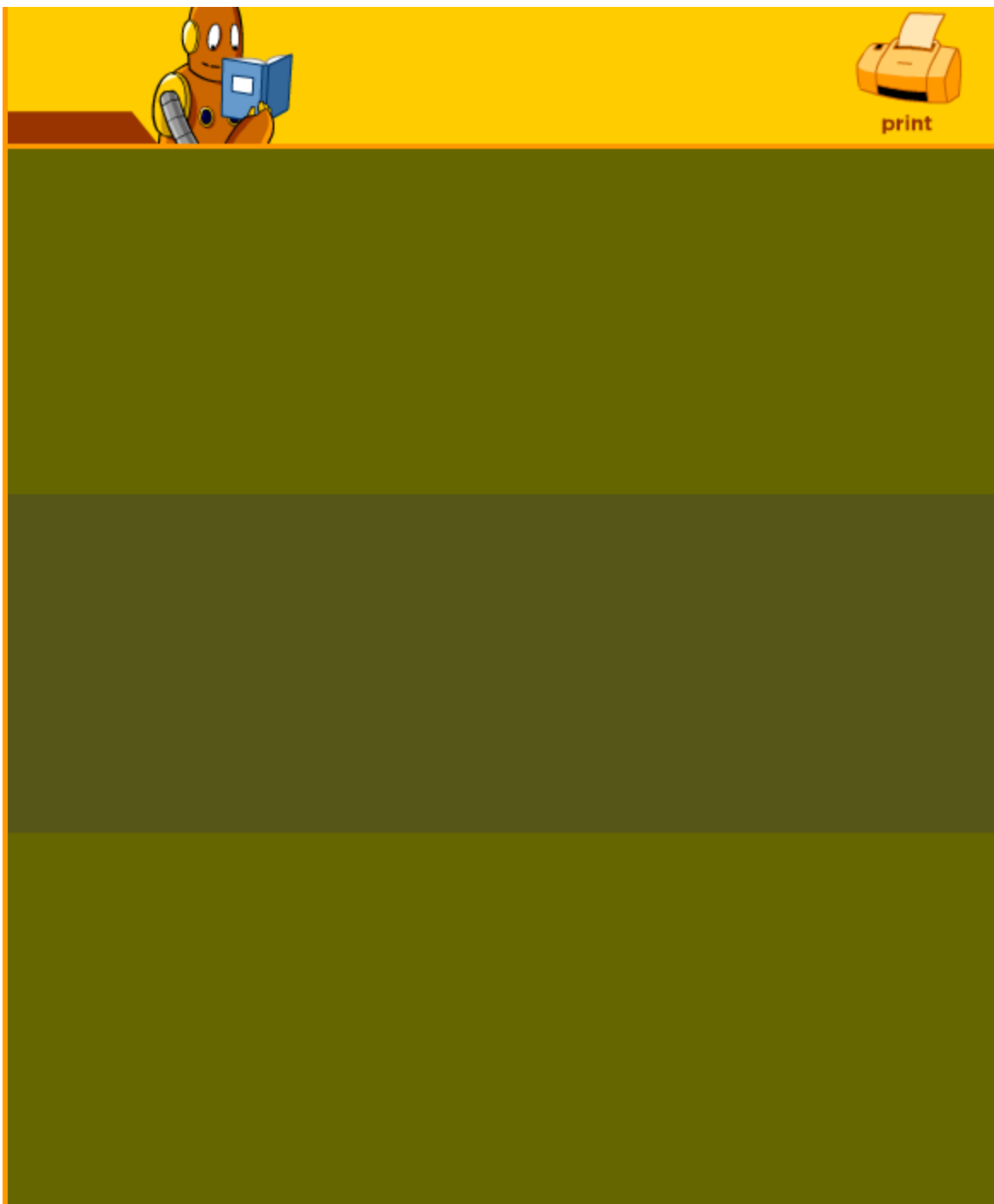
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## Greater than or Less than?

Together with your child, go through your home together and count different objects. For example, you might want to count the number of chairs in the kitchen and then count the number of chairs in another room. Then have your child say and write a number sentence comparing the number. He or she may want to draw pictures and use the greater than, less than, or equal to symbols. Then ask your child to find objects that are greater than, less than, or equal to a number. For example, you might ask your child to find a group of something that is equal to the number of chairs in the kitchen or the total number of chairs in your home. This would allow your child to practice adding skills as well as practice inequalities.

## To the Letter

Connect math and spelling together. Together with your child collect a group of spelling words in a list. How many letters does each word have? Which words have more letters? Which words have fewer letters? Which words have the greatest or least number of letters? Which words have the same number of letters? Then have your child write “number” sentences using the words and the appropriate inequality symbol.



The main content area of the page is a large rectangle with a yellow header and a dark olive green footer. The central area is divided into three horizontal bands of different shades of green: a top band of medium green, a middle band of dark olive green, and a bottom band of medium green. This layout is designed for students to write or draw their work on place value.





A large rectangular area with a dark olive green background, divided into three horizontal sections by thin lines. This area is intended for student work or notes.



# Comparing Numbers Easy Quiz

**DIRECTIONS:** Circle the best answer.

Name \_\_\_\_\_

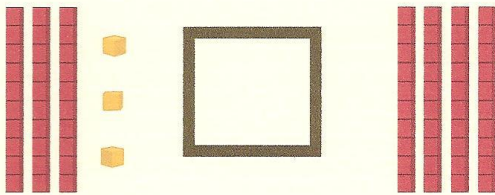
1.

$$\underline{\quad} < 29$$

Which number makes the number sentence above TRUE?

- A. 65
- B. 31
- C. 29
- D. 18

2.



Which symbol belongs in the box?

- A. >
- B. <
- C. =
- D. +

3. Moby has 48 pennies. Mia has 91 pennies. Which number sentence compares how much money they have?

- A.  $48¢ + 91¢$
- B.  $48¢ = 91¢$
- C.  $48¢ < 91¢$
- D.  $48¢ > 91¢$

4. Grandpop picks more than 16 flowers, but less than 25. How many flowers could he have?

- A. 25 flowers
- B. 13 flowers
- C. 27 flowers
- D. 18 flowers

5. Which is greater than 62?

- A.
- B.
- C.
- D.



# Comparing Numbers Hard Quiz

**DIRECTIONS:** Circle the best answer.

Name \_\_\_\_\_

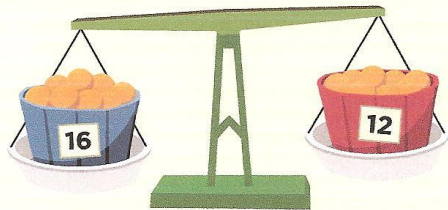
1.

Number of Shells	
Moby	5
Mia	11
Grandpop	6

Moby, Mia, and Grandpop collected shells at the beach. Which sentence is TRUE?

- A. Grandpop collected more shells than Mia.
- B. Mia collected fewer shells than Moby.
- C. Moby has one less shell than Grandpop.
- D. Grandpop collected the most shells.

2.



What should you do to balance the scale so the sides are equal?

- A. Take away 1 orange from the blue basket.
- B. Take away 12 oranges from the blue basket.
- C. Add 6 more oranges to the red basket.
- D. Add 4 more oranges to the red basket.

3. Which number sentence is correct?

- A.  $110 < 109$
- B.  $332 < 312$
- C.  $613 < 778$
- D.  $273 = 299$

4. Moby has 5 pins and gets 3 more. Mia has 6 pins and gets 2 more. Which number sentence compares how many pins they have?

- A.  $5 + 3 = 6 + 2$
- B.  $5 + 3 > 6 + 2$
- C.  $5 + 3 < 6 + 2$
- D.  $5 + 3 \times 6 + 2$

5. How do you know that 154 is greater than 138?

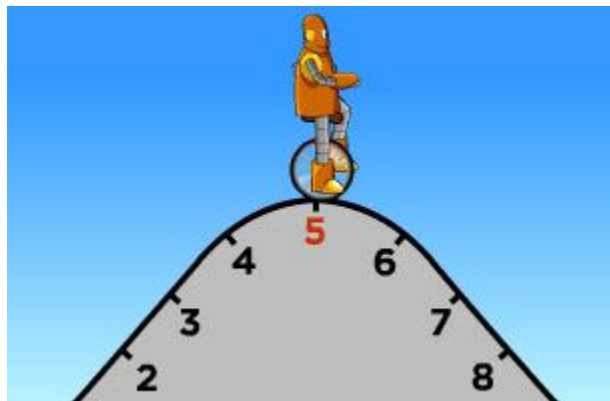
- A. The number 154 has more tens than 138.
- B. The number 154 has less ones than 138.
- C. The number 154 has more hundreds than 138.
- D. The number 154 has more thousands than 138.

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# Rounding Background Information & Activities



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This movie will introduce estimation and rounding and explain how to round numbers to the nearest tens and hundreds place. We recommend watching the movie and exploring the features over the course of a week or more. You may want to watch the movie again after children are more familiar with the skill and then stop the movie when there is a number on the screen. Encourage children to round the numbers that are on the screen before Annie and Moby do!

Review with children that when you estimate, you use what you know or see to make a reasonable guess about an amount. Estimate different amounts together, such as the number of books on a shelf, number of marbles in a bowl, or the length of a desk. Go through reasonable and unreasonable estimates together. Explain that when people estimate, they round numbers to make them easier to work with. This means changing numbers so that they end in a zero (or several zeroes).

Show the number 38 on a number line from 30 through 40. Guide children to see that 38 is closer to 40 than it is to 30. So, we round 38 up to 40. Then show the number 31 on the number line. Help children see that 31 is closer to 30 than to 40. So, we round 31 down to 30. Then show the number 35 on the number line. Some children may point out that the number is right in the middle between 30 and 40. Explain that when a number ends in 5, it is right in the middle of two tens, and we round up. So, 35 rounds up to 40. If a two-digit number ends in 0, then it is already rounded to the nearest ten!

To show children how to round without a number line, present a number to children and point out the ones place. Explain that when you round to the nearest ten, you look at the digit in the ones place to help you decide whether to round up or round down. If the digit is less than 5, you round down to the nearest ten. If the digit is 5 or greater, you round up to the nearest ten. It may be helpful for children to imagine a hill with the numbers 1 through 10 going up and over the hill, with the 5 at the top of the hill. When you reach the top of the hill (5), it's easier to go over to the higher number (10).

Practice different examples together using number lines, hundred charts, and/or place value charts.

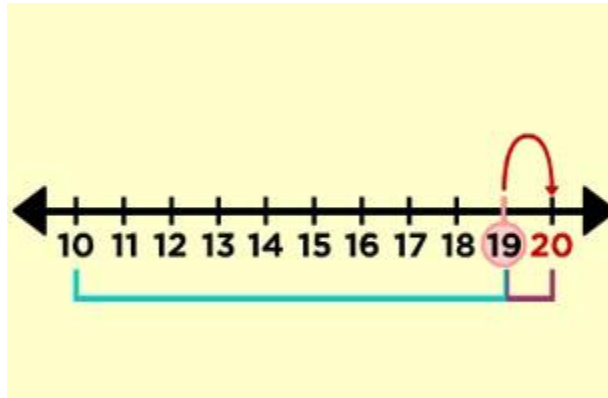
After children feel comfortable with rounding to the nearest ten, challenge them to round to the nearest hundred. Show the number 413 on a number line between 400 and 500. Which hundred is 413 closer to, 400 or 500? Help children see that 413 is closer to 400, so we round 413 down to 400. Then present 489 on the number line. Ask children if they should round the number down to 400 or up to 500? Why? Repeat the activity with 450. Remind children that when a number is right in the middle between two numbers, they should round up. Explain that when they round to the nearest hundred, they look at the digit in the tens place to help them decide whether to round up or round down. If the digit in the tens place is less than 5, round down. If the digit in the tens place is 5 or greater than 5, round up. If there are zeroes in the tens and ones places, then the number is already rounded to the nearest hundred! Round different three-digit numbers together and have children explain how and why they rounded up or down.

Discuss with children why rounding numbers might be useful. Challenge children to come up with numbers and have partners round them to the nearest ten or hundred. Give plenty of opportunities where children can practice the skill and become experts!



[See more lesson plans and resources: BrainPOP Educators.](#)

# Rounding Teacher Activities



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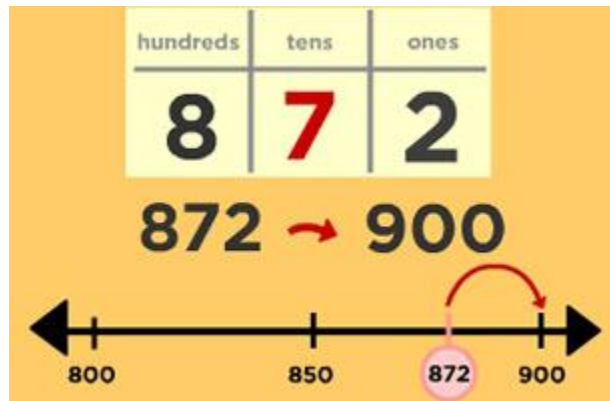
## Round and Round

Have each student randomly draw a digit from 0 through 9 from a hat. You may wish students to wear their digits around their necks or use sticky notes attached to their clothes. Then have students mingle around the room and find a partner. Have them identify and write down a two-digit number they can form together using the digits they're wearing. Then have partners round up or down to the nearest ten. You may want children to then reverse the digits and round up or round down again. You can repeat the activity by having students gather in groups of three to make a three-digit number.

## Number Line Hop

If possible, go outside and have small groups draw number lines on the concrete in chalk. You may wish to assign or randomly distribute specific number lines (10 through 20, 20 through 30, 30 through 40 and so on until 90 through 100). Have one group member call out a number that is on their number line. Another member can stand on the number on the line, and all together they can decide whether to round up or round down to the nearest ten. The group member standing on the number can hop to the nearest ten. Remind them that they should round to the multiple of ten they are closest to. If they are not sure whether to round up or round down, they can count their hops to each end of their number line and compare. Repeat the activity so that everyone has a turn to hop along the number line.

# Rounding Family Activities



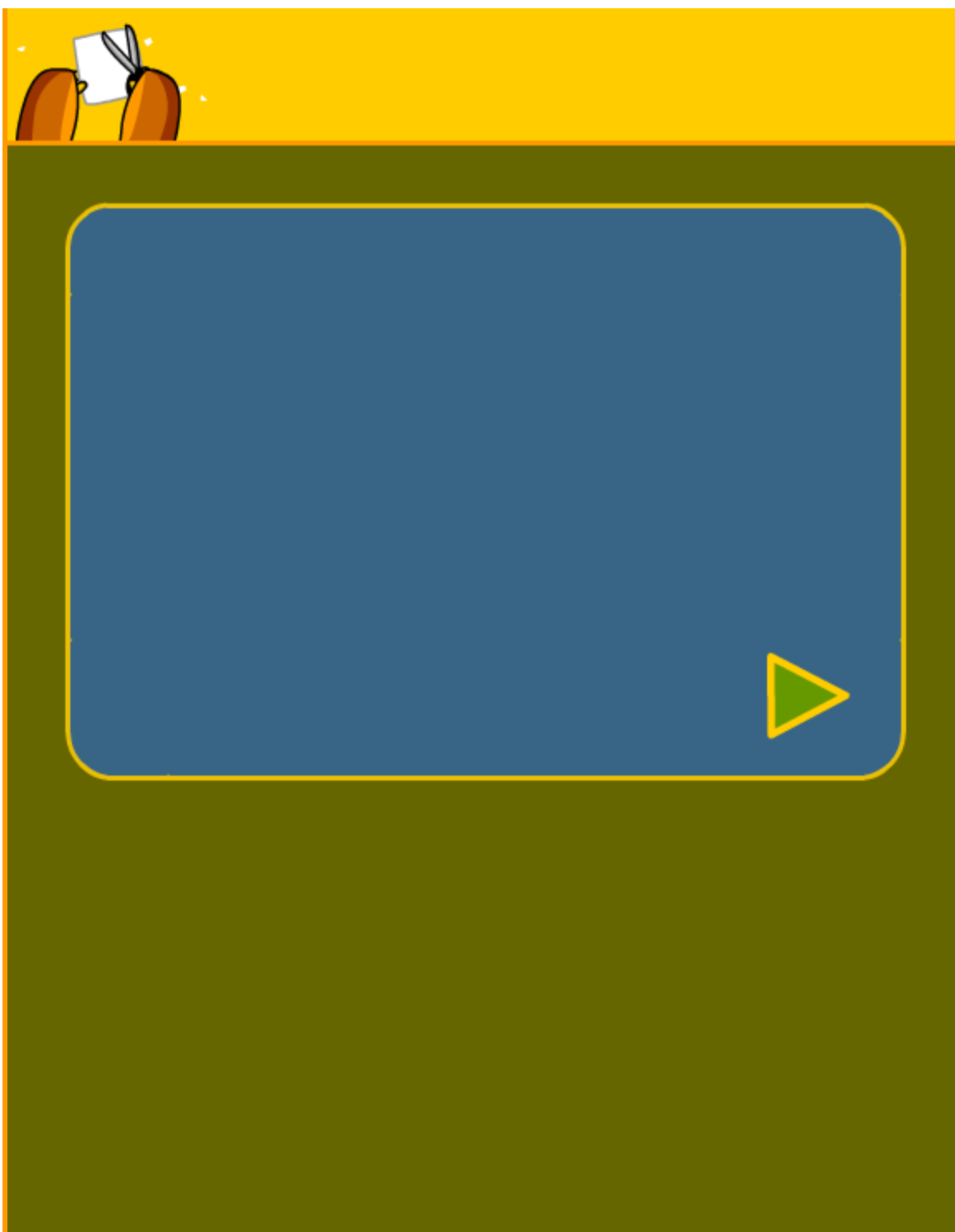
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## Open for Business

Set up an imaginary store in your home. Choose small items and label them with a price. Choose low amounts, such as a pencil for 12¢. Give your child some coins and count them together. Then have your child round each price and determine which items he or she could buy with the coins. Remind your child that he or she can only buy items that are less than or equal to the total amount of coins!

## Go the Distance

Map out the route from your home to a special destination, such as a relative's house, City Hall, the local library, or a museum. You may even want to choose farther distances, such as other cities or states. Then have your child round the distance to the nearest ten or hundred. Which is closest? Which is farthest away?







# ACTIVITY

Name: .....

Date: June 28, 2012

MATH > NUMBERS AND OPERATIONS > ROUNDING

## COMPLETE THE CHART

Round each number to the place values indicated in the chart.			
	TENS	HUNDREDS	THOUSANDS
119	.....	.....	.....
257	.....	.....	.....
682	.....	.....	.....
3,471	.....	.....	.....
12,673	.....	.....	.....
75,485	.....	.....	.....

## DESCRIBE IT

Describe three situations in which rounding could come in handy.

1. ....  
.....

2. ....  
.....

3. ....  
.....

# Brain POP® ROUNING

Date: \_\_\_\_\_

Name: \_\_\_\_\_

Class: \_\_\_\_\_

1 Rounding a number means:

- A Making it larger
- B Making it smaller
- C Changing it to a simpler one
- D Multiplying it by itself

2 In the following number, what is the place value of the 3?

[437,981]

437

- A Tens
- B Tenths
- C Hundreds
- D Hundredths

3 What do you have to know before you can round a number?

- A What its square is
- B Where it falls on the number line
- C How large the number is
- D What place value you're rounding to

4 If you're rounding to the nearest hundred, when do you round up?

- A When the tens digit is five through nine
- B When the tens digit is one through four
- C When the tenths digit is five through nine
- D When the tenths digit is one through four

5 In the number 549.812, what digit holds the tenths place?

- A 9
- B 8
- C 4
- D 1

6 What is 549.812 rounded to the nearest ten?

- A 549
- B 549.8
- C 550
- D 500

7 What is 3,286 rounded to the nearest thousand?

- A 3,280
- B 3,290
- C 3,300
- D 3,000

8 What is 2.9857 rounded to the nearest hundredth?

- A 2.99
- B 2.98
- C 3.00
- D 2.986

9 What is 4,490.9 rounded to the nearest hundred?

- A 4,491
- B 4,000
- C 4,500
- D 4,490

10 What is 8.5439 rounded to the nearest tenth?

- A 8.0
- B 8.5
- C 8.54
- D 8.544

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# Rounding Easy Quiz

**DIRECTIONS:** Circle the best answer.

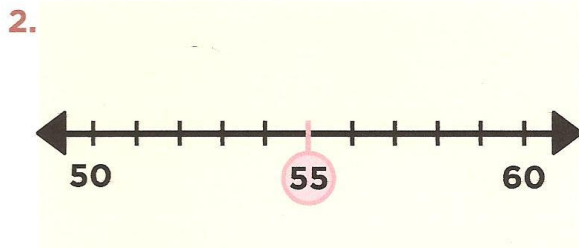
Name \_\_\_\_\_

1.

Name	Number of Shells
Moby	33
Mia	68
Grandpop	45
Becca	37

The chart shows how many shells people collected at the beach. Who collected about 40 shells?

- A. Moby
- B. Mia
- C. Grandpop
- D. Becca



Round 55 to the nearest ten.

- A. 40
- B. 50
- C. 60
- D. 70

3. Moby has a secret number. It rounds UP to 90. What is Moby's secret number?

- A. 83
- B. 84
- C. 87
- D. 91

4. Mia rounds the number of students in her school to the nearest hundred. Which number could be her answer?

- A. 506
- B. 719
- C. 600
- D. 940

5. How do you round 46 to the nearest ten?

- A. You round up to 50.
- B. You round down to 40.
- C. You keep the number the same.
- D. You subtract 10 from the number.



# Rounding Hard Quiz

**DIRECTIONS:** Circle the best answer.

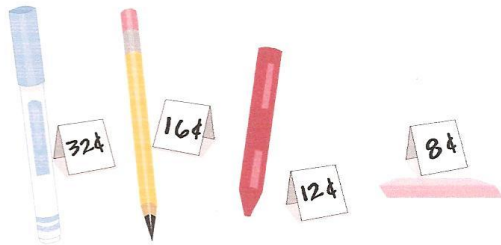
Name \_\_\_\_\_

1. Team	Number of Players
Lions	31
Cubs	24
Sharks	25
Tigers	28

The chart shows how many players are on each team. Which team has about 20 players?

- A. Lions
- B. Cubs
- C. Sharks
- D. Tigers

2.



Moby has 30¢. Which items could he buy? Round the prices to help you find the answer.

- A. pencil and pen
- B. pen and crayon
- C. pencil and eraser
- D. pen and eraser

3. Moby keeps track of how much he reads. This month, he read 862 pages. About how many pages did Moby read?

- A. about 800 pages
- B. about 700 pages
- C. about 900 pages
- D. about 600 pages

4. Moby has 22 stickers. He gets 10 more. How many stickers does he have now? Round the numbers to help you add.

- A. about 40 stickers
- B. about 30 stickers
- C. about 20 stickers
- D. about 10 stickers

5. Mia starts with a number. She rounds it DOWN to 600. Which number did she start with?

- A. 529
- B. 587
- C. 658
- D. 630

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# VOCABULARY ACTIVITY

Name: .....
Date: June 28, 2012

MATH > NUMBERS AND OPERATIONS > ROUNDING

## DEFINE Can you explain the terms below in your own words?

<p><b>PLACE VALUE:</b></p> <p>.....</p> <p>.....</p> <p><b>INTEGERS:</b></p> <p>.....</p> <p>.....</p> <p><b>TENS PLACE:</b></p> <p>.....</p> <p>.....</p> <p><b>HUNDREDS PLACE:</b></p> <p>.....</p> <p>.....</p> <p><b>DECIMALS:</b></p> <p>.....</p> <p>.....</p> <p><b>TENTHS PLACE:</b></p> <p>.....</p> <p>.....</p> <p><b>HUNDREDTHS PLACE:</b></p> <p>.....</p> <p>.....</p> <p><b>Choose an additional term from the movie to define.</b></p> <p>.....</p> <p>.....</p>
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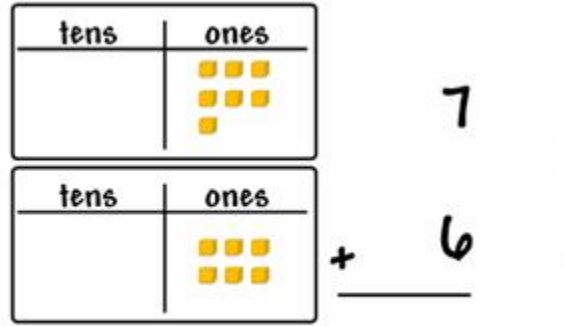
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## Adding with Regrouping

### Background Information & Activities



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Adding with regrouping can be a tricky concept for some children, so we recommend solving different number sentences together using number lines, hundred charts, and hands-on manipulatives, such as base-ten blocks. We also recommend reviewing math strategies that children can use to help solve number sentences that require regrouping. You may wish to review the [Doubles](#) and [Basic Addition](#) movies to brush up on a few strategies. This movie will cover addition with regrouping involving two-digit and one-digit numbers.

Show children the number sentence  $8 + 6$ . Use a number line or hundred chart to solve together. Then use base-ten cubes to show the numbers 8 and 6. Remind children that a tens rod is equal to 10 cubes. They can group 10 cubes together to form 1 tens rod. That means there will be 4 cubes left over. What number does that show? Encourage children to count the ones and the tens to make the number instead of counting each cube one by one. Show that  $8 + 6 = 14$ . Explain to children that when they regroup, they gather ten ones to make one group of ten. Repeat the activity again to solve  $15 + 9$  and  $39 + 6$ . Use base-ten blocks and have children combine the cubes into rods to find each sum.

After children are familiar with regrouping using manipulatives, invite them to solve number sentences using pencil and paper. Show the number sentence  $17 + 8$  in vertical form. Remind children that when they add numbers with more than one digit, they add the ones column first, then add the tens column. What is  $7 + 8$ ? Some children may remember that since  $8 + 8 = 16$ ,  $7 + 8$  will be one less than 16, or 15. Teach them how to write 5 in the total and then carry the 1 over to the tens. Then add the tens column:  $1 + 1 = 2$ . Therefore,  $17 + 8 = 25$ . Solve more number sentences together, such as  $56 + 9$  and  $87 + 4$ .

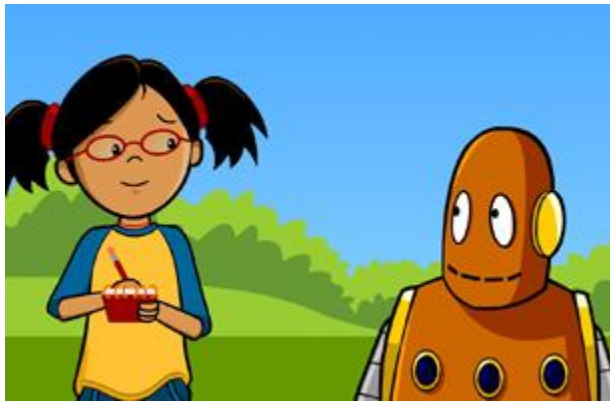
Present different word problems to children and have them make up their own

stories for other people to solve. Have children verbally explain how they add and regroup while solving number sentences using base-ten blocks or with pencil and paper. This will help them visualize and explain the process to themselves and gives you an opportunity to guide their thinking process if they run into errors. Encourage children to not give up or get too frustrated. Regrouping can be challenging but becomes much easier with time and practice!



[See more lesson plans and resources: BrainPOP Educators.](#)

## Adding with Regrouping Teacher Activities



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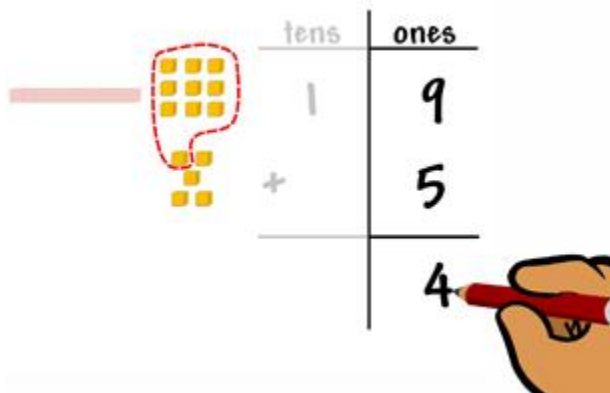
### Regroup!

Divide children into small groups and give each group a set of base-ten blocks. If you do not have enough sets, print out base ten block drawings from the Internet and cut them apart for students. Then, have one student in each group show a large number using only ones cubes. Other group members can discuss how to regroup the ones. Remind students that when they regroup, they gather ten ones to make one group of ten. Have students trade in 10 cubes for a rod. Then have one person in each group write the number represented by the base-ten blocks. Have students swap roles and regroup different numbers.

### Addition Stories

Have students make up their own word problems or addition story problems. Encourage them to use amounts that require addition with regrouping. You may wish to model a few examples for the class before having students write and illustrate their own word problems. You may also allow them to use manipulatives such as base-ten blocks or counters to solve. Afterwards, have students swap their work with a classmate to check over each other's work. Collect each child's paper and staple them together into a class book. Title the book "Our Addition Stories" and keep it in the class library for students to read throughout the year.

### **Adding with Regrouping Family Activities**



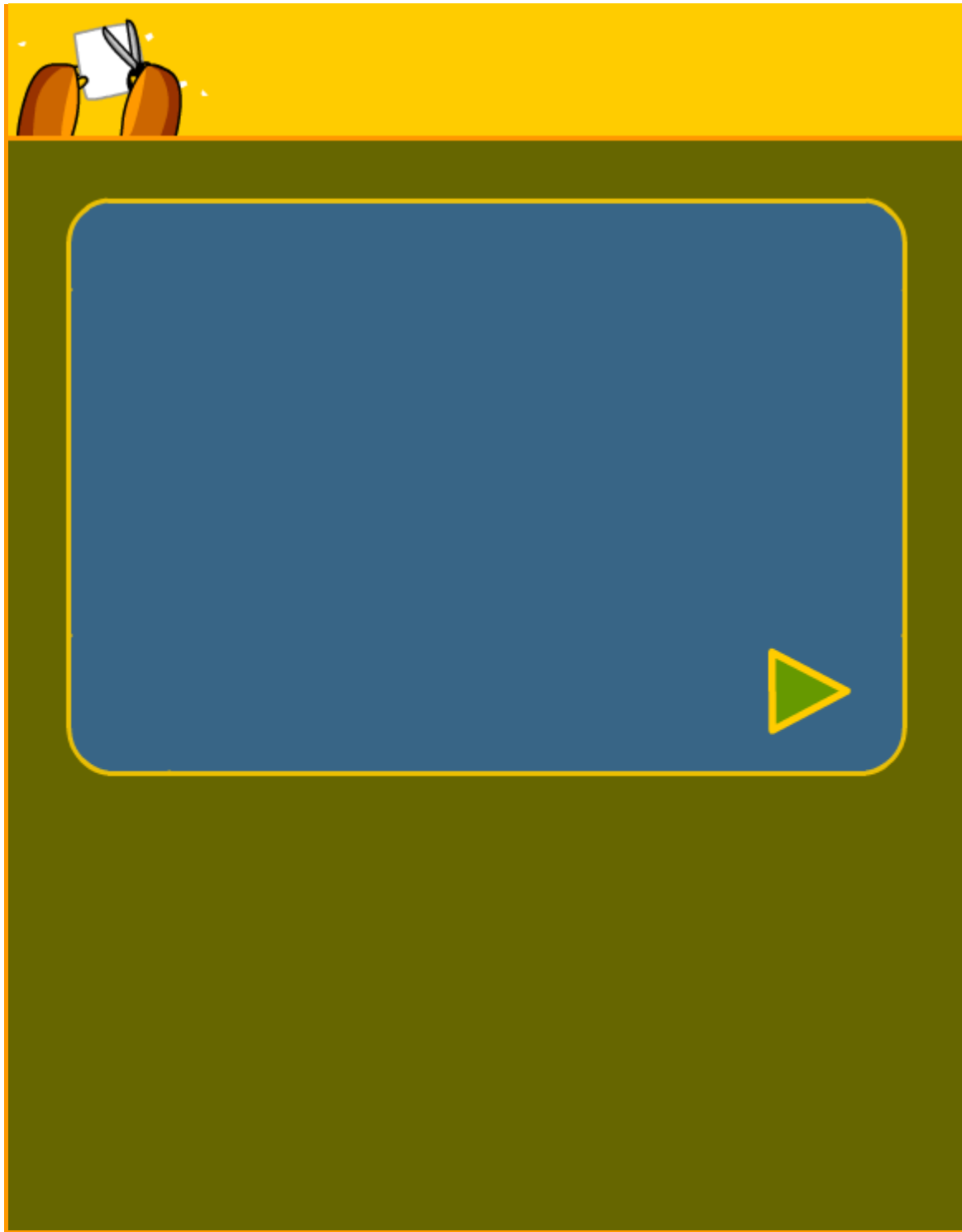
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### Think Out Loud

Present a number sentence, such as  $72 + 9$ . Then have your child solve the number sentence using pencil and paper. Have your child explain how he or she is solving the number sentence out loud. What is done first? What happens when you carry the one over to the tens place? Guide your child through the process, addressing any questions or misunderstandings, and then try the exercise again with other number sentences. You may want to also have your child write and draw about the steps in an addition with regrouping problem.

### Pennies and Dimes

Give your child a large collection of pennies and have him or her trade in groups of ten for dimes. Then count the coins. How much money is there? Remind your child to count the dimes first with skip-counting by tens, and then count on with the pennies. Repeat the activity with different numbers of pennies. Then have your child give you a collection of pennies to regroup. You may want to make a mistake when counting your coins and see if your child can correct you.







Place Value and Everything in its Place

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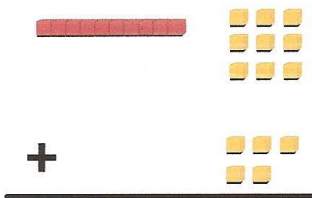








# Adding with Regrouping Easy Quiz

DIRECTIONS: Circle the best answer.

Name \_\_\_\_\_

1. 

What amount is shown?

- A. 
- B. 
- C. 
- D. 

2. 

$13 + 7 = \underline{\quad}$

Mia has 13 stickers. She gets 7 more. How many stickers does she have all together?

- A. 20 stickers
- B. 19 stickers
- C. 18 stickers
- D. 16 stickers

3. Moby has 9 blue marbles and gets 5 red marbles. Which number sentence shows how many marbles he has now?

- A.  $9 + 5 = 24$
- B.  $9 + 5 = 21$
- C.  $9 + 5 = 19$
- D.  $9 + 5 = 14$

4. Grandpop has 28 points. Then he wins 3 more points. How many points does he have now?

- A. 41 points
- B. 31 points
- C. 21 points
- D. 11 points

5. Which number sentence is CORRECT?

- A.  $10 + 2 = 11$
- B.  $22 + 9 = 30$
- C.  $7 + 6 = 13$
- D.  $8 + 8 = 15$



# Adding with Regrouping Hard Quiz

**DIRECTIONS:** Circle the best answer.

Name \_\_\_\_\_

1.



How can you regroup these rods and cubes?  
Remember, each rod is equal to ten cubes.

- A.
- B.
- C.
- D.

2.

Name	Shells
Mia	10
Becca	8
Moby	7
Grandpop	5

The chart shows how many shells people found at the beach. Which two people found a total of 13 shells?

- A. Mia and Grandpop
- B. Becca and Moby
- C. Grandpop and Becca
- D. Moby and Grandpop

3. Mia has 8 beads. Moby has 9 beads. Which number sentence can you use to find the number of beads they have together?

- A.  $9 - 8 =$
- B.  $9 + 8 =$
- C.  $8 - 9 =$
- D.  $9 \times 8 =$

4. Grandpop picks 12 roses. Then he picks 8 more. Which number sentence shows how many roses he picked?

- A.  $12 + 8 = 10$
- B.  $12 + 8 = 12$
- C.  $12 + 8 = 18$
- D.  $12 + 8 = 20$

5. Moby read 47 pages before dinner. After dinner, he read 8 more. How many pages did he read together?

- A. 39 pages
- B. 55 pages
- C. 54 pages
- D. 56 pages

## Adding and Subtracting Tens **Background Information & Activities**



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As children begin working with larger numbers, teach them strategies and shortcuts that help them manipulate numbers more easily. Help them understand that they can use basic facts they already know to solve more complicated number sentences and problems. We suggest reviewing the [Making Ten](#) and [Doubles](#) movies before exploring this topic. We also recommend that children use counters, base-ten blocks, number lines, and hundred charts to practice adding and subtracting tens.

Use base-ten blocks or counters to show 40 and 20. Then have children add the two numbers together. Try to add them in different ways. For example, you can skip-count each tens rod or you can start with 40 and add on two tens: 50, 60. You can also use a number line or a hundred chart and add on two tens. If you are using a hundred chart, be sure children notice that they jump down two rows for two tens. Remind them that each row on a hundred chart has ten numbers. Explore a variety of strategies, and write the number sentence to show how you added:  $40 + 20 = 60$ . You may wish to write the sentence horizontally and vertically.

Explain to children that when they are working with tens, they can hide the zeroes to make it easier to add, and then bring back the zeroes at the end. So  $50 + 30$  can become  $5 + 3$ , which is a basic number fact. Since  $5 + 3 = 8$ , then  $50 + 30 = 80$ . Try solving other number sentences together where children add tens by hiding the zeroes.

Encourage children to use doubles facts to help them solve number sentences. For

example, many children know  $3 + 3$  because it is a basic doubles fact. They can use this fact to solve  $30 + 30$ . Just remind them to bring back the zeroes after they solve.

Remind children that when they subtract using manipulatives, they take away pieces. Use base-ten blocks to show 90. Then, take away 20. How many are left? Write the number sentence  $90 - 20$  to show what happened. Then use a number line, a hundred chart, or the base-ten blocks to solve the problem. Remind children that they can hide the zeroes to help solve the problem. Since  $9 - 2 = 7$ , they know that  $90 - 20 = 70$ .

Once children are familiar with adding and subtracting tens, they can use those strategies to help them solve other number sentences. Show the number sentence  $20 + 11$ . What is the sum? Write the number sentence  $20 + 10$  and have children solve. Explain that in  $20 + 11$ , they are adding 11 and not 10. Since 11 is one more than 10, the sum of  $20 + 11$  should be one more than  $20 + 10$ . Thus,  $20 + 10 + 1 = 31$ . Practice this strategy with other number sentences.

Show the number sentence  $50 + 9$ . What is the sum? Some children may remember that  $50 + 10 = 60$  (or remember that  $5 + 1 = 6$ , therefore  $50 + 10 = 60$ ). How can they use this fact to solve  $50 + 9$ ? Remind children that in  $50 + 9$ , they are adding 9 and not 10. Since 9 is one less than 10, the sum of  $50 + 9$  is one less than  $50 + 10$ . Thus,  $50 + 10 - 1 = 59$ . Practice this strategy with other number sentences.

Now show the number sentence  $60 - 11$ . What is the difference? Write down the number sentence  $60 - 10$  and have children solve. Some children may be able to quickly solve  $60 - 10 = 50$  (or recall that  $6 - 1 = 5$ , thus  $60 - 10 = 50$ ). How can they use this number sentence to solve  $60 - 11$ ? Remind children that in  $60 - 11$ , they are subtracting 11 and not 10. Since 11 is one more than 10, the difference of  $60 - 11$  is one less. Thus,  $60 - 10 - 1 = 49$ . Practice this strategy with different number sentences. We recommend using hundred charts and base-ten blocks to help children. This strategy will be useful later when they start regrouping while subtracting.

Show the number sentence  $70 - 9$ . What is the difference? Write down the number sentence  $70 - 10$ . Children may recall that  $70 - 10 = 60$ . Have them use this number sentence to solve  $70 - 9$ . Since 9 is one less than 10, the difference of  $70 - 9$  should be one more than  $70 - 10$ . Thus,  $70 - 9 = 61$ . Practice solving other number sentence without regrouping.

Help children understand that adding and subtracting tens is a useful strategy that can be used to solve other number sentences. With plenty of practice, children can become comfortable solving two-digit addition and subtraction sentences without feeling overwhelmed or daunted. They can use their knowledge to apply to more complex number sentences, and are well on their way to becoming math pros!



See more lesson plans and resources:  
BrainPOP Educators.

## Adding and Subtracting Tens Teacher Activities

11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

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### 10 More, 10 Less

Give individual students or pairs a hundred chart. Then call out a number and have student volunteers say the number that is 10 more or 10 less than the number. You may wish to start with tens first (10, 20, 30, 40, etc.) and then move on to numbers with values in the ones place, such as 11, 29, 36, etc.) Next have students call out their own numbers and have their classmates or partners name the numbers that are 10 more or 10 less. Make sure students check over each other's answers. You can repeat the activity with 9 more or 9 less and 11 more or 11 less.

### Secret Number

Tell your students that you have a secret number. Then give them clues to help them guess your number, such as "This number is 11 more than 30. It is also 9 less than 50." You may want to give students a hundred chart to help them solve. Then have student volunteers give clues about their secret number and have classmates guess.

### Ones, Tens, Hundreds, Thousands

Remind students that to solve  $30 + 50$  they can use the number sentence  $3 + 5$ . Challenge them to solve sentences with larger numbers such as  $3,000 + 5,000$ . You can challenge them further by presenting number sentences such as  $60,000 + 11,000$ . Encourage children to use the facts they know and the strategies of adding and subtracting ten to help them solve the number sentences.

## Adding and Subtracting Tens Family Activities



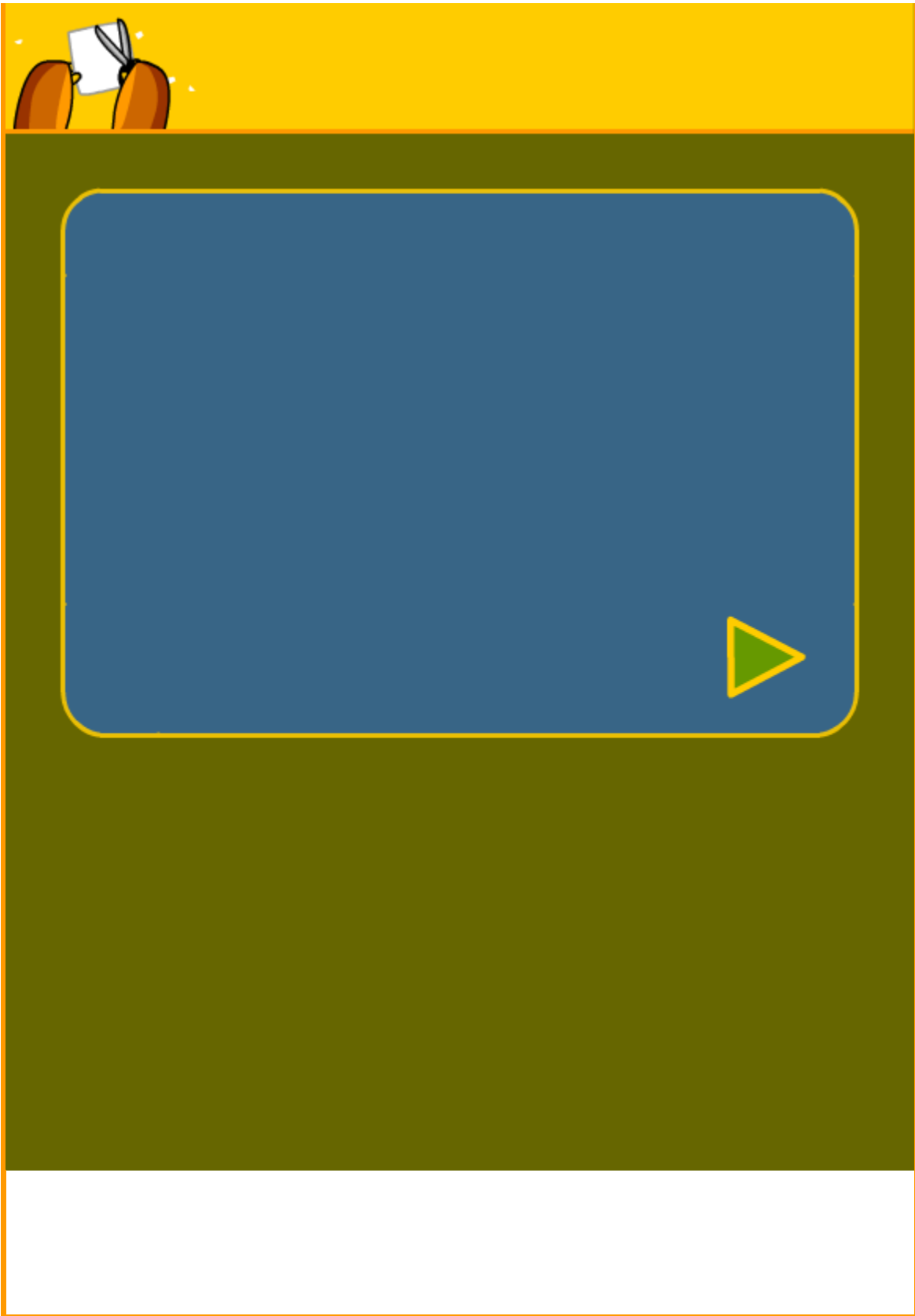
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### Packs of Ten

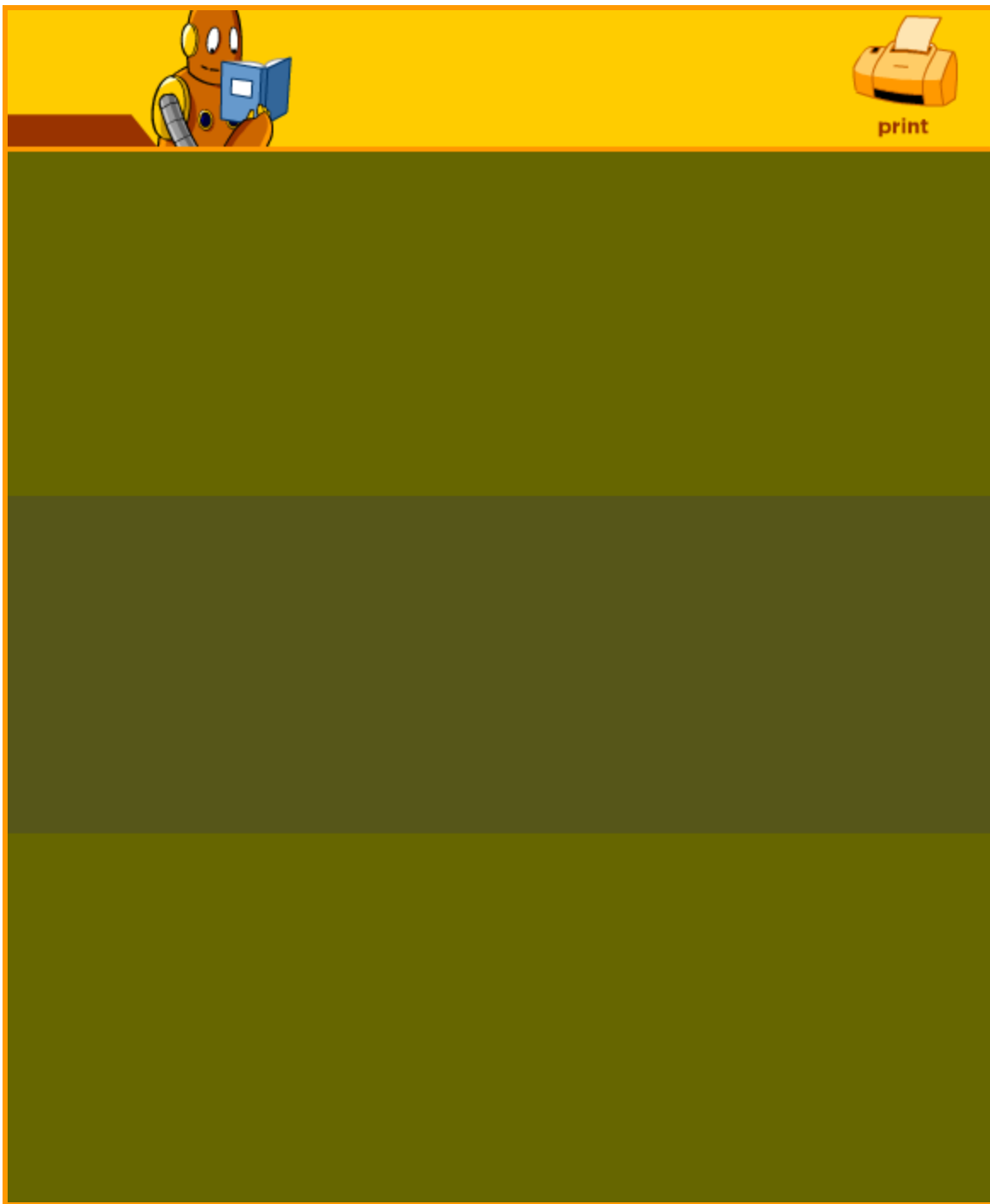
Together with your child, fill plastic baggies with ten small items, such as paper clips, beans, or crayons. Skip-count the objects in your packs together. Then add or subtract items and have your child find the sum or difference for each bag. If you add or take away one object from a bag, you can practice adding and subtracting 9 and 11. Be sure to write down number sentences to show how you added and subtracted.

### Missing Number

Practice algebraic thinking with your child by having him or her identify the missing number in an equation. For example, write the number sentence  $40 + \underline{\quad} = 50$  or  $\underline{\quad} - 20 = 30$  and have your child solve. He or she may want to use a hundred chart, base-ten blocks, or counters to help find the missing number. Then have your child write his or her own missing number problems for you to solve. This may be easier if your child writes a full number sentence and then erases one of the addends. Have your child check over your work. You may want to give an incorrect answer and have your child explain how to find the correct answer.







Place Value and Everything in its Place

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# Adding and Subtracting Tens Easy Quiz

DIRECTIONS: Circle the best answer.

Name \_\_\_\_\_

1.



Grandpop has 50¢. He gives 10¢ to Mia. How much money does Grandpop have now?

- A. 60¢
- B. 40¢
- C. 30¢
- D. 20¢

2.

**40, 50, 60, 70, \_\_\_**

Follow the pattern. Which number comes next?

- A. 80
- B. 30
- C. 90
- D. 20

3. Mia finds 10 seashells. Her friend finds 9 seashells. Which number sentence could you use to find how many seashells they have together?

- A.  $10 - 9 = 1$
- B.  $10 + 9 = 19$
- C.  $10 \times 9 = 90$
- D.  $10 + 10 = 20$

4. Moby has 40 marbles. He gives half away. How many marbles does he have left?

- A. 60 marbles
- B. 30 marbles
- C. 20 marbles
- D. 10 marbles

5. Moby has 10 markers. Mia gives him more markers. Now he has 30 markers. How many markers did Mia give him?  $10 + \underline{\quad} = 30$

- A. 10 markers
- B. 20 markers
- C. 30 markers
- D. 40 markers



# Adding and Subtracting Tens Hard Quiz

**DIRECTIONS:** Circle the best answer.

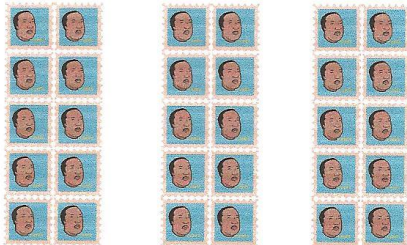
Name \_\_\_\_\_

1. Name	Number of Cans
Moby	10
Mia	30
Grandpop	20
Becca	60

The chart shows how many cans people collected for a can drive. Which two people collected a total of 50 cans?

- A. Moby and Mia
- B. Grandpop and Becca
- C. Moby and Becca
- D. Mia and Grandpop

2.



Grandpop has 30 stamps in his stamp collection. He gives some stamps away. Now he has 20 stamps. How many stamps did he give away?

- A. 50 stamps
- B. 30 stamps
- C. 20 stamps
- D. 10 stamps

3. Mia has 10 buttons. She gets 90 more. Which equation shows how many buttons she has now?

- A.  $10 + 90 = 100$
- B.  $10 + 10 = 100$
- C.  $90 + 10 = 10$
- D.  $90 - 10 = 80$

4. Moby is playing a game and wins 40 points. Then he scores 21 more. How many points does Moby have now?

- A. 41
- B. 51
- C. 61
- D. 71

5. Mia has a secret number. She starts on 61 and adds on two tens to get her secret number. What is her secret number?

- A. 20
- B. 71
- C. 81
- D. 91

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