

PLACE VALUE AND ESTIMATING

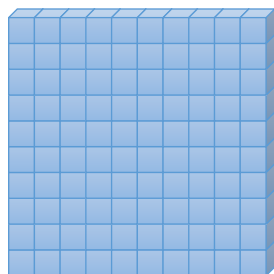


Unit Overview

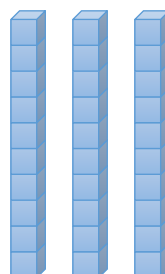
This unit is about using place value understanding to round whole numbers to the nearest 10 or 100 and estimating.

Place Value

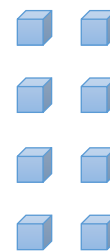
1 hundred, 3 tens, and 8 ones is equal to **138**.



1 hundred



3 tens



8 ones

Place Value Games

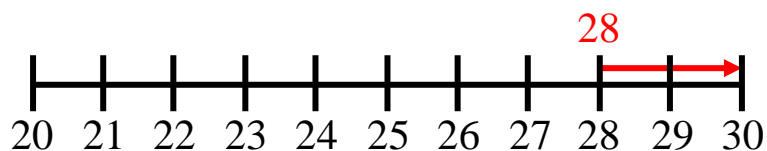


Click [here](#) to play some interactive games to practice your place value skills. Have fun!

Estimation

Rounding to the Nearest 10

Numbers are rounded to tell about how many. When rounding to the nearest 10, you simply find the 10 that is the closest. Look at the number line below. It shows the 20 and the 30 and all of the numbers between. Is the 28 closer to the 20 or to the 30? By looking at the number line, you see that 28 is closer to 30.



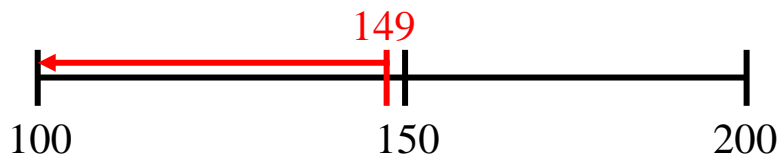
28 will round to 30.

Click on the link to watch the video "[Rounding to the nearest 10](#)".



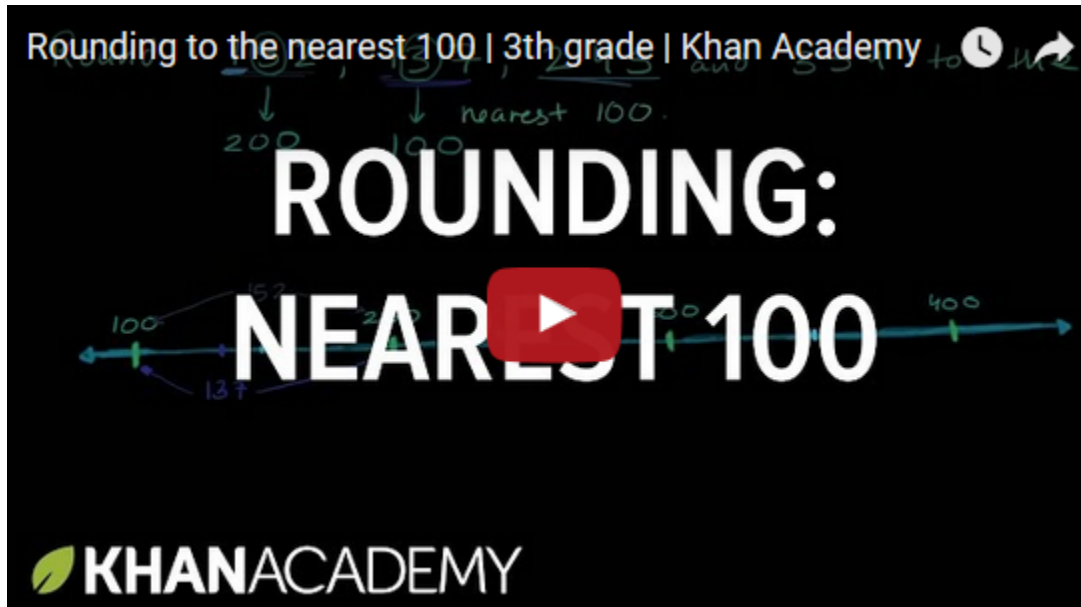
Rounding to the Nearest 100

When rounding to the nearest 100 you need to look at the ten to determine if you round to the lower or higher hundred. In the number 149, look at the ten. 4 is a lower number so it will round to the lower hundred. Look at the number line below to determine which two hundreds 149 is between. The 4 is a lower number and 149 is between 100 and 200, so it will round to the lower hundred. 149 will round to 100.



149 will round to 100.

Click on the link to watch the video "[Rounding to the nearest 100](#)".



You can also follow this rule for rounding:

For the numbers 0, 1, 2, 3, and 4:
Round to the lower ten or hundred
because they are smaller numbers.

For the numbers 5, 6, 7, 8, and 9:
Round to the higher ten or hundred
because they are higher numbers.

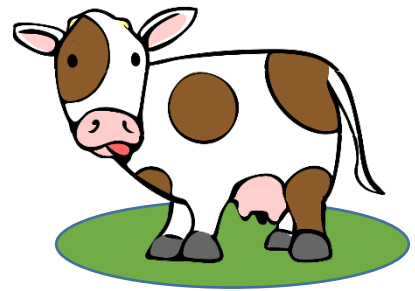


Estimating Size

When reading word problems, many times the question will ask about how many? This is when you use estimating by rounding to the nearest 10 or 100.

Example 1: Brooke has **37 cows** on her farm. To the nearest ten, about how many cows does Brooke have?


Look at the ones place. This number is a 7. For numbers 5, 6, 7, 8, and 9, you round to the higher ten. Therefore, Brooke has about **40 cows** on her farm.





Example 2: Jeff went fishing over the weekend and caught 65 blue gill, 12 carp and 16 catfish. About how many fish did he catch in all?



Round each number to the nearest ten, and then find the estimate.

65 – Look at the ones place. For numbers 5, 6, 7, 8, and 9, round to the higher ten. 65  rounds to 70

12 – Look at the ones place. For numbers 0, 1, 2, 3, and 4, round to the lower ten. 12  rounds to 10

16 – Look at the ones place. For numbers 5, 6, 7, 8, and 9, round to the higher ten. 16  rounds to 20

Now, total the rounded numbers to get an estimate. $70 + 10 + 20 = 100$.

Therefore, Jeff caught about 100 fish.

Estimating the size of a number is mainly mental math. Look at the examples below and estimate which answer will be a larger number.

Example 3: Use estimation to solve.

Which product is larger? 8×9 or 80×9

Without actually doing the math, you can see that 80 is larger than 8.

$$80 \times 9 = 720 \quad \text{and} \quad 8 \times 9 = 72$$

The larger product is $80 \times 9 = 720$.

Example 4: Use estimation to solve.

Which sum is larger? $100 + 100$ or $50 + 50$.

Without actually doing the math, you can see that 100 is larger than 50.

$$100 + 100 = 200 \quad \text{and} \quad 50 + 50 = 100$$

The larger sum is $100 + 100 = 200$.