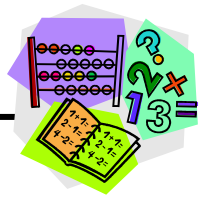
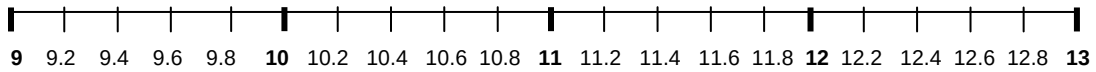
Rounding Decimal Numbers



Rounding decimal numbers is a good strategy to use when estimating amounts, such as the cost of items in a store.

Decimal numbers represent parts of whole numbers, similar to fractions.

In the number line below, the **bold** numbers are **whole numbers**.
The other numbers are **decimal numbers** — they have a decimal point in them.



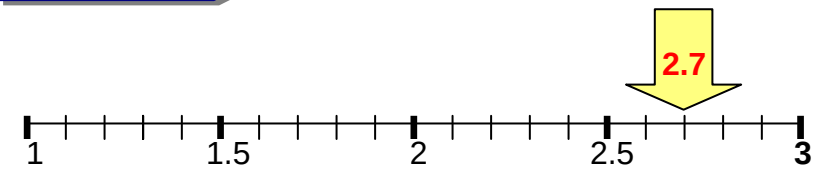
Think: Why is the number line broken into four equal parts between each whole number? Remember what you know about intervals. Notice how the decimals count up by 2s.

Decimal numbers can be rounded using number lines. Remember that you can think of this number line as a mountain. See Rounding Whole Numbers for an example.

Rounding to the Nearest Whole Number

Examples

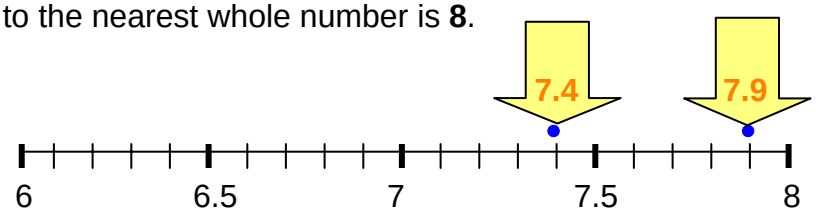
A) Round **2.7** to the nearest whole number.



Locate the whole numbers 2 and 3 on the number line.
Locate 2.7.
2.7 is closer to the whole number 3 than to the whole number 2.
So, 2.7 rounded to the nearest whole number is **3**.

B) Round **7.4** and **7.9** to the nearest whole numbers.

7.4 lies between 7 and 8.
7.4 is closer to the whole number 7.
7.9 is closer to the whole number 8.
So, 7.4 rounded to the nearest whole number is **7**, and
7.9 rounded to the nearest whole number is **8**.



When a number is halfway between two numbers, round up to the larger number.

C) Round **7.5** to the nearest whole number.

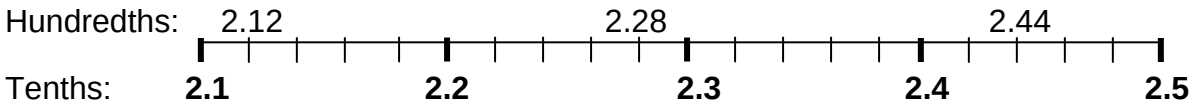
7.5 is exactly halfway between 7 and 8.
Therefore, 7.5 rounds to **8**.

Rounding to the Nearest Tenth

To round to the nearest tenth using a number line, look at the tenth place value closest to the number you are rounding.

Example Round 2.12, 2.28 and 2.44 to the nearest tenth.

The number line shows a calibration that increases by 0.02. The bold numbers show tenths, the numbers above are in hundredths.



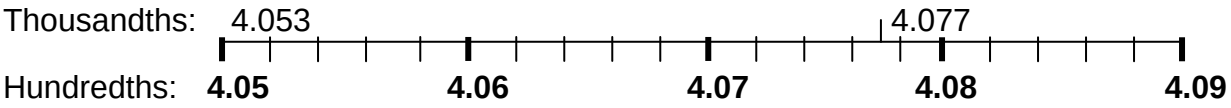
2.12 is closest to **2.1** and rounds to 2.1.
2.28 is closest to **2.3** and rounds to 2.3.
2.44 is closest to **2.4** and rounds to 2.4.

Rounding to the Nearest Hundredth

To round to the nearest hundredth using a number line, look at the hundredth place value closest to the number you are rounding.

Example Round 4.053 and 4 to the nearest hundredths.

The bold numbers on this number line show numbers in the **hundredths** decimal place. The numbers above the line are in the thousandths.



4.053 lies between 4.05 and 4.06.
4.053 is closer to **4.05**, so it rounds to 4.05.

4.077 lies between 4.07 and 4.08.
4.077 is closer to **4.08** so it rounds to 4.08.

Check this out! Another strategy to use when rounding can be found in Hints for Rounding.