

Rounding Decimals

Reading and Discussion

Using decimals is a good way to get a really accurate measurement of anything, but too many decimal places makes a number unwieldy and difficult to work with.

An example of this is **pi** which is the ratio of the circumference of a circle to its diameter. It is what we call a **mathematical constant** because it is always the same number on any circle. But the number of decimal places in **pi** is unlimited. For example, here is **pi** taken to the 10th place:

- **3.1415926535**

This would be a very difficult number to work with because it is so long. We need to round it.

Rounding decimals is the same as rounding whole numbers. We need to look at the number to the right of the place which we want to round to. When that number is 5 or over we round up, and when it is 4 or under we round down.

Rounding a number to the nearest 10th means we round it to 1 decimal point:

- **1.28 = 1.3**

Rounding a number to the nearest 100th means we round it to 2 decimal points:

- **1.635 = 1.64**

Rounding a number to the nearest 1000th means we round it to 3 decimal points:

- **1.72546 = 1.725**

And rounding a number to the nearest 1 gives you a whole number:

- **= 3**

What about rounding a 9? If, for example, you have a number like **1.971** to round to the nearest 10th, the 9 becomes a whole number and the answer is **2.0**

So let us round **pi** to the nearest hundredth. To do that we need to look at the number following the first 4. That number is 1 so we will round down and we have:

- **pi = 3.14**

Much easier to remember!

Name _____

Date _____

Activities

Activity A: Some decimal numbers to round. Round these numbers to the nearest 10th:

- a) 3.6945
- b) 5.2372
- c) 7.5914
- d) 9.1376
- e) 11.4537

Now try rounding them to the nearest 100th and then to the nearest 1000th.

How did you do?

Activity B: Some useful rounding.

Rounding can be useful if you want to know more or less what you have. For example, if you have \$20 in your bag would you have enough to buy the following? To work it out quickly, round each amount to a whole number. The first one has been done for you.

- a) Pancake mix \$5.15 = \$5
- b) Brownies \$3.75 =
- c) Lemonade \$1.65 =
- d) Peanut butter \$2.45 =
- e) Popcorn \$1.89 =
- f) Cereal \$4.19 =
- g) Pretzels \$3.17 =

When you have finished, tick the correct box:

Yes, I probably have enough money. 😊

No, I probably don't have enough money. ☹️

Name _____

Date _____

Answer Key

Activity A

- | | | |
|------------|---|--------|
| a) 3.6945 | = | 3.7 |
| b) 5.2372 | = | 5.2 |
| c) 7.5914 | = | 7.6 |
| d) 9.1376 | = | 9.1 |
| e) 11.4537 | = | 11.5 |
| | | |
| f) 3.6945 | = | 3.69 |
| g) 5.2372 | = | 5.24 |
| h) 7.5914 | = | 7.59 |
| i) 9.1376 | = | 9.14 |
| j) 11.4537 | = | 11.45 |
| | | |
| k) 3.6945 | = | 3.695 |
| l) 5.2372 | = | 5.237 |
| m) 7.5914 | = | 7.591 |
| n) 9.1376 | = | 9.138 |
| o) 11.4537 | = | 11.454 |

Activity B

| | | |
|---------------|----------|------------|
| Pancake mix | \$5.15 = | \$5 |
| Brownies | \$3.75 = | \$4 |
| Lemonade | \$1.65 = | \$2 |
| Peanut butter | \$2.45 = | \$2 |
| Popcorn | \$1.89 = | \$2 |
| Cereal | \$4.19 = | \$4 |
| Pretzels | \$3.17 = | <u>\$3</u> |

\$22

No, I probably don't have enough money.

