

DECIMAL SKILLS: STUDY GUIDE

What are decimals?

- Decimals are numbers we write using place value. They name parts of a whole when the whole is divided into 10 equal parts (*tenths*), 100 equal parts (*hundredths*), 1000 equal parts (*thousandths*), etc.
- A decimal is placed between the whole numbers and numbers that are parts of a whole.

Place Value Chart

Hundreds	Tens	Ones		Tenths	Hundredths
		0	.	9	

Read this number as *nine tenths*.

Hundreds	Tens	Ones		Tenths	Hundredths
		0	.	5	6

Read this number as *fifty-six hundredths*.

Hundreds	Tens	Ones		Tenths	Hundredths
2	3	6	.	9	

Read this number as *two hundred thirty-six and nine tenths*.

Hundreds	Tens	Ones		Tenths	Hundredths
	1	1	.	5	6

Read this number as *eleven and fifty-six hundredths*.

Common Fractions and Their Decimal Amounts (Remember: Think Money!)

$$\frac{1}{2} = 0.5 \text{ or } 0.50 \qquad \frac{1}{4} = 0.25 \qquad \frac{3}{4} = 0.75$$

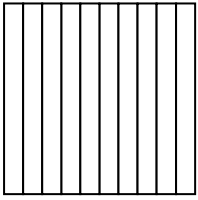
Other Fractions and Decimals

$$\frac{6}{10} = 0.6 \qquad \frac{6}{100} = 0.06 \qquad \frac{35}{100} = 0.35$$

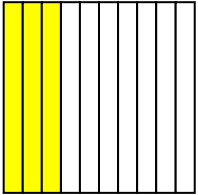
Pictures That Represent Decimal Amounts

We commonly use squares to represent amounts when studying decimals, but anything divided equally into 10, 100, 1000, etc., equal parts could be used.

We name decimals as tenths when the whole is divided into 10 equal parts.

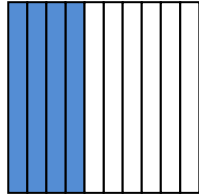


The square is one whole. It is divided into 10 equal parts.



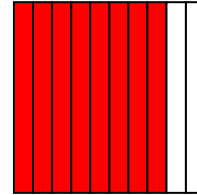
3 out of 10 are shaded
three tenths are shaded

0.3



4 out of 10 are shaded
four tenths are shaded

0.4

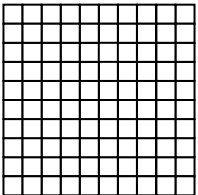


8 out of 10 are shaded
eight tenths are shaded

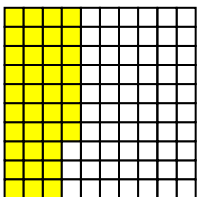
0.8

➤ These decimal amounts are in order from *least* to *greatest*.

We name decimals as hundredths when the whole is divided into 100 equal parts.

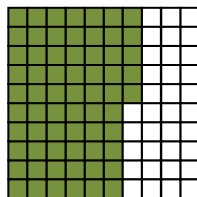


The square is one whole. It is divided into 100 equal parts.



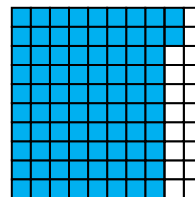
37 out of 100 are shaded
thirty-seven hundredths are shaded

0.37



65 out of 100 are shaded
sixty-five hundredths are shaded

0.65

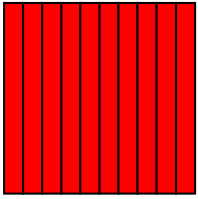


82 out of 100 are shaded
eighty-two hundredths are shaded

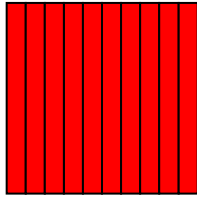
0.82

➤ These decimal amounts are in order from *least* to *greatest*.

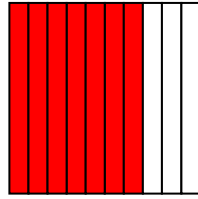
Whole numbers are written to the left of the decimal. Parts of the whole are written to the right of the decimal. Here are some examples:



1 whole



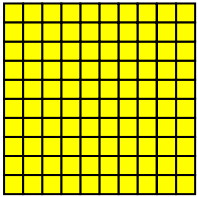
1 whole



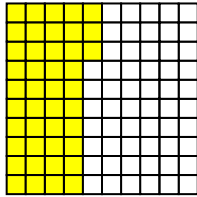
7 out of 10 parts

The shaded amount = two *and* seven tenths

The shaded amount = 2.7



1 whole



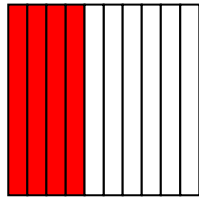
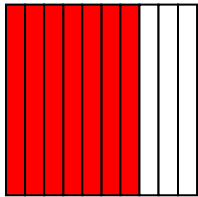
43 out of 100 parts

The shaded amount = one *and* forty-three hundredths

The shaded amount = 1.43

Comparing Decimal Amounts

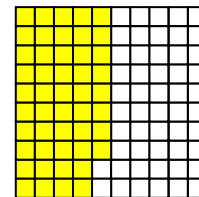
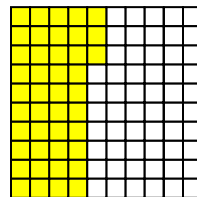
- When comparing decimals, look at the largest places first. Compare using the largest place that is different.



Compare using tenths place:

0.7 is greater than 0.4

$$0.7 > 0.4$$

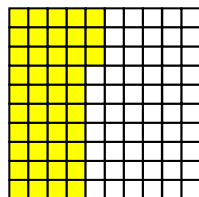
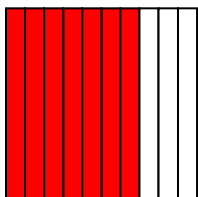


The digit in the tenths place is the same.

Compare using hundredths:

0.43 is less than 0.48

$$0.43 < 0.48$$

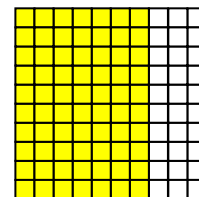
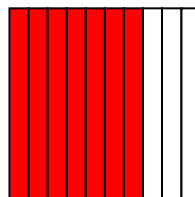


Compare using tenths place:

0.7 is greater than 0.43

$$0.7 > 0.43$$

(Remember that $0.7 = 0.70$)



Compare using tenths place: 0.7

0.7 is the same as 0.70

$$0.7 = 0.70$$

Adding and Subtracting Decimals

- When adding or subtracting decimals, you must add tenths to tenths and hundredths to hundredths.
- This is easy to do if you line up the decimals carefully.
- Sometimes you may need to add a zero in the hundredths place to make adding and subtracting easier.

Example:

$$4.9 - 1.25 = \begin{array}{r} 4.90 \\ - 1.25 \\ \hline 3.65 \end{array}$$