

# Relating Decimals and Fractions



**Guiding Question:** How are fractions and decimals related?

**Purpose:** Students explore how fractions and decimals are related.

I represent and compare fractions with concrete materials, pictures and symbols.

I represent decimals with concrete materials, pictures and symbols.

**Lesson 1 of 1 | 2-part lesson** | ~30 mins/part + student work time

## Activities to Complete

### Videos/Slides

- [Decimals to Fractions video](#)
- [Relating Decimals and Fractions](#) slides

### Key Vocabulary

**Decimal** - A decimal number is a number that can be expressed as a fraction with a denominator of 1, 10, 100, 1000, or other powers with a base of ten. (Alberta Education, 2007)

**Decimal Point** - A decimal point is used to separate the whole-number portion of the decimal number from the portion that is less than 1. (Alberta Education, 2007)

**Fraction** - A fraction is a number that stands for part of something. Usually a fraction represents one of the following:

- A number representing part of a set of items.
- A number representing part of a whole. (Alberta Education, 2007)

## Part 1: Warm Up

- Watch [Decimals to Fractions video](#) and discuss what you learned about relating fractions to decimals with a classmate or family member.
- Use the [Relating Decimals and Fractions](#) slideshow to support this lesson.
- Read through the *Warm Up: Which One Is Different* slides with a classmate or partner. Consider using the following steps:
  - Present each slide.
  - Take some silent thinking time.
  - Share which one is different with partner
  - Be sure to give a reason(s) for your selection.

## Part 2: Reading and Comparing Fractions to Decimals

- Continue using the [Relating Decimals and Fractions](#) slideshow to support this lesson.
- Review how to read the decimal names aloud using the *Reading Decimals* slides. Consider using the following steps:
  - View the number written within the [Decimal Place Value Chart](#). **You do not need to print and hand in this chart. It is simply to help you practice.**
  - Review the fact that we say *and* for the decimal point.
- As you move through practicing reading decimals, work through the following steps:
  - Start with your decimal.
  - Place your decimal on the *decimal place value chart*.
  - Record an equivalent fraction with a denominator of ten, hundred, or thousand.
  - Say the name of the fraction.
  - Record the name of the fractions, which is what we say as we read the fraction.
- Using the *Fractions as Decimals - Your Turn* slide, practice reading decimals and fractions to a classmate or family member.
  - Notice that the decimals may be written as equivalent decimals, just as fractions can have an equivalent fraction. For example,  $.43 = 0.43$  or  $.43 = .430$
- Using the *What is Missing?* slide, try relating decimals and fractions on your own and compare your thinking with a partner, a classmate or family member.
- Complete the [Relating Decimals and Fractions](#) student activity page and share your responses with a classmate, family member and your teacher.

 **Submit to Teacher:** [Relating Decimals and Fractions](#) student activity page submitted to Brightspace.

## Decimal Place Value Chart

H	T	O		tenths	hundredths	thousandths
			■			

Click [here](#) to make an editable copy of the activity.

## Relating Decimals and Fractions

Complete the chart by filling in the missing information.

Decimal	Equivalent Decimal	Fraction	Equivalent Fraction
		$\frac{1}{2}$	$\frac{500}{1000}$
0.32	0.320		
0.45			
.120	.12		
.89			
0.36			
		$\frac{45}{100}$	$\frac{450}{1000}$

	0.73	73/100	
	.47		470/1000

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.89			
0.36			
		$\frac{45}{100}$	$\frac{450}{1000}$
	0.73	$\frac{73}{100}$	

	.47		470/1000
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# Relating Decimals and Fractions

Complete the chart by filling in the missing information.

Decimal	Equivalent Decimal	Fraction	Equivalent Fraction
0.500	0.5	$\frac{1}{2}$	$\frac{500}{1000}$
0.32	0.320	$\frac{32}{100}$	$\frac{8}{25}, \frac{320}{1000}$
0.45	0.450	$\frac{45}{100}$	$\frac{9}{20}, \frac{450}{1000}$
.120	.12	$\frac{12}{100}$	$\frac{3}{25}, \frac{120}{1000}$
.89	0.890	$\frac{89}{100}$	$\frac{890}{1000}$
0.36	0.360	$\frac{36}{100}$	$\frac{9}{25}, \frac{360}{1000}$
0.45	0.450	$\frac{45}{100}$	$\frac{450}{1000}$
0.730	0.73	$\frac{73}{100}$	$\frac{730}{1000}$
0.470	.47	$\frac{47}{100}$	$\frac{470}{1000}$



# Relating Decimals and Fractions

- 8. Describe and represent decimals (tenths, hundredths, thousandths), concretely, pictorially and symbolically.  
[C, CN, R, V]PLO
- 9 (Numbers) Relate decimals to fractions and fractions to decimals (to thousandths).  
[CN, R, V]

*Warm Up- Which One is Different?*

$$\frac{\underline{3}}{4}$$

0.250

$$\frac{\underline{75}}{100}$$

0.75



*Warm Up- Which One is Different?*

**0.10**

**0.20**

**1  
10**

**0.100**



*Warm Up- Which One is Different?*

**0.300**

**0.50**

**0.500**

**$\frac{5}{10}$**



# Reading Decimals

Ones	.	Tenths
2	.	3

**Two and three tenths**

**2.3**



# Reading Decimals

Ones	.	Tenths	Hundredths
1	.	7	2

One and seventy two hundredths

1.72



# Reading Decimals

Ones	.	Tenths	Hundredths	Thousandths
1	.	3	0	5

One and three hundred five thousandths

1.305



# Reading Decimals

Ones	.	Tenths	Hundredths	Thousandths
1	.	2	9	3

One and two hundred ninety three thousandths

1.293



# Relating Decimals and Fractions

0.4       $\frac{4}{10}$       four tenths

0.68       $\frac{68}{100}$       sixty eight hundredths

0.732       $\frac{732}{1000}$       seven hundred thirty  
two  
thousandths



# Reading Decimals - Your Turn

Ones	.	Tenths	Hundredths	Thousandths
3	.	1	5	9
2	.	5	0	8
8	.	4	3	6
1	.	7	2	4



## Fractions as Decimals - Your Turn

Decimal	Fraction	Name (We say)
0.581	$581/1000$	Five hundred eighty one thousandths
0.6	$6/10$	Six tenths
0.203	$203/1000$	Two hundred three thousandths
0.49	$49/100$	Forty nine hundredths
0.327	$327/1000$	Three hundred twenty seven thousandths

# What is Missing?

Decimal	Fraction	Name
0.68		
0.205		
0.856		
0.087		
0.25		

