

Decimals

Numbers and Number Sense

By Kathy Russo and Roberta Morse

Martin Luther King Jr. Elementary School



*The buttons on each page will take you forward or backward
when you left-click your mouse on them.*





Dear Student,

In this presentation, you will learn about decimals! You will have the chance to review decimal concepts. You will also be able to practice your decimal skills. We hope you have fun!

Mrs. Russo and Mrs. Morse

Click [here](#) see the Standards Of Learning objectives you will cover.

Click [here](#) begin learning about decimals.

SOL Objective 5.1

The student will read, write and identify the place values of decimals through ten-thousandths.



SOL Objective 5.2

The student will compare the value of two decimals through ten-thousandths using the symbols $>$, $<$, or $=$.

Begin working with decimals →



What is a decimal?

A decimal is a part of a whole.



Think about money.

*One dollar, 4 dimes, and 3 pennies is
written in decimal form.*



\$1.43





*It takes 10 dimes to make 1 dollar, so a dime is **one-tenth** of a dollar.*

One dollar is equal to 10 dimes.





*It takes 100 pennies to make a dollar, so each penny is equal to **one-hundredth** of a dollar.*

One dime is equal to 10 pennies.



It takes 10 dimes to make 1 dollar, so a dime is one-tenth of a dollar.

$$\textcolor{blue}{\$0.10 = \textit{one dime}}$$

It takes 100 pennies to make 1 dollar, so a penny is one-hundredth of a dollar.

$$\textcolor{blue}{\$0.01 = \textit{one penny}}$$



Practice writing these amounts of money as decimals on a sheet of paper.

71 cents

6 cents

119 cents

215 cents

*Click here to check
your answers.*



*Money is one way we use
decimals every day, but
decimals are used for more than
just money.*





Decimals are special fractions with certain multiples of ten in the denominator.

$$\frac{1}{10} = 0.1$$

one tenth

$$\frac{1}{100} = 0.01$$

one hundredth

$$\frac{1}{1,000} = 0.001$$

one thousandth

$$\frac{1}{10,000} = 0.0001$$

one ten-thousandth

*Decimals can also be shown on
the place value chart.*





thousands

hundreds

tens

ones



tenths

hundredths

thousandths

ten-thousandths

Everything to the *left* of
the decimal point is a
WHOLE number.

Everything to the *right* of
the decimal point is *PART*
of a whole.

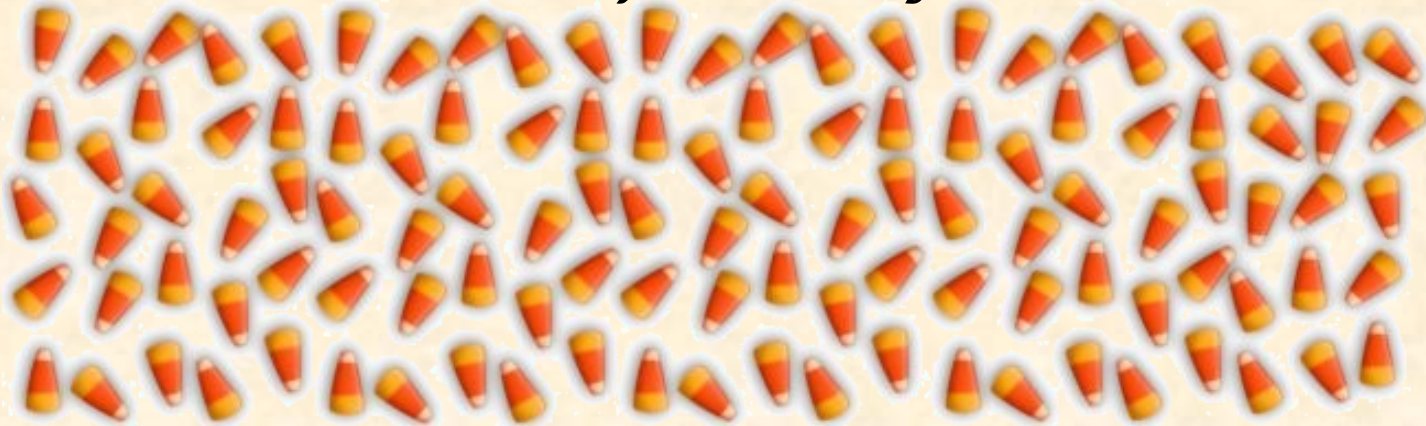
<i>thousands</i>		<i>tens</i>	<i>ones</i>	<i>tenths</i>	<i>hundredths</i>	<i>thousandths</i>	<i>ten-thousandths</i>
		1	4				

This shows 14 (fourteen) spiders.



<i>thousands</i>	<i>hundreds</i>	<i>tens</i>	<i>ones</i>	<i>tenths</i>	<i>hundredths</i>	<i>thousandths</i>	<i>ten-thousandths</i>
	1	1	5				

This shows 115 (one hundred fifteen) candy-corns.



Really! Count them.



Remember the dime? It was less than one whole. It was only a part of 1 whole dollar.

1 dime = \$0.10, so we will write it in the tenths and hundredths place value positions.

<i>thousands</i>	<i>hundreds</i>	<i>tens</i>	<i>ones</i>	<i>tenths</i>	<i>hundredths</i>	<i>thousandths</i>	<i>ten-thousandths</i>
			0	1	0		



$$\$0.10 = 0.1$$

ten hundredths = one tenth

<i>thousands</i>	<i>hundreds</i>	<i>tens</i>	<i>ones</i>	<i>tenths</i>	<i>hundredths</i>	<i>thousandths</i>	<i>ten-thousandths</i>
			0	1	0		
			0	1			

There are no whole dollars, only part of a whole.



A penny is also only a part of 1 whole dollar.

1 penny = \$0.01 since it is one hundredth of a dollar we will write it in the hundredths place value position.



<i>thousands</i>	<i>hundreds</i>	<i>tens</i>	<i>ones</i>	<i>tenths</i>	<i>hundredths</i>	<i>thousandths</i>	<i>ten-thousandths</i>
			0	0	1		



A quarter is also less than 1 whole dollar.

1 quarter = \$0.25, so we will write it in the tenths and hundredths place value positions.

<i>thousands</i>	<i>hundreds</i>	<i>tens</i>	<i>ones</i>	<i>tenths</i>	<i>hundredths</i>	<i>thousandths</i>	<i>ten-thousandths</i>
			0	2	5		



one hundred thirty -four and seven ten-thousandths

<i>hundreds</i>	<i>tens</i>	<i>ones</i>	<i>tenths</i>	<i>hundredths</i>	<i>thousandths</i>	<i>ten-thousandths</i>
<i>1</i>	<i>3</i>	<i>4</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>7</i>





Remember, decimals are special fractions with certain multiples of ten in the denominator.

$$\frac{1}{10} = 0.1$$

one tenth

$$\frac{1}{100} = 0.01$$

one hundredth

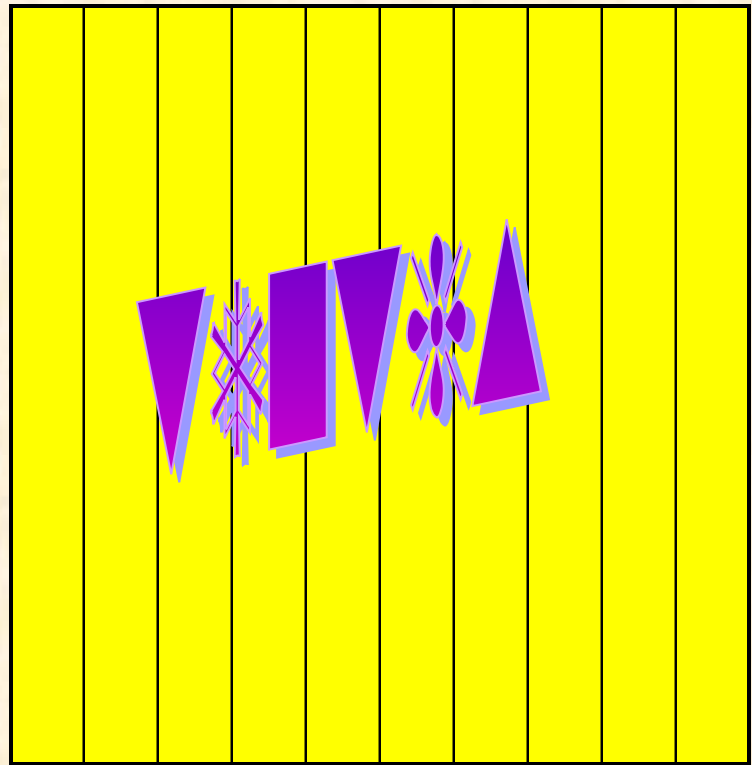
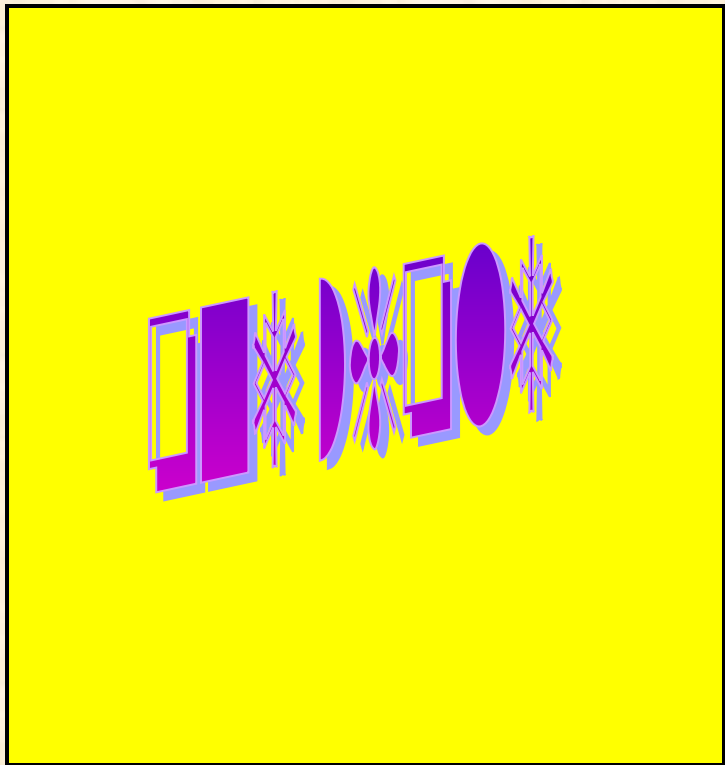
$$\frac{1}{1,000} = 0.001$$

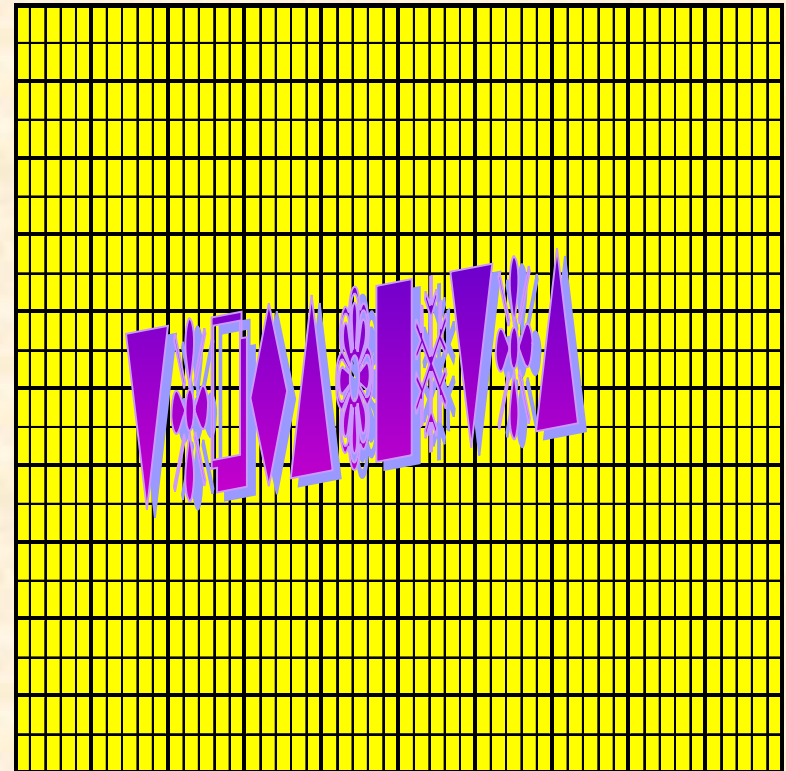
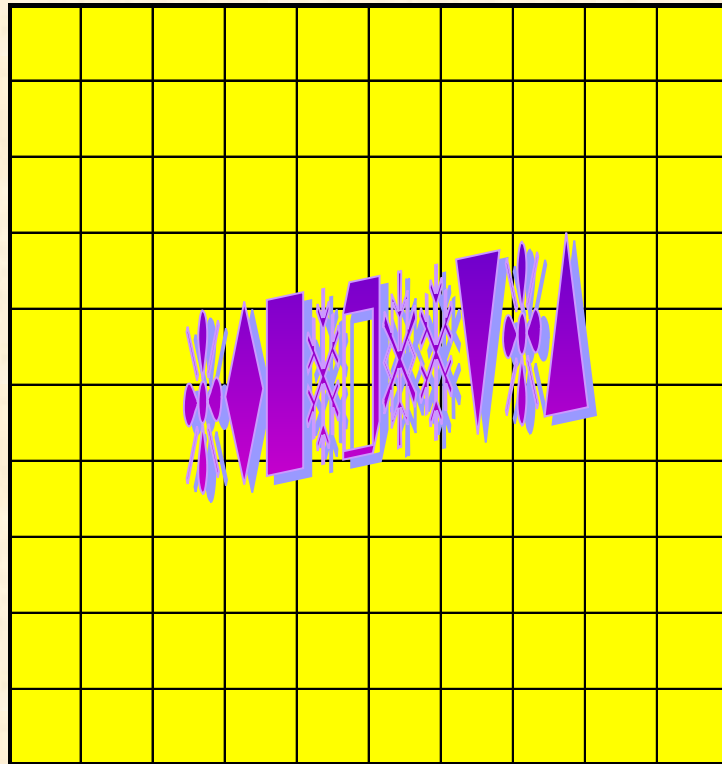
one thousandth

$$\frac{1}{10,000} = 0.0001$$

one ten-thousandth

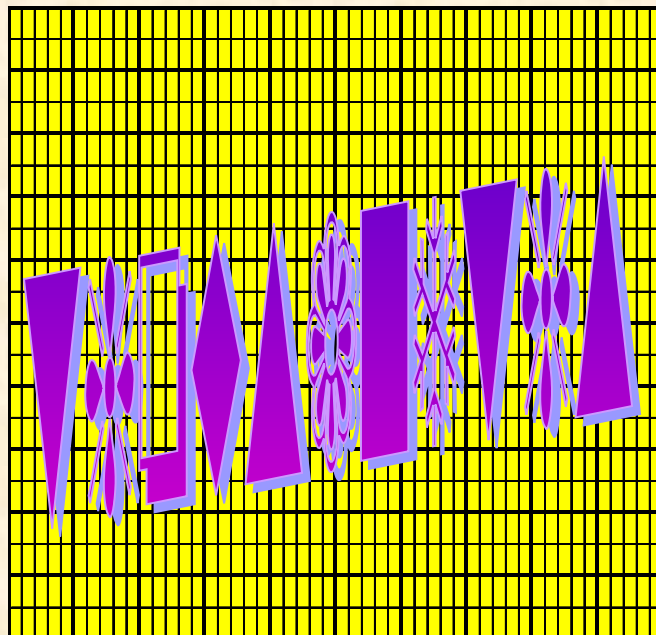
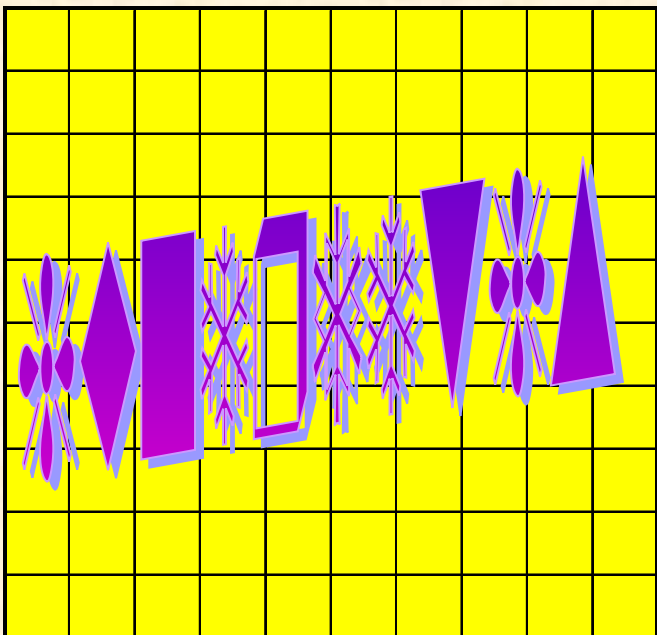
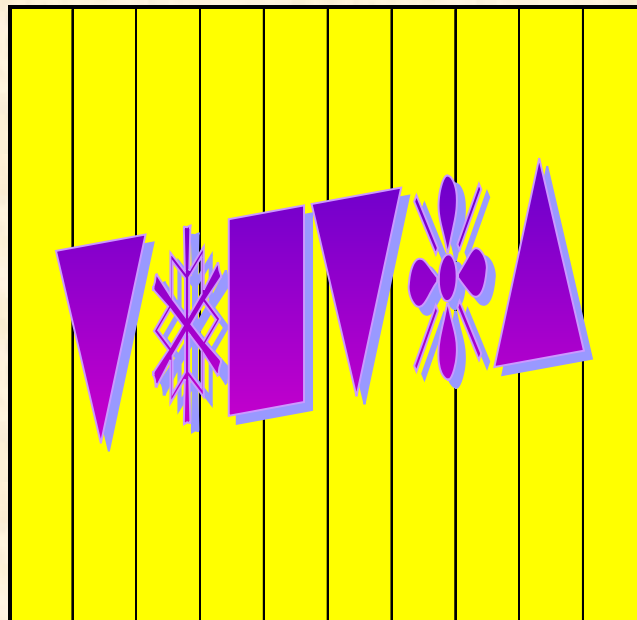
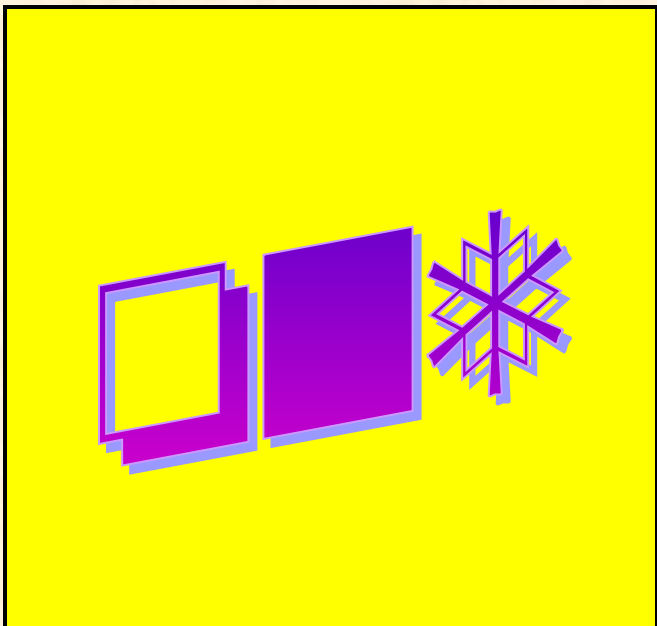
Decimals show parts of wholes in divisions of ten.





Decimals can show parts of wholes in divisions of hundreds or thousands.



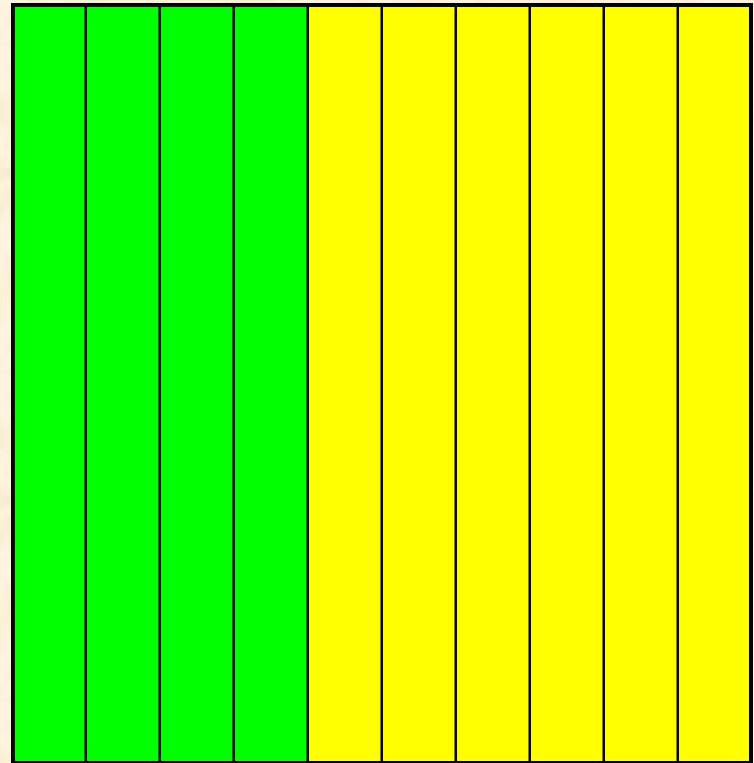


Now practice writing and saying some decimals. (Write your answers on paper. Then check your work by clicking below.)

What portion of the square is green?

What portion of the square is yellow?

Click here for the answer.

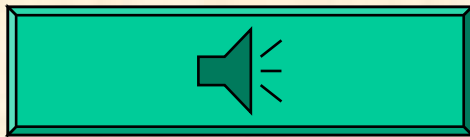


0.4 (or four tenths) of the square is green.

0.6 (six tenths) of the square is yellow.

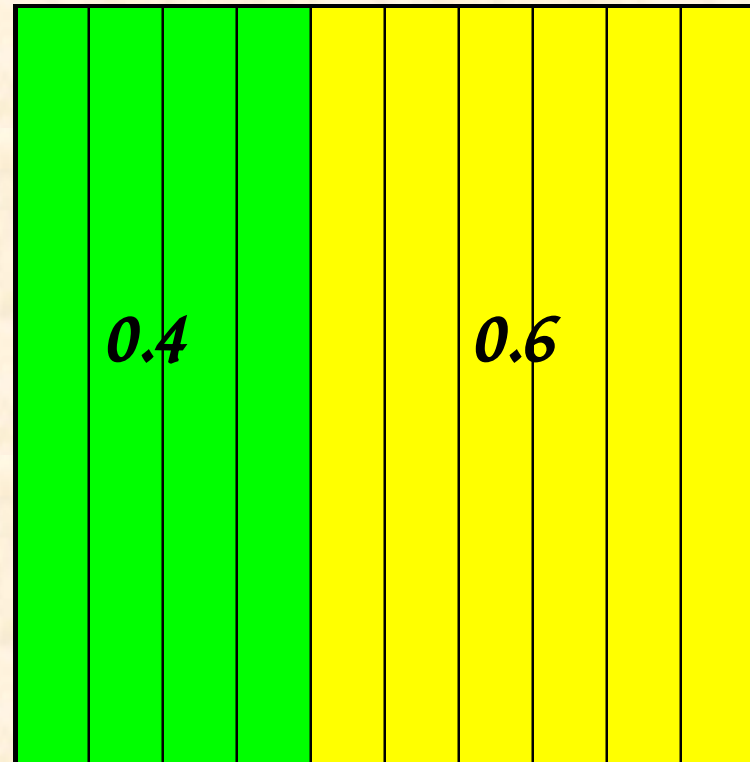
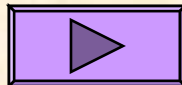
wrote on your paper?)

(Does this match what you

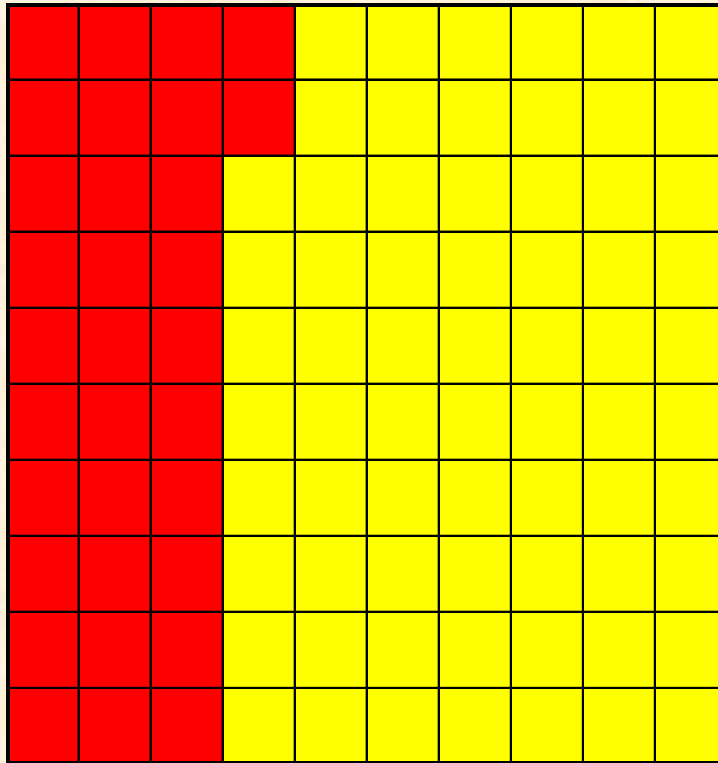


*Click here to hear the
answer.*

*Click here and try
another one!*



How many hundredths are red?



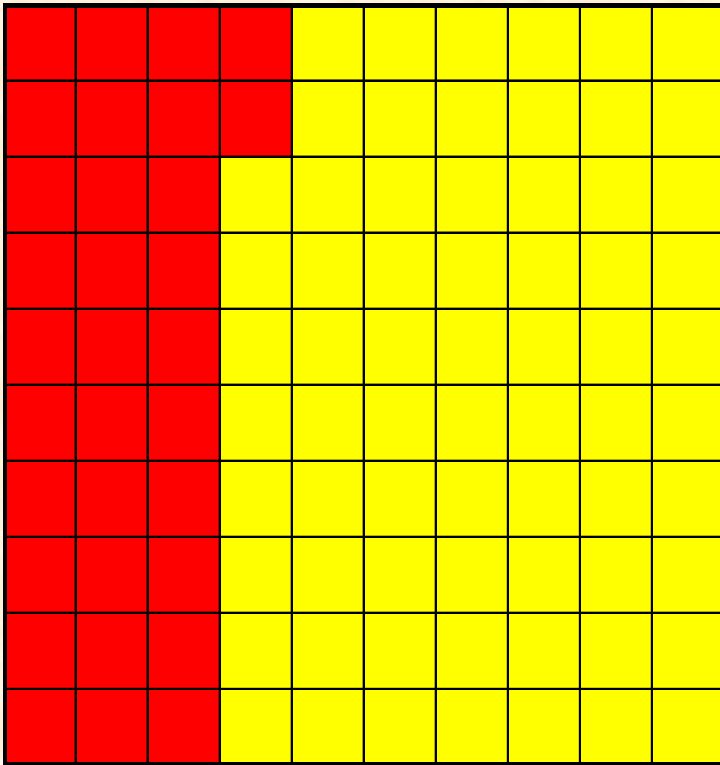
Click here to find out.

How many hundredths are yellow?

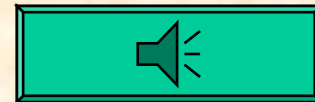


32 hundredths are red, 0.32

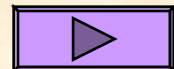
68 hundredths are yellow, 0.68



*Click to hear the
answer.*



*Click here and try
another one!*



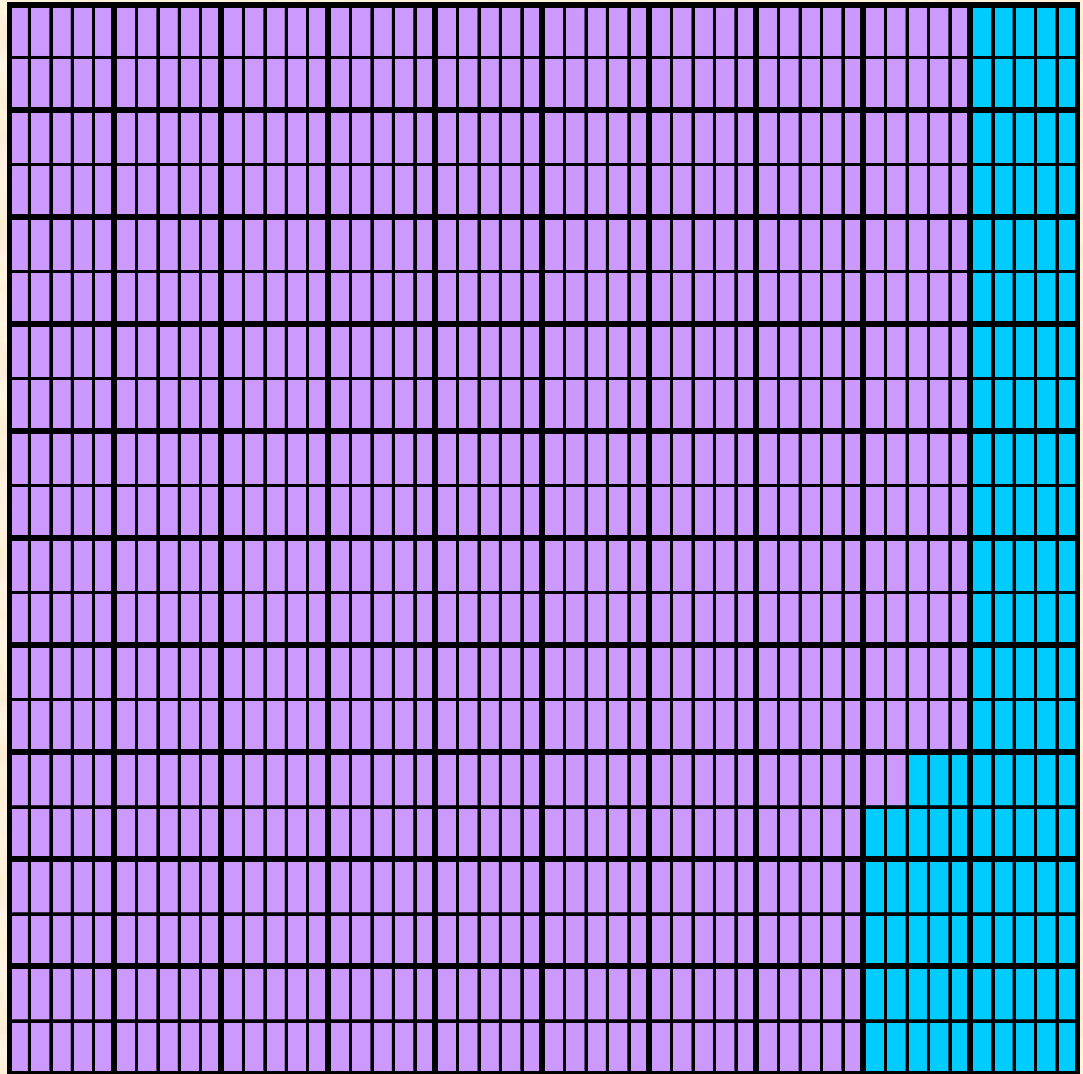
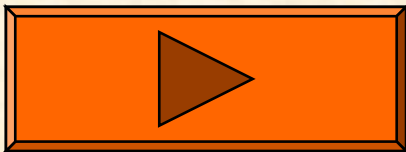


*How many
thousandths are
purple?*

*How many are
blue?*

*Don't forget to write your
answers down!*

*Check your answer
here.*

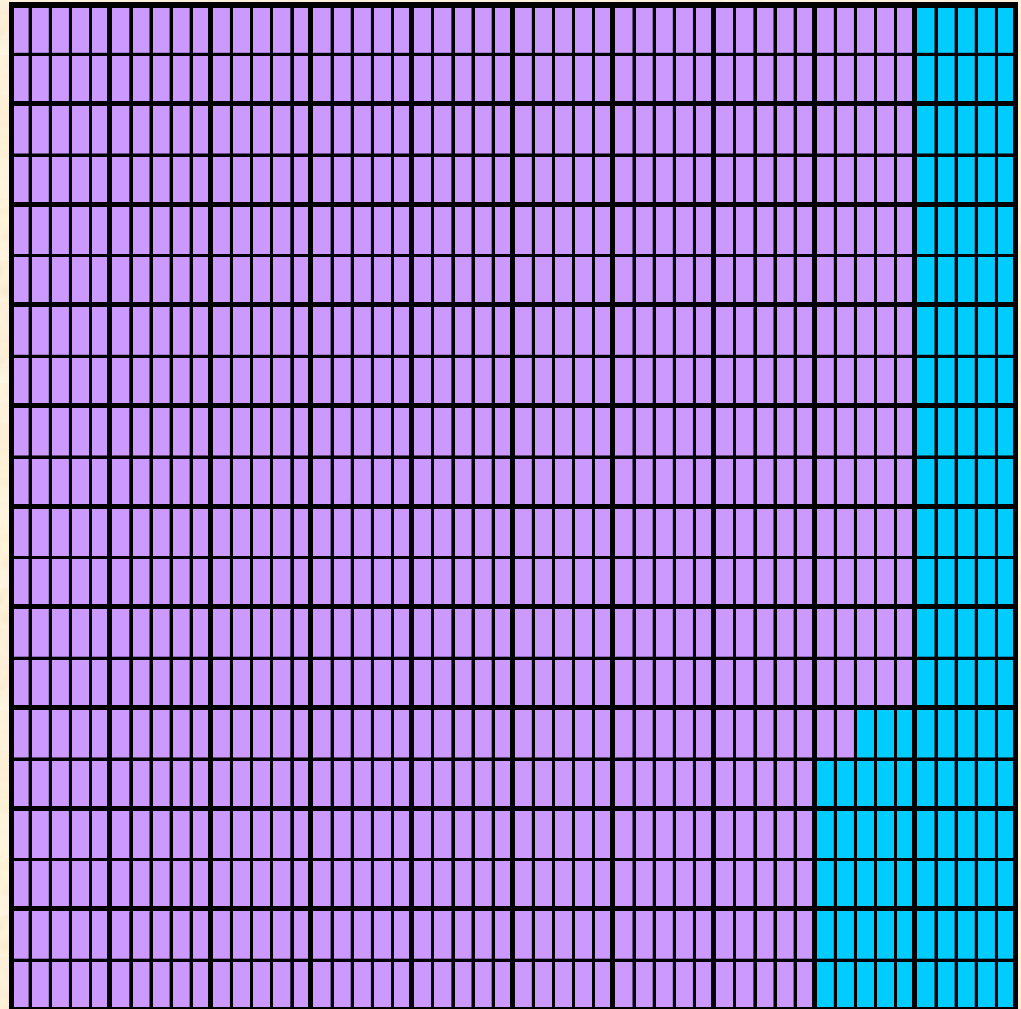




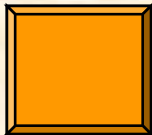
*872 thousandths are
purple. This number is
written 0.872*

*128 thousandths are
blue. This number is
written 0.128*

Did you check your work?



More



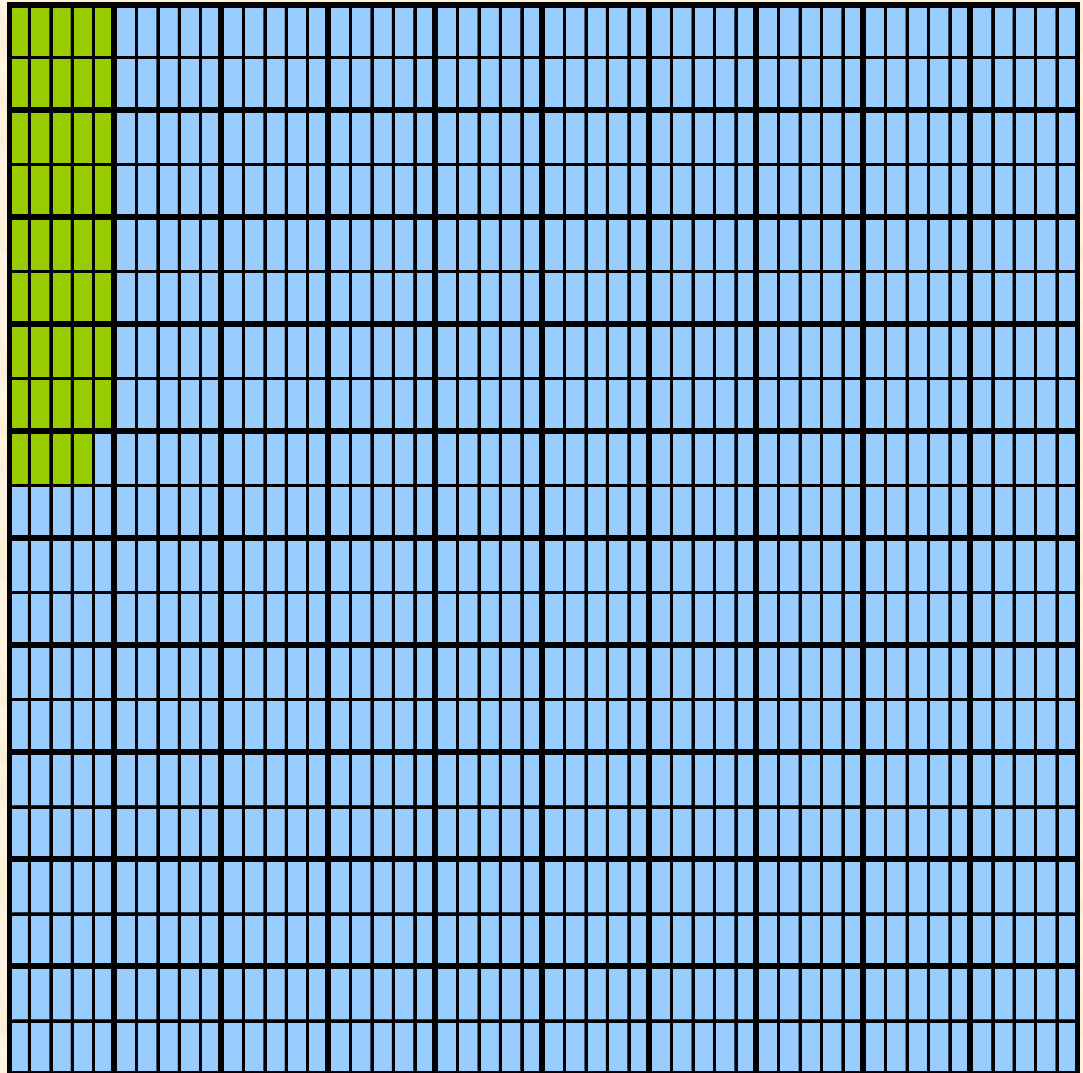
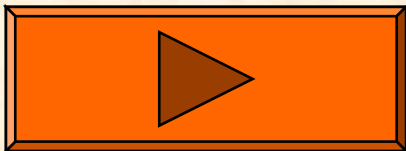
Click this button to hear the numbers.



*How many
thousandths are
green?*

*How many
thousandths are
blue?*

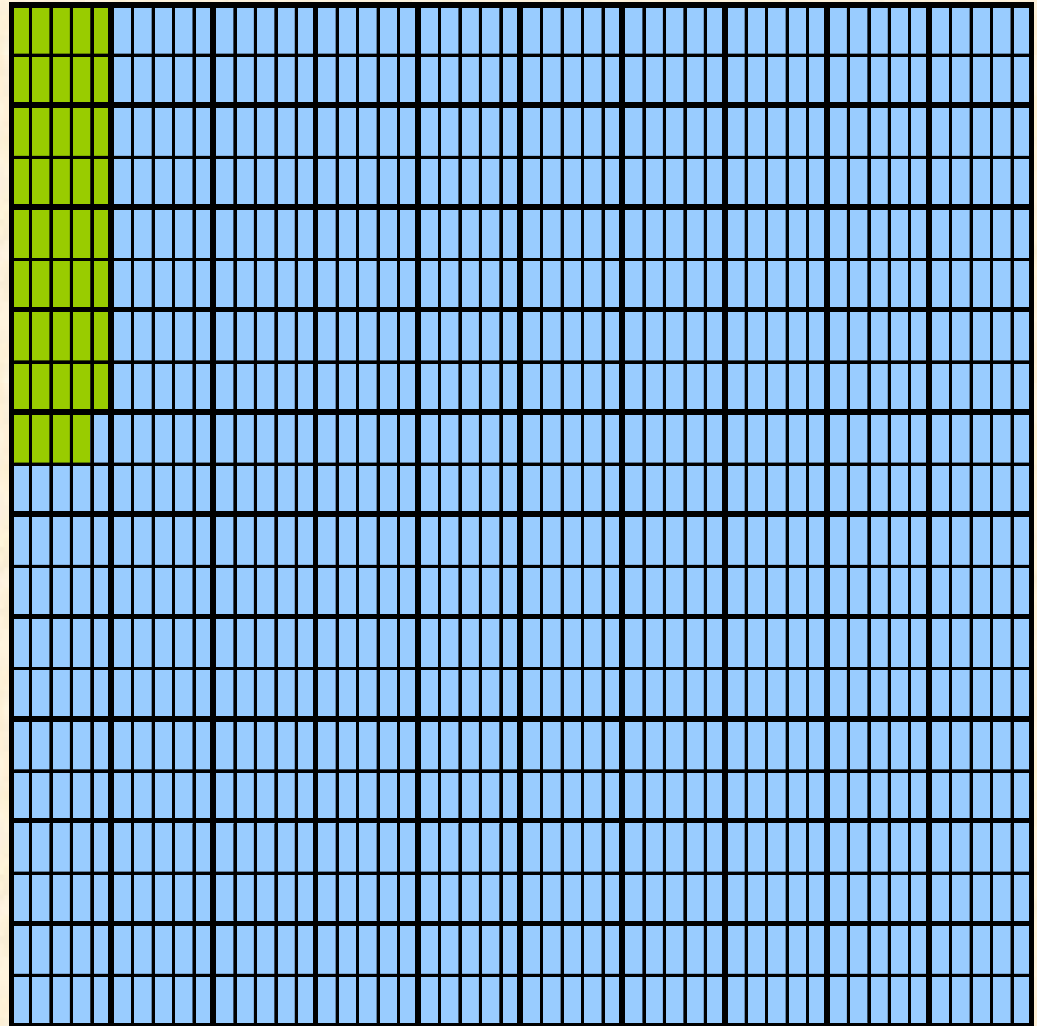
*Check your
answers here.*



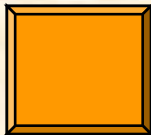


*44 thousandths
0.044 are green.*

*956 thousandths
0.956 are blue.*



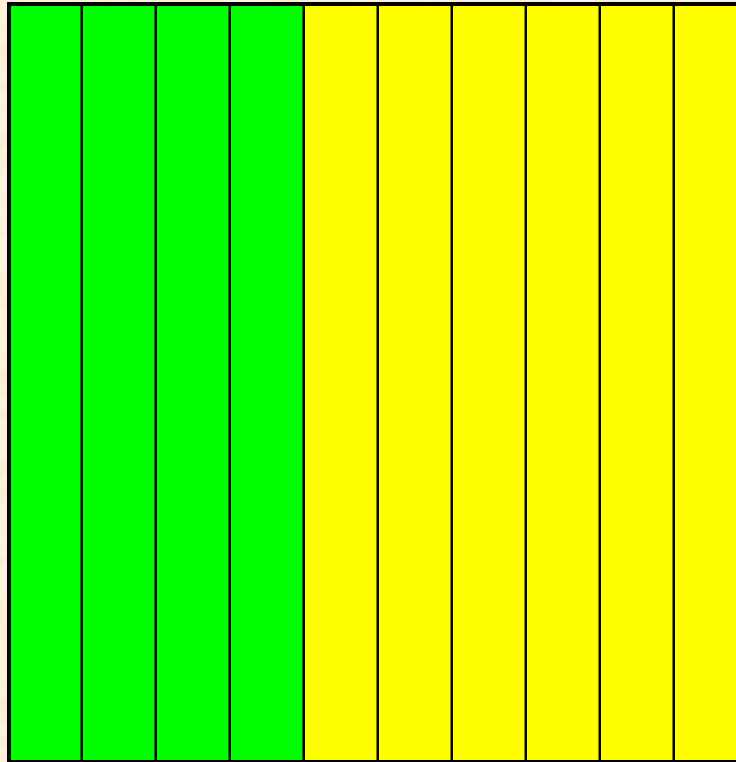
More



Click this button to hear the numbers.



Compare these decimals.

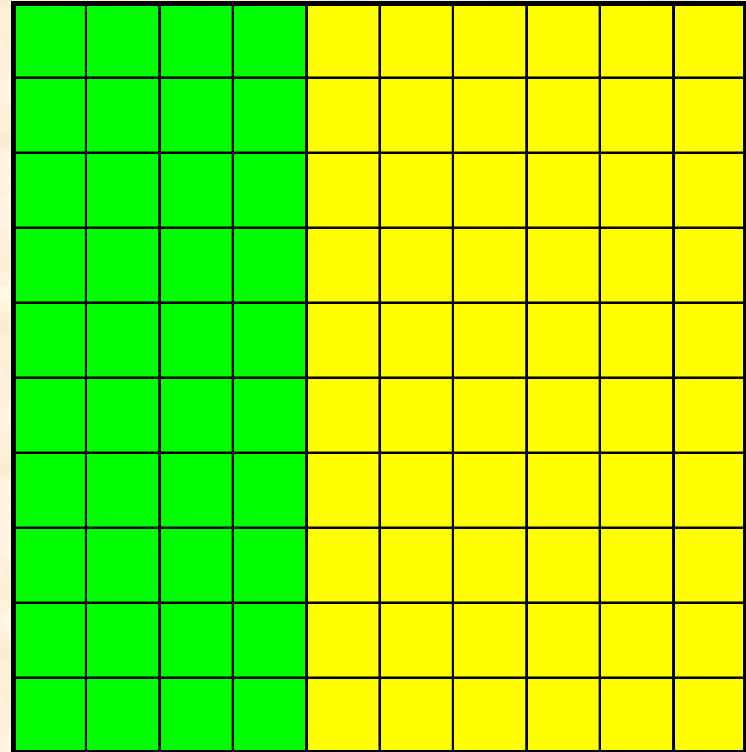
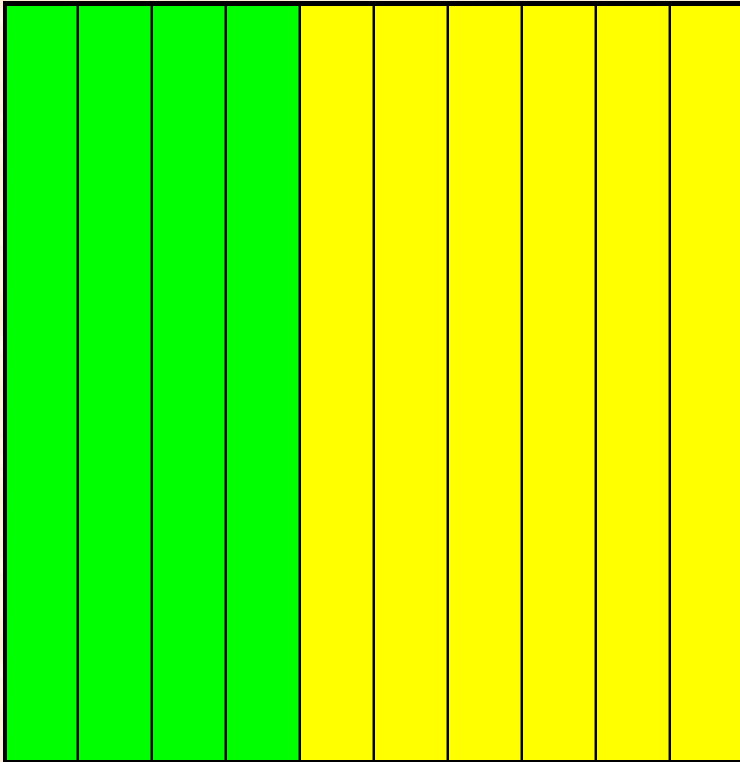


$$0.4 < 0.6$$

*four tenths is **LESS THAN** six tenths*



Compare these decimals.



$$0.4 = 0.40$$

*four tenths **IS EQUAL TO** forty hundredths*



eight tenths *is greater than* eight hundredths

eight hundredths *is greater than* eight thousandths

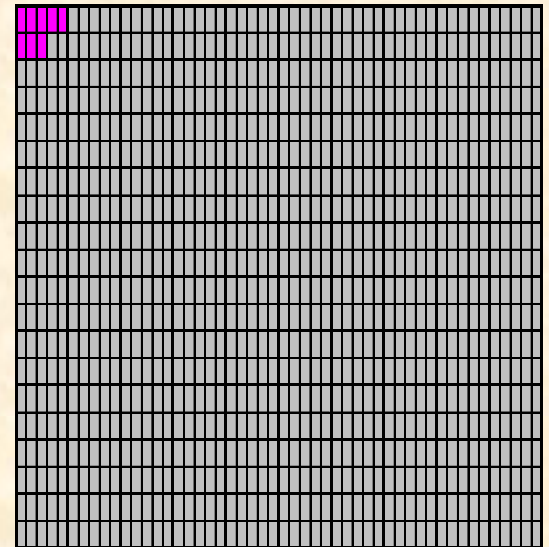
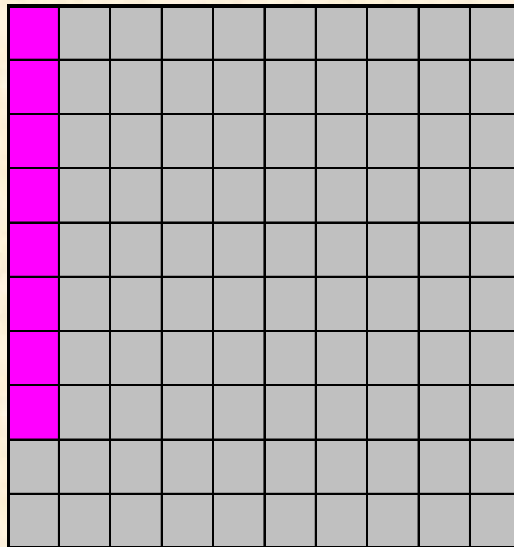
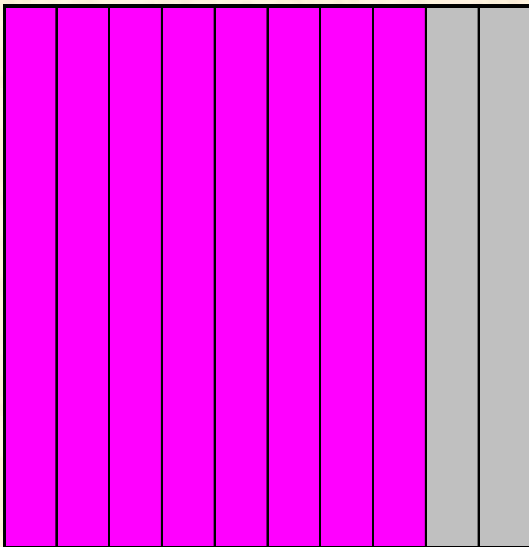
0.8

$>$

0.08

$>$

0.008



*Compare these decimals
using $<$, $>$, or $=$.*

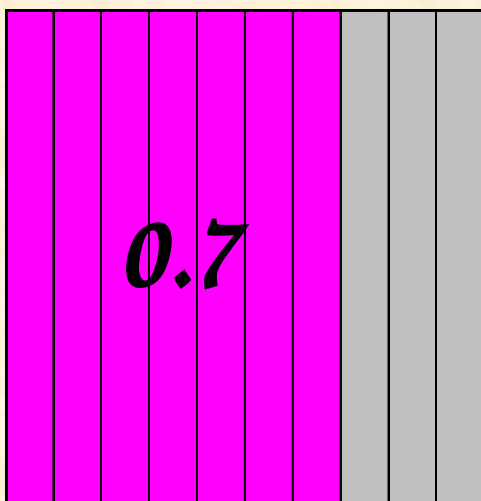
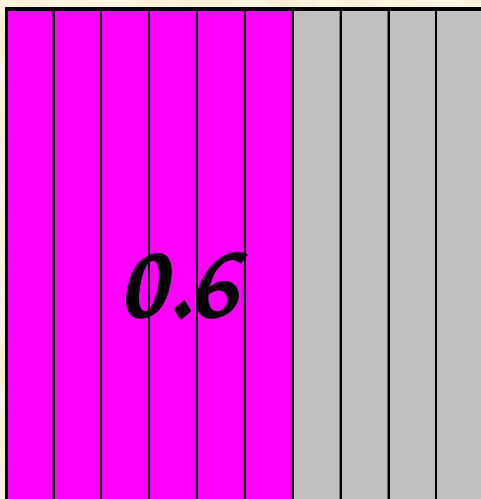
A. 0.6 and 0.7

*Check your
answers.*

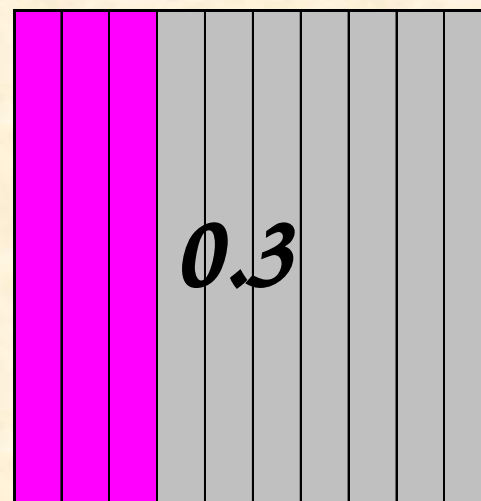
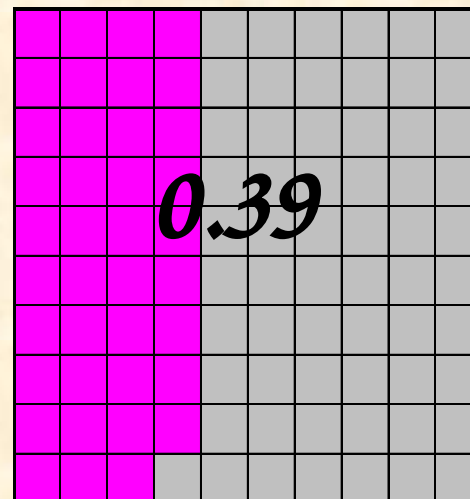
B. 0.39 and 0.3



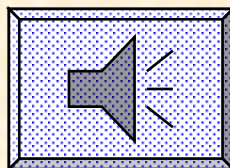
$$\mathcal{A}. \quad 0.6 < 0.7$$



$$\mathcal{B}. \quad 0.39 > 0.3$$



*Click to hear
the answers.*



*Compare these decimals
using $<$, $>$, or $=$.*

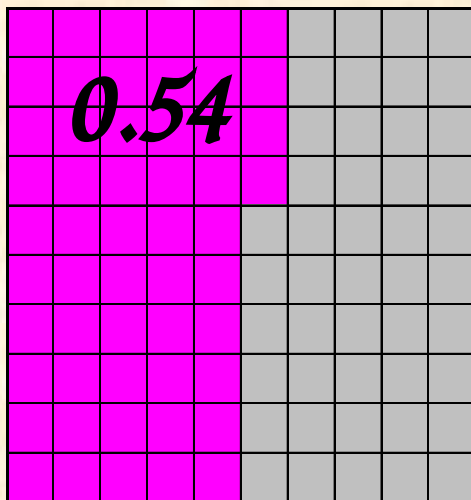
C. 0.54 and 0.56

*Check your
answers.*

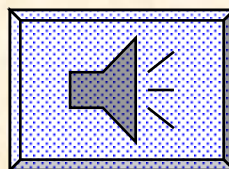
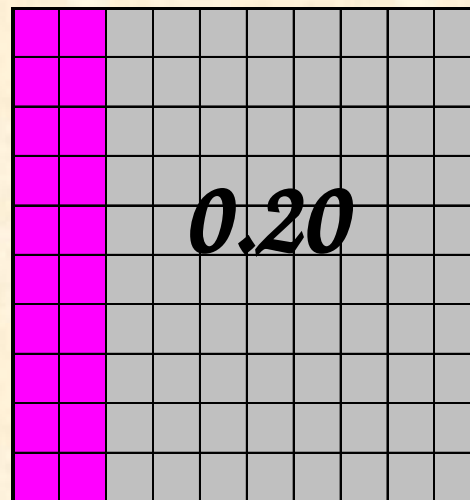
D. 0.20 and 0.2



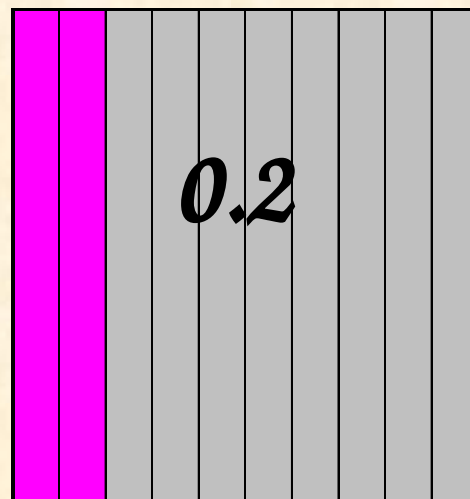
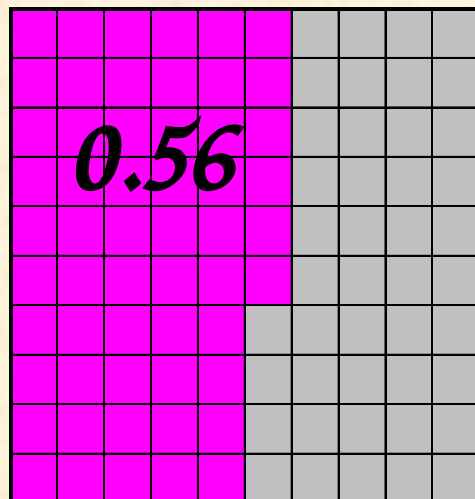
C. $0.54 < 0.56$



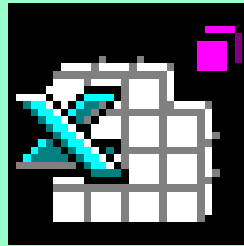
D. $0.20 = 0.2$



*Click to hear
the answers.*



*Click below to play a
very cool decimal game!*

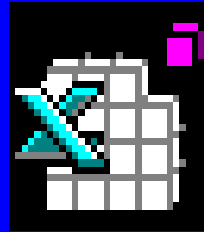


*Microsoft Excel
Worksheet*

*When you are finished, close the Excel window
by clicking on the $\times$ in the top right hand corner.*



*Click below to play again, this time
with hundredths and thousandths.*



*Microsoft Excel
Worksheet*

*When you are finished, close the Excel window
by clicking on the $\times$ in the top right hand corner.*



More Ideas!

For more fun with decimals check out these:

Games: Virtual Counting Stick Turtle Races

Web Sites: See Burly Middle School's Numeracy Activities. It is full of wonderful math games!

<http://www.numeracyresources.co.uk/>

Math Internet Projects

Books: Patriarca, Linda A., Scheffel, Marilyn, and Hedeman, Sheila. Decimals: A Place Value Approach. Dale Seymour Publications

Burns, Marilyn. About Teaching Mathematics A K-8 Resource. Math Solutions Publications



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***SOL Objective 5.1** The student will read, write and identify the place values of decimals through ten-thousandths.*

***SOL Objective 5.2** The student will compare the value of two decimals through ten-thousandths using the symbols $>$, $<$, or $=$.*

Credits:

Thank you to Mark Cogan at Burley Middle School for permission to link to his website.

This presentation was created using Microsoft PowerPoint 97.

Graphics from Jasc Paint Shop Pro version 6.02.

Decimal Squares were created using Microsoft Excel 97.



Practice writing these amounts of money as decimals on a sheet of paper.

71 cents

\$0.71

6 cents

\$0.06

119 cents

\$1.19

215 cents

\$2.15

