Essential Elements
Math Pacing Guide

October

Background

The Essential Elements Math Pacing Guide was inspired by realizing that there is a small amount of information found on the internet to help support educators who teach those who follow an alternate curriculum for our amazing 1% of the student population in education. I wanted to create something that could help serve as a guide, a support, an understanding of how to hold our students to high academic achievement, just like their regular education peers.

Regular education materials are abundant and come with pacing guides with how to implement the prescribed curriculum that the school decided to buy into. Within those curriculums, a good majority of publishers incorporated how to differentiate Instruction for struggling learners, for English Language Learners and/or English as a Second Language learners. However, there does not seem to be a supplementary curriculum that aligns to how to modify instruction and materials for those who follow the alternate curriculum so the 1% of students with disabilities aligned to the alternate curriculum could also learn a modified version of the same materials as their non-disabled peers in an inclusive setting.

Your partner in education,

Jeanette Nowak

Updated May 2022

Jeanette Nowak @ msnowakhomeroom.com

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Credits 80

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October Outline

Standards covered during October:

- M.EE.6.NS.5-8 - Understand that positive and negative numbers are used together to describe quantities having opposite directions or values.
- M.EE.7.NS.2.c-d - Express a fraction with a denominator of 10 as a decimal.
- M.EE.7.NS.3 - Compare quantities represented as decimals in real world examples to tenths.
- M.EE.8.NS.2.a - Express a fraction with a denominator of 100 as a decimal.

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According to the Dynamic Learning Maps (DLM) website, these are the commonly tested standards that are used for the DLM assessment.

How to Access Math Instruction and Materials from Unique

1. https://www.n2y.com/unique-learning-system/
2. Log in using the provided username and password you received
3. Click on Unique Learning System
4. Click on the three lines

5. Select Monthly Lessons/Unit Lessons
6. Select Math
    a. When selecting materials, select PDF icon to save and print
7. Select Math Story Problems – Addition
    a. Fractions
8. Select Math Story Problems – Subtraction
    a. Fractions
    b. Positive and negative numbers
9. Select Algebra
    a. Ratios

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Understanding Differentiated Levels In Unique

- Level 3 Learners – can read text and can participate more independently in the lesson (Independent)
- Level 2 Learners- require pictorial support and require mild to moderate support to participate in the lesson (Supported)
- Level 1 Learners- require extensive supports to participate in the lesson (Participatory).

Measuring Success by the Essential Elements Standards

Students who take DLM assessments are instructed and assessed on *Essential Elements*. Essential Elements are grade-specific expectations about what students with the most significant cognitive disabilities should know and be able to do. The Essential Elements relate to college and career readiness standards for students in the general population.

October Math Pacing Guide
6th Grade

M.EE.6.NS.5-8 - Understand that positive and negative numbers are used together to describe quantities having opposite directions or values.

Learning Goal:

- Level 2-3 – I will add positive and negative numbers to solve a math problem and graph the answer.
- Level 1 – I will count objects with negative numbers.

Essential Questions:

- Where can I find this number on a number line?
- Does this number have a positive or negative value?
- What are some examples I can use to show negative and positive numbers?
- If I start with a positive number and then add a negative number, what direction on the number line will I move?
- How far is this number from zero?

Vocabulary:

- **Positive numbers -** numbers greater than zero; the numbers to the right of zero on the number line.
- **Negative numbers –** numbers that are less than zero; the numbers to the left of zero on the number line.
- **Whole number** - a positive integer or zero. 1, 15, 30 and 894 are examples.
- **Number line -** visual representation of numbers along a horizontal line.

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Mini-Map for M.EE.6.NS.5-8

Subject: Mathematics
The Number System (NS)
Grade: 6

Learning Outcome

DLM Essential Element	Grade-Level Standard
M.EE.6.NS.5-8 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero).	**M.6.NS.5** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. **M.6.NS.6** Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. **M.6.NS.7** Understand ordering and absolute value of rational numbers. **M.6.NS.8** Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

Linkage Level Descriptions

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
Communicate understanding of "separateness" by recognizing objects that are not joined together. Communicate understanding of set by recognizing a group of objects sharing an attribute.	Count all objects in a set to communicate the total number of objects in that set. Identify sets having the same number of objects. Identify a set containing a different number of objects than the other two sets. Recognize a set containing more or fewer objects than the other set.	Communicate understanding that opposite numbers are equidistant from zero but in opposite directions, or that when two opposite numbers are added together they yield a sum of zero (e.g., 3 + (- 3) = 0, thus 3 and -3 are opposite numbers).	Demonstrate use of positive and negative numbers in real-world contexts such as temperature, elevation, credits, and debits (e.g., representing a debit of 500 dollars as -500 dollars).	Communicate understanding of inequalities in real-world contexts (e.g., -3 degrees > -7 degrees means that -3 degrees is warmer than -7 degrees). Communicate the meaning of zero in relation to positive and negative numbers in real-world contexts (e.g., recognize that no elevation, or 0 feet, means "at sea level"; positive elevation, for example, 200 feet, means "above sea level"; and negative elevation, for example, -200 feet, means "below sea level").

Jeanet

Initial Precursor and Distal Precursor Linkage Level Relationships to the Target

How is the Initial Precursor related to the Target?

In order to use positive and negative numbers, students need to gain experience with creating sets. Educators can help students learn this by providing students with opportunities to take a set of objects (e.g., tiles, linking cubes, buttons) and separate them based on a given characteristic (e.g., shape, color, size) into two distinct sets. Then encourage them to separate them again based on another characteristic.

How is the Distal Precursor related to the Target?

As students begin to develop the understanding of sets and numbers, educators will highlight the differences between sets on the basis of overall area or discrete number using the words same, different, fewer and more. Provide students with multiple opportunities to count and compare a wide variety of sets with an increasing number of items, label the set (e.g., eight ball, 12 bears, 15 blocks), and move items in and out of the sets, labeling and counting them again (e.g., "You just said this set has 11 cubes; if I take two cubes, how many will you have?").

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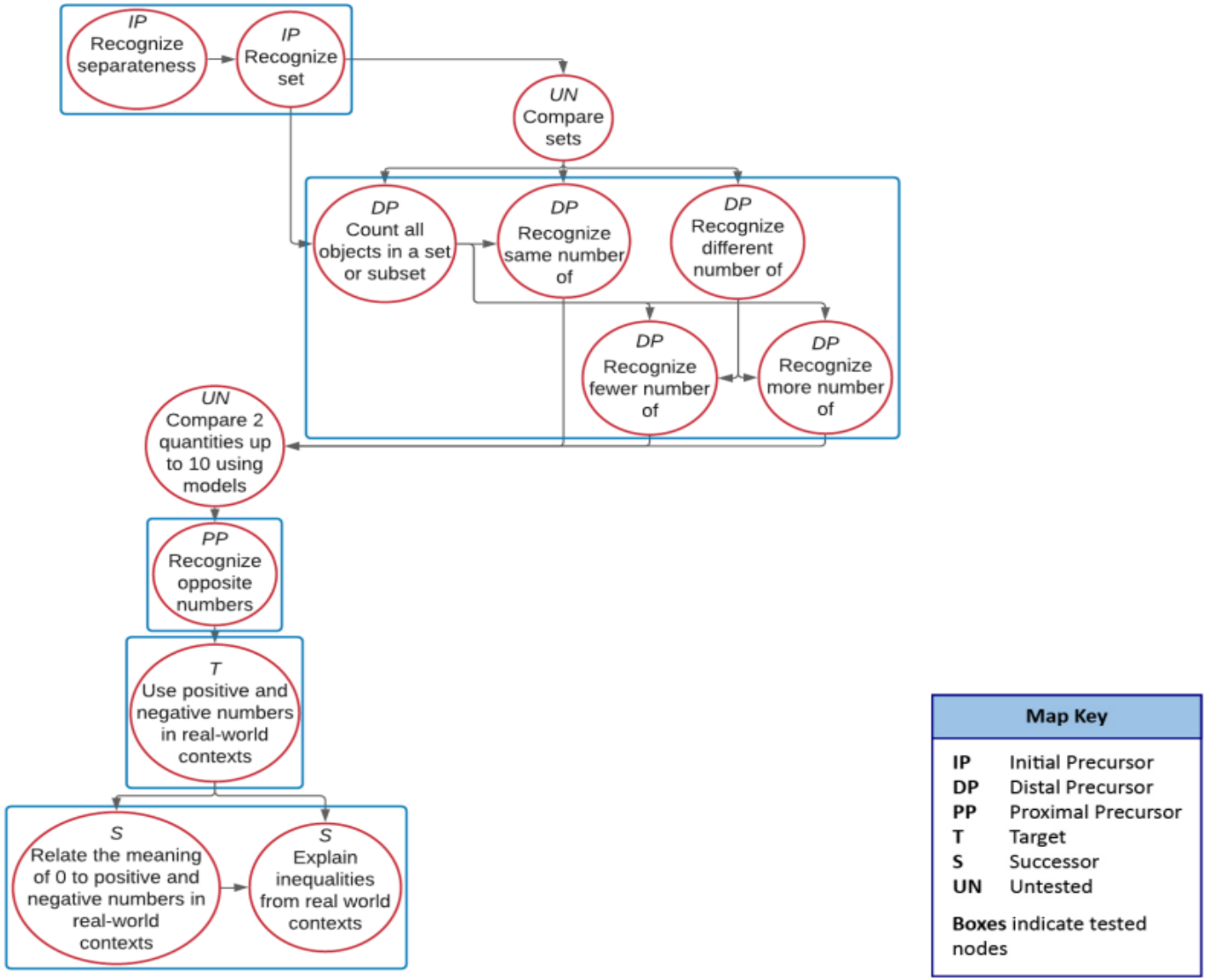
M.EE.6.NS.5-8 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero).



Rubric of Student Success

M.EE.6.NS.5-8 - Understand that positive and negative numbers are used together to describe quantities having opposite directions or values.

Level 3 Students will… Successor and Target Students will…	Level 2 Students will… Proximal Precursor and Distal Precursor Students will…	Level 1 Students will… Initial Precursor Students will…
Level 3 Identify and label positive and negative numbers in the context of a real-world scenario. Use appropriate operations to add and subtract positive and negative numbers in a real-world scenario (using a number line). Independently identify the opposite of a number and the number equals 0 (e.g., -2 and 2, -2 + 2 = 0).	Level 2 Select positive and negative numbers in a real-world scenario. Add or subtract positive and negative numbers in a real-world scenario (e.g., using a number line). Select the opposite of a number (e.g., -2 and 2, -2 + 2 = 0).	Level 1 Participate in labeling positive and negative numbers using an active response mode. Count a set of objects in an addition or subtraction real-world problem involving positive and negative numbers through an active participation response (e.g., voice output device, eye gaze choice board.). Participate in labeling the opposite of a number (e.g., -2 and 2, -2 + 2 = 0).
Successor • Relate the meaning of 0 to positive and negative numbers in real-world context	Proximal Precursor • Recognize opposite numbers	Initial Precursor • Recognize separateness • Recognize set

• Explain inequalities from real-world contexts **Target** • Use positive and negative numbers in real-world contexts	**Distal Precursor** • Count all numbers in a set or subset • Recognize same number of • Recognize differ number of • Recognize few number of • Recognize more number of	

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Instructional Ideas

M.EE.6.NS.5-8 - Understand that positive and negative numbers are used together to describe quantities having opposite directions or values.

Both positive and negative numbers represent a distance from zero on the number line.

The big idea is that positive numbers are greater than zero. Negative numbers are less than zero and have a negative sign (-) in front of them. A negative number is the opposite of a positive number of the same size.

- Introduce by asking the essential questions.
- Display a minus sign and ask, "What does this sign mean besides subtract – negative or positive?" Discuss students' responses.
- Introduce and discuss the symbols used to indicate a negative and positive number, including the minus sign and the plus sign.
- Discuss the uses of a negative number in temperature, seal level, and when owing money.
- Tell students it is their job to count, add negative and positive numbers, and graph the numbers on a number line.
- Remind students that when they see a minus sign, or negative sign, it means that the number is less than zero.
- Model the steps of graphing a positive and negative number on a number line.
- Model how to write positive and negative numbers with the appropriate sign in front of it.
- Model the steps of solving the problem using the number line.
- Solve the problem by counting in the targeted direction.
- Use manipulatives as needed.
- Students may use a calculator if needed.
- Provide students with their own number line and anchor chart.
- Included worksheets are examples of what to look for when finding additional materials that best fits your students needs.

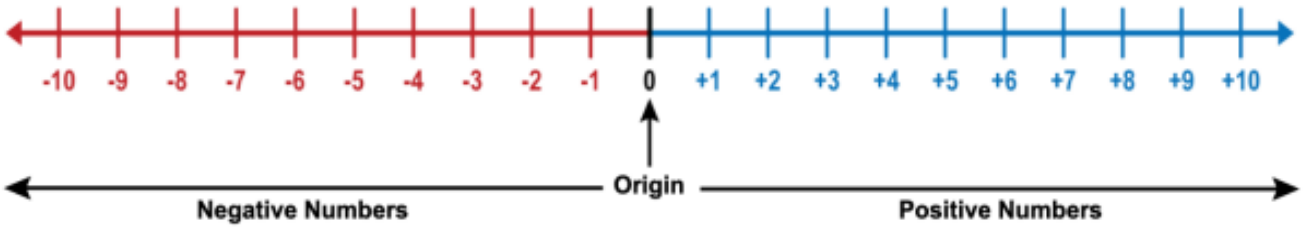
Additional Instructional Ideas

- Go to website for additional instructional resources, materials, and activities for lessons:
    - https://www.msnowakhomeroom.com/2e-positivenegative-numbers.html

Clues Guide 4
Positive and Negative Numbers

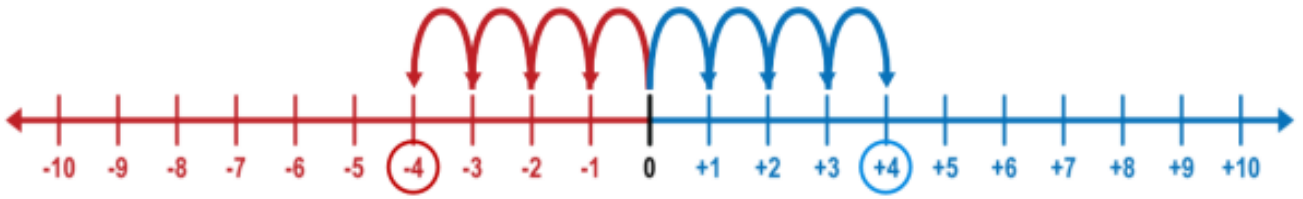
+ - Positive and Negative Numbers

Zero is the middle of all numbers.
Zero has no value. All **negative** numbers are to the **left** of **zero.**
All **positive** numbers are to the **right** of **zero.**



Numbers that are **equal** distance from **zero** are **opposites.**

For example, -4 and +4 are **opposites** because they are both 4 units from zero.



Adding opposite numbers will always equal **zero.**
For example, +4 + -4 = 0 or -4 + +4 = 0

Positive and Negative numbers describe opposite relationships:

Positive is opposite of Negative

Up is opposite of Down

Above is opposite of Below

How much you **have** is opposite of How much you **owe**

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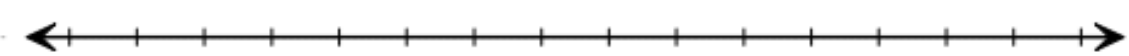
2

3



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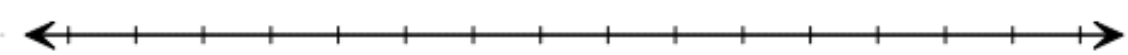

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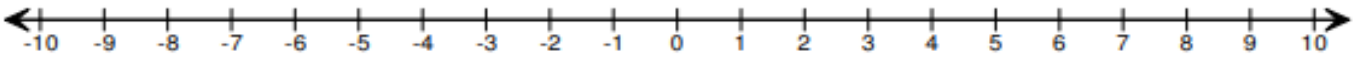
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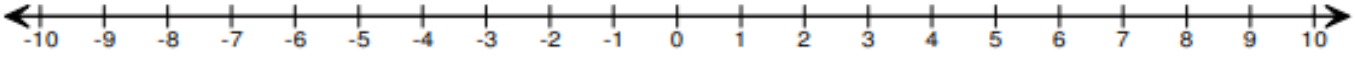
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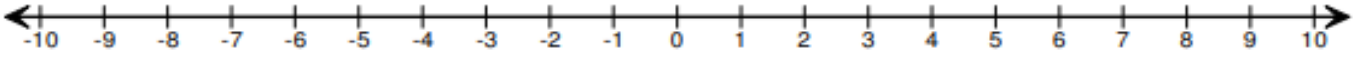
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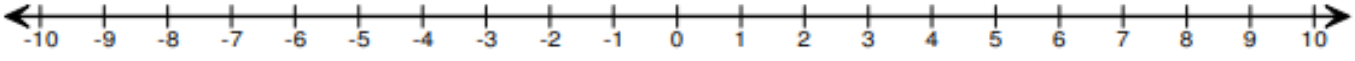
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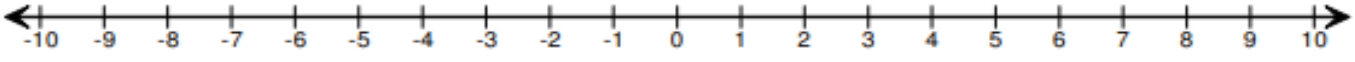
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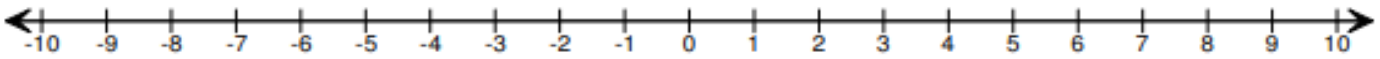

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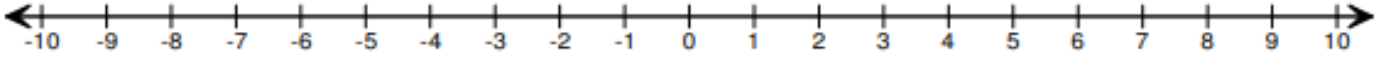

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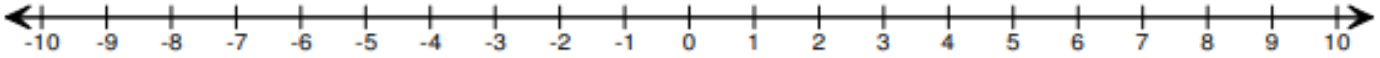

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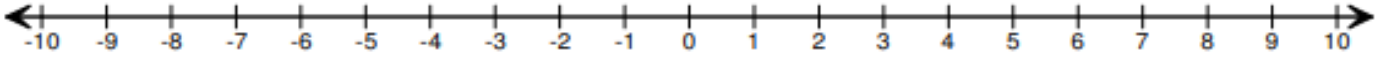

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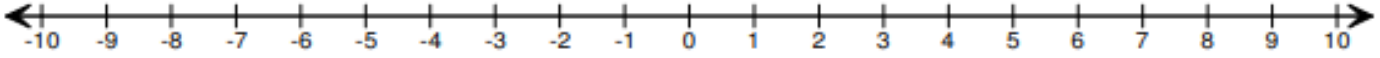

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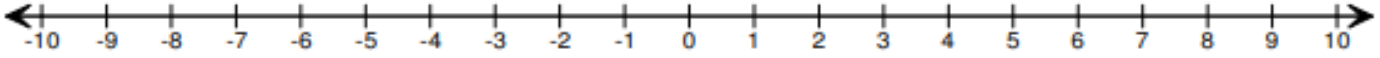

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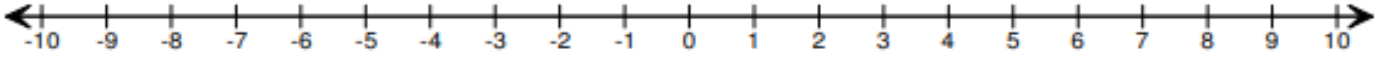

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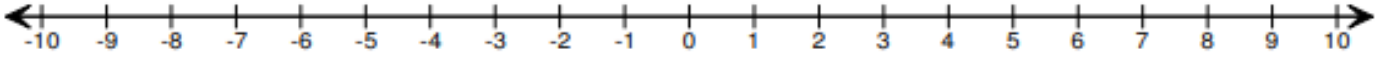

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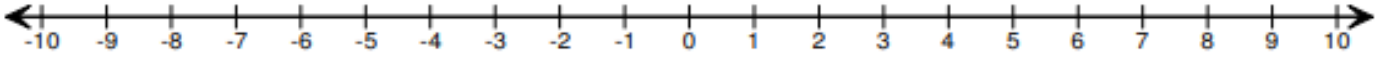

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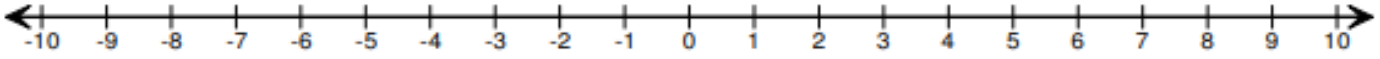

Number Line

Use the number line to find the answer to each problem. Look at the first number in the problem. Put your pencil on that number on the number line. Look at the second number in the problem. Move your pencil to the right that many numbers on the number line to find the answer.

① 4+2=_____

② 0+5=_____

③ 1+6=_____

④ 7+3=_____

⑤ 5+4=_____

⑥ 1+9=_____

⑦ 8+2=_____

⑧ 4+0=_____

⑨ 6+3=_____

⑩ 3+3=_____

⑪ 2+3=_____

⑫ 2+7=_____

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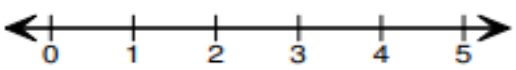
Student Name: _____ **Score:**

Addition Using Number Line

Draw hops to show the addition sentence and find the sum.

1)



1 + 3 = ☐

2)

2 + 2 = ☐

3)

3 + 2 = ☐

4)

1 + 1 = ☐

5)

2 + 1 = ☐

6)

3 + 1 = ☐

7)

1 + 4 = ☐

8)

2 + 3 = ☐

Name: _____ Date _____

Topic: Representing Integers- Worksheet 1

Represent the statements with integers.

1 Forty-eight feet below sea level.

2 The opposite of -768

3 A pay cut of $14,000.

4 The stock market went up 1,400 points today.

5 The football player had a 60 yard gain on the play.

6 60^0 below zero.

7 The opposite of -974

8 A loss of thirty pounds.

9 A raise of $14,450.

10 Ninety-five feet below sea level.

Student Name: _____ **Score:**

Opposite of Integers

Write the opposite of the integers: (The first one is done for you)

Opposite of 3	**-3**
Opposite of −4	
Opposite of −9	
Opposite of 6	
Opposite of 4	
Opposite of −1	
Opposite of 9	
Opposite of −2	
Opposite of 1	
Opposite of −8	
Opposite of −3	
Opposite of 2	
Opposite of −5	
Opposite of 7	
Opposite of −6	
Opposite of −3	

Student Name: _____ **Score:**

Representation of Integers

Reperesent the following statement as integers: (The first one is done for you)

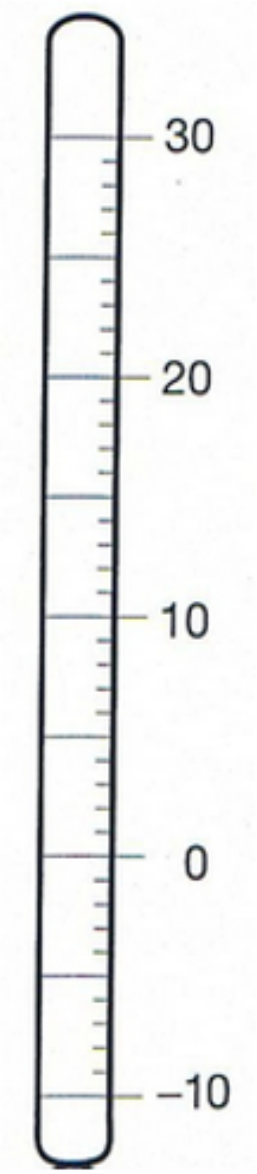
Statement	Integer
Rony earned $ 5	+5
The tempreature falls 10 degrees	
Tim won 20 points	
Jack lost forty dollars	
The plant has grown 3 inches since last month	
Thomas has to pay $ 4 as penalty	
The cat lost its two kittens	
Rosy have 12 excessive stamps compared to others	
Henry won a lottery amount of $ 50	
Andy got 7 set of watches as gift	
Zack lost a pound since last month	

Temperature:

The table displays the low temperatures that occurred in North Dakota during a week last winter.

Day:	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Low Temperature in °F	8°	-2°	-4°	-6°	0°	-3°	-8°

1. Mark and label the temperatures from that week.



Put the temperatures in order from coldest to warmest:

Number Line Practice:

Directions: Fill in the missing numbers on each number line.

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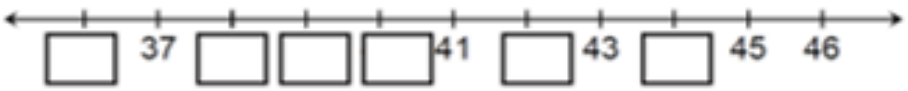

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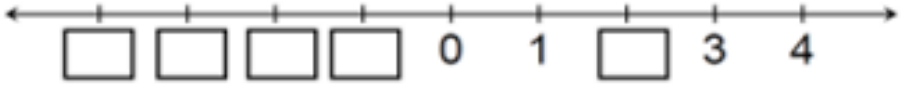

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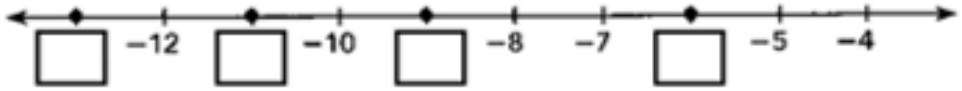

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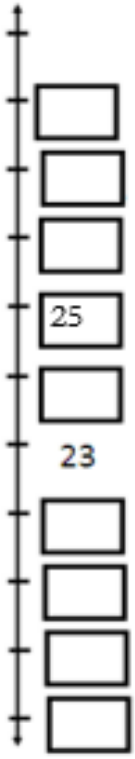

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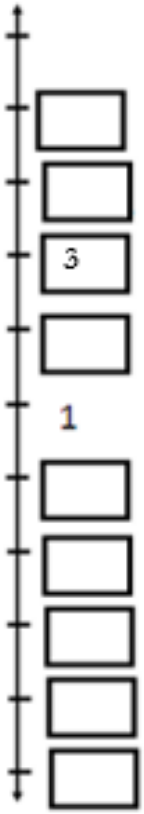
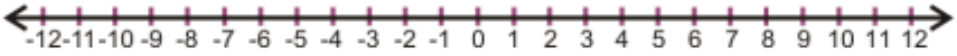


6.

Name: _____ Date _____

Topic: Positive/Negative Number Line Addition - Worksheet 1

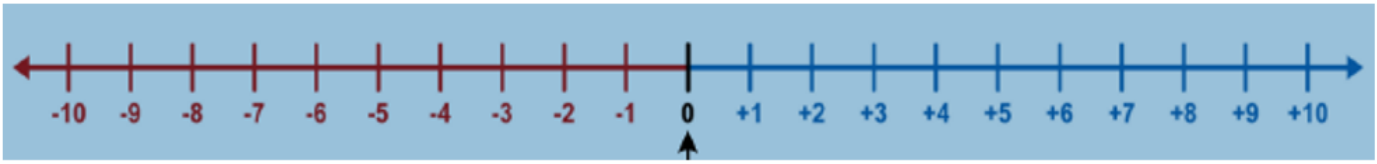
Directions: Complete the following operation using the number lines.

1	2+2	
2	5-2	
3	-6-4	
4	6+2	
5	9-2	
6	4+2	
7	1+6	
8	-8+2	
9	7+1	
10	3+4	

Name _____

Date _____

Number Line



Word Bank

Down **Giraffe** **Below** **Right** **How much you owe** **Left** **Negative**

1. **Positive** is opposite of _____.
2. **Up** is opposite of _____.
3. **Above** is opposite of _____.
4. **How much you have** is opposite of _____.
5. **Positive** numbers are to the _____ of zero (0).
6. **Negative** numbers are to the _____ of zero (0).

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October Math Pacing Guide
7th Grade

1. M.EE.7.NS.2.c-d - Express a fraction with a denominator of 10 as a decimal.

Learning Goal:

- Level 2-3 – Students will represent a fraction with a denominator of 10 as a decimal
- Level 1 – Students will recognize separateness

Essential Questions:

- How can I express a fraction as a decimal?

Vocabulary:

- **decimal** - in the base ten number system, a number that has a decimal point with digits after it.
- **decimal point** - a dot or point used to separate whole numbers from fractions.
- **digit** - one of the numbers from zero to nine.
- **fraction** - a representation of a division of a number; a part of a whole.
- **hundredth** - one part of one hundred equal parts; 0.01.
- **number line** - a line that shows all numbers placed in their correct positions.
- **tenth** - one of ten equal parts into which something is divided; 0.10.
- **denominator** – the part of a fraction that is below the line that functions as the divisor of the number.
- **numerator –** the number above the line in a common fraction showing how many parts indicated by the denominator are taken.

Jeanette

Mini-Map for M.EE.7.NS.2.c-d

Subject: Mathematics
The Number System (NS)
Grade: 7

Learning Outcome

DLM Essential Element	Grade-Level Standard
M.EE.7.NS.2.c-d Express a fraction with a denominator of 10 as a decimal.	**M.7.NS.2.c** Apply properties of operations as strategies to multiply and divide rational numbers. **M.7.NS.2.d** Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.

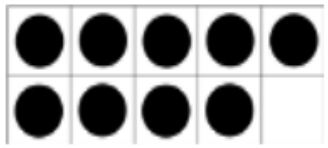
Linkage Level Descriptions

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
Communicate understanding of "separateness" by recognizing objects that are not joined together. Communicate understanding of a set by recognizing a group of objects sharing an attribute.	Recognize a set model that represents a whole.	Recognize one-tenth in a set model. Recognize multiple tenths, such as two-tenths, five-tenths, or eight-tenths in a set model.	Communicate understanding that a decimal point is a dot that separates the whole number from the fractional part of a number. Represent a fraction with a denominator of 10 as a decimal.	Communicate understanding that the value of the digit in the tenths place is worth that many tenths. Compare two decimals to the tenths place using symbols (i.e., =, <, >) to show that one is greater than, less than, or equal to the other.

Initial Precursor and Distal Precursor Linkage Level Relationships to the Target

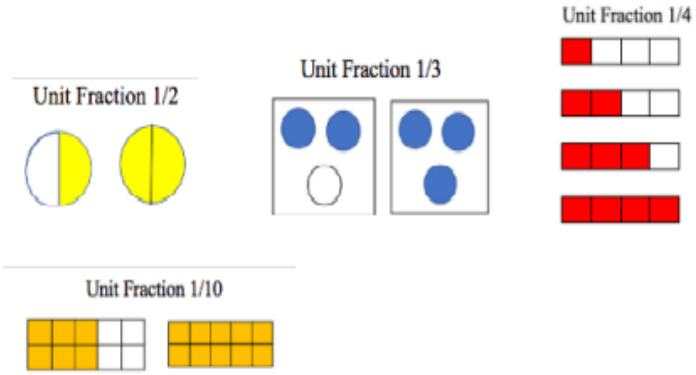
How is the Initial Precursor related to the Target?

Expressing a fraction as a decimal requires a student to be able to recognize that two or more sets or groups of items exist. Work on this skill using a variety of sets. Help students recognize when items are grouped together into a set or separated out. As educators present a set, they label it (e.g., two balls, one marker, three CDs), count the items, label it again, and encourage students to use numerals to label and count the separate sets. Use tools like the ten-frame to point out whole and parts (e.g., a set of 9 is part of 10).



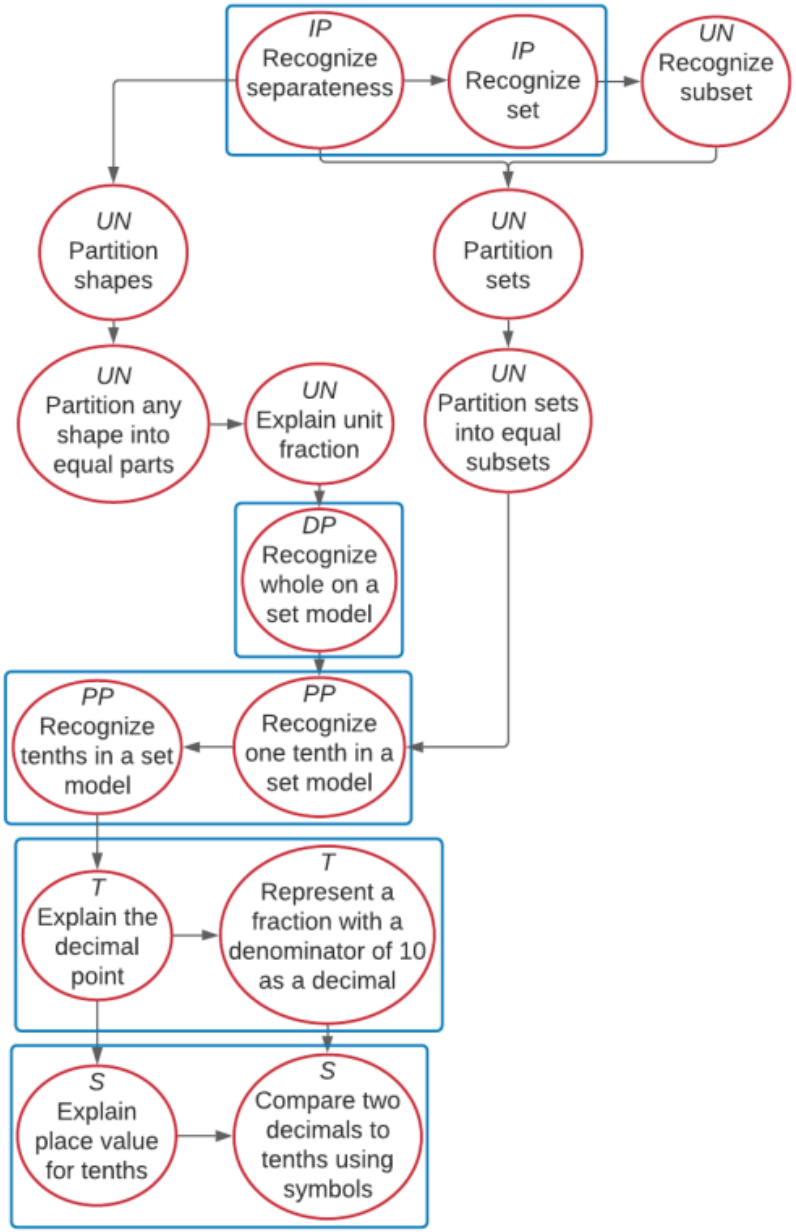
How is the Distal Precursor related to the Target?

As students work toward a greater understanding of sets, educators will provide students with many set models (see below) of fractions using the same unit fraction, either halves, thirds, fourths, or tenths. Students will work on identifying the whole.



Jeanette Nowak

M.EE.7.NS.2.c-d Express a fraction with a denominator of 10 as a decimal.



Map Key	
IP	Initial Precursor
DP	Distal Precursor
PP	Proximal Precursor
T	Target
S	Successor
UN	Untested

Boxes indicate tested nodes

Rubric of Student Success

M.EE.7.NS.2.c-d - Express a fraction with a denominator of 10 as a decimal.

Level 3 Students will… Successor and Target Students will…	Level 2 Students will… Proximal Precursor and Distal Precursor Students will…	Level 1 Students will… Initial Precursor Students will…
Level 3 Unique does not have lessons on this standard.	Level 2 Unique does not have lessons on this standard.	Level 1 Unique does not have lessons on this standard.
Successor • Explain place value for tenths • Compare two decimals to tenths using symbols Target • Explain the decimal point • Represent a fraction with a denominator of 10 as a decimal	Proximal Precursor • Recognize one tenth in a set model • Recognize tenths in a set model Distal Precursor • Recognize whole on a set model	Initial Precursor • Recognize separateness • Recognize set

Jeanette Nowak

Instructional Ideas

M.EE.7.NS.2.c-d - Express a fraction with a denominator of 10 as a decimal.

Numbers can be converted.

The big idea is that the concepts and properties of addition, subtraction, multiplication, and division are the same whether using whole numbers, fractions, or decimals.

- Introduce by asking the essential questions.
- Students will convert a fraction with denominator of 10 to a decimal.
- Use manipulatives as needed.
- Students may use a calculator if needed.
- Included worksheets are examples of what to look for when finding additional materials that best fits your student's needs.

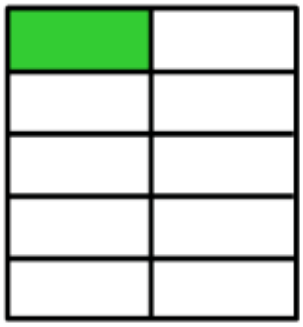
Additional Instructional Ideas

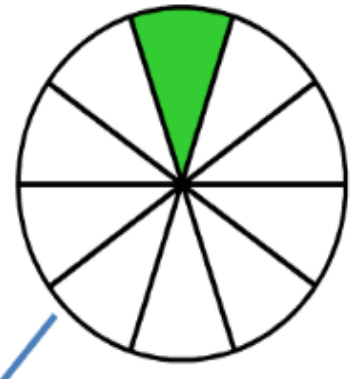
- Go to website for additional instructional resources, materials, and activities for lessons:
    - https://www.msnowakhomeroom.com/2d-decimals.html

Jeanette Nowak @

FRACTION INFORMATION CARD

One-tenth





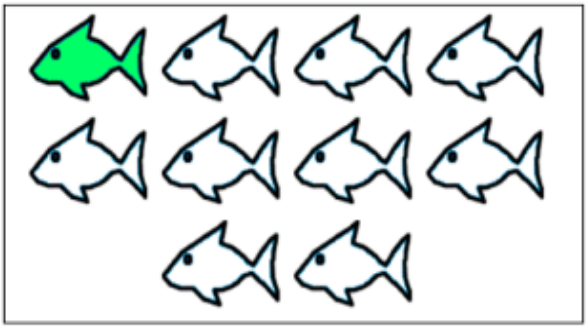
$\frac{1}{10}$

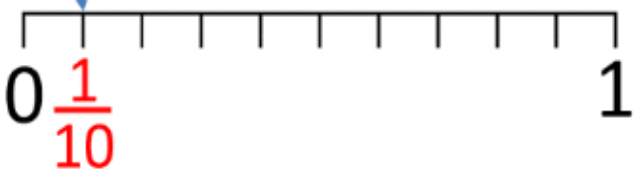
0.1

DECIMAL

10%

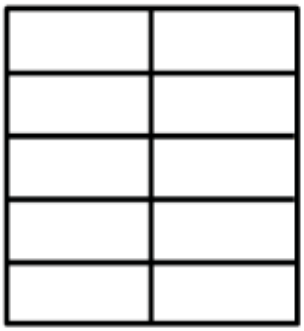
PERCENT

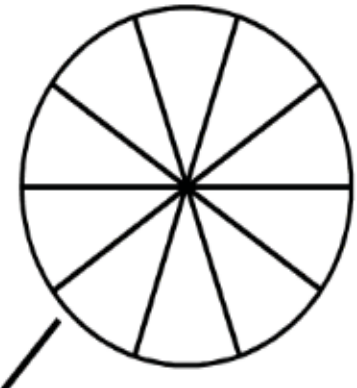




FRACTION INFORMATION CARD

One-tenth





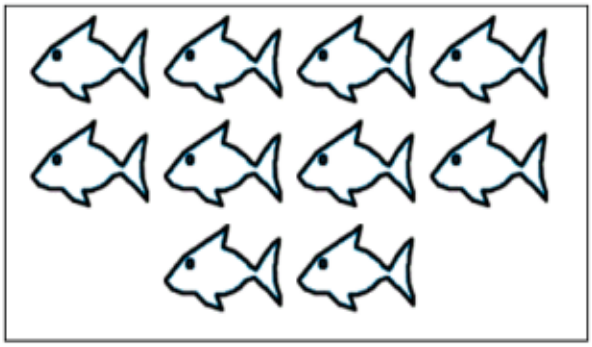
$\frac{1}{10}$

0.1

DECIMAL

10%

PERCENT



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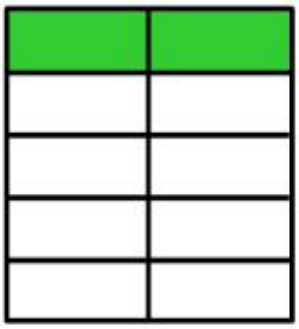
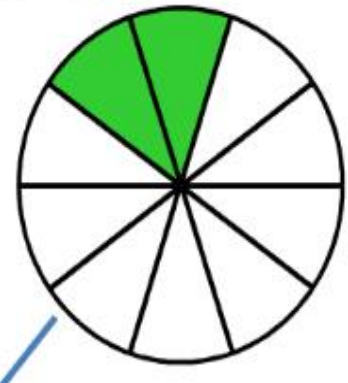
FRACTION INFORMATION CARD

Two-tenths





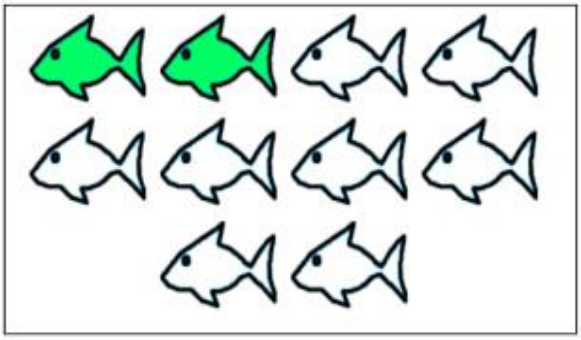
$\frac{2}{10}$

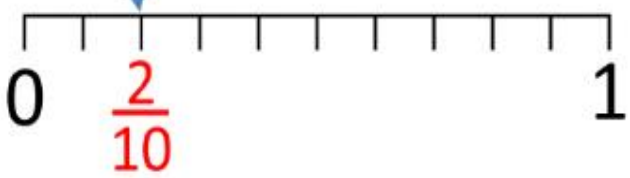
0.2

DECIMAL

20%

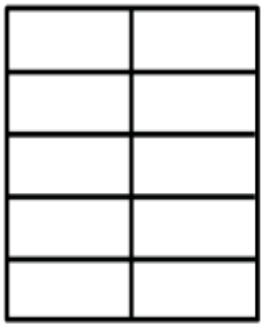
PERCENT

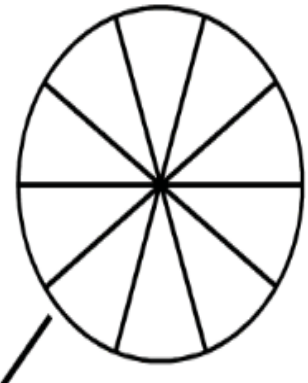




FRACTION INFORMATION CARD

Two-tenths





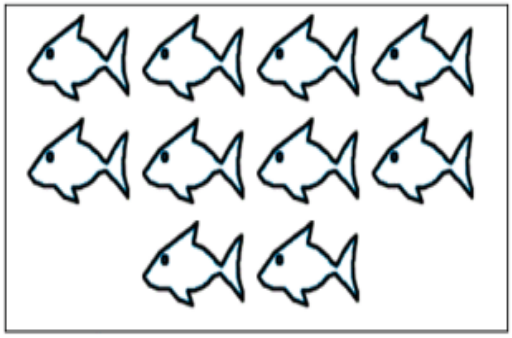
$\frac{2}{10}$

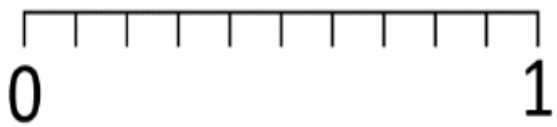
0.2

DECIMAL

20%

PERCENT





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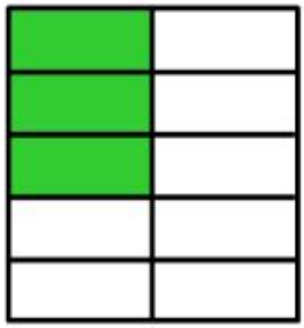
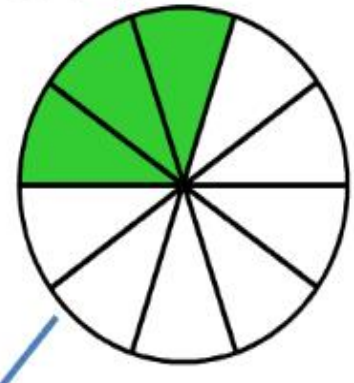
FRACTION INFORMATION CARD

Three-tenths





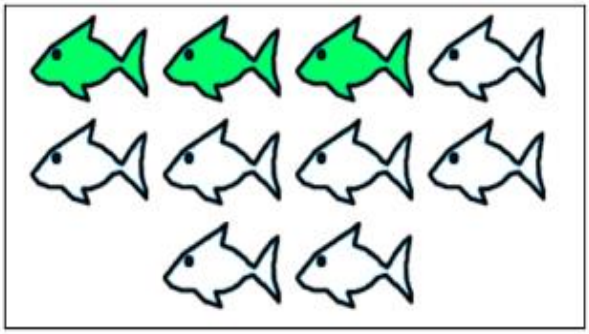
$\frac{3}{10}$

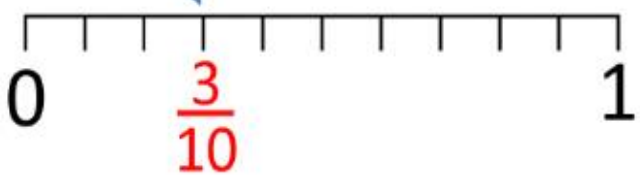
0.3

DECIMAL

30%

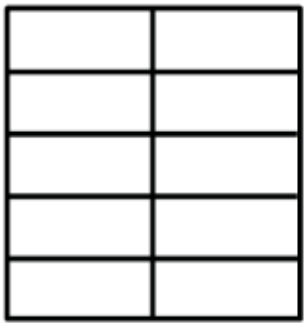
PERCENT

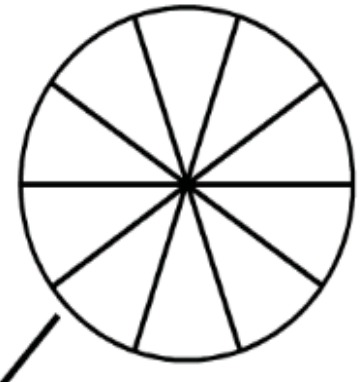




FRACTION INFORMATION CARD

Three-tenths





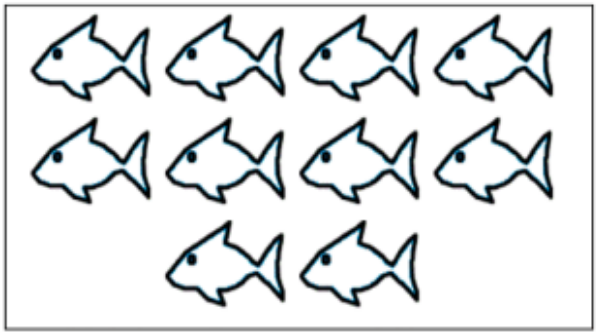
$\frac{3}{10}$

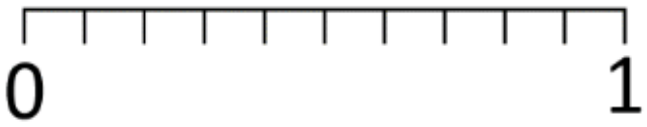
0.3

DECIMAL

30%

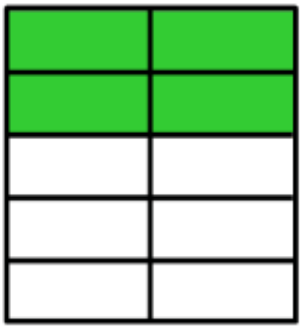
PERCENT

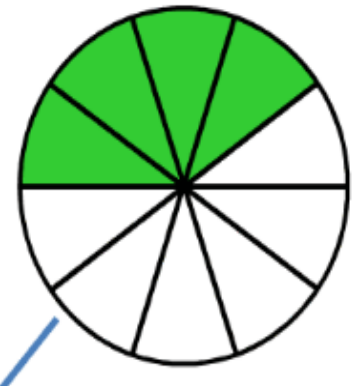




FRACTION INFORMATION CARD

Four-tenths





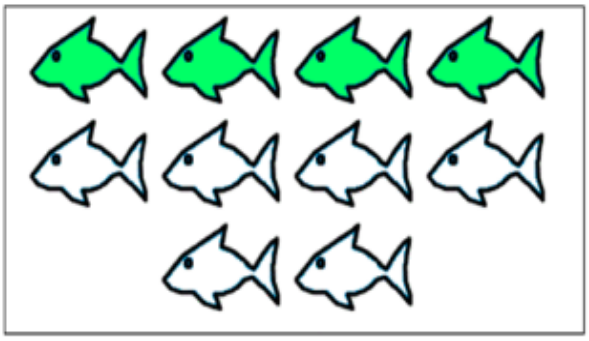
$\frac{4}{10}$

0.4

DECIMAL

40%

PERCENT



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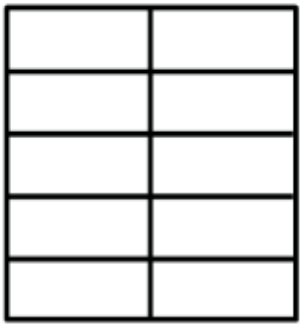
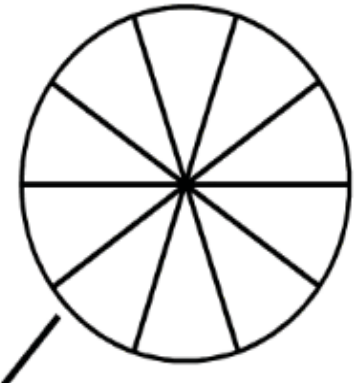
Four-tenths





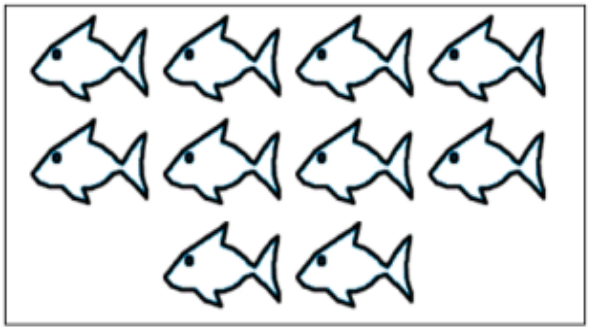
$\frac{4}{10}$

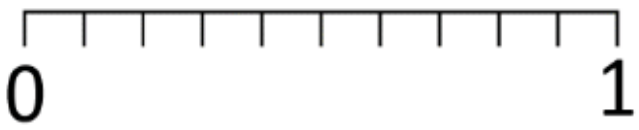
0.4

DECIMAL

40%

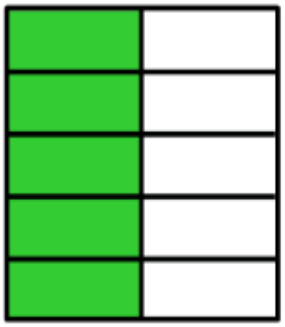
PERCENT

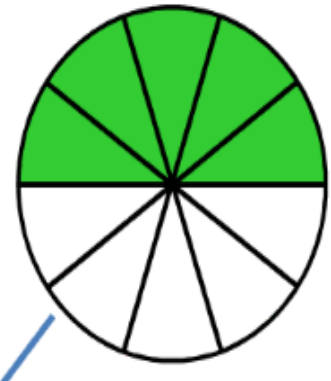




FRACTION INFORMATION CARD

Five-tenths





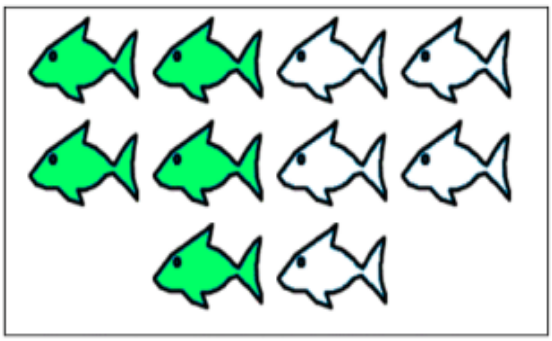
$\frac{5}{10}$

0.5

DECIMAL

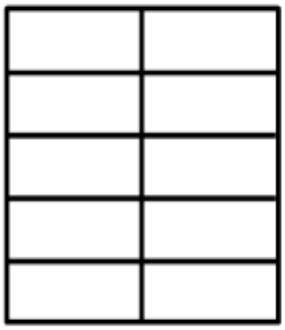
50%

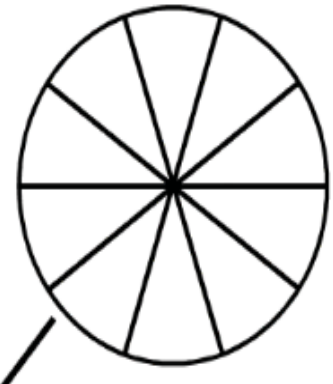
PERCENT



FRACTION INFORMATION CARD

Five-tenths





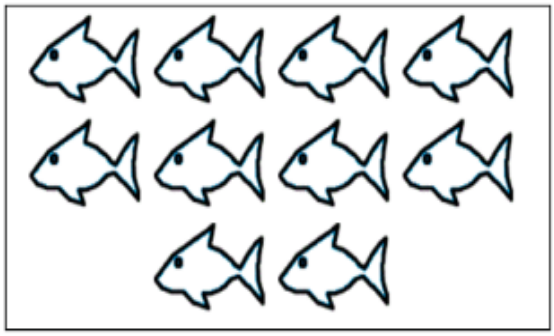
$\frac{5}{10}$

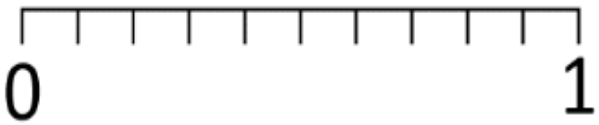
0.5

DECIMAL

50%

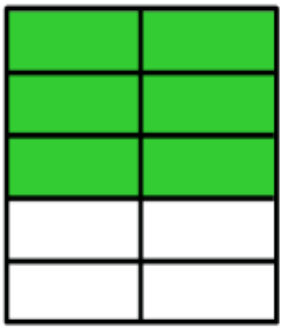
PERCENT

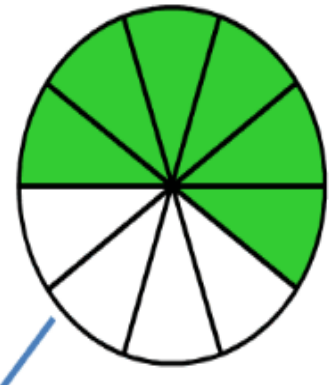




FRACTION INFORMATION CARD

Six-tenths





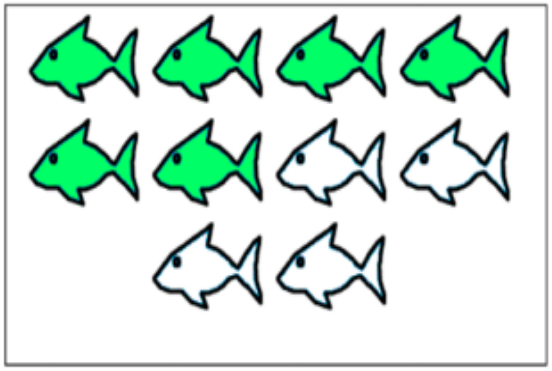
$\frac{6}{10}$

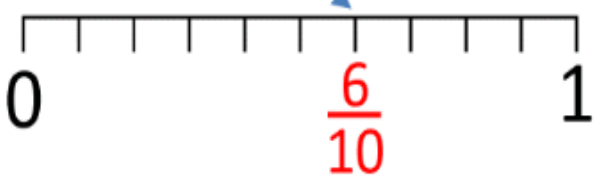
0.6

DECIMAL

60%

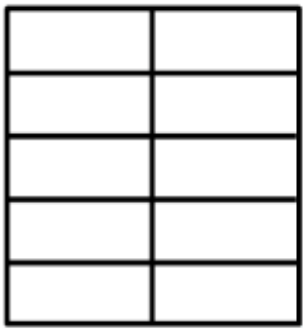
PERCENT

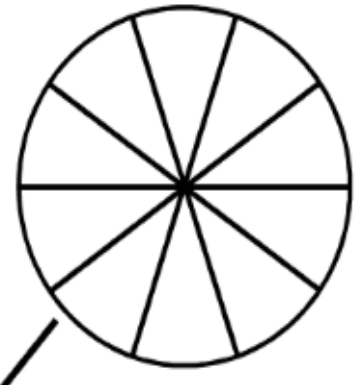




FRACTION INFORMATION CARD

Six-tenths





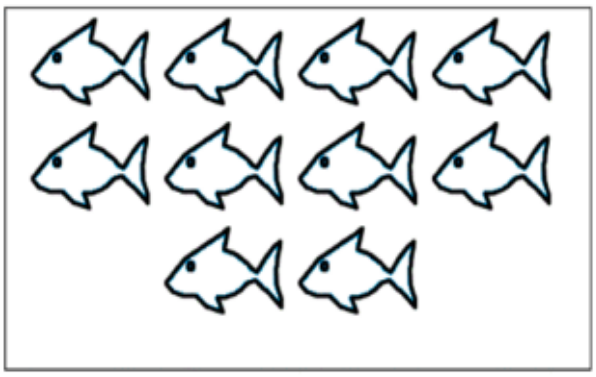
$\frac{6}{10}$

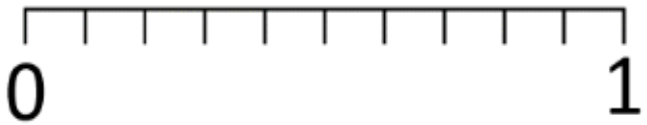
0.6

DECIMAL

60%

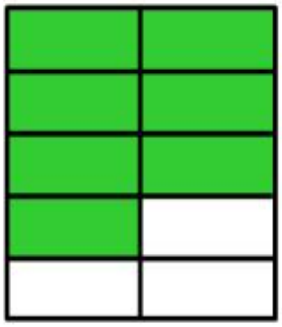
PERCENT

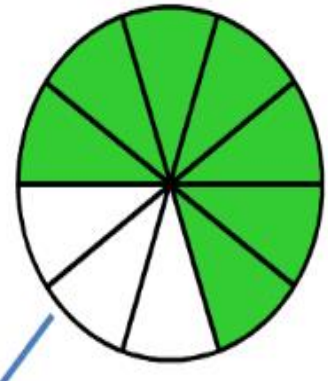




FRACTION INFORMATION CARD

Seven-tenths





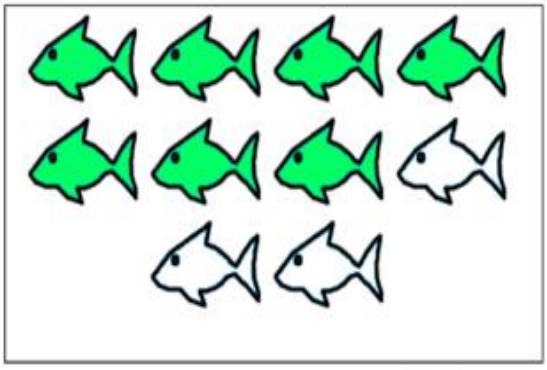
$\frac{7}{10}$

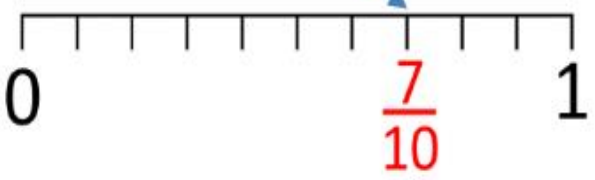
0.7

DECIMAL

70%

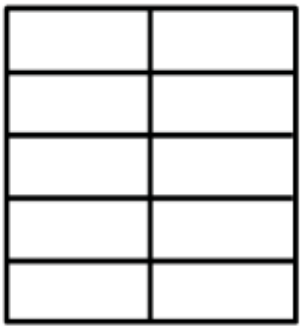
PERCENT

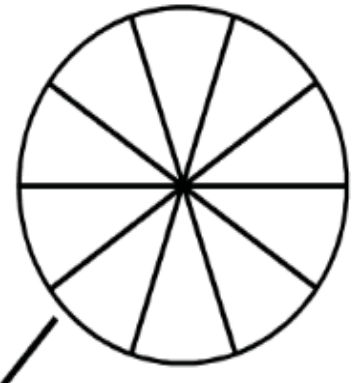




FRACTION INFORMATION CARD

Seven-tenths





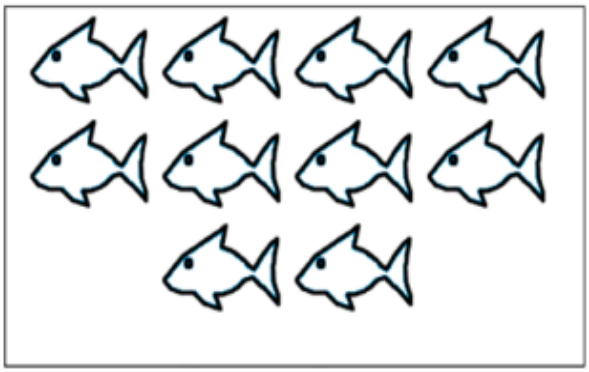
$\frac{7}{10}$

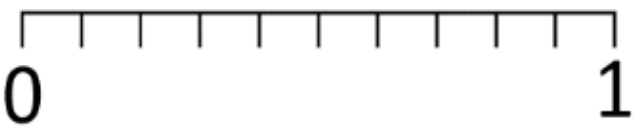
0.7

DECIMAL

70%

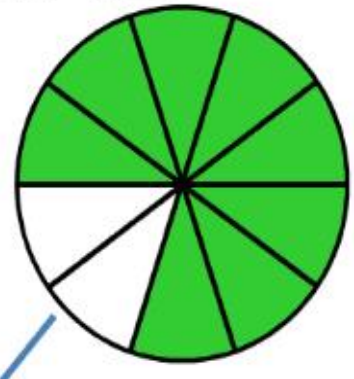
PERCENT





FRACTION INFORMATION CARD

Eight-tenths



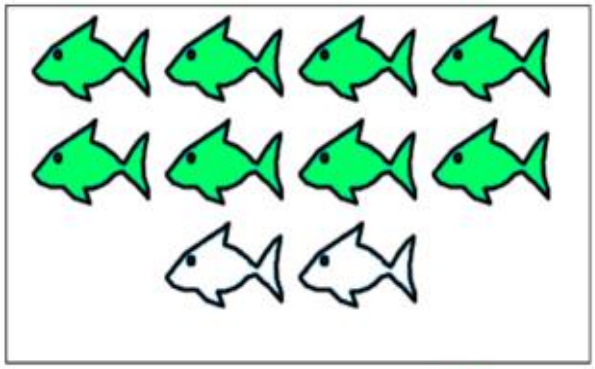
$\frac{8}{10}$

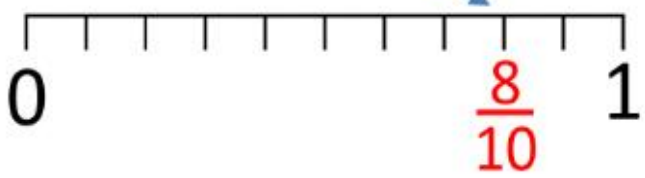
0.8

DECIMAL

80%

PERCENT





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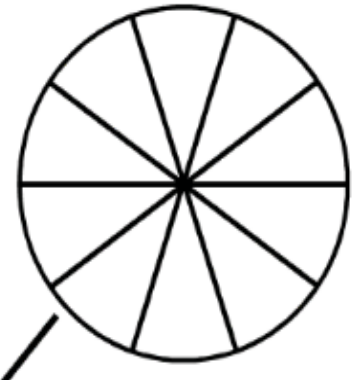
FRACTION INFORMATION CARD

Eight-tenths



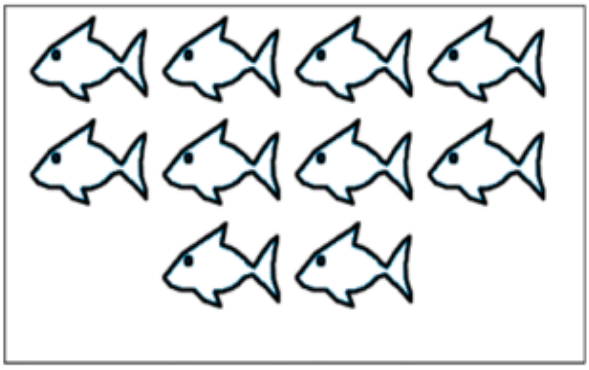
$\frac{8}{10}$

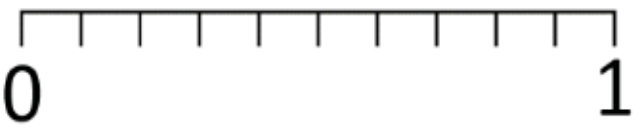
0.8

DECIMAL

80%

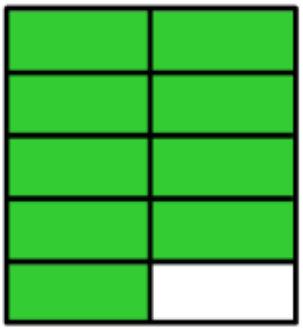
PERCENT

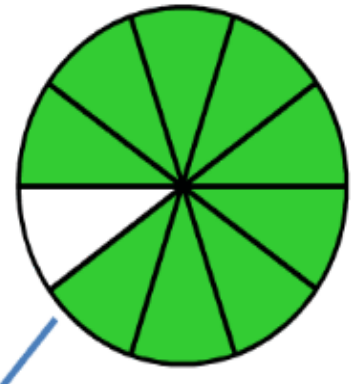




FRACTION INFORMATION CARD

Nine-tenths





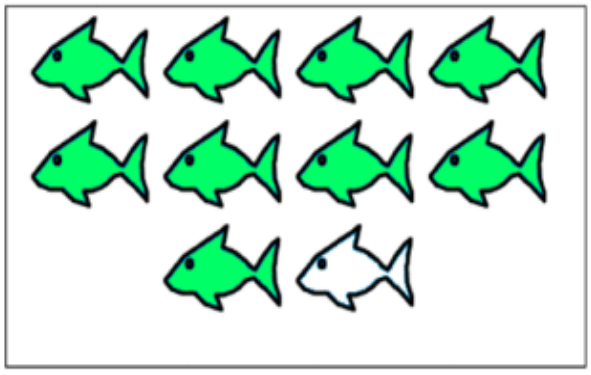
$\frac{9}{10}$

0.9

DECIMAL

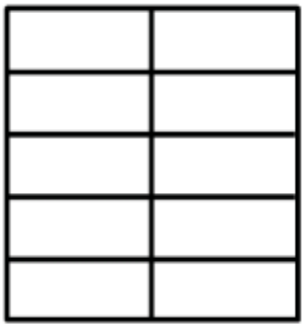
90%

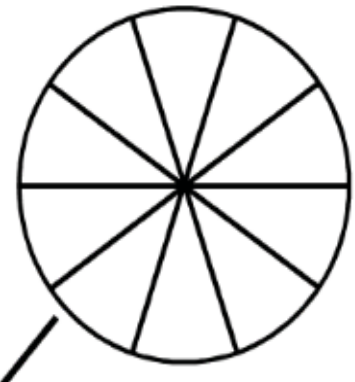
PERCENT



FRACTION INFORMATION CARD

Nine-tenths





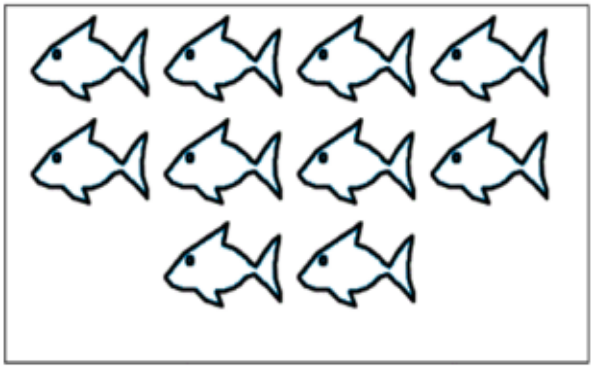
$\frac{9}{10}$

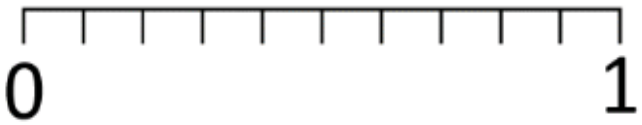
0.9

DECIMAL

90%

PERCENT





Tenths Place

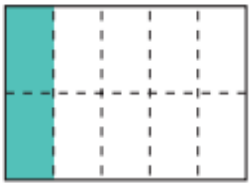
A decimal is a number that contains a decimal point.
Digits can be placed to the left and right of a decimal point to show numbers greater than one or less than one.
The decimal point is placed to the right of the ones place.

tenths
↓
0.7
↑
decimal point

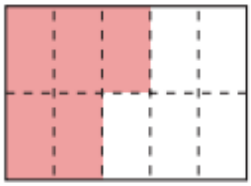
The first digit to the right of the decimal point is in the tenths place.

The decimal **0.7** is equal to **seven tenths**, or $\frac{7}{10}$.

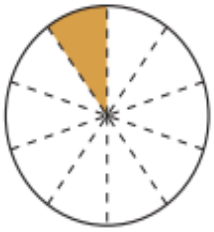
What fraction of the shape has been colored?
Write the fraction and its equivalent **decimal**.



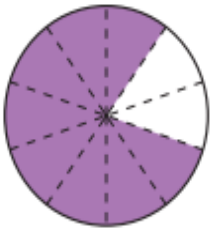
$\frac{2}{10} = 0.2$



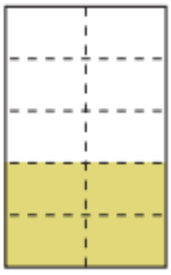
$\frac{\quad}{\quad} = \quad$



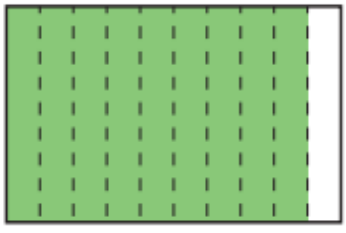
$\frac{\quad}{\quad} = \quad$



$\frac{\quad}{\quad} = \quad$



$\frac{\quad}{\quad} = \quad$



$\frac{\quad}{\quad} = \quad$

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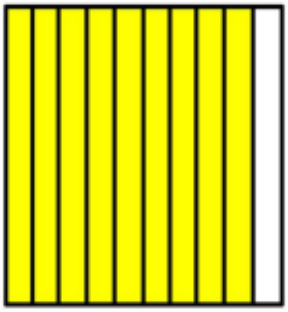
Name: _____

Decimals: Tenths

Write the decimal and the fraction shown by each square.

a.

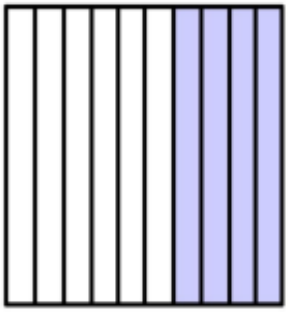


_____

b.

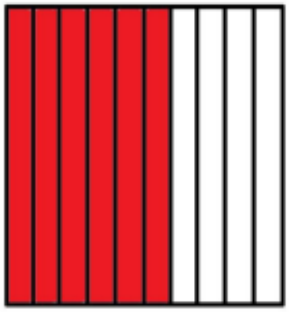
_____

c.



_____

d.

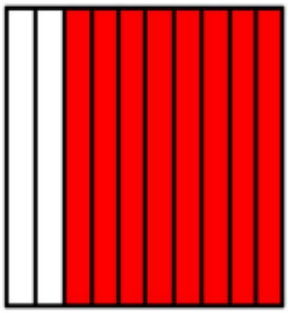


_____

e.

_____

f.



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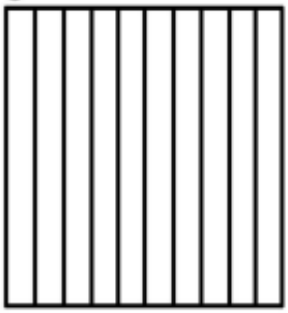
g.

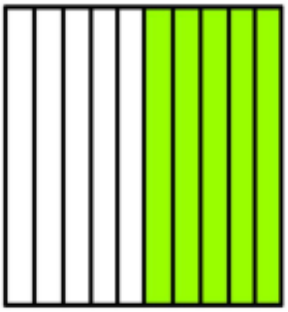


_____

h.

_____

i.



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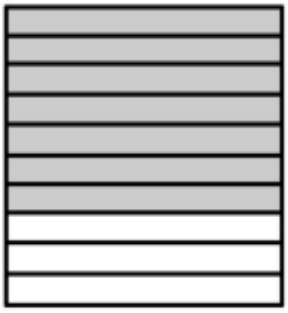
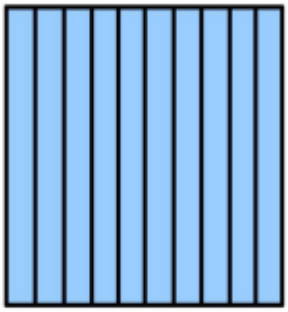
j.



_____

k.



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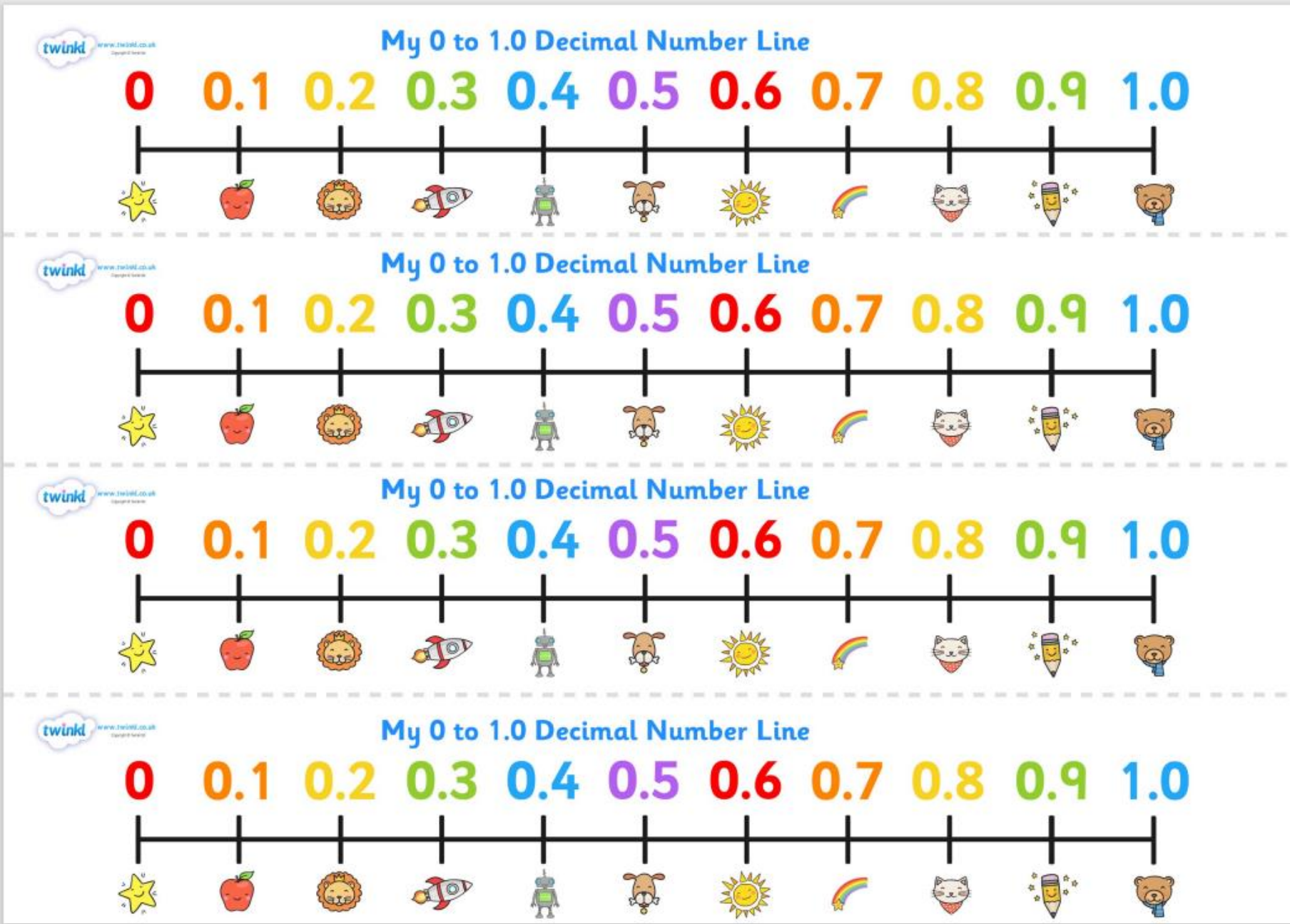
My 0 to 1.0 Decimal Number Line
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0
My 0 to 1.0 Decimal Number Line
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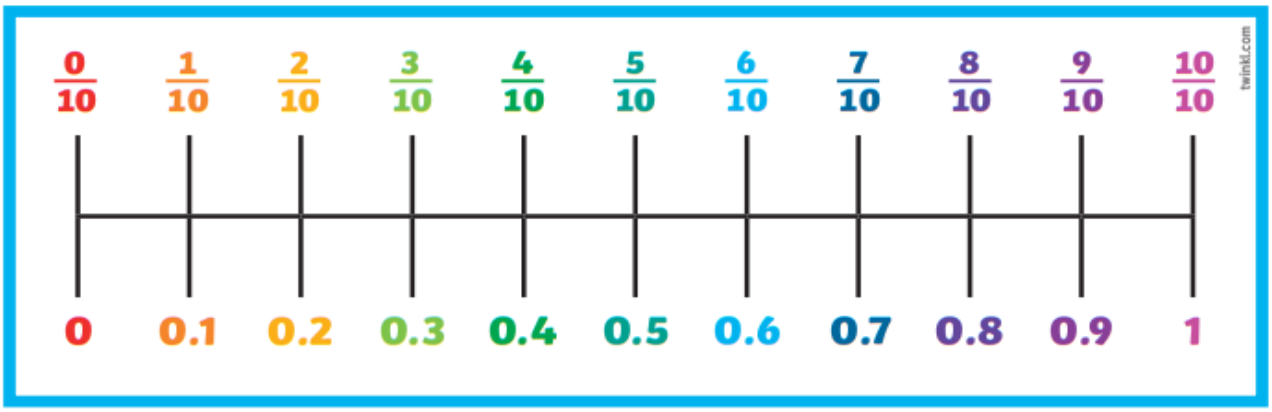
My 0 to 1.0 Decimal Number Line
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0
My 0 to 1.0 Decimal Number Line
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0


0/10 1/10 2/10 3/10 4/10 5/10 6/10 7/10 8/10 9/10 10/10
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
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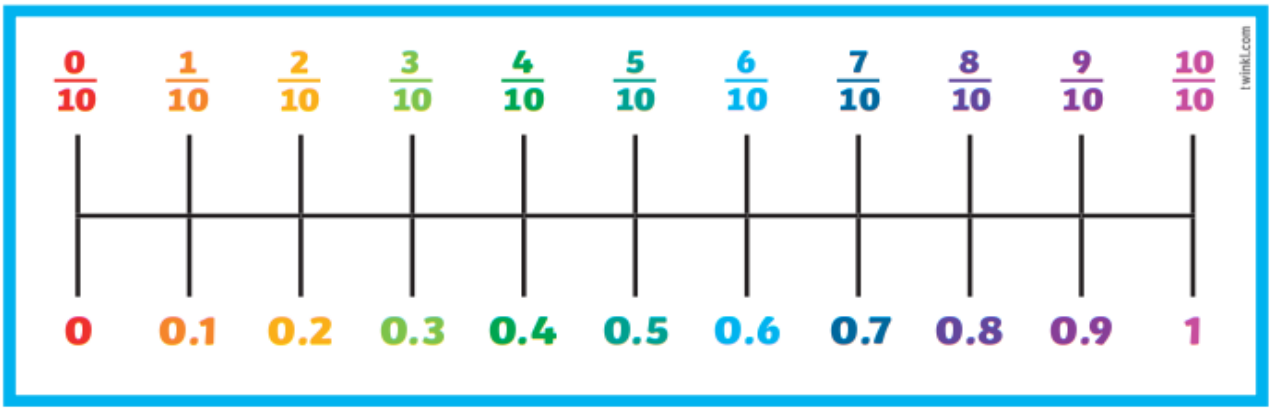
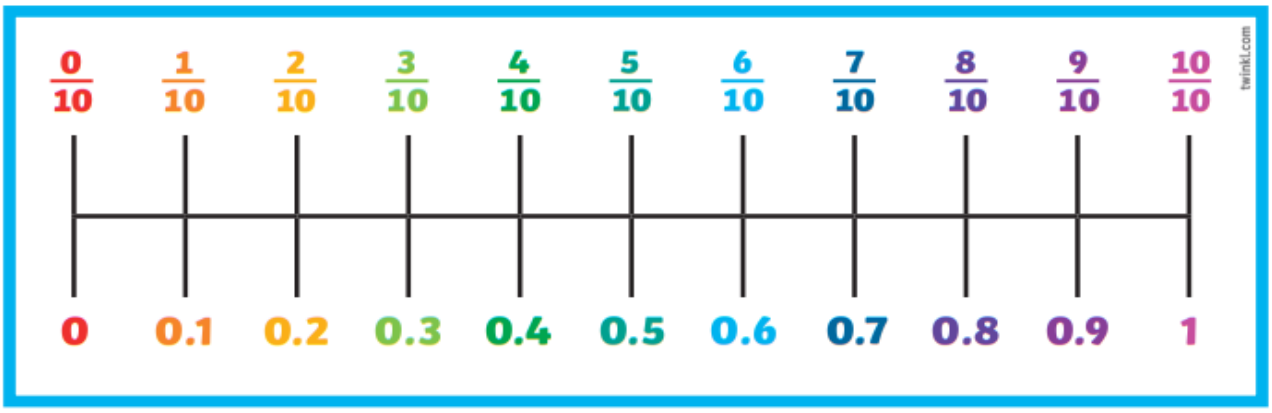

0/10 1/10 2/10 3/10 4/10 5/10 6/10 7/10 8/10 9/10 10/10
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
twinkl.com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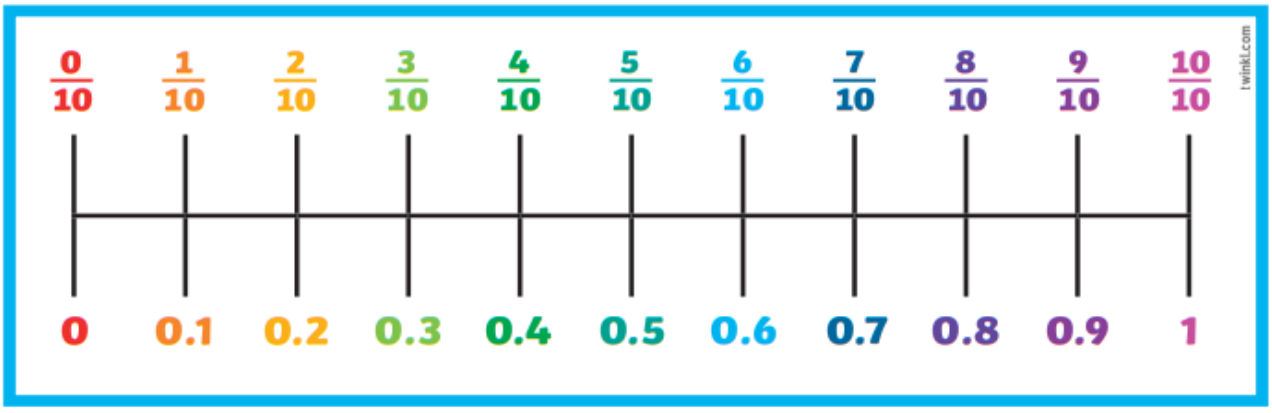
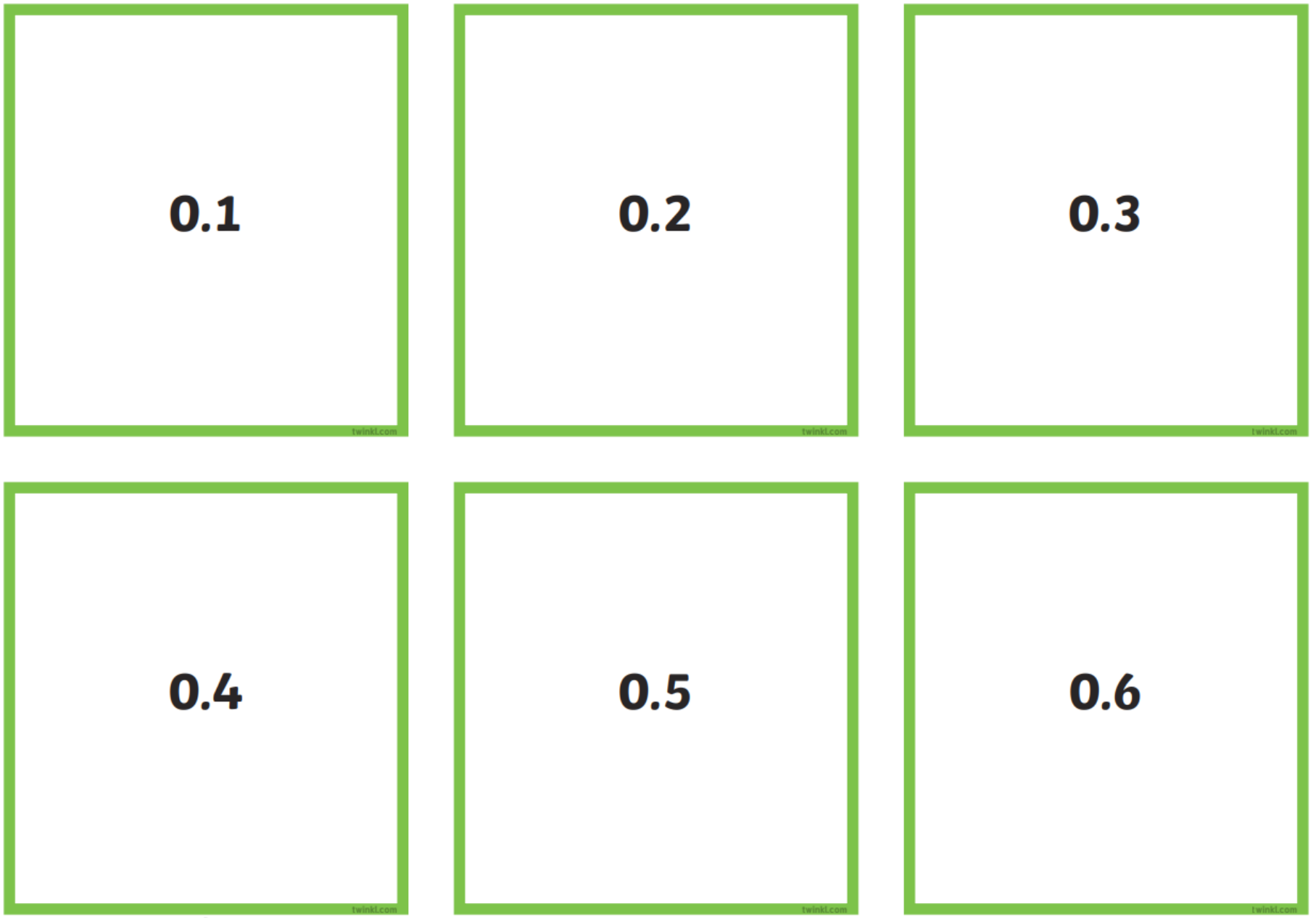
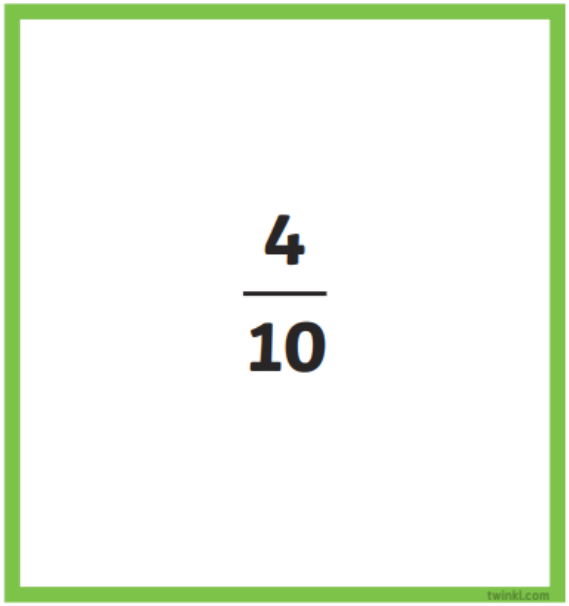
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
twinkl.com


0/10 1/10 2/10 3/10 4/10 5/10 6/10 7/10 8/10 9/10 10/10
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
twinkl.com


0.1
0.2
0.3
0.4
0.5
0.6

0.7	0.8	0.9
$\frac{1}{10}$	$\frac{2}{10}$	$\frac{3}{10}$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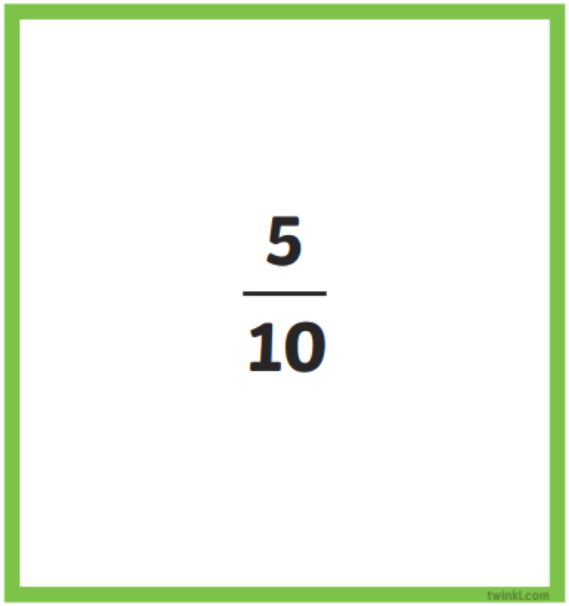
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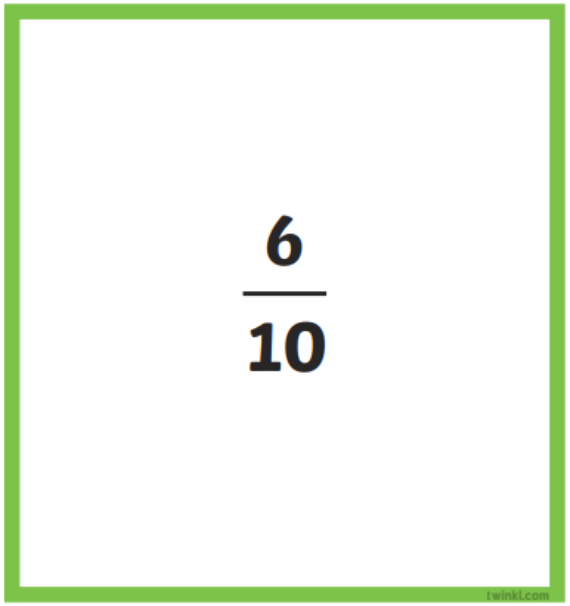
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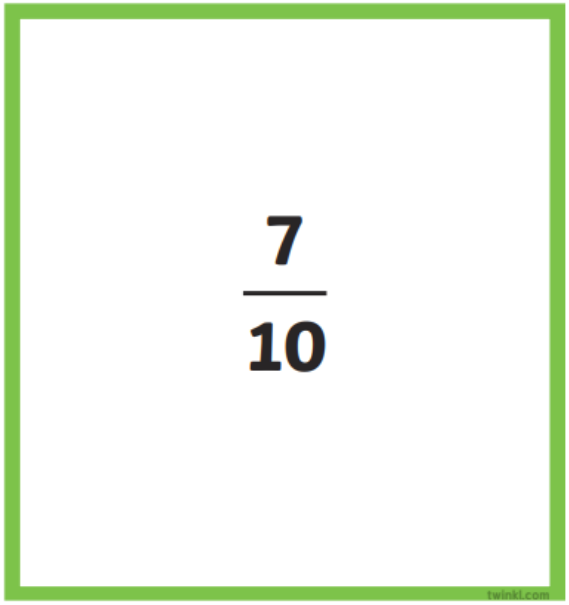
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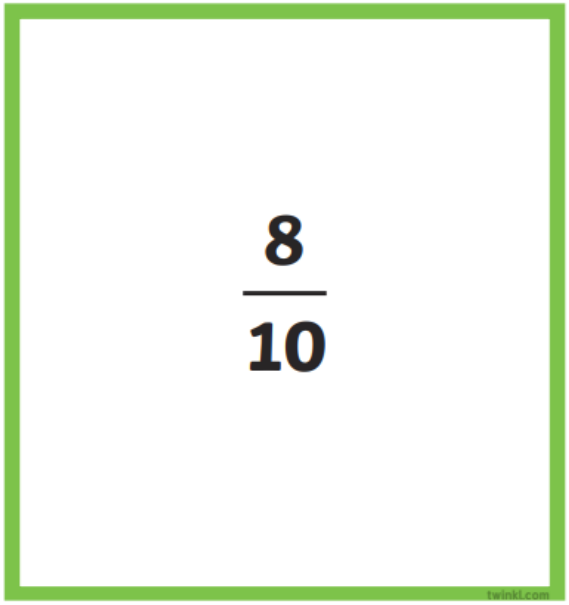
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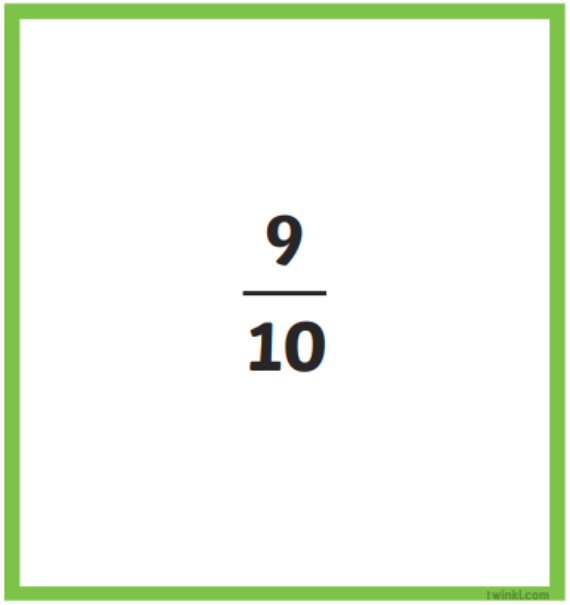
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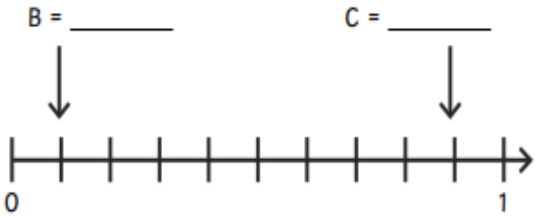
1) Write the fractions and decimals shown.

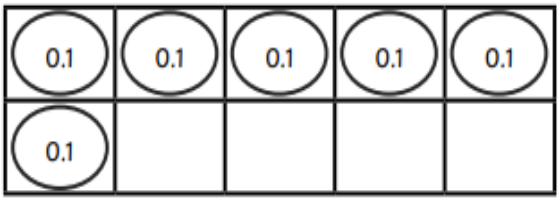
A = _____



2) Draw lines to match the fractions to the correct decimal.

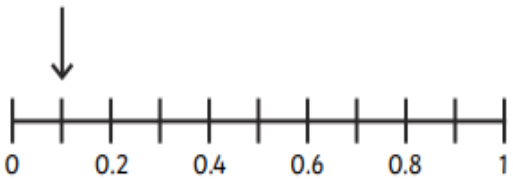
$\frac{3}{10}$	0.9
four-tenths	0.3
$\frac{9}{10}$	0.4

3) Use the image to complete the fraction and decimal.



$\frac{\square}{10}$ 0. _____

4) True or false? The arrow shows 0.3. Explain your answer.



1) Which is the odd one out? Use reasoning to explain your answer.

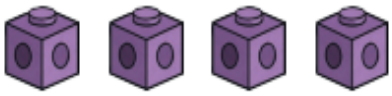
nine-tenths

0.9

0.1	0.1	0.1	0.1	0.1
0.1	0.1	0.1	0.1	

2)

Each one of my cubes represent a tenth. If I add another four cubes, 0.7 will be represented.



Is Hamed correct? Explain with reasoning.

3)

If I order the fractions and decimals on a number line from smallest to largest, 0.8 will be the third largest.

$\frac{3}{10}$ 0.8 $\frac{7}{10}$ 0.6 nine-tenths

Do you agree? Explain with reasoning.

1) Neil and Kumar are counting up and down in tenths.

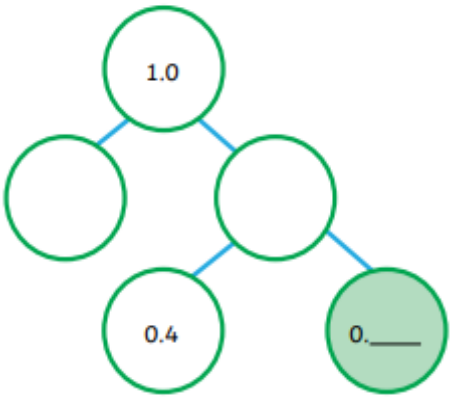
- Neil starts at 1.6 and counts backwards.
- Kumar starts at 0.8 and counts forwards.

What decimal will they reach at the same time?

Draw then explain your answer.

2)

I can put different digits in the shaded circle to complete the part-whole model.



What decimal numbers can be placed in the shaded circle to correctly complete the part-whole model? Find all possible answers.

3) Represent 0.6 in as many ways as you can.

Decimal Tenths

To recognise and represent tenths as decimals.

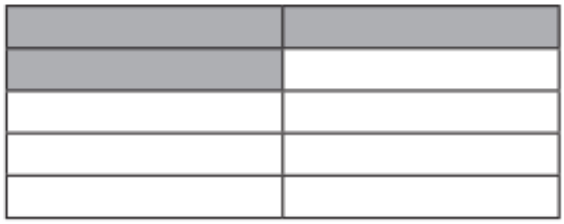
1. For each bar model, write how many tenths are shaded as a decimal.

a) _____

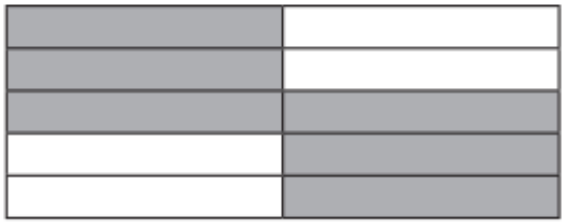
b) _____

c) _____

d) _____

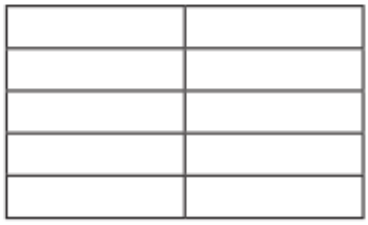


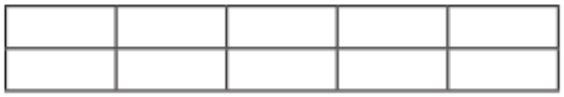
e) _____



f) _____

2. Colour in 0.4 of each shape.





3. Fill in the gaps on the counting stick.

Converting Decimal Tenths and Hundredths to Fractions

Converting decimals tenths and hundredths to fractions couldn't be easier - all you need is a place value chart! To convert from a decimal into a fraction, we write the number on the place value chart then **read the number off the place value chart**.

0.7=

Ones		tenths
0	.	7

No ones and 7 tenths. So the fraction is... $\frac{7}{10}$!

A. Write these decimals into the place value chart. Read the place value and write the decimal as a fraction. The first question has been completed for you.

Decimal	Place Value Chart			How many tenths?
0.7	Ones		tenths	7 tenths = $\frac{7}{10}$
	0	.	7	
0.3	Ones		tenths	
		.		
zero point two	Ones		tenths	
		.		
0.4	Ones		tenths	
		.		
0.1	Ones		tenths	
		.		
0.9	Ones		tenths	
		.		
zero point eight	Ones		tenths	
		.		

October Math Pacing Guide
7th Grade

2. M.EE.7.NS.3 - Compare quantities represented as decimals in real world examples to tenths.

Learning Goal:

- Level 2-3 – Students will compare two decimals to tenths using symbols
- Level 1 – Students will recognize separateness

Essential Questions:

- Which tenth is larger/smaller (from real world example)?

Vocabulary:

- decimal - in the base ten number system, a number that has a decimal point with digits after it.
- decimal point - a dot or point used to separate whole numbers from fractions.
- digit - one of the numbers from zero to nine.
- tenths - One of ten equal parts.
- Less than – a number that is smaller than what it is being compared to.
- Greater than – a number that is greater than what it is being compared to.
- Equal to – a number that is the same as what it is being compared to.

Jeanette Nowak

Mini-Map for M.EE.7.NS.3

Subject: Mathematics
The Number System (NS)
Grade: 7

Learning Outcome

DLM Essential Element	Grade-Level Standard
M.EE.7.NS.3 Compare quantities represented as decimals in real-world examples to tenths.	**M.7.NS.3** Solve real-world and mathematical problems involving the four operations with rational numbers.

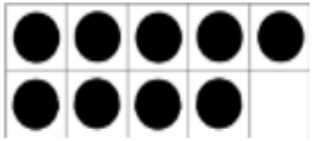
Linkage Level Descriptions

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
Communicate understanding of "separateness" by recognizing objects that are not joined together. Communicate understanding of set by recognizing a group of objects sharing an attribute. Communicate understanding of a subset by recognizing a subset as a set or group of objects within a larger set that share an attribute.	Recognize the set model that represents one-tenth. Recognize the set model that is divided into tenths.	Represent a decimal to tenths (e.g., 5.6) as a fraction (i.e., 56/10).	Compare two decimals to the tenths place using symbols (i.e., =, <, >) to show that one is greater than, less than, or equal to the other.	Compare two decimals to the hundredths place using symbols (i.e., =, <, >) to show that one is greater than, less than, or equal to the other.

Initial Precursor and Distal Precursor Linkage Level Relationships to the Target

How is the Initial Precursor related to the Target?

Adding fractions requires a student to be able to recognize that two or more sets or groups of items exist. Work on this skill using a variety of sets. Help students recognize when items are grouped together into a set or separated out. Educators present a set, label it (e.g., two balls, one marker, three CDs), count the items, label it again, and encourage students to use numerals to label and count the separate sets. Use tools like the ten-frame to point out whole and parts (e.g., a row of 5 dots and a row of 4 dots are parts or subsets of 9).

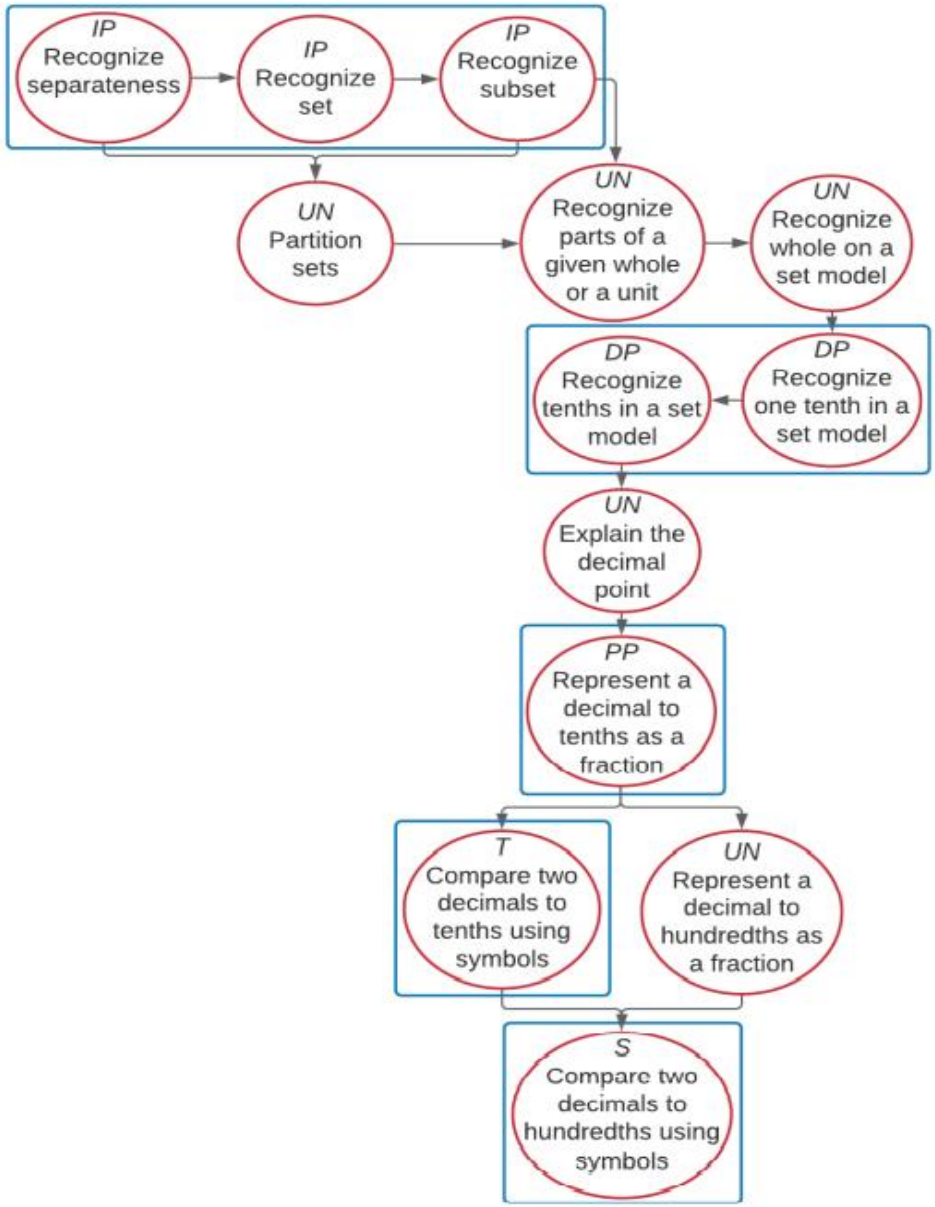


How is the Distal Precursor related to the Target?

As students begin to understand labeling, counting small sets, and recognizing wholes and parts of objects and sets, use set models to provide a wide variety of sets of 10 to model tenths (e.g., individual shapes to match the fraction: "I have 10 cubes in my bag, 1/10 of them are blue").

Jeanette Nowa

M.EE.7.NS.3 Compare quantities represented as decimals in real-world examples to tenths.



Map Key	
IP	Initial Precursor
DP	Distal Precursor
PP	Proximal Precursor
T	Target
S	Successor
UN	Untested

Boxes indicate tested nodes

Rubric of Student Success

M.EE.7.NS.3 - Compare quantities represented as decimals in real world examples to tenths.

Level 3 Students will… Successor and Target Students will…	Level 2 Students will… Proximal Precursor and Distal Precursor Students will…	Level 1 Students will… Initial Precursor Students will…
Level 3 Unique does not have lessons on this standard.	Level 2 Unique does not have lessons on this standard.	Level 1 Unique does not have lessons on this standard.
Successor • Compare two decimals to hundredths using symbols Target • Compare two decimals to tenths using symbols	Proximal Precursor • Represent a decimal to tenths as a fraction Distal Precursor • Recognize tenths in a set model • Recognize one tenth in a set model	Initial Precursor • Recognize separateness • Recognize set • Recognize subset

Jeanette Nowak Classroom.com

Instructional Ideas

M.EE.7.NS.3 - Compare quantities represented as decimals in real world examples to tenths.

Numbers can be compared.

The big idea is that the concepts and properties of addition, subtraction, multiplication, and division are the same whether using whole numbers, fractions, or decimals.

- Introduce by asking the essential questions.
- Students will need to learn less than and greater than symbols
- Students will need to understand smaller and bigger
- Use manipulatives as needed.
- Students may use a calculator if needed.
- Included worksheets are examples of what to look for when finding additional materials that best fits your student's needs.

Additional Instructional Ideas

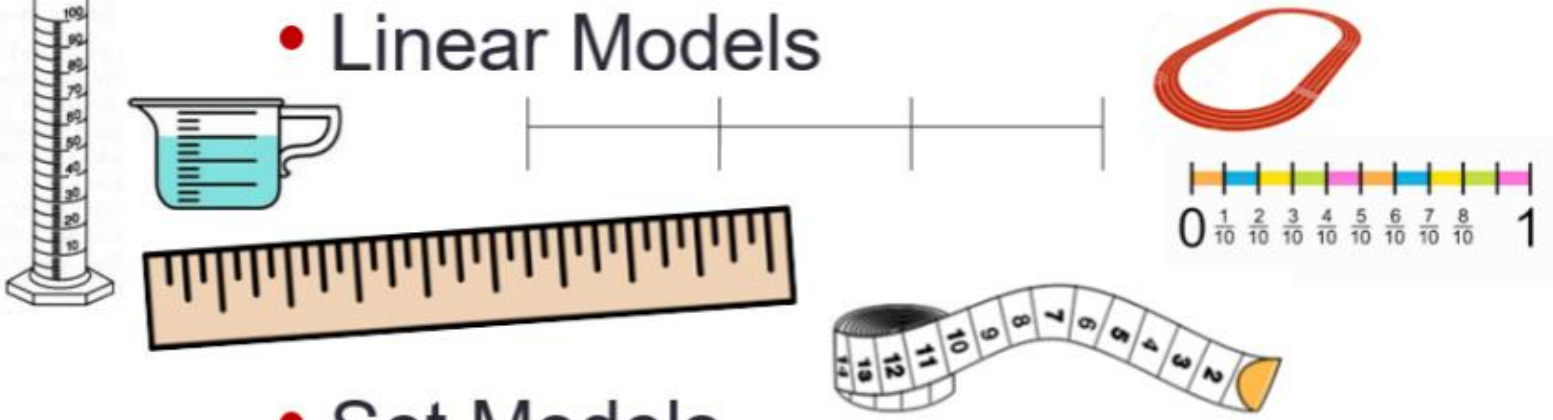
- Go to website for additional instructional resources, materials, and activities for lessons:
    - https://www.msnowakhomeroom.com/2d-decimals.html

Jeanette Nowak

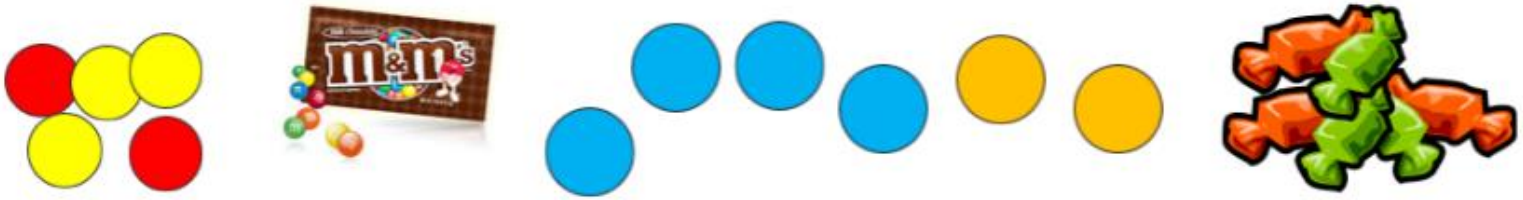
Models & Representations

- Area/Region Models

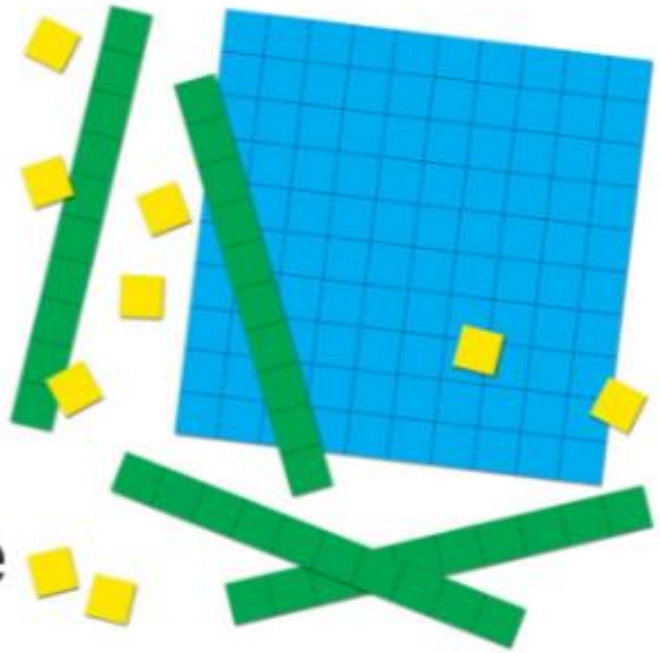
- Linear Models



- Set Models



Base Ten Blocks



- How can you partition the blocks into tenths and hundredths?
- If the flat is one, what is the value of the rod? What is the value of the unit?
- Express the value as a decimal and as a fraction.

Jean

Money as a Model

While money can be written in decimal notation, and children can relate decimal numbers to their understanding of money, it is not recommended as a model, but as an application.

Why do you think this is the case?

How can we use money as an application for decimals?

Decimal Experiences

Bring decimals into the students' world by:

Time:

- Use stop watches to help students understand decimal numbers less than one second. Have students try to start and stop the stopwatch as fast as they can. Write numbers on board and compare.
- Have students run short distances outside and compare times on the board. How do the decimal numbers help? What do they mean?

Distance:

- Have students try to hit a target and measure within a tenth of a meter to see who was closest. You may have to measure to the nearest hundredth to break ties. (Targets can be hula hoops or pieces of paper. Objects can be bean bags tossed, Frisbees thrown, golf balls putted, etc.)

Compare and Order Fractions

Compare and order fractions with appropriate denominators and position on the number line.

1. Match the equivalent fractions.

$\frac{1}{2}$	$\frac{10}{10}$
1	$\frac{2}{8}$
$\frac{6}{8}$	$\frac{3}{4}$
$\frac{1}{4}$	$\frac{5}{10}$

2. Put these fractions in order from smallest to biggest.

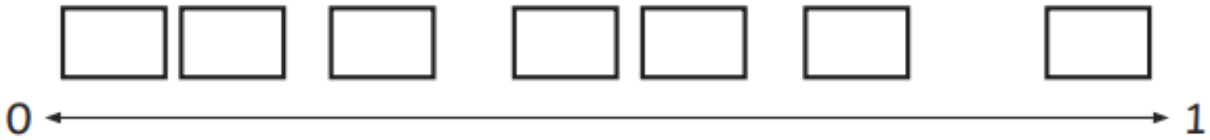
$\frac{3}{10}$	$\frac{7}{10}$	$\frac{6}{10}$	$\frac{9}{10}$	$\frac{1}{10}$	$\frac{8}{10}$	$\frac{4}{10}$	$\frac{2}{10}$	$\frac{5}{10}$
____	____	____	____	____	____	____	____	____

3. Put these fractions on the number line.

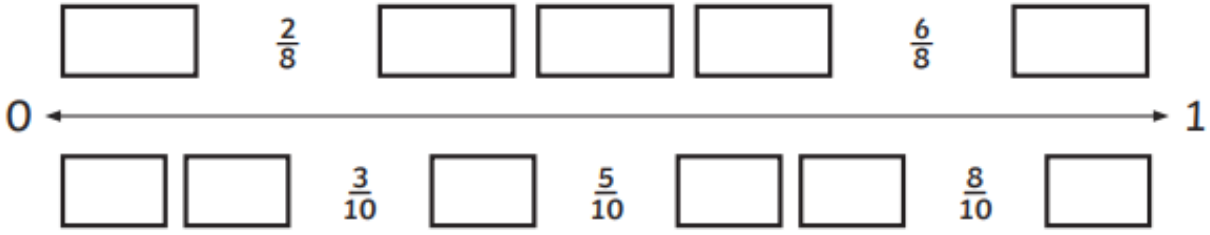
$\frac{4}{10}$	$\frac{7}{10}$	$\frac{9}{10}$	$\frac{5}{10}$	$\frac{3}{10}$	$\frac{8}{10}$	$\frac{1}{10}$	$\frac{6}{10}$	$\frac{2}{10}$

4. Put these fractions on the number line.

$\frac{9}{10}$	$\frac{3}{8}$	$\frac{3}{4}$	$\frac{1}{10}$	$\frac{1}{2}$	$\frac{6}{10}$	$\frac{2}{10}$



5. Can you fill in the missing fractions on the number line?



Comparing Decimals to the Tenth

Complete each number sentence below using <, >, or =.
The first has been done for you.

1.	45.5	<	45.8
2.	67.3		21.3
3.	78.1		65.9
4.	0.6		0.6
5.	0.4		0.5
6.	87.1		87.4
7.	31.2		31.9
8.	4.8		4.2
9.	0.7		0.3
10.	89.3		89.3

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Comparing Decimals to the Tenth

Complete each number sentence below using <, >, or =.
The first has been done for you.

1.	45.5	<	45.8
2.	67.3		21.3
3.	78.1		65.9
4.	0.6		0.6
5.	0.4		0.5
6.	87.1		87.4
7.	31.2		31.9
8.	4.8		4.2
9.	0.7		0.3
10.	89.3		89.3

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Comparing Decimals (A)

Name: _____ Date: _____

Compare each pair of decimals using <, >, or =.

6.1 ☐ 2.3	9.6 ☐ 3.5	2.7 ☐ 6.2
4.9 ☐ 6.0	1.2 ☐ 3.5	5.2 ☐ 7.2
8.4 ☐ 8.1	6.3 ☐ 9.9	3.9 ☐ 1.0
3.6 ☐ 5.9	2.9 ☐ 6.2	7.7 ☐ 8.0
2.5 ☐ 5.4	1.8 ☐ 0.1	7.6 ☐ 7.6
8.5 ☐ 3.1	2.4 ☐ 5.3	1.3 ☐ 7.5
4.0 ☐ 4.2	0.6 ☐ 7.3	0.3 ☐ 3.4
7.5 ☐ 9.9	6.6 ☐ 4.3	3.0 ☐ 6.0
3.4 ☐ 4.7	1.6 ☐ 7.0	2.1 ☐ 2.5
8.2 ☐ 8.8	9.0 ☐ 2.3	8.9 ☐ 0.7
1.8 ☐ 9.0	6.0 ☐ 1.3	1.9 ☐ 0.4
1.5 ☐ 8.5	2.2 ☐ 8.0	1.8 ☐ 5.1
4.1 ☐ 5.2	1.0 ☐ 6.6	8.0 ☐ 3.7
2.1 ☐ 2.6	7.1 ☐ 3.2	3.1 ☐ 3.1
0.2 ☐ 3.2	9.0 ☐ 0.0	4.0 ☐ 6.4
9.1 ☐ 0.8	7.5 ☐ 3.0	9.3 ☐ 9.3
3.8 ☐ 9.9	3.7 ☐ 1.1	Score: ___ /50

Set G-1

Decimals - Tenths

Cut out the cards and place the numbers in order from **least to greatest**.

3.4 G-1	8.6 G-1	6.9 G-1
0.7 G-1	3.2 G-1	1.5 G-1
6.8 G-1	4.1 G-1	9.6 G-1
2.3 G-1	7 G-1	5.1 G-1

Use these cards to compare.

Set G-2

Decimals - Tenths

Cut out the cards and place the numbers in order from **least to greatest**.

8.3 G-2	0.6 G-2	4.2 G-2
1.9 G-2	5.9 G-2	9.1 G-2
7.8 G-2	2.4 G-2	3.8 G-2
6 G-2	7.5 G-2	9.5 G-2

<	>	=
is less than	is greater than	is equal to
0.03	0.3	0.23
0.8	0.81	0.80

Credits

Websites Used for Worksheets and Lesson Ideas:

- https://www.education.com
- https://www.twinkl.com
- https://www.superteacherworksheets.com
- https://www.easyteacherworksheets.com
- https://www.mathworksheets4kids.com
- https://www.math-salamanders.com
- https://www.math-drills.com
- https://www.tutorialspoint.com/converting_fractions_to_decimals/converting_fraction_with_denominator_10_100_decimal_worksheets.htm

Resources Used to Help Create the Pacing Guide:

DLM Essential Elements Unpacking

- https://www.dlmpd.com/dlm-essential-elements-unpacking

Instructional Resources for YE Model States

- https://dynamiclearningmaps.org/instructional-resources-ye/mathematics

Dynamic Learning Maps

- https://dynamiclearningmaps.org

Unique Learning System

- https://www.n2y.com/unique-learning-system

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