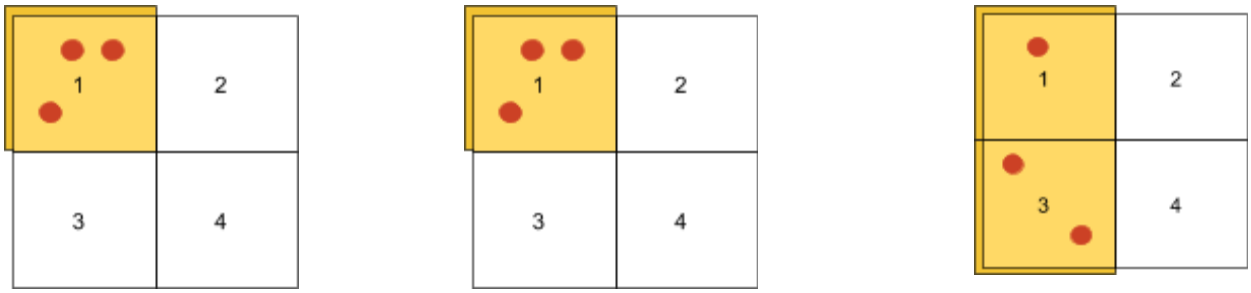
“Numbers and Operations: Fractions”

For Grade 3

Traditional Students

1/4 Pizza + 1/4 Pizza = 2/4 Pizza



"Numbers and Operations: Fractions"
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This educational resource pack includes: visual and tactile enhancements.
To save ink and paper, an application like Google Classroom could be utilized.

This educational resource pack requires: scissors, glue, a ruler and a pencil.

Number and Operations - Fractions Note: Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8. Develop understanding of fractions as numbers.

3.NF.1 Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.

3.NF.2 Understand a fraction as a number on the number line; represent fractions on a number line diagram.

a. Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.

b. Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.

3.NF.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.

a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.

b. Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model.

c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram.

d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

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www.TeachersPayTeachers.com or www. StoneSoupSchool.com

I wish to dedicate this to all my students past and present.

Sincerely,

Mrs. Cheryl Lynn Peele

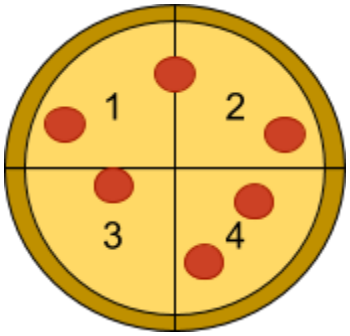
Informational Text: "Understanding Fractions As Whole Numbers"

A whole can be represented by the number **1**.

When 1 is split into **equal parts** it allows you to represent the **whole and it's parts**, in different ways called a **fraction.**

Lets use pizza as an example, if you have 1 whole pizza you could choose to split it into individual parts or slices. The image below shows a pizza split into 4 parts.

So the pizza = **1 whole**



The slices represent = **Fractions of the whole**

Because the pizza has been cut into 4 parts we could now represent the whole in **fraction form** to show how many parts are in the whole by writing the following fraction:

4/4

Since no one has eaten any slices yet, this number shows how many can be eaten

This number shows the total number of slices that the pizza was cut into.

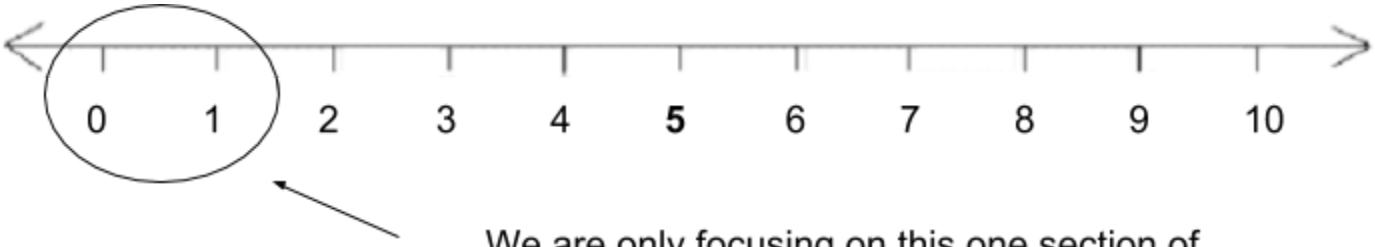
4 / 4 = 1 Whole (pizza)

Because we have 4 out of a total of 4 possible parts available we still have 1 whole pizza!

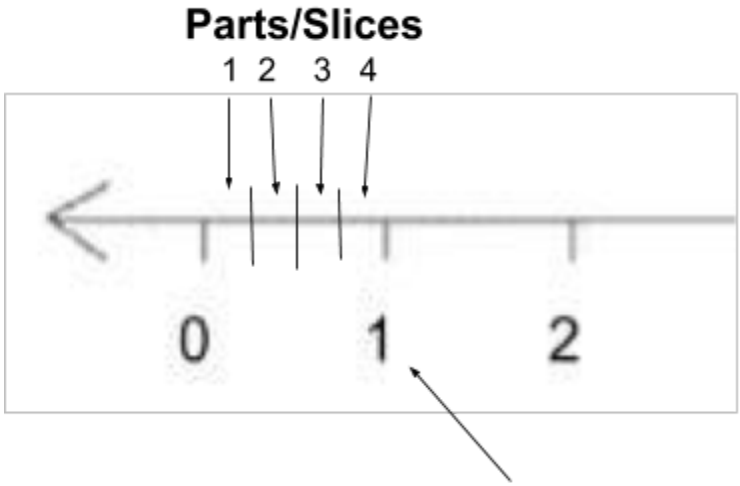
4/4 = 1 Whole (pizza)

Name _____ Date _____

Worksheet #1 **Instructions**: Let's look at the same concept on a number line:



We are only focusing on this one section of the number line, because we are only talking about 1 whole or pizza!

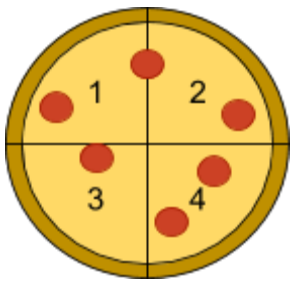


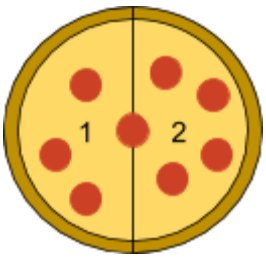
4/4 = 1 Whole (Pizza)

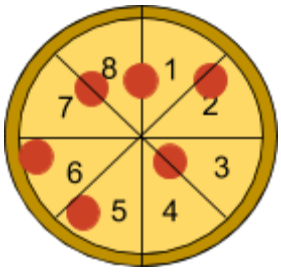
The important part to remember is that the slices need to be equal sizes!

Let's see if you can write fractions to match the following whole pizzas:

1._____ 2. _____ 3. _____





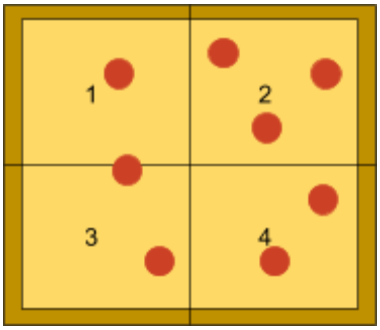


Name _____ Date _____

Worksheet #2 Instructions: Here we have some deep dish square pizzas instead.

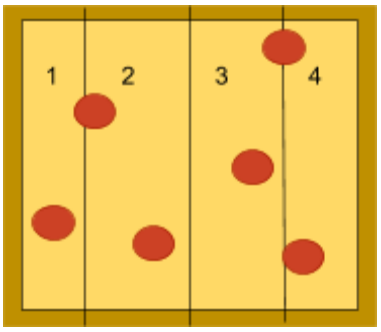
So just like before here is our 1 whole pizza split into 4 parts.
This time we have 3 different ways to make our equal parts.

1 Whole (Pizza)



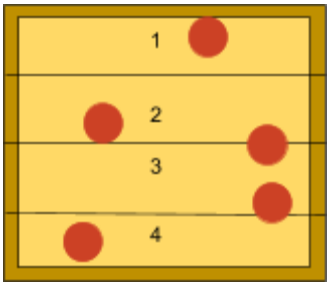
It could also be divided equally into 4 parts like this:

1 Whole (Pizza)



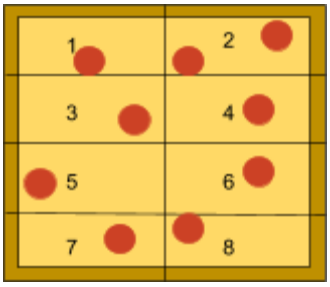
Or it could also be divided equally into 4 parts like this:

1 Whole (Pizza)

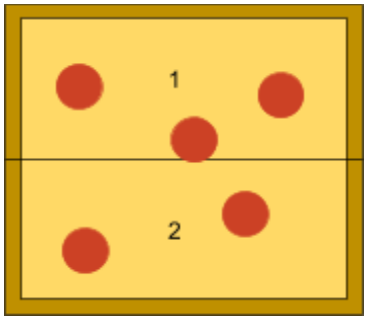


Write some fractions for these images below:

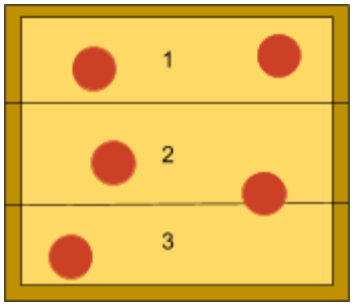
1. _____



2. _____



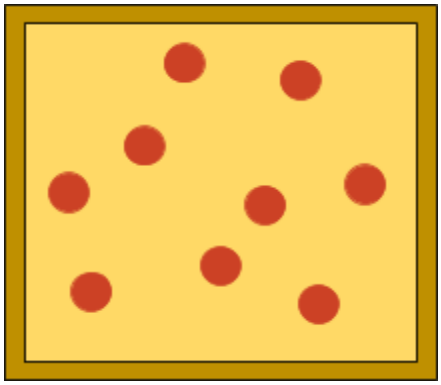
3. _____



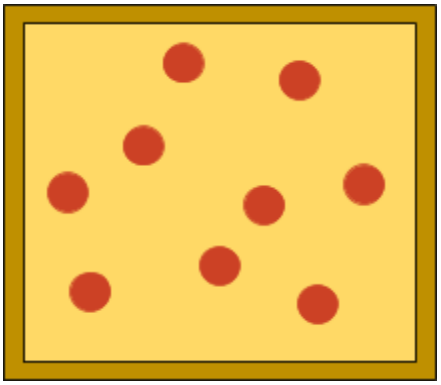
Name _____ Date _____

Worksheet #3 Instructions: Draw your own lines and divide the pizza into equal parts to match the fractions given.

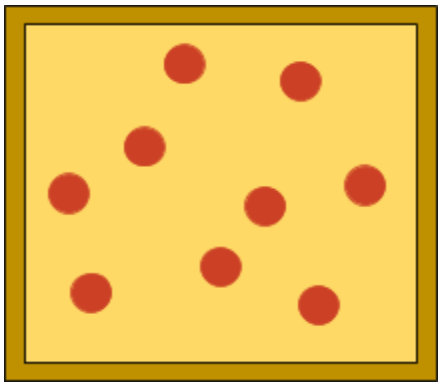
1. 3/3



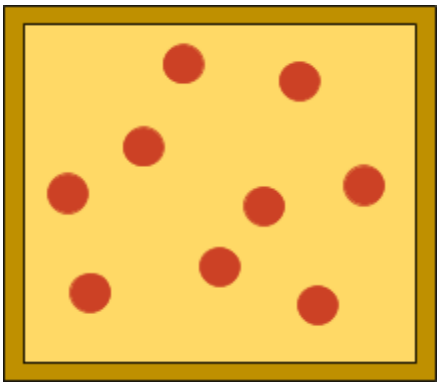
2. 4/4



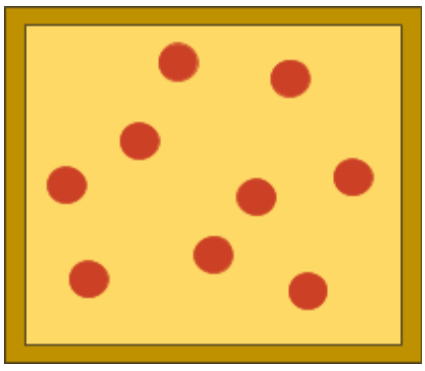
3. 2/2



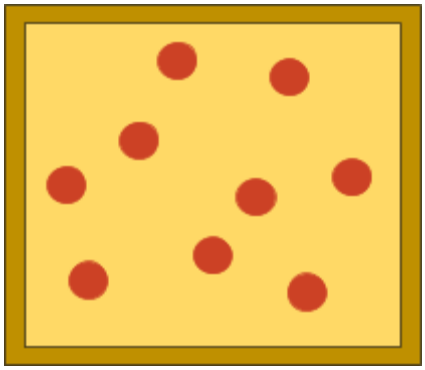
4. 6/6



5. 8/8



6. 3/3

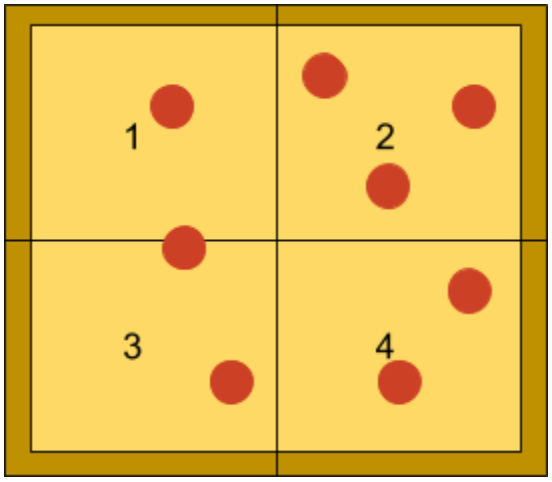


Information Text: "Fractions as Part of a Whole"

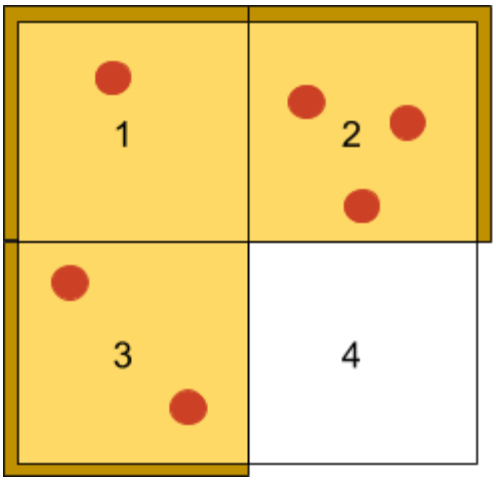
Here is our square pizza again divided into 4 equal parts.

Instructions: Now it's time to eat some pizza. How about eating 1 slice of pizza?

4 parts/slices = 1 whole pizza start



<u>Now</u> you only have 3 out of your original 4 pieces left and it would look like this:



This is the slice that is missing

So looking at the pizza missing a slice, you now have 3 out of the original 4 slices **remaining** which can be written as the following fraction:

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

Number of parts or slices remaining

Number of parts that would make up 1 whole

Another way to look at this same image is to talk about what is **missing**.

So if you ate 1 slice, which is now **missing** out of the 4 slices, then you have eaten the following fraction of the pizza:

$$\frac{1}{4}$$

Number of parts or slices missing

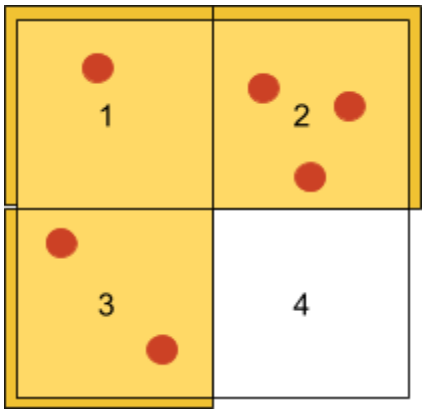
Number of parts that would make up 1 whole

When writing fractions, always ask yourself:
"Am I writing was is **remaining** or **what is missing**?"

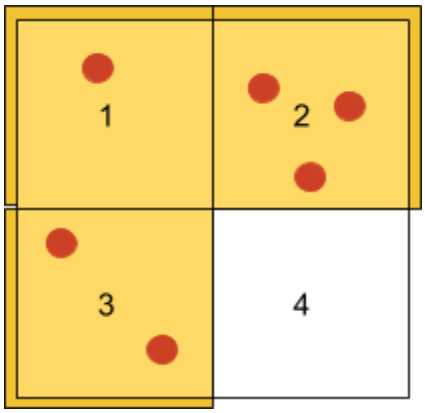
Name _____ Date _____

Worksheet #4 Instructions: Let's practice writing fractions that remain or are missing.

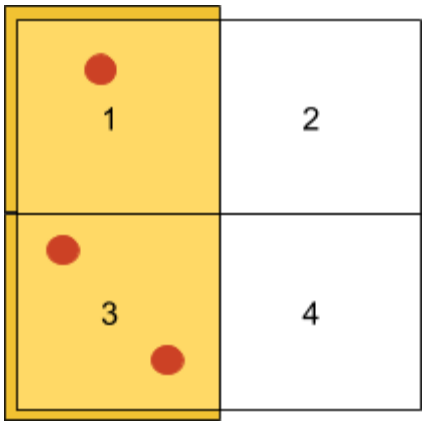
1. What fraction of this pizza remains? _____



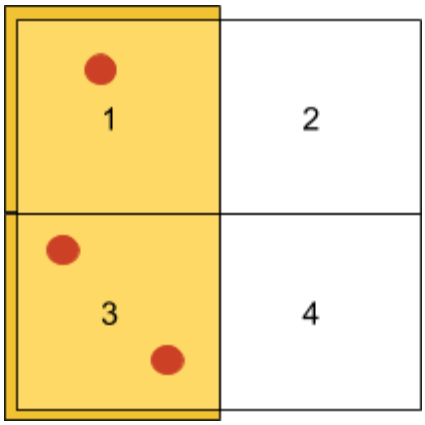
2 What fraction of this pizza is missing? _____



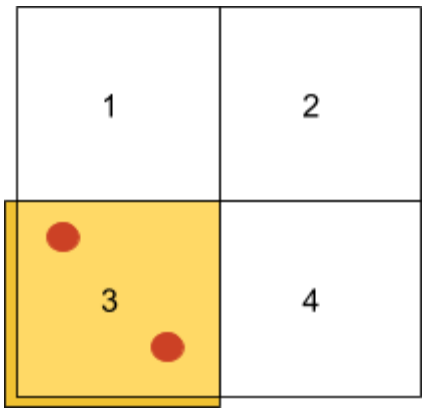
3. What fraction of this pizza remains? _____



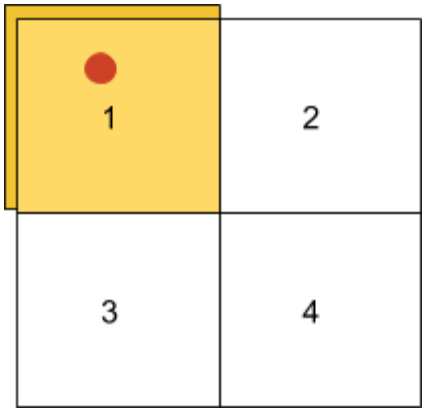
4. What fraction of this pizza is missing? _____



5. What fraction of this pizza remains? _____



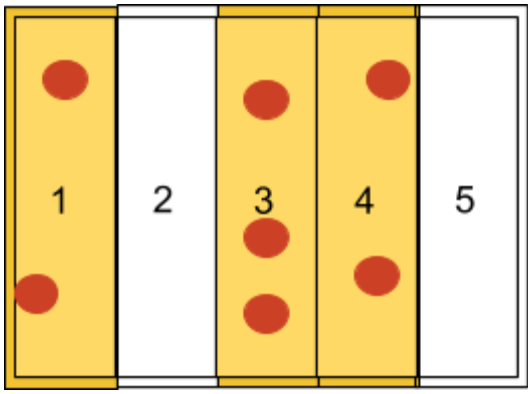
6. What fraction of this pizza is missing? _____



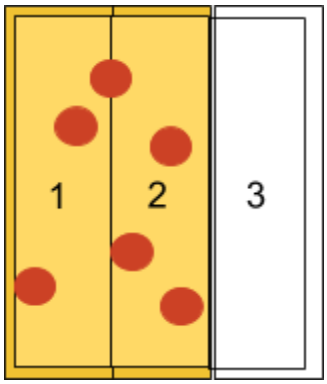
Name _____ Date _____

Worksheet #5 Instructions: **Let's try some more challenging problems!**

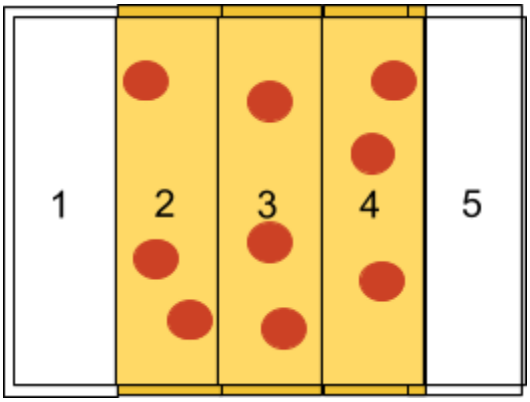
1. What fraction of this pizza is missing? _____



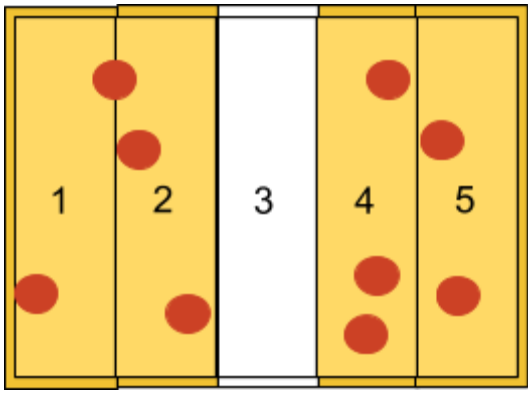
2. What fraction of this pizza is missing? _____



3. What fraction of this pizza is remaining? _____

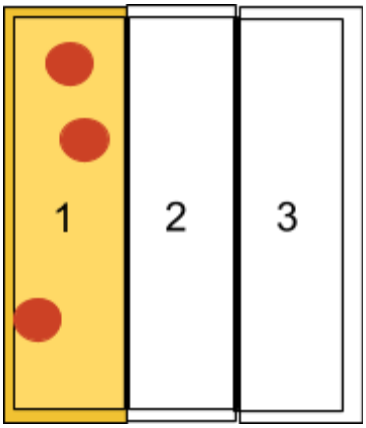


4. What fraction of this pizza is missing? _____



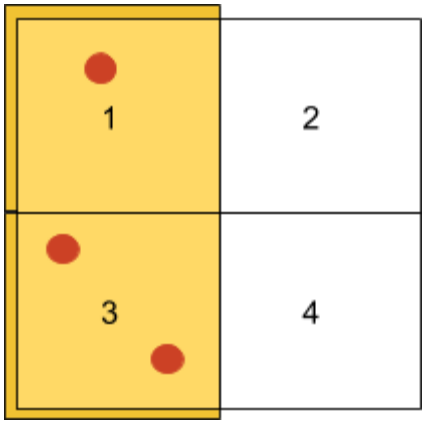
5. What fraction of this pizza is missing?

_____



6. What fraction of this pizza is remaining?

_____



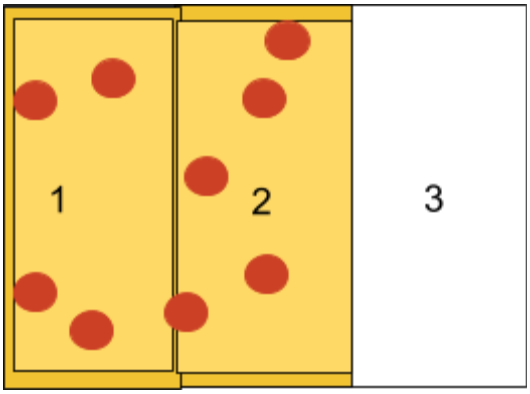
Name _____ **Date** _____

Worksheet #6 Instructions: **Comparing fractions.** Let's look at a bunch of pizzas that are the same size but are divided into different sized slices fractions.

Determine which pizza has more pizza remaining. Circle the pizza that has more remaining.

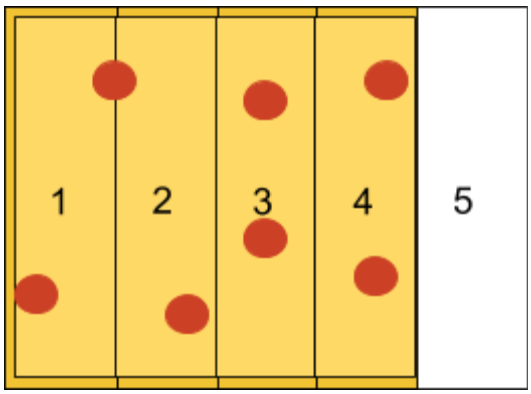
1. Pizza A

This pizza has 2/3 of a pizza remaining



Pizza B

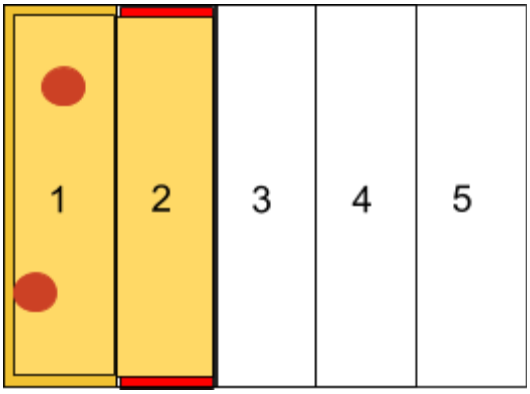
This pizza has 4/5 of a pizza remaining



Determine which pizza has more pizza remaining. Circle the pizza that has more remaining.

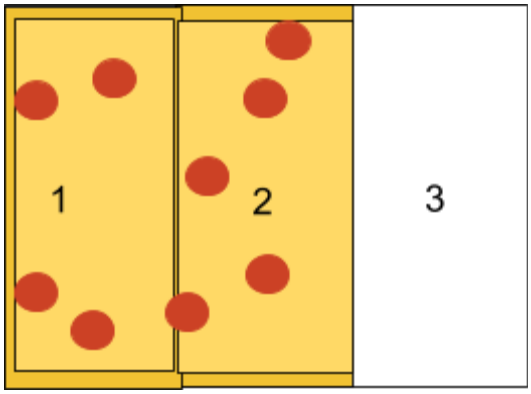
2. Pizza A

This pizza has 2/5 of a pizza remaining



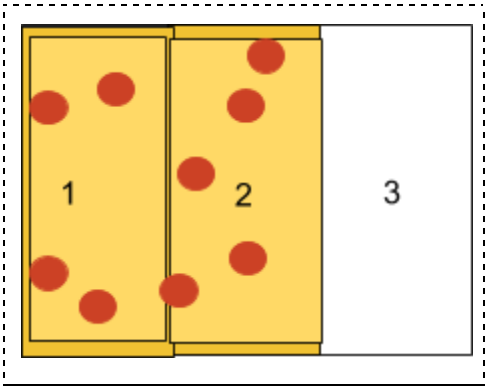
Pizza B

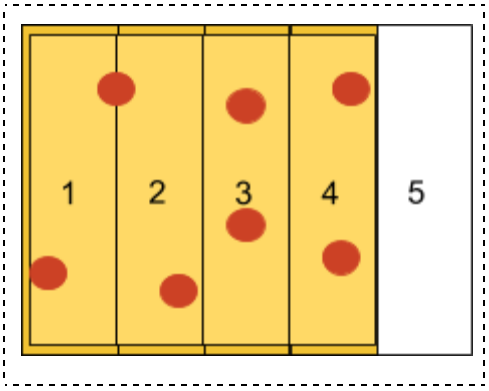
This pizza has 2/3 of a pizza remaining

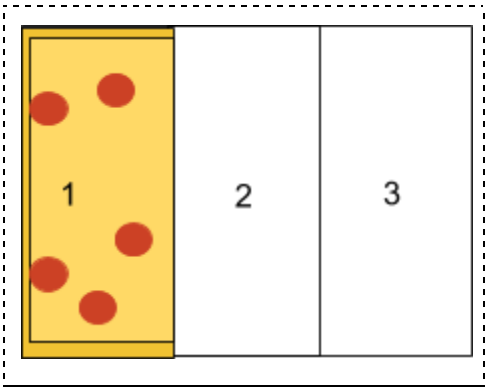


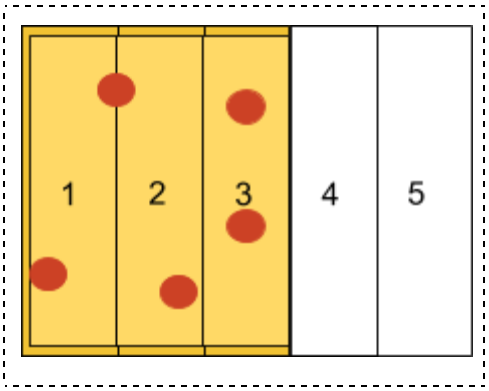
Name _____ Date _____

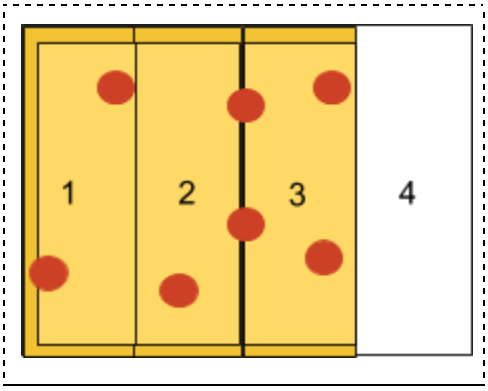
Worksheet #7 Instructions: Cut out the following images and put them in order from the least amount of pizza remaining to the most amount of pizza remaining.

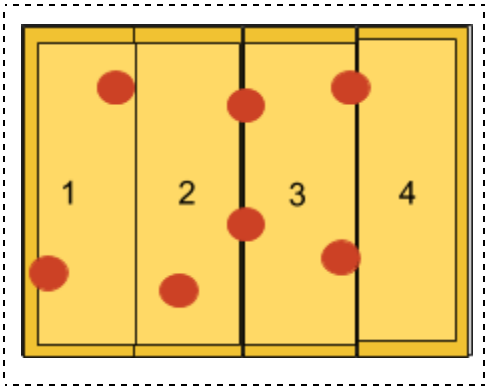






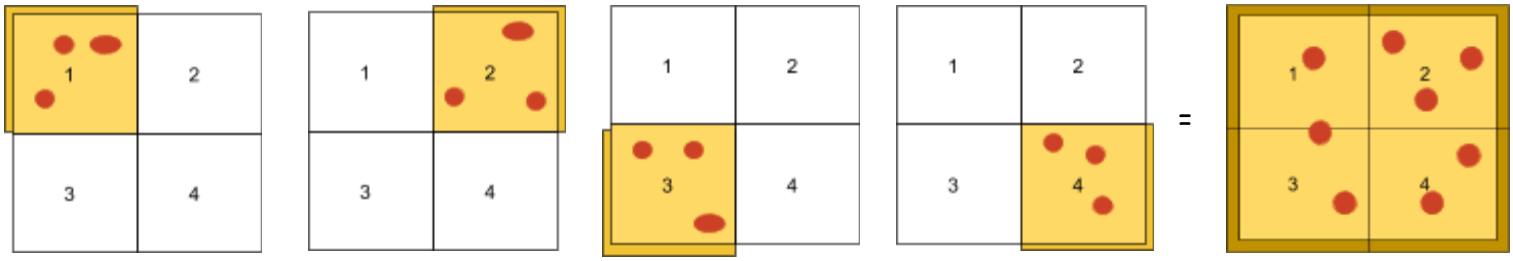




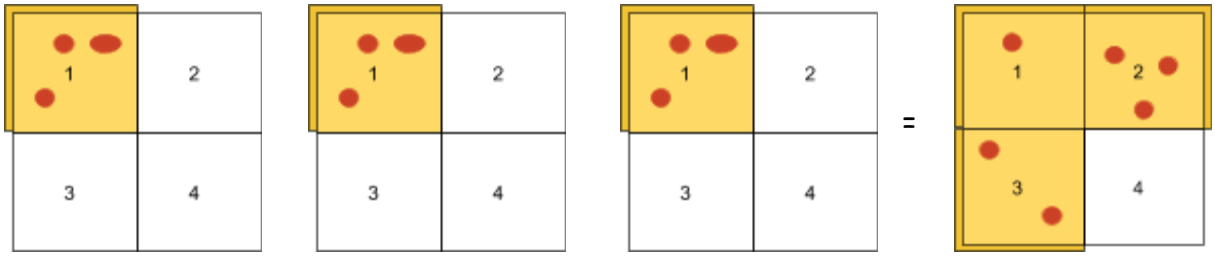


Informational Text: "Adding fractions"

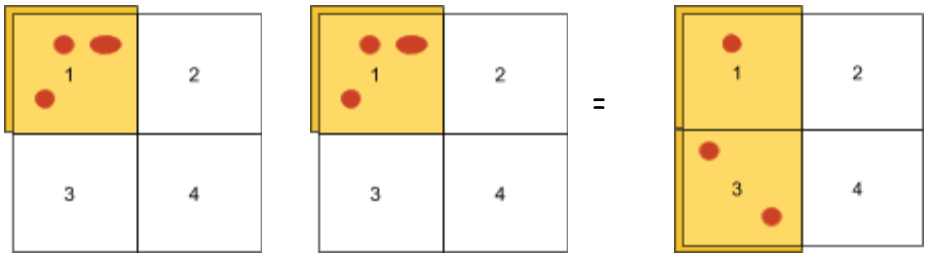
1/4 Pizza + 1/4 Pizza + 1/4 Pizza + 1/4 Pizza = 1 Whole Pizza



1/4 Pizza + 1/4 Pizza + 1/4 Pizza = 3/4 Pizza



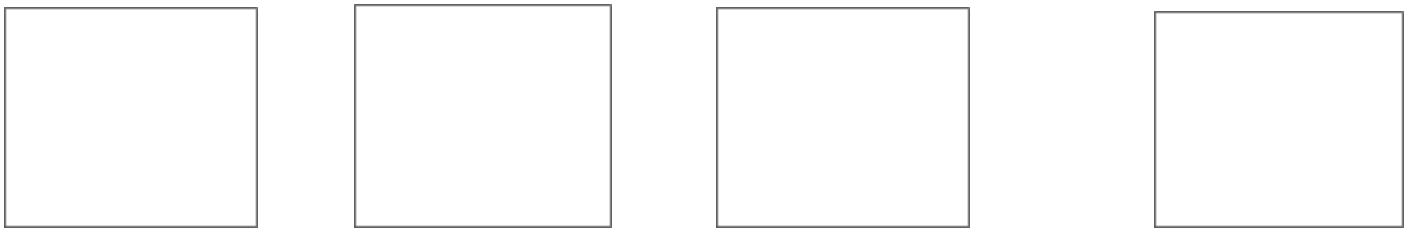
1/4 Pizza + 1/4 Pizza = 2/4 Pizza



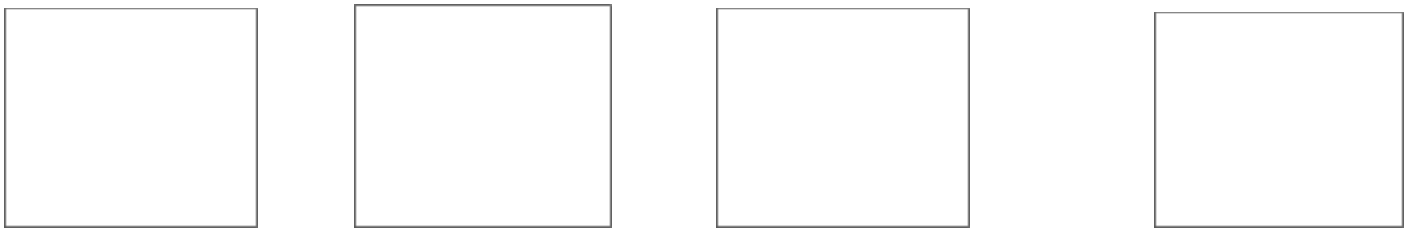
Name _____ Date _____

Worksheet #8 Instructions: Adding Fractions cont. Add up the following fractions and draw lines to divide boxes and shade in each box to show the fraction represented.

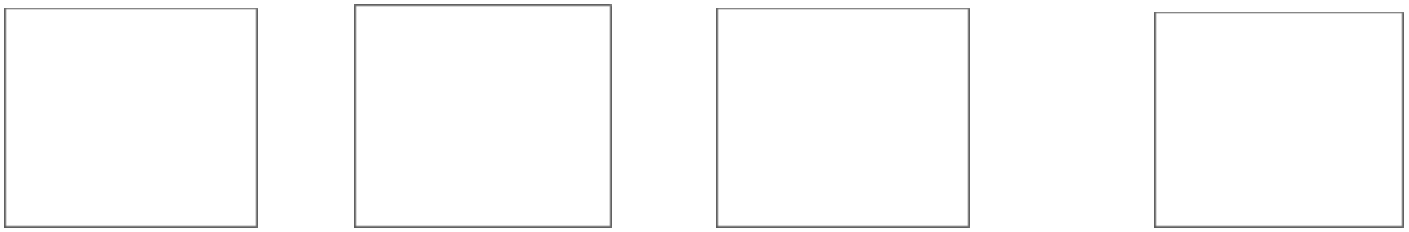
1/3 + 1/3 + 1/3 = _____



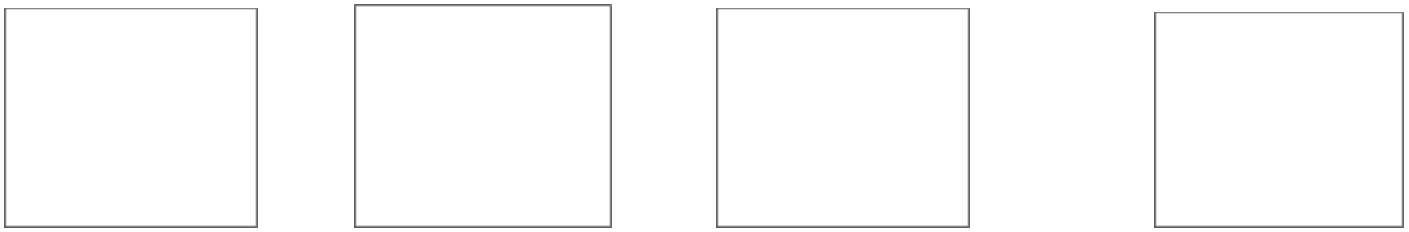
1/6 + 1/6 + 1/6 = _____



1/4 + 1/4 + 1/4 = _____



1/8 + 1/8 + 1/8 = _____

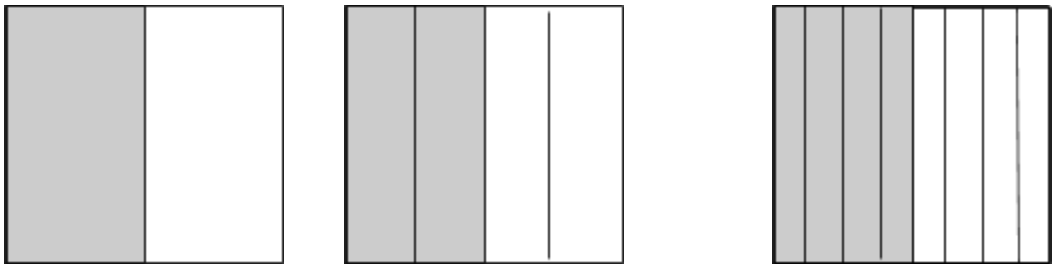


Name _____ Date _____

Informational Text: Learning equivalent fractions.

If you compare these three different diagrams of fractions you will notice that all three have exactly the same amount of area shaded in; These are **equivalent fractions**.

1/2 = 2/4 = 4/8



Worksheet #9 Instructions: Use a ruler and your pencil to shade the correct portion of the images to match the corresponding fractions.

1/3 = 2/6 = 3/9

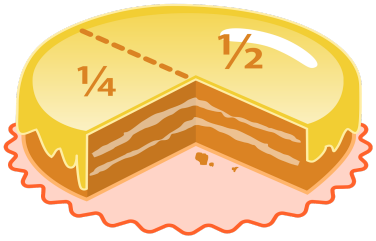
1/4 = 2/8 = 3/12

Name _____ Date _____

Instructions: Informational Text. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

These images are divided into equivalent shapes with smaller sizes.

As with equivalence of fractions, it is important in comparing fractions to make sure that each fraction refers to the same whole.



1. " $\frac{1}{2}$ or 2/4 Is Greater than $\frac{1}{4}$" or ($\frac{1}{2}$ > $\frac{1}{4}$)

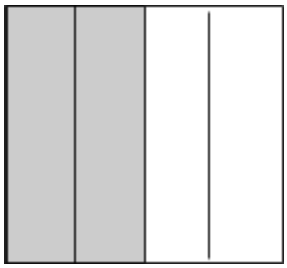
2. "$\frac{1}{4}$ Is Less Than 2/4 or $\frac{1}{2}$ or ($\frac{1}{4}$ < 2/4 or 1/2)

3. $\frac{1}{2}$ is Equal to 2/4 ($\frac{1}{2}$ = 2/4)

Name _____ Date _____

Instructions: (Worksheet 10) The teacher will assist the students to circle the correct answer:

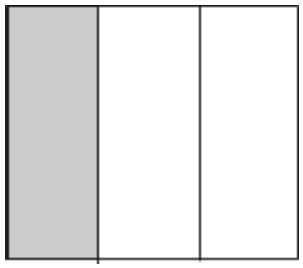
1



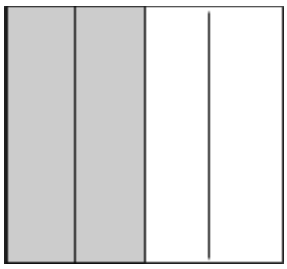
Greater than

Less than

Equal to



2.

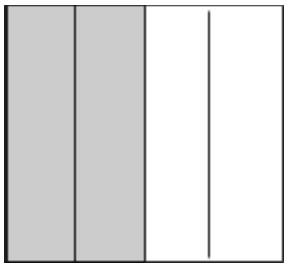


Greater than

Less than

Equal to

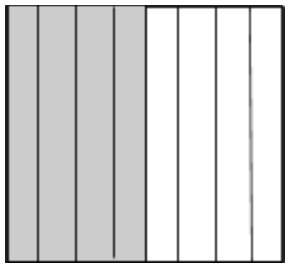
3



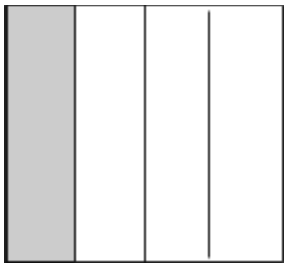
Greater than

Less than

Equal to



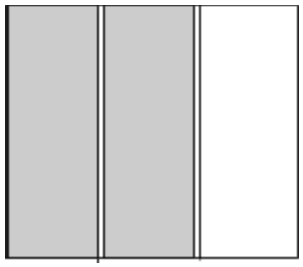
4.



Greater than

Less than

Equal to



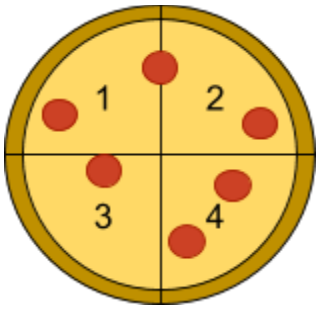
Name _____ Date _____

Instructional Text: *A whole can also be a group of things, not just a single object!* For example a "Whole" could be two pizzas if you want.
A whole can be any number of items, or amount of something; as long as we are prepared to divide it ALL in equal parts.

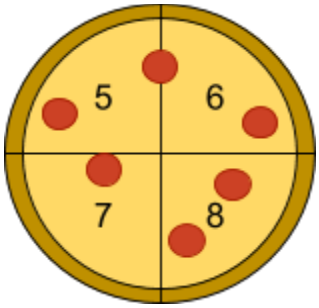
Let's use pizza as an example again. If you have 2 pizzas you could choose to split it into individual parts or slices.

The image below shows two pizzas split into 4 parts each; making our whole into 8 total slices.

So the 2 pizzas = **1 whole**



1 whole = **8 equal parts**



Because the pizzas have been cut into 8 total slices we could now represent the whole (both pizzas) in fraction form to show how many parts are in the whole by writing the following fraction:

8/8

Since no one has eaten any slices yet, this number represents how many parts or slices are still available

This number represents the total number of parts required to equal 1 whole.(2 Pizzas)

8 / 8 = 1 Whole (2 pizzas)

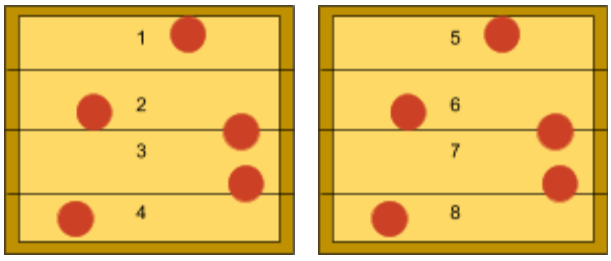
Because we have 8 out of a total of 8 possible parts available we still have 1 whole or 2 pizzas!

8/8 = 1 Whole (2 pizzas)

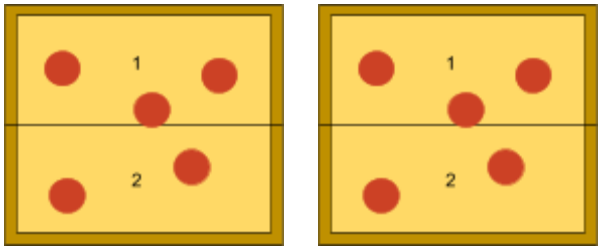
Name _____ Date _____

(Worksheet #9) Instructions: **Let's write fractions that represent each group of pizza as a whole.**

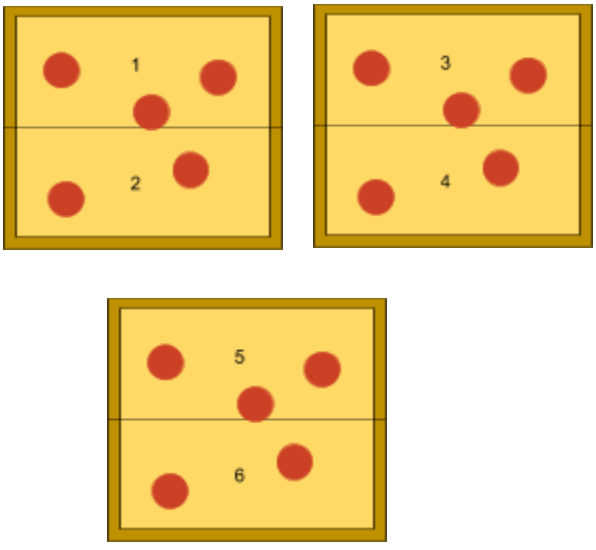
1. _____



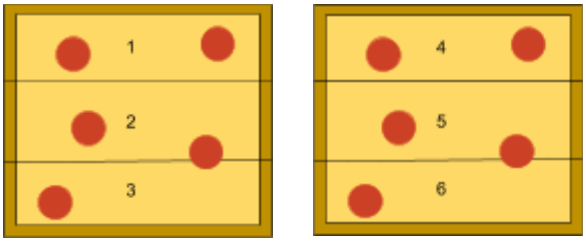
2. _____



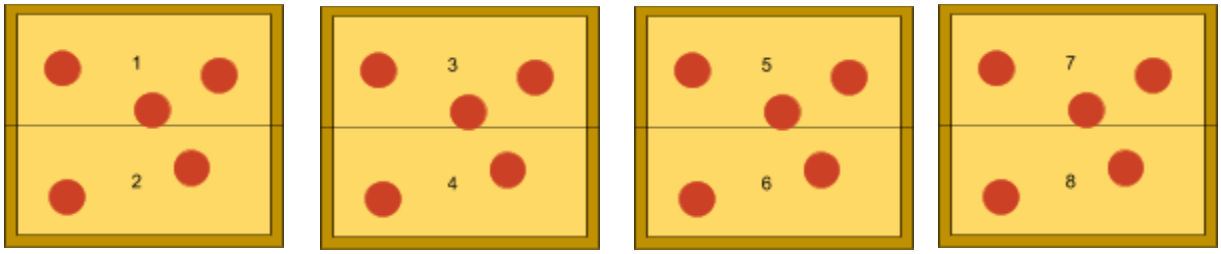
3. _____



4. _____

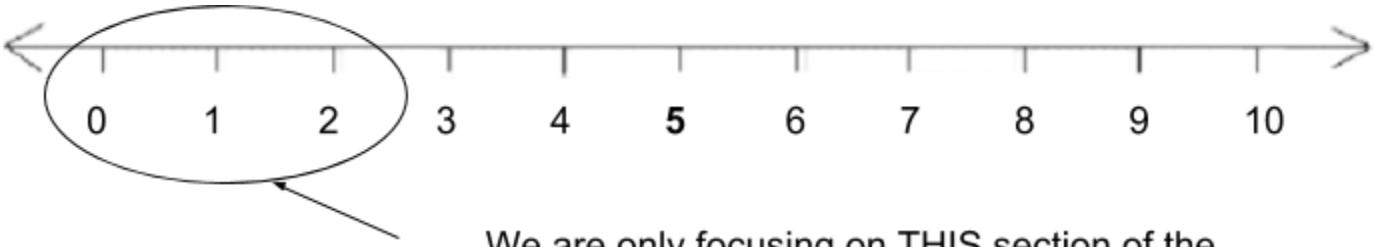


5. _____

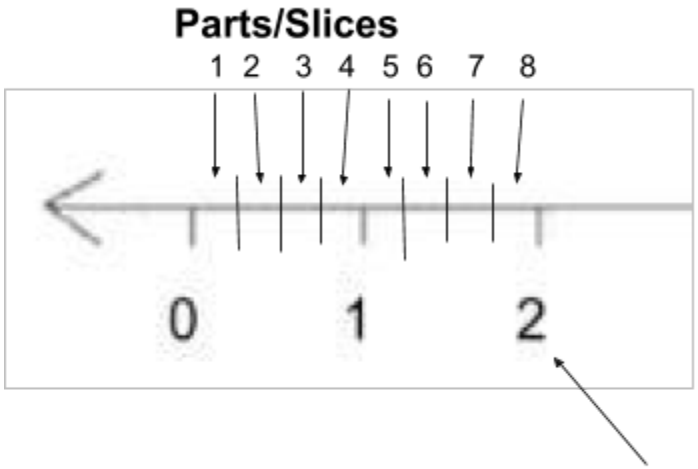


Name _____ Date _____

(Worksheet #10) Instructions: Let's look at the same concept on a number line:



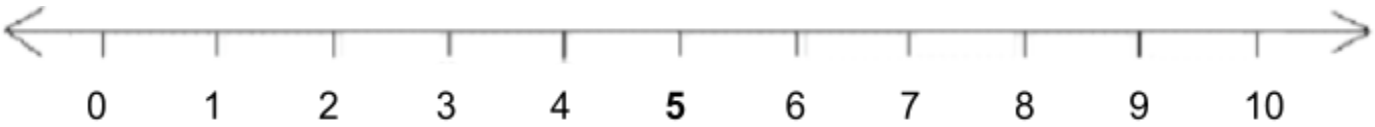
We are only focusing on THIS section of the number line, because we are now identifying 1 whole as 2 pizzas!



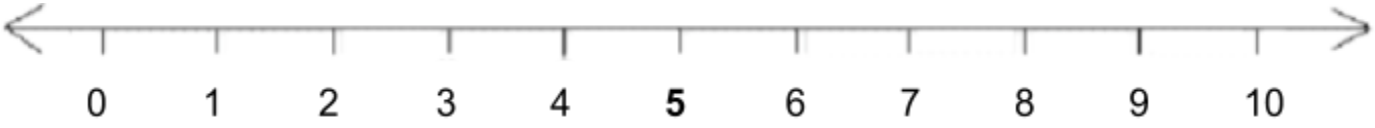
8/8 = 1 Whole (2 Pizzas)

Use the number lines below to divide up your each group of pizzas in the following fractions:

Show 3 pizza's on the numberline as the following total fraction 6/6



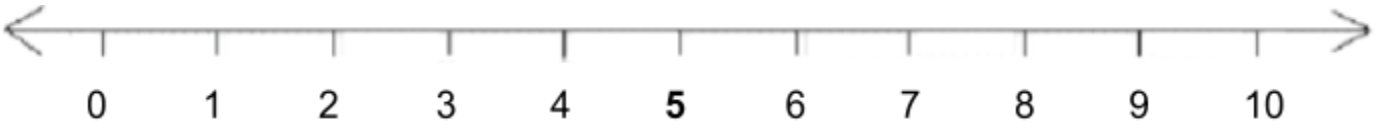
Show 2 pizza's on the numberline as the following total fraction 6/6



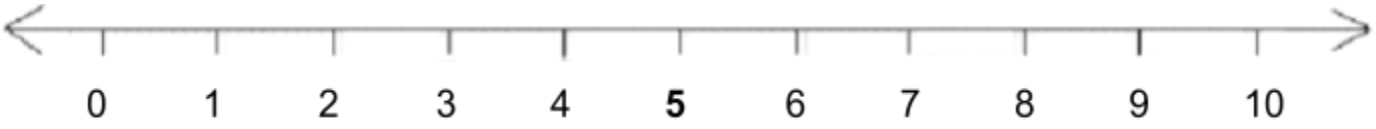
Name _____ Date _____

(Worksheet #11) Instructions: Use the number lines below to divide up your each group of pizzas in the following fractions.

Show 4 pizzas on the numberline as the following total fraction 8/8



Show 2 pizzas on the numberline as the following total fraction 4/4



Show 2 pizzas on the numberline as the following total fraction 8/8

Show 3 pizzas on the numberline as the following total fraction 12/12

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