

Number Theory  
Kindergarten Unit

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## **Executive Summary**

This 22 day unit covers addition, subtraction, and decomposing numbers within 10. It covers a variety of MN standards including:

K.1.1.4 Find a number that is 1 more or 1 less than a given number.

K.1.2.1 Use objects and draw pictures to find the sums and differences of numbers between 0 and 10.

K.1.2.2 Compose and decompose numbers up to 10 with objects and pictures.

K.1.1.3 Count, with and without objects, forward and backward to at least 20.

Students will be using hand on materials to find sums and differences in a concrete way. Students will move, when ready, towards semi-concrete methods of finding sums and differences. These strategies include using pictures and number lines. Students will also use their background knowledge of addition and subtraction and apply it towards composing and decomposing numbers.

## OUTLINE

### Unit 1 Addition By Joni Tobeck

Day	Activity	Math strategy
1	Building with Legos	Exploring putting 2 parts together, addition symbol
2	Two sided color chips to five spill and shake 5	Exploring 2 parts together, addition
3	Drawing pictures manipulatives in whole group	Drawing pictures to find sums, addition
4	Domino's-counting both sides to find a sum, Sorting accordingly	Counting both parts and sorting, addition
5	Domino's-parking car in sum garage	Using manipulatives
6	Number line - roll dice and frog jump	Use a number line for addition
7	Floor sized number line-roll dice and they are the frog	Use a number line for addition

### Unit 2 Subtraction By Dawn Cook

Day	Activity	Math strategy
8	"Mix it, Fix it, Flip it,"	Introduction of subtraction
9	"Match me"	Making one less
10	"Match me" +1,-1	Switching from+1, -1
11	"Match me" +1,-1	Switching from+1, -1
12	"Match me" +1,-1	Switching from+1, -1
13	Whole, part, part	Switching from+1, -1, Vocabulary, Strategies for adding

14	Whole, part, part	Subtraction -1
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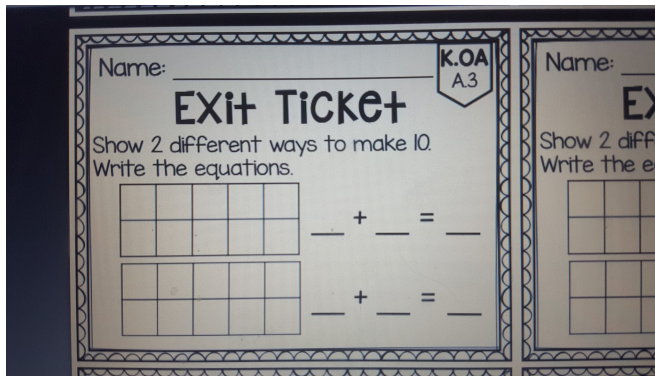
Unit 3 Decomposing numbers By Christine Christiansen

Day	Activity	topic
15	Boys and girls seating arrangements groups of 5	Decomposing 5
16	Shake and spill 5	Decomposing 5
17	Shake and spill 6, 7, 8, 9,	Decomposing numbers 6-9
18	Ten train 10	Decomposing numbers of 10
19	Monster math	Partners of 10
20	Bears in den	Unknown partners of 10
21	Guess my number	Find missing partner of 10
22	Assessment/ center rotations	Addition, subtraction, decomposing numbers

## Day 1

**Lesson Objective:** Students will use Legos to show addition. Students will recreate equations shown on cards. Students will create their own equations.

**Pretest:** Hand out exit ticket asking for students to show two addition problems to 10.



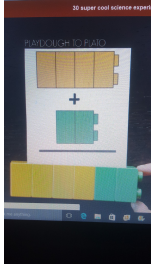
<https://www.teacherspayteachers.com/Product/Exit-Tickets-Kindergarten-Math-Freebie-2297176>

**Launch-** (story starter to get attention): I love to build things with Legos. Does anyone else love to build things with Legos? I want to see who can create something amazing but instead of grabbing any Legos that you want you have to follow the direction cards.

**Mini Lesson** (direct instruction of skill): Show students Lego cards that show addition problems. Show students how to solve the equation shown on the card. On the white board, write the equation and then solve it using the Legos. I have 3 yellow Legos and 4 green Legos. All together I have 7 Legos.  $3 + 4 = 7$ . Show a few more examples. Have students pick a card and solve the equation. You write the equation on the board.

**Students Explore in Groups:** Each group will need a set of cards, Legos, white boards and dry erase markers. Take turns completing each card, your partner writes down your equation. Have students create an equation for their partner to solve.

**Share/Summarize** (reflection back on rug to confer): Did anyone notice this thing here. It looks like an x or maybe a t. What do you think it means? Have students take turns writing an equation on the board and use Legos to solve it. Give students Legos and have them create and equation on the board.



Lego cards can be downloaded from <http://www.playdoughtoplato.com/>

## Day 2

**Lesson Objective:** Students will solve addition equations using 2 sided color chips.





**Launch-** (story starter to get attention): I have some special chips that I am going to share with you today. Would you like to see what is special about them? Look, they are red on this side and yellow on this side. Today we are going to use our red and yellow chips to write and solve addition problems.

**Mini Lesson** (direct instruction of skill): Show students the 5 two sided chips. Place the chips into a cup. Shake and dump them out. Sort the chips by color and line them up. Write the equation. Do a few more examples. Next, ask a student to do the shaking and dumping. Have the students tell you the equation to write down. Have a few more students shake and dump the chips.

**Students Explore in Groups:** Give each pair of students a cup with the two sided chips. Do the first problem together. Tell the students to take turns shaking and dumping. Have your partner write your equation then switch. Remember to do your best work and use the same colors to color as the chips.

**Share/Summarize** (reflection back on rug to confer): When students are finished, meet back at circle to talk about using the chips to get to five.

Name \_\_\_\_\_

 ____ + ____ = ____	 ____ + ____ = ____
 ____ + ____ = ____	 ____ + ____ = ____

<https://drive.google.com/a/isd002.org/file/d/0B3zpIWUt7zh5a3RCQld1cGIIZk0/view>

## Day 3

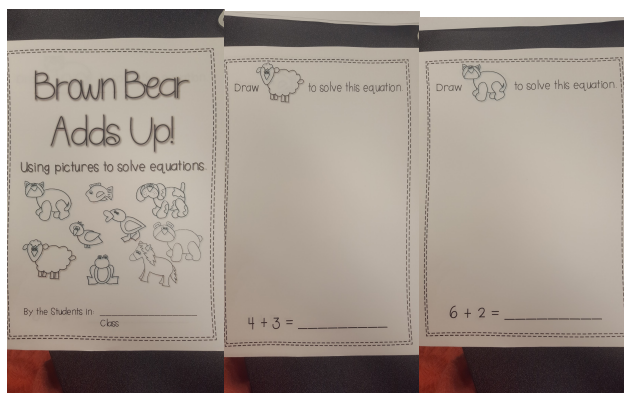
**Lesson objective:** Students will be able to draw simple pictures to solve addition problems

**Launch-** (story starter to get attention): I love Pete the Cat. Raise your hand if he is your favorite too. Today we are going to read Pete the Cat's Got Class. Let's find out about what Pete will teach us about numbers.

**Mini Lesson:** Today I want to show you a new way that we can use to solve problems. It is already one that we are very good at. You can draw a picture to help you. Let's say I had this problem in front of me and I was not sure how to figure it out.  $4+3=7$ . I could draw a picture! Draw a simple picture with red circles and yellow circles to demonstrate the problem. Use the I Do, We Do, You Do method. Show the students a few more examples. Next, pick a student to come up to the board and give them an addition problem to draw a picture of. Next, move onto partner work.

**Students Explore in Groups:** Today you are going to draw pictures to solve some math equations. We will make this into a class book, so do your best! The book will have characters from Brown Bear, Brown Bear. Each pair of students will get a different page for the book. Remind the students to use only two colors to draw their pictures.

**Share/Summarize:** Read and discuss class book at the circle. Call on several students to share their observations with the class. Tell students that you will be putting the pages together into a book for the classroom library.



Deanna Jump, Teachers pay teachers

<https://www.teacherspayteachers.com/Product/Kindergarten-Math-COMPLETE-BUNDLE-ALL-ELEVEN-UNITS-119569>



Day: 4

**Lesson Objective:** Students will use domino's to write addition equations.

**Launch-** (story starter to get attention): Who has ever played with these before? Who knows what they are called? What can we do with them? What do you notice about them? Today we will count the dots on dominoes and write addition equations.

**Mini Lesson** (direct instruction of skill): Today we will be sorting dominos. I will pick a domino and count the dots on top of the line. Then count the number of dots on the bottom. Count the dots all together. My domino has 4 dots above the line and 5 dots below the line. I have 9 dots all together. So my equation will be  $4+5=9$ . I will look for the number 9 and place the domino under the 9. I will pick another domino and count all of the dots. Have a few students pick a few dominos and write their equations on the board.

**Students Explore in Groups:** Each group will take turns picking a domino, counting the dots, writing equations, and placing their domino under the correct number.

**Share/Summarize** (reflection back on rug to confer): Meet back at rug. Have students pick a domino and write their equation on the board. They will then put their domino under the correct number.



<https://www.pinterest.com/pin/154107618478752308/>

Day: 5

**Lesson Objective:** Students will be able to solve addition facts by using any of the methods taught in the unit to solve equations up to 10

**Launch-** (story starter to get attention): Today we will finish using domino's to write addition facts. How many of your parents park their car or truck in a garage at night? Today we will pretend we can drive and will be parking our cars in the garage to keep them safe.

**Mini Lesson** (direct instruction of skill): Today we park our domino "cars" in our garage. I am going to pick out a car. My car has 4 dots on top and 3 dots on the bottom. How many dots do I have all together? I have 7 dots so  $4+3=7$ . I am going to find 7 on my garage and park my car in the garage. Do a few more examples.

**Students Explore in Groups:** Each pair of students will need a garage; domino's, white board and dry erase markers. Pick a car count the dominos, write the equation on your white board and then park your car in the garage.

**Summarize** (reflection back on rug to confer):After completing domino activity. Have all the students go back to the tables. Give each student an exit ticket. Have the students complete the ticket and turn it in. Remind them that they can draw a picture to help them solve the problems if they need to. Then they can take out their book basket and read quietly.

**Domino parking lot printable**

<http://www.mathwire.com/numbersense/domparklot.pdf>

## Day 6

**Lesson Objective:** Students will be able to solve addition problems using a number line

**Launch-** (story starter to get attention): Yesterday we practiced drawing pictures as an addition strategy. Today I want to show you another strategy. It is using a number line.

**Mini Lesson** (direct instruction of skill): Watch! I am going to roll the dice (3) Now I am going to put my frog on number 3. Now I am going to roll again (4). I am going to move my frog from 3 to 7. We need to count the hops. The frog will hop 4 times. Count with me. So  $3+4=7$ . Repeat this several times.

**Students Explore in Groups:** Today you are going to use the strategy of using a number line to help you with addition. You will first roll the dice and put one cube on that number. Then you will roll again and move your frog that many hops to find your answer. Your partner will write your equation down. Then you will switch.

**Share/Summarize:** Meet back at circle. Partner talk, look at your partner's paper and your own paper. Talk with your partner about how your papers are the same. Tell each other how they are different. Call on several students to share their observations with the class.



<http://www.123homeschool4me.com/2011/10/hoppy-frog-math-free-printable.html>

Day: 7

**Lesson Objective:** Students will be able to solve addition problems using floor sized number lines.

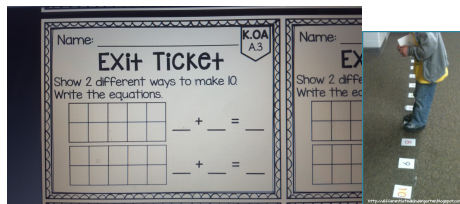
**Launch-** (story starter to get attention): I am going to take my magic wand and turn you into frogs! We are now all frogs and will be hopping like frogs and solving addition problems.

**Mini Lesson** (direct instruction of skill): Using the floor sized number line up to 10, show students how to roll dice, start at the number on the dice(3). Roll the dice again (4). Take 4 hops to get the answer to the problem  $3+4=7$ . Do a few more, then using the I Do, We Do, You Do method have students do examples as a group, then do the activity with their partner.

**Students Explore in Groups:** Each pair of students will have a floor sized number line, dice, dry erase board and markers. Students will take turns rolling dice and hopping to solve equations. Your partner will write your equation down. Then switch. Next give partners worksheet so they can practice solving addition equations.

**Share/Summarize** (reflection back on rug to confer): Meet back at rug to talk about worksheet. Have students hop like frogs on floor sized number line to show they solved the addition problems. I am going to wave my magic wand and turn us back into kindergartners. We are going to walk back to our tables and see if we can do a test to see what we learned about addition. Remember to draw a picture to help you. Take your time and do your best.

**Post Test/Exit Ticket** <https://www.teacherspayteachers.com/Product/Exit-Tickets-Kindergarten-Math-Freebie-2297176>



Floor size number line available here for free.

<https://www.teacherspayteachers.com/Product/Instructions-and-Printable-Numbers-for-Making-Floor-Sized-Number-Line-20847>



## Day 8

## Number Theory

**Lesson Objective:** Introduction of subtraction

**Supplies:** Cubes/chips, 10 frame, Blast off number cards, scissors, glue - SAVE these cards when complete.

**Launch-** (story starter to get attention): How many of you like cookies? How many of you like to bake cookies? How many of you like to eat cookies? Today we will learn about baking an amount of cookies and then taking them away by eating them.

**Mini Lesson** (direct instruction of skill): Let's take one cookie (cube) and add one more to it. How much is  $1 + 1$ ? Let's add one more. What is my math sentence?  $(2 + 1)$  ...up to  $9+1$  Sometimes we can count backwards, like when we eat out cookies. We have 10 and eat one, how many are left? How do we write that?  $10-1=9$ ....(until we get to zero)

Let's play a game now. It's called "Mix it, Fix it, Flip it." First I am going to mix up all of my cards with the number side showing. Then I am going to fix it. I will count down by 1 so I will start with 10. What number will I put next? (Answers from students). Now I will flip it. I will flip all of my cards over until just the dots are showing. Next I will mix it. Then I will fix it. This time I will flip from the dot side(ten frame side) to the number side. I want to see how fast I can fix it.

Regroup to give directions for the worksheet. Make sure students have numbers and ten frames matched correctly before gluing.

**Students Explore in Groups:** Now it is your turn. "Mix it, Fix it, Flip it." Both you and your partner will work together, at the same time, to mix the cards, fix the cards and then flip the cards. Let's see how quickly we can fix these rocket ships. Remember we are counting DOWN or counting backwards, so we will start with 10.

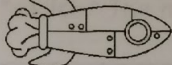
**Share/Summarize** (reflection back on rug to confer): Let's Think, Pair, Share our papers with our partner. What is the same on your paper? Tell each other how they are different. Share some students' work with the class and have them explain their process.



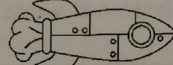


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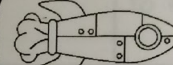
Get ready to blast off! Put your 10 frames in order. Count down from 10. Write in the missing numbers.



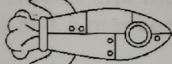
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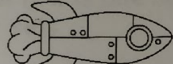
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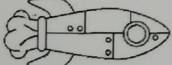
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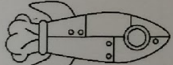
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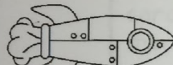
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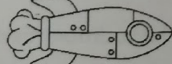
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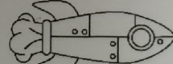
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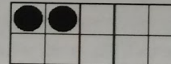
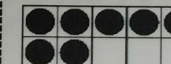

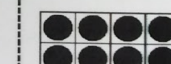


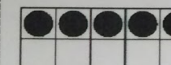


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Blast  OFF!

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<https://www.teacherspayteachers.com/Product/Kindergarten-Math-COMPLETE-BUNDLE-ALL-ELEVEN-UNITS-1195697>

## Day 9

## Number Theory

**Lesson Objective:** Making one less

**Supplies:** Subitizing cards 1-10 (Blast Off cards from yesterday), Dinosaur worksheet, sorting mat, expo markers, cubes, Math Talk Cards +1

**Launch-** (story starter to get attention): What do dinosaurs eat? (meat, leaves) So if there are 5 leaves on a tree and the dinosaur eats one how many are left? How do you know that?

**Mini Lesson** (direct instruction of skill): Students will match up to flash each other the subitizing cards taking turns. This is to build fluency of numbers 1-10. (3 minutes).

In earlier units we played "Match me + 1." Yesterday we were counting down/backwards from 10 by taking away one every time. Today we are going to play a new version of "Match Me." Watch how I play the new version.

Lay out "Sorting Mat" and choose one card from yesterday's Blast Off cards. Build a set, on one side of the mat, that shows the number you drew. On the other side of the mat build the number that will be one less/fewer than that card. This problem I created is (show +1 card and fill in the blanks). Write problem on your mat.

Regroup to explain Dinosaur worksheet. Read directions and have them regroup to complete. Think, pair, share your work with your partner. Talk about how you get your answers.

**Students Explore in Groups:** Now it's your turn to play "Match me +1." Take turns with your partner. Draw a card and build your problem on one side of your mat. Then build your answer as one less on the other side of your mat. Using your math talk cards fill in the blanks. Play for 5-10 minutes.

**Share/Summarize** (reflection back on rug to confer): Share some worksheets. How can we write the number sentence for the dinosaurs? Is there another math sentence that we can write to show the dinosaur problem? (+, -)

# Sorting Mat

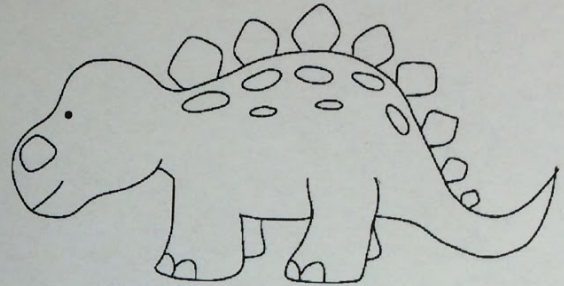
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The triceratops has 7 leaves. The stegosaurus has one fewer than the triceratops. Draw leaves to show how many each of them has.



How many leaves does the triceratops have?

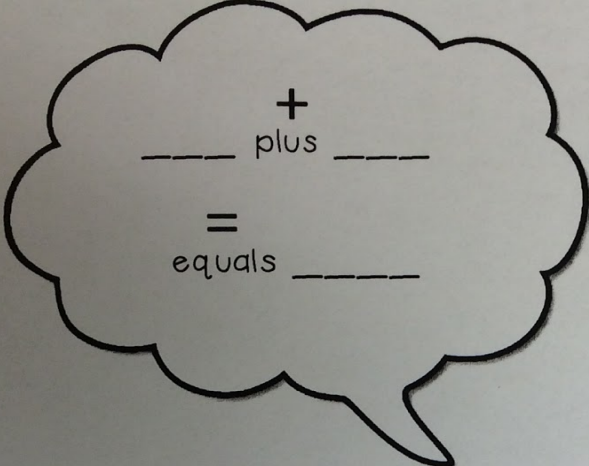
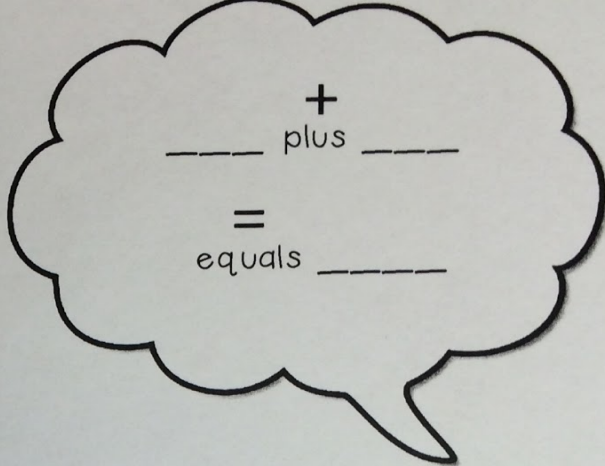
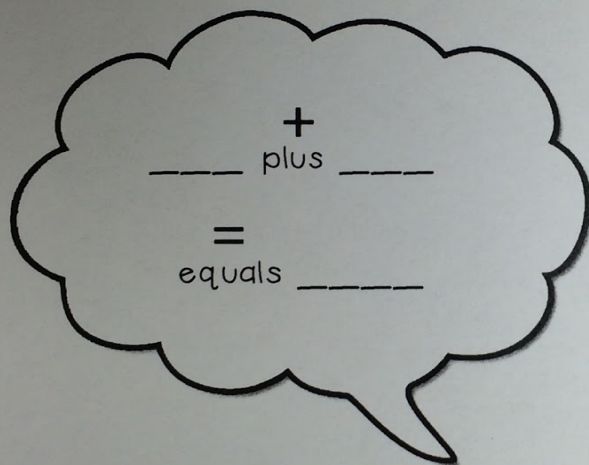
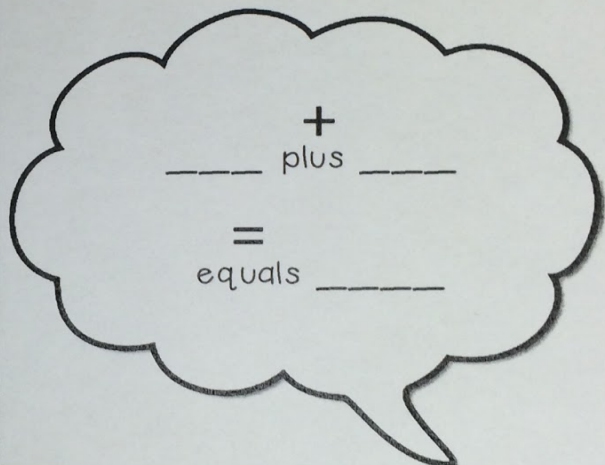
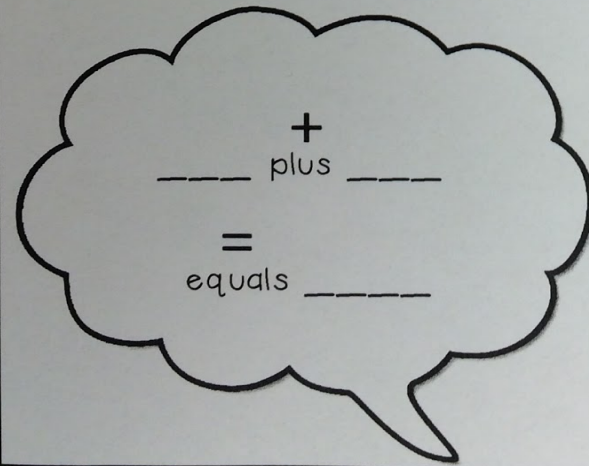
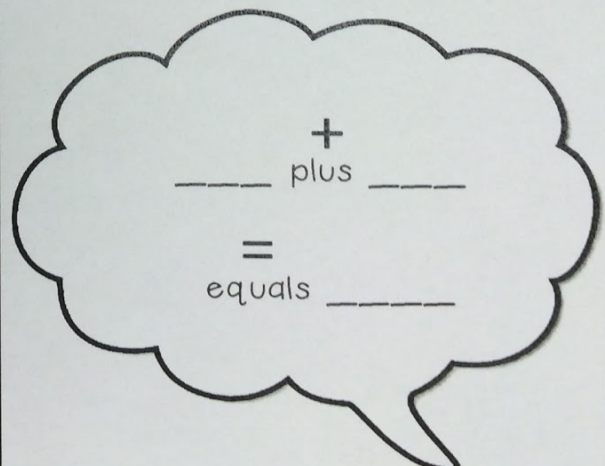


How many leaves does the stegosaurus have?

Write your numbers from 0-15.

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Print and laminate so they can be written on with a dry erase. Laminate this page with the – page back to back.

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Day 10

## Number Theory

**Lesson Objective:** Switching from +1, -1

**Materials:** Switching from +1, -1, red/yellow counting chips with +1/-1, mats, dry erase, math talk card, Mouse/bird worksheet

**Launch-** (story starter to get attention): We talked about the cookies we baked and ate the other day. Today we'll be feeding cookies to mice and birds! Does a mouse eat a cookie: Does a bird eat a cookie? If I gave mouse 3 cookies and I gave bird 1 less cookie than mouse, how many cookies did I give bird?

Students will match up to flash each other the subitizing cards taking turns. This is to build fluency of numbers 1-10. (3 minutes).

**Mini Lesson** (direct instruction of skill): Yesterday we played with the Match +1 cards.

Today we are going to switch up the game and play Match +1, or Match -1. Watch so you can learn how to play the game.

Pick a card from the Blast Off cards. Using your mat, build that number on one side of your mat. Flip your chip to see if you are going to build your next set as a +1 or -1. Using your math talk card, write out your problem.

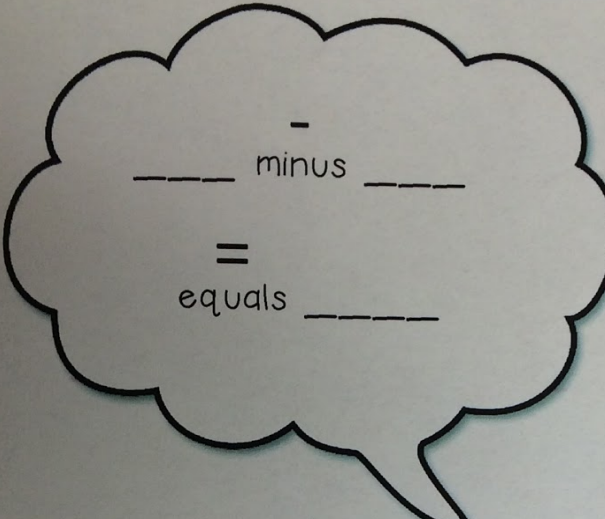
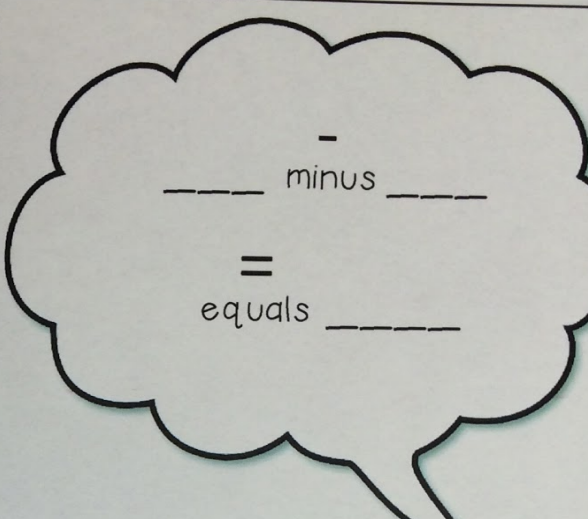
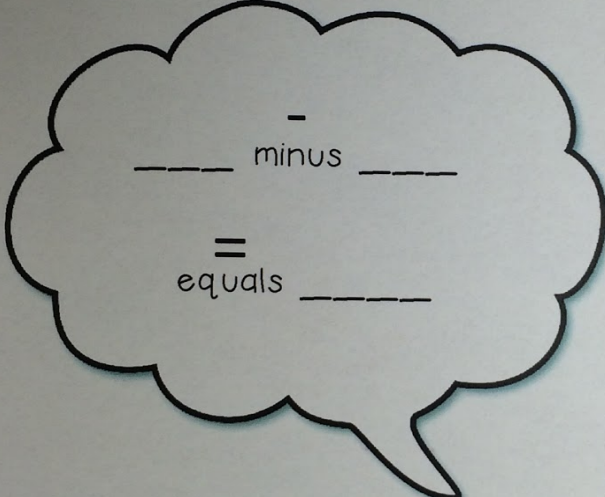
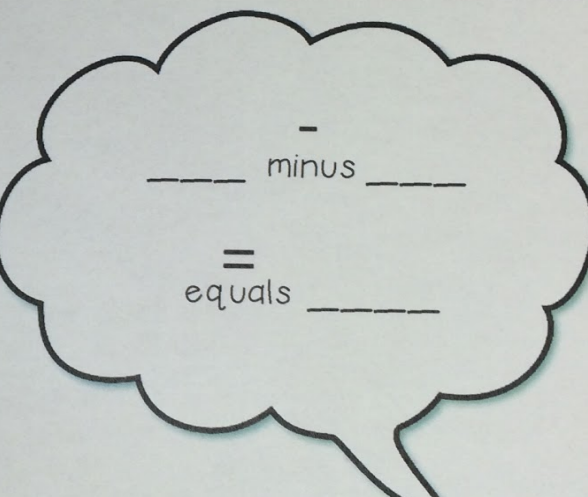
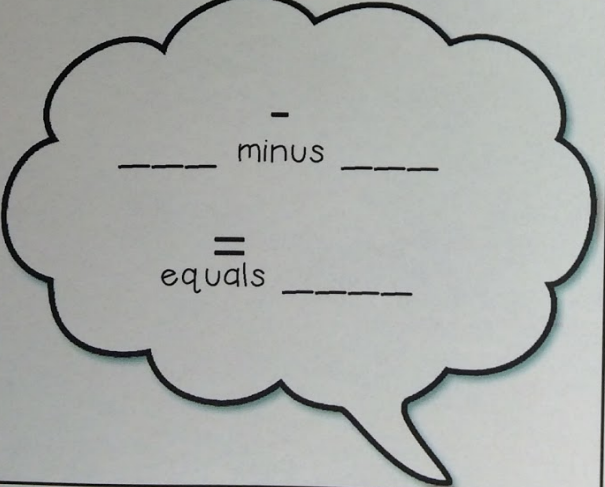
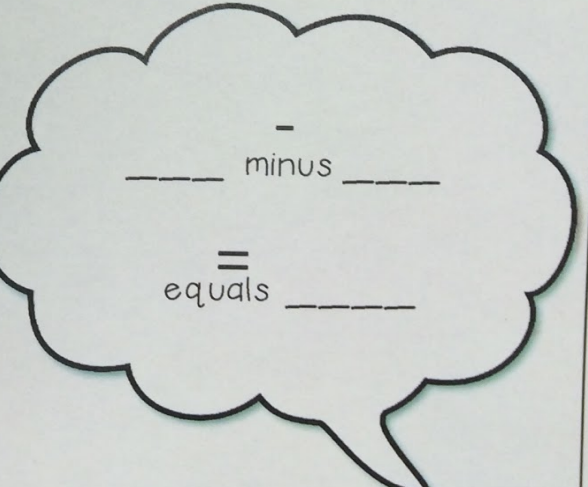
Regroup after game to explain worksheet (mouse/bird). Have students complete worksheet and help neighbors that may need it by explaining the process.

**Students Explore in Groups:** Now it's your turn to play Match +1, or Match -1.

Take turns with your partner. Draw your Blast Off card number and create, then flip your +1/-1 chip to decide whether to add or subtract one. Show this on the other side of your mat. Write out your math talk card. Discuss with your partner what you are doing and why. Now it is their turn to teach and you listen.

**Share/Summarize** (reflection back on rug to confer): Come back to the circle to discuss findings from mouse and bird worksheet. Are the papers the same or different? What would that number sentence look like? Is there another way to write that problem? Point and count out loud the numbers backwards from 15. What is happening to every number? (One less)

Laminate this page with the + page back to back. This side will be used in lesson 14.

 <p>— minus — = equals —</p>	 <p>— minus — = equals —</p>
 <p>— minus — = equals —</p>	 <p>— minus — = equals —</p>
 <p>— minus — = equals —</p>	 <p>— minus — = equals —</p>

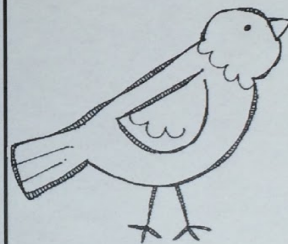
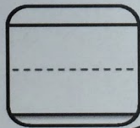


Name: \_\_\_\_\_

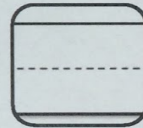
The mouse has 9 cookies. The bird has one fewer than the mouse.  
Draw cookies to show how many each of them has.



How many cookies  
does the mouse  
have?



How many cookies  
does the bird  
have?



Write your numbers from 15-0.

15							

Day 11

## Number Theory

**Lesson Objective:** Switching from +1, -1

**Materials:** red/yellow counting chips with +1/-1, sorting mats, dry erase, math talk cards, hot cocoa/marshmallows worksheet, Blast Off cards

**Launch-** (story starter to get attention): On cold days I like to drink hot cocoa. I like mine with marshmallows. Do you like marshmallows in your cup? How many? (6) If I drink my hot cocoa and eat one of those marshmallow how many would be left in my cup?(5). Yesterday we played Match +1, or Match -1 where mouse and bird were eating cookies.. We are going to play that with a different partner today and pretend they are marshmallow in our hot cocoa,

Students will match up to flash each other the subitizing cards (blast off cards) taking turns. This is to build fluency of numbers 1-10. (3 minutes).

**Mini Lesson** (direct instruction of skill):Yesterday we played Match +1, or Match -1 where mouse and bird were eating cookies.. We are going to play that with a different partner today and pretend they are marshmallow in our hot cocoa. Pick a card from the Blast Off cards. Using your mat, build that number on one side of your mat. Flip your chip to see if you are going to build your next set as a +1 or -1. Using your math talk card, write out your problem.

Regroup to explain worksheet (hot cocoa/marshmallows). Have students complete worksheet and help neighbors that may need it by explaining the process.

**Students Explore in Groups:** Now it's your turn to play Match +1, or Match -1. Take turns with your partner. Draw your Blast Off card number and create, then flip your +1/-1 chip to decide whether to add or subtract one. Show this on the other side of your mat. Write out your math talk card. Discuss with your partner what you are doing and why.

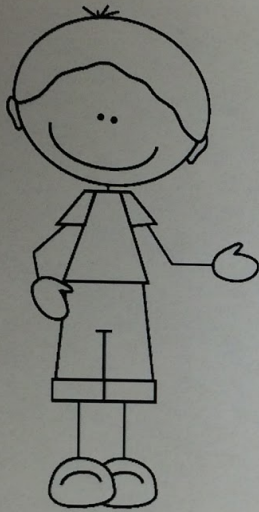
**Share/Summarize** (reflection back on rug to confer): Come back to the circle to discuss findings from hot cocoa/marshmallow worksheet. Are the papers the same or different? What would that number sentence look like? Is there another way to write that problem? Point and

count out loud the numbers backwards from 15. What is happening to every number? (One less)

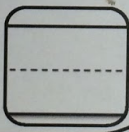
Name: \_\_\_\_\_

Unit 4: Day 8

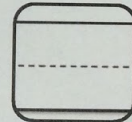
Landon has 5 marshmallows in his hot cocoa. Ashley has one more in her cup. Draw marshmallows to show how many each of them has.



How many marshmallows does Landon have?



How many marshmallows does Ashley have?



Write your numbers from 15-0.

15							

2013 Jump and Willis

Day 12

**Lesson Objective:** Switching from +1, -1

**Materials:** red/yellow counting chips with +1/-1, mats, dry erase, math talk card, Blast off cards

**Launch-** (story starter to get attention): Do you know what an elephant is? How about a monkey? What do they eat? Today in math we will be elephants and monkeys eating peanuts and bananas! We will give some peanuts to one elephant and give 1 less to another. So if I have 4 peanuts and give them to the white elephant and want to give one less to the pink elephant, how many does the pink elephant get?(3)

Students will match up to flash each other the Subitizing cards taking turns. This is to build fluency of numbers 1-10. (3 minutes).

Yesterday we played Match +1, or Match -1. We are going to play that again with a different partner today.

**Mini Lesson** (direct instruction of skill): Yesterday we played Match +1, or Match -1. We are going to play that again with a different partner today. Demo again: Pick a card from the Blast Off cards. Using the mat, build that number on one side of your mat. Flip the chip to see if you are going to build your next set as a +1 or -1. Using the math talk card, write out the problem.

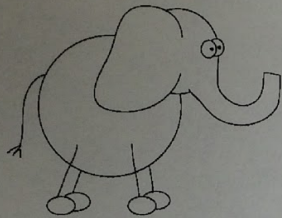
Regroup to explain worksheet (elephants/monkeys). Have students complete worksheet and help neighbors that may need it by explaining the process.

**Students Explore in Groups:** Now it's your turn to play Match +1, or Match -1. Take turns with your partner. Draw your Blast Off card number and create it on one side of your mat. Flip your +1/-1 chip to decide whether to add or subtract one. Show this on the other side of your mat. Write out your math talk card. Discuss with your partner what you are doing and why.

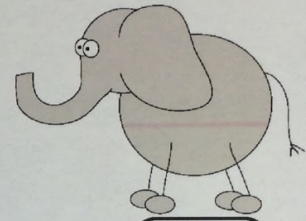
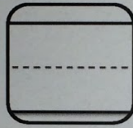
**Share/Summarize** (reflection back on rug to confer): Come back to the circle to discuss findings from hot cocoa/marshmallow worksheet. Are the papers the same or different? What would that number sentence look like? Is there another way to write that problem? Point and count out loud the numbers backwards from 15. What is happening to every number? (One less)

Name: \_\_\_\_\_

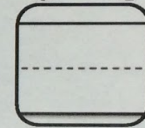
The white elephant has 7 peanuts. The gray elephant has one fewer. Draw peanuts to show how many each of them has.



How many peanuts does the white elephant have?



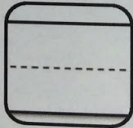
How many peanuts does the gray elephant have?



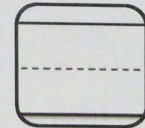
The sitting monkey has 6 bananas. The swinging monkey has one more. Draw bananas to show how many each of them have.



How many bananas does this monkey have?



How many bananas does this monkey have?



## Day 13

**Lesson Objective:** Switching from +1, -1, math vocabulary and signs, teaching strategies for adding

**Materials:** math talk card +1, -1, Whole and part board, cubes, dice, expo markers, whiteboards, Socks worksheet

**Launch-** (story starter to get attention): You ever have one of those days where you can't find matching socks? Maybe you have 2 in one drawer and 3 next to your bed. If I had that 2 and three how many do I have altogether. That is what we call a whole

Teacher will flash a number to the students for fluency practice. Students will then choose to their partner a response by using either side of their subitizing cards. They will help or correct each other as needed.

**Mini Lesson** (direct instruction of skill): Today we will use our whole and part board again to show a number and how to put it together to make a whole. I am going to roll my dice (1-6). I will count out that many cubes or clean socks, and put it under ONE of my parts (3). I will then roll my dice again and put it under the other part (5). When I put the two parts together, add them, and put them in the whole box I will say  $5 + 3 =$  (equals) 8 socks. Equal means: the same as. Repeat the process a couple more times emphasizing "add/plus, equals/same as" vocabulary. Use your whiteboard to write out what the number sentence would look like.

Regroup to do whole/part sock worksheet.

**Students Explore in Groups:** With your partner, one of you will solve the problem by showing it with your blocks and whole/part board. The other partner will be writing it on the whiteboard in a number sentence. Take turns after each completed problem. Discuss with your partner how you came to your answer. Did you get the same answer? If not work it out together both ways.




**Share/Summarize** (reflection back on rug to confer): Talk about the socks worksheet.

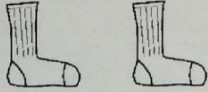
Look at several student examples and discuss. Have students explain how they got to that answer and read the math sentences that is written down.

Name: \_\_\_\_\_

Write your numbers on the socks. Draw your socks in the "whole" box. Write your equation.


whole


part 

part 

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

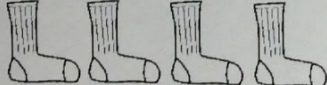
whole


part 

part 

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

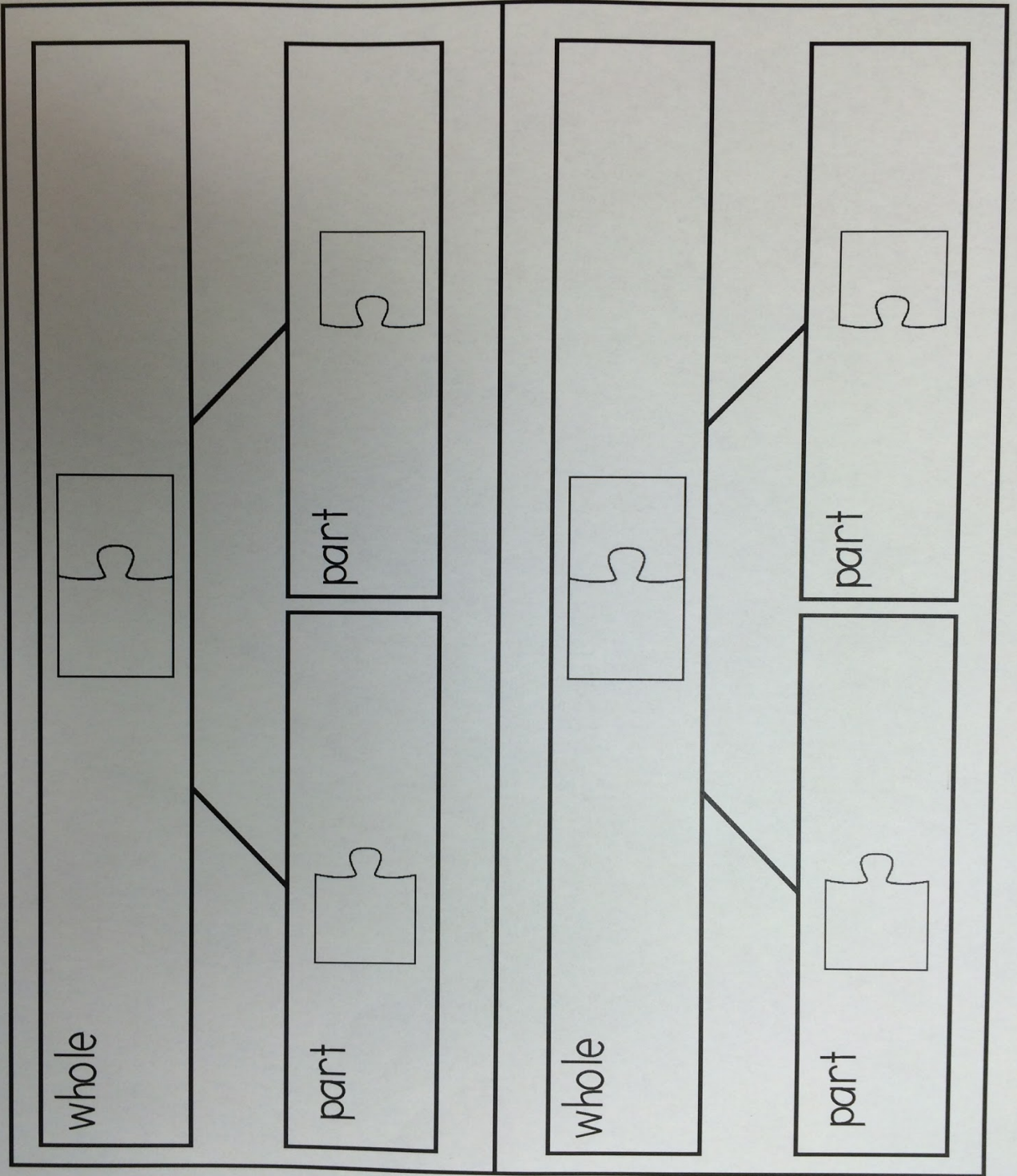
whole

part 

part 

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

From unit 3



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Day 14

## Number Theory

**Lesson Objective:** Using  $-1$ , math vocabulary and signs, teaching strategies for subtracting

**Materials:** math talk card  $+1$ ,  $-1$ , Whole and part board, cubes, dice with 8, 9, 10, regular die with 1-6, expo markers, whiteboards

**Launch-** (story starter to get attention): Students will match up to flash each other the subitizing cards taking turns. This is to build fluency of numbers 1-10. (3 minutes).

**Mini Lesson** (direct instruction of skill): Today we will use our whole and part board again to show a number and how to break it apart to make parts. I am going to roll my dice(8). I will count out that many cubes and place them on my whole area of my mat. Now I will roll my small number dice and break off that amount of cubes to put in on of my parts on my mat (3). I will put the other group of cubes under the other part (5). I take my whole and subtract my first part and that equals my last mystery part  $8-5=3$ .. Equal means: the same as. Repeat the process a couple more times emphasizing “subtract/minus, equals/same as” vocabulary. Use your whiteboard to write out what the number sentence would look like. Use your math talk card if you have to.

**Students Explore in Groups:** With your partner, one of you will solve the problem by showing it with your blocks and whole/part board. The other partner will be writing it on the whiteboard in a number sentence. Take turns after each completed problem. Discuss with your partner how you came to your answer. Did you get the same answer? If not work it out together both ways.

**Share/Summarize** (reflection back on rug to confer): End the game and have the students keep everything the way it is on their mats and whiteboards. Share several of the small groups work on both the mat and the whiteboards. Try to find one of each example using 8, 9, and 10.

## Post-test for Lesson 8-15

Give each student a ten frame box from day 8 and numbers 1-10. Each child will also get some red/yellows chips. Show me six, show me 9, show me 7, show me 10. Have student lay out the chips on the ten frame to show the number you ask for and find the number that corresponds to the number they have created. Check off student understanding on recording sheet.

Next have students show you what is one more than 5, one more than 2. Check off student understanding on recording sheet.

Last have students show you one less than 4, one less than 9. Check off student understanding on recording sheet.

Name	Show me a #	Show me +1	Show me -1

Pre/posttest for **composing and decomposing numbers.**

Students will complete assessment within small groups at back table. Students will be given a ten stick to use if they want, and asked to perform actions and give a verbal answer.

To find answer.

Student	Student A	Student B	Student C
Can you put a tower of two with a tower of three and tell me how many you have altogether?			
Can you put a tower of three with a tower of four and tell me how many you have altogether?			
Now what if you take your tower of 10 and take 6 off, how many is there in the other part?			
If I have 10 cupcakes and 7 are vanilla how many are chocolate?			
If I have 10 cupcakes and 5 are vanilla how many are chocolate?			
If I have 8 cupcakes and 4 are vanilla how many are chocolate?			

## Day: 15

Lesson Objective: Learn vocabulary of part part whole

### Boy and girl groups

**Launch:** We're going to get a new seating chart. We have tables with five kids at them. You get to sit where ever you want, we just need to make sure that all five spots at the table are filled. Do you have any questions about the rules?

2minutes- let them explore a two different arrangements.

After the second arrangement begin to record some make-ups the children are sitting in.

### Mini Lesson (direct instruction of skill):

Boys and girls I realize that no matter what we have five students. And this number sentence seems to work; some boys + some girls = 5 students.

No matter how we fill these tables we have a total or a whole group of five students. We know that five is always our whole number or part. We then have different ways we can fill those five whole spots.

### Explore:

Have students make another new seating chart

This time recognize and record all the ways they got to five:

- A. All girls otherwise stated 5 girls 0 boys
- B. 4 girls 1 boy
- C. 3 girls 2 boys
- D. 2 girls 3 boys
- E. 1 girl 4 boy
- F. All boys or 0 girls 5 boys

Have students rearrange again in a new seating chart. Have the groups identify from the poster or anchor chart which combination they are.

Continue this process if necessary.

### Share/Summarize

Who can explain what we did today? Does anyone know what I was trying to get you to realize by doing this activity? Yes I was trying to get you to see all the different ways you can add two different parts to make five.

We will explore more of this type of activity tomorrow.

## Day:16

**Lesson Objective:** partners of 5

Game: Spill and shake 5

**Launch-** (story starter to get attention):

I love to buy strawberry cupcakes and lemon cupcakes. But there is only five people in my family. So I always only buy five cupcakes at the bakery.

My family loves both kinds, so I never have to worry about getting Parker a lemon one and not strawberry. I need you guys to help me write out my cupcake orders for this week.

**Mini Lesson** (direct instruction of skill): Have students take turns to come to document camera and model how to use the trading chips. I am going to spill and shake these cupcakes and see how they land. If they land on the red side that will count as a strawberry cupcake. If it lands on the yellow side it will count as a lemon cupcake. We want to see the different orders we can make. Have them model how to shake and read the number sentence.

I shook and I will show you how to read this as a number sentence. I have 3 lemon cupcakes and 2 strawberry cupcakes.

**Students Explore in Groups:**

In pairs have students take materials to their spots. Materials include chips (red and yellow sided), cup, and recording chart.

Challenging questions for higher level thinking:

You can ask high groups if they have recorded all the possible options? What would be the exact opposite of this order?

What if I liked this order so much I wanted two of them to share with my neighbors?

Struggling student: help them by simply rolling and sorting all the reds into a group then all the yellows and returning frequently to count them into a whole group of five.

**Share/Summarize** (reflection back on rug to confer):

Have student share their worksheet and have them explain their drawings.

Is there any combination we do not have of cupcakes? Guide them to all the combos.

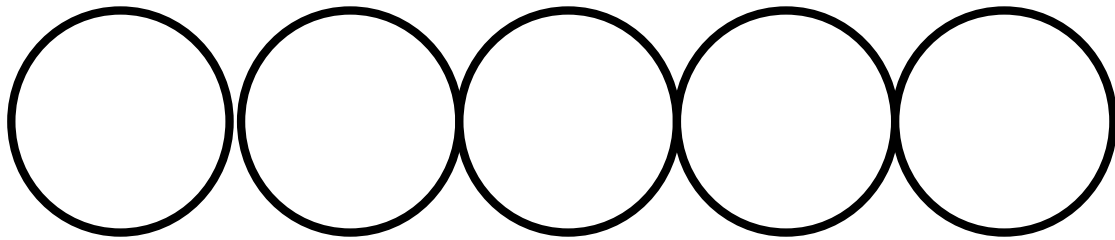
Clear up confusion; Can you have it turn out where you only have 2 lemon and 2 strawberry why or why not?



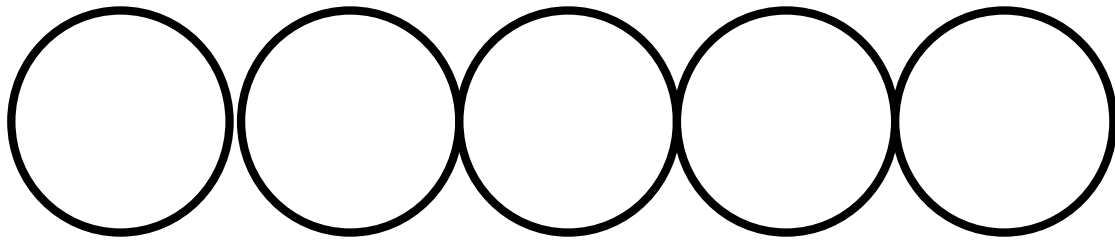
NAME \_\_\_\_\_ Name \_\_\_\_\_

Shake the chips and dump them onto the table. Read the number sentence and record the equation.

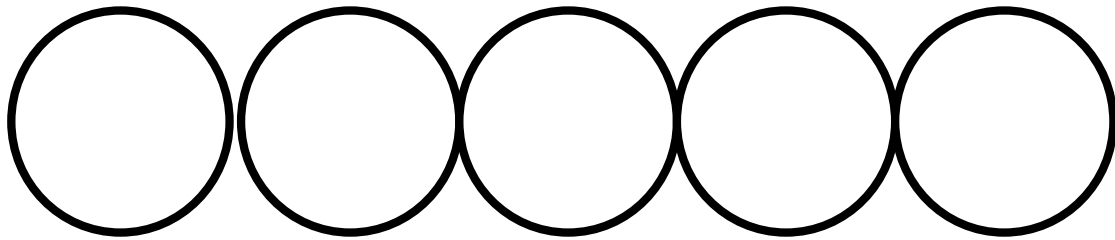
***"I have \_\_\_\_ Yellow Chips and \_\_\_\_ Red Chips, altogether I have 5 chips."***



\_\_\_\_\_ + \_\_\_\_\_ = 5 Total Chips  
Yellow Chips                  Red Chips



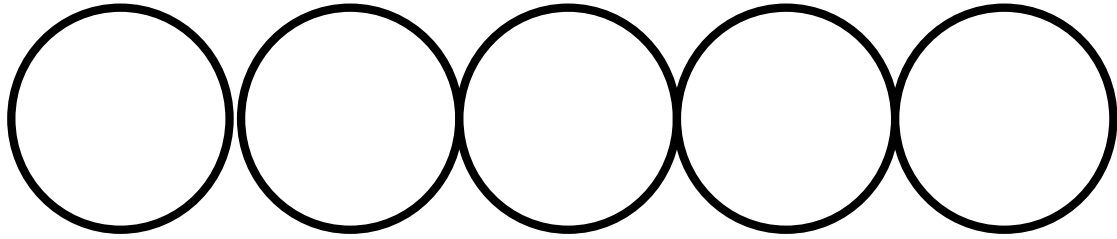
\_\_\_\_\_ + \_\_\_\_\_ = 5 Total Chips  
Yellow Chips                  Red Chips



\_\_\_\_\_ + \_\_\_\_\_ = 5 Total Chips

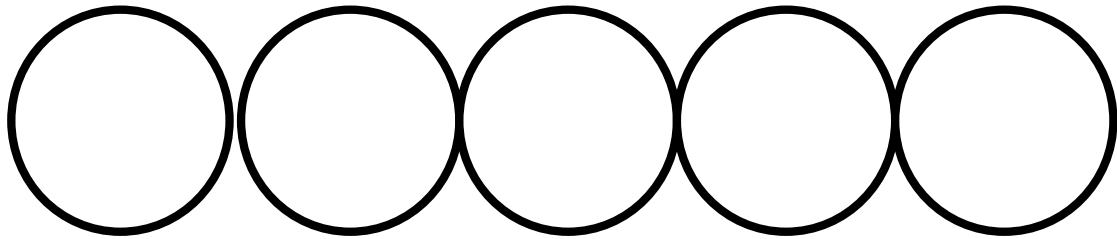
Yellow Chips

Red Chips



$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = 5 \text{ Total Chips}$$

Yellow Chips                      Red Chips



$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = 5 \text{ Total Chips}$$

Yellow Chips                      Red Chips

## Day 17

**Objective;** continuation of Day 2, this time adding partners of 6, 7, 8, 9

Game: Spill and shake 6, 7, 8, 9,

**Launch:** Today I am still going to buy my lemon and strawberry cupcakes but now I have to feed my sister and her family. So the number of cupcakes I order will be growing, getting larger.

**Mini Lesson** (direct instruction of skill): We're going to start with a six package of cupcakes. Still part of my box of cupcakes will be yellow or lemon and the other part will be strawberry.

Add to anchor chart?

### Students Explore in Groups:

Give students materials of recording sheet, 6 chips, cup

As they finish has them add 7 chips and 8 chips, 9 chips.

What do you think will happen with more chips in the cup? Record predictions, as you will revisit these in the closing circle part of the day.

Higher level questions: Is there a pattern between the ways you could split up 6 cupcakes and the ways you can split up 7 or 8 cupcakes?

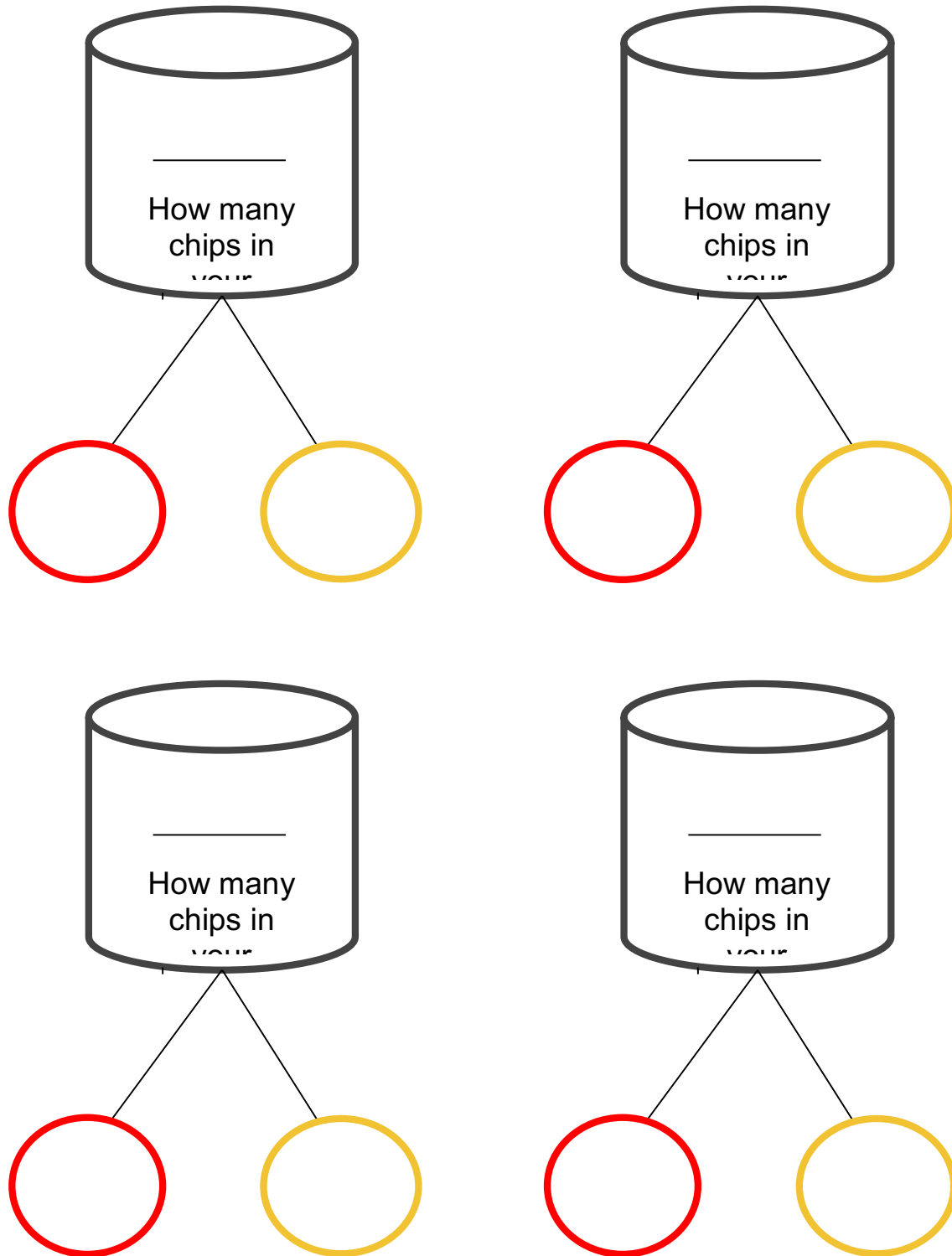
Struggling student: Help them walk through the steps one by one. Help them by sorting like chips together and recording it on paper in such a way so it is visually easier to see separate groups.

If time allows can complete anchor chart for partners of 6, 7, 8, 9

### Share/Summarize (reflection back on rug to confer):

Revisit predictions compared to reality when we had more cupcakes what happened to the part lemon and part strawberry cupcake parts or partners.

# SPILL AND SHAKE GAME



## Day 18

## Number theory

### Lesson Objective: partners of 10,

Build ten trains with two different colors.

- after exploring record on recording sheet

Create an anchor chart for partners of 10.

**Launch-** (story starter to get attention): Parker my little boy loves building trains. He makes all sorts of trains, sometimes he uses 7 cars, a caboose and an engine, sometimes he only uses an engine, a caboose, and one oil car. He makes all sorts of trains. I bet you can be as creative as he is and build me some really neat trains.

**Mini Lesson** (direct instruction of skill): we are going to create trains with two colors. You and your partner are going to get a huge bucket filled with unifix cubes; it has two different colors in this tub. You can build any combination of trains you want; the only rule is your train has to have 10 cars.

### Students Explore in Groups:

In pairs have students take materials to their spots. Materials include unifix cubes in two colors, recording sheet will be introduced later.

### Midway Meet and & confer-

Have pairs explain some of the combinations that they created.

Pass out recording sheet to draw their representations.

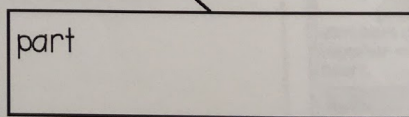
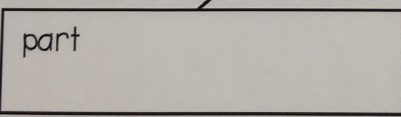
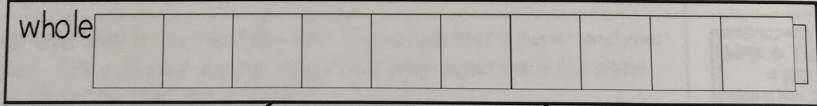
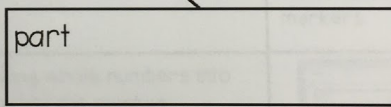
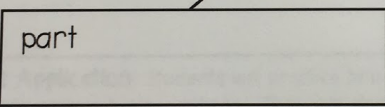
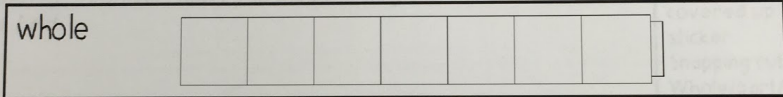
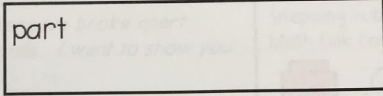
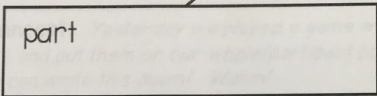
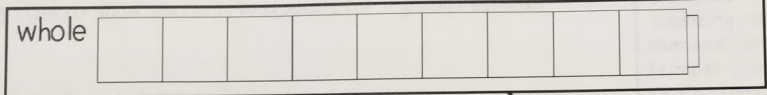
This time I want you to make your train and you are going to record the number of each color or each part you have.

So for example I am made my train have 1 red and 9 blue so in the number sentence line I write  $1+9=10$

Guiding questions Is there a simple way we can order these, Is there any observations you've made, is there an easy way to make them so we have all the different varieties?

### Share/Summarize (reflection back on rug to confer): Guiding Questions

Basically what we did today was found two smaller parts that when put together they made a bigger whole section. 7 parts of the train plus 3 parts of the train made my whole train 10 units long.



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## Day 19

**Lesson Objective:** partners of 10- math monster munch

Partners of 10

Add to anchor chart

**Launch-** (story starter to get attention):

Parker is a very picky eater and I am trying to get and when I do I like to mix two things to eat on his dinner tray. He loves goldfish crackers, but he does not like green beans. So when I put some goldfish crackers on his tray and I mix them with the green beans. I hope that he will eat them both!

Sometimes he gets lucky and I put 9 goldfish crackers on his tray and only 1 green bean.

**Mini Lesson** (direct instruction of skill): We're going to put two different types of food into this monster's mouth. You can pretend they are any 2 types of food. Some are going to kick out of his belly on one side, and the other type are going to kick out of the monster's belly on the other side. Then you are going to use the recording chart to show how the whole amount of food was split up into two parts.

**Students Explore in Groups:**

In pairs have students take materials to their spots. Materials include monster machine, 10 food cubes per group, add recording sheet halfway through after exploration.

Midway meet & confer- next model and distribute recording sheet.

**Share/Summarize** (reflection back on rug to confer):

What if I put 3 goldfish crackers on his tray, how many green beans would I need to get to 10.

What are combinations that Parker would like? What are combinations that Parker would not like?



Name: \_\_\_\_\_

Today I fed the decomposing monster!  
Here is what it taught me!

I started with

It decomposed to:

I started with

It decomposed to:

I started with

It decomposed to:

Photos  
&  
Printables

Addresses  
CCLS While  
Having Fun!



Created By Jennifer Drake

Jennifer Drake, Teachers pay teachers <https://www.teacherspayteachers.com/Product/How-To-Make-A-Decomposing-Numbers-Monster-PLUS-Printables-FREE-1115679>

## Day 20

**Lesson Objective:** partners of ten, bears hiding in den

Partners of 10

Determine unknown part  $10-x=$  known number

**Launch-** (story starter to get attention):

Mrs. Christiansen has a new house and it's pretty much in the woods, but it's also on the lake. Can you think of an animal that lives in the woods, but also likes to catch his dinner from the lake?

Brainstorm, reason answers, guides them to BEAR.

YES! A bear lives in the woods, but yet would love to catch fish for dinner from the lake.

That's why where I live it is not a surprise to see bears. Now a family of 10 bears live by my house. Sometimes I see them all, they all get up and go to the lake to eat.

Sometimes I only see 4 or 5. When I see 4 or 5 where do you think the other ones are? Could they be sleeping? Could they be in their house, what is a bear's house called...

DEN!

**Mini Lesson** (direct instruction of skill): You and your partner are going to pretend you are at my house, one of you will set up the bears and one of you will write. Then we will switch jobs. Your partner is going to take some of the bears out to go fishing by the lake and the other group of bears are going to stay sleeping in the den. When your partner tells you to open your eyes you will have to count the bears you see hunting, and try to use your strategies to figure out how many bears are sleeping.

One strategy I could use is to take my ten stick with me, and if I get stuck I can use my ten stick to set up my problem like this... model how to do ten take away number known to determine unknown part.

MODEL THE Activity WITH A PARTNER

### Students Explore in Groups:

In pairs have students take materials to their spots. Materials include ten bear counters, Den (Styrofoam bowl with opening cut out).

5 minutes to explore on their own.

Bring back together, did anyone have a trick or a strategy to use to help figure out the number of bears who were sleeping?

Guiding Questions:

Low- Could you use your own set of bears, or your fingers to help? Model how.

High- Is there something in the room that you used to help figure out the answer.

Did the number partner anchor chart help? Did your fingers help why?

Higher level questioning- Wow, how did you know so quickly that since there were five bears out fishing, there were five bears sleeping?- have student justify answer, share with class.

Struggling student, insist they use them to use their bears and the ten frame on the recording paper, have them match the same amount of bears that they see out hunting with their bears placed on one to one on the ten frame, have them count the empty spaces in the ten frame. Could that be right? Let's check, and then lift up the den to see.

**Share/Summarize** (reflection back on rug to confer):

Have a few students model under doc. Camera, and I record the number partners they find. After the anchor chart is made from the few end examples, share with students the Main idea of the day.

We always had ten bears, that is a number we knew. We also could find out the number of bears that were hunting. And as long as we knew the Whole amount and one of the parts we can figure out the missing part or missing number.

## Day 21

**Lesson Objective:** Guess my number with a ten stick.

Identify partners of 10

**Launch-** (story starter to get attention): I love tricking my sister. But it doesn't happen that often! She actually is much smarter than I and she often tricks me. So I came up with a game that I can do well, because I know my partners of ten, I know the two small parts can go together to make 10, and I can trick her at this game!

**Mini Lesson** (direct instruction of skill)

This game is called guess the missing part. I am going to take my ten stick and tell my partner to close his eyes. When his eyes are good and closed, I break off my ten stick, at any place, and then I take one part of my ten stick, one tower and hide it behind my back. Next, I tell my friend to open his eyes and guess the missing part.

**Students Explore in Groups:**

In pairs have students take materials to their spots. Materials include a ten stick for each child. Make sure anchor chart is visible.

Teacher mingles around classroom using guiding questions or prompting when needed.

Higher level questioning- Wow, how did you know so quickly that since there were five blocks out there must be five hiding behind his back?, have student justify answer, share with class.

Struggling student, insist they use them to use their blocks to help them find their answer not just when it's their turn to hide some. Encourage them to set up the problem using their own blocks but instead of hiding a part they will get to use it to count.

**Share/Summarize** (reflection back on rug to confer):

**Guiding Questions:**

How did you make your guesses as to what was the number missing?

Did you use any other strategies, Was there anything in the room that helped you come to your conclusion?

## Day 22

**Lesson Objective:** Assessment of decomposing numbers and review game for decomposing and composing numbers

**Launch-** (story starter to get attention): Today we are going to pretend we are at the arcade. You get to go to any center you want as long as there is room for you at that station! You can play the game that is set up there! When you have played that game and you are ready to switch you may get up and move to another station! I will also be calling students back to the table for a chance for you to show me what you know.

### Stations of Games or Centers:

All centers are reviews of the units games we have already played! There will be a recording page at every center.

1. Guess my ten stick
2. Shake and spill choose your level or amount 5,6,7,8,9,
3. Shake and spill choose your level or amount 5, 6, 7, 8, 9
4. Feed the Monster
5. Assessments at the back table

### Students Explore in Groups:

Students can move from group to group as they wish, and behavior allows. I can work with one on one calling students to back table to go through posttest questionnaire.

**Share/Summarize** (reflection back on rug to confer):

### Guiding Questions:

What stations did we do today? Why did I pick those stations? What skills am I trying to get you to master by doing this? What math skills are we working with in doing these activities?