

2nd Grade

Learning

Guide

Math

Topics:

- Fluently adding and subtracting
- Working with equal groups of objects to gain foundations for multiplication, which they will learn at the beginning of 3rd grade
- Measuring and estimating lengths in standard units
- Representing problems to add and subtract within 100
- Telling time to the nearest five minutes
- Using place value concepts to read and write numbers to 1000
- Comparing three digit numbers using place value concepts (hundreds, tens, and ones)

What Your Student is Learning:

- Numbers can be broken apart to make it easier to add and subtract them mentally; there are a variety of different strategies that can be used to add or subtract
- Patterns we notice by skip counting on a hundreds grid can help us with multiplication
- Bigger numbers of objects can be broken down into groups to help with counting (skip counting by 5s is more efficient than counting each object one at a time).

Background and Context for Parents:

Page	Notes
1	Students are learning to decompose (break down) into parts of 10. Regardless of the way in which they break down each 10-stick, they should begin to notice that reversing facts such as $3 + 7$ and $7 + 3$ still add up to 10 (commutative property). It is also helpful to quickly know how to make 10 because it will help when they add larger numbers.
2-3	Play Cross Out: if two players aren't available, either play with the student or have the student "play" against her/himself. Be careful not to say, "you always take the big number minus the small number," because that isn't mathematically true. You can certainly subtract and get negative numbers, just not yet :) Instead, "In this game, you subtract the small number from the big number. In later math classes you will learn to subtract big numbers from small!"
4	The hundreds grid helps students begin to see patterns as they skip count. In this case, focus on the patterns students notice when skip counting by 5s and by 10s. Be sure to discuss the patterns. What do they notice? Continue to practice skip counting by 2s, and 5s as you walk around the house, climb stairs, etc.
5-6	Grouping & Counting: students learn here that larger numbers of objects can be counted more efficiently when we create smaller groups that can be skip counted. This helps students practice skip counting, and begins to build the understanding that a number can be made up of ___ groups of ____.
7	Measuring Objects around the House: the purpose here is to give students practice in estimating length, then checking their estimates. The estimates don't have to be correct! Ask students to reflect on what they noticed about any difference between their estimate and the actual measurements. If you don't have a ruler or yardstick at home, have students use a nonstandard unit like a pencil or teaspoon to measure objects. Note: Estimating is just as important as measuring. Do students have a feel for

	<p>how long an inch is? A foot? A yard? www.estimated180.com is a fun website to practice estimation. Can they make their own estimation180?</p>
8	<p>Number Line Hops: the purpose of using open number lines here is to build students' awareness of how numbers can be broken apart to aid addition and subtraction. If the addition problem is $18 + 34$, for example, students should notice that 34 is made up of 3 tens and 4 ones. We can then skip count: 18, 28, 38, 48, and then count up 4 ones (49, 50, 51, 52). The open number lines help students to visualize this as a way to build their mental math capabilities.</p> <p>Remember on page 1 when you practiced making 10? This is helpful now because students can break apart numbers to "make 10" and make the hopping easier!</p> <p>You can practice this more by making up your own problems and drawing your own number lines. Important: Students are not intended to learn the standard way that we learned to add until 4th grade! Focus on strategies like number lines because it helps them understand how numbers are related and can break apart.</p>
9	<p>Arrow Math Puzzles: hundreds grids help students learn how to skip count by 10s starting with any number (not just multiples of ten). Ask students, "How many are we counting by when we move "down" each row of the hundreds grid?" "How many are we counting when we move "right" on the hundreds grid?" "How does the grid help you to add?"</p>
10-11	<p>Time: by the end of second grade, students should be able to tell and write times to five minute increments on an analog clock. Provide additional practice for students here by creating a daily schedule, and having students create analog clocks to go along with each time. Note: Many people ask, "What's the point of learning analog clocks?" One benefit is that it helps with fractional thinking. I can see the hour as a whole circle that can be broken into equal parts (quarters, halves, etc).</p>
12	<p>Fish Story: students can use different strategies to solve this problem, but should include some kind of diagram for how to visualize the problem. Ask students to explain the strategy that they used. Focus on the strategy not the answer. Then, you could ask, how long are the fish altogether? This would require a second step.</p>
13-14	<p>My Subtraction Word Problem: on this page, students come up with their own subtraction word problem. Challenge your student to try to come up with a subtraction problem that includes 2-digit numbers if they can! Ask questions like, "How does your diagram match the problem? Where is the (insert number) in your diagram?" Help them make connections between the problems and the pictures.</p>
15-16	<p>Unknowns with Dominoes: students are using open number lines here to work forwards (adding) and backwards (subtracting) to solve problems with unknowns. Work through these problems by asking them to plot out the known numbers on a number line, and work from there. It is helpful to see problems modeled using different tools.</p>
17-18	<p>Strategies that students use for each of these word problems can vary, but students should be able to explain (verbally and in writing) how they got the answers. Ask students questions like, "What does this number represent? How did you figure out that number? Why did you use [addition/subtraction] here?"</p>

	<p>These are challenging word problems! Page 17 has the change unknown and Page 18 has comparison problems. These are types of problems that can be confusing for students, so you will really have to talk about what is happening in the problems. It is less about computation, and more about understanding.</p>
19	<p>Missing Pieces in the 1000 Chart: some of these “puzzle” pieces are from a 1000 chart, and some are from a 100 chart. Students should use what they know about place value to try out numbers in each square, and check that they make sense. Some things to know:</p> <p>Hundred Charts:</p> <ul style="list-style-type: none"> • Moving “up” one square means subtracting 10. • Moving “down” one square means adding 10. • Moving left or right one square means subtracting or adding by 1. <p>Thousand Charts:</p> <ul style="list-style-type: none"> • Moving “up” one square means subtracting 100. • Moving “down” one square means adding 100. • Moving left or right one square means subtracting or adding by 1. <p>You might want to have the hundred chart available from the earlier worksheets so they can use it as a tool.</p>
20	<p>True or False? Have students write out each number in these problems, so that they can compare the numbers based on their place value (the number of hundreds, tens, and ones). Some are tricky! Another way to compare numbers is to put them onto number lines. Numbers that are farther to the right are larger.</p>

Ways to support your student:

- Read the problem out loud to them.
- Remember, focus on strategies instead of answers. We want students to understand and be flexible with numbers.
- Before giving your student the answer to their question or specific help, ask them “What have you tried so far? What do you know? What might be a next step?”
- After your student has solved it, and before you tell them it’s correct or not, have them explain to you how they got their solution and if they think their answer makes sense.

Some Online Resources for Parents and Students:

- Interactive Hundred Chart: https://www.mathplayground.com/interactive_hundreds_chart.html
- Video to model addition on number line (Note: You can add tens first or ones first, and you can start with either number. It should be flexible!):
<https://www.youtube.com/watch?v=B8xTMrDgjfQ>
- Games to students practice all grade 2 Topics:
<https://www.splashlearn.com/math-skills/second-grade>
- These are different problem types that students encounter. Can you make up word problems for each type? Students do not need to know the names of the types, but it is helpful for you to make sure you are not giving all of the same type as examples:
<http://www.corestandards.org/Math/Content/mathematics-glossary/Table-1/>
- Explanation of some strategies for addition (The traditional method is the one that we learned. The Common Core does not require this until 4th grade). Do you and your students understand the other methods?
https://www.youtube.com/watch?v=_oPqIF_3cPM

Learning Support for Mathematics

For students that are approaching grade level and have learning gaps/ differences in mathematics, provide numerous opportunities for explorations at the concrete (manipulatives) and representational (visual) levels before progressing to the abstract (numbers) level. Students that need learning supports should be provided with:

- Intensive Direct Instruction and daily guided practice
- scaffolded supports
- the use of visuals as models and aids
- numerous opportunities to think out loud
- support to help them understand the why
- use of manipulatives and tools to support understanding
- Bar Modeling Representations to decode word problems
- the use of mnemonics to enhance retention of skills
- daily practice with basic facts
- the presentation of content in varied contexts and varied levels
- opportunities to use diagrams and draw math concepts
- graph paper to support understanding
- numerous opportunities to draw pictures of word problems
- the use of smaller numbers to address number operations
- opportunities for success to build a growth mindset
- computer time to allow for needed practice
- opportunities to engage in metacognition (the building and reinforcing of thinking and reasoning) skills

See examples for each bulleted item on the following pages

- **Intensive Direct Instruction and daily guided practice**

(Intensive Direct Instruction means to explain the skill / concept to the student with several examples repeatedly to help them understand)

https://youtu.be/F_HzrRBOU7I / https://youtu.be/OJJkkUPC_yM

- **Scaffolded Supports**

(Scaffolded supports means to introduce the skill one step at a time – allowing the student to understand one section part, before moving on to

the next part) ex. $5 + 1 = 6$, $9 + 1 = 10$, $24 + 1 = 25$ - it is the same as “what number comes after 5, after 9, after 24

https://youtu.be/5hWDbSx_kdo

- **Visuals as models and aides**

(Pictures of objects that can be used to help students understand the math)

<https://studentsatthecenterhub.org/resource/helping-struggling-students-build-a-growth-mindset/>

- **Thinking out loud**

(Allows students to talk and think about the skills they are learning, which allows them to better remember the skill)

<https://youtu.be/f-4N7OxSMok>

- **Understanding the why**

(When students understand why a strategy works, they will apply it to other skills) ex. $5x = 5$, $45x1 = 45$, $320x1 = 320$

- **Manipulatives and Tools**

(Manipulatives can be counters, beans, blocks, etc. – Tools can be rulers, calculators, scales, etc.) <https://youtu.be/uWBZF-Lyq58>

- **Bar Modeling Representations**

(Bar Modeling Representations consist of visuals that help students understand the skill they are learning. Ex.

70	
35	35

https://youtu.be/TbayTZvS_bc

Mnemonics

(Mnemonics consist of strategies to help students remember skills – ex.



Mnemonic Devices

Every Good Boy Does Fine

Elvis' Guitar Broke Down Friday Eat Good Burritos During Fiesta

Treble clef
Line notes

E4 G4 B4 D5 F5

STANFORD

Mnemonic		
Please	P	- Parenthesis
Excuse	E	- Exponent
My	M	- Multiplication
Dear	D	- Division
Aunt	A	- Addition
Sally	S	- Subtraction

<https://youtu.be/dXvvGc9TIdY>

Basic Facts

(Basic facts include addition, subtraction, division, multiplication facts –
ex. $8+2=10$, $2+8=10$, $10-2=8$, $10-8=2$ / $2 \times 5=10$, $5 \times 2=10$, $10/2=5$, $10/5=2$)

https://youtu.be/TbayTZvS_bc

Content with varied contexts and varied levels

Means to show student how to solve a problem different ways to allow them to use the skill that way they understand best

<https://youtu.be/FVg9n0l0Gf0>

Diagrams

(Diagrams provide students with visuals / pictures that help them solve the problem and they help them read the problem with less words)

https://youtu.be/TbayTZvS_bc

Graph paper

(Graph paper helps students to solve the problem by making it visual / easier to see the answer)

<https://youtu.be/mX43cn3IASI>

Drawing Pictures

(Drawing pictures allow students to show they can solve the problem without using words that they may not know or be able to write)

https://youtu.be/TbayTZvS_bc

- **Smaller Numbers**

(The use of smaller numbers can help students understand the process of a skill, so that when they move on to bigger numbers, they will see that the process is still the same, they acquire understanding of the skill) ex. $5x = 5$, $45x1 = 45$, $320x1 = 320$

- **Growth Mindset**

(A growth mindset is a process that helps to improve intelligence (thinking), ability (skill) and performance (actions). This means that by helping students to develop a growth mindset, we can help them to learn to think and be problem solvers. This is a process that occurs over time by helping them improve by building success over time.

<https://studentsatthecenterhub.org/resource/helping-struggling-students-build-a-growth-mindset/>

- **Computer Time**

(Computer time allows students to use websites, games, activities that will help them learn math skills and concepts)

mathgametime.com, pbs.com, bestkidsolutions.com, firstinmath.com, helpingkidsrise.org

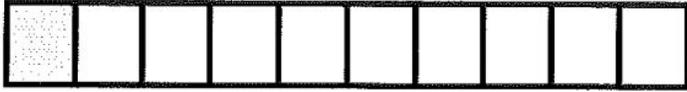
- **Metacognition**

(Metacognition means to help students think about what they are thinking, the steps they are using, the words and numbers that they are using- It helps students to better focus on the skills they are using- it is a process that occurs over time) / <https://youtu.be/HKFOhd5sMEc/>

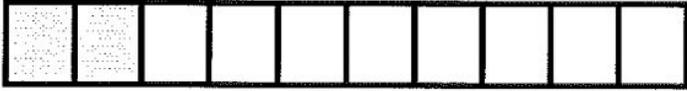
<http://www.spencerauthor.com/metacognition/>

Part 1: What are all the combinations of numbers that add to 10?

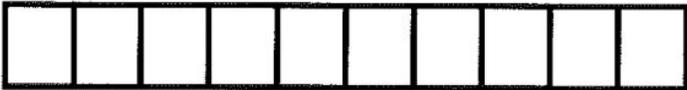
Color the 10-sticks with two colors and write equations like the examples:



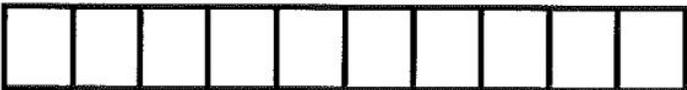
$1 + 9 = 10$



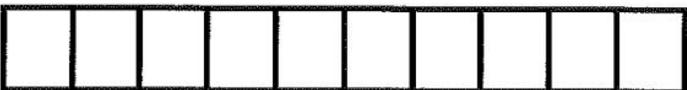
$2 + 8 = 10$



$_ + _ = 10$



$_ + _ = 10$



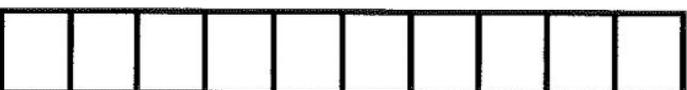
$_ + _ = 10$



$_ + _ = 10$



$_ + _ = 10$



$_ + _ = 10$



$_ + _ = 10$



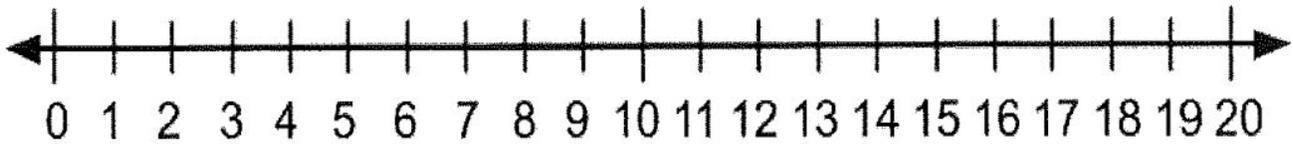
$_ + _ = 10$



What patterns do you see?

Part 2: Play Cross Out

Play on this number line:



- Player 1 chooses a number on the line and crosses it out.
- The **same** player chooses a **second** number and crosses that out too.
- Player 1 then circles the sum **or** difference of the two numbers and records the equation.

<i>Example 1</i>	<i>Example 2</i>
$6 + 8 = 14$	$8 - 6 = 2$

- Player 2 crosses out the number that Player 1 circled.
- Player 2 chooses **another** number to cross out and then circles a third number, which is the sum or difference of the two crossed-out numbers. They record the equation.

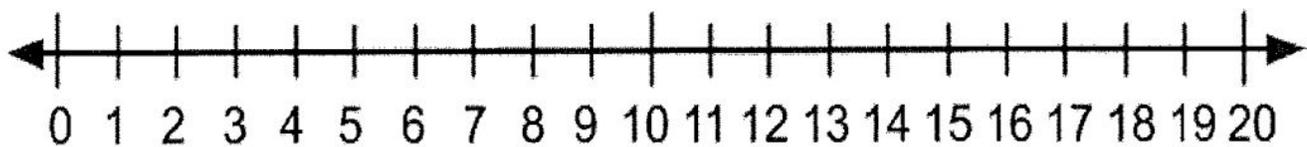
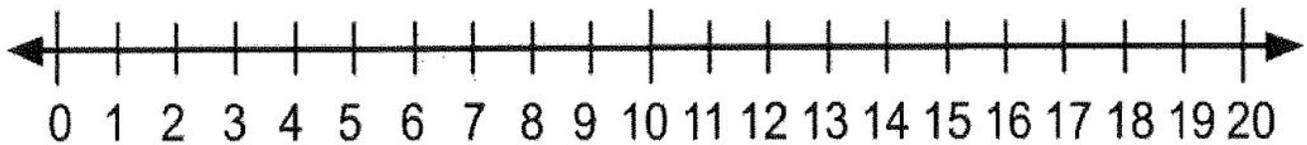
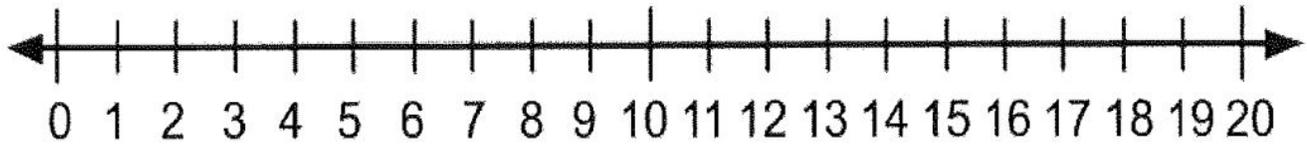
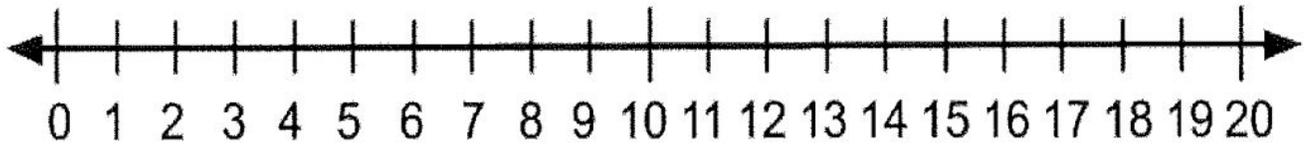
<i>Example 1</i>	<i>Example 2</i>
$14 + 3 = 17$	$2 + 13 = 15$

Take turns! When a player can't make a move, the game is over.



What strategy did you use?

Cross Out Game Boards



Part 1: Skip counting on the hundred chart.

Skip count by fives (5). Color in the numbers.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Skip count by tens (10). Color in the numbers.

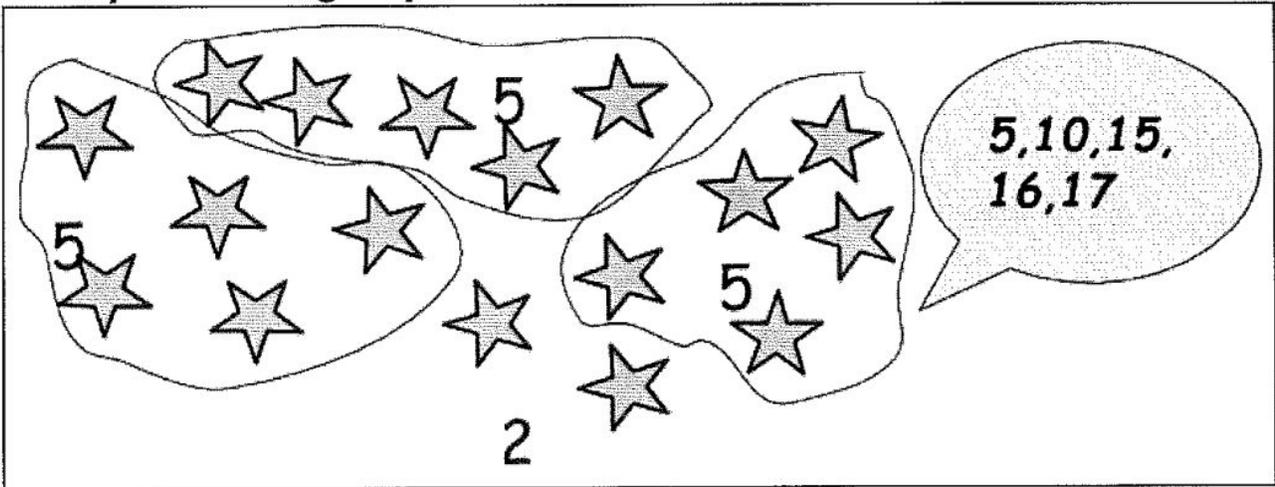
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



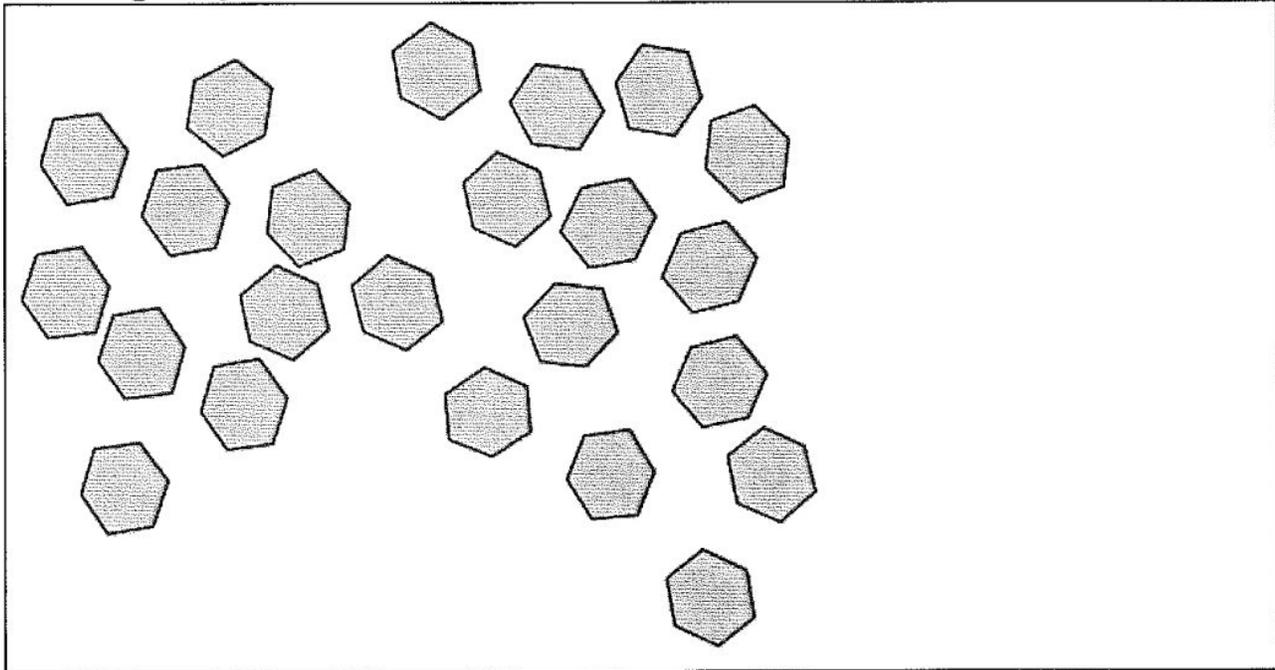
What patterns do you see?

Part 2: Grouping and Counting

Example: Circle groups of 5 stars and count all the stars:



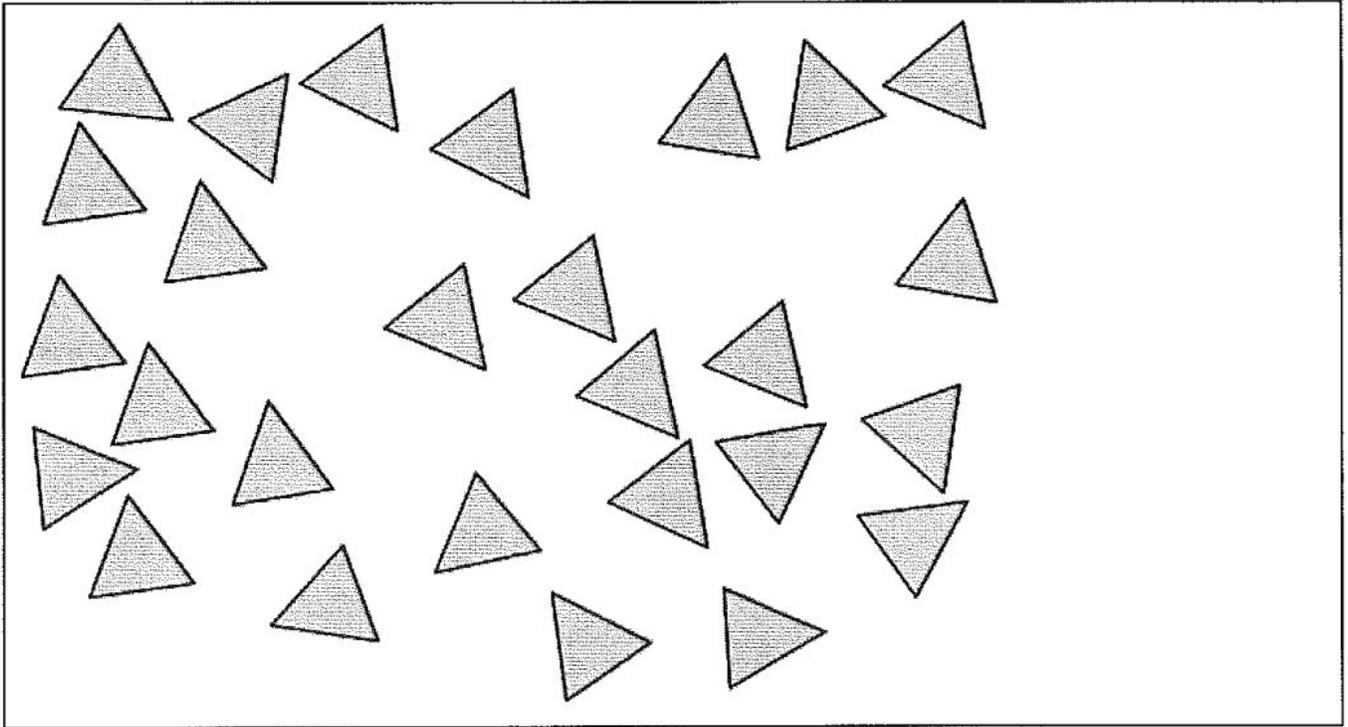
Circle groups of 5 hexagons and count them:



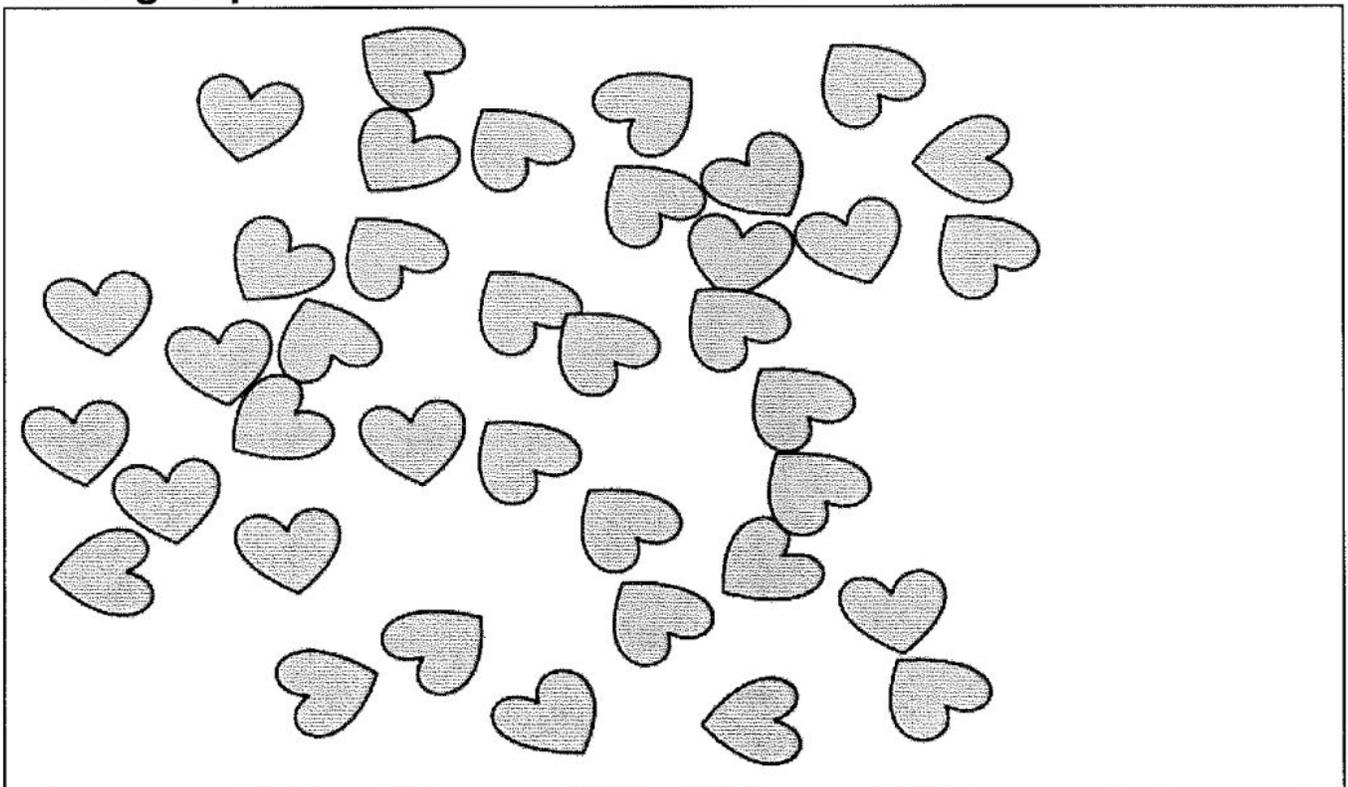
What patterns do you see?

More shapes to count:

Circle groups of triangles and count them:



Circle groups of hearts and count them:



Name _____ Date _____



Measuring Objects Around the House

Object	Estimate <i>(centimeters, inches, feet, meters or yards)</i>	Tool	Measurement <i>(centimeters, inches, feet, meters or yards)</i>

What was the longest object you measured? _____

What was the shortest object you measured? _____

Number Line Hops

Start 19 Hop 41



Write the equation:

Start 33 Hop 27



Write the equation:

Arrow Math Puzzles

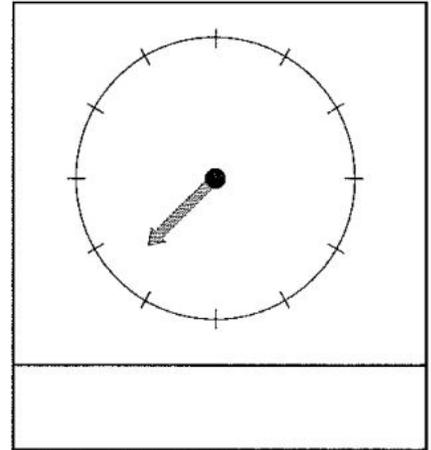
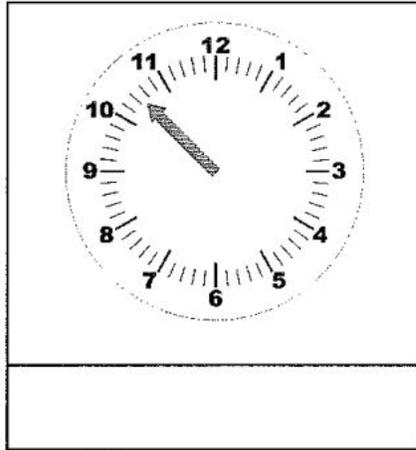
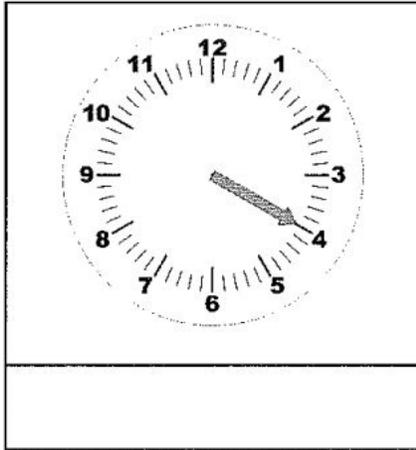
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
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51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
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91	92	93	94	95	96	97	98	99	100

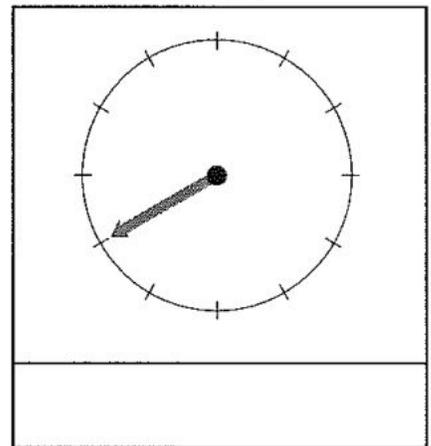
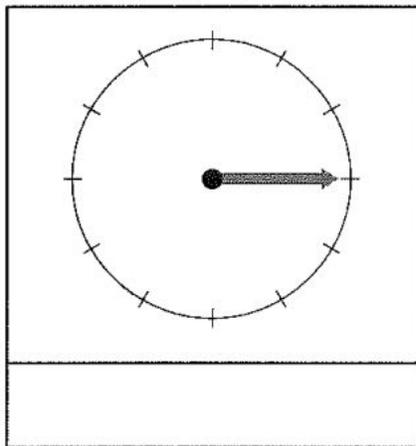
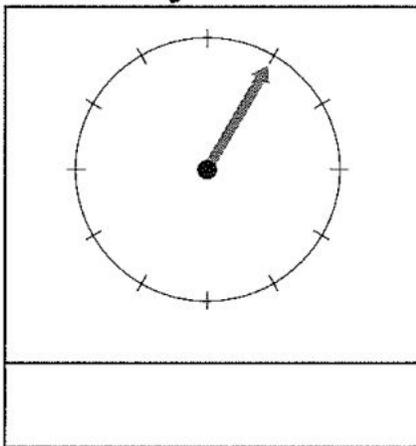
Start	Moves	Expression	End
10	↓ ↓ ↓ → → → →		
45	↓ ↓ ↓ → →		
	↓ ↓ ↓ → → → →		
	↓ → → →		
55			
			80

How can you use the Hundreds Chart to Add?

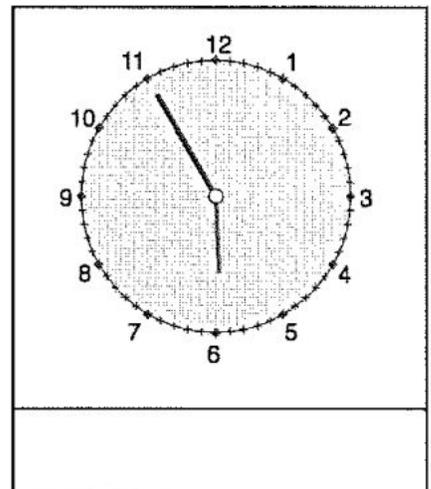
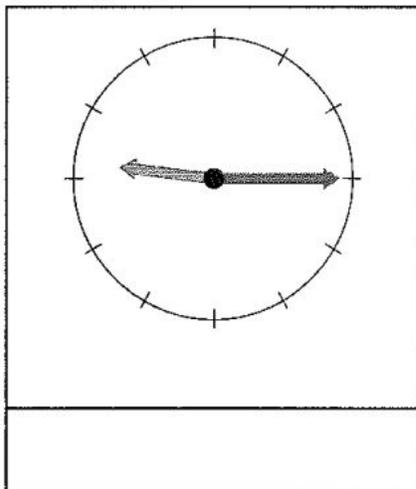
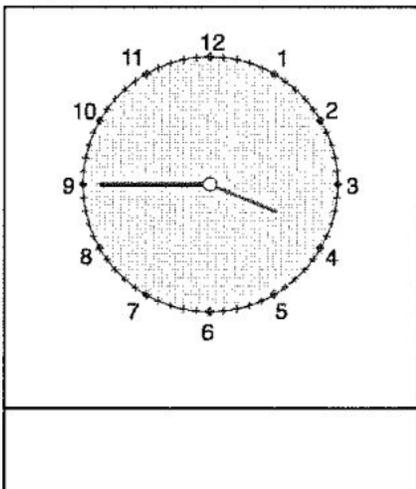
About what time does each clock show?



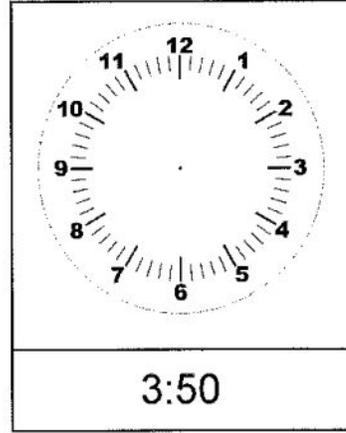
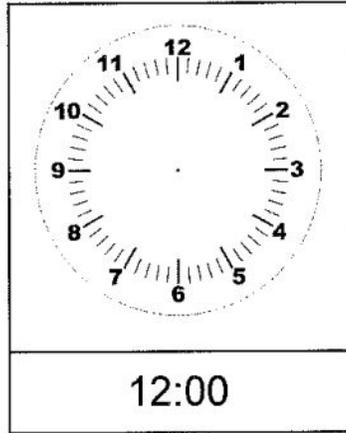
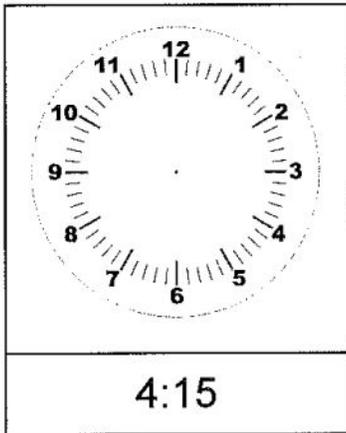
How many minutes after the hour does each clock show?



What time does each clock show?



Show the time on each clock:

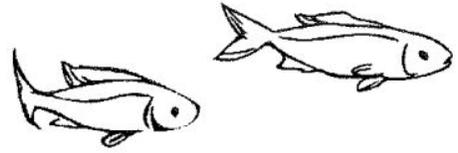


In the morning I ...

a.m.

Fish Story

Jen caught a fish that was 17 inches long.
Bob caught a fish that was 23 inches long.



Draw a picture or diagram of the situation:

A large, empty rounded rectangular box with a thick black border, intended for drawing a picture or diagram of the situation.

Whose fish is longer? _____

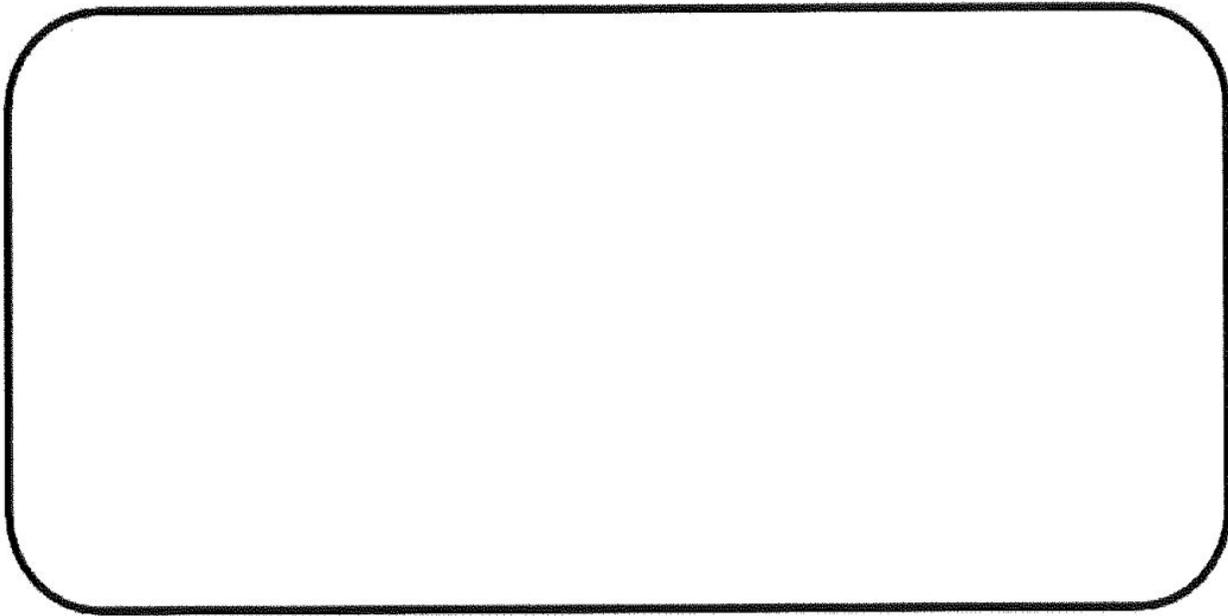
How much longer? _____

How do you know? _____

My Subtraction Word Problem

Write your math story problem:

Draw a picture or diagram of the situation:



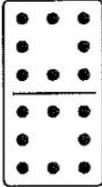
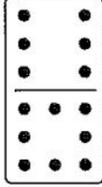
What is your question?

Solve the problem and show how you know your answer is correct.

A large, empty rectangular box with a black border, intended for the student to show their work and verify their answer.

Unknowns with Dominoes

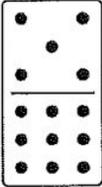
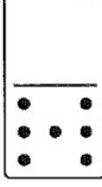
	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100


 $+$

 $=$ _____

Record your strategy on an Open Number Line.



	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

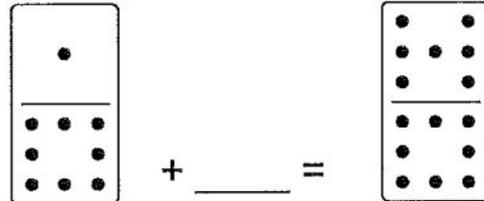

 $-$ _____

 $=$ _____

Record your strategy on an Open Number Line.



Unknowns with Dominoes

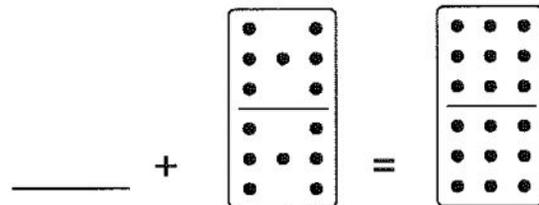
	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



Record your strategy on an Open Number Line.



	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

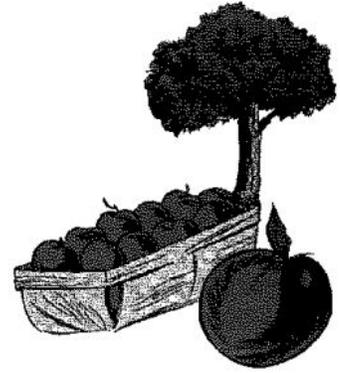


Record your strategy on an Open Number Line.



Solve each problem. Show how you know.

Cam picked 24 apples. Then she picked some more apples. In the end she had 52 apples. How many more apples did she pick?

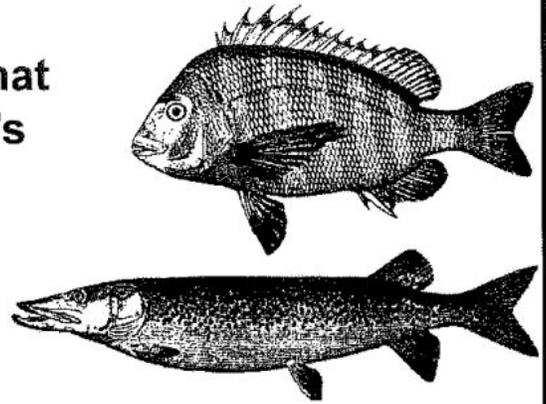


This loaf of bread was 34 centimeters long. I cut off a piece and now it is 26 centimeters long. How long was the piece I cut off?



Solve each problem. Show how you know.

Steven caught a fish that was 37 centimeters long. Emily caught a fish that was 15 centimeters longer than Steven's fish. How long was Emily's fish?



Tamika caught a fish that was 19 centimeters shorter than Emily's fish. How long was Tamika's fish?

Fill in the missing pieces of the 1000 chart

	443		
472			

286		288	

		574
593		

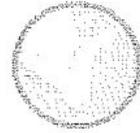
	792		
891			

		394	
		494	

			110
			150

What strategy did you use to place the numbers? _____

True or False?



Are these comparisons true or false?

How do you know?

a. 3 hundreds + 9 ones > 6 tens + 6 ones

b. 8 tens + 2 hundreds + 5 ones < 824

c. 565 < 5 hundreds

d. 4 hundreds + 1 ten + 3 ones < 431

e. 2 hundreds + 9 tens < 7 tens + 9 ones + 2 hundred

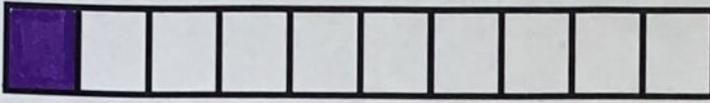
f. 7 ones + 3 hundreds > 370

ANSWER

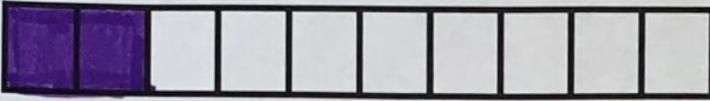
KEY

Part 1: What are all the combinations of numbers that add to 10?

Color the 10-sticks with two colors and write equations like the examples:



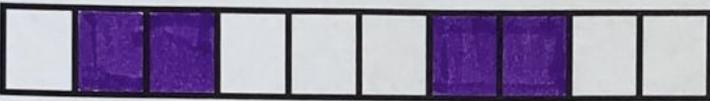
$1 + 9 = 10$



$2 + 8 = 10$



$3 + 7 = 10$



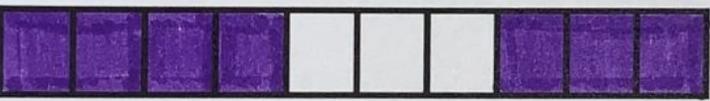
$4 + 6 = 10$



$5 + 5 = 10$



$6 + 4 = 10$



$7 + 3 = 10$



$8 + 2 = 10$



$9 + 1 = 10$



$10 + 0 = 10$



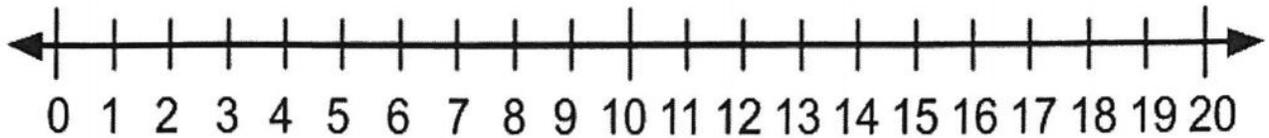
What patterns do you see?

Every fact (except $10 + 0 = 10$) has a pair or

turnaround fact: for example, $3 + 7 = 10$ and $7 + 3 = 10$

Part 2: Play Cross Out

Play on this number line:



- Player 1 chooses a number on the line and crosses it out.
- The **same** player chooses a **second** number and crosses that out too.
- Player 1 then circles the sum **or** difference of the two numbers and records the equation.

Example 1	Example 2
$6 + 8 = 14$	$8 - 6 = 2$

- Player 2 crosses out the number that Player 1 circled.
- Player 2 chooses **another** number to cross out and then circles a third number, which is the sum or difference of the two crossed-out numbers. They record the equation.

Example 1	Example 2
$14 + 3 = 17$	$2 + 13 = 15$

Take turns! When a player can't make a move, the game is over.



What strategy did you use?

Strategies for addition and subtraction could include: drawing pictures, using the number line, and

Part 1: Skip counting on the hundred chart.

Skip count by fives (5). Color in the numbers.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Skip count by tens (10). Color in the numbers.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



What patterns do you see? [May include:]

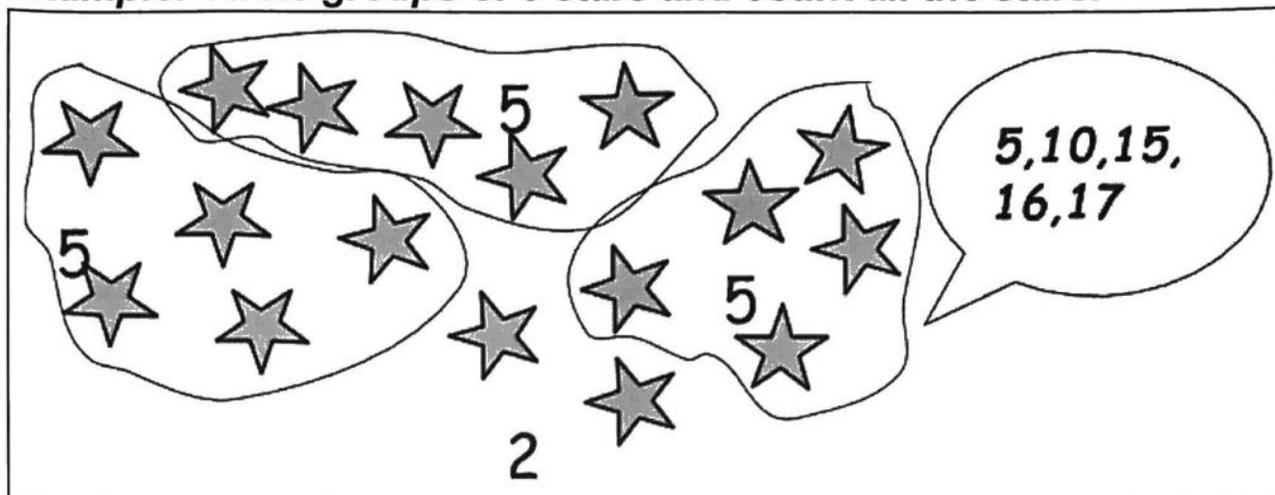
In the "count by 5s" chart, all multiples of 5 have

either a 0 or 5 in the ones place. In the "count by

10s" chart, all multiples of 10 have a 0 in the ones place

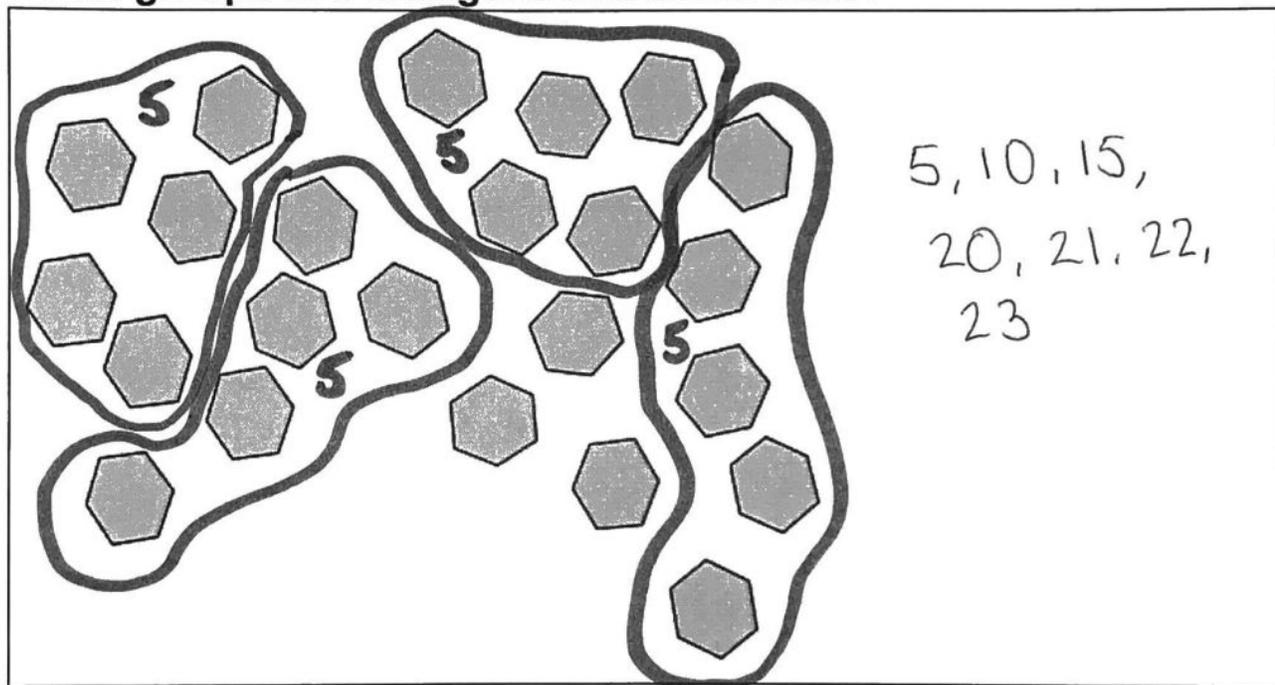
Part 2: Grouping and Counting

Example: Circle groups of 5 stars and count all the stars:



5, 10, 15,
16, 17

Circle groups of 5 hexagons and count them:



5, 10, 15,
20, 21, 22,
23



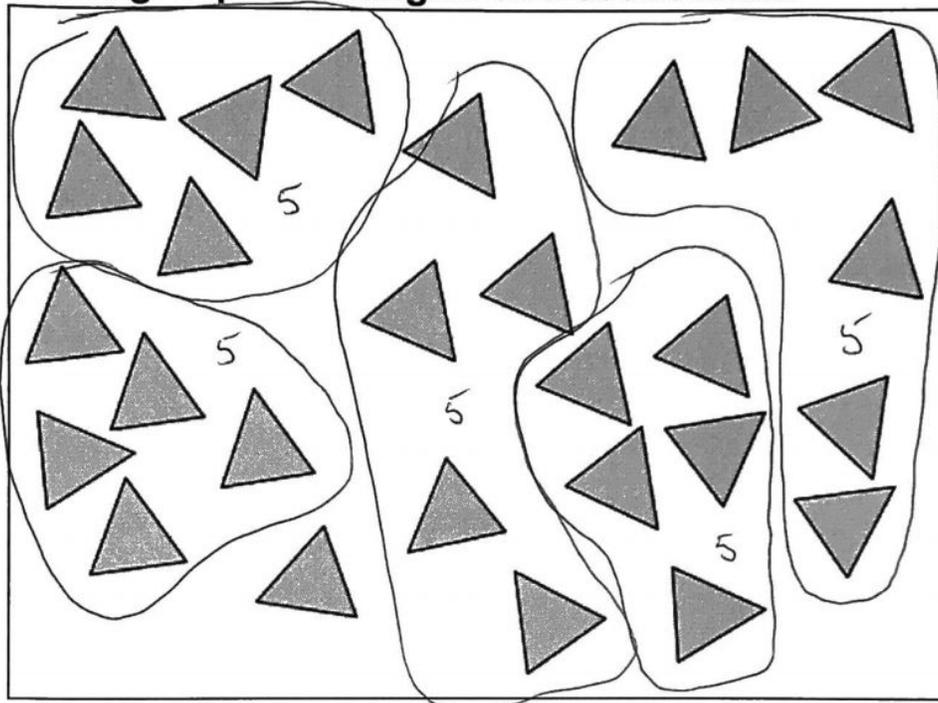
What patterns do you see?

Answers will vary, but may include: I see 4

groups of 5, with 3 left over.

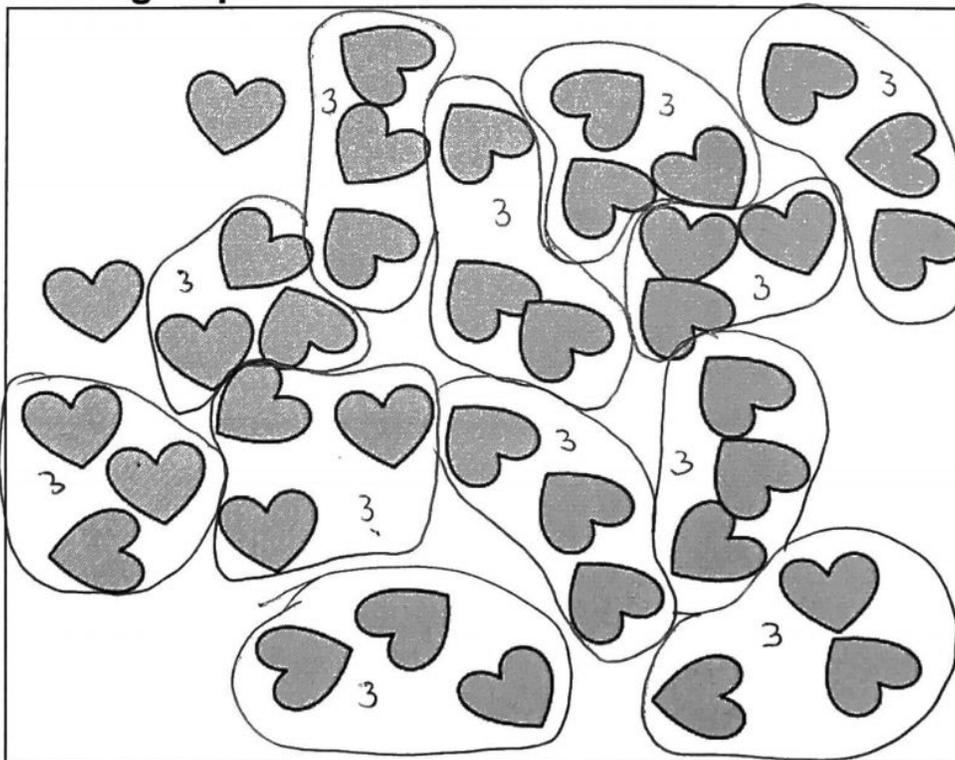
More shapes to count: Students can use any equal groupings for the shapes below, including the following:

Circle groups of triangles and count them:



5, 10, 15, 20,
25, 26

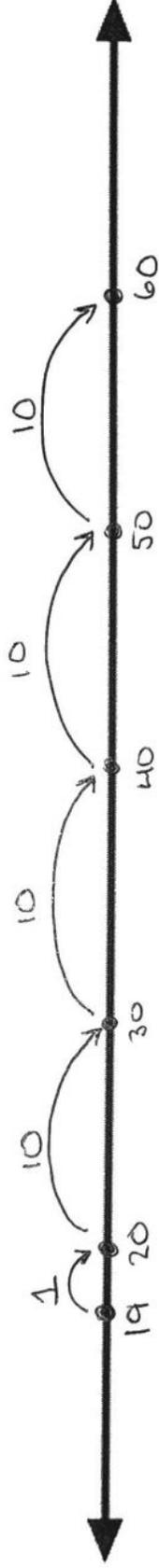
Circle groups of hearts and count them:



3, 6, 9, 12, 15,
18, 21, 24,
27, 30, 33,
36, 37, 38

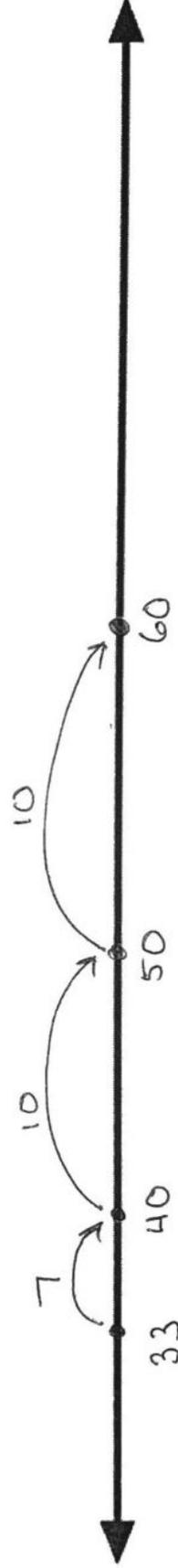
Number Line Hops

Start 19 Hop 41



Write the equation: $19 + 41 = 60$

Start 33 Hop 27



Write the equation: $33 + 27 = 60$

Arrow Math Puzzles

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Start	Moves	Expression	End
10	↓ ↓ ↓ → → → →	$10 + 34$	44
45	↓ ↓ ↓ → →	$45 + 32$	77
(may vary) 17	↓ ↓ ↓ → → → →	$17 + 34 =$	51
(may vary) 22	↓ → → →	$22 + 13$	35
55	(may vary) ↓ ↓ → → → →	$55 + 24$	79
(may vary) 27	(may vary) ↓ ↓ ↓ ↓ ↓ → → →	$27 + 53$	80

How can you use the Hundreds Chart to Add?

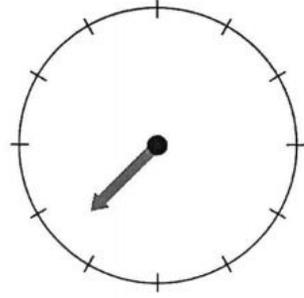
About what time does each clock show?



20 minutes after the hour



52 minutes after the hour

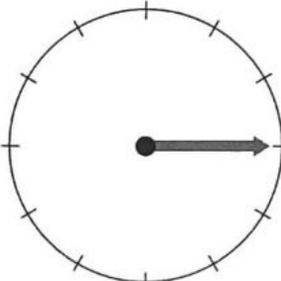


37 minutes after the hour

How many minutes after the hour does each clock show?



5 minutes

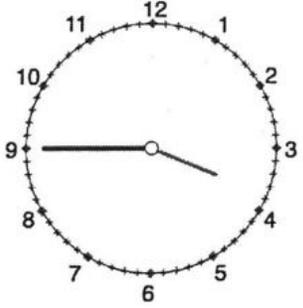


15 minutes

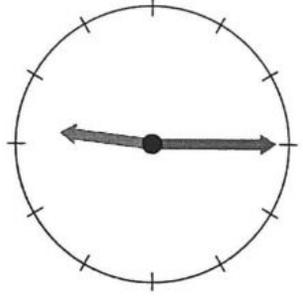


40 minutes

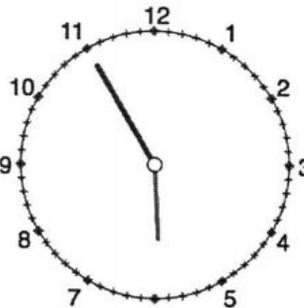
What time does each clock show?



3:45

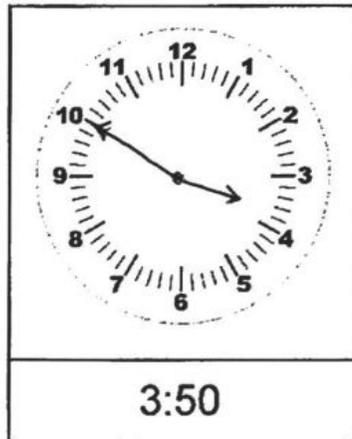
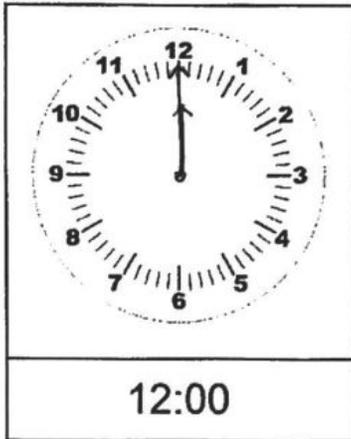
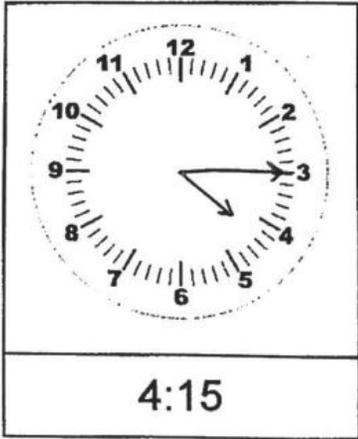


9:15



5:55

Show the time on each clock:



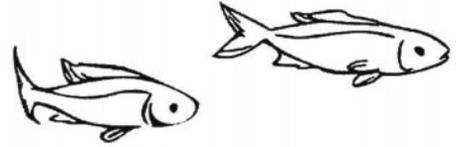
In the morning I ...

(responses will vary)

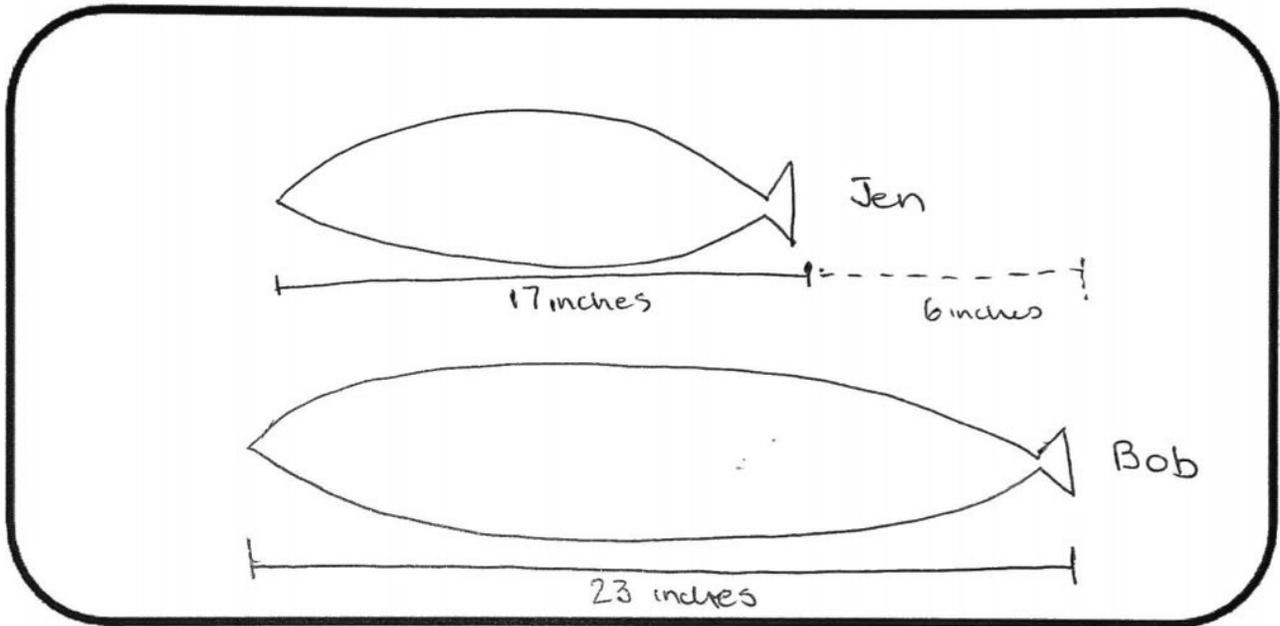
a.m.

Fish Story

Jen caught a fish that was 17 inches long.
Bob caught a fish that was 23 inches long.



Draw a picture or diagram of the situation:



Whose fish is longer? Bob's fish is longer

How much longer? It's longer by 6 inches.

How do you know? (answers may vary)

My Subtraction Word Problem

Write your math story problem: [answers will vary; this is one example]

Harry has 89 goldfish snacks. He eats 23 of them.

How many does he have left?

Draw a picture or diagram of the situation:

$$\begin{array}{r} 89 \\ - 23 \\ \hline 66 \end{array} \leftarrow \begin{array}{r} 80 + 9 \\ 20 + 3 \\ \hline 60 + 6 \end{array}$$

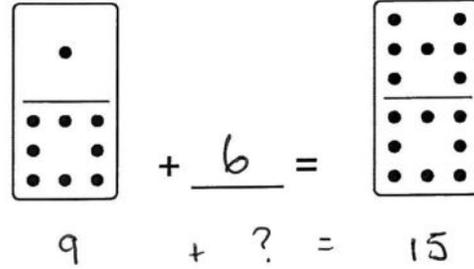


He has 66 goldfish snacks left. I got this answer by subtracting 3 ones from 9 ones, and 2 tens from 8 tens, to get 66.

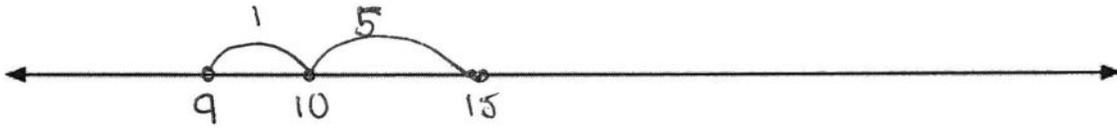
What is your question? (see above)

Unknowns with Dominoes

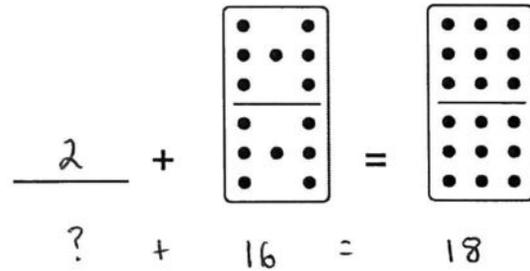
	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



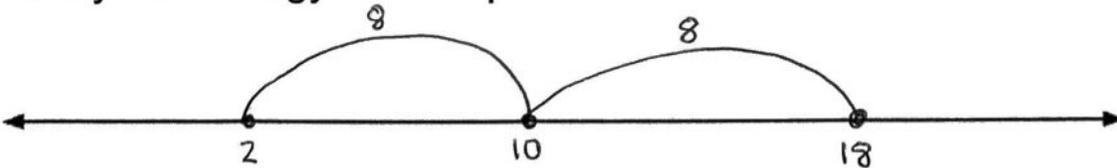
Record your strategy on an Open Number Line.



	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



Record your strategy on an Open Number Line.



Strategies may vary -- some are shown below.

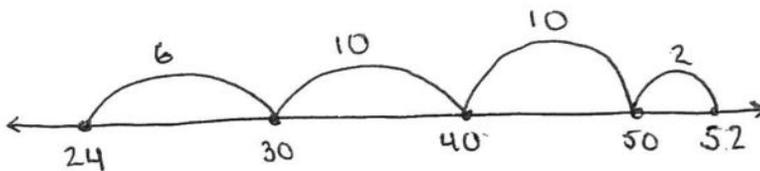
Solve each problem. Show how you know.

Cam picked 24 apples. Then she picked some more apples. In the end she had 52 apples. How many more apples did she pick?



24	?
52	

$$24 + \underline{\quad} = 52$$



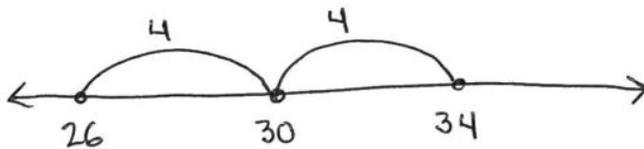
Cam picked 28 more apples, because if you add 28 to 24, your total is 52.

This loaf of bread was 34 centimeters long. I cut off a piece and now it is 26 centimeters long. How long was the piece I cut off?



26 cm	?
34 cm	

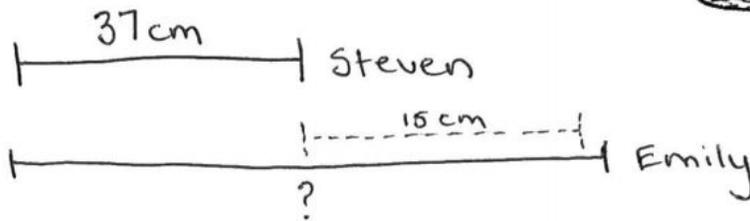
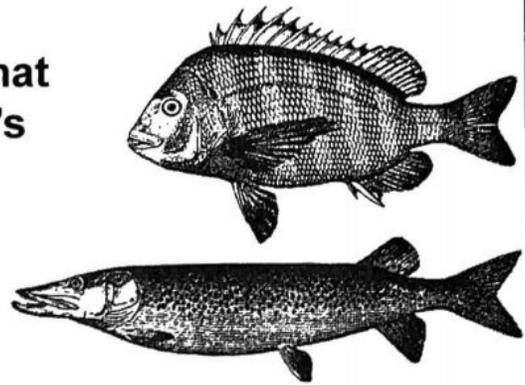
$$26\text{cm} + \underline{\quad} = 34\text{cm}$$



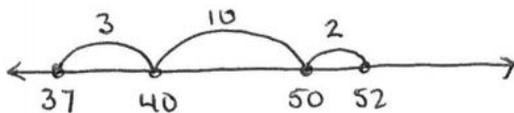
The piece was 8cm long, because $26 + 8 = 34$.

Solve each problem. Show how you know.

Steven caught a fish that was 37 centimeters long. Emily caught a fish that was 15 centimeters longer than Steven's fish. How long was Emily's fish?

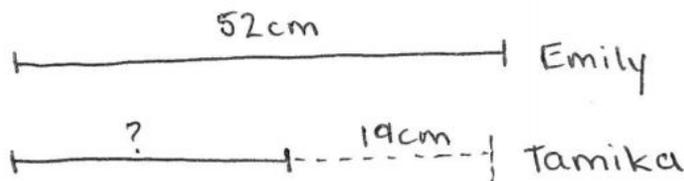


$$37 \text{ cm} + 15 \text{ cm} = 52 \text{ cm}$$

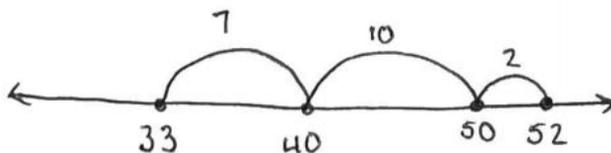


Emily's fish was 52 cm long. I added 15 cm to 37 cm to get 52 cm.

Tamika caught a fish that was 19 centimeters shorter than Emily's fish. How long was Tamika's fish?



$$52 - 19 = 33$$



Tamika's fish was 33 cm long. I found this answer by starting at 52, and subtracting (counting back) 19 to 33.

Fill in the missing pieces of the 1000 chart

432	433	434	435
442	443	444	445
452			455
462			465
472	473	474	475

256	257	258	259
266			269
276			279
286	287	288	289

		554
562	563	564
		574
		584
	593	594

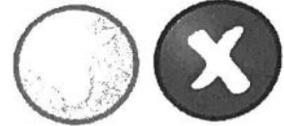
		693	694
791	792	793	
891		893	
991		993	994

192	193	194	195
292	293	294	295
392	393	394	395
492	493	494	495
592	593	594	595
692	693	694	695

		109	110
		119	
127	128	129	130
	138		140
	148		150

What strategy did you use to place the numbers? (answers will vary)

True or False?



Are these comparisons true or false?

How do you know?

a. 3 hundreds + 9 ones > 6 tens + 6 ones

True: because 309 has three hundreds, and 66 has no hundreds.

b. 8 tens + 2 hundreds + 5 ones < 824

True: the first number is 285, and the second number, 824, has more hundreds, so it is the greater number.

c. 565 < 5 hundreds

False: both numbers have 5 hundreds in them, but the first number, has more tens (6) than the second (0).

d. 4 hundreds + 1 ten + 3 ones < 431

True: we're comparing 413 and 431 here, and while both numbers have the same number of hundreds in them (4), 431 is bigger because 3 tens > 1 ten.

e. 2 hundreds + 9 tens < 7 tens + 9 ones + 2 hundred

False: we're comparing 290 and 279, which means that 290 is greater because 9 tens > 7 tens.

f. 7 ones + 3 hundreds > 370

False: 307 and 370 both have 3 hundreds in them, but 370 has 7 tens, more than the zero tens in 307.