



Today's Number is
18

3rd Grade Bridges Math

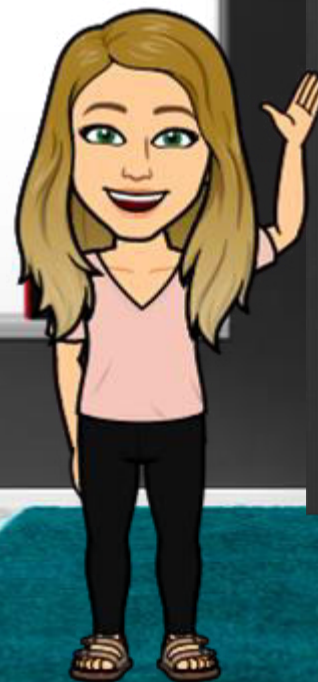
Unit 1

[Module 1](#)

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[Module 3](#)

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Module 1

Session 1
Making
people
glyphs

Session 2
Sorting and
classifying
glyphs

Session 3
Number
Rack Review

Session 4
The Addition
Table

Session 5
The Addition
Table pt.2

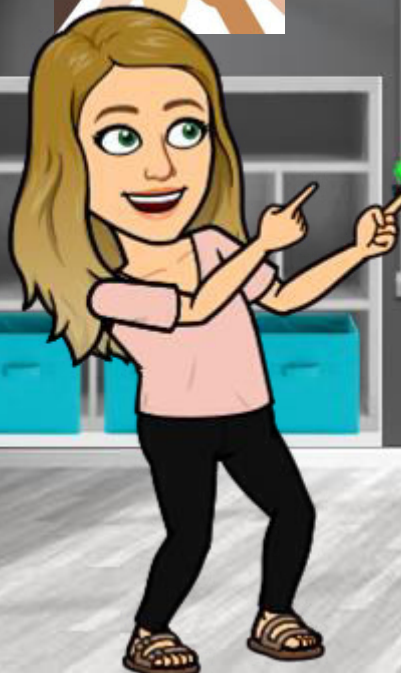




Making People Glyphs

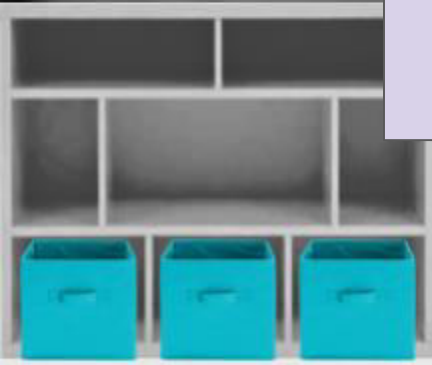
Learning Targets

- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively
- Model with mathematics
- Look for and make use of digital structures





What does it mean to be a learning community?





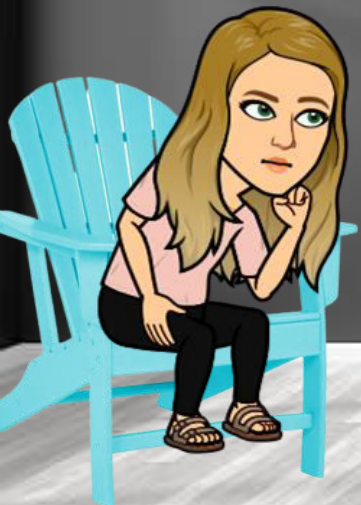
A **community** is a group of people who share something in common. Families, classrooms, schools, neighborhoods, and cities are all examples of communities.

Our class is a **learning community**. In a learning community, everyone can learn more by sharing ideas and materials, listening to each other, and showing respect for people and things.





- How would you like to be treated in the classroom?
- What do you need to be able to learn in the classroom?
- What can other members of the class do to help you learn?
- What can you do to help others learn?
- What can you do to show respect for other people's ideas?

















Today we will make glyphs...

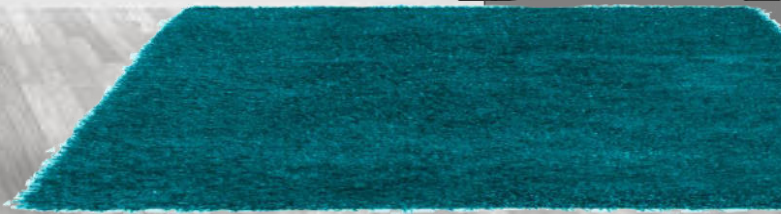
What is a glyph?

A glyph is a simple picture or figure whose features represent information about a subject.



People Glyph Legend

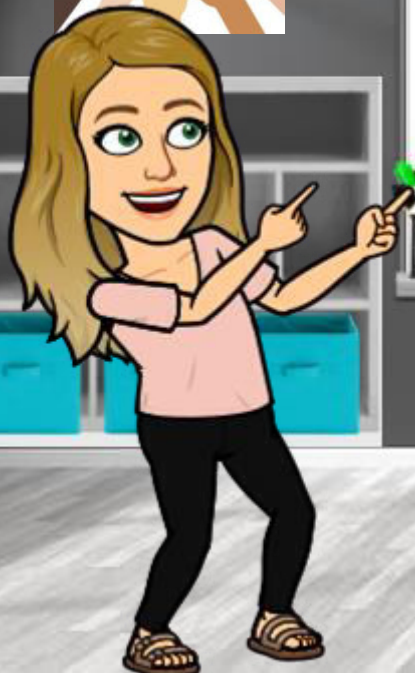
FEATURE	SHOWS	EXAMPLES
 Hat	What group size you prefer	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">red</div> = Alone <div style="border: 1px solid black; padding: 2px;">yellow</div> = With 1 person </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; padding: 2px;">brown</div> = With small groups <div style="border: 1px solid black; padding: 2px;">green</div> = With large groups </div>
 Glasses	How you like to record mathematical thinking	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> Pictures</div> <div style="text-align: center;"> Words</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> Numbers</div> </div>
 Nose	Your favorite time of day	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> Morning</div> <div style="text-align: center;"> Evening</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> Afternoon</div> </div>
 Mouth	How you feel about math	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> Love math</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> Like math</div> </div>












Sorting and Classifying Glyphs Learning Targets

- Make sense of problems and persevere in solving them
- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Look for and make use of structure



Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

People Glyph		Legend	
FEATURE	SHOWS	EXAMPLES	
 Hat	What group size you prefer	red = Alone	brown = With small groups
 Glasses	How you like to record mathematical thinking	 Pictures	 Words
 Nose	Your favorite time of day	● Morning	▲ Evening
 Mouth	How you feel about math	 Love math	 Like math

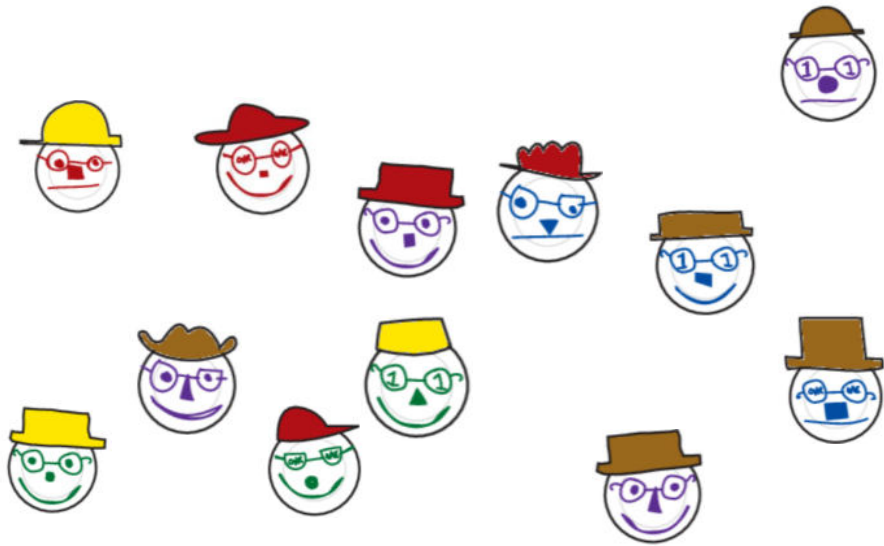
Title here

Label

Label

Label

of People



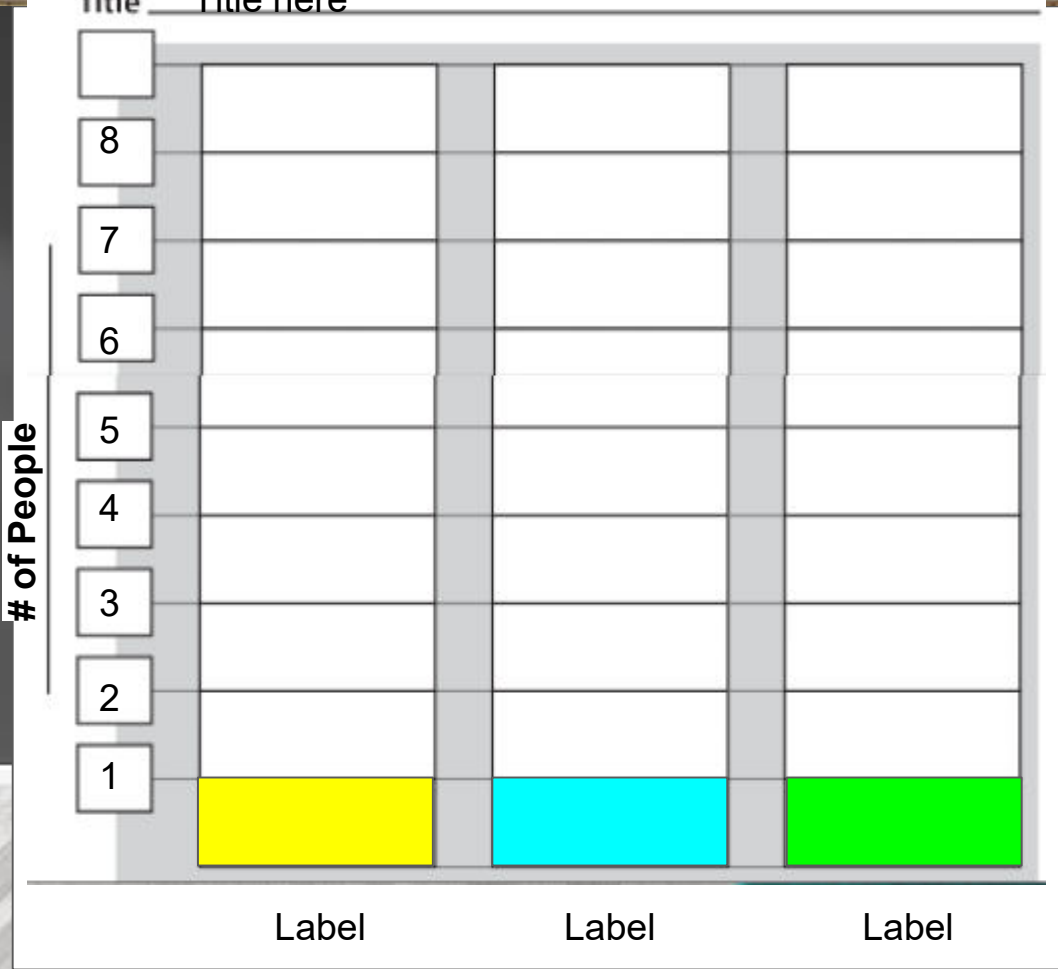
How can we sort these glyphs?



What is a bar graph?

A bar graph is a picture that helps people compare information.

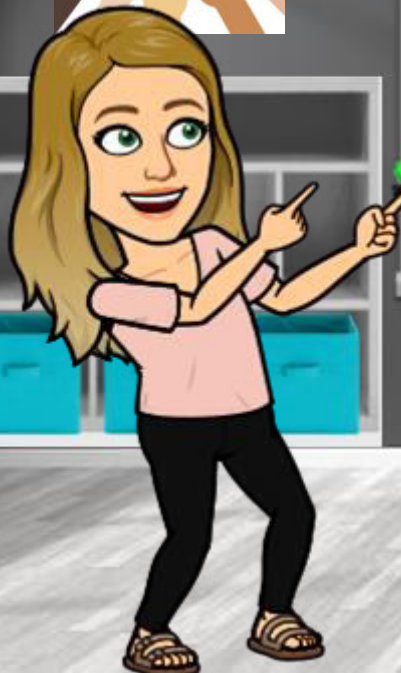
Bar Color	Height (Approximate)
Blue	35
Purple	39
Orange	50
Teal	55
Pink	49



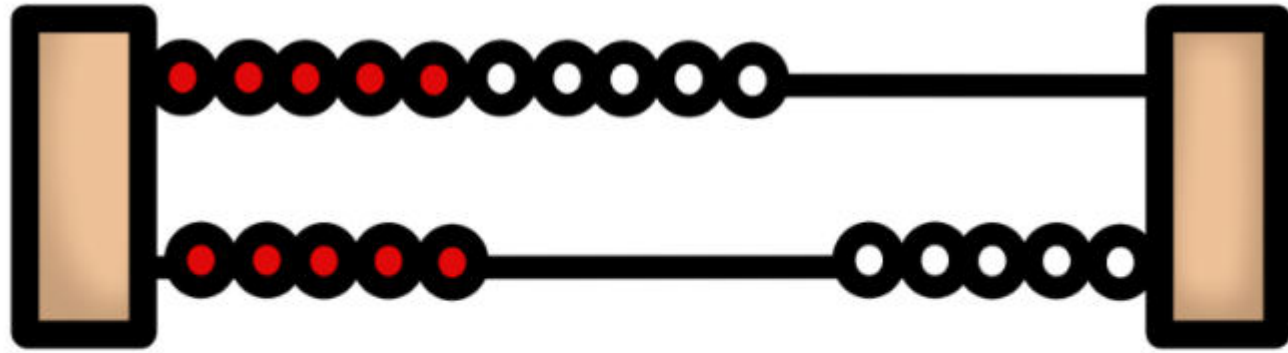


Number Rack Review Learning Targets

- Fluently add and subtract within 20 using mental strategies
- Use addition and subtraction within 100 to solve one-step word problems
- Fluently add and subtract within 100 using strategies
- Identify patterns among basic addition facts
- Fluently add and subtract within 1,000 using strategies
- Model with mathematics
- Look for and make use of structure

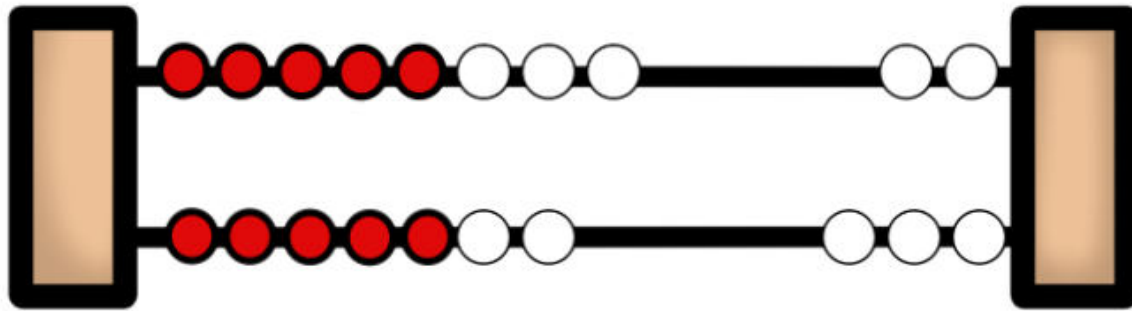


Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz



Number Rack
What do you observe about the rack?

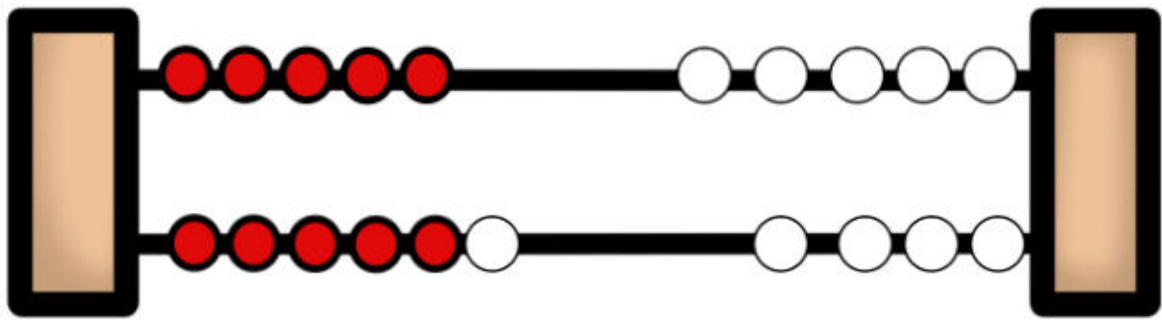




How could you use the beads to solve

$$8 + 7 = ?$$

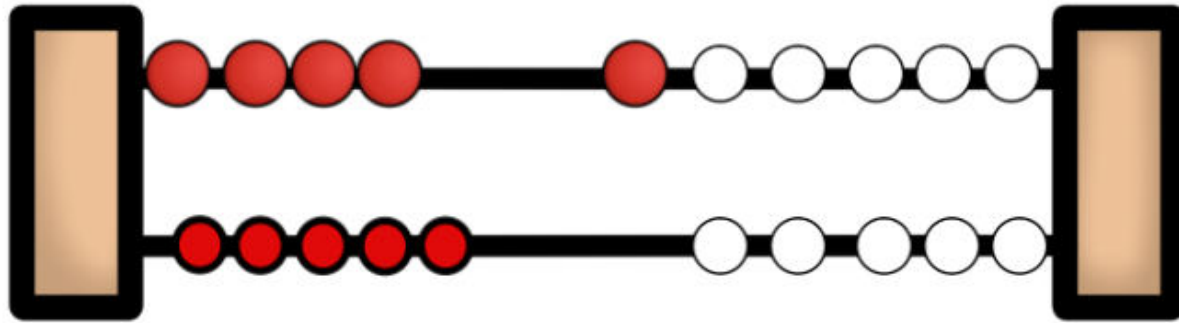




How could you use the beads to solve

$$5 + 6 = ?$$

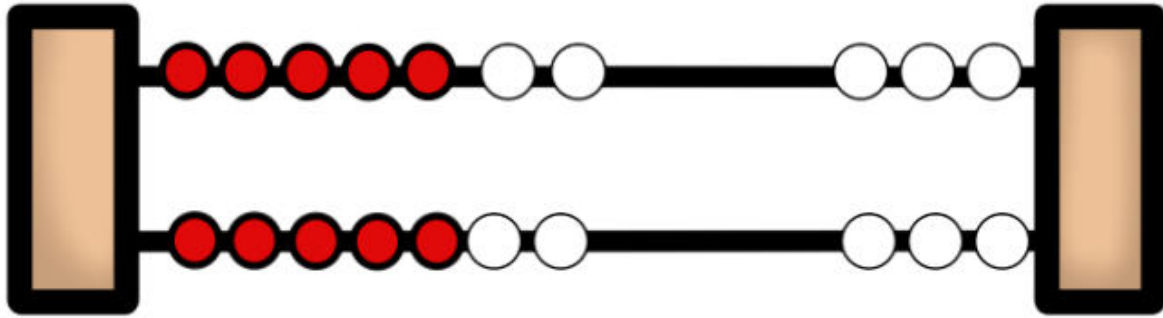




How could you use the beads to solve

$$4 + 5 = ?$$

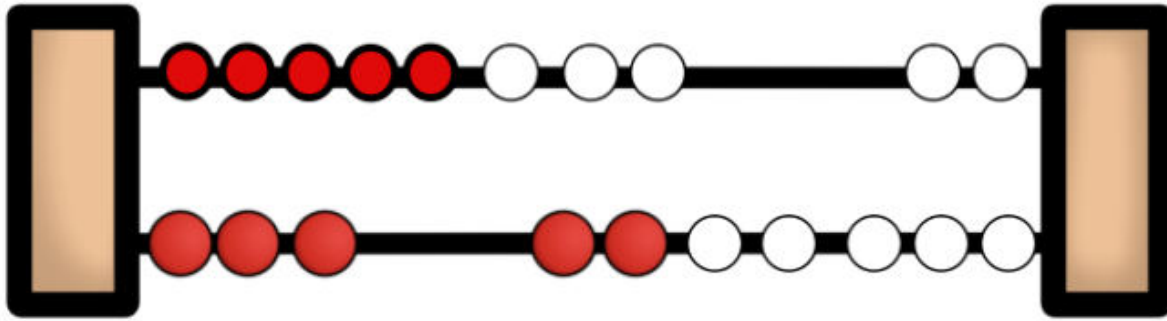




How could you use the beads to solve

$$7 + 7 = ?$$

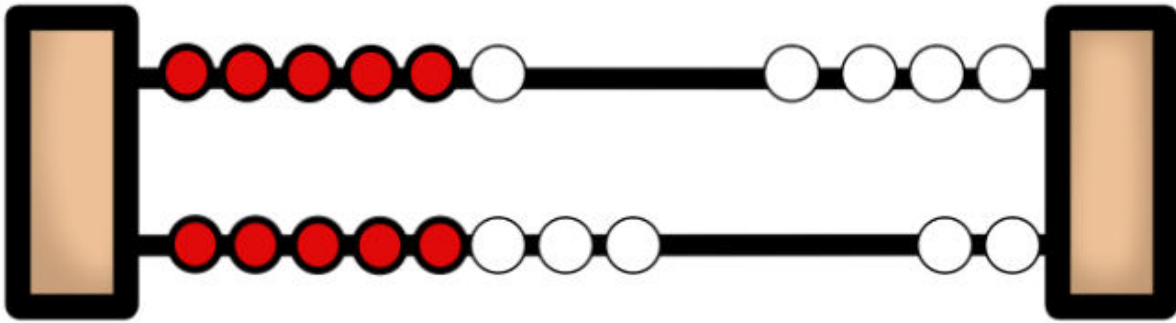




How could you use the beads to solve

$$8 + 3 = ?$$

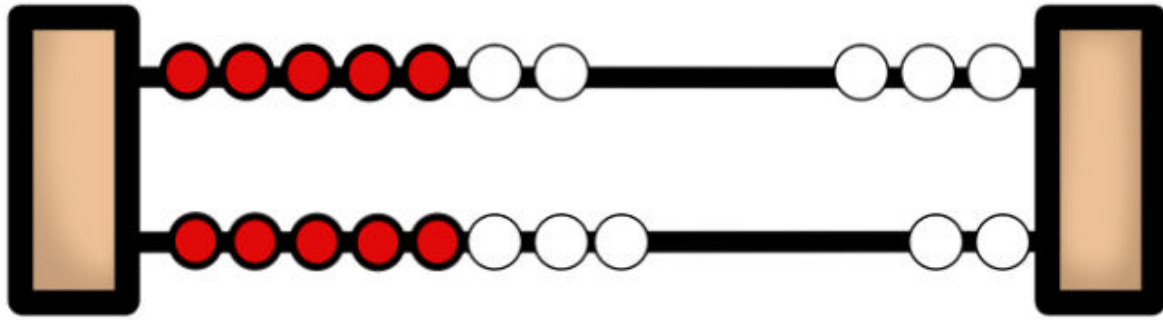




How could you use the beads to solve

$$6 + 8 = ?$$

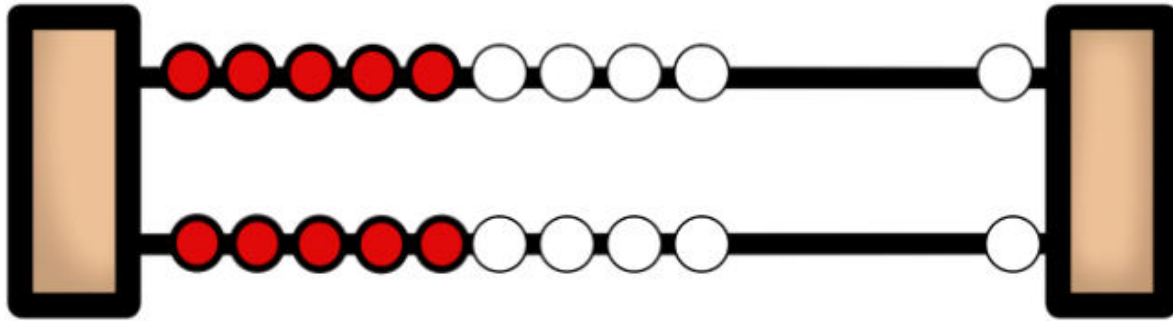




How could you use the beads to solve

$$7 + 8 = ?$$

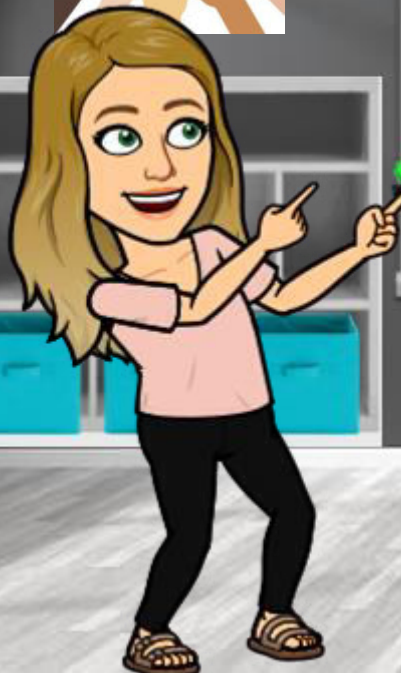




How could you use the beads to solve

$$9 + 9 = ?$$





The Addition Table Learning Targets

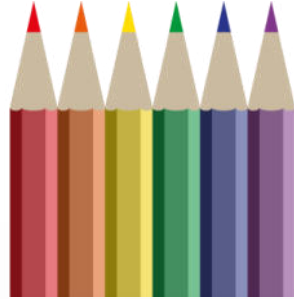
- Fluently add within 20 using mental strategies
- Identify patterns among basic addition facts
- Look for and make use of structure
- Look for and express regularity in repeated reasoning



Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz



Items you will need today....



	0	1	2	3	4	5	6	7	8	9	10				
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Legend <input type="checkbox"/> Add Zero facts <input type="checkbox"/> Count On facts <input type="checkbox"/> Doubles facts <input type="checkbox"/> Doubles Plus or Minus One facts <input type="checkbox"/> Make Ten facts <input type="checkbox"/> Add Ten facts <input type="checkbox"/> Add Nine facts <input type="checkbox"/> Leftover facts
1	±0	±1	±2	±3	±4	±5	±6	±7	±8	±9	±10	±1	±1	±1	
2	±0	±1	±2	±3	±4	±5	±6	±7	±8	±9	±10	±2	±2	±2	
3	±0	±1	±2	±3	±4	±5	±6	±7	±8	±9	±10	±3	±3	±3	
4	±0	±1	±2	±3	±4	±5	±6	±7	±8	±9	±10	±4	±4	±4	
5	±0	±1	±2	±3	±4	±5	±6	±7	±8	±9	±10	±5	±5	±5	
6	±0	±1	±2	±3	±4	±5	±6	±7	±8	±9	±10	±6	±6	±6	
7	±0	±1	±2	±3	±4	±5	±6	±7	±8	±9	±10	±7	±7	±7	
8	±0	±1	±2	±3	±4	±5	±6	±7	±8	±9	±10	±8	±8	±8	
9	±0	±1	±2	±3	±4	±5	±6	±7	±8	±9	±10	±9	±9	±9	
10	±0	±1	±2	±3	±4	±5	±6	±7	±8	±9	±10	±10	±10	±10	





Vocabulary

sum or total

$$2 + 5 = 7$$

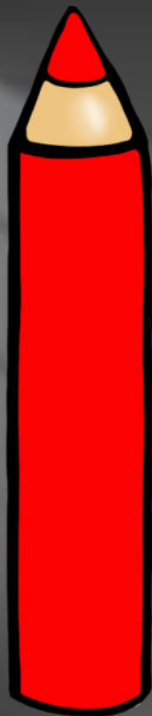
$$\begin{array}{r} 2 \quad \square \square \\ + 5 \quad \square \square \square \square \\ \hline \end{array}$$

$$7 \quad \square \square \square \square \square \square$$

Word Resource Cards Grades 3-5 | WRC35

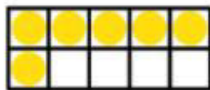
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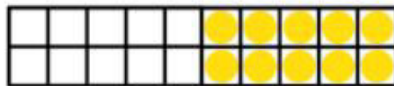


ADD ZERO FACTS

When you add 0 to any number, the sum is always that number.

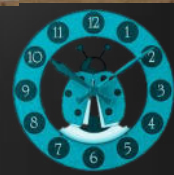


$$6 + 0 = 6$$



$$0 + 10 = 10$$

Da Bb C C1 C To 0 110 n n 20 20 m n n n n n 0 1 2 3 4 5 6 7 8 9 10 Lu Ur Uur Xx Yy Zz



Bridges in Mathematics Grade 3 Student Book
 1
 © The Math Learning Center

	0	1	2	3	4	5	6	7	8	9	10
0	$\begin{array}{r} 0 \\ +0 \\ \hline 0 \end{array}$	$\begin{array}{r} 0 \\ +1 \\ \hline 1 \end{array}$	$\begin{array}{r} 0 \\ +2 \\ \hline 2 \end{array}$	$\begin{array}{r} 0 \\ +3 \\ \hline 3 \end{array}$	$\begin{array}{r} 0 \\ +4 \\ \hline 4 \end{array}$	$\begin{array}{r} 0 \\ +5 \\ \hline 5 \end{array}$	$\begin{array}{r} 0 \\ +6 \\ \hline 6 \end{array}$	$\begin{array}{r} 0 \\ +7 \\ \hline 7 \end{array}$	$\begin{array}{r} 0 \\ +8 \\ \hline 8 \end{array}$	$\begin{array}{r} 0 \\ +9 \\ \hline 9 \end{array}$	$\begin{array}{r} 0 \\ +10 \\ \hline 10 \end{array}$
1	$\begin{array}{r} 1 \\ +0 \\ \hline 1 \end{array}$	$\begin{array}{r} 1 \\ +1 \\ \hline 2 \end{array}$	$\begin{array}{r} 1 \\ +2 \\ \hline 3 \end{array}$	$\begin{array}{r} 1 \\ +3 \\ \hline 4 \end{array}$	$\begin{array}{r} 1 \\ +4 \\ \hline 5 \end{array}$	$\begin{array}{r} 1 \\ +5 \\ \hline 6 \end{array}$	$\begin{array}{r} 1 \\ +6 \\ \hline 7 \end{array}$	$\begin{array}{r} 1 \\ +7 \\ \hline 8 \end{array}$	$\begin{array}{r} 1 \\ +8 \\ \hline 9 \end{array}$	$\begin{array}{r} 1 \\ +9 \\ \hline 10 \end{array}$	$\begin{array}{r} 1 \\ +10 \\ \hline 11 \end{array}$
2	$\begin{array}{r} 2 \\ +0 \\ \hline 2 \end{array}$	$\begin{array}{r} 2 \\ +1 \\ \hline 3 \end{array}$	$\begin{array}{r} 2 \\ +2 \\ \hline 4 \end{array}$	$\begin{array}{r} 2 \\ +3 \\ \hline 5 \end{array}$	$\begin{array}{r} 2 \\ +4 \\ \hline 6 \end{array}$	$\begin{array}{r} 2 \\ +5 \\ \hline 7 \end{array}$	$\begin{array}{r} 2 \\ +6 \\ \hline 8 \end{array}$	$\begin{array}{r} 2 \\ +7 \\ \hline 9 \end{array}$	$\begin{array}{r} 2 \\ +8 \\ \hline 10 \end{array}$	$\begin{array}{r} 2 \\ +9 \\ \hline 11 \end{array}$	$\begin{array}{r} 2 \\ +10 \\ \hline 12 \end{array}$
3	$\begin{array}{r} 3 \\ +0 \\ \hline 3 \end{array}$	$\begin{array}{r} 3 \\ +1 \\ \hline 4 \end{array}$	$\begin{array}{r} 3 \\ +2 \\ \hline 5 \end{array}$	$\begin{array}{r} 3 \\ +3 \\ \hline 6 \end{array}$	$\begin{array}{r} 3 \\ +4 \\ \hline 7 \end{array}$	$\begin{array}{r} 3 \\ +5 \\ \hline 8 \end{array}$	$\begin{array}{r} 3 \\ +6 \\ \hline 9 \end{array}$	$\begin{array}{r} 3 \\ +7 \\ \hline 10 \end{array}$	$\begin{array}{r} 3 \\ +8 \\ \hline 11 \end{array}$	$\begin{array}{r} 3 \\ +9 \\ \hline 12 \end{array}$	$\begin{array}{r} 3 \\ +10 \\ \hline 13 \end{array}$
4	$\begin{array}{r} 4 \\ +0 \\ \hline 4 \end{array}$	$\begin{array}{r} 4 \\ +1 \\ \hline 5 \end{array}$	$\begin{array}{r} 4 \\ +2 \\ \hline 6 \end{array}$	$\begin{array}{r} 4 \\ +3 \\ \hline 7 \end{array}$	$\begin{array}{r} 4 \\ +4 \\ \hline 8 \end{array}$	$\begin{array}{r} 4 \\ +5 \\ \hline 9 \end{array}$	$\begin{array}{r} 4 \\ +6 \\ \hline 10 \end{array}$	$\begin{array}{r} 4 \\ +7 \\ \hline 11 \end{array}$	$\begin{array}{r} 4 \\ +8 \\ \hline 12 \end{array}$	$\begin{array}{r} 4 \\ +9 \\ \hline 13 \end{array}$	$\begin{array}{r} 4 \\ +10 \\ \hline 14 \end{array}$
5	$\begin{array}{r} 5 \\ +0 \\ \hline 5 \end{array}$	$\begin{array}{r} 5 \\ +1 \\ \hline 6 \end{array}$	$\begin{array}{r} 5 \\ +2 \\ \hline 7 \end{array}$	$\begin{array}{r} 5 \\ +3 \\ \hline 8 \end{array}$	$\begin{array}{r} 5 \\ +4 \\ \hline 9 \end{array}$	$\begin{array}{r} 5 \\ +5 \\ \hline 10 \end{array}$	$\begin{array}{r} 5 \\ +6 \\ \hline 11 \end{array}$	$\begin{array}{r} 5 \\ +7 \\ \hline 12 \end{array}$	$\begin{array}{r} 5 \\ +8 \\ \hline 13 \end{array}$	$\begin{array}{r} 5 \\ +9 \\ \hline 14 \end{array}$	$\begin{array}{r} 5 \\ +10 \\ \hline 15 \end{array}$
6	$\begin{array}{r} 6 \\ +0 \\ \hline 6 \end{array}$	$\begin{array}{r} 6 \\ +1 \\ \hline 7 \end{array}$	$\begin{array}{r} 6 \\ +2 \\ \hline 8 \end{array}$	$\begin{array}{r} 6 \\ +3 \\ \hline 9 \end{array}$	$\begin{array}{r} 6 \\ +4 \\ \hline 10 \end{array}$	$\begin{array}{r} 6 \\ +5 \\ \hline 11 \end{array}$	$\begin{array}{r} 6 \\ +6 \\ \hline 12 \end{array}$	$\begin{array}{r} 6 \\ +7 \\ \hline 13 \end{array}$	$\begin{array}{r} 6 \\ +8 \\ \hline 14 \end{array}$	$\begin{array}{r} 6 \\ +9 \\ \hline 15 \end{array}$	$\begin{array}{r} 6 \\ +10 \\ \hline 16 \end{array}$
7	$\begin{array}{r} 7 \\ +0 \\ \hline 7 \end{array}$	$\begin{array}{r} 7 \\ +1 \\ \hline 8 \end{array}$	$\begin{array}{r} 7 \\ +2 \\ \hline 9 \end{array}$	$\begin{array}{r} 7 \\ +3 \\ \hline 10 \end{array}$	$\begin{array}{r} 7 \\ +4 \\ \hline 11 \end{array}$	$\begin{array}{r} 7 \\ +5 \\ \hline 12 \end{array}$	$\begin{array}{r} 7 \\ +6 \\ \hline 13 \end{array}$	$\begin{array}{r} 7 \\ +7 \\ \hline 14 \end{array}$	$\begin{array}{r} 7 \\ +8 \\ \hline 15 \end{array}$	$\begin{array}{r} 7 \\ +9 \\ \hline 16 \end{array}$	$\begin{array}{r} 7 \\ +10 \\ \hline 17 \end{array}$
8	$\begin{array}{r} 8 \\ +0 \\ \hline 8 \end{array}$	$\begin{array}{r} 8 \\ +1 \\ \hline 9 \end{array}$	$\begin{array}{r} 8 \\ +2 \\ \hline 10 \end{array}$	$\begin{array}{r} 8 \\ +3 \\ \hline 11 \end{array}$	$\begin{array}{r} 8 \\ +4 \\ \hline 12 \end{array}$	$\begin{array}{r} 8 \\ +5 \\ \hline 13 \end{array}$	$\begin{array}{r} 8 \\ +6 \\ \hline 14 \end{array}$	$\begin{array}{r} 8 \\ +7 \\ \hline 15 \end{array}$	$\begin{array}{r} 8 \\ +8 \\ \hline 16 \end{array}$	$\begin{array}{r} 8 \\ +9 \\ \hline 17 \end{array}$	$\begin{array}{r} 8 \\ +10 \\ \hline 18 \end{array}$
9	$\begin{array}{r} 9 \\ +0 \\ \hline 9 \end{array}$	$\begin{array}{r} 9 \\ +1 \\ \hline 10 \end{array}$	$\begin{array}{r} 9 \\ +2 \\ \hline 11 \end{array}$	$\begin{array}{r} 9 \\ +3 \\ \hline 12 \end{array}$	$\begin{array}{r} 9 \\ +4 \\ \hline 13 \end{array}$	$\begin{array}{r} 9 \\ +5 \\ \hline 14 \end{array}$	$\begin{array}{r} 9 \\ +6 \\ \hline 15 \end{array}$	$\begin{array}{r} 9 \\ +7 \\ \hline 16 \end{array}$	$\begin{array}{r} 9 \\ +8 \\ \hline 17 \end{array}$	$\begin{array}{r} 9 \\ +9 \\ \hline 18 \end{array}$	$\begin{array}{r} 9 \\ +10 \\ \hline 19 \end{array}$
10	$\begin{array}{r} 10 \\ +0 \\ \hline 10 \end{array}$	$\begin{array}{r} 10 \\ +1 \\ \hline 11 \end{array}$	$\begin{array}{r} 10 \\ +2 \\ \hline 12 \end{array}$	$\begin{array}{r} 10 \\ +3 \\ \hline 13 \end{array}$	$\begin{array}{r} 10 \\ +4 \\ \hline 14 \end{array}$	$\begin{array}{r} 10 \\ +5 \\ \hline 15 \end{array}$	$\begin{array}{r} 10 \\ +6 \\ \hline 16 \end{array}$	$\begin{array}{r} 10 \\ +7 \\ \hline 17 \end{array}$	$\begin{array}{r} 10 \\ +8 \\ \hline 18 \end{array}$	$\begin{array}{r} 10 \\ +9 \\ \hline 19 \end{array}$	$\begin{array}{r} 10 \\ +10 \\ \hline 20 \end{array}$

Legend

Add Zero facts

Count On facts

Doubles facts

Doubles Plus or Minus One facts

Make Ten facts

Add Ten facts

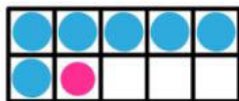
Add Nine facts

Leftover facts

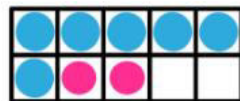


COUNT ON FACTS

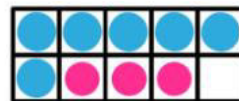
You can count on when you add 1, 2, or 3 to another number.



$$6 + 1 = 7$$

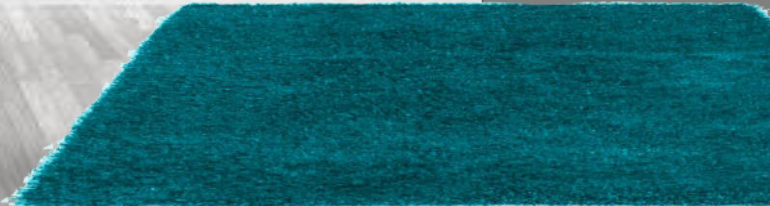


$$6 + 2 = 8$$



$$6 + 3 = 9$$

Tip: Count on from the larger addend



	0	1	2	3	4	5	6	7	8	9	10
0	0 + 0 0	0 + 1 1	0 + 2 2	0 + 3 3	0 + 4 4	0 + 5 5	0 + 6 6	0 + 7 7	0 + 8 8	0 + 9 9	0 + 10 10
1	1 + 0 1	1 + 1 2	1 + 2 3	1 + 3 4	1 + 4 5	1 + 5 6	1 + 6 7	1 + 7 8	1 + 8 9	1 + 9 10	1 + 10 11
2	2 + 0 2	2 + 1 3	2 + 2 4	2 + 3 5	2 + 4 6	2 + 5 7	2 + 6 8	2 + 7 9	2 + 8 10	2 + 9 11	2 + 10 12
3	3 + 0 3	3 + 1 4	3 + 2 5	3 + 3 6	3 + 4 7	3 + 5 8	3 + 6 9	3 + 7 10	3 + 8 11	3 + 9 12	3 + 10 13
4	4 + 0 4	4 + 1 5	4 + 2 6	4 + 3 7	4 + 4 8	4 + 5 9	4 + 6 10	4 + 7 11	4 + 8 12	4 + 9 13	4 + 10 14
5	5 + 0 5	5 + 1 6	5 + 2 7	5 + 3 8	5 + 4 9	5 + 5 10	5 + 6 11	5 + 7 12	5 + 8 13	5 + 9 14	5 + 10 15
6	6 + 0 6	6 + 1 7	6 + 2 8	6 + 3 9	6 + 4 10	6 + 5 11	6 + 6 12	6 + 7 13	6 + 8 14	6 + 9 15	6 + 10 16
7	7 + 0 7	7 + 1 8	7 + 2 9	7 + 3 10	7 + 4 11	7 + 5 12	7 + 6 13	7 + 7 14	7 + 8 15	7 + 9 16	7 + 10 17
8	8 + 0 8	8 + 1 9	8 + 2 10	8 + 3 11	8 + 4 12	8 + 5 13	8 + 6 14	8 + 7 15	8 + 8 16	8 + 9 17	8 + 10 18
9	9 + 0 9	9 + 1 10	9 + 2 11	9 + 3 12	9 + 4 13	9 + 5 14	9 + 6 15	9 + 7 16	9 + 8 17	9 + 9 18	9 + 10 19
10	10 + 0 10	10 + 1 11	10 + 2 12	10 + 3 13	10 + 4 14	10 + 5 15	10 + 6 16	10 + 7 17	10 + 8 18	10 + 9 19	10 + 10 20

Legend



Add Zero facts



Count On facts



Doubles facts

Doubles Plus or
Minus One facts

Make Ten facts



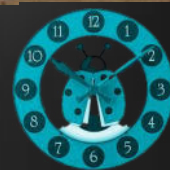
Add Ten facts



Add Nine facts



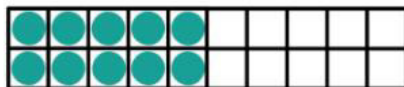
Leftover facts



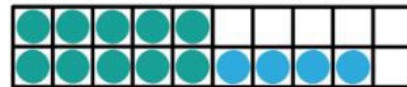


DOUBLES FACTS

When you add the same number to itself,
it's a doubles fact.



$$5 + 5 = 10$$



$$7 + 7 = 14$$

Doubles are always even



	0	1	2	3	4	5	6	7	8	9	10
0	0 + 0 0	0 + 1 1	0 + 2 2	0 + 3 3	0 + 4 4	0 + 5 5	0 + 6 6	0 + 7 7	0 + 8 8	0 + 9 9	0 + 10 10
1	1 + 0 1	1 + 1 2	1 + 2 3	1 + 3 4	1 + 4 5	1 + 5 6	1 + 6 7	1 + 7 8	1 + 8 9	1 + 9 10	1 + 10 11
2	2 + 0 2	2 + 1 3	2 + 2 4	2 + 3 5	2 + 4 6	2 + 5 7	2 + 6 8	2 + 7 9	2 + 8 10	2 + 9 11	2 + 10 12
3	3 + 0 3	3 + 1 4	3 + 2 5	3 + 3 6	3 + 4 7	3 + 5 8	3 + 6 9	3 + 7 10	3 + 8 11	3 + 9 12	3 + 10 13
4	4 + 0 4	4 + 1 5	4 + 2 6	4 + 3 7	4 + 4 8	4 + 5 9	4 + 6 10	4 + 7 11	4 + 8 12	4 + 9 13	4 + 10 14
5	5 + 0 5	5 + 1 6	5 + 2 7	5 + 3 8	5 + 4 9	5 + 5 10	5 + 6 11	5 + 7 12	5 + 8 13	5 + 9 14	5 + 10 15
6	6 + 0 6	6 + 1 7	6 + 2 8	6 + 3 9	6 + 4 10	6 + 5 11	6 + 6 12	6 + 7 13	6 + 8 14	6 + 9 15	6 + 10 16
7	7 + 0 7	7 + 1 8	7 + 2 9	7 + 3 10	7 + 4 11	7 + 5 12	7 + 6 13	7 + 7 14	7 + 8 15	7 + 9 16	7 + 10 17
8	8 + 0 8	8 + 1 9	8 + 2 10	8 + 3 11	8 + 4 12	8 + 5 13	8 + 6 14	8 + 7 15	8 + 8 16	8 + 9 17	8 + 10 18
9	9 + 0 9	9 + 1 10	9 + 2 11	9 + 3 12	9 + 4 13	9 + 5 14	9 + 6 15	9 + 7 16	9 + 8 17	9 + 9 18	9 + 10 19
10	10 + 0 10	10 + 1 11	10 + 2 12	10 + 3 13	10 + 4 14	10 + 5 15	10 + 6 16	10 + 7 17	10 + 8 18	10 + 9 19	10 + 10 20

Legend



Add Zero facts



Count On facts



Doubles facts



Doubles Plus or Minus One facts



Make Ten facts



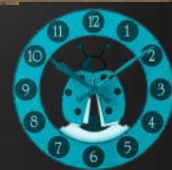
Add Ten facts



Add Nine facts



Leftover facts



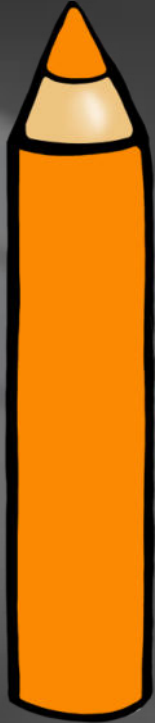


Commutative Property

$$1 + 4 = 4 + \underline{\quad}$$

$$6 + 1 = \underline{\quad} + 6$$





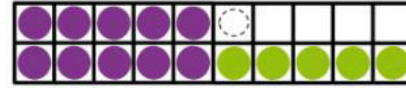
DOUBLES PLUS OR MINUS ONE FACTS

Double the smaller number and add 1.



$$7 + 8 = 15$$

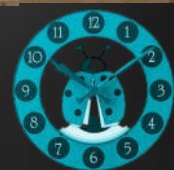
Double the larger number and subtract 1.



$$8 + 7 = 15$$

Doubles plus or minus one are always odd





	0	1	2	3	4	5	6	7	8	9	10
0	0 + 0 0	0 + 1 1	0 + 2 2	0 + 3 3	0 + 4 4	0 + 5 5	0 + 6 6	0 + 7 7	0 + 8 8	0 + 9 9	0 + 10 10
1	1 + 0 1	1 + 1 2	1 + 2 3	1 + 3 4	1 + 4 5	1 + 5 6	1 + 6 7	1 + 7 8	1 + 8 9	1 + 9 10	1 + 10 11
2	2 + 0 2	2 + 1 3	2 + 2 4	2 + 3 5	2 + 4 6	2 + 5 7	2 + 6 8	2 + 7 9	2 + 8 10	2 + 9 11	2 + 10 12
3	3 + 0 3	3 + 1 4	3 + 2 5	3 + 3 6	3 + 4 7	3 + 5 8	3 + 6 9	3 + 7 10	3 + 8 11	3 + 9 12	3 + 10 13
4	4 + 0 4	4 + 1 5	4 + 2 6	4 + 3 7	4 + 4 8	4 + 5 9	4 + 6 10	4 + 7 11	4 + 8 12	4 + 9 13	4 + 10 14
5	5 + 0 5	5 + 1 6	5 + 2 7	5 + 3 8	5 + 4 9	5 + 5 10	5 + 6 11	5 + 7 12	5 + 8 13	5 + 9 14	5 + 10 15
6	6 + 0 6	6 + 1 7	6 + 2 8	6 + 3 9	6 + 4 10	6 + 5 11	6 + 6 12	6 + 7 13	6 + 8 14	6 + 9 15	6 + 10 16
7	7 + 0 7	7 + 1 8	7 + 2 9	7 + 3 10	7 + 4 11	7 + 5 12	7 + 6 13	7 + 7 14	7 + 8 15	7 + 9 16	7 + 10 17
8	8 + 0 8	8 + 1 9	8 + 2 10	8 + 3 11	8 + 4 12	8 + 5 13	8 + 6 14	8 + 7 15	8 + 8 16	8 + 9 17	8 + 10 18
9	9 + 0 9	9 + 1 10	9 + 2 11	9 + 3 12	9 + 4 13	9 + 5 14	9 + 6 15	9 + 7 16	9 + 8 17	9 + 9 18	9 + 10 19
10	10 + 0 10	10 + 1 11	10 + 2 12	10 + 3 13	10 + 4 14	10 + 5 15	10 + 6 16	10 + 7 17	10 + 8 18	10 + 9 19	10 + 10 20

Legend



Add Zero facts



Count On facts



Doubles facts



Doubles Plus or Minus One facts



Make Ten facts



Add Ten facts



Add Nine facts



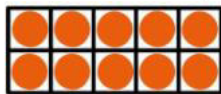
Leftover facts



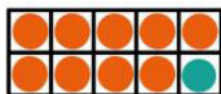


MAKE TEN FACTS

These pairs of numbers make 10.



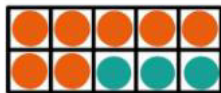
$$10 + 0 = 10$$



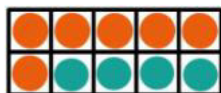
$$1 + 9 = 10$$



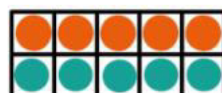
$$2 + 8 = 10$$



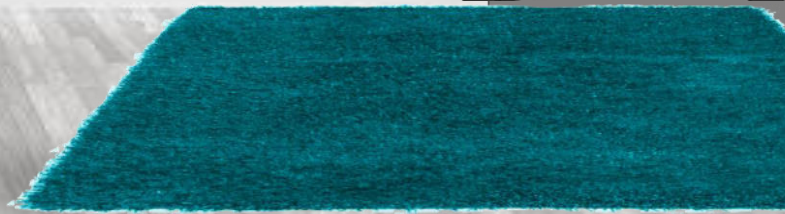
$$3 + 7 = 10$$



$$4 + 6 = 10$$



$$5 + 5 = 10$$




	0	1	2	3	4	5	6	7	8	9	10
0	0 + 0 0	0 + 1 1	0 + 2 2	0 + 3 3	0 + 4 4	0 + 5 5	0 + 6 6	0 + 7 7	0 + 8 8	0 + 9 9	0 + 10 10
1	1 + 0 1	1 + 1 2	1 + 2 3	1 + 3 4	1 + 4 5	1 + 5 6	1 + 6 7	1 + 7 8	1 + 8 9	1 + 9 10	1 + 10 11
2	2 + 0 2	2 + 1 3	2 + 2 4	2 + 3 5	2 + 4 6	2 + 5 7	2 + 6 8	2 + 7 9	2 + 8 10	2 + 9 11	2 + 10 12
3	3 + 0 3	3 + 1 4	3 + 2 5	3 + 3 6	3 + 4 7	3 + 5 8	3 + 6 9	3 + 7 10	3 + 8 11	3 + 9 12	3 + 10 13
4	4 + 0 4	4 + 1 5	4 + 2 6	4 + 3 7	4 + 4 8	4 + 5 9	4 + 6 10	4 + 7 11	4 + 8 12	4 + 9 13	4 + 10 14
5	5 + 0 5	5 + 1 6	5 + 2 7	5 + 3 8	5 + 4 9	5 + 5 10	5 + 6 11	5 + 7 12	5 + 8 13	5 + 9 14	5 + 10 15
6	6 + 0 6	6 + 1 7	6 + 2 8	6 + 3 9	6 + 4 10	6 + 5 11	6 + 6 12	6 + 7 13	6 + 8 14	6 + 9 15	6 + 10 16
7	7 + 0 7	7 + 1 8	7 + 2 9	7 + 3 10	7 + 4 11	7 + 5 12	7 + 6 13	7 + 7 14	7 + 8 15	7 + 9 16	7 + 10 17
8	8 + 0 8	8 + 1 9	8 + 2 10	8 + 3 11	8 + 4 12	8 + 5 13	8 + 6 14	8 + 7 15	8 + 8 16	8 + 9 17	8 + 10 18
9	9 + 0 9	9 + 1 10	9 + 2 11	9 + 3 12	9 + 4 13	9 + 5 14	9 + 6 15	9 + 7 16	9 + 8 17	9 + 9 18	9 + 10 19
10	10 + 0 10	10 + 1 11	10 + 2 12	10 + 3 13	10 + 4 14	10 + 5 15	10 + 6 16	10 + 7 17	10 + 8 18	10 + 9 19	10 + 10 20


Legend

 Add Zero facts


 Count On facts


 Doubles facts

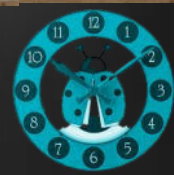
 Doubles Plus or Minus One facts

 Make Ten facts

 Add Ten facts

 Add Nine facts

 Leftover facts





What patterns do you notice?

$$1 + 9 = 10$$

$$7 + 3 = 10$$

$$2 + 8 = 10$$

$$8 + 2 = 10$$

$$3 + 7 = 10$$

$$9 + 1 = 10$$



Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz



$7 + 3 = 6 + \underline{\quad}$
What goes in the blank to make the statement true?

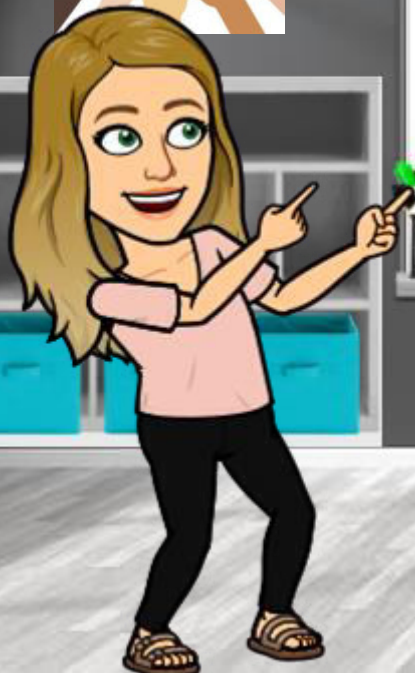
$2 + 8 = \underline{\quad} + 9$
What goes in the blank to make the statement true?





The Addition Table Pt. 2 Learning Targets

- Fluently add and subtract within 20 using mental strategies
- Use addition and subtraction within 100 to solve one-step word problems
- Fluently add and subtract within 100 using strategies
- Identify patterns among basic addition facts
- Fluently add and subtract within 1,000 using strategies
- Model with mathematics
- Look for and make use of structure



Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz



What patterns do you notice?



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NAME: _____ DATE: _____

Use 1 Minute | Student

Addition Table

	0	1	2	3	4	5	6	7	8	9	10
0	0	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10	11
2	2	3	4	5	6	7	8	9	10	11	12
3	3	4	5	6	7	8	9	10	11	12	13
4	4	5	6	7	8	9	10	11	12	13	14
5	5	6	7	8	9	10	11	12	13	14	15
6	6	7	8	9	10	11	12	13	14	15	16
7	7	8	9	10	11	12	13	14	15	16	17
8	8	9	10	11	12	13	14	15	16	17	18
9	9	10	11	12	13	14	15	16	17	18	19
10	10	11	12	13	14	15	16	17	18	19	20

Legend

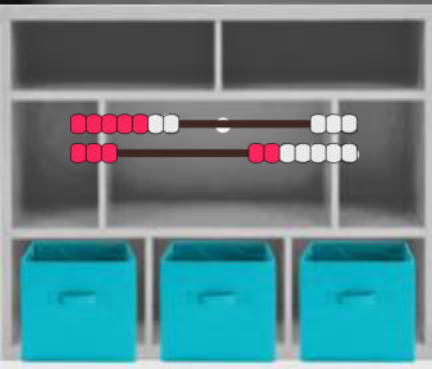
- Add Zero facts
- Count On facts
- Doubles facts
- Doubles Plus or Minus One facts
- Make Ten facts
- Add Ten facts
- Add Nine facts
- Leftover facts





$$\underline{\quad} + \underline{\quad} = 14$$

Describe a few different ways to show 14 beads using the number rack.





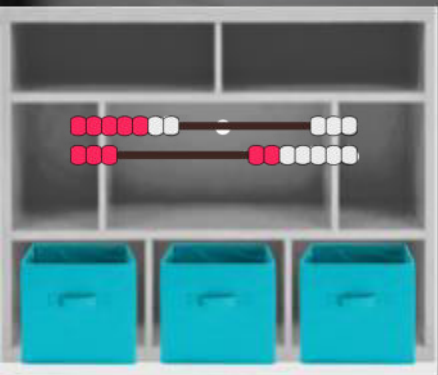
Model these problems using the number rack...

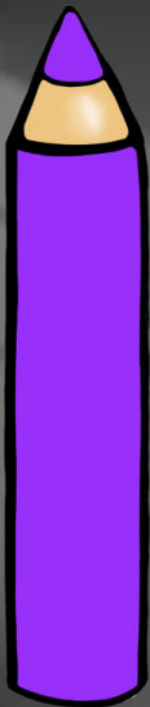
$$10 + 7$$

$$10 + 8$$

$$10 + 3$$

$$10 + 2$$



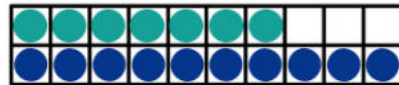


ADD TEN FACTS

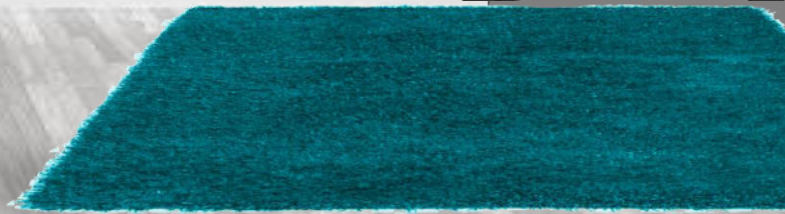
When you add 10 to a single-digit number, the sum is always a teen number.



$$10 + 4 = 14$$




$$7 + 10 = 17$$





	0	1	2	3	4	5	6	7	8	9	10
0	0 + 0 0	0 + 1 1	0 + 2 2	0 + 3 3	0 + 4 4	0 + 5 5	0 + 6 6	0 + 7 7	0 + 8 8	0 + 9 9	0 + 10 10
1	1 + 0 1	1 + 1 2	1 + 2 3	1 + 3 4	1 + 4 5	1 + 5 6	1 + 6 7	1 + 7 8	1 + 8 9	1 + 9 10	1 + 10 11
2	2 + 0 2	2 + 1 3	2 + 2 4	2 + 3 5	2 + 4 6	2 + 5 7	2 + 6 8	2 + 7 9	2 + 8 10	2 + 9 11	2 + 10 12
3	3 + 0 3	3 + 1 4	3 + 2 5	3 + 3 6	3 + 4 7	3 + 5 8	3 + 6 9	3 + 7 10	3 + 8 11	3 + 9 12	3 + 10 13
4	4 + 0 4	4 + 1 5	4 + 2 6	4 + 3 7	4 + 4 8	4 + 5 9	4 + 6 10	4 + 7 11	4 + 8 12	4 + 9 13	4 + 10 14
5	5 + 0 5	5 + 1 6	5 + 2 7	5 + 3 8	5 + 4 9	5 + 5 10	5 + 6 11	5 + 7 12	5 + 8 13	5 + 9 14	5 + 10 15
6	6 + 0 6	6 + 1 7	6 + 2 8	6 + 3 9	6 + 4 10	6 + 5 11	6 + 6 12	6 + 7 13	6 + 8 14	6 + 9 15	6 + 10 16
7	7 + 0 7	7 + 1 8	7 + 2 9	7 + 3 10	7 + 4 11	7 + 5 12	7 + 6 13	7 + 7 14	7 + 8 15	7 + 9 16	7 + 10 17
8	8 + 0 8	8 + 1 9	8 + 2 10	8 + 3 11	8 + 4 12	8 + 5 13	8 + 6 14	8 + 7 15	8 + 8 16	8 + 9 17	8 + 10 18
9	9 + 0 9	9 + 1 10	9 + 2 11	9 + 3 12	9 + 4 13	9 + 5 14	9 + 6 15	9 + 7 16	9 + 8 17	9 + 9 18	9 + 10 19
10	10 + 0 10	10 + 1 11	10 + 2 12	10 + 3 13	10 + 4 14	10 + 5 15	10 + 6 16	10 + 7 17	10 + 8 18	10 + 9 19	10 + 10 20


Legend


 Add Zero facts


 Count On facts


 Doubles facts

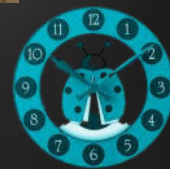
 Doubles Plus or Minus One facts

 Make Ten facts

 Add Ten facts

 Add Nine facts

 Leftover facts

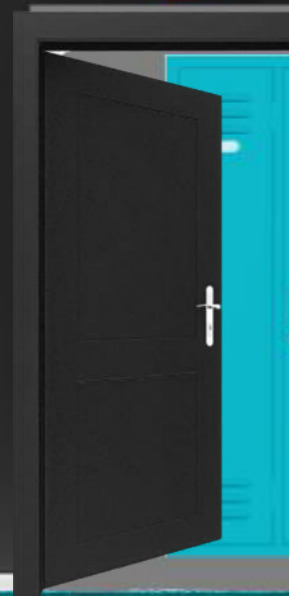
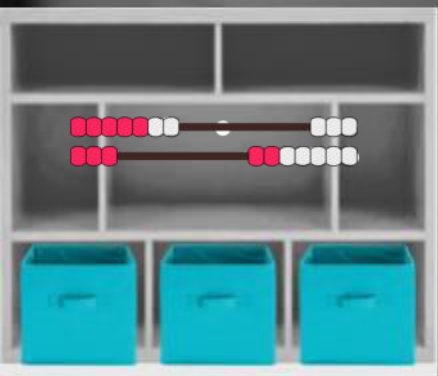


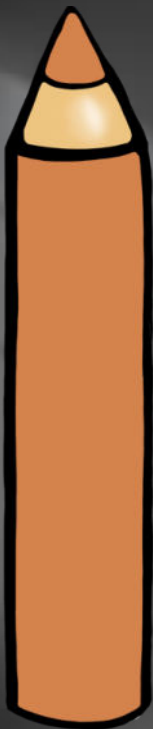
Model these problems using the number rack...

$$9 + 7$$

$$3 + 9$$

$$9 + 8$$





ADD NINE FACTS

To solve $9 + 4$, take 1 from the 4 and give it to the 9 to make $10 + 3$.

$$9 + 4 = 10 + 3$$



$$9 + 4 = 13$$

To solve $7 + 9$, take 1 from the 7 and give it to the 9 to make $6 + 10$.

$$7 + 9 = 6 + 10$$











$$7 + 9 = 16$$



	0	1	2	3	4	5	6	7	8	9	10
0	0 +0 0	0 +1 1	0 +2 2	0 +3 3	0 +4 4	0 +5 5	0 +6 6	0 +7 7	0 +8 8	0 +9 9	0 +10 10
1	1 +0 1	1 +1 2	1 +2 3	1 +3 4	1 +4 5	1 +5 6	1 +6 7	1 +7 8	1 +8 9	1 +9 10	1 +10 11
2	2 +0 2	2 +1 3	2 +2 4	2 +3 5	2 +4 6	2 +5 7	2 +6 8	2 +7 9	2 +8 10	2 +9 11	2 +10 12
3	3 +0 3	3 +1 4	3 +2 5	3 +3 6	3 +4 7	3 +5 8	3 +6 9	3 +7 10	3 +8 11	3 +9 12	3 +10 13
4	4 +0 4	4 +1 5	4 +2 6	4 +3 7	4 +4 8	4 +5 9	4 +6 10	4 +7 11	4 +8 12	4 +9 13	4 +10 14
5	5 +0 5	5 +1 6	5 +2 7	5 +3 8	5 +4 9	5 +5 10	5 +6 11	5 +7 12	5 +8 13	5 +9 14	5 +10 15
6	6 +0 6	6 +1 7	6 +2 8	6 +3 9	6 +4 10	6 +5 11	6 +6 12	6 +7 13	6 +8 14	6 +9 15	6 +10 16
7	7 +0 7	7 +1 8	7 +2 9	7 +3 10	7 +4 11	7 +5 12	7 +6 13	7 +7 14	7 +8 15	7 +9 16	7 +10 17
8	8 +0 8	8 +1 9	8 +2 10	8 +3 11	8 +4 12	8 +5 13	8 +6 14	8 +7 15	8 +8 16	8 +9 17	8 +10 18
9	9 +0 9	9 +1 10	9 +2 11	9 +3 12	9 +4 13	9 +5 14	9 +6 15	9 +7 16	9 +8 17	9 +9 18	9 +10 19
10	10 +0 10	10 +1 11	10 +2 12	10 +3 13	10 +4 14	10 +5 15	10 +6 16	10 +7 17	10 +8 18	10 +9 19	10 +10 20

Legend

-  Add Zero facts
-  Count On facts
-  Doubles facts
-  Doubles Plus or Minus One facts
-  Make Ten facts
-  Add Ten facts
-  Add Nine facts
-  Leftover facts

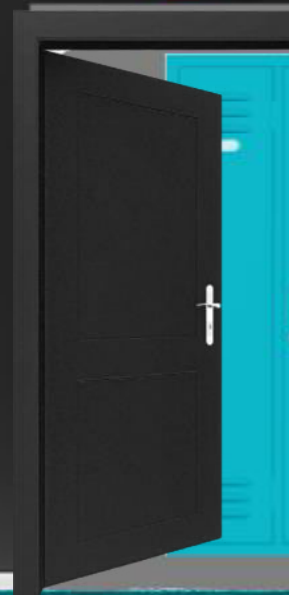
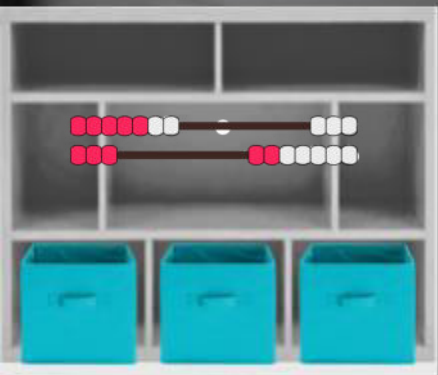




How could you solve these problems?

$$5 + 3$$

$$3 + 6$$



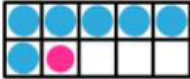




Add 3 facts can be considered count on facts



COUNT ON FACTS

You can count on when you add 1, 2, or 3
to another number.

		
$6 + 1 = 7$	$6 + 2 = 8$	$6 + 3 = 9$

Tip: Count on from the larger addend









LearningCOVE

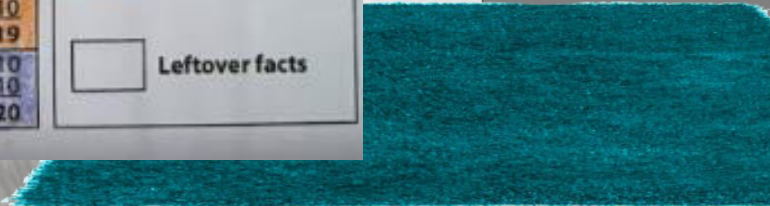


Da Bb Cc Pp Ss Tt Uu Vv Ww Xx Yy Zz

	0	1	2	3	4	5	6	7	8	9	10
0	0 +0 0	0 +1 1	0 +2 2	0 +3 3	0 +4 4	0 +5 5	0 +6 6	0 +7 7	0 +8 8	0 +9 9	0 +10 10
1	1 +0 1	1 +1 2	1 +2 3	1 +3 4	1 +4 5	1 +5 6	1 +6 7	1 +7 8	1 +8 9	1 +9 10	1 +10 11
2	2 +0 2	2 +1 3	2 +2 4	2 +3 5	2 +4 6	2 +5 7	2 +6 8	2 +7 9	2 +8 10	2 +9 11	2 +10 12
3	3 +0 3	3 +1 4	3 +2 5	3 +3 6	3 +4 7	3 +5 8	3 +6 9	3 +7 10	3 +8 11	3 +9 12	3 +10 13
4	4 +0 4	4 +1 5	4 +2 6	4 +3 7	4 +4 8	4 +5 9	4 +6 10	4 +7 11	4 +8 12	4 +9 13	4 +10 14
5	5 +0 5	5 +1 6	5 +2 7	5 +3 8	5 +4 9	5 +5 10	5 +6 11	5 +7 12	5 +8 13	5 +9 14	5 +10 15
6	6 +0 6	6 +1 7	6 +2 8	6 +3 9	6 +4 10	6 +5 11	6 +6 12	6 +7 13	6 +8 14	6 +9 15	6 +10 16
7	7 +0 7	7 +1 8	7 +2 9	7 +3 10	7 +4 11	7 +5 12	7 +6 13	7 +7 14	7 +8 15	7 +9 16	7 +10 17
8	8 +0 8	8 +1 9	8 +2 10	8 +3 11	8 +4 12	8 +5 13	8 +6 14	8 +7 15	8 +8 16	8 +9 17	8 +10 18
9	9 +0 9	9 +1 10	9 +2 11	9 +3 12	9 +4 13	9 +5 14	9 +6 15	9 +7 16	9 +8 17	9 +9 18	9 +10 19
10	10 +0 10	10 +1 11	10 +2 12	10 +3 13	10 +4 14	10 +5 15	10 +6 16	10 +7 17	10 +8 18	10 +9 19	10 +10 20

Legend

-  Add Zero facts
-  Count On facts
-  Doubles facts
-  Doubles Plus or Minus One facts
-  Make Ten facts
-  Add Ten facts
-  Add Nine facts
-  Leftover facts






Make the Sum 1A Workplace Game Board



Work Place Instructions 1A Make the Sum

Each pair of players needs:

- 1 deck of Number Cards to share, with the wild cards removed
- their own journals and a pencil



1 Together players choose a target number between 10 and 15, and each player writes the target number at the top of the page.

2 One player places 16 cards from the deck face down in the 4-by-4 array, then the players decide who will go first.

3 The first player turns over 2 cards face that 4 by 4 array:

- If the numbers on the 2 cards add up to the target number, the player keeps the cards and writes an equation in their journal to show the two numbers and the sum.
- If the numbers don't add up to the target number, the player can turn over another card until the sum is equal to or greater than the target number. If the sum is equal to the target number, the player keeps all of the cards and writes an equation in their journal. If the sum goes over the target number, the player turns all the cards back over.

4 Players replace any cards taken so that there are still 16 cards face-down. Then the next player takes a turn.

5 The game continues until all of the cards are gone, or until there are no more combinations that add up to the target number.

6 The player with the most cards wins the game.

7 Players choose a different target number and play again.

Game Variations

A Cards are placed face-up instead of face-down.

B Players use a target number lower than 10 or higher than 15. A player turns over 3 or 4 cards at a time and then uses any combination of operations (addition, subtraction, multiplication, division) and each number just once to reach the target number.

C Players choose 15 or 20 as the target number. A player turns over 4 cards at a time and uses any combination of operations (addition, subtraction, multiplication, division) and each number just once to reach the target number.



Module 2

Session 1
Subtraction
Table

Session 2
Subtraction
Table Pt. 2

Session 3
Blast Off to
Space

Session 4
Addition and
Subtraction
Equations

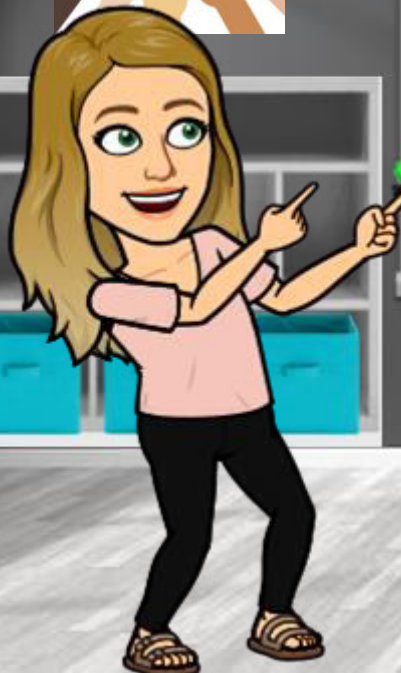
Session 5
Workplace
Support





The Subtraction Table Learning Targets

- Solve one-step subtraction story problems
- Fluently subtract with minuends to 20 using mental strategies
- Identify patterns among basic subtraction facts and explain those patterns by referring to properties of the operation
- Reason abstractly and quantitatively
- Look for and express regularity in repeated reasoning



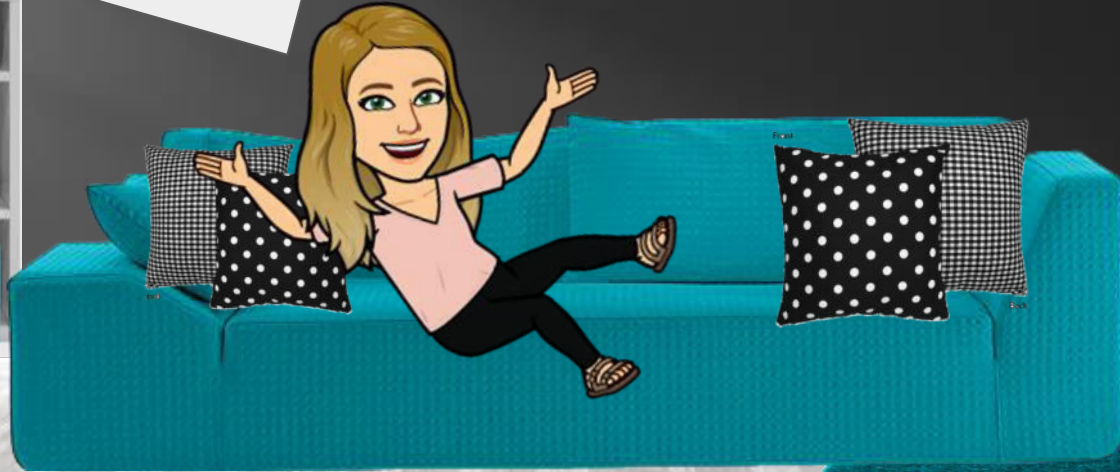
Story Time!

I was sitting on a bench in the park, watching squirrels eat acorns. I watched them for awhile, and one in particular caught my eye. This squirrel had collected a whole bunch of acorns. I counted the acorns and there were 12. As I watched, the squirrel nibbled away, eating 8 of the acorns. Then, the squirrel swept the remaining acorns into a hole and scurried away. How could we figure out how many acorns the squirrel had left?



Story Time!

I noticed other busy squirrels in the park, too. They were all collecting piles of acorns. One squirrel had 8 acorns. Another squirrel had 12 acorns. I was thinking about the difference between the squirrels' piles of acorns. I wondered how many more acorns the squirrel with 12 acorns had than the squirrel with 8 acorns.



Compare the two equations:

$$8 + _ = 12$$

$$12 - 8 = _$$

How are the two stories different, even though they both use subtraction?



Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz



Items you will need today....



Subtraction Table

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	-	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	0
2	1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
3	2	1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
4	3	2	1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
5	4	3	2	1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
6	5	4	3	2	1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
7	6	5	4	3	2	1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
8	7	6	5	4	3	2	1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
9	8	7	6	5	4	3	2	1	0	1	2	3	4	5	6	7	8	9	10	11	12	13
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11	10	9	8	7	6	5	4	3	2	1	0	1	2	3	4	5	6	7	8	9	10	11
12	11	10	9	8	7	6	5	4	3	2	1	0	1	2	3	4	5	6	7	8	9	10
13	12	11	10	9	8	7	6	5	4	3	2	1	0	1	2	3	4	5	6	7	8	9
14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	1	2	3	4	5	6	7	8
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	1	2	3	4	5	6	7
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	1	2	3	4	5	6
17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	1	2	3	4	5
18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	1	2	3	4
19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	1	2	3
20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	1	2

Legend

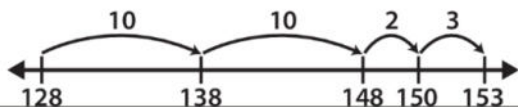


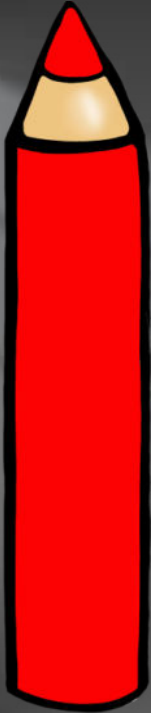


Vocabulary

$$\begin{array}{r} 6 \square\square\square\square\square\square \\ - 4 \quad \square\square\square\square \\ \hline 2 \square\square \end{array}$$

difference





ZERO FACTS

When you subtract 0 from any number, the difference is always the number you started with.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----

$11 - 0 = 11$

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----

$18 - 0 = 18$




Aa Bb Cc Dd Ee Ff Gg

Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	-	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	-	0
2	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	-	1
3	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	-	2
4	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80	-	3
5	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	-	4
6	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120	-	5
7	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140	-	6
8	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120	128	136	144	152	160	-	7
9	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135	144	153	162	171	180	-	8
10	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	-	9
11	11	22	33	44	55	66	77	88	99	110	121	132	143	154	165	176	187	198	209	220	-	10
12	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	-	11
13	13	26	39	52	65	78	91	104	117	130	143	156	169	182	195	208	221	234	247	260	-	12
14	14	28	42	56	70	84	98	112	126	140	154	168	182	196	210	224	238	252	266	280	-	13
15	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	-	14
16	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	-	15
17	17	34	51	68	85	102	119	136	153	170	187	204	221	238	255	272	289	306	323	340	-	16
18	18	36	54	72	90	108	126	144	162	180	198	216	234	252	270	288	306	324	342	360	-	17
19	19	38	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323	342	361	380	-	18
20	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	-	19
21	21	42	63	84	105	126	147	168	189	210	231	252	273	294	315	336	357	378	399	420	-	20

Legend

 zero facts





COUNT BACK FACTS

You can count back when you subtract 1, 2, or 3
-1 from another number.



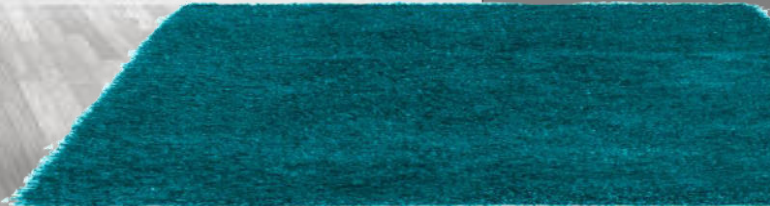
$$6 - 1 = 5$$



$$16 - 2 = 14$$



$$18 - 3 = 15$$



Aa Bb Cc Dd Ee

Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20

Legend

zero facts

count back facts





TAKE ALL FACTS

Any number minus itself is always 0

$8 - 8 = 0$

First I will show 8 on my number rack.

Now I will subtract all 8 by pushing them back. There are 0 left.

$14 - 14 = 0$

I pushed over 7 on top and 7 on the bottom to make 14.

When I subtract all 14 by pushing them back to start, there aren't any left.



Aa Bb Cc Dd Ee

Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

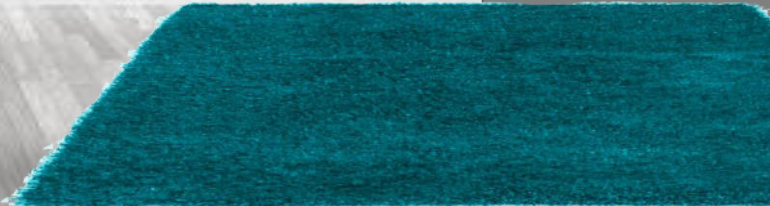
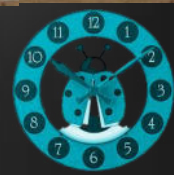
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	-	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	1	
2	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	2	
3	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	3	
4	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80	4	
5	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	5	
6	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120	6	
7	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140	7	
8	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120	128	136	144	152	160	8	
9	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135	144	153	162	171	180	9	
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12	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	12	
13	13	26	39	52	65	78	91	104	117	130	143	156	169	182	195	208	221	234	247	260	13	
14	14	28	42	56	70	84	98	112	126	140	154	168	182	196	210	224	238	252	266	280	14	
15	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	15	
16	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	16	
17	17	34	51	68	85	102	119	136	153	170	187	204	221	238	255	272	289	306	323	340	17	
18	18	36	54	72	90	108	126	144	162	180	198	216	234	252	270	288	306	324	342	360	18	
19	19	38	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323	342	361	380	19	
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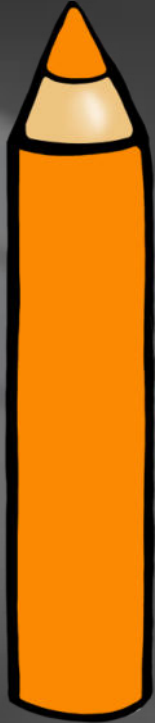
Legend

zero facts

count back facts

take all facts





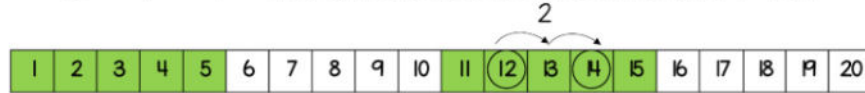
NEIGHBOR FACTS

The difference between two numbers that live next door to each other, or almost next door, is always

1 or 2.



$8 - 7 = 1$ The difference between 8 and 7 is 1



$14 - 12 = 2$ The difference between 14 and 12 is 2

Aa Bb Cc Dd Ee

a b c d e f g h i j k l m n o p q r r s s t t u u v v w w x x y y z z

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	-	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	0	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	0	1	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	0	1	2	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	0	1	2	3	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	0	1	2	3	4	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	0	1	2	3	4	5	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	0	1	2	3	4	5	6	7	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	0	1	2	3	4	5	6	7	8	9	9	9	9	9	9	9	9	9	9	9	9	9
10	0	1	2	3	4	5	6	7	8	9	10	10	10	10	10	10	10	10	10	10	10	10
11	0	1	2	3	4	5	6	7	8	9	10	11	11	11	11	11	11	11	11	11	11	11
12	0	1	2	3	4	5	6	7	8	9	10	11	12	12	12	12	12	12	12	12	12	12
13	0	1	2	3	4	5	6	7	8	9	10	11	12	13	13	13	13	13	13	13	13	13
14	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	14	14	14	14	14	14	14
15	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	15	15	15	15	15	15
16	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	16	16	16	16	16
17	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	17	17	17	17
18	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	18	18	18
19	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	19	19
20	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	20

Legend

zero facts

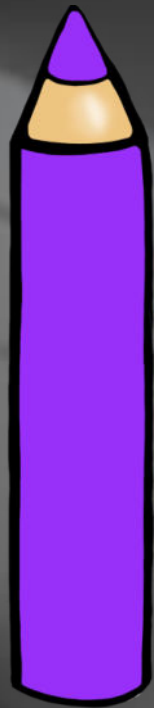
count back facts

take all facts

Neighbors facts

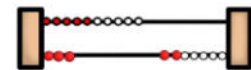


Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

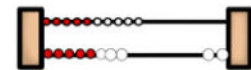


TAKE AWAY FACT

When you subtract 10 from a ten ones are left



$$13 - 10 = 3$$



$$13 - 10 = 3$$

Aa Bb Cc Dd Ee

Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	-	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	0	
2	2	4	6	8	10	12	14	16	18	20	0	0	0	0	0	0	0	0	0	0	0	
3	3	6	9	12	15	18	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4	4	8	12	16	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5	5	10	15	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	6	12	18	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7	7	14	21	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	8	16	24	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	9	18	27	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	10	20	30	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	11	22	33	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	12	24	36	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
13	13	26	39	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14	14	28	42	56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	15	30	45	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16	16	32	48	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17	17	34	51	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18	18	36	54	72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19	19	38	57	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20	20	40	60	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Legend

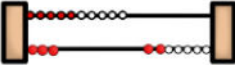
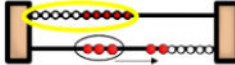
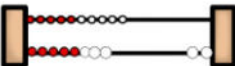
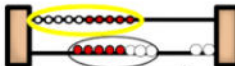
- zero facts
- count back facts
- take all facts
- Neighbors facts
- take away 10 facts
-

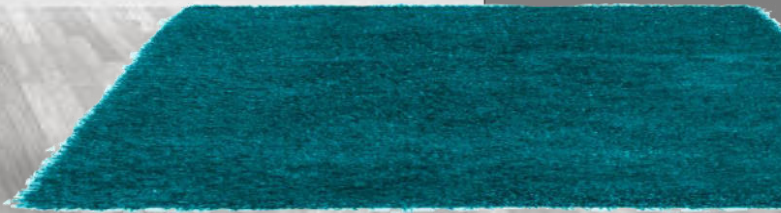




BACK TO TEN FACTS

When you subtract all the ones from a teen number, all you have left is 10.

	→	
		$13 - 3 = 10$
	→	
		$18 - 8 = 10$



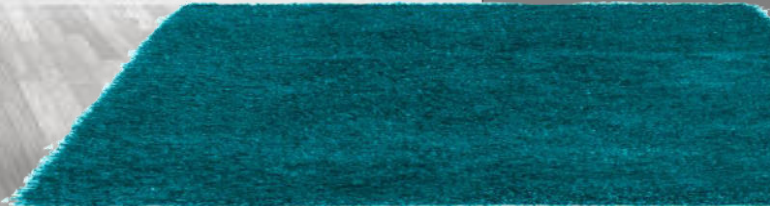
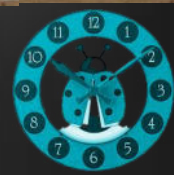
Aa Bb Cc Dd Ee

Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	-
0-0 0	1-0 1	2-0 2	3-0 3	4-0 4	5-0 5	6-0 6	7-0 7	8-0 8	9-0 9	10-0 10	11-0 11	12-0 12	13-0 13	14-0 14	15-0 15	16-0 16	17-0 17	18-0 18	19-0 19	20-0 20	0
1-1 0	2-1 1	3-1 2	4-1 3	5-1 4	6-1 5	7-1 6	8-1 7	9-1 8	10-1 9	11-1 10	12-1 11	13-1 12	14-1 13	15-1 14	16-1 15	17-1 16	18-1 17	19-1 18	20-1 19	1	0
	2-2 0	3-2 1	4-2 2	5-2 3	6-2 4	7-2 5	8-2 6	9-2 7	10-2 8	11-2 9	12-2 10	13-2 11	14-2 12	15-2 13	16-2 14	17-2 15	18-2 16	19-2 17	20-2 18	2	0
		3-3 0	4-3 1	5-3 2	6-3 3	7-3 4	8-3 5	9-3 6	10-3 7	11-3 8	12-3 9	13-3 10	14-3 11	15-3 12	16-3 13	17-3 14	18-3 15	19-3 16	20-3 17	3	0
			4-4 0	5-4 1	6-4 2	7-4 3	8-4 4	9-4 5	10-4 6	11-4 7	12-4 8	13-4 9	14-4 10	15-4 11	16-4 12	17-4 13	18-4 14	19-4 15	20-4 16	4	0
				5-5 0	6-5 1	7-5 2	8-5 3	9-5 4	10-5 5	11-5 6	12-5 7	13-5 8	14-5 9	15-5 10	16-5 11	17-5 12	18-5 13	19-5 14	20-5 15	5	0
					6-6 0	7-6 1	8-6 2	9-6 3	10-6 4	11-6 5	12-6 6	13-6 7	14-6 8	15-6 9	16-6 10	17-6 11	18-6 12	19-6 13	20-6 14	6	0
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							8-8 0	9-8 1	10-8 2	11-8 3	12-8 4	13-8 5	14-8 6	15-8 7	16-8 8	17-8 9	18-8 10	19-8 11	20-8 12	8	0
								9-9 0	10-9 1	11-9 2	12-9 3	13-9 4	14-9 5	15-9 6	16-9 7	17-9 8	18-9 9	19-9 10	20-9 11	9	0
									10-10 0	11-10 1	12-10 2	13-10 3	14-10 4	15-10 5	16-10 6	17-10 7	18-10 8	19-10 9	20-10 10	10	0
										11-11 0	12-11 1	13-11 2	14-11 3	15-11 4	16-11 5	17-11 6	18-11 7	19-11 8	20-11 9	11	0
											12-12 0	13-12 1	14-12 2	15-12 3	16-12 4	17-12 5	18-12 6	19-12 7	20-12 8	12	0
												13-13 0	14-13 1	15-13 2	16-13 3	17-13 4	18-13 5	19-13 6	20-13 7	13	0
													14-14 0	15-14 1	16-14 2	17-14 3	18-14 4	19-14 5	20-14 6	14	0
														15-15 0	16-15 1	17-15 2	18-15 3	19-15 4	20-15 5	15	0
															16-16 0	17-16 1	18-16 2	19-16 3	20-16 4	16	0
																17-17 0	18-17 1	19-17 2	20-17 3	17	0
																	18-18 0	19-18 1	20-18 2	18	0
																		19-19 0	20-19 1	19	0
																			20-20 0	20	0

Legend

- zero facts
- count back facts
- take all facts
- Neighbors facts
- take away 10 facts
- Back to 10 facts

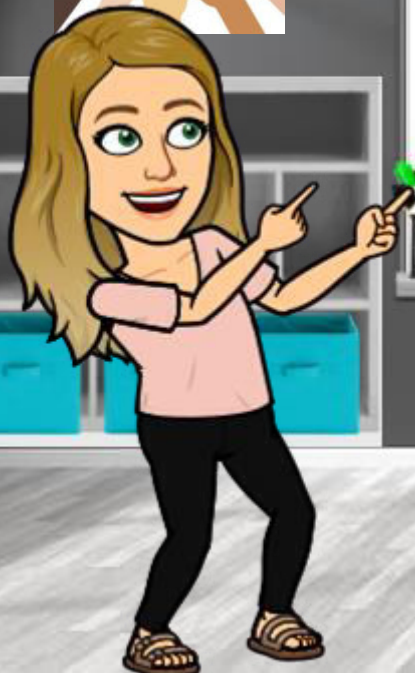




The Subtraction Table, Pt. 2

Learning Targets

- Fluently add within 20 using mental strategies
- Identify patterns among basic addition facts
- Look for and make use of structure
- Look for and express regularity in repeated reasoning



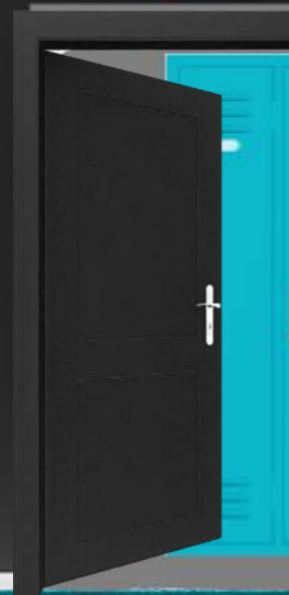


$$8 - 4 = \underline{\quad\quad\quad}$$

$$6 - 3 = \underline{\quad\quad\quad}$$

$$12 - 6 = \underline{\quad\quad\quad}$$

How might you represent these problems on the number rack?





TAKE HALF FACTS

When you subtract half of a number, the answer matches the number you subtracted. Can you explain why?

$16 - 8 = 8$

I slide over 16 beads, 8 on top and 8 on the bottom.

When I subtract 8 by pushing all of the beads on the bottom row back to the start, there are still 8 on top.



Aa Bb Cc Dd Ee Ff

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	-	
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	0	
-0	-0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	1	
-1	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	2	
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0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	3	
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0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	14	
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Legend

- zero facts
- count back facts
- take all facts
- Neighbors facts
- Take half facts
- take away 10 facts
- Back to 10 facts

Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz





UP TO TEN FACTS

To use the Up to Ten strategy, add to the smaller number to make ten. Then add more to reach the larger number. The total amount you add is the difference.

To subtract 8 from 14, think of $8 + 2 = 10$, then add 4 more to get 14.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----

$+2$ $+4$

$14 - 8 = 6$ The difference between 14 and 8 is 6



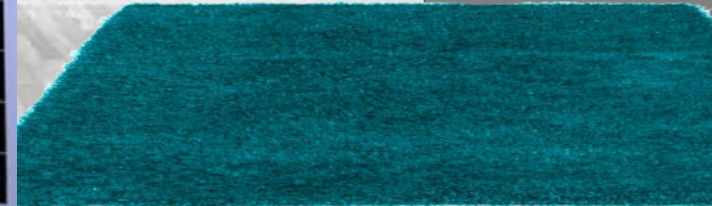
Aa Bb Cc Dd Ee Ff

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	-
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1-1	2-1	3-1	4-1	5-1	6-1	7-1	8-1	9-1	10-1	11-1	12-1	13-1	14-1	15-1	16-1	17-1	18-1	19-1	20-1	1	1
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18-18	19-18	20-18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
19-19	20-19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
20-20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20

Legend

- zero facts
- count back facts
- take all facts
- Neighbors facts
- take away 10 facts
- Back to 10 facts
- Take half facts
- Up to ten facts
-

Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz



What do you notice about the table?

LEFTOVER FACTS

The leftover facts can be solved many different ways, using different strategies.

Here are two strategies for $12 - 5$

Strategy 1:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----

$12 - 2 = 10$ and $10 - 3 = 7$, so $12 - 5 = 7$

Strategy 2:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----

$12 - 5 = 7$ The difference between 12 and 5 is 7





$18 - 5 = \underline{\quad}$ $9 - 13 = \underline{\quad}$ $17 - 2 = \underline{\quad}$

Solve the problems.
What strategies did you use?



a

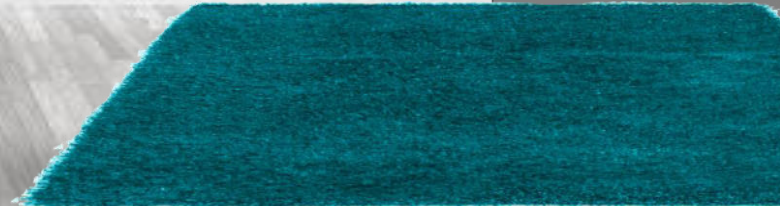
Subtraction Table

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	-
0-0	0-1	0-2	0-3	0-4	0-5	0-6	0-7	0-8	0-9	0-10	0-11	0-12	0-13	0-14	0-15	0-16	0-17	0-18	0-19	0-20	0
	1-1	1-2	1-3	1-4	1-5	1-6	1-7	1-8	1-9	1-10	1-11	1-12	1-13	1-14	1-15	1-16	1-17	1-18	1-19	1-20	1
		2-2	2-3	2-4	2-5	2-6	2-7	2-8	2-9	2-10	2-11	2-12	2-13	2-14	2-15	2-16	2-17	2-18	2-19	2-20	2
			3-3	3-4	3-5	3-6	3-7	3-8	3-9	3-10	3-11	3-12	3-13	3-14	3-15	3-16	3-17	3-18	3-19	3-20	3
				4-4	4-5	4-6	4-7	4-8	4-9	4-10	4-11	4-12	4-13	4-14	4-15	4-16	4-17	4-18	4-19	4-20	4
					5-5	5-6	5-7	5-8	5-9	5-10	5-11	5-12	5-13	5-14	5-15	5-16	5-17	5-18	5-19	5-20	5
						6-6	6-7	6-8	6-9	6-10	6-11	6-12	6-13	6-14	6-15	6-16	6-17	6-18	6-19	6-20	6
							7-7	7-8	7-9	7-10	7-11	7-12	7-13	7-14	7-15	7-16	7-17	7-18	7-19	7-20	7
								8-8	8-9	8-10	8-11	8-12	8-13	8-14	8-15	8-16	8-17	8-18	8-19	8-20	8
									9-9	9-10	9-11	9-12	9-13	9-14	9-15	9-16	9-17	9-18	9-19	9-20	9
										10-10	10-11	10-12	10-13	10-14	10-15	10-16	10-17	10-18	10-19	10-20	10
											11-11	11-12	11-13	11-14	11-15	11-16	11-17	11-18	11-19	11-20	11
												12-12	12-13	12-14	12-15	12-16	12-17	12-18	12-19	12-20	12
													13-13	13-14	13-15	13-16	13-17	13-18	13-19	13-20	13
														14-14	14-15	14-16	14-17	14-18	14-19	14-20	14
															15-15	15-16	15-17	15-18	15-19	15-20	15
																16-16	16-17	16-18	16-19	16-20	16
																	17-17	17-18	17-19	17-20	17
																		18-18	18-19	18-20	18
																			19-19	19-20	19
																				20-20	20

- Legend**
- Zero facts
 - Count Back facts
 - Take All facts
 - Neighbors facts
 - Take Away Ten facts
 - Back to Ten facts
 - Take Half facts
 - Up to Ten facts
 - Leftovers

l Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

What patterns do you see?





Target Twenty 1B Workplace

One Player Instruction Video

Game Board

Thumbnail for the One Player Instruction Video. It shows a worksheet titled "Work Place 1B Target Twenty" with a table for recording scores.

	Work Place	My Score	Partner's Score
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____

Thumbnail for the Game Board. It shows a worksheet titled "Work Place 1B Target Twenty" with a table for recording scores.

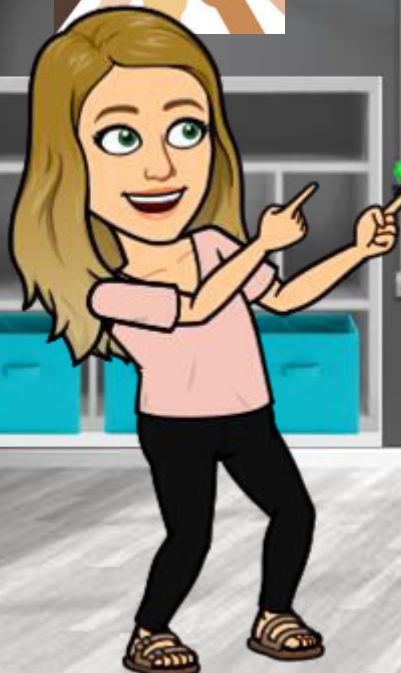
	Work Place	My Score	Partner's Score
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____





Addition and Subtraction Checkpoint Learning Targets

- Fluently add within 20 using mental strategies
- Identify patterns among basic addition facts
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

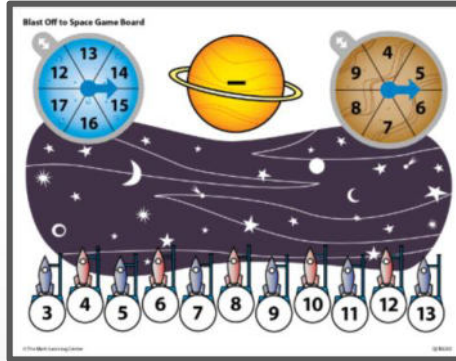


Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz



Blast Off to Space 1C Workplace

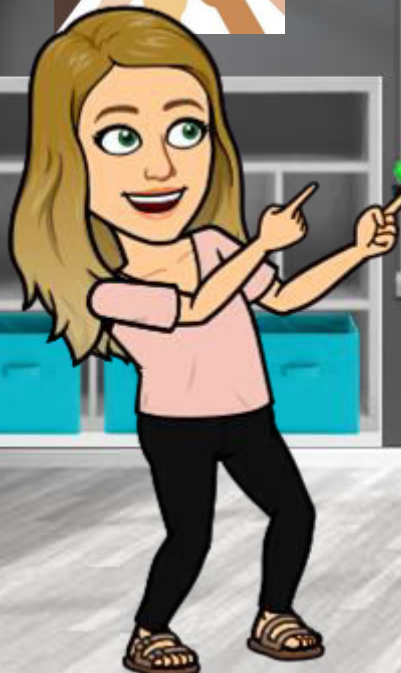
Game Board





Addition and Subtraction Equations Learning Targets

- Fluently add within 20 using mental strategies
- Identify patterns among basic addition facts
- Look for and make use of structure
- Look for and express regularity in repeated reasoning





What number is missing from the equation?

$$12 = \underline{\quad} + 5$$





What number is missing from the equation?

$$3 + 7 = 6 + \underline{\quad}$$





What number is missing from the equation?

$$8 + \underline{\quad} = 9 + 1$$





What number is missing from the equation?

$$n + 9 = 4 + 8$$





What number is missing from the equation?

$$16 - 9 = 12 - \underline{\quad}$$





Subtraction Bingo 1D Workplace

Game Board

Work Place 1D Subtraction Bingo

Record problems below the bingo boards.

Board A				Board B			
10 - 7	11 - 5	14 - 3	16 - 7	17 - 9	11 - 3	16 - 5	15 - 7
15 - 8	13 - 4	12 - 5	17 - 8	18 - 5	14 - 8	13 - 6	12 - 3
15 - 6	18 - 6	16 - 2	14 - 9	13 - 8	16 - 9	15 - 9	11 - 6
18 - 7	12 - 5	13 - 7	17 - 4	18 - 9	17 - 4	14 - 5	12 - 8

Board A Problems

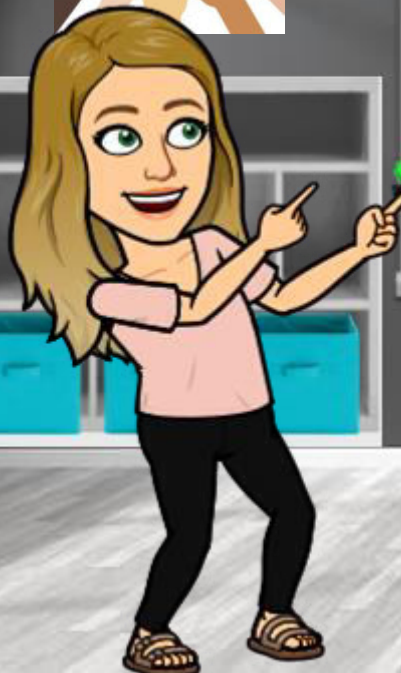
Board B Problems





Workplace Day Learning Targets

- Fluently add within 20 using mental strategies
- Identify patterns among basic addition facts
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

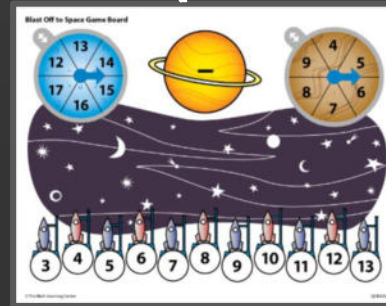


Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

Target 10 1A Workplace



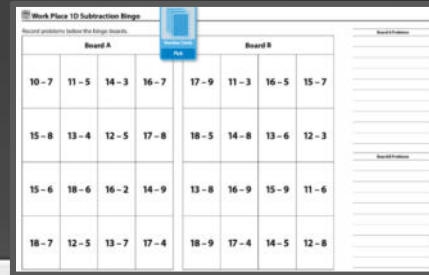
Blast Off to Space 1C Workplace



Target Twenty 1B Workplace



Subtraction Bingo 1D Workplace



Module 3

Session 1
Length
Scavenger
Hunt

Session 2
Adding
Lengths

Session 3
Adding
Lengths
Forum

Session 4
Carrot Grab
1E

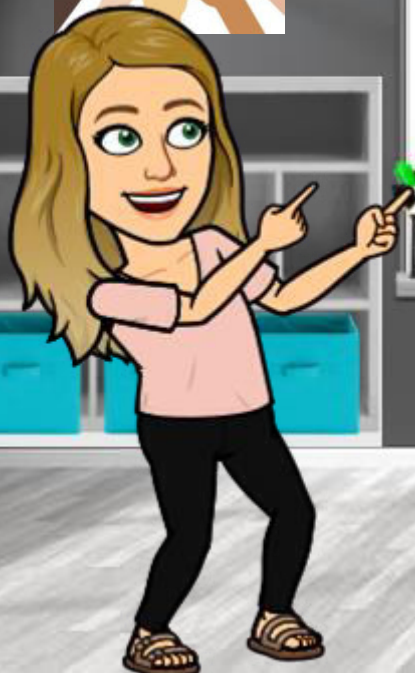
Session 5
Strings and
Strategies





Adding Length Scavenger Hunt Learning Targets

- I can measure length to the nearest whole unit.
- I can use strategies to solve addition and subtraction facts.
- I can make sense of problems and persevere in solving them.



Warm-Up Count Around Game
(Skip Counting by 10s)

Counting by 10s starting with.... 8!

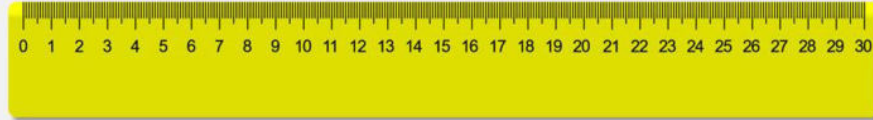
8,



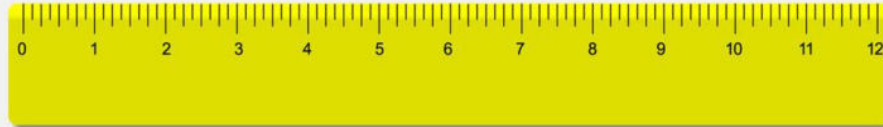
Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

Midiendo longitud

(cm/mm)



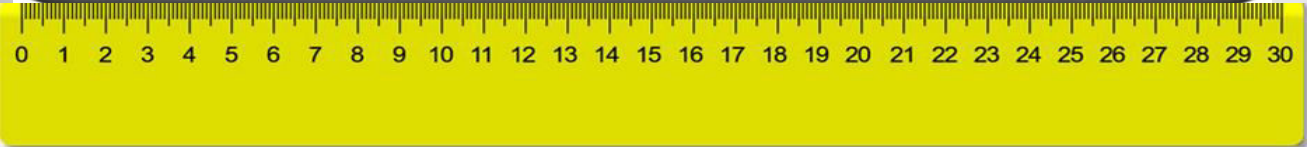
(inch)





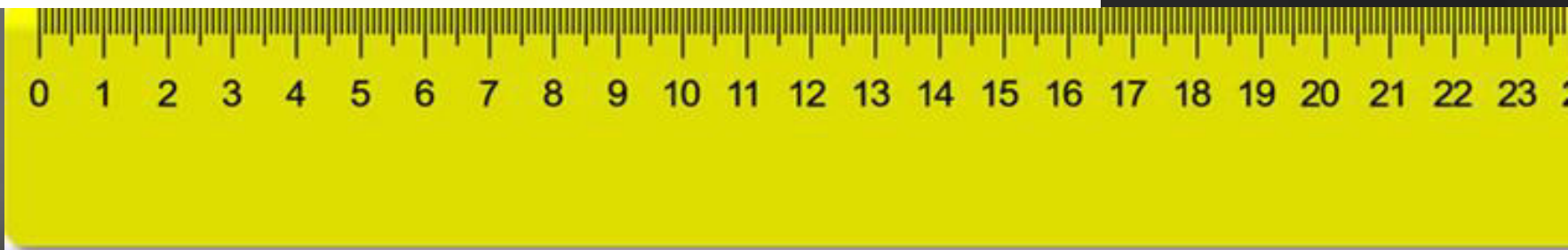
Que tan largo es este objeto?

__ cm



Que tan largo es
este objeto?

__cm





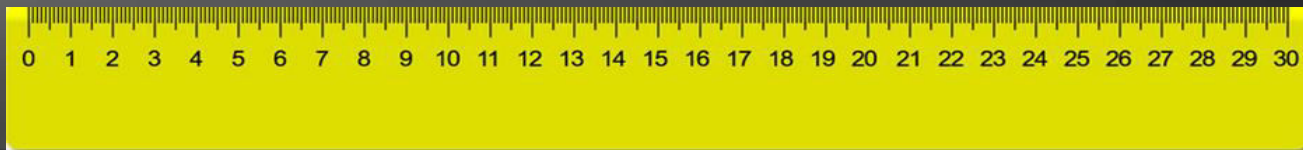
Que tan largo es este objeto?
__cm

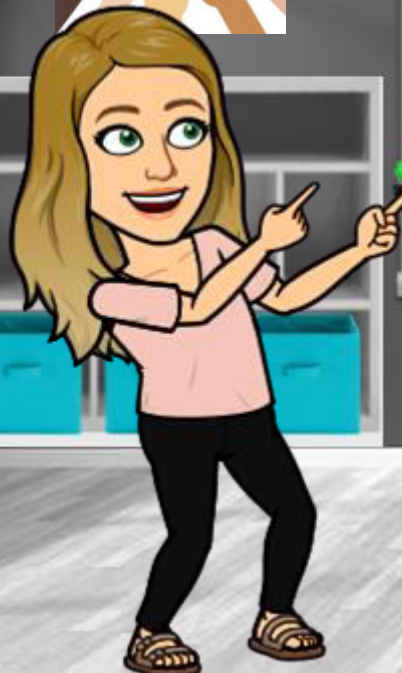




Que tan largo es
este objeto?

__cm





Adding Lengths Learning Targets

- I can use math strategies to solve 2-digit addition problems.
- I can make sense of a word problem.
- I can write equations to match a word problem.



Warm-Up Count Around Game
(Skip Counting by 10s)

Counting by 10s starting with.... 7!

7,

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz



How long are the pencil and the whiteboard eraser lined up end to end, 19 centimeters + 15 centimeters?



Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

What strategies did you use to solve
 $19 + 15$?



Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

We just found out that if you line up a 19-centimeter pencil end to end with a 15-centimeter eraser, the total length is 34 centimeters. Here are some equations we might use to represent the situation.

$$19 + 15 = m$$

$$19 + m = 34$$

$$m + 15 = 34$$



Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

Does this equation match the
problem?
Why or why not?

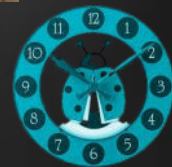
$$19 - 15 = m$$



Does this equation match the
problem?

Why or why not?

$$34 + m = 15$$



Does this equation match the
problem?

Why or why not?

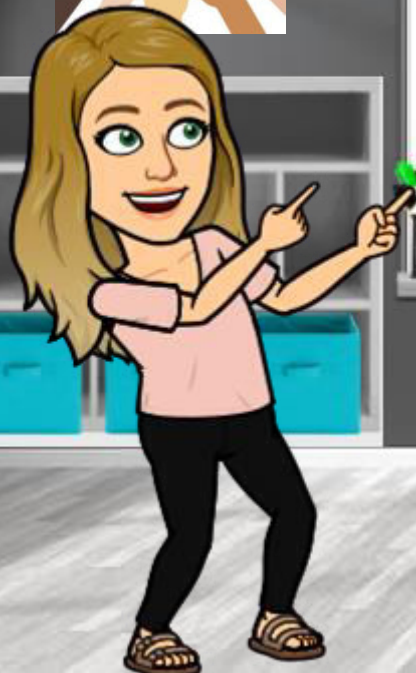
$$19 - m = 15$$





Adding Lengths Forum Learning Targets

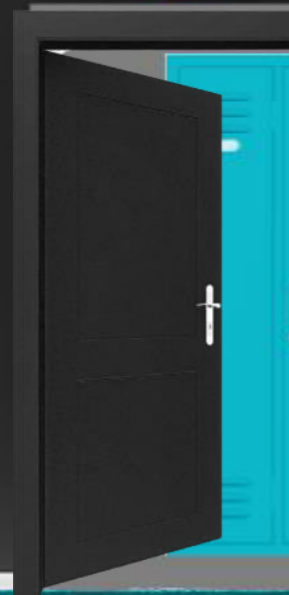
- Solve addition story problems with sums to 100 involving lengths given in the same units
- Write equations with a letter standing for the unknown quantity to represent one-step story problems
- Use strategies based on place value, properties of operations, or the relationship between addition and subtraction to add fluently with sums to 1,000.
- Construct a viable arguments and critique the reasoning of others
- Model with mathematics





Warm-Up Count Around Game (Skip Counting by 10s)

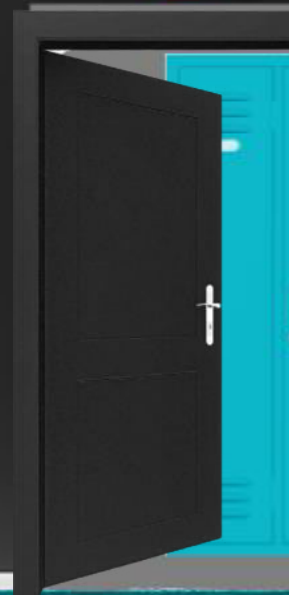
Counting by 10s starting with....
122!





Introducing... Math Forums!

- A **math forum** is an active learning time when class members will share their thinking and the class will discuss the problems and solution strategies.
- A few people will share today, and others will get to share in future forums.

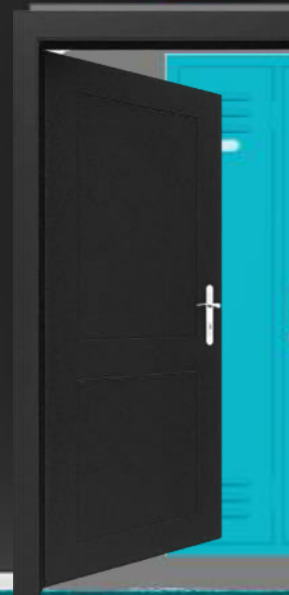


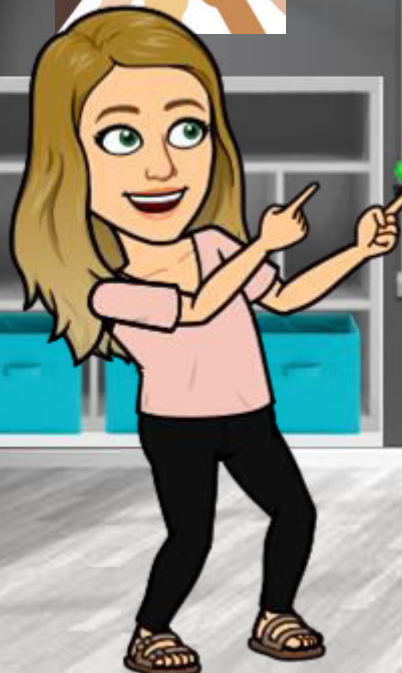


Math Forums

Solve this problem and be ready to share with the class.

$$15 + 28$$





Problem Strings Learning Targets

- I can model my thinking with words, numbers, or pictures.
- I can use strategies to solve 2-digit addition problems.
- I can identify patterns in math facts.



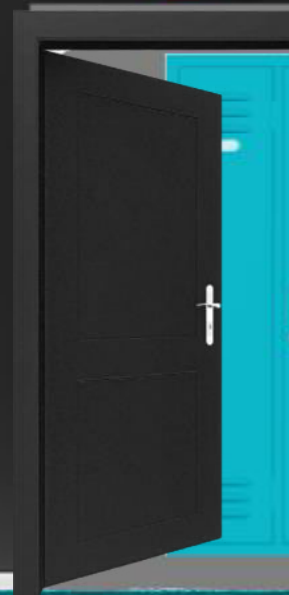


Introducing... Problem Strings!

Today we will complete our first **problem string** in your math journals.

A problem string is a series of problems that students solve and discuss one at a time.

Strings often start out with an easier problem, and then the problems get more challenging as the string continues.



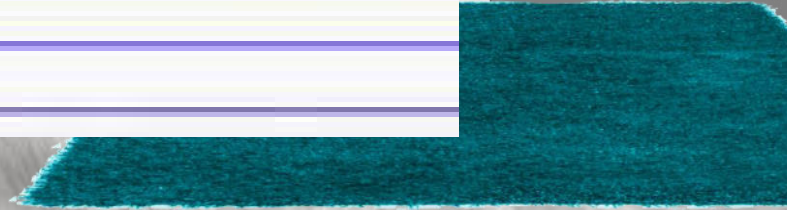
e Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

Open to a
blank page in
your notebook.



Adding Tens Problem String

1. $28 + 10$



e Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

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blank page in
your notebook.



Adding Tens Problem String

1. $28 + 10$

2. $28 + 13$



e Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

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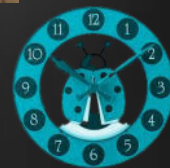


Adding Tens Problem String

1. $28 + 10$

2. $28 + 13$

3. $28 + 23$



e Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

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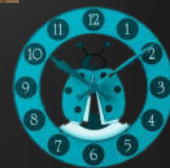
Adding Tens Problem String

1. $28 + 10$

2. $28 + 13$

3. $28 + 23$

1. $36 + 10$



e Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

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your notebook.



Adding Tens Problem String

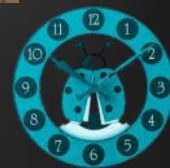
1. $28 + 10$

2. $28 + 13$

3. $28 + 23$

1. $36 + 10$

2. $36 + 16$



e Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

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your notebook.



Adding Tens Problem String

1. $28 + 10$

2. $28 + 13$

3. $28 + 23$

1. $36 + 10$

2. $36 + 16$

3. $36 + 36$

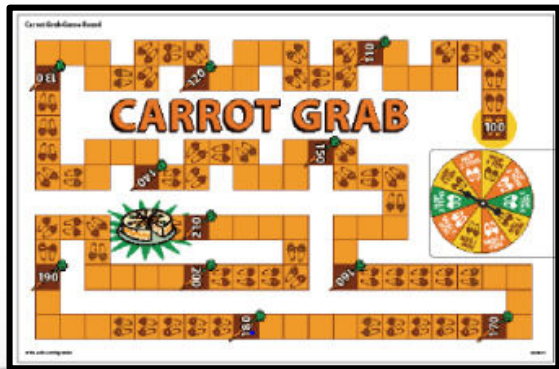


Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz



Carrot Grab 1E Workplace

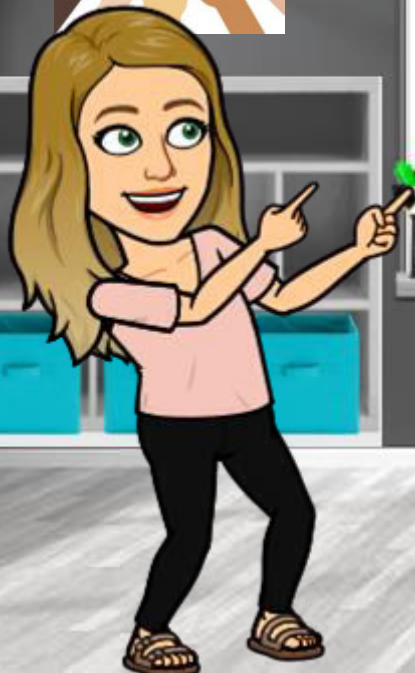
Game Board





Strings and Strategies Learning Targets

- Explain patterns among basic addition facts.
- Use strategies based on place value, properties of operations, or the relationship between addition and subtraction to add fluently with sums to 1,000
- Model with mathematics
- Look for and express regularity in repeated addition





Introducing... Friendly Numbers!

In Carrot Grab, players were able to collect carrots every time they landed on what we call a friendly number.

Look at the Carrot Grab Game board and think about what makes the number friendly.



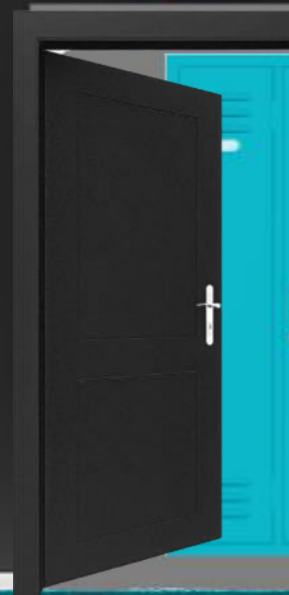


Introducing... Friendly Numbers!

In the game, a friendly number is a multiple of 10, often referred to as a round number.

More generally, a friendly number might be any number that is easy to compute with, for examples multiples of 5.

Today we will work specifically with friendly numbers that are multiples of 10.



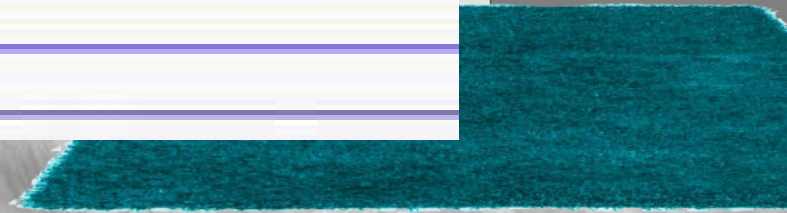
e Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

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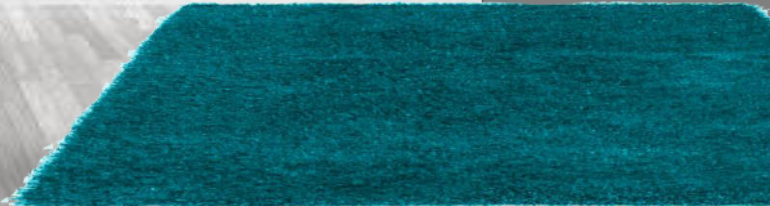
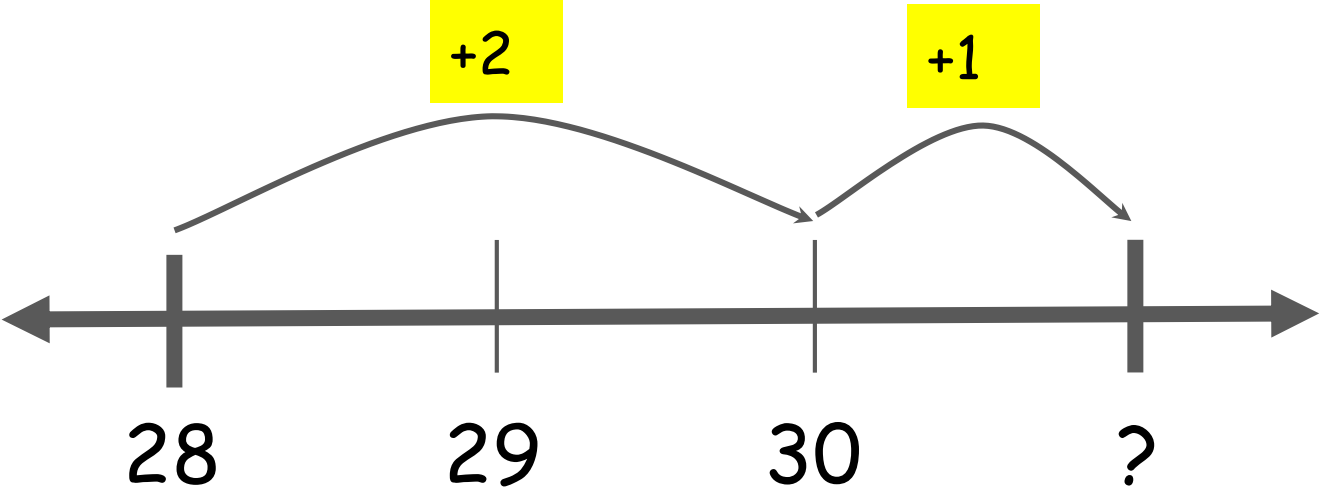


Get to a Friendly Number

1. $28 + 3$



Number lines are a great way to show your thinking!



e Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

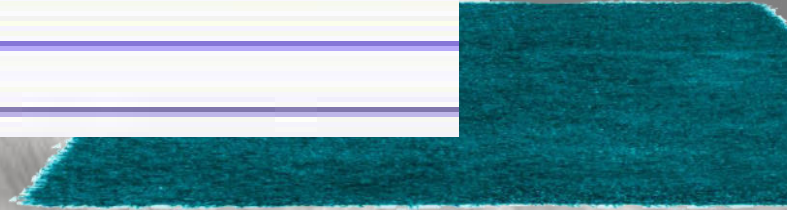
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Get to a Friendly Number

1. $28 + 3$

2. $28 + 7$



e Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

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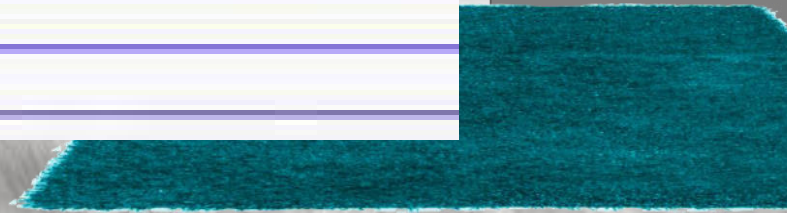


Get to a Friendly Number

1. $28 + 3$

2. $28 + 7$

3. $28 + 13$



e Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

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your notebook.



Get to a Friendly Number

1. $28 + 3$

2. $28 + 7$

3. $28 + 13$

1. $39 + 4$



e Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

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Get to a Friendly Number

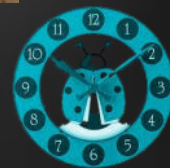
1. $28 + 3$

2. $28 + 7$

3. $28 + 13$

1. $39 + 4$

2. $39 + 14$



e Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

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blank page in
your notebook.



Get to a Friendly Number

1. $28 + 3$

2. $28 + 7$

3. $28 + 13$

1. $39 + 4$

2. $39 + 14$

3. $39 + 23$



Module 4

Session 1
Rabbit
Tracks 1F

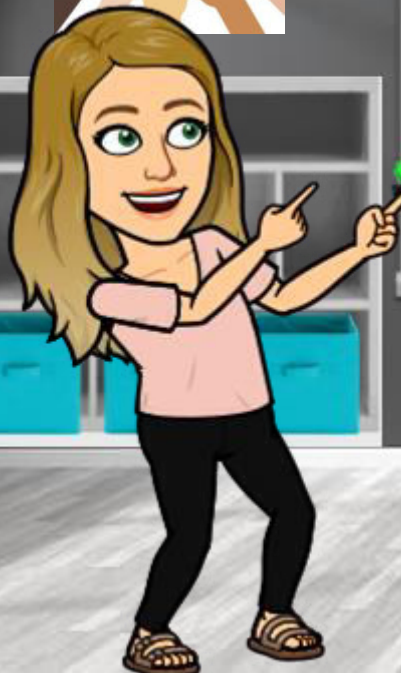
Session 2
Two Digit
Addition
Story
Problems

Session 3
Two Digit
Addition
Story
Problems

Session 4
Strategies
for
Subtracting
two-digit
numbers

Session 5
Multi-Step
Story
Problems





Rabbit Tracks 1F Learning Targets

- Use strategies based on place value, properties of operations, or the relationship between addition and subtraction to add fluently with sums to 1,000
- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively

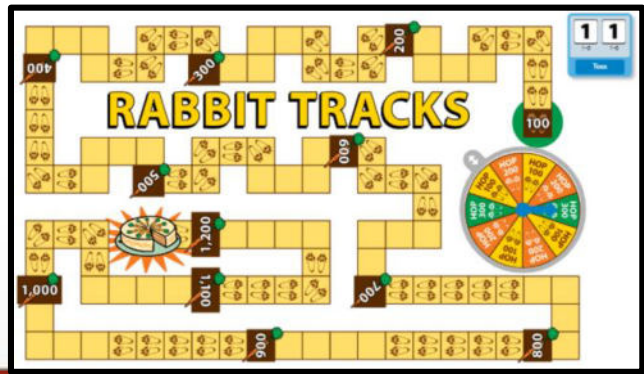


Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz



Rabbit Tracks 1F Workplace

Game Board





Two Digit Addition Story Problems

Learning Targets

- Solve one-step addition story problems with sums to 100 involving situations of adding and putting together, with unknowns in all positions
 - Use strategies based on place value, properties of operations, or the relationship between addition and subtraction to add fluently with sums to 100
 - Assess the reasonableness of answers to story problems using mental computation, rounding, and other estimation strategies
- Construct viable arguments and critique the reasoning of others
Model with mathematics



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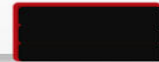
Date:

Story Problems





Malcolm collects special marbles.
He had 34 marbles. For his
birthday, Malcolm received 17
more special marbles. How many
marbles does Malcolm have now?



$$34 + 17 = m$$

What different addition strategies did you use to solve this problem?



Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

Jonah loved to read. Yesterday he read for 36 pages and today he read 28. How many pages did Jonah read in all?

Solve independently using two different strategies.

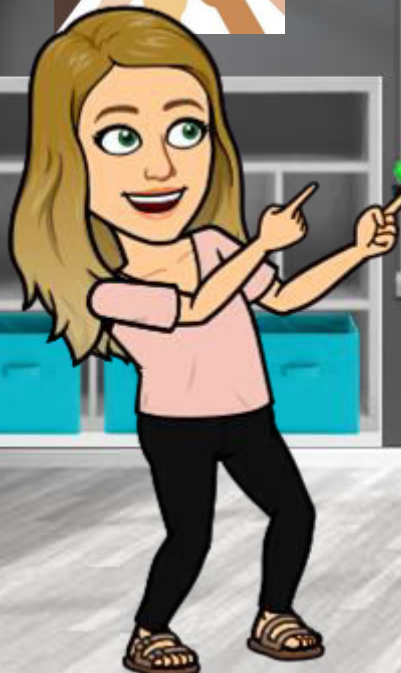




Two Digit Addition Story Problems Part 2

Learning Targets

- Solve one-step addition story problems with sums to 100 involving situations of adding and putting together, with unknowns in all positions
 - Use strategies based on place value, properties of operations, or the relationship between addition and subtraction to add fluently with sums to 100
 - Assess the reasonableness of answers to story problems using mental computation, rounding, and other estimation strategies
- Construct viable arguments and critique the reasoning of others
Model with mathematics





Math Forum: Class Expectations

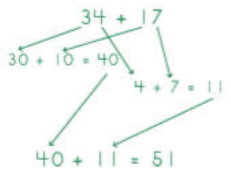
- Students listen quietly and actively while others share their thinking
- Students think carefully about what their classmates share, so that they can be prepared to ask questions and discuss their classmates' strategies in pairs and as a whole group



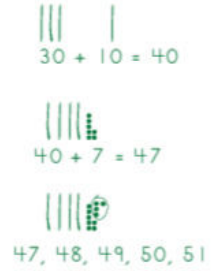


Addition Strategies

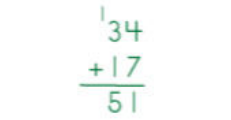
Strategy 1



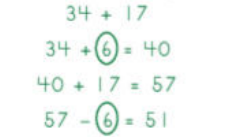
Strategy 2



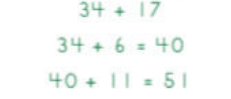
Strategy 3



Strategy 4



Strategy 5





Share how you solved
36 + 28



Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz



Target 100 1G Workplace Game Board

Work Place 1G Target One Hundred

For each round of the game, players write an addition equation, their score, and their partner's score.

	First Game	Player 1	Player 2
1	_____ + _____ = _____		
2	_____ + _____ = _____		
3	_____ + _____ = _____		
4	_____ + _____ = _____		
5	_____ + _____ = _____		
Player 1 Total: _____		Player 2 Total: _____	

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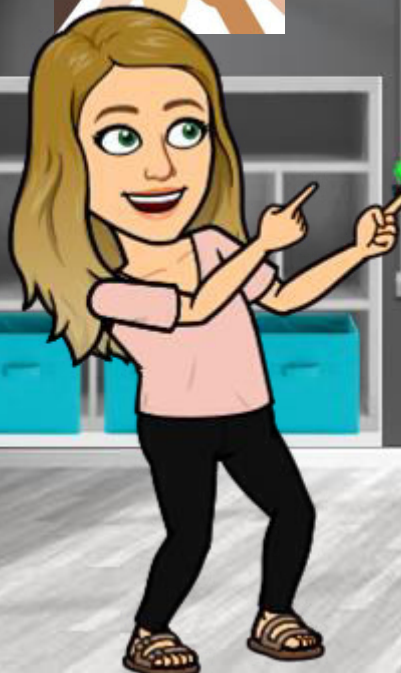




Strategies for Subtracting Two Digit Numbers

Learning Targets

- Solve one-step subtraction story problems with minuends to 100 involving situations taking from, taking apart, and comparing, with unknowns in all positions.
- Use strategies based on place value, properties of operations, or the relationship between addition and subtraction to subtract fluently with minuends to 100
- Reason abstractly and quantitatively
Model with mathematics



e Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

Open to a
blank page in
your notebook.

Date:

Subtraction Story Problems



INCLUDE:

1. Equation
2. Show your work

Arrow has 38 toy cars.
Audrey has 53 toy cars. How
many **more** toy cars does
Audrey have **than** Arrow?



$$53 - 38 = c$$

What different subtraction strategies did you use to solve this problem?



1. Start with the smaller number.
2. Add up to friendly numbers to meet the larger number at the end.
3. Add up all your jumps to find the difference.

Differencing strategy

Add up from 38 to 53.
 Add 2 to get to 40.
 Then add 13 to get to 53.
 $53 - 38 = 15$



$38 + \underline{\quad} = 53$
 $38 + 2 = 40$
 $40 + 13 = 53$
 So $38 + 15 = 53$ and that means $53 - 38 = 15$
 The difference between 53 and 38 is 15.



Differencing strategy

$$53 - 38 = m$$

1. Start with the smaller number.
2. Add up to friendly numbers.



Differencing strategy

$$53 - 38 = m$$

1. Start with the smaller number.
2. Add up to friendly numbers.



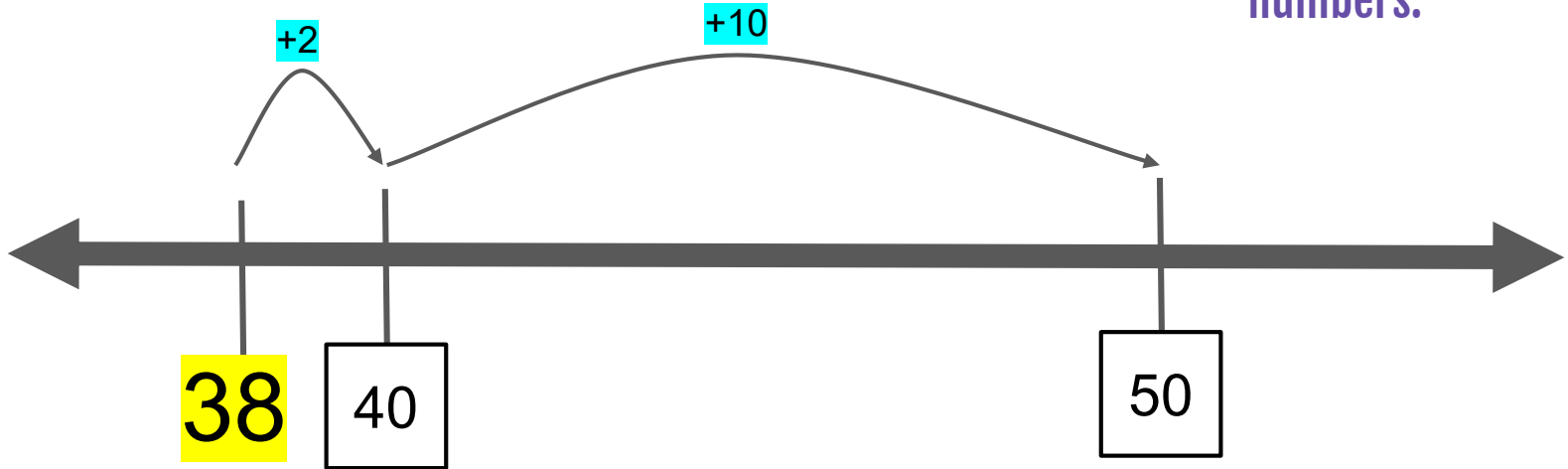
Friendly Number!

Add up all of your jumps to find the difference

Differencing strategy

$$53 - 38 = m$$

1. Start with the smaller number.
2. Add up to friendly numbers.



Friendly Number!

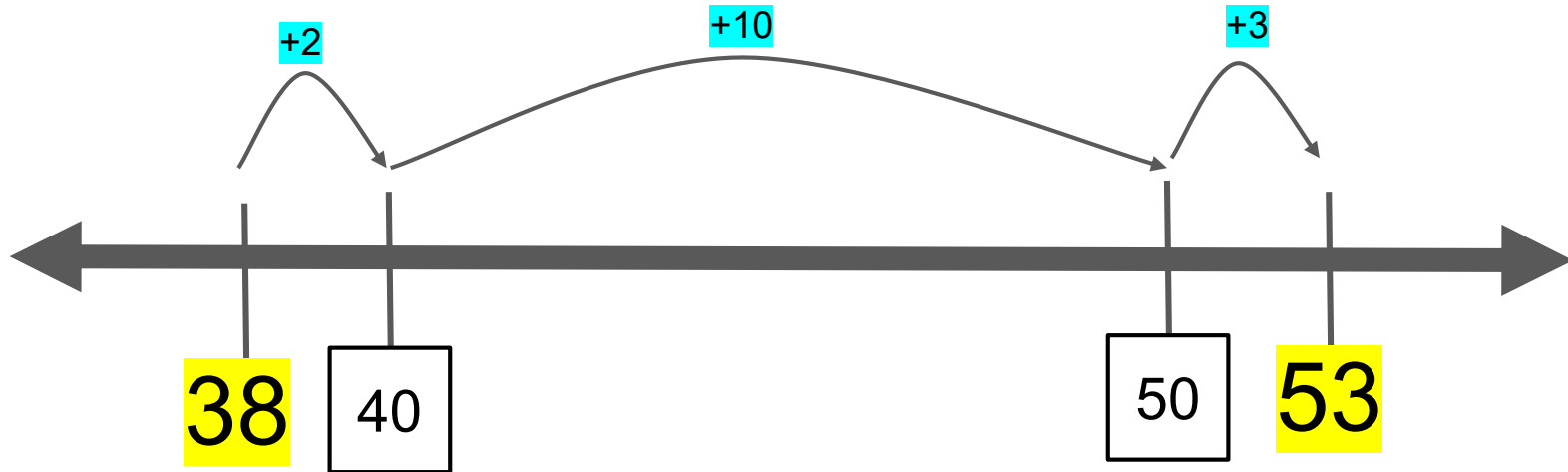
Add up all of your jumps to find the difference

$$2 + 10 +$$

Differencing strategy

$$53 - 38 = m$$

1. Start with the smaller number.
2. Add up to friendly numbers.
3. Stop at 52. Add up the jumps!



Friendly Number!

Add up all of your jumps to find the difference

$$2 + 10 + 3 = 15$$

Audrey has 15 more toy cars.

INCLUDE:

1. Equation
2. Show your work

Arrow has 38 toy cars.
Audrey has 53 toy cars. How
many **more** toy cars does
Audrey have **than** Arrow?



Take 38 away from 53
a little bit at a time.

First take away 30 to get to 23.

Then take away 3 to get to 20.

Then take away 5 to get to 15.

$53 - 38 = 15$



$$\begin{aligned}
 53 - 38 &= 53 - 30 - 3 - 5 \\
 &= 23 - 3 - 5 \\
 &= 20 - 5 \\
 &= 15 \\
 53 - 38 &= 15
 \end{aligned}$$



Removal strategy

1. Start with the BIG number.
2. Count down using friendly numbers.
3. Count down the rest after you reached the last friendly number you could get to!

Removal strategy

$$53 - 38$$

1. Start with the BIG number.



53

Removal strategy

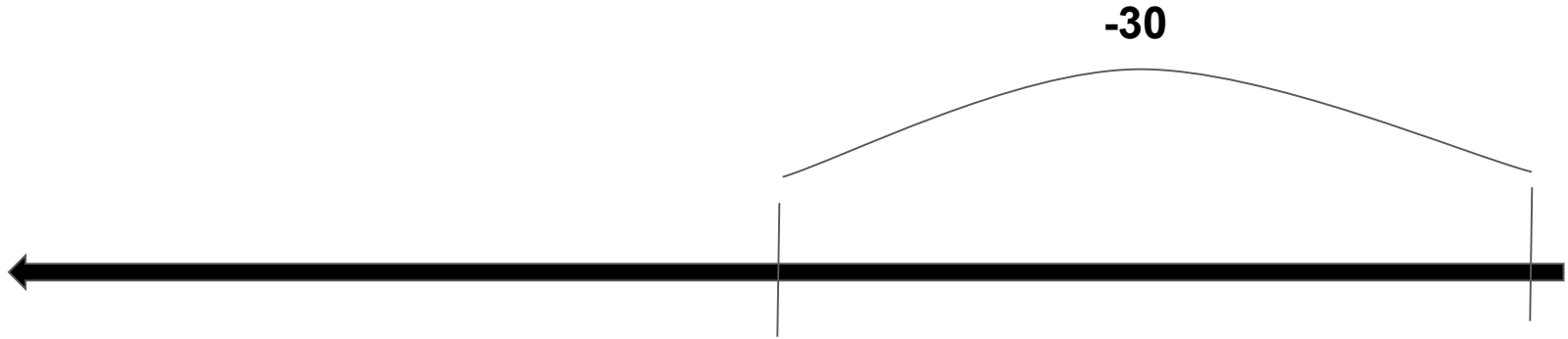
$$53 - 38$$

1. Start with the BIG number.
2. Count down using friendly numbers.

-30

23

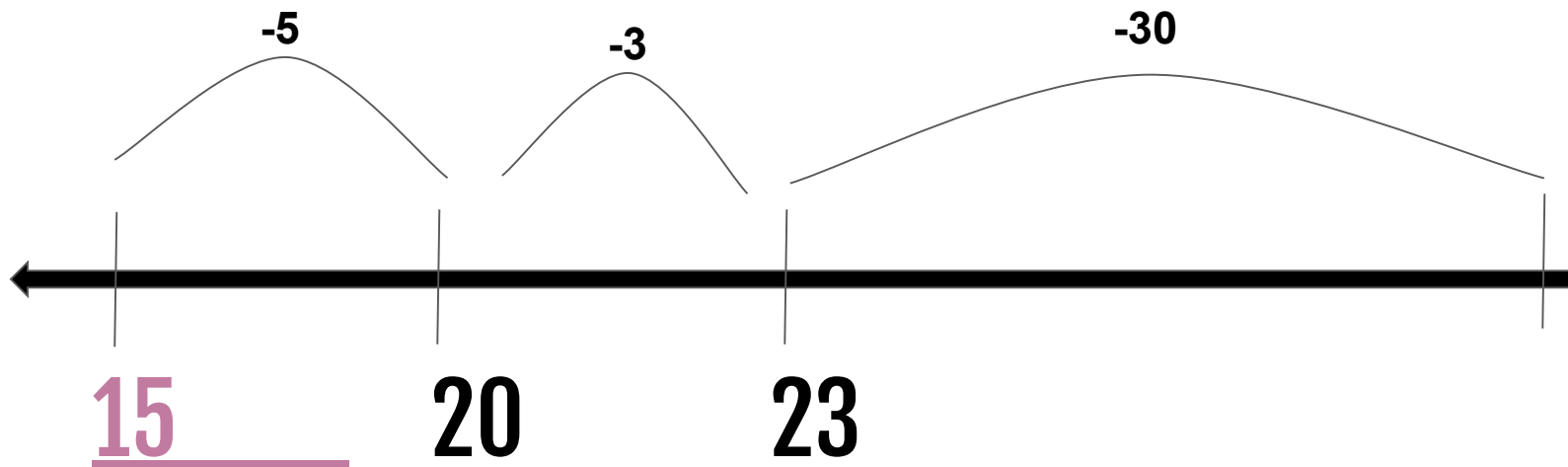
53



Removal strategy

$$53 - 38$$

1. Start with the BIG number.
2. Count down using friendly numbers.



53

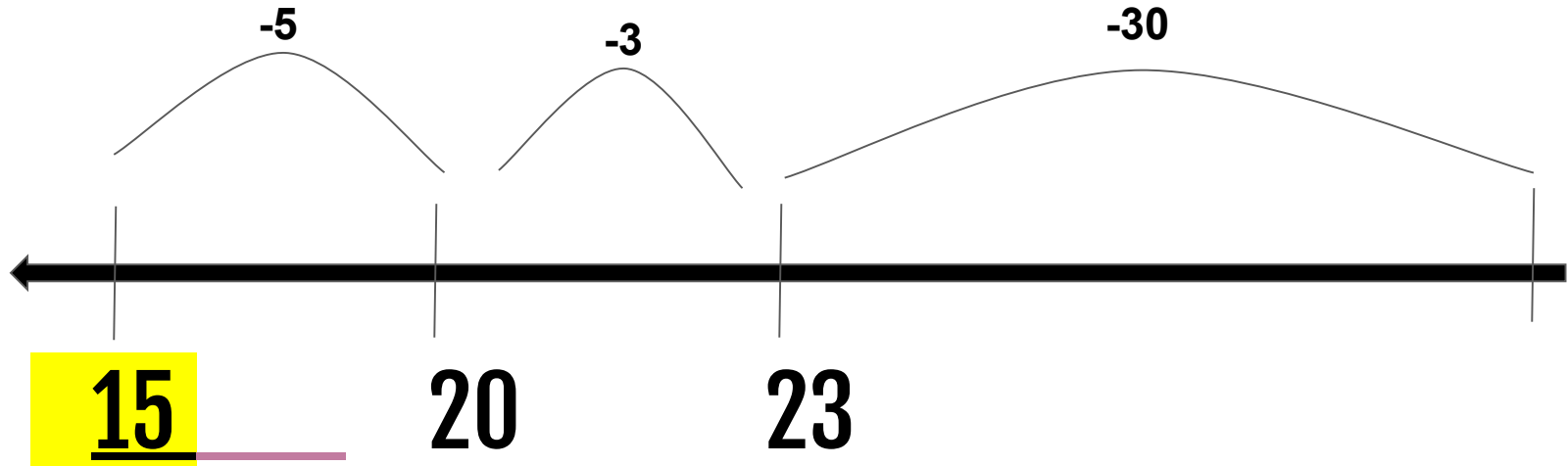
Removal strategy

53 - 38

1. Start with the BIG number.
2. Count down using friendly numbers.

Check: $30+3+5=38$ ✓

Sooo... $53 - 38 = 15$



53

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

Seventy-two third grade students at _____ school are going on a field trip. Forty-nine students have turned in their permission slips. How many students still need to return their permission slips?

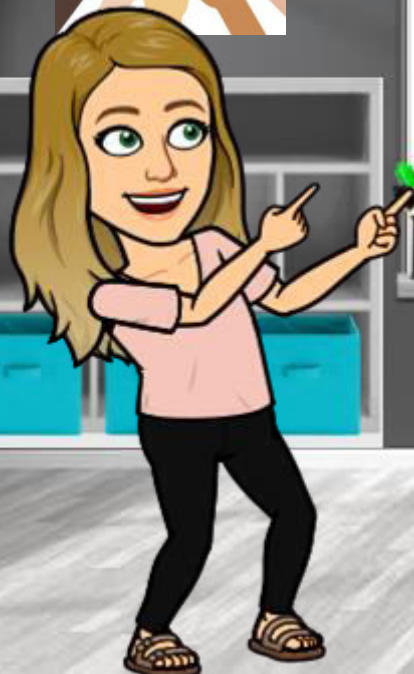
Solve independently using two different strategies.





Multi-Step Subtraction Problems Learning Targets

- Use strategies based on place value, properties of operations, or the relationship between addition and subtraction to add fluently with sums to 1,000 and subtract fluently with minuends to 1,000.
- Solve two-step story problems using addition and subtraction
- Reason abstractly and quantitatively
Model with mathematics



Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz



Jojo had a collection of 23 LOL dolls. She took the dolls to a friend's house and lost 4 of them. Her dad bought a package of 6 more dolls for her. How many dolls does Jojo have now?

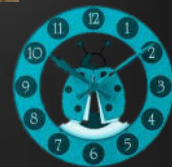


Hmm..what do I need to do first?

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

What is our equation?

$$23 - 4 + 6 = m$$

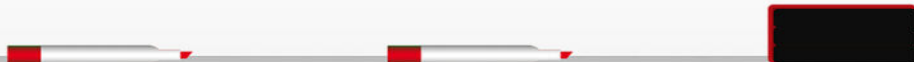




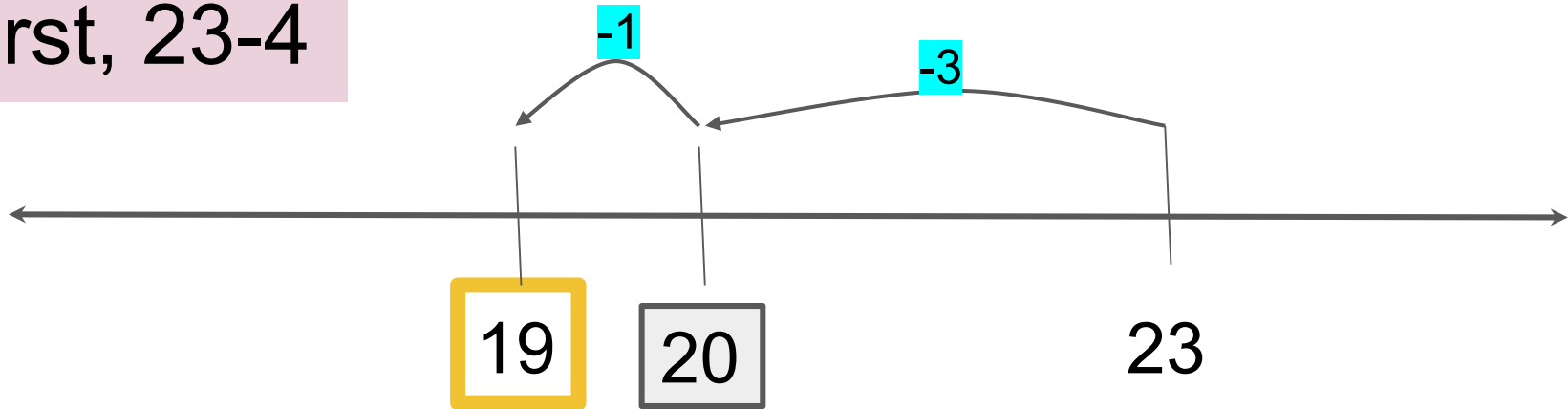
My plan:

First, solve $23-4=c$

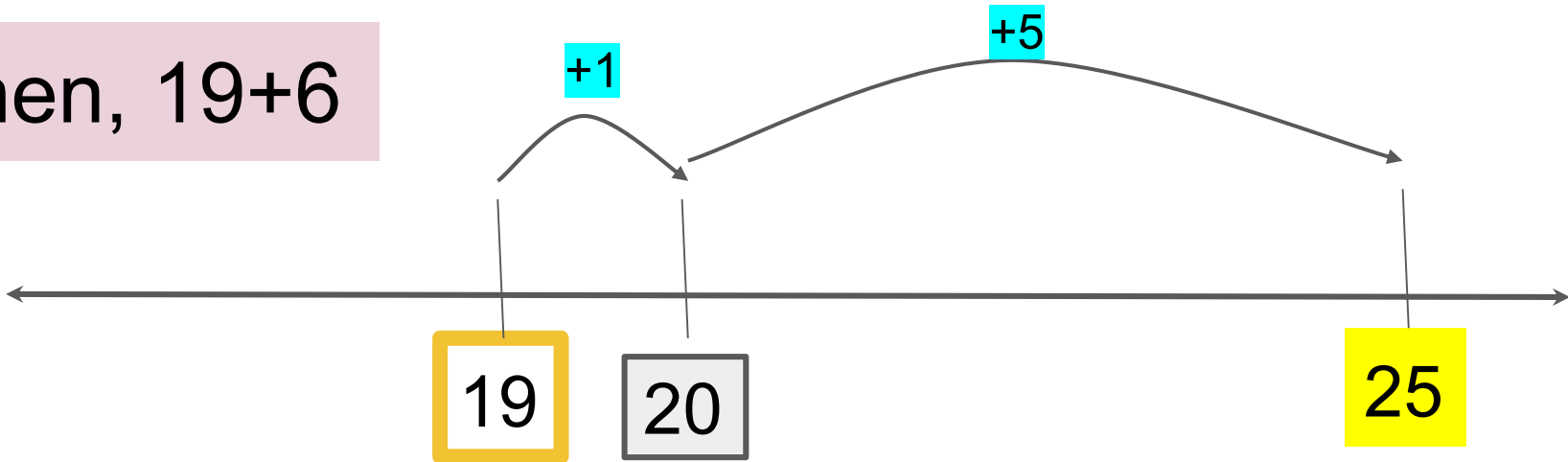
Then, solve $c+6$



First, 23-4



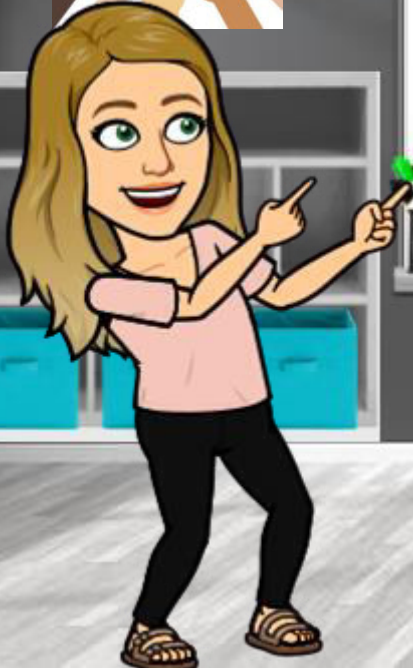
Then, 19+6



Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz



Unit 1 Post Assessment Review



$$\underline{\quad} = 8+6$$

$$\underline{\quad} = 7+4+3$$

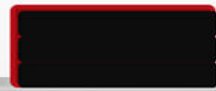
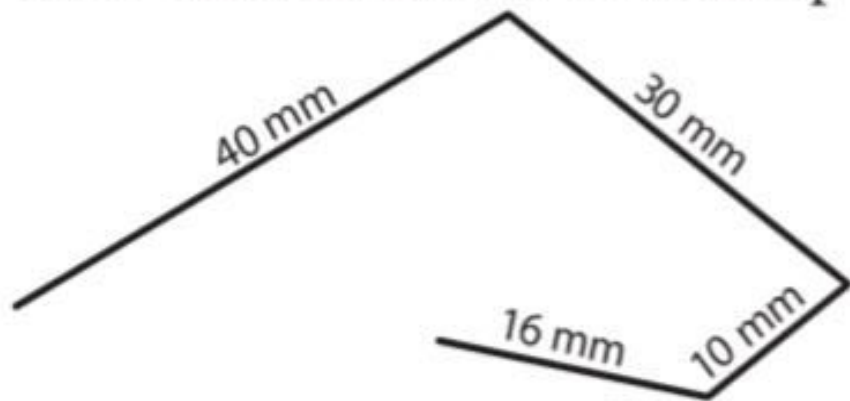
$$\underline{\quad} + 8 = 10+7$$

$$12 - 4 = \underline{\quad}$$

$$9 = 14 - \underline{\quad}$$

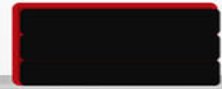
$$12 - \underline{\quad} = 6$$

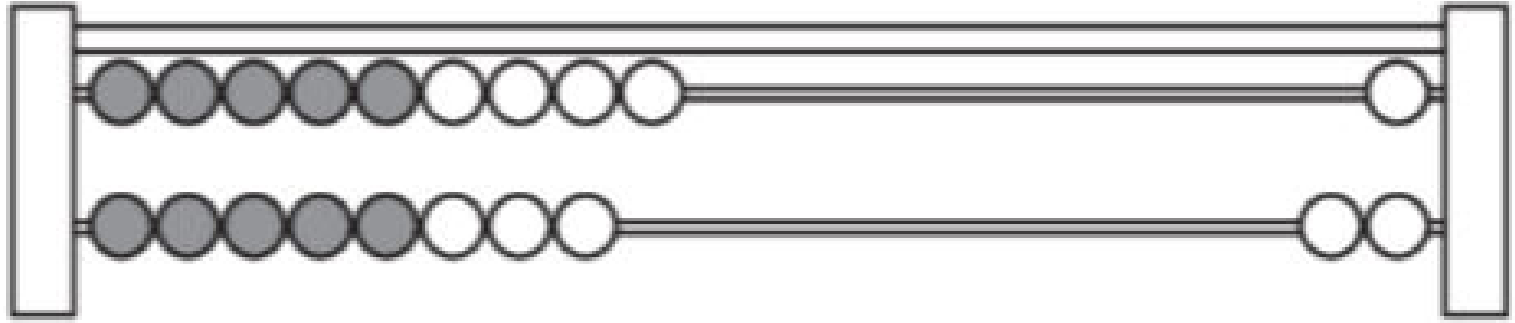
Paul watched an ant walk this path. How far did the ant walk?



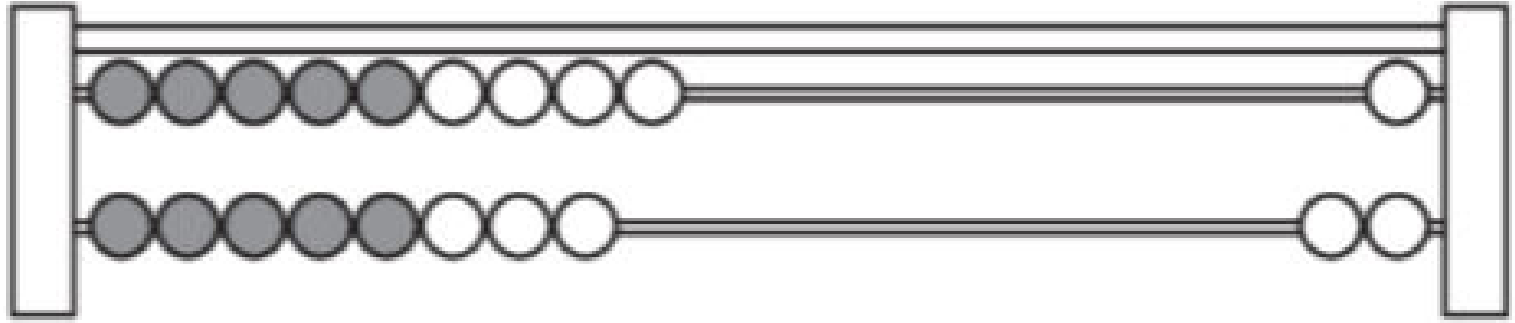
Alyssa has \$85 in her savings account at the bank. Dylan has \$38 in his savings account. How much more does Alyssa have than Dylan?

Mr. Kose has blueberry bushes in his garden. Yesterday he picked 118 blueberries. Today he picked 223 blueberries. How many blueberries did he pick in all?

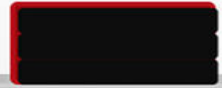




Write an equation that could represent the beads on the left side.



Desmond says he can use $8+8$ to figure out how many beads are on the left side. How can he do that?



Lea says that when you add two odd numbers, you always get an even number. Do you agree with Lea? Why or why not?

Lillian measured some items from her room. She measured a book that was 8 inches long, a big stuffed bear that was 33 inches long, and a picture that was 15 inches long. Lillian lined up all of these items and measured them together. How long were all of the items together?

Last year, Seth went to an amusement park. He rode the Fantastic Freeway for 16 minutes, the spaceship Speedway ride for 13 minutes, and the Rackety Rocket Ride for 11 minutes. How long did Seth spend on all three rides?

Ms. B delivers learning bags to students. On one street, she delivers 6 bags. On another street she delivers 12 bags. On a different street she delivers 15 bags. How many bags does Ms. B deliver on these three streets?

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz



Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz



Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

