

# Summer Math

## Educator Packet



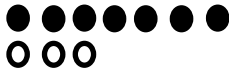
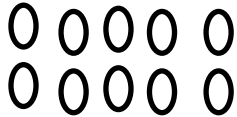
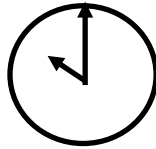
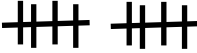
## Unit 4



## Warm up: Target Number

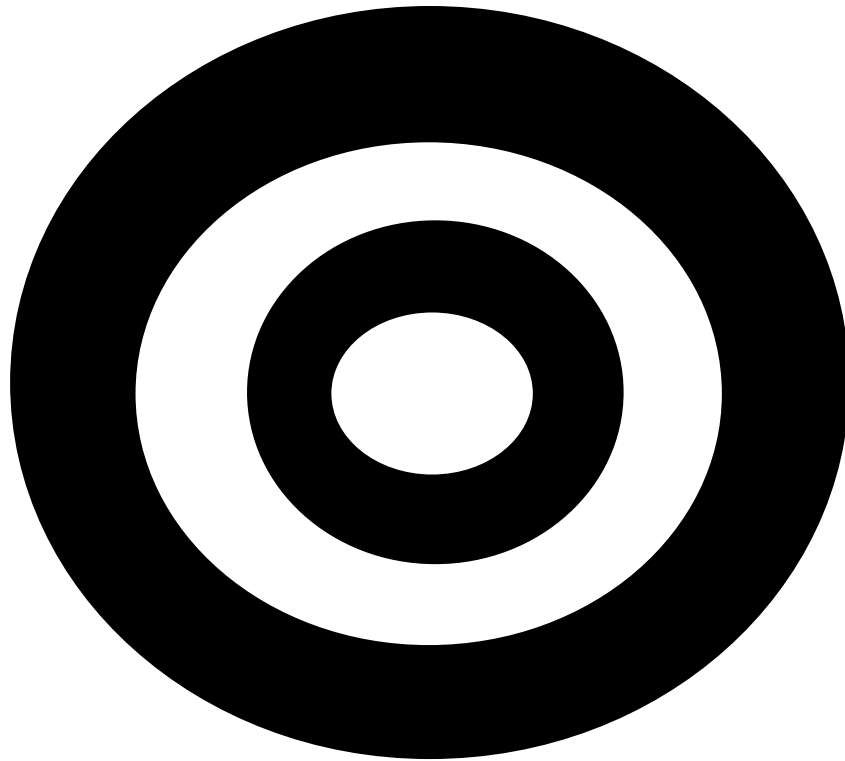
- The task is to represent the target number in different ways in one minute. Do a couple samples with students before starting the timer.
- Set the timer for one minute.
- Educators play along, and write examples to share related to the students' required math fluencies:
- At the end of the minute, students give ONE example at a time, going around the group a couple of times until all DIFFERENT responses are used. Students need to give **different** ways to represent the number. Writing, "7 + 3" is different from writing, "3 + 7". Drawing 7 circles and 3 circles is different from writing, "7 + 3."

**Examples of some different ways to represent the number 10:**

$7 + 3$	$10 + 0$	$17 - 7$	$2 \times 5$	$100 / 10$	$20 / 2$
$3 + 7$	$0 + 10$	ten	$5 \times 2$	$10 / 1$	$10 \times 1$
					
One dozen eggs take away 2		$2 + 2 + 2 + 2 + 2$			$100 - 90$

## Required [Math] Fluencies

Kindergarten	Add and subtract within 5	<b>Procedural Fluency:</b> can easily use a process to figure out the answer.
Grade 1	Add and subtract within 10	<b>Procedural Fluency:</b> can easily use a process to figure out the answer.
Grade 2	Single digit sums and differences (automaticity by the end of Grade 2);	<b>Automaticity</b> by the end of Grade 2: Knows the answer without stopping to use a process to figure out the answers.
Grade 2	Add and subtract within 100	<b>Procedural Fluency:</b> can easily use a process to figure out the answer.



# Target Number

**Suggested Target Numbers:** Start with 12 and 15 for everyone for the first two sessions. Afterwards, numbers over 20 are fair for all grade bands except for the DOG ICON, which should just use numbers under 20.

12

15

24

36

60

48

100

45

90

50

75

More K choices: 9

18

6

20

## FAMILY FUN GAME Directions

All ages of students play the game together. On their turn, students use the game cards from their own packet to solve math problems at their own level.

### Key Points:

- Unit 1 introduces the game and some of the Math Matters skills.
- Units 2 through 5 provide students practice all of the core math skills, except fractions, throughout the summer.

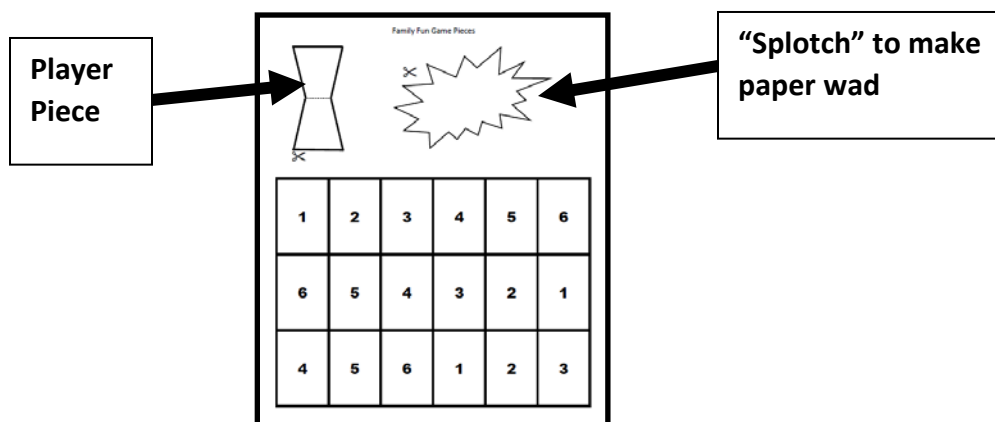
### Process:

1. Each Student Packet has its own Family Fun Game Cards, allowing each student to participate together with students who have different skills to practice.
2. Do not cut the cards apart! Starting with Lesson 2, the three cards in each row will practice the same skill.
  - a. Many students will read ahead, solving problems, to find the “easiest” ones while waiting for their next turn.
3. Instead of students drawing a card, students select a problem from their packets. Students can select problems in the order they choose, BUT ask students to solve one problem from each row, before repeating from the row, so they practice each skill.
4. Game Directions are on the game board. Game boards are at the end of each Student Packet, so they are easy to pull off and use.
5. The best way to move around the board is to use dice. The Student Packets have a “Do It Yourself (DIY)” version to toss a small wad of paper onto a board of numbers.

## Do It Yourself (DIY) Game Pieces

**Player:** Cut the outside of the double trapezoid. Fold in half to make the player. If more than one student has the same color, students can write their name on the playing piece.

**If you don't have a 6-sided die:** Cut around the jagged “splotch” shape and wad the paper into a ball. Toss the ball onto the number board to find number of spaces to move.



**BLM Unit 4, Follow-Up Lesson 3 Family Fun Game All Level Answer Key**

<b>Problem Letter</b>	<b>Kinder (pink)</b>	<b>1-2 (blue)</b>	<b>3-4 (green)</b>	<b>5-6 (yellow)</b>	<b>7-8 (peach)</b>
<b>A</b>	14 ants	8 + 7 = 15 7 + 8 = 15 15 - 7 = 8 15 - 8 = 7	0.8	$6\frac{1}{4}$ or 6.25	3
<b>B</b>	4 eggs	5 + 7 = 12 7 + 5 = 12 12 - 7 = 5 12 - 5 = 7	0.80	$\frac{5}{8}$ or 0.625 cups	6
<b>C</b>	7 brown	8 + 9 = 17 9 + 8 = 17 17 - 9 = 8 17 - 8 = 9	0.08	\$423,294,920.10	4
<b>D</b>	Shows 10 counters Number 10	38	8	2134.448	scale factor 3
<b>E</b>	Shows 15 counters Number 15	23	63	\$7400 down	scale factor 3
<b>F</b>	Shows 12 counters Number 12	38	49	10% water	fifth term 20
<b>G</b>	Penny	17	156 flowers	\$48.50 tax	Length: 3078 mm Width: 1368 mm
<b>H</b>	Penny	4, 6 make ten	5 eggs	\$33 late fee	Height: 0.64 feet
<b>I</b>	Dime	3, 7 make ten	21 pounds	\$375 earned	2.56 inches
<b>J</b>	2 pieces are the same size, fair	Path B is longer.	$4\frac{3}{4}$	\$39.64	20 total candies
<b>K</b>	Cuts card in 2 equal pieces	Path A is shorter	$9\frac{1}{3}$	\$12.20 tip	\$157.50 total bill
<b>L</b>	Halves OR 1 out of 2 equal pieces	A is shorter than B. B is longer than A.	$99\frac{2}{4}$	25% tip	99 total chickens
<b>M</b>	13 drops of water	49 jelly beans	The 4 facts for $8 \times 4 = 32$	no. labels flipped	\$57 sales price
<b>N</b>	3 thorns	35 fewer	The 4 facts for $6 \times 9 = 54$	yes. scale factor of (x6)	\$31.25 sales price
<b>O</b>	10 miles	52 miles	$7 \times 8 = 56$ $8 \times 7 = 56$ $56 / 7 = 8$ $56 / 8 = 7$	60 students: 1 bus	120 cookies
<b>P</b>	Set of 5 counters Set of 8 counters Mouse (8) had more	18 more	Equivalent to $\frac{1}{3}$ can be $\frac{2}{6}$ or $\frac{3}{9}$ or $\frac{4}{12}$ ....	30 notes hit	66 or 67 cents
<b>Q</b>	Set of 12 counters Set of 11 counters Lion (12) saw more	31 bananas	Equivalent to $\frac{1}{2}$ can be $\frac{2}{4}$ or $\frac{3}{6}$ or $\frac{4}{8}$ ....	$\frac{17}{12}$ or $1\frac{5}{12}$	\$37.89 total cost
<b>R</b>	Set of 12 counters Set of 13 counters Mouse (13) saw more more	28 times	Equivalent to $\frac{1}{4}$ can be $\frac{2}{8}$ or $\frac{3}{12}$ or $\frac{4}{16}$ ....	$4\frac{1}{8}$	3 hours

## CGI CHARTS:

With a few changes, this chart is in New York State's Next Generations Learning Standards for Pre-K to Grade 2, titled, "Common Addition and Subtraction Situations."

### Process:

1. Look for the word problem(s) on the chart with a STAR - ★
2. For Dog Icon packets, start with the "ADD TO - (Result Unknown)" and the "TAKE FROM - (Result Unknown)" word problems from the Unit's CGI Chart.
  - a. If a student struggles, stick with these for the summer so the student becomes secure. Otherwise, you can proceed to the "PUT TOGETHER/TAKE APART – (Total Unknown)" word problems.
3. Have manipulatives and paper for students to choose either medium for solving the problem.
4. Read the problem to students once. **Note:** Each problem has three sets of numbers for you to choose from to fill in the blanks. Use the set that works best for the student(s).
5. **Read the problem again, and then teach students to take notes.**
  - a. Prompt students with questions, and model writing notes. (Kindergarten Students Packets have a mostly blank page called, "Word Problem Work Space," to use for this.)
  - b. What did Deena start with? *5 pennies*. How can we write? *D 5 (or draw 5 circles)*
  - c. What happens next? *She gets 3 more*. How can we write? *+3 (or draw 3 circles)*
  - d. What question do we have to answer? *How many does Deena have now?* How can we write this? *D has \_\_\_?*
6. Give students time to solve. (If struggling, prompt with, "What number does the problem start with?" Do you want to draw this or use manipulatives to recreate it?)
7. Ask students to explain their process before asking them for an answer. This allows students time to self-correct and gives the Educator a clue about how the student is thinking.
8. At the end, look at the final answer together, to decide if it solves the problem. How would you say the answer in a sentence? (*"Deena has 8 pennies now."*)

Unit 4 CGI Problems for *The Classic Treasury of Aesop's Fables* 

<b>Add To</b>	<p><i>(Result Unknown)</i> ★</p> <p>City Mouse had ___ sunflower seeds. Country Mouse gave him ___ more sunflower seeds. How many sunflower seeds does City Mouse have now?</p> <p>3, 1   5, 2   6, 3</p>	<p><i>(Change Unknown)</i></p> <p>City Mouse had ___ sunflower seeds. How many more sunflower seeds will he need to get so that he will have ___ seeds?</p> <p>2, 3   3, 5   4, 7</p>	<p><i>(Start Unknown)</i></p> <p>There were some pebbles in the pitcher. Crow put ___ more pebble(s) in the pitcher. Now there are ___ pebbles in the pitcher. How many pebbles were in the pitcher to start?</p> <p>1, 8   2, 5   3, 6</p>
	<p><i>(Result Unknown)</i> ★</p> <p>Country Mouse had ___ sunflower seeds. He gave ___ sunflower seeds to City Mouse. How many sunflower seeds does Country Mouse have now?</p> <p>10, 1   8, 2   9, 3</p>	<p><i>(Change Unknown)</i></p> <p>City Mouse had ___ dandelion greens. He ate some dandelion greens. Now he has ___ dandelion greens. How many greens did he eat?</p> <p>5, 4   8, 6   10, 7</p>	<p><i>(Start Unknown)</i></p> <p>Country Mouse had some cornbread crumbs. He ate ___. Now he has ___ cornbread crumbs. How many crumbs did he have to start?</p> <p>1, 3   2, 4   3, 5</p>
<b>Put Together/ Take Apart</b>	<p><i>(Whole Unknown)</i> ★</p> <p>Crow dropped ___ small pebbles and ___ big pebble(s) into the pitcher. How many pebbles did he drop into the pitcher all together?</p> <p>2, 2   3, 3   5, 5</p>		<p><i>(Part Unknown)</i></p> <p>Crow dropped ___ pebbles into the pitcher. ___ were big and the rest were small. How many pebbles were small?</p> <p>6, 4   8, 5   10, 7</p>
	<p><i>(Difference Unknown)</i></p> <p>Country Mouse had ___ sunflower seeds. City Mouse had ___ sunflower seeds. How many fewer seeds did Country Mouse have than City Mouse?</p> <p>5, 7   6, 9   5, 10</p>	<p><i>(Quantity Unknown)</i></p> <p>Crow dropped ___ small pebbles into the pitcher. He dropped ___ more big pebble(s) than small pebbles. How many big pebbles did he drop into the pitcher?</p> <p>4, 1   5, 2   7, 10</p>	<p><i>(Referent Unknown)</i></p> <p>Country Mouse has ___ dandelion greens. He has ___ more green(s) than sunflower seeds. How many sunflower seeds does Country Mouse have?</p> <p>9, 1   7, 2   5, 3</p>

Unir	<p>(Resultado desconocido) ★</p> <p>El ratón de la ciudad tenía ___ semillas de girasol. El ratón del campo le dio ___ semillas de girasol más. ¿Cuántas semillas de girasol tiene el ratón de la ciudad ahora?</p> <p>3, 1   5, 2   6, 3</p>	<p>(Cambio desconocido)</p> <p>El ratón de la ciudad tenía ___ semillas de girasol. ¿Cuántas semillas de girasol más necesitará para tener ___ semillas?</p> <p>2, 3   3, 5   4, 7</p>	<p>(Inicio desconocido)</p> <p>Había algunas piedras en la jarra. El cuervo puso ___ piedras más en la jarra. Ahora hay ___ piedras en la jarra. ¿Cuántas piedras había en la jarra al principio?</p> <p>1, 8   2, 5   3, 6</p>
Separar	<p>(Resultado desconocido) ★</p> <p>El ratón del campo tenía ___ semillas de girasol. Él le dio ___ semillas de girasol al ratón de la ciudad. ¿Cuántas semillas de girasol tiene el ratón del campo ahora?</p> <p>10, 1   8, 2   9, 3</p>	<p>(Cambio desconocido)</p> <p>El ratón de la ciudad tenía ___ dientes de león. Se comió algunos dientes de león. Ahora tiene ___ dientes de león. ¿Cuántos dientes de león se comió?</p> <p>5, 4   8, 6   10, 7</p>	<p>(Inicio desconocido)</p> <p>El ratón del campo tiene algunas morusas de pan. Se comió ____. Ahora tiene ___ morusas de pan. ¿Cuántas morusas de pan tenía al principio?</p> <p>1, 3   2, 4   3, 5</p>
Parte-Parte-Entero	<p>(Entero desconocido) ★</p> <p>Un cuervo puso ___ piedras pequeñas y ___ piedras grandes en la jarra. ¿Cuántas piedras puso en la jarra en total?</p> <p>2, 2   3, 3   5, 5</p>		<p>(Parte desconocida)</p> <p>El cuervo puso ___ piedras en la jarra. ___ eran grandes y el resto pequeñas. ¿Cuántas piedras eran pequeñas?</p> <p>6, 4   8, 5   10, 7</p>
Compara	<p>(Diferencia desconocida)</p> <p>El ratón del campo tenía ___ semillas de girasol. El ratón de la ciudad tenía ___ semillas de girasol. ¿Cuántas semillas de girasol menos tenía el ratón del campo que el de la ciudad?</p> <p>5, 7   6, 9   5, 10</p>	<p>(Cantidad desconocida)</p> <p>El cuervo puso ___ piedras pequeñas en la jarra. Él puso ___ piedras grandes más que piedras pequeñas. ¿Cuántas piedras grandes puso en la jarra?</p> <p>4, 1   5, 2   7, 10</p>	<p>(Referente desconocido)</p> <p>El ratón del campo tiene ___ dientes de león. Él tiene ___ dientes de león más que semillas de girasol. ¿Cuántas semillas de girasol tiene el ratón del campo?</p> <p>9, 1   7, 2   5, 3</p>



### Math Objectives

- Share a snack in half.
- Explain why each portion is half.

### Language Objectives

- Explain why each portion is half.
- Share-write what is a half.

### Vocabulary

- half
- fair shares
- equal pieces
- 1 out of 2 equal pieces

### Materials:

(per partner pair, per teacher):

- BLM Snack Bag Fractions
- 2 bags of 100 calorie snacks (1 bag per student)
- 2 paper plates
- 2 paper towels
- 2 pair scissors
- 2 glue sticks
- Chart paper with question: **Did your snack bags divide your snack into fair shares? Why or why not?** Work as a class to decide if the snacks provided in each bag gave each partner fair shares of today's snack, or halves.

## Unit 4, Lesson 2

### Snack Fractions

**Children MUST wash their hands before this activity if using food items.**

Kinder



### Snack Fractions

As part of each math day, please include a quick “Snack Fraction” activity. If your district/school does not allow any snacks to be given to students, please alter the activity by providing the paper shape to be divided into fractional parts.

### Objective:

*Once again we are going to change the way we look at fractions. Today, each student has a full bag of a snack. They are going to open their own bags and find out if the bags have already divided their snack into halves.*

*(Read through the directions with the students first, then walk them through it step by step.)*

- Today you are each going to have your own bag of snack.
- You are going to open your bag of snack, pour it on your paper plate, and count your pieces.
- Now look at your record sheet. “My bag had ---- pieces in it. You are going to write your count on your Snack Bag Fractions record sheet.
- The next statement on your Snack Bag Fractions sheet is “My partner’s bag had \_\_\_ pieces in it. You will write your partner’s count on this line.
- Then you will compare the two numbers. See the comparison words at the bottom of the page? Let’s cut those out right now *(do so)*. We will need one of these words to finish our comparison statement.

*(When everyone has the comparison words cut out, begin step-by-step to walk through the activity.)*

- Distribute the snack bags. *(do so)*
- Empty your snack bags on your paper plate. *(do so)*
- Count the pieces of snacks inside. *(do so)*
- Write the number of pieces on your record sheet. *(do so)*
- Write your partner’s number of pieces on your record sheet. *(do so)*
- Now write the number of pieces in the comparison statement, your number first. *(do so)*
- You and your partner must now decide which comparison word to use *(pause and let them decide)*.

## Unit 4, Lesson 2

Kinder



### Snack Fractions - continued

- Now you and your partner must decide whether your bags gave each of you half of today's snack. If your bags did give you fair shares, circle ARE in the sentence. If you bags did not give you fair shares, circle ARE NOT in the sentence. (*Pause and give students time to do so.*)
- I would like now to hear from each pair. We are going to decide whether our snack bags were fair shares. We are going to write on our chart paper to show each group's records.

#### Writing:

- Share-write the student answers to: **Did your snack bags divide your snack into fair shares? Why or why not?** Talk to each pair and record their numbers and their comparison statement on the chart paper. Decide as a class if that comparison offers halves. Why and why not. What comparison word would they have had to use to show fair shares, or halves? (*equal*)

#### Objectives:

Read the objectives. How did we accomplish these in our snack fraction lesson?