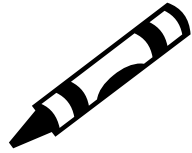
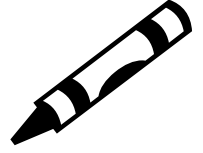
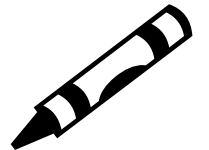


Summer Math

Educator Packet



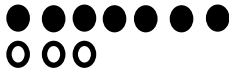
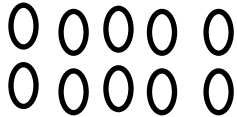
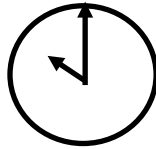
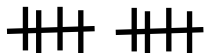
Unit 4



Warm up: Target Number

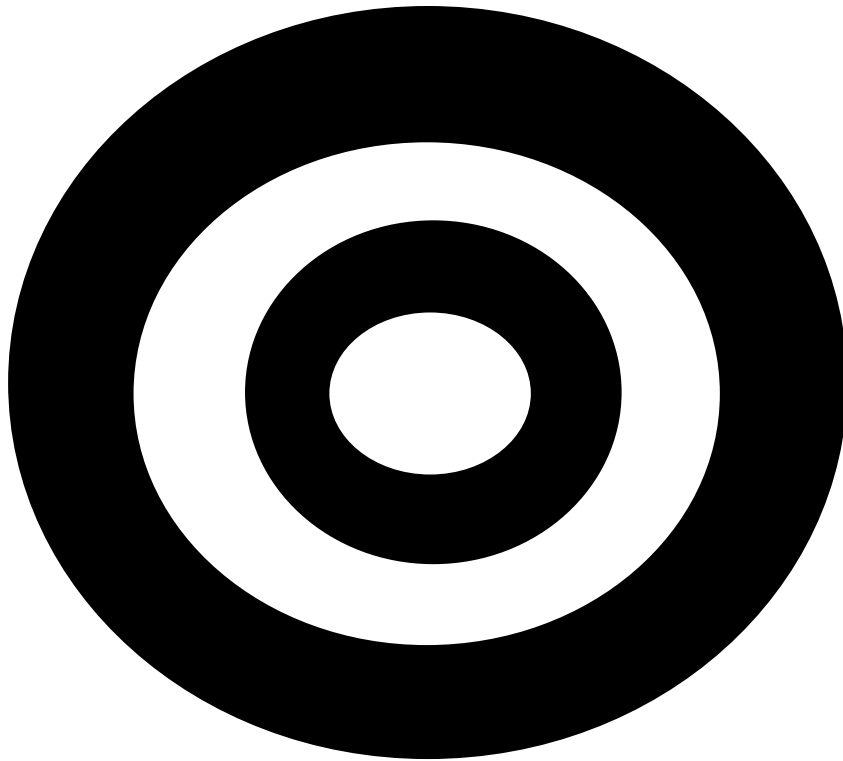
- The task is to represent the target number in different ways in one minute. Do a couple samples with students before starting the timer.
- Set the timer for one minute.
- Educators play along, and write examples to share related to the students' required math fluencies:
- At the end of the minute, 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:

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

Required [Math] Fluencies

Kindergarten	Add and subtract within 5	Procedural Fluency: can easily use a process to figure out the answer (for example, using manipulatives, diagrams)
Grade 1	Add and subtract within 10	Procedural Fluency
Grade 2	Single digit sums and differences (automaticity by the end of Grade 2); Add and subtract within 100	Automaticity by the end of Grade 2: Knows the answer without stopping to use a process to figure out the answers.
Grade 3	Single digit products and quotients (product automaticity by the end of Grade 3)	Automaticity for Products by the end of Grade 3
	Add and subtract within 1,000	Procedural Fluency
Grade 4	Add and subtract within 1,000,000	Procedural Fluency



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 choices:

9

18

6

20

FAMILY FUN GAME Directions

Key Points:

- Starting with Unit 2, the Family Fun Game gives students repeated practice in each of the Math Matters skills. This allows students to practice all of the skills throughout the summer.

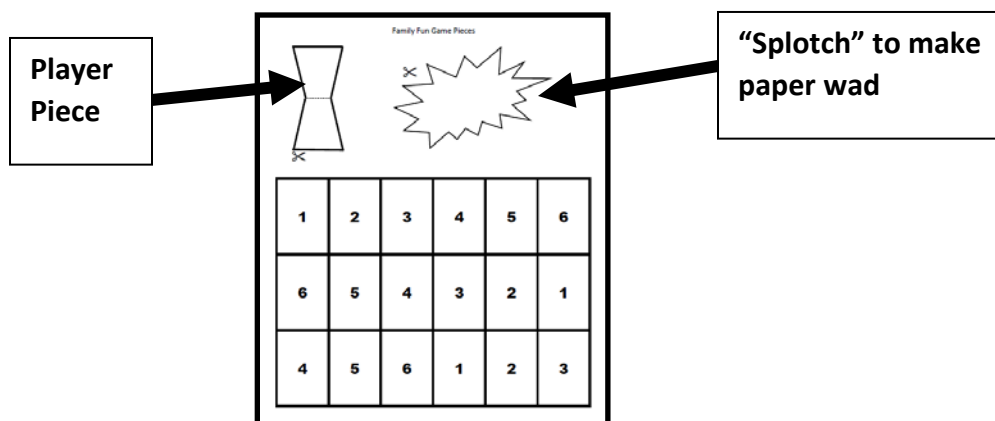
Process:

- Each Student Packet has its own Family Fun Game Cards, allowing each student to participate with students who have different skills to practice.
- Do not cut the cards apart! Starting with Lesson 2, the three cards in each row will practice the same skill.
- Instead of students drawing a card, students select a problem from their grade band sheets. 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.
- 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.
- 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.
- Many students end up reading all of the problems in between turns as they search for the “best” ones to answer.

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 names 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

Problem Letter	Kinder (pink)	1-2 (blue)	3-4 (green)	5-6 (yellow)	7-8 (peach)
A	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	4 eggs	5 + 7 = 12 7 + 5 = 12 12 - 7 = 5 12 - 5 = 7	0.80	$\frac{5}{8}$ or 0.625 cups	6
C	7 brown	8 + 9 = 17 9 + 8 = 17 17 - 9 = 8 17 - 8 = 9	0.08	\$423,294,920.10	4
D	Shows 10 counters Number 10	38	8	2134.448	scale factor 3
E	Shows 15 counters Number 15	23	63	\$7400 down	scale factor 3
F	Shows 12 counters Number 12	38	49	10% water	fifth term 20
G	Penny	17	156 flowers	\$48.50 tax	Length: 3078 mm Width: 1368 mm
H	Penny	4, 6 make ten	5 eggs	\$33 late fee	Height: 0.64 feet
I	Dime	3, 7 make ten	21 pounds	\$375 earned	2.56 inches
J	2 pieces are the same size, fair	Path B is longer.	$4\frac{3}{4}$	\$39.64	20 total candies
K	Cuts card in 2 equal pieces	Path A is shorter	$9\frac{1}{3}$	\$12.20 tip	\$157.50 total bill
L	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
M	13 drops of water	49 jelly beans	The 4 facts for $8 \times 4 = 32$	no. labels flipped	\$57 sales price
N	3 thorns	35 fewer	The 4 facts for $6 \times 9 = 54$	yes. scale factor of (x6)	\$31.25 sales price
O	10 miles	52 miles	$7 \times 8 = 56$ $8 \times 7 = 56$ $56 / 7 = 8$ $56 / 8 = 7$	60 students: 1 bus	120 cookies
P	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
Q	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
R	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."

Key Points:

- Allows students to solve the problem in a way they understand, instead of the "right" way.
 - **NY-1.OA.1** – Use addition and subtraction within 20 to solve one-step word problems involving situations of adding to, taking from, putting together, taking apart, and/or comparing, with unknowns in all positions.
 - ...using objects, drawings and equations with a symbol to represent the unknown.
 - **NY-2.OA.1** – Use addition and subtraction within 100 to solve one-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions.
 - Mastery of all word problems types on the "Common Addition and Subtraction Situations" Chart by end of Grade 2.

Process:

- **Pick one word problem.**
 - Start easy (top left corner of CGI Chart, then work to the left and down as students show confidence.
 - Or use the STAR (Grade 1) ★ or the TRIANGLE (Grade 2) ▲ for types of word problems on the summer math assessments.
- Read the problem to students, using the choice of differentiated numbers to fill in the blanks.
- Read again and encourage students to take notes on the graphic organizer. (modeling, teaching the first time)
- 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?)
- Have manipulatives and paper for students to choose either medium for solving the problem.
- 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.
- At the end, look at the final answer together, to decide if it solves the problem. How would you say this in a sentence?

Unit 4 CGI Problems for Aesop's Fables



<p>Add To</p>	<p><i>(Result Unknown)</i> ★ ▲</p> <p>__ mice were having a meeting in the barn to figure out how to avoid the cat. __ more barn mice came to the meeting. How many mice are at the meeting now?</p> <p>6, 7 8, 5 19, 18</p>	<p><i>(Change Unknown)</i> ▲</p> <p>There were __ pebbles in the pitcher. How many more pebbles will crow need to put in the pitcher in order to have __ pebbles in the pitcher, enough to get a drink?</p> <p>12, 27 18, 41 29, 12</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>6, 15 20, 35 17, 26</p>
<p>Take From</p>	<p><i>(Result Unknown)</i> ★</p> <p>There were __ mice meeting in the barn to figure out how to avoid the cat. __ mice scampered away. How many mice are in the barn now?</p> <p>35, 10 17, 9 22, 13</p>	<p><i>(Change Unknown)</i></p> <p>There were __ mice meeting in the barn to figure out how to avoid the cat. Some mice scampered away. Now there are __ mice at the meeting. How many mice scampered away?</p> <p>12, 5 21, 11 27, 8</p>	<p><i>(Start Unknown)</i></p> <p>Crow had a pile of pebbles. He dropped __ in the pitcher. Now he has __ pebbles in the pile. How many pebbles were in the pile to start?</p> <p>12, 13 17, 8 9, 15</p>
<p>Put Together/ Take Apart</p>	<p><i>Total 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>8, 6 16, 4 19, 15</p>		<p><i>(Addend Unknown)</i></p> <p>Crow dropped __ pebbles into the pitcher. __ were big and the rest were small. How many pebbles were small?</p> <p>14, 5 19, 11 22, 7</p>
<p>Compare</p>	<p><i>(Difference Unknown)</i> ★ ▲</p> <p>The stag had lots of points on his antlers. There were __ points on his left antler, and __ on his right antler. How many fewer points on the left antler than the right?</p> <p>12, 15 14, 18 15, 21</p>	<p><i>(Bigger 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>8, 3 6, 9 19, 5</p>	<p><i>(Smaller Unknown)</i></p> <p>Crow has __ smooth pebbles. He has __ more smooth pebbles than rough pebbles. How many rough pebbles does Crow have?</p> <p>9, 5 8, 7 15, 7</p>

Unit 4 CGI Problems for Aesop's Fables



Grouping and Partitioning	Multiplication	Measurement Division	Partitive Division
	<p>Crow has ___ piles of pebbles. There are ___ pebbles in each pile. How many pebbles does Crow have in all?</p> <p style="text-align: center;">3, 10 6, 5 9, 2</p>	<p>Cat counted ___ mouse feet. There are four feet on each mouse. How many mice were there?</p> <p style="text-align: center;">8 16 32</p>	<p>There are ___ mice that want to have teams to try to put a bell on the cat. If there are ___ teams, how many mice will be on each team if all of the teams have an equal number of mice?</p> <p style="text-align: center;">15, 5 18, 3 20, 10</p>

Unit 4 CGI Problems for Aesop's Fables



<p style="text-align: center;">Unir</p>	<p>(Resultado Desconocido) ★▲ ___ ratones estaban reunidos en el granero para pensar cómo evitar al gato. Otros ___ ratones de granero más vinieron a la reunión. ¿Ahora cuántos ratones hay en la reunión?</p> <p style="text-align: center;">6, 7 8, 5 9, 8</p>	<p>(Cambio Desconocido) ▲ Había ___ piedras en la jarra. ¿Cuántas piedras más tendrá que poner el cuervo en la jarra para tener ___ piedras en la jarra, suficientes para poder beber un trago?</p> <p style="text-align: center;">12, 27 18, 41 29, 12</p>	<p>(Inicio Desconocido) Había algunas piedras en la jarra. El cuervo puso ___ piedra(s) más en la jarra. Ahora hay ___ piedras en la jarra. ¿Cuántas piedras había al principio en la jarra?</p> <p style="text-align: center;">6, 15 20, 35 17, 26</p>
<p style="text-align: center;">Separar</p>	<p>(Resultado Desconocido) ★ Había ___ ratones reunidos en el granero para pensar cómo evitar al gato. ___ ratones se escabulleron. ¿Ahora cuántos ratones hay en el granero?</p> <p style="text-align: center;">35, 10 17, 9 22, 13</p>	<p>(Cambio Desconocido) There were ___ mice meeting in the barn to figure out how to avoid the cat. Some mice scampered away. Now there are ___ mice at the meeting. How many mice scampered away?</p> <p style="text-align: center;">12, 5 21, 11 27, 8</p>	<p>(Inicio Desconocido) Crow had a pile of pebbles. He dropped ___ in the pitcher. Now he has ___ pebbles in the pile. How many pebbles were in the pile to start?</p> <p style="text-align: center;">12, 13 17, 8 9, 15</p>
<p style="text-align: center;">Parte-Parte Entero</p>	<p>(Entero Desconocido) ★ El cuervo dejó caer ___ piedras pequeñas y ___ piedra(s) grande en la jarra. ¿Cuántas piedras dejó caer en la jarra en total?</p> <p style="text-align: center;">8, 6 16, 4 19, 15</p>	<p style="text-align: center;">(Parte Desconocida)</p> <p>El cuervo dejó caer ___ piedras en la jarra. ___ eran grandes y el resto, pequeñas. ¿Cuántas piedras eran pequeñas?</p> <p style="text-align: center;">14, 5 19, 11 22, 7</p>	
<p style="text-align: center;">Comparar</p>	<p>(Diferencia Desconocida) ★▲ El ciervo tiene muchas puntas en sus astas. Había ___ puntas en su asta izquierda, y ___ en su asta derecha. ¿Cuántas puntas menos había en la izquierda respecto de la derecha?</p> <p style="text-align: center;">12, 15 14, 18 15, 21</p>	<p>(Cantidad Desconocida) El cuervo dejó caer ___ piedras pequeñas en la jarra. Dejó caer ___ piedra(s) grande(s) más que piedras pequeñas. ¿Cuántas piedras grandes dejó caer en la jarra?</p> <p style="text-align: center;">8, 3 6, 9 19, 5</p>	<p>(Referente Desconocido) El cuervo tiene ___ piedras lisas. Tiene ___ piedras lisas más que piedras de superficie irregular. ¿Cuántas piedras de superficie irregular tiene el Cuervo?</p> <p style="text-align: center;">9, 5 8, 7 15, 7</p>

Unit 4 CGI Problems for Aesop's Fables



	Multiplicación	División de medidas	División partitiva
Grouping and Partitioning	El cuervo tiene ___ pilas de piedras. Ahora hay ___ piedras en cada pila. ¿Cuántas piedras en total tiene el Cuervo?	El gato contó ___ pies de ratón. Cada ratón tiene cuatro pies. ¿Cuántos ratones había?	Hay ___ ratones que quieren formar equipos para tratar de poner un cascabel al gato. Si hay ___ equipos, ¿cuántos ratones habrá en cada equipo si todos los equipos tienen igual número de ratones?
	3, 10 6, 5 9, 2	8 16 32	15, 5 18, 3 20, 10

Math Objectives

- Use concrete models to represent and name fractional parts of a whole (thirds).
- Use concrete models to represent and name fractional parts of a set of objects (thirds).
- Use appropriate language to describe part of a set, such as 3 out of 4 crayons are red.

Language Objectives

- Explain why each portion is a third.
- Share-write what is a third.
- Use appropriate language to describe part of a set, such as 3 out of 4 crayons are red.
- Explain that the more fractional parts used to make a whole, the smaller the part and the fewer the fractional parts, the larger the part.

Vocabulary

thirds
fair shares
equal pieces

(per group 3, per teacher):

- **BLM** Snack Bag Fractions
- 3 bags of 100 calorie snacks (1 bag per student)
- 3 paper plates
- 3 paper towels
- scissors
- glue stick
- 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 thirds.

Unit 4, Lesson 2

1st – 2nd



Snack Fractions

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

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.

Once again our snack fraction is a little different today. Today you will begin with the actual food. But before you can eat your snack, you must compare.

(Divide students into groups of three. If you need to have a pair, they must use you as a third in their group.)

Each of these snack bags has the same weight of snack inside, and does say that if you eat the entire bag, you will have eaten a 100 calorie snack. But does that mean that the same number of snacks are in each bag? If each of you has a snack bag, do you think that you will have fair shares, the same NUMBER of each snack inside?
(discussion)

We're going to find out. Let's look at our Record sheet to see what is expected of us.

Looking at the sheet, what do you think you each must do first?
(count the snacks in your own bag)

Then, what do you think you must do? *(Share the count with the others on your team. Fill in your own record sheet with the counts.)*

What do you think you will do with the sentence stems? *(Cut out the comparison words at the bottom of the page, then use the counts from the bags and the comparison words to compare the amounts in each bag. Glue the words into place.)*

Finally, you need to make a decision about whether you had fair shares based on the number of snacks in each of your bags. Circle “did” or “did not” to complete the sentence at the bottom of your record sheet. I should hear a lot of discussion in your groups about comparing, more than, less than, and equal to. When will you use the phrase “equal to?”
(when the two bags have the same number of snack items in them)

OK, work with your team to count, compare and complete your record sheet. Then we'll compare notes before you enjoy your snack.

Unit 4, Lesson 2

1st – 2nd

Snack Fractions - continued



QUESTIONS:

- How many snacks do each of you have in your bags?
- How will you use that information to compare the three bags of snacks?
- Explain to me how you know that you have compared all three snacks using the sentence stems.

Discuss all of their findings, and then complete the Snack Fraction Writing assignment before they enjoy their snacks.

Snack Fraction Writing: Chart

Did your snack bags divide your snack into fair shares? Why or why not?

Objectives: Review what you learned and how you learned it.