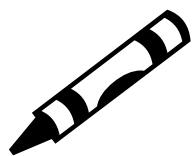# Summer Math

Educator Packet
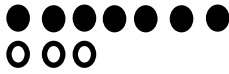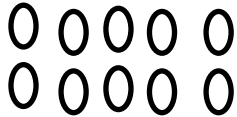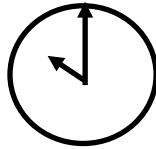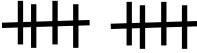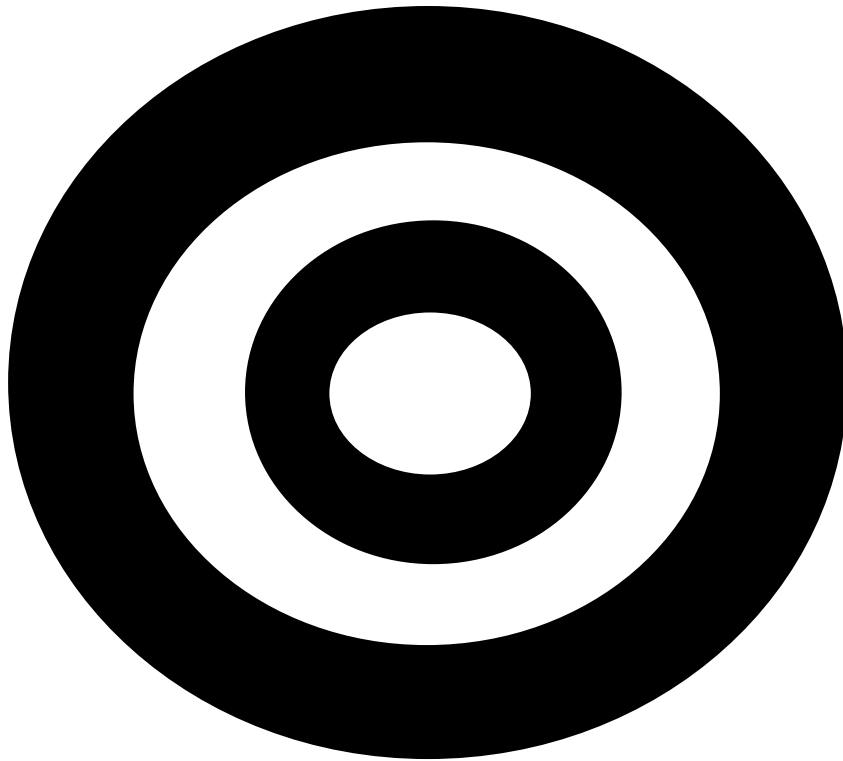
Unit 3

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 x 5 | 100 / 10 | 20/2 |
| 3 + 7 | 0 + 10 | ten | 5 x 2 | 10/1 | 10 x 1 |

●●●●●●● ●●
○ ○○

One dozen eggs take away 2

0 0 0 0 0
0 0 0 0 0

2 + 2 + 2 + 2 + 2

卌 卌

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.
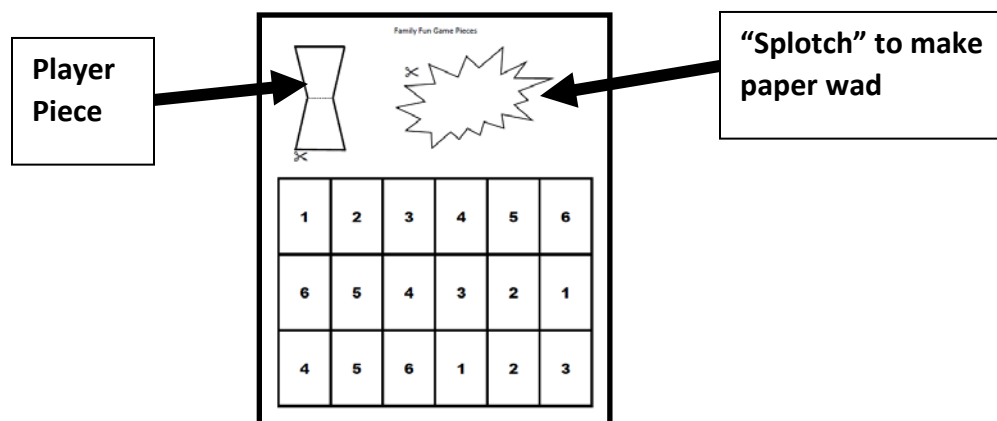
Process:

1. Each Student Packet has its own Family Fun Game Cards, allowing each student to participate 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.
3. 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.
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.
6. 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.

Player Piece → Family Fun Game Pieces ← "Splotch" to make paper wad

1	2	3	4	5	6
6	5	4	3	2	1
4	5	6	1	2	3

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

Problem	Kinder (pink)	1-2 (blue)	3-4 (green)	5-6 (yellow)	7-8 (peach)
A	15 dots Number 15	7 + 6 = 13 6 + 7 = 13 13 -7 = 6 13 – 6 = 7	0.9	2.26	7.5 units
B	5 butterflies Number 5	5 + 8 = 13 8 + 5 = 13 13 – 5 = 8 13 – 8 = 5	0.06	1/6	36 units
C	9 stars Number 9	7 + 9 = 16 9 + 7 = 16 16 – 9 = 7 16 – 7 = 9	0.4	32,770.77	5 units
D	Count out 8 counters	8, 2 make ten	solve for 169	210.55	25 x 30
E	Count out 15 counters	3, 7 make ten	solve for 143	0.75	10.42 feet
F	Count out 10 counters	5, 5 make ten	solve for 195	0.07	L = 7 inches W = 2.8 inches
G	12 ants	14 + 5 = 19 Sue read 19 picture books.	0.45, 0.75	0.05, 5%	$0.20
H	10 leaves	13 – 9 = 4 Eddie picked up 4 fewer rocks.	0.7 0.56	9	$4
I	3 bugs	Divided into 2 equal or same size pieces.	0.08 0.9	18	$1.33 or $1.34
J	2 eggs	4 tens and 5 ones (now count them) 45	4/6 They are equivalent	4 tiles 1 color 1 tile another color	$10.75 (pennies difference for rounding is acceptable)
K	10 eggs	3 tens and 9 ones (now count them) 39	1/2 5/8 is just a little more than a half; 1/3 is smaller than 1/2	5 tiles 1 color 3 tiles another color	$26.22 (pennies difference for rounding is acceptable)
L	8 were brown	6 tens and 6 ones (now count them) 66	1/4 They are equivalent	3 tiles 1 color 7 tiles another color	$14.09 (pennies difference for rounding is acceptable)
M	Penny	5	8/10 = 0.8	3:4 and 3/4	1.5 hr or 1 ½ hours
N	Penny	12	4/10 = 0.4	6:1 and 6/1	3 hours
O	Dime	46	7/10 = 0.7	3:5 and 3/5	9 hours
P	Blue set On bottom	Ally had 33 cupcakes.	5 x 4 = 20 4 x 5 = 20 20 ÷ 5 = 4 20 ÷4 = 5	x = 3	16/1 = x/3 OR 1/16 = 3/x
Q	9 (red) ovals on right	12 cupcakes were not eaten.	24	x = 9	12/1 = x/4 OR 1/12 = 4/3
R	10 (red) hearts on left	17 cupcakes were left.	5	x = 9	36/1 = x/12 OR 1/36 = 12/x

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 3   CGI Problems for *The Monster in the Mattress*   ✏️

Add To	*(Result Unknown)* ★ ▲ ___ of Abuelo's grandchildren were playing in the yard. ___ more grandchildren came out to play. How many grandchildren in all? (10, 6) (8,7) (5, 8)	*(Change Unknown)*▲ Abuelo's grandchildren had ___ green frogs. How many more frogs do the children need to find so that they will have ___ green frogs all together? (15, 25) (7, 12) (9, 17)	*(Start Unknown)* Abuelo's grandchildren had some frogs. They caught ___ more frogs. Now they have ___ frogs. How many frogs did they have to start? (6, 13) (9, 15) (4, 12)
Take From	*(Result Unknown)* ★ ___ of Abuelo's grandchildren were playing in the yard. ___ children went in for a drink. How many children are playing now? (17, 7) (18, 9) (16, 7)	*(Change Unknown)* Abuelo's grandchildren had ___ frogs. Some frogs hopped away. Now there are ___ frogs. How many frogs hopped away? (19, 10) (15, 7) (14, 6)	*(Start Unknown)* Abuelo's grandchildren had some green frogs. ___ frogs hopped away. Now there are ___ frogs. How many frogs did the children have to start? (6, 8) (9, 5) (4, 13)

Put Together/ Take Apart	*(Total Unknown)* ★ Abuelo's grandchildren had ___ green frogs and ___ white frogs. How many frogs did they have in all? (7, 5) (4, 8) (5, 9)		*(Addend Unknown)* Abuelo had ____ candles on his birthday cake. ___ were lit and the rest were not. How many candles were not lit? (50, 25) (50, 13) (50, 37)
Compare	*(Difference Unknown)* ★ ▲ Abuelo's grandchildren had __ green frogs and ___ white frogs. How many fewer green frogs did they have than white frogs? (7, 13) (8, 17) (9, 14)	*(Bigger Unknown)* Abuelo's grandchildren had __ green frogs. They had ___ more white frogs than green frogs. How many white frogs did they have? (5, 6) (8, 9) (12, 7)	*(Smaller Unknown)* Abuelo's grandchildren had __ green frogs. They had __ more green frogs than white frogs. How many white frogs did they have? (15, 7) (18, 9) (19, 6)

Unit 3   CGI Problems for *The Monster in the Mattress*   ✏

	Multiplication	Measurement Division	Partitive Division
Grouping and Partitioning	Abuela decorated Abuelo's birthday cake with lots of candles. She arranged them in___ rows. There were __ candles in each row. How many candles in all? (3, 20) (10, 6) (12, 5)	Abuela decorated Abuelo's birthday cake with ___ candles She put ___ candles in each row. How many rows were there? (60, 10) (60, 5) (60, 30)	Abuela decorated Abuelo's birthday cake with ___ candles. She put the same number of candles in each row. There were ___ rows. How many candles did she put in each row? (70, 7) (70, 35) (70, 10)

Unit 3 CGI Problems for *The Monster in the Mattress* ✏️

	(Resultado desconocido) ★ ▲	(Cambio desconocido) ▲	(Inicio desconocido)
Unir	___ de los nietos de Abuelo jugaban afuera. ___ nietos mas salieron a jugar. ¿Cuántos nietos hay en total? 10, 6 8, 7 5, 8	Los nietos de Abuelo tenían ___ ranas verdes. ¿Cuántas ranas más necesitan encontrar para tener ___ ranas verdes en total? 15, 25 7, 12 9, 17	Los nietos de Abuelo tenían algunas ranas. Atraparon ___ ranas más. Ahora tienen ___ ranas. ¿Cuántas ranas tenían al empezar? 6, 13 9, 15 4, 12
	(Resultado desconocido) ★	(Cambio desconocido)	(Inicio desconocido)
Separaar	___ de los nietos de Abuelo jugaban afuera. ___ muchachos entraron en la casa para una bebida. ¿Cuántos nietos están jugando ahora? 17, 7 18, 9 16, 7	Los nietos de Abuelo tenían ___ ranas. Algunas ranas salieron saltando. Ahora hay ___ ranas. ¿Cuántas ranas salieron saltando? 19, 10 15, 7 14, 6	Los nietos de Abuelo tenían algunas ranas verdes . ___ ranas salieron saltando . Ahora hay ___ ranas. ¿Cuántas ranas tenían los niños al empezar? 6, 8 9, 5 4, 13

	(Total desconocido) ★	(Parte desconocido)
Parte-Parte-Entero	Los nietos de Abuelo tenían ___ ranas verdes y ___ ranas blancas. ¿Cuántas ranas tenían en total? 7, 5 4, 8 5, 9	Abuelo tenía ___ velas en su pastel de cumpleaños. ___ estaban encendidas y lo demás no. ¿Cuántas velas no estaban encendidas? 50, 25 50, 13 50, 37

Unit 3   CGI Problems for *The Monster in the Mattress* ✏

<table>
<tr>
<td rowspan="2">Comparar</td>
<td>

(Diferencia ★▲ desconocida)

Los nietos de Abuelo tenían ___ ranas verdes y ___ ranas blancas. ¿Cuántas ranas verdes menos tenían que ranas blancas?

7, 13   8, 17   9, 14
</td>
<td>

(Comparar a cantidad desconocida)

Los nietos de Abuelo tenían ___ ranas verdes . Tenían ___ ranas blancas más que ranas verdes. ¿Cuántas ranas blancas tenían?

5, 6   8, 9   12, 7
</td>
<td>

(Referente desconocido)

Los nietos de Abuelo tenían ___ ranas verdes . Tenían ___ ranas verdes más que ranas blancas. ¿Cuántas ranas blancas tenían?

15, 7   18, 9   19, 6
</td>
</tr>
</table>

	Multiplicación	**División de medidas**	**División partitiva**
Agupamiento y división	Abuela decoró el pastel de cumpleaños de Abuelo con muchas velas. Las arregló en ___ filas. Había ___ velas en cada fila. ¿Cuántas velas hay en total? 3, 20 10, 6 12, 5	Abuela decoró el pastel de cumpleaños de Abuelo con ____ velas. Metió ___ velas en cada fila. ¿Cuántas filas había? 60, 10 60, 5 60, 30	Abuela decoró el pastel de cumpleaños de Abuelo con ____ velas. Metió el mismo número de velas en cada fila. Había _____ filas. ¿Cuántas velas había en cada fila? 70, 7 70, 35 70, 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 parts 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.

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

STUDENT ACTIVITY (per partner pair):

- **BLM** Jerky Fractions
- 6 small beef jerky pieces
- 2 paper plates
- 2 paper towels
- Chart paper with question: **How do you know that each portion is a third?** Put a copy of the record sheet at the top of the chart with the question.

Unit 3, 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.

Today you are going to share six pieces of jerky, but you are going to pretend that there are THREE of you to share the pickle.

- If you were sharing with three, what would your fractional part of the jerky be? *(one-third, or one out of three pieces)*
- If jerky is your favorite snack, would you rather have 1/2 of a pickle or 1/3 of the jerky? Explain your thinking.

Record Sheet: Before really sharing the jerky with a partner, decide how to share the paper jerky into thirds. Cut out your portion of the paper jerky and glue it to the picture of the paper plate.

SNACK Eating: Now tell the partners that they may each have half of the snack. How much will each receive? Ask, "Which is the greater amount of the snack, one-third or one-half? *(response)* How do you know?"

Snack Fraction Writing: BLM Jerky Fractions

Students identify the fractional part and complete the "because" statement on the record sheet.

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