Summer Math

Educator Packet
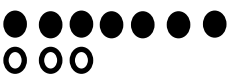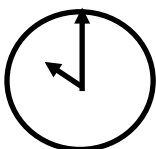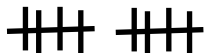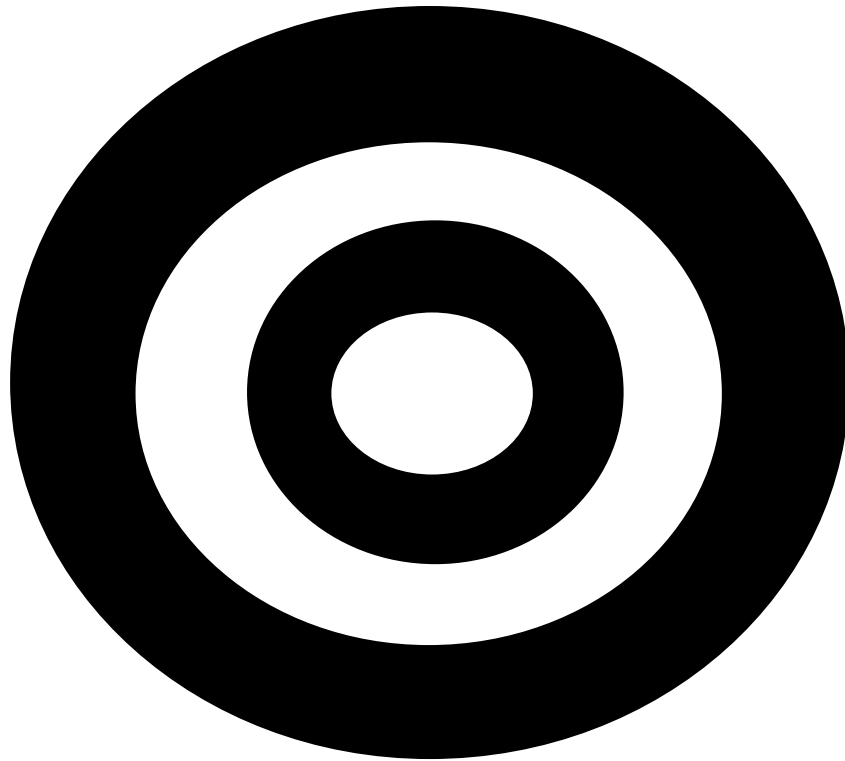
Unit 5

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

● ● ● ● ● ● ● ●
○ ○ ○

0 0 0 0 0
0 0 0 0 0

卌 卌

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.
Grade 1	Add and subtract within 10	*Procedural Fluency*: can easily use a process to figure out the answer.
Grade 2	Single digit sums and differences (automaticity by the end of Grade 2);	*Automaticity* 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	*Procedural Fluency*: 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.
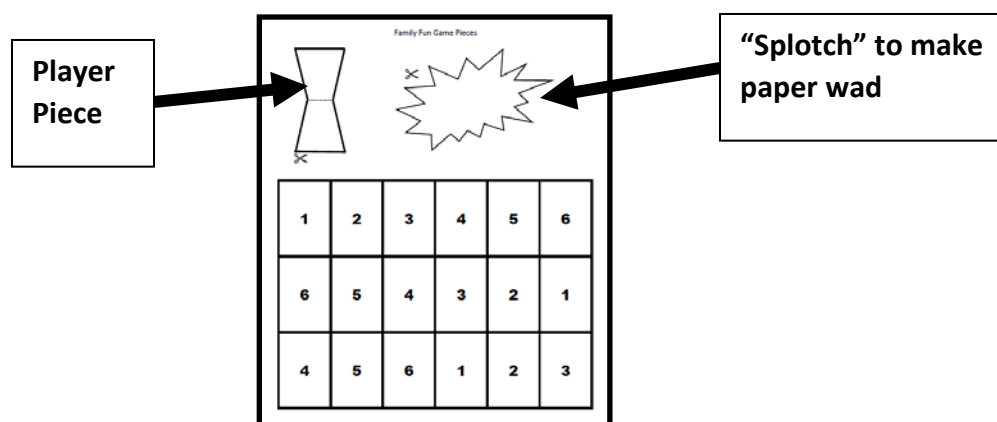
Process:
1. Each Student Packet has its own Family Fun Game Cards, allowing each student to participate together with students who have different skills to practice.
2. Do not cut the cards apart! Starting with Lesson 2, the three cards in each row will practice the same skill.
   a. Many students will 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.
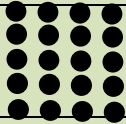
Do It Yourself (DIY) Game Pieces

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

Problem Letter	Kinder (pink)	1-2 (blue)	3-4 Iguana Tales Specific information about strategies in 3-4 packets	5-6 (yellow)	7-8 (orange)
A	15 beans counted Number 15	2, 8 make ten	$79.99	0.5	8
B	9 beans counted Number 9	1, 9 make ten	1/2 (or any equivalence)	$8\frac{1}{8}$	10
C	10 beans counted Number 10	$7 + 9 = 16$ $9 + 7 = 16$ $16 - 9 = 7$ $16 - 7 = 9$	1cpf 2/3, 1 cpf 3/4	$0.01	0.12 cm
D	2 cicadas	$8 + 7 = 15$ $7 + 8 = 15$ $15 - 7 = 8$ $15 - 8 = 7$	(4×4 array of dots)	1,111,111,110	87.5 feet OR 87.50 feet OR 87 ½ feet
E	8 mice	Last week: 12 miles This week: 11 Total:12+11=33miles	63	54.657 grams salt	$\frac{3\ ft}{1\ yd} = \frac{x\ ft}{9\ yd}$
F	9 leaves	David read 24 books.	7 balloons	11.92% chemical B	$\frac{16\ oz}{1lb} = \frac{x\ oz}{5\ lb}$
G	Penny	14	5 pennies	$27.45 tax	$.26 OR 26 cents
H	Nickel	17	30 muffins	$350 tip	$0.40 OR 40 cents
I	Penny	13	0.02	$90 interest	$687.50
J	Top bar	one fourth OR One out of 4 equal pieces	0.75	$230 charged	$31.25
K	9 dots	Circle divided into 4 equal parts	Finished number line	3 cups cashews	3 hours
L	Bar on left	Lucy ate 4 cookies.	8.99	10% tip	4 hours
M	Must cut or tear card into approximately 2 equal pieces	Bob walked 4 miles.	1/4 = 0.4	False. Scale factor not consistent	$428
N	Halves, or 1 out of 2 equal pieces	7	0.07	True. Scale factor = (÷4) or(x $\frac{1}{4}$)	$1030.00
O	Both pieces are the same size	17		120 cotton balls: 1 bag	$18.34 or $18.35
P	7 flowers	65		48 babies	$59.34
Q	4 flowers	80		$\frac{12}{12}$ or 1 whole $2\frac{7}{15}$	200
R	0 frogs	85			96

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.")*

	(Result Unknown) ★	(Change Unknown)	(Start Unknown)
Add To	Juana the Ant had ___ leaves. Celestina the Cicada gave her ___ more leaves. How many leaves does Juana have now? 1, 9 2, 5 3, 7	Juana gathered ___ crumbs. How many more crumbs will Juana need to gather to have ___ crumbs for the winter? 9, 10 8, 10 7, 10	Celestina had some leaves. Juana gave her ___ more leaves. Now Celestina has ___ leaves. How many leaves did Celestina have to start? 1, 8 2, 9 3, 10

	(Result Unknown) ★	(Change Unknown)	(Start Unknown)
Take From	There were ___ meadow toads sitting on a rock by the pond. ___ toad(s) hopped away. How many toads are there now? 10, 1 9, 2 8, 3	Little Brown Duck had ___ brown ducklings. Some ducklings swam away. Now he has ___ brown ducklings. How many ducklings swam away? 5, 4 7, 5 9, 6	Some little brown ducklings were swimming in a line. ___ ducklings stopped to eat. Now there are ___ ducklings swimming in a line. How many ducklings were swimming to start? 2, 2 3, 4 7, 4

	(Whole Unknown) ★	(Part Unknown)
Put Together/ Take Apart	___ baby toads and ___ grown-up toads sing at the pond. How many toads all together? 2, 3 3, 4 0, 6	___ meadow toads were singing at the pond. ___ were babies and the rest were grown-ups. How many toads were grown-ups? 5, 4 7, 5 10, 7

	(Difference Unknown)	(Quantity Unknown)	(Referent Unknown)
Compare	Celestina had ___ leaves. Juana had ___ leaves. How many more leaves did Celestina have than Juana? 8, 7 5, 3 7, 4	Celestina had ___ crumbs. Juana had ___ more crumb(s) than Celestina. How many crumbs did Juana have? 6, 1 7, 2 3, 4	There were ___ blue buttons on the floor. There were ___ more blue than red buttons. How many red buttons were there? 6, 2 9, 3 12, 2

	(Resultado desconocido) ★	(Cambio desconocido)	(Inicio desconocido)
Unir	Juana la hormiga tenía ___ hojas. Celestina la cigarra le dio ___ hojas más. ¿Cuántas hojas tiene Juana ahora? 1, 9 2, 5 3, 7	Juana reunió ___ migas. ¿Cuántas migas más necesitará Juana reunir para tener ___ migass para el invierno? 9, 10 8, 10 7, 10	Celestina tenía algunas hojas. Juana le dio ___ hojas más. Ahora Celestina tiene ___ hojas. ¿Cuántas hojas tenia Celestina al principio? 1, 8 2, 9 3, 10
Separar	(Resultado desconocido) ★ Había ___ sapos sentados en una roca en el estanque. ___ sapos saltaron. ¿Cuántos sapos quedaron en la piedra? 10, 1 9, 2 8, 3	(Cambio desconocido) El pequeño pato café tenía ___ patitos color café. Algunos patitos se fueron nadando. Ahora él tiene ___ patitos color café. ¿Cuántos patitos se fueron nadando? 5, 4 7, 5 9, 6	(Inicio desconocido) Algunos pequeños patitos color café estaban nadando en línea. ___ patitos se detuvieron a comer. Ahora hay ___ patitos nadando en línea. ¿Cuántos patitos estaban nadando al principio? 2, 2 3, 4 7, 4
Parte-Parte -Entero	(Entero desconocido) ★ ___ sapos bebés y ___ sapos adultos cantan en el estanque. ¿Cuántos sapos hay en total? 2, 3 3, 4 0, 6	(Parte desconocida) ___ sapos estaban cantando en el estanque. ___ eran bebés y el resto adultos. ¿Cuántos sapos adultos había? 5, 4 7, 5 10, 7	
Comparar	(Diferencia desconocida) Celestina tenía ___ hojas. Juana tenía ___ hojas. ¿Cuántas hojas más tenía Celestina que Juana? 8, 7 5, 3 7, 4	(Cantidad desconocida) Celestina tenía ___ migas. Juana tenía ___ migas más que Celestina. ¿Cuántas migas tenía Juana? 6, 1 7, 2 3, 4	(Referente desconocido) Había ___ botones azules en el piso. Había ___ botones azules más en el piso. Había ___ botones azules más que botones rojos. ¿Cuántos botones rojos había? 6, 2 9, 3 12, 2

Snack Fractions

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

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 of 2 equal pieces

Materials:
TEACHER
Chart paper with question**: How do you know you each have half of the snack?**

- **BLM** Crackers and Nutella Fractions Class Sheet – 1 for teacher only
- 4" x 4" piece of paper for each student

Per partners:
- 4 graham crackers (full sheets)
- 2 T Nutella (1 T in each of 2 portion cups)
- 2 paper plates
- 2 paper towels
- 2 plastic knives
- Chart paper with question**: How do you know you each have half of the snack?**

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:
Today's snack fraction is a little different. We are going to share our snack. Then as you are enjoying your snack, I will come around to each of you and ask you to share a pretend snack with me.

Let's look at the snack we have today. (*Show crackers.*)
How many crackers are there? *(4)*
What shape are the crackers? (*rectangles*)
Here is another part of our snack. (*Show the Nutella in two containers of 1 T each.*)

I would like for you and your partner to talk and make a plan about how you can divide the four crackers and two containers of Nutella so that you each have fair shares. Do NOT divide the snack until we have all talked about the plans in the room. OK, start your planning.

(*As the students plan, you will need to draw on the board or chart paper as many sets of four rectangles and two circles as you have partners in the room. When all partners are ready, share their plans as follows.*)

Alright, let's talk about your plans. I have drawn some shapes on the board to represent your snacks. What do you think the rectangles represent? How do you know? *(shape and number)* What do you think the circles represent? How do you know? *(shape and number)* As you describe your plan, I will divide the pictures so we can verify whether you have planned to divide the snack into fair shares. (*Or let the student pairs come up and draw as they explain – your choice.*)

As each group describes, divide the snack exactly as they describe. This one shouldn't be difficult for them. The class should verify whether the crackers and Nutella are divided into halves by telling you in their own words either: Yes, they are halves because each partner will receive the same amount of the snack; OR No, they are not halves because one partner will have more than the other. If that is the case, tell the student partners to come up with another plan. Once all partners have shared and the class is confident that all plans will yield halves, let the students share their snack.

Snack Fractions – Part 2 – Unit 5

After student(s) eat their snack, ask them to use the Snack Fraction page in their packet to make fair shares.

I would like you to share this paper with me in fair shares.
- Students draws, folds or cuts equally or very close to it

What else do you call these fair shares?
- Half, on- half, halves, one of two equal pieces

How do you know that you divided the paper into halves?
- Two equal pieces, fair, fair shares, same, etc.
- *Tried to* be equal, fair, etc.