Summer Math

Educator Packet
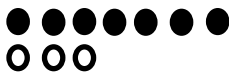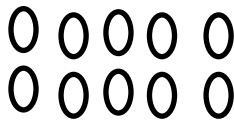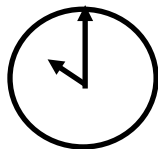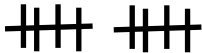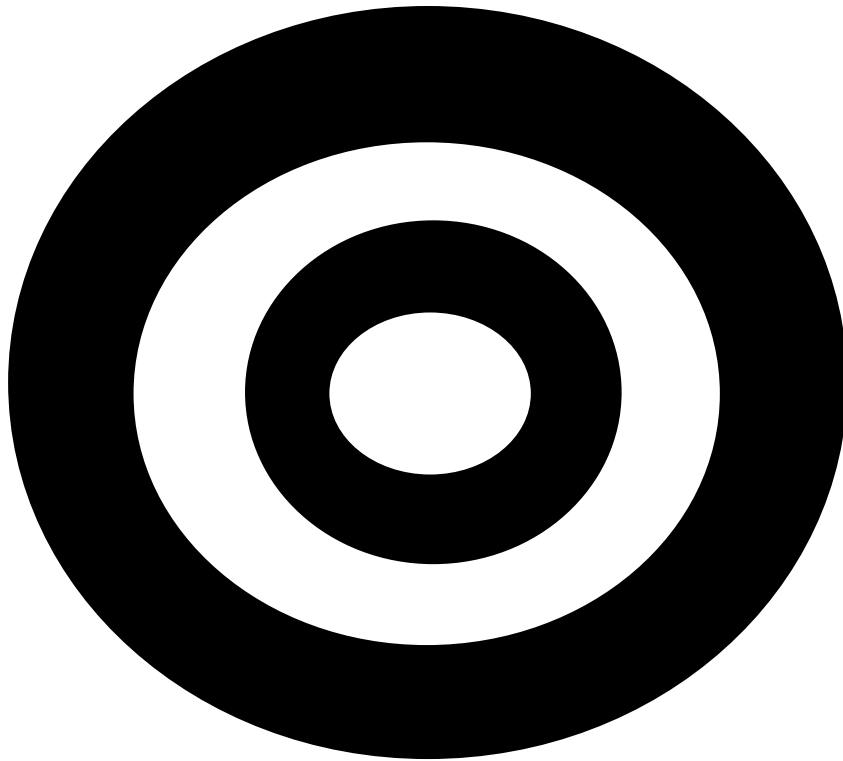
Unit 2

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.
    a. Start all groups with the numbers 12 and 15.
        i. All target numbers are fair to use with students in grades 1 through 8.
        ii. Use numbers 20 and under for any "Cat-Icon" students in the group.
- 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   2 + 2 + 2 + 2 + 2   100 - 90

Required [Math] Fluencies

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***
Grade 5	Multi digit multiplication	***Procedural Fluency***
Grade 6	Multi digit division; multi digit decimal operations	***Procedural Fluency***
Grade 7	Solve two step equations in the form of px + q = r and p(x +q) = r	***Procedural Fluency***
Grade 8	Solve simple 2 x 2 systems of equations by inspection/substitution	***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.
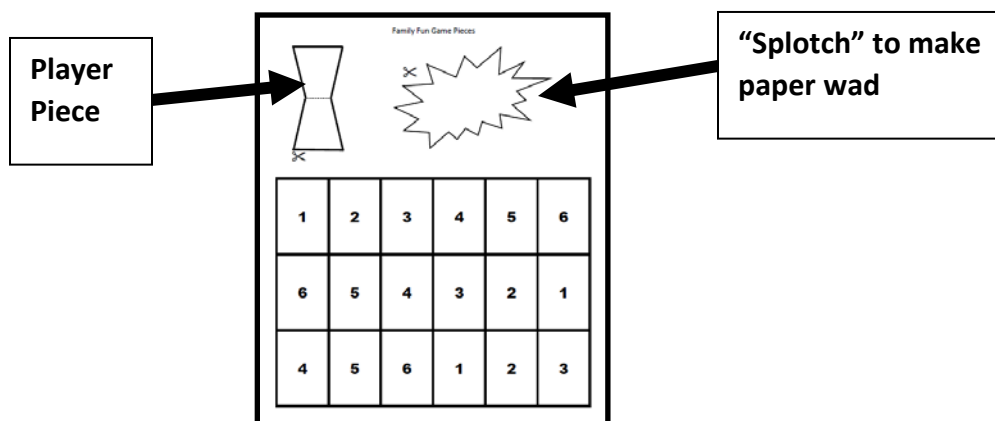
Process:

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.

BLM Unit 2 Family Fun Game Answer Key - All Levels

Problem Letter	Kinder	1-2	3-4	5-6	7-8
A	10 ¢	$46	$2 \times 5 = 10$ $5 \times 2 = 10$ $10 \div 2 = 5$ $10 \div 5 = 2$	1.25	50% increase
B	10 ¢	$59	$5 \times 4 = 20; 20 \div 4 = 5$	1.21	75% increase
C	12 ¢	$45	$3 \times 6 = 18; 18 \div 6 = 3$	0.22	20% decrease
D	11 cents	$40	42	three-sixths or half	$\dfrac{8 \text{ oz}}{1 \text{ c}} = \dfrac{x \text{ oz}}{3 \text{ c}}$
E	10 cents	$90	8	five-eighths	$\dfrac{16 \text{ oz}}{1 \text{ lb}} = \dfrac{x \text{ oz}}{4 \text{ lb}}$
F	12 cents	$85	45	three-eighths	$\dfrac{36 \text{ in}}{1 \text{ yd}} = \dfrac{72 \text{ in}}{x \text{ yd}}$
G	15 cents	$37	5 blouses	$108.55	$0.60 or 60¢
H	14 cents	$52	$4 each	6.4 miles	$1.75
I	18 cents	$26	4 in each row	50.2 miles	$0.90 or 90¢
J	6 + 4	$2 + 7 = 9$ $7 + 2 = 9$ $9 - 2 = 7$ $9 - 7 = 2$	0.76	9	$13.14
K	5 + 5	$7 + 3 = 10$ $3 + 7 = 10$ $10 - 7 = 10$ $10 - 3 = 7$	0.08	7	$18.90
L	1 + 9	$6 + 9 = 15$ $9 + 6 = 15$ $15 - 9 = 6$ $15 - 6 = 9$	0.19	9	$15.90
M	10, 20, 30, 40, 50, 60, 70, 80, 90, 100	22 perch	$\dfrac{9}{10}$	14	$2.59
N	9 ants	6 fish were left	6/10	42	$7.50
O	5 bugs	10 tadpoles left	4/10	16	$4.58
P	4 coyotes	8, 2 make 10	0.33 , 0.5	one-thrid	$1.64
Q	7 sage leaves	1, 9 make 10	11.99	three-sixths or half	$2.36
R	$5 - 1 = 4$	3, 7 make ten	Drew	five-eighths	$3.75

CGI CHARTS:

While the New York State's Next Generations Learning Standards for Grade 5 and Grade 6 do not have a chart of sample word problems, the CGI Chart for Grades 5 and 6 give the students practice multiplying with fractions and decimals. Additionally, the CGI process supports students in reading and solving word problems.

Process:

1. ***Pick one word problem.*** Spend time on the process instead of a quick answer.

2. **Read the problem to students,** using the choice of differentiated numbers to fill in the blanks.

3. ***Read again and encourage students to take notes on the graphic organizer***. (modeling, teaching the first time)

4. ***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?)
   a. Have manipulatives and paper for students to choose either medium for solving the problem.

5. ***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.

6. ***At the end, look at the final answer together, to decide if it solves the problem***. How would you say this in a sentence?

	Unknown Product $a \times b = ?$	Group Size Unknown $a \times ? = p$ and $p \div a = ?$	Number of Groups Unknown $? \times b = p$ and $p \div b = ?$
Equal Groups	The sun shines 24 hours a day during the summer months on the tundra, a far-north terrestrial biome. If summer lasts 84 days in this biome, how many hours of continuous sunshine is that?	The Cuban Tody, a small bird living in the tropical dry forest of Cuba, feeds its chicks up to 140 insects. If there were 560 insects available in the flight area, how many chicks could that feed for a day?	Bears hibernate to avoid extreme cold. During one phase to prepare for hibernation, a bear can eat up to 20,000 calories per day. If the bear eats about 5 times during the day, how many calories would each meal be?
Rate	Moose live in the boreal forest biome. They are great swimmers and can swim up to 5.9 miles per hour. At that rate, how far could they swim in 3 hours?	Moose live in the boreal forest biome. Their normal walking speed is 4 miles per hour. At that rate, how long would it take them to walk 1 mile?	Moose live in the boreal forest biome. They can run 35 miles per hour for short periods. At that rate, how many miles could they run in 20 minutes?
Price	Anna's family visited the Aransas Wildlife Refuge on the shimmering Texas gulf. They each bought a Whooping Crane boat tour ticket for $12.95. If there were 5 in her family, what was the total ticket cost of the boat tour?	Anna wanted to buy drinks on board the tour boat for her family. If she had $20.67, and the drinks cost $3 each, how many drinks could she buy?	Anna spent $57.50 on pictures from her trip to the Aransas Wildlife Refuge. She wanted to give each of her family of 5 a photo album with the same number of photos in it. What would the pictures for each album cost?
Fractions	A capybara, a savanna-living animal and the world's largest rodent, eats 2/3 of a pound of grass per meal. If it eats three meals per day, how many pounds of grass will it eat in a week?	A capybara, a savanna-living animal and the world's largest rodent, eats about 2/3 of a pound of grass in a meal. If there were 6 pounds of grass available to one capybara, how many meals would that make for him?	The banana slug is the second largest terrestrial slug in the world. If it can eat 3/4 of a tablespoon of detritus, or dead organic matter, in a meal, how many meals could it have out of 16 tablespoons?

	Multiplicación	**División de medida**	**División partitiva**
Agrupamiento/División	El sol brilla las 24 horas del día durante los meses del verano en la tundra, un bioma terrestre. Si el verano dura 84 días en este bioma, ¿durante cuántas horas brillará el sol continuamente?	El barrancolí cubano, un pájaro pequeño que vive en el bosque seco tropical de Cuba, alimenta a sus pichones hasta 140 insectos. Si hubiese 560 insectos disponibles en el área de vuelo, ¿cuántos polluelos pudiesen alimentarse con esa cantidad de insectos al día?	Los osos invernan huyéndole al frío extremo. Durante una fase en la que se preparan para invernar, un oso puede ingerir hasta 20,000 calorías al día. Si el oso come alrededor de 5 veces al día, ¿cuántas calorías ingiere cada vez que come?
Razón	Los alces viven en el bioma del bosque boreal. Son grandes nadadores y pueden nadar a una velocidad de hasta 5.9 millas por hora. A esa razón, ¿cuán lejos pueden nadar durante 3 horas?	Los alces viven en el bioma del bosque boreal. Caminan normalmente a una velocidad de 4 millas por hora. A esa razón, ¿cuánto tiempo les tomaría caminar 1 milla?	Los alces viven en el bioma del bosque boreal. Pueden galopar a una velocidad de 35 millas por hora durante periodos breves. A esa razón, ¿cuántas millas podrían galopar durante 20 minutos?
Precio	La familia de Anna visitó el Refugio Nacional de Vida Silvestre de Aransas, ubicado en el golfo reluciente de Tejas. Cada uno de ellos compró una excursión en bote Whooping Crane por $12.95. Si había 5 personas en su familia, ¿cuál fue el total de los boletos para la excursión en bote?	Anna quería comprar bebidas a bordo del botepara su familia. Si tenía $20.67 y cada bebida costaba $3, ¿cuántas bebidas podía comprar?	Anna gastó $57.50 en fotografías del viaje al Refugio Nacional de Vida Silvestre de Aransas. Quería darle a cada persona de su familia de 5, un álbum de fotos con la misma cantidad de fotos en cada uno. ¿Cuánto costarían las fotos de cada álbum?
Fracciones	Los árboles de arce, roble y abedul son comunes en el bosque templado caducifolio. Cuando estaba verificando la combinación de estos 3 árboles en un radio de 10 millas, un investigador encontró que los arces tenían la mitad de la combinación y los abedules tenían alrededor de una quinta parte de la combinación. ¿Qué fracción de la combinación sería la de los robles?	Un carpincho, un animal que vive en la sabana y el roedor más grande del mundo, ingiere alrededor de 2/3 de libra de hierba en cada comida. Si hubiera 6 libras de hierba disponibles para cada carpincho, ¿cuántas comidas podría comer el carpincho?	La babosa del plátano es la segunda babosa en tamaño del mundo. Si puede comer ¾ de una cucharada de detritus, o materia orgánica muerta, en cada comida, ¿cuántas comidas puede comer de 16 cucharadas?

Materials • 2 paper dessert plates • 2 paper towels • 1 plastic knife • 2 pieces wax paper • 2 pair of scissors • 2 cups trail mix (pre-packaged or home-made) **Allergy Warning – please substitute a nut-free mix for the entire class if nut allergies are present.* *All items listed above per partner pair* • **BLM** Trail Mix-Snack Fractions • **BLM** Trail Mix-Snack Fractions Teacher Guide **Math Vocabulary** array model area model factors products multiples prime factors greatest common factor least common multiple **Literature Vocabulary** biomes terrestrial visitors dazzling shimmering deciduous temperate	**Unit 2, Lesson 2** **Grades 5-6** ## Snack Fractions -- **Students should wash their hands before this activity if using food items.** -- **Math Objectives** • Use addition, subtraction, multiplication and division to solve problems involving fractions, decimals, ratios, and percents. • Convert between fractions, decimals, and percents. • Estimate to find solutions to problems involving fractions, decimals, and percents. **Language Objectives** • Discuss how fractions, decimals, ratios, and percents can be used to solve real-world problems. -- **Snack Fractions** Tell students they will use the same process today that they used in the Snack Fraction for Lesson 1. Students should have the skills to answer these in small groups. Have the students work through the BLM before sharing the actual snack. Circulate the room while students are working on the BLM, asking questions as needed to guide, redirect, extend: **QUESTIONS** • What does this fraction mean? • How did you know where to "cut" the trail mix? • How did you change your decimal to a percent? Once the activity is complete, let them enjoy their trail mix! **Snack Fraction Journal Writing: BLM Trail Mix-Snack Fractions** Explain how you found the percent for two-fifths of the trail mix. **Objectives:** Review the objectives with the class, making sure they understand how they achieved each.