

Summer Math

Educator Packet



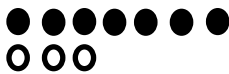
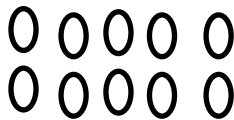
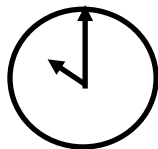
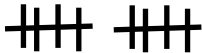
Unit 3



Warm up: Target Number

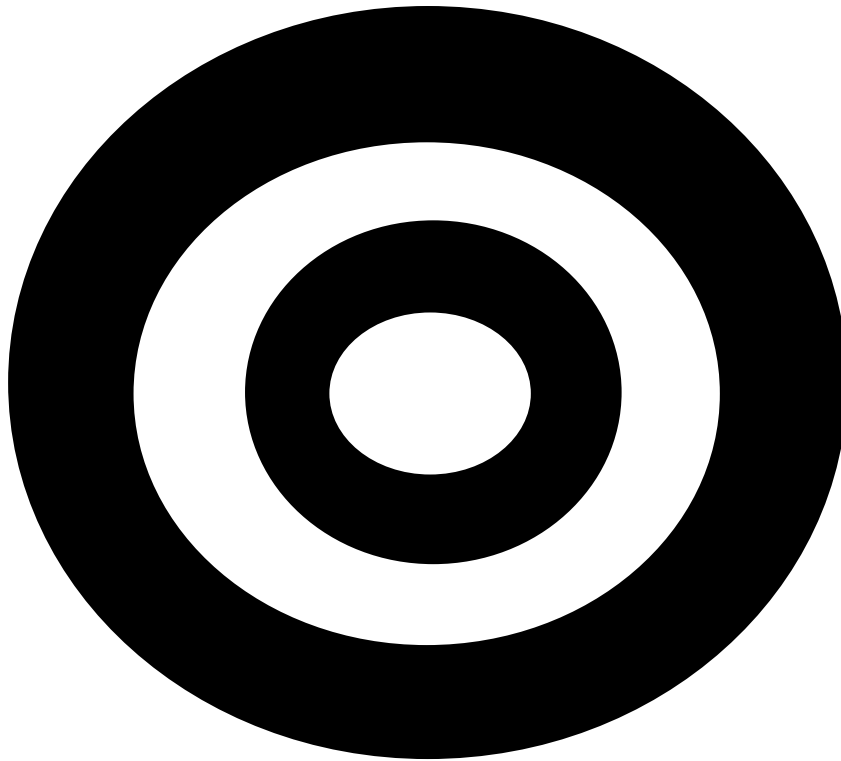
- The task is to represent the target number in different ways in one minute. Do a couple samples with students before starting the timer.
 - Start all groups with the numbers 12 and 15.
 - All target numbers are fair to use with students in grades 1 through 8.
 - Use numbers 20 and under for any “Cat-Icon” 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:

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

Required [Math] Fluencies

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 2×2 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.

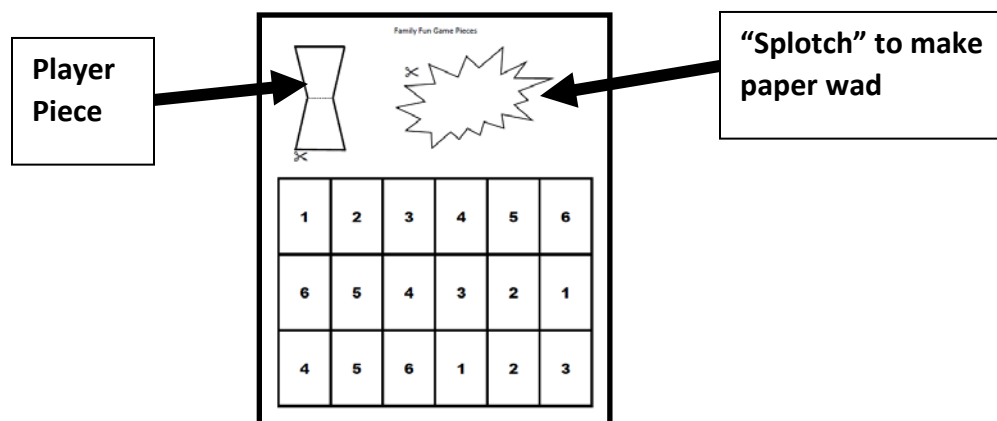
Process:

- 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 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	25×30
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 $1 \frac{1}{2}$ 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.	$5 \times 4 = 20$ $4 \times 5 = 20$ $20 \div 5 = 4$ $20 \div 4 = 5$	$x = 3$	$16/1 = x/3$ 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:

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	There are 4 dozen lemons in a crate. How many lemons are in 12 crates?	The grocer packed 15 dozen lemons into boxes. If he packed half a dozen lemons in each box, how many boxes would he need?	Tina had 65 lemons. She plans to make 15 pitchers of lemonade from them. How many lemons will she use in each pitcher?
Rate	Tina squeezes fresh lemons to make her super duper lemonade. If Tina can squeeze 3 lemons in 60 seconds, how many lemons can she squeeze in a half hour?	Tina has a sack of 224 lemons. If she uses 30 lemons per day, how many days will the sack of lemons last?	Tina has 400 lemons that must last her 2 weeks. How many lemons can she use per day?
Price	Tina sold her super duper ice cold lemonade for 50 cents per glass. In one week, Tina sold 139 glasses. How much money did Tina take in that week?	Tina sold \$173.00 worth of lemonade. If each glass cost 50 cents, how many glasses did Tina sell?	Tina sold \$69.00 worth of lemonade yesterday. If she sold 138 glasses, what did she charge for each glass?
Fractions	The average glass of lemonade contains the juice of about $\frac{1}{4}$ of a lemon. If Tina sold 15 glasses, how many lemons did she use?	Tina has $\frac{3}{4}$ of a sack of lemons. A full sack weighs 50 pounds. How many pounds of lemons does Tina have?	Tina has $\frac{2}{3}$ of a bag of lemons. It weighs 40 pounds. How many pounds does a whole sack weigh?

	Multiplicación	División de medidas	División partitiva
Agrupamiento y división	Hay 4 docenas de limones en una caja. ¿Cuántos limones hay en 12 cajas?	El tendero empaquetó 15 docenas de limones en cajas. Si empaquetó media docena de limones en cada caja, ¿cuántas cajas necesita?	Tina tenía 65 limones. Con ellos, piensa hacer 15 jarras de limonada. ¿Cuántos limones va a usar en cada jarra?
Razón	Tina exprime limones frescas para hacer su limonada súper súper fría. Si Tina puede exprimir 3 limones en 60 segundos, ¿cuántos limones puede exprimir en media hora?	Tina tiene un saco de 224 limones. Si usa 30 al día, ¿cuántos días va a alcanzar el saco?	Tina tiene 400 limones que le tienen que alcanzar dos semanas. ¿Cuántos limones puede usar cada día?
Precio	Tina vendió su limonada súper súper fría por 50 centavos el vaso. En una semana, Tina vendió 139 vasos. ¿Cuánto dinero se ganó Tina esa semana?	Tina vendió \$173.00 de limonada. Si cada vaso costó 50 centavos, ¿cuántos vasos vendió?	Tina vendió \$69.00 de limonada ayer. Si vendió 138 vasos, ¿cuánto cobró por vaso?
Fracciones	Como promedio, un vaso de limonada contiene el jugo de $\frac{1}{4}$ de un limón. Si Tina vendió 15 vasos, ¿cuántos limones usó?	Tina tiene $\frac{3}{4}$ de un saco de limones. Un saco lleno pesa 50 libras. ¿Cuántas libras de limones tiene Tina?	Tina tiene $\frac{2}{3}$ de un saco de limones. Pesa 40 libras. ¿Cuántas libras pesa un saco completamente lleno?

Materials

- 3 paper dessert plates
- 3 paper towels
- 6 pieces of beef jerky

All items above per group of three

- **BLM** Beef Jerky-Snack Fractions
- **BLM** Beef Jerky-Snack Fractions Teacher Guide

Math Vocabulary

ratio
proportion
equivalent ratios
variables

Literature Vocabulary

detective
victim
suspect
culprit
clue
evidence
motive

Unit 3, Lesson 2

Snack Fractions

Grades 5-6



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

Math Objectives

- Represent and solve addition and subtraction of fractions with like and unlike denominators referring to the same whole using objects and pictorial models, including area models.
- Add and subtract positive rational numbers fluently.
- Represent and solve multiplication of a whole number and a fraction that refers to the same whole using objects and pictorial models, including area models.

Language Objectives

- Discuss how fractions, decimals, ratios, and percents can be used to solve real-world problems.

Snack Fractions

The Snack Fraction activities for this unit will focus on combining fractional parts and dividing into thirds. This means they will work in groups of three. A Teacher Guide for the BLM is provided.

The snack for this lesson represents a set model (*group of objects defined as a whole*). The six pieces of jerky are boxed in to show that it is considered a whole. **The snack is NOT considered six wholes.**

QUESTIONS

- What is the whole in this situation?
- How do I break this up into equal shares?
- What does that fraction represent?
- Does this fraction have an easily calculated decimal equivalent?
- How can you find the decimal of this fraction?

Once the activity is complete, let them enjoy their beef jerky!

Snack Fraction Journal Writing: BLM Beef Jerky-Snack Fractions

Explain why $\frac{2}{3} + \frac{1}{3} = 1$ whole.

Objectives: Review the objectives with the class, making sure they understand how they achieved each.

Unit 3 Lesson 1 – Snack Fractions
TEACHER KEY



Beef Jerky – Snack Fractions

Divide the snack equally between the THREE of you. Work with your group to solve the problems.

1. What fraction represents your portion of the beef jerky out of the whole?

word two-sixths or one-third

fraction $\frac{2}{6} = \frac{1}{3}$

decimal 0.33

percent 33%

2. What fraction represents your portion and one partner out of the whole?

word four-sixths or two-thirds

fraction $\frac{4}{6} = \frac{2}{3}$

decimal 0.66

percent 66%

3. What fraction represents your portion and two partners out of the whole?

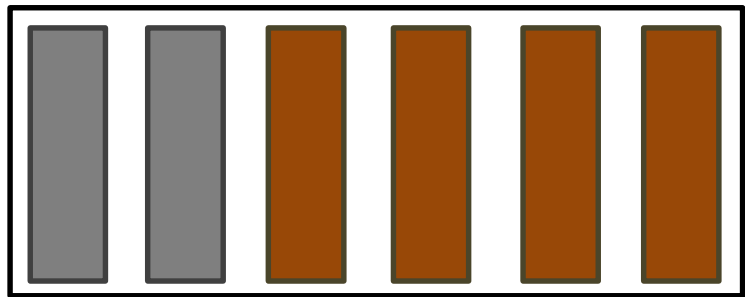
word six-sixths or one whole

fraction $\frac{6}{6} = 1$ whole

decimal 1.0

percent 100%

4. Using the picture, represent your portion when shared between you and your two partners.



Now pretend there are six of you sharing the whole snack.

5. What fraction represents your portion and one partner out of the whole?

word one-sixth

fraction $\frac{1}{6}$

6. What fraction represents your portion and two other partners out of the whole?

word three-sixths

fraction $\frac{3}{6} = \frac{1}{2}$

decimal 0.5

percent 50%

7. Using the picture, prove that $\frac{2}{6}$ is equivalent to $\frac{1}{3}$. Each colored jerky represents $\frac{1}{6}$. Lines show $\frac{1}{3}$.

