

# Summer Math

## Educator Packet



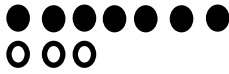
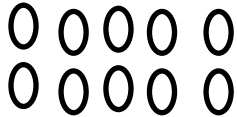
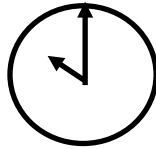
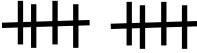
## Unit 1



## Warm up: Target Number

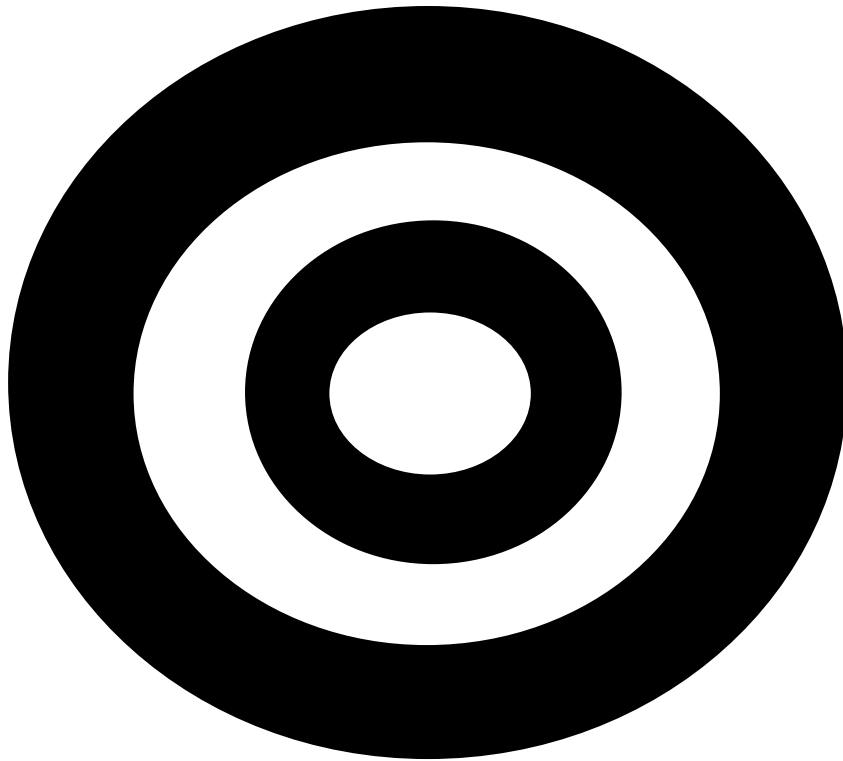
- The task is to represent the target number in different ways in one minute. Do a couple samples with students before starting the timer.
- Set the timer for one minute.
- Educators play along, and write examples to share related to the students' required math fluencies:
- At the end of the minute,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

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

## Required [Math] Fluencies

|              |   |  |
|--------------|---|--|
| Kindergarten | Add and subtract within 5   | <b>Procedural Fluency:</b> can easily use a process to figure out the answer.  |
| Grade 1      | Add and subtract within 10  | <b>Procedural Fluency:</b> can easily use a process to figure out the answer.  |
| Grade 2      | Single digit sums and differences (automaticity by the end of Grade 2); | <b>Automaticity</b> 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   | <b>Procedural Fluency:</b> 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

Other choices 20 or less: 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.

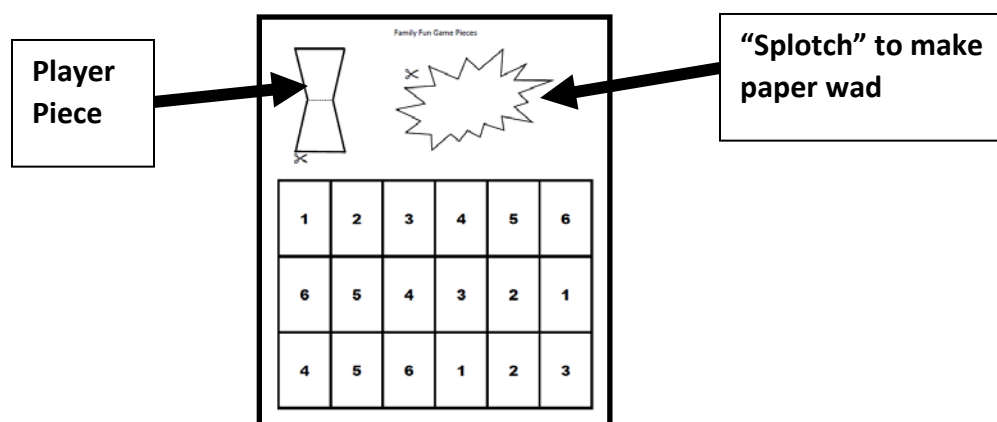
### Process:

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 1 Family Fun Game Answer Key - All Levels**

| <b>Problem Letter</b> | <b>Kinder (pink)</b> | <b>1-2 (blue)</b> | <b>3-4 (green)</b> | <b>5-6 (yellow)</b>            | <b>7-8 (peach)</b>   |
|-----------------------|----------------------|-------------------|--------------------|--------------------------------|--|
| <b>A</b>              | 5¢ (cents)           | \$32              | 0.15               | 2.35                           | 18 boys : 22 girls   |
| <b>B</b>              | 6¢ (cents)           | \$42              | 0.2                | 1.2 or 1.20                    | 11 girls : 20 total  |
| <b>C</b>              | 7¢ (cents)           | \$55              | 0.42               | 0.42                           | 12 boys : 27 total   |
| <b>D</b>              | 8¢ (cents)           | \$78              | 0.05               | 13%                            | 16 red : 27 total  |
| <b>E</b>              | 9¢ (cents)           | \$62              | 1/4                | 1%                             | 9 cups   |
| <b>F</b>              | 10¢ (cents)          | \$82              | 2/8                | 34%                            | 1 1/3 cups   |
| <b>G</b>              | 6¢ (cents)           | \$28              | 1/3                | 25% and 1/4                    | 18 cups  |
| <b>H</b>              | 7¢ (cents)           | \$12              | 2/6                | 50% and 1/2                    | 10 cups  |
| <b>I</b>              | 8¢ (cents)           | \$8               | 10                 | 75% and 3/4                    | 7.5 ounces   |
| <b>J</b>              | 10¢ (cents)          | \$10              | 3                  | <del>1/4</del> <sup>2.35</sup> | \$36   |
| <b>K</b>              | 13¢ (cents)          | \$32              | 9                  | 3/8                            | 25 shirts  |
| <b>L</b>              | 15¢ (cents)          | \$25              | 1                  | 3/5                            | 16 shirts  |
| <b>M</b>              | 11¢ (cents)          | \$15              | 6                  | 3/8                            | 20 blocks  |
| <b>N</b>              | 12¢ (cents)          | \$21              | 3                  | 2/5                            | 7.2 minutes  |
| <b>O</b>              | 9¢ (cents)           | \$45              | 15                 | 3/6 or 1/2                     | Martin runs faster.<br>Martin runs 12 blks/6 min and Alicia runs 10 blks/6 min |
| <b>P</b>              | 14¢ (cents)          | \$37              | 8                  | 8.2                            | 5 gallons  |
| <b>Q</b>              | 13¢ (cents)          | \$3               | 9                  | 9.01                           | 425 miles  |
| <b>R</b>              | 16¢ (cents)          | \$19              | 28                 | 151.2                          | \$5.00   |

## 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."*)

# COMMON ADDITION AND SUBTRACTION SITUATIONS

## Unit 1 CGI Problems for Deena's Lucky Penny



|                                     |   |   |  |
|-------------------------------------|---|---|--|
| <b>ADD TO</b>                       | <p><i>(Result Unknown)</i> ★</p> <p>Deena was lucky. She had ___ pennies. Mrs. Green gave her ___ pennies. How many pennies does Deena have now?</p> <p>(1, 4) (5, 3) (10, 4)</p>   | <p><i>(Change Unknown)</i></p> <p>Deena had ___ pennies. How many more pennies will Deena need to get so that she will have ___ pennies to buy her mother a present?</p> <p>(3, 8) (5, 10) (10, 13)</p> | <p><i>(Start Unknown)</i></p> <p>Deena was lucky. She found some money. Mrs. Green gave her ___. Now Deena has ___. How much money did Deena have to start with?</p> <p>(3¢, 10¢) (5¢, 15¢) (10¢, 20¢)</p> |
|                                     | <p><i>(Result Unknown)</i> ★</p> <p>Deena had ___ pennies. She spent ___ pennies for a present. How many pennies does she have now?</p> <p>(10, 5) (15, 5) (100, 25)</p>            | <p><i>(Change Unknown)</i></p> <p>Deena had ___¢. She spent some on a present. Now she has ___¢. How much money did she spend?</p> <p>(10, 6) (15, 9) (100, 25)</p>                                     | <p><i>(Start Unknown)</i></p> <p>Deena had some money. She spent ___¢. Now she has ___¢. How much money did she have to start with?</p> <p>(4, 6) (18, 9) (20, 5)</p>                                      |
| <b>PUT TOGETHER/<br/>TAKE APART</b> | <p><i>(TOTAL Unknown)</i> ★</p> <p>Deena had ___ pennies and ___ nickels. How many coins did she have?</p> <p>(5, 20) (10, 30) (50, 50)</p>   |   | <p><i>(ADDEND Unknown)</i></p> <p>Deena had ___ coins. ___ were pennies and the rest were nickels. How many nickels did Deena have?</p> <p>(20, 5) (50, 40) (100, 60)</p>                                  |
|                                     | <p><i>(Difference Unknown)</i></p> <p>Deena had ___ pennies. Her brother, Sam, had ___ pennies. How many more pennies did Deena have than Sam?</p> <p>(10, 5) (20, 10) (25, 10)</p> | <p><i>(BIGGER Unknown)</i></p> <p>Deena had ___ pennies. Her brother, Sam, had ___ more pennies than Deena had. How many pennies did Sam have?</p> <p>(10, 5) (20, 10) (25, 10)</p>                     | <p><i>(SMALLER Unknown)</i></p> <p>Deena spent ___ pennies. That's ___ pennies more than Sam spent. How many pennies did Sam spend?</p> <p>(5, 3) (10, 5) (25, 25)</p>                                     |



|  |  |  |   |
|--|--|--|---|
| <p style="text-align: center;"><b>Juntar</b></p>             | <p><i>(Resultados desconocidos)</i> ★</p> <p>Deena era afortunada. Tenía ____ centavos. La Sra. Green le dio ____ centavos. ¿Cuántos centavos tiene Deena ahora?<br/>(1, 4) (5, 3) (10, 4)</p> | <p><i>(Cambio desconocido)</i></p> <p>Deena tenía ____ centavos. ¿Cuántos centavos de más tiene que buscar si necesita ____ centavos para comprarle un regalo a su mamá?<br/>(3, 8) (5, 10) (10, 13)</p> | <p><i>(Inicio desconocido)</i></p> <p>Deena fue afortunada. Encontró algo de dinero. La Sra. Green le dio ____ . Ahora Deena tiene ____ . ¿Cuánto dinero tenía Deena al empezar?<br/>(3¢, 10¢) (5¢, 15¢) (10¢, 20¢)</p> |
|  | <p style="text-align: center;"><b>Separar</b></p>  | <p><i>(Resultados desconocidos)</i> ★</p> <p>Deena tenía ____ centavos. Se gastó ____ centavos comprando un regalo. ¿Cuántos centavos le quedan?<br/>(10, 5) (15, 5) (100, 25)</p>                       | <p><i>(Cambio desconocido)</i></p> <p>Deena tenía ____ ¢. Se gastó algo de dinero comprando un regalo. Ahora tiene ____ ¢. ¿Cuánto dinero se gastó?<br/>(10, 6) (15, 9) (100, 25)</p>                                   |
| <p style="text-align: center;"><b>Parte-Parte-Entero</b></p> |  | <p><i>(Todo desconocido)</i> ★</p> <p>Deena tenía ____ centavos y ____ monedas de cinco centavos. ¿Cuántas monedas tenía?<br/>(5, 20) (10, 30) (50, 50)</p>  |   |
|  | <p style="text-align: center;"><b>Comparar</b></p>   | <p><i>(Difference Unknown)</i></p> <p>Deena tenía ____ centavos . Su hermano Sam tenía ____ centavos. ¿Cuántos centavos mas tenía Deena que Sam ?<br/>(10, 5) (20, 10) (25, 10)</p>                      | <p><i>(Quantity Unknown)</i></p> <p>Deena tenía ____ centavos. Su hermano Sam tenía ____ más centavos que Deena. ¿Cuántos centavos tenía Sam ?<br/>(10, 5) (20, 10) (25, 10)</p>  |



### 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.

### Materials:

#### TEACHER:

Chart paper with question:

**How do you know that each portion is half?** Put a copy of the record sheet string cheese cut apart at the top of the chart with the question.

#### TEACHER DEMO

- BLM String Cheese Snack Fractions,
- 1 large string cheese
- Pastic knife
- Paper towel
- Paper plate

#### STUDENT ACTIVITY (per partner pair):

- BLM String Cheese Snack Fractions
- BLM String Cheese to Share
- 1 string cheese per pair
- 1 plastic knife
- 2 paper dessert plates
- 2 paper towels
- 2 pair scissors
- 2 rulers and 2 markers
- 2 glue sticks

## Unit 1, Lesson 3

### Snack Fractions

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

Kinder



### 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 you are going to share a snack with one other friend. The snack will be cut into two pieces. You will be able to tell each other the fractional name of the pieces. You will be able to draw a line on a picture to show the parts that you have.

#### TODAY: Teacher demonstration of halves

“I have a piece of string cheese that I want to share with a friend. How can I do that? (*Wait for answers.*) I want the portions to be fair shares, that is, both of us have the same amount of the string cheese.

Here is how I will cut the string cheese into two pieces so that my friend and I will have fair shares. (*Cut string cheese.*) Does anyone know what we call this fractional part of the string cheese? (*Hold up a half and wait for answers.*) We call this a half. Why is this portion a half? (*Wait for answers.*) It is half because it is **one out of two equal pieces** (*compare the 2 pieces side by side so students see they are equal pieces*).

Ask the students:

- What fractional part of my snack will my friend receive? (*one-half*)
- How do you know? (*The piece is **one out of two equal pieces**.*)
- What fractional part am I receiving? (*half*)
- How do you know? (*You have **one out of two equal pieces**.*)

Before dividing the actual snack, give each child the BLM String Cheese Snack Fractions and the String Cheese picture. Have the student draw a line, cut the paper model in half, and then glue to the BLM String Cheese Snack Fractions sheet.

When those sheets are collected, divide the students into partners, giving each pair the set of materials listed. Tell them to share the snack into fair shares, and be able to tell you when you come around if they each have half, and how they know. Circulate and ask as students enjoy their snacks.