

# Summer Math

## Educator Packet



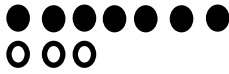
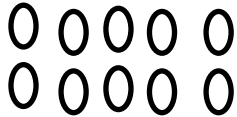
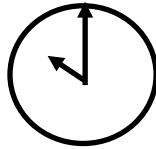
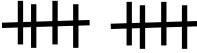
## Unit 2



## Warm up: Target Number

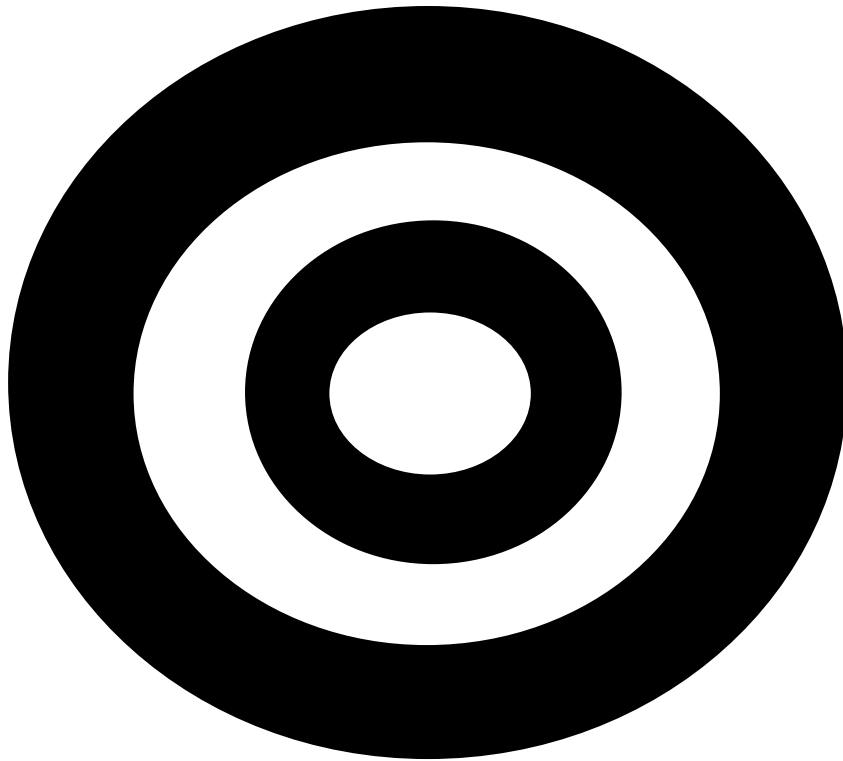
- The task is to represent the target number in different ways in one minute. Do a couple samples with students before starting the timer.
- Set the timer for one minute.
- Educators play along, and write examples to share related to the students' required math fluencies:
- At the end of the minute,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

More 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.

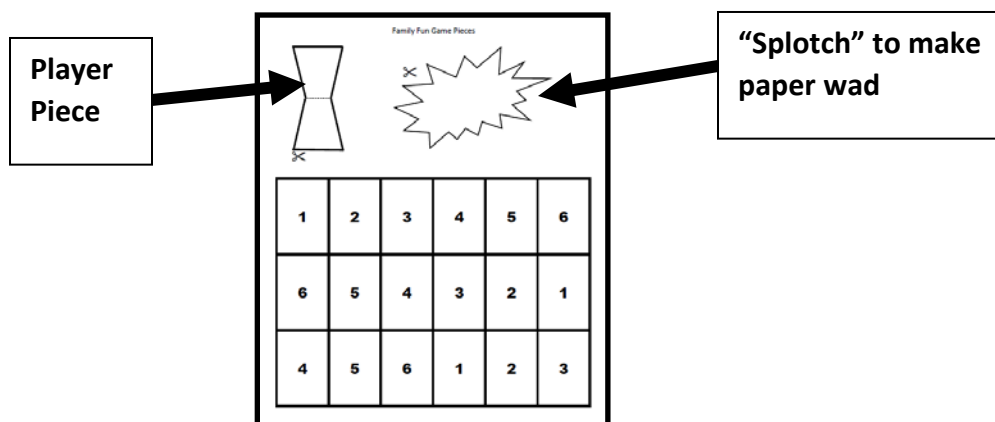
### Process:

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 2      Family Fun Game Answer Key - All Levels**

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

## 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."*)

## Unit 2 CGI Problems for *A Desert Habitat*



|                                     |   |   |   |
|-------------------------------------|---|---|---|
| <b>Add to</b>                       | <p><i>(Result Unknown)</i> ★</p> <p>The desert rabbit had ____ cactus flowers. The iguana gave him ____ more cactus flowers. How many cactus flowers does the rabbit have now?</p> <p>(1, 9) (5, 8) (10, 9)</p> | <p><i>(Change Unknown)</i></p> <p>The desert rabbit had ____ cactus flowers. How many more cactus flowers will he need to gather so that he will have ____ cactus flowers in all?</p> <p>(4, 9) (6, 8) (8, 10)</p>        | <p><i>(Start Unknown)</i></p> <p>The desert rabbit was very lucky. He had some cactus flowers. Then he found ____ more cactus flowers. Now he has __ cactus flowers. How many cactus flowers did he have to start?</p> <p>(3, 8) (6, 11) (8, 17)</p>                    |
|                                     | <b>Tale From</b>  | <p><i>(Result Unknown)</i> ★</p> <p>The burrowing owls collected ____ piles of soft grass. They took ____ piles to their underground home. How many piles of soft grass do they have now?</p> <p>(9, 1) (7, 5) (9, 7)</p> | <p><i>(Change Unknown)</i></p> <p>The burrowing owls had ____ piles of soft grass. They took some of them into their underground home. Now they have __ piles of soft grass. How many piles of soft grass did they take underground?</p> <p>(10, 2) (15, 9) (17, 9)</p> |
| <b>Put together/<br/>Take Apart</b> |   | <p><i>(Whole Unknown)</i> ★</p> <p>One day the iguana ate ____ pink cactus flowers and ____ orange cactus flowers. How many flowers did he eat that day?</p> <p>(5, 7) (9, 6) (10, 9)</p>                                 |   |
|                                     | <b>Compare</b>  | <p><i>(Difference Unknown)</i></p>  | <p><i>(Quantity Unknown)</i></p>  |



|                             |   |  |  |
|-----------------------------|---|--|--|
| <b>Juntar</b>               | <p><i>(Resultados desconocidos)</i> ★</p> <p>El conejo castellano tenía ____ flores de cacto. La iguana le dio ____ mas flores de cacto. ¿Cuántas flores de cacto tiene ahora?</p> <p>(1, 9) (5, 8) (10, 9)</p> | <p><i>(Cambio desconocido)</i></p> <p>El conejo castellano tenía ____ flores de cacto. ¿Cuántas flores de cacto de más necesita recoger para tener ____ flores de cacto en total?</p> <p>(4, 9) (6, 8) (8, 10)</p>         | <p><i>(Inicio desconocido)</i></p> <p>El conejo castellano fue muy afortunado. Tenía algunas flores de cacto. Encontró ____ más flores de cacto. Ahora tiene __ flores de cacto. ¿Cuántas flores de cacto tenía al empezar?</p> <p>(3, 8) (6, 11) (8, 17)</p>                                |
|                             | <b>Separar</b>  | <p><i>(Resultados desconocidos)</i> ★</p> <p>Las lechuzas llaneras juntaron ____ montones de hierba. Llevaron ____ montones a su hogar subterráneo. ¿Cuántos montones de hierba le quedan?</p> <p>(9, 1) (7, 5) (9, 7)</p> | <p><i>(Cambio desconocido)</i></p> <p>Las lechuzas llaneras tenían ____ montones de hierba. Llevaron algunos de los montones a su hogar bajo la tierra. Ahora tienen __ montones de hierba. ¿Cuántos montones de hierba llevaron al hogar bajo la tierra?</p> <p>(10, 2) (15, 9) (17, 9)</p> |
| <b>Parte- Parte- Entero</b> |   | <p><i>(Whole Unknown)</i> ★</p> <p>Un día la iguana comió ____ flores de cacto rosadas y ____ flores de cacto narajnas. ¿Cuántas flores comió este día?</p> <p>(5, 7) (9, 6) (10, 9)</p>                                   |  |
|                             | <b>Comparar</b>   | <p><i>(Diferencia desconocida)</i></p> <p>Había ____ ratas y ____ lagartijas andando en el desierto. ¿Cuántos ratas de más había que lagartijas?</p> <p>(8, 5) (19, 10) (17, 9)</p>  | <p><i>(Cantidad desconocida)</i></p> <p>Había ____ ratas corriendo en la arena del desierto. Había ____ lagartijas más que ratas. ¿Cuántos lagartijas había?</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.

**Vocabulary**

- half
- fair shares
- equal pieces
- 1 out of 2 equal pieces

**Materials:****TEACHER:**

Chart paper with question: How do you know that each portion is half? Put a copy of the record sheet at the top of the chart with the question.

**TEACHER DEMO**

- **BLM** Trail Mix Fractions
- 2 cups **trail mix/pair** mix equal parts of
  - pecans,
  - semi-chocolate chips,
  - granola
  - raisins
- Two 1/2 c measuring cups
- 2 paper plates

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

**NOTE:** you can certainly provide the 2 cups/partner Trail Mix already mixed if you prefer – would cut down on the 1/2 c measuring cups you need to provide.

- 2 cups **trail mix/pair** mix equal parts of
  - 1/2 c pecans
  - 1/2 c semi-chocolate chips
  - 1/2 c granola
  - 1/2 c raisins
- one 2 cup measuring cup
- two 12 oz. plastic cups
- 2 napkins
- two 1/2 cup measuring cups
- one 1 cup measuring cup
- 2 scissors
- 2 rulers and 2 markers
- 2 glue sticks

**Unit 2, Lesson 2****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.

**Objective:**

Today you are going to share a snack with one other friend. The snack will be shared in two portions. 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**

Tell students that today you are going to share the snack a different way from the sharing in Unit 1. Show the students 1/2 cups of ingredients for their Trail Mix. (You could put each ingredient in an 8 oz. paper cup for simplicity.) Tell the students that the first thing they have to do is to mix their ingredients in the large measuring cup. TODAY students will work with you. Every pair should now mix their ingredients into the 2-cup measuring cup. Ask students to look at the large measuring cup. How much does it hold? (response) It holds two cups. Today two cups equals the whole amount.

Before they share the snack, they should each complete the BLM Trail Mix Fractions. Walk through the steps with them, reading the sheet and asking them rather than telling them the answers.

When they have finished the record sheet, they may actually share and enjoy their snacks. Be sure to circulate the room so you are sure students understand the concept.

**Writing:**

Share-write the student answers to “How do you know that each portion is half?”

**Objectives:**

Read the objectives. How did we accomplish these in our snack fraction lesson?

**Kinder**