

# MULTIPLICATION PATTERNS



# MINI LESSON

**Patterns**

**Function Table**

| In | Out |
|----|-----|
| 2  | 10  |
| 3  | 15  |
| 4  | 20  |
| 5  | 25  |

Rule:  $\times 5$

**Multiplication** Patterns that GROW

**Addition** Rule:  $+ 2$   
 $2, 4, 6, 8, 10$

**Subtraction** Rule:  $- 2$   
 $10, 8, 6, 4, 2$

**Division** Rule:  $\div 2$   
 $32, 16, 8, 4, 2$

**Find the next 3 numbers!**  
 23, 29, 35, 41, 47, 53, 59, 65

Rule: Add 6

**Rule: Add 4**

| INPUT  | 3 | 17 | 29 | 42 | 51 |
|--------|---|----|----|----|----|
| OUTPUT | 7 | 21 | 33 | 46 | 55 |

**Rule: Divide by 4**

| IN  | 36 | 20 | 8 | 44 | 28 |
|-----|----|----|---|----|----|
| OUT | 9  | 5  | 2 | 11 | 7  |

**Rule: Multiply by 4**

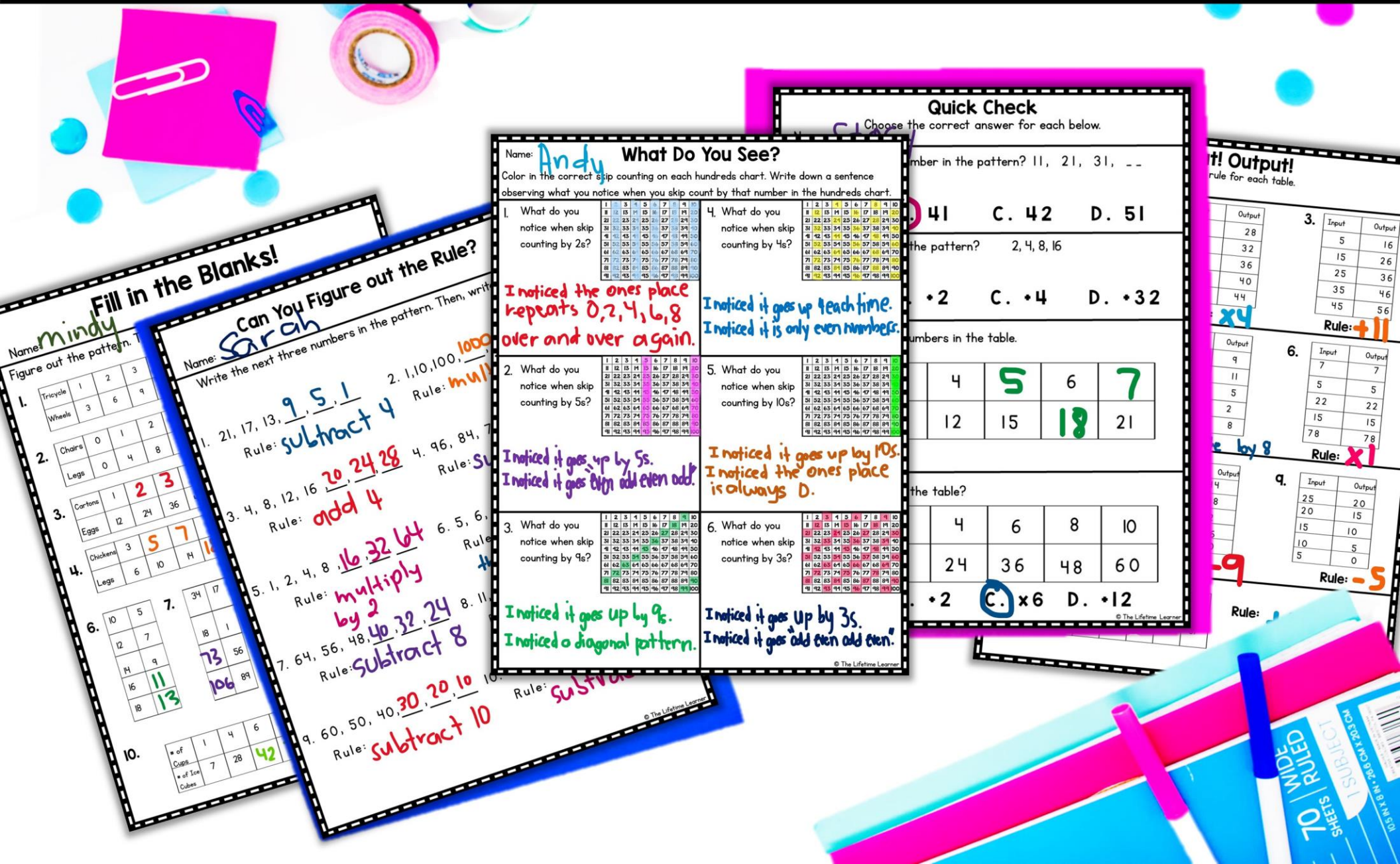
| # of Bunnies | # of Ears |
|--------------|-----------|
| 1            | 4         |
| 3            | 12        |
| 4            | 16        |
| 6            | 24        |
| 8            | 32        |

**Rule: Subtract 4**

| In | Out |
|----|-----|
| 22 | 18  |
| 21 | 17  |
| 20 | 16  |
| 19 | 15  |
| 18 | 14  |



# 10 WORKSHEETS



# PATTERN ACTIVITY

Cut out the pattern number cards. Each student grabs some and makes a skip counting pattern. The partner tries to guess what the pattern is.

## RECORDING SHEET

### Guess My Pattern Game

Write your pattern below!  Guess the first person's pattern!  Guess the second person's pattern!  Guess the third person's pattern! 

|                               |               |               |               |
|-------------------------------|---------------|---------------|---------------|
| My Pattern Rule:<br><b>+3</b> | Pattern Rule: | Pattern Rule: | Pattern Rule: |
| My Pattern Rule:              | Pattern Rule: | Pattern Rule: | Pattern Rule: |
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| My Pattern Rule:              | Pattern Rule: | Pattern Rule: | Pattern Rule: |

Score:

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42

32

50

96

120

35

18

3

6

9

12

# MATH SORT



Students solve each question.  
They put a smile or a frown on each based on if it's

**Card #9**



| Input | Output |
|-------|--------|
| 6     | 42     |
| 7     | 49     |
| 8     | 56     |
| 9     | 63     |
| 10    | 70     |

Rule:  $\times 7$

**Card #6**



| Input | Output |
|-------|--------|
| 2     | 4      |
| 4     | 6      |
| 6     | 8      |
| 8     | 10     |
| 10    | 12     |

Rule:  $+2$

**Card #7**



| Input | Output |
|-------|--------|
| 65    | 70     |
| 68    | 73     |
| 71    | 76     |
| 74    | 79     |
| 82    | 87     |

Rule:  $+5$

**Card #5**



| Input | Output |
|-------|--------|
| 88    | 8      |
| 77    | 7      |
| 66    | 6      |
| 55    | 5      |
| 44    | 4      |

Rule:  $-10$

**Card #1**



| Input | Output |
|-------|--------|
| 100   | 80     |
| 90    | 70     |
| 80    | 60     |
| 70    | 50     |
| 60    | 40     |

Rule:  $-20$

**Card #8**



| Input | Output |
|-------|--------|
| 100   | 91     |
| 90    | 81     |
| 80    | 71     |
| 70    | 61     |
| 60    | 51     |

Rule:  $\div 6$

**Card #4**



| Input | Output |
|-------|--------|
| 19    | 8      |
| 17    | 6      |
| 15    | 4      |
| 13    | 2      |
| 11    | 0      |

Rule:  $-11$

# ERROR ANALYSIS

Students decide if each kid solved the problem correctly or incorrectly. They explain their thinking at the bottom.

4 PAGES

Directions: Read the problem below and look at the work the student did. Decide if the work is correct or not.

What is the next number in the pattern? 2, 4, 8, \_\_\_\_\_



The student says:

The next number in the pattern is 10 because it's going up by 2s.



Explain if they are right or wrong. Put a check or X on their work.

The pattern is actually multiplying by 2 instead of adding 2.  $2 \times 2$  is 4. Then  $4 \times 2$  is 8.

# GAME #1

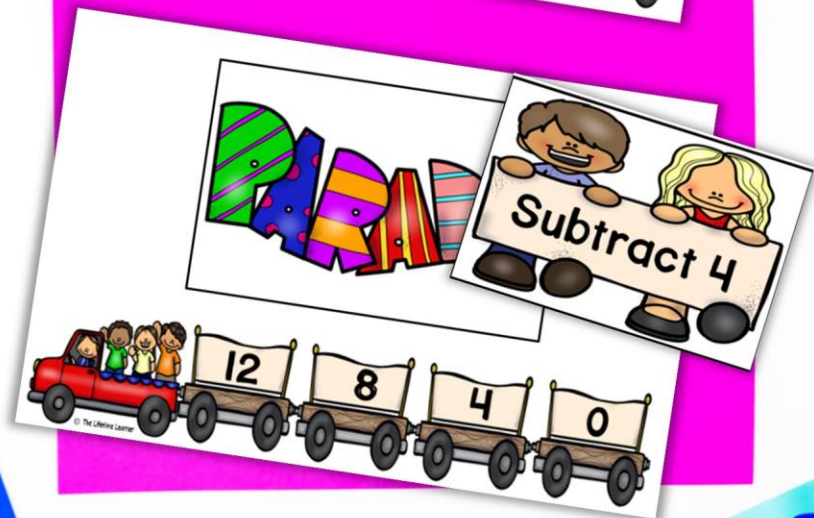
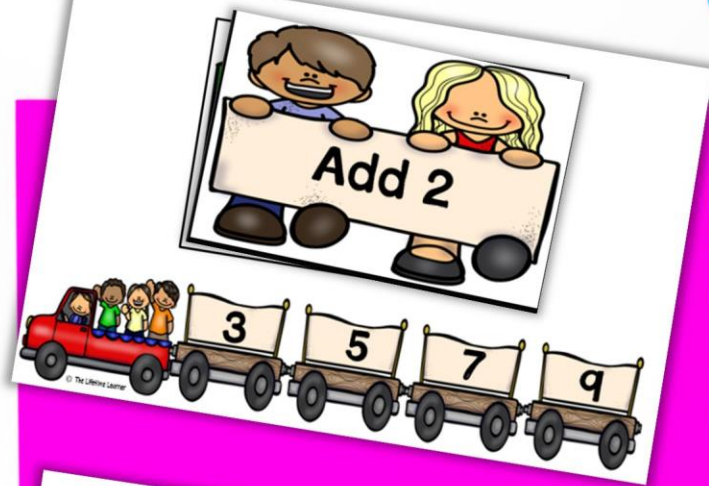
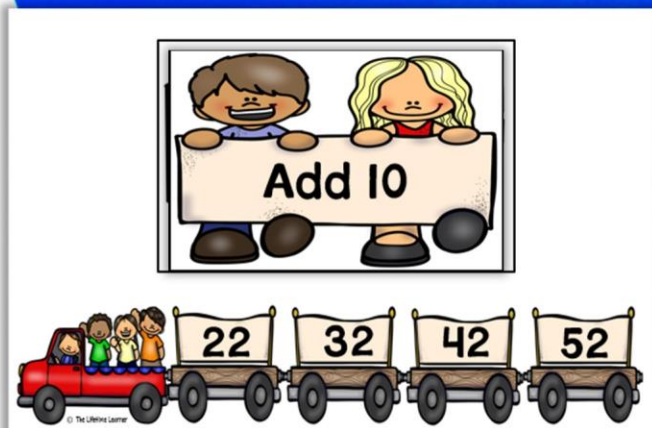
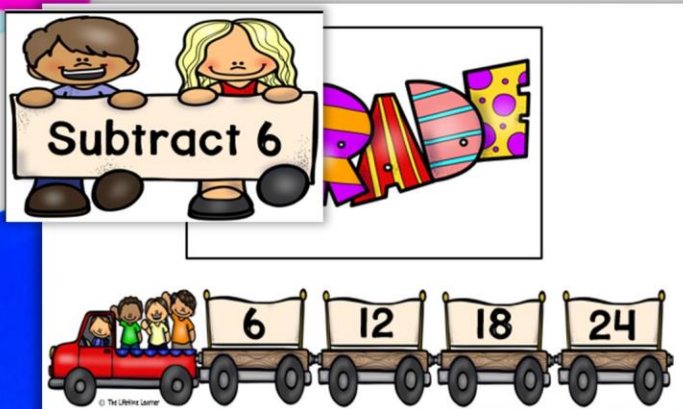


Figure out the rule for each parade float.

# GAME #2

FOR 2-4 PLAYERS



## HOW TO PLAY:

1. All players receive a game mat.
2. Students answer a question card.
3. If they are correct, they earn an item.
4. The first person to earn 10 items wins.
5. Chance cards included to spice up gameplay.



Figure out the rule of the pattern below.

| In | Out |
|----|-----|
| 6  | 30  |
| 9  | 45  |
| 12 | 60  |
| 5  | 25  |

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Figure out the rule of the pattern below.

| In | Out |
|----|-----|
| 63 | 9   |
| 21 | 3   |
| 49 | 7   |
| 56 | 8   |

#19  $\div 7$

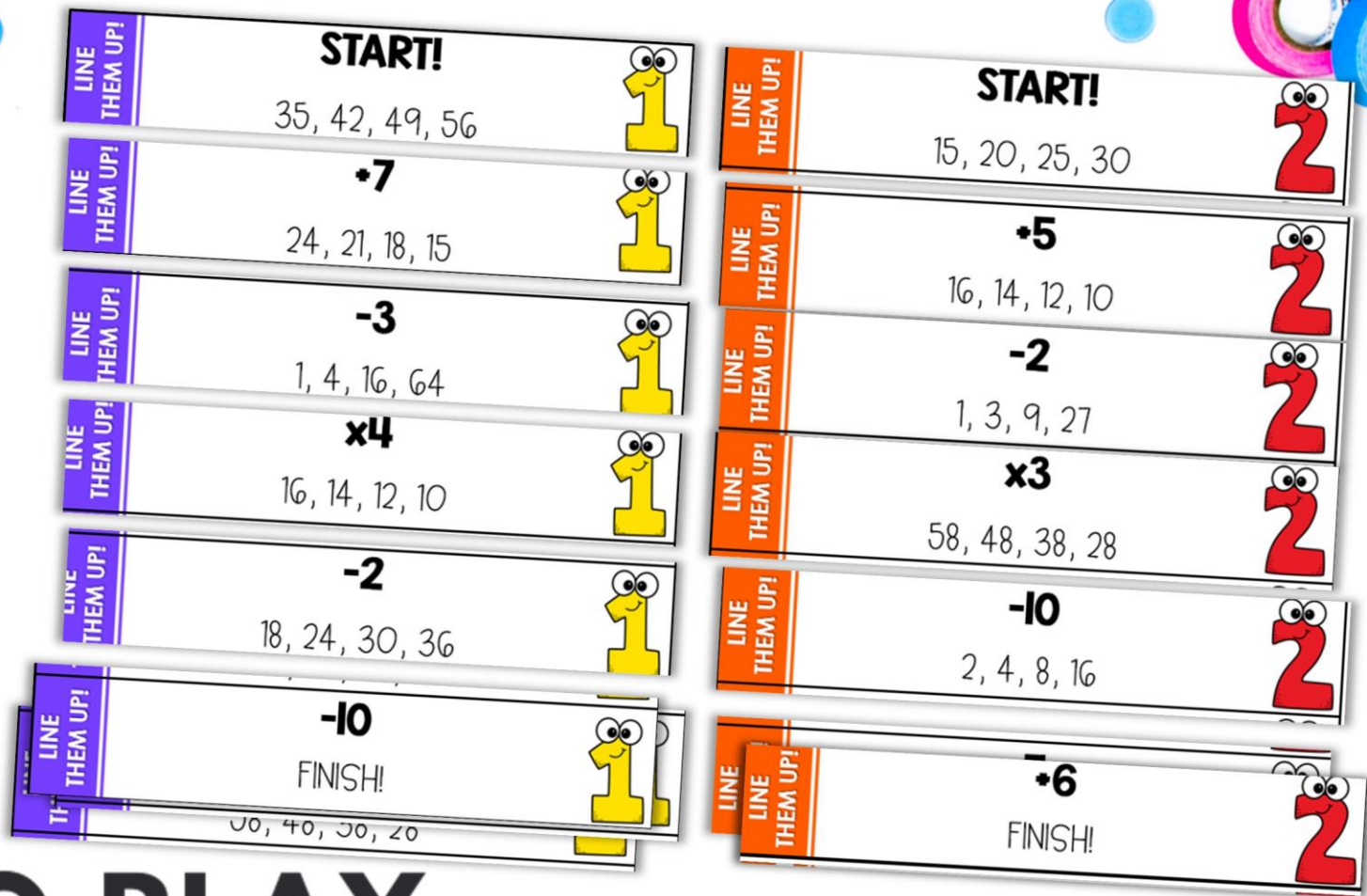
Figure out the rule of the pattern below.

| In | Out |
|----|-----|
| 23 | 9   |
| 70 | 56  |
| 87 | 73  |
| 51 | 37  |

#17



# GAME #3

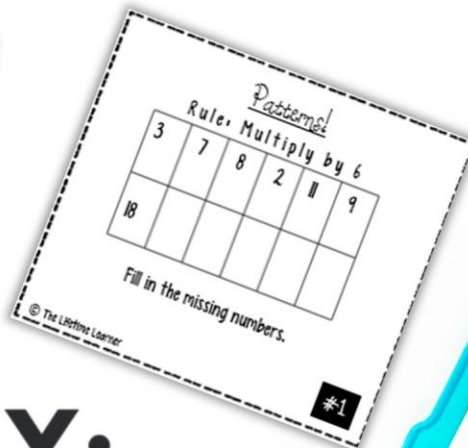
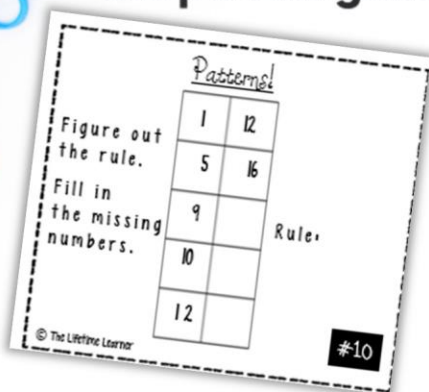


## HOW TO PLAY:

- Students pair up in teams.
- Students race to line up their cards in order before the other team.

# GAME #4

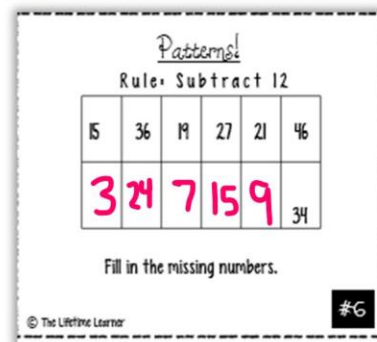
the perfect game to play with the whole class



Click the bucket to see this game in action.

## HOW TO PLAY:

1. Students answer task cards.
2. If they get it right, they drop it in the bucket.
3. Students play for a set amount of time.
4. At the end of gameplay, the teacher draws task cards out of the bucket.
5. Any student whose task card gets pulled out gets a small prize.



# BUY THE BUNDLE AND SAVE BIG!

## 3RD GRADE MATH BUNDLE

Name: Lindsay The Beach

Write the number of the matching word problem on each bucket to show which sandcastle goes with each word problem.

| Sandcastle | Letter | Number |
|------------|--------|--------|
| A          | #6     |        |
| B          | #5     |        |
| C          | #2     |        |
| D          | #4     |        |
| E          | #1     |        |
| F          | #3     |        |

- There are 2 sharks. Each one has 5 teeth. How many teeth do the sharks have combined?  $2 \times 5 = 10$
- There are 54 fish in the water. They are split between 6 small pools equally. How many fish are in each pool of water?  $54 \div 6 = 9$
- There are 36 umbrellas for sale on the beach. 6 umbrellas are sold each hour. How many hours did it take to sell all of the umbrellas?  $36 \div 6 = 6$
- There are 3 fences facing the beach. There are four seagulls sitting on each one. How many seagulls are there total?  $3 \times 4 = 12$
- There are 12 surfers out in the water. They are chatting in groups of 4. How many groups are chatting?  $12 \div 4 = 3$
- There are 50 seals out in the ocean. They are sitting in groups of 10. How many groups of seals are there?  $50 \div 10 = 5$

My Castle



To win, you must have 10 items in your castle.

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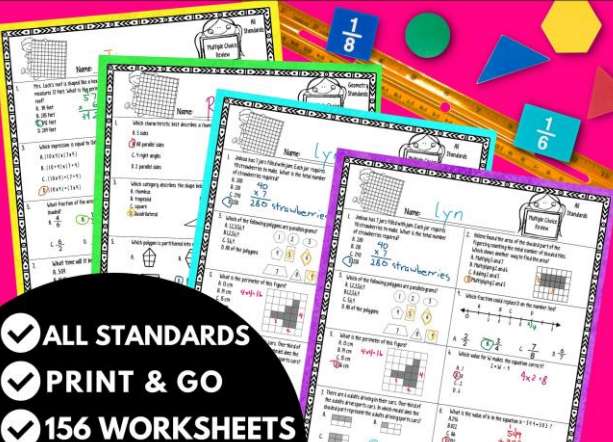
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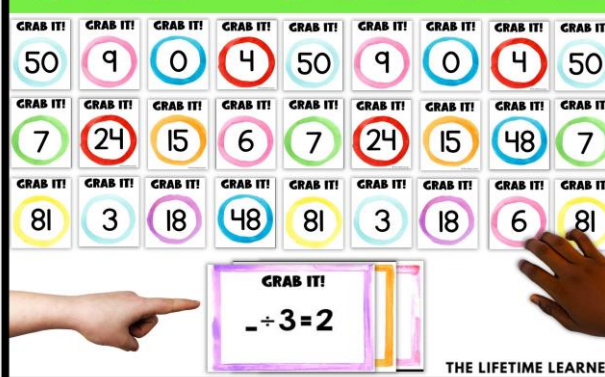
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 $-3=2$

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