

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: $+ 2$
 $2, 4, 6, 8, 10$

Rule: $\times 2$
 $5, 10, 20, 40, 80$

Division Patterns that SHRINK

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

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

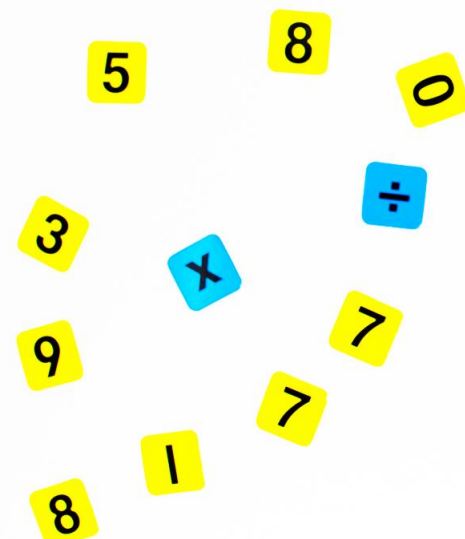
IN	36	20	8	44	28
OUT	9	5	2	11	7

Rule: Multiply by 4

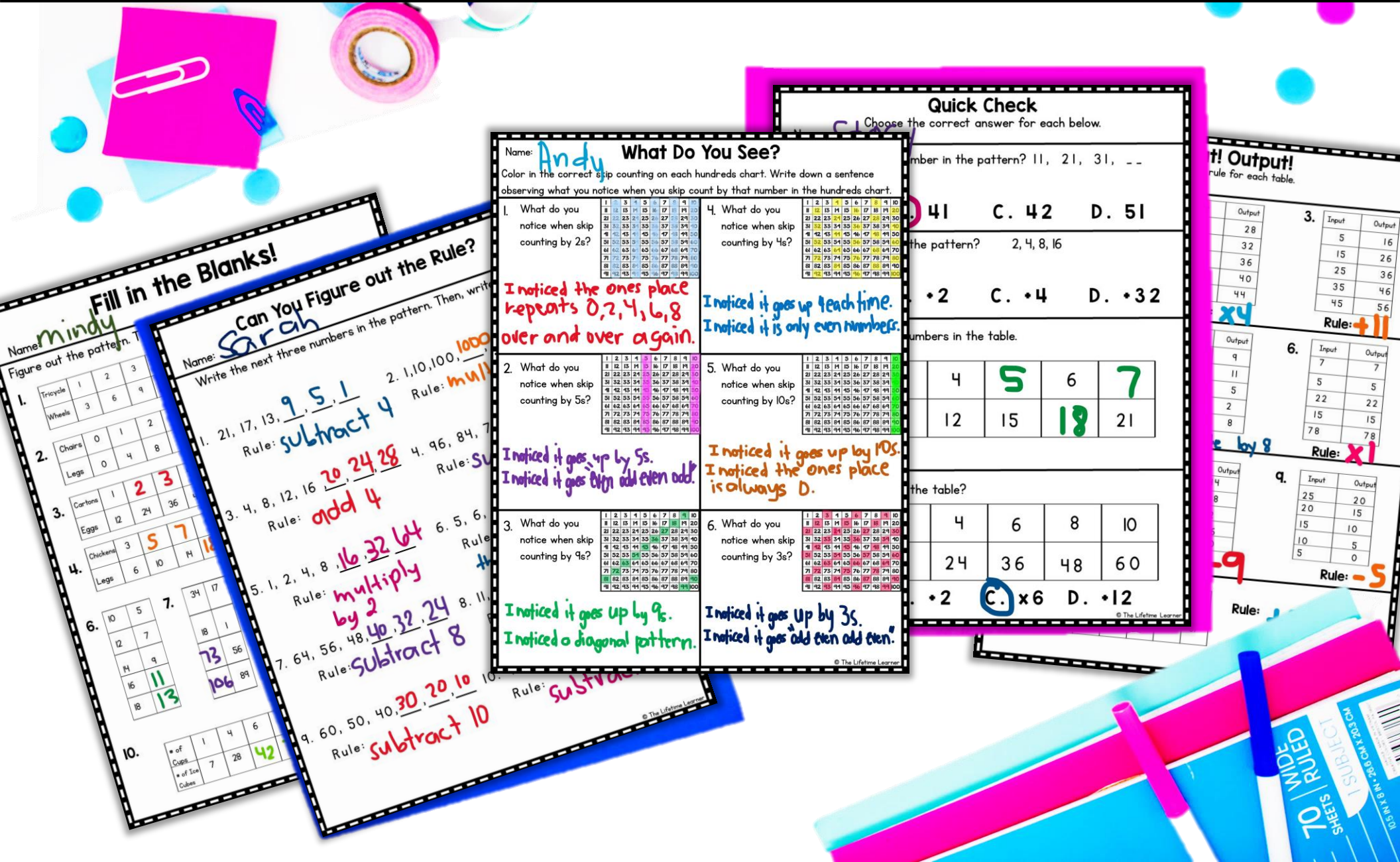
# of Bunnies	# of Ears
1	4
3	12
4	16
6	24
8	32

Rule: Subtract 4

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



10 WORKSHEETS



Fill in the Blanks!

Name: Mindy

Figure out the pattern.

- Tricycle: 1, 2, 3
Wheels: 3, 6, 9
- Chairs: 0, 1, 2
Legs: 0, 4, 8
- Cartons: 1, 2, 3
Eggs: 12, 24, 36
- Chickens: 3, 5, 7
Legs: 6, 10, 14
10.

1	4	6
7	28	42

Can You Figure out the Rule?

Name: Sarah

Write the next three numbers in the pattern. Then, write the rule.

- 21, 17, 13, 9, 5, 1
Rule: subtract 4
- 1, 10, 100, 1,000
Rule: multiply by 10
- 4, 8, 12, 16, 20, 24, 28
Rule: add 4
- 96, 84, 72, 60, 48, 36
Rule: subtract 12
- 1, 2, 4, 8, 16, 32, 64
Rule: multiply by 2
- 64, 56, 48, 40, 32, 24
Rule: subtract 8
- 60, 50, 40, 30, 20, 10
Rule: subtract 10

What Do You See?

Name: Andy

Color in the correct skip counting on each hundreds chart. Write down a sentence observing what you notice when you skip count by that number in the hundreds chart.

- What do you notice when skip counting by 2s?
I noticed the ones place repeats 0, 2, 4, 6, 8 over and over again.
- What do you notice when skip counting by 5s?
I noticed it goes up by 5s. I noticed it goes 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100.
- What do you notice when skip counting by 9s?
I noticed it goes up by 9s. I noticed a diagonal pattern.
- What do you notice when skip counting by 4s?
I noticed it goes up 4 each time. I noticed it is only even numbers.
- What do you notice when skip counting by 10s?
I noticed it goes up by 10s. I noticed the ones place is always 0.
- What do you notice when skip counting by 3s?
I noticed it goes up by 3s. I noticed it goes 0, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 60, 63, 66, 69, 72, 75, 78, 81, 84, 87, 90, 93, 96, 99, 100.

Quick Check

Choose the correct answer for each below.

- Number in the pattern? 11, 21, 31, --
A. 41 B. 31 C. 42 D. 51
- Pattern? 2, 4, 8, 16
A. $\div 2$ B. $\times 2$ C. $\div 4$ D. $\times 32$
- Numbers in the table.

4	5	6	7
12	15	18	21
- Table?

4	6	8	10
24	36	48	60

A. $\div 2$ B. $\times 6$ C. $\times 6$ D. $\div 12$

! Output!

Rule for each table.

- | Input | Output |
|-------|--------|
| 5 | 16 |
| 15 | 26 |
| 25 | 36 |
| 35 | 46 |
| 45 | 56 |

Rule: $+11$
- | Input | Output |
|-------|--------|
| 7 | 7 |
| 5 | 5 |
| 22 | 22 |
| 15 | 15 |
| 78 | 78 |

Rule: $\times 1$
- | Input | Output |
|-------|--------|
| 25 | 20 |
| 15 | 10 |
| 10 | 5 |
| 5 | 0 |

Rule: -5

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: +3	Pattern Rule:	Pattern Rule:	Pattern Rule:
My Pattern Rule:	Pattern Rule:	Pattern Rule:	Pattern Rule:
My Pattern Rule:	Pattern Rule:	Pattern Rule:	Pattern Rule:
My Pattern Rule:	Pattern Rule:	Pattern Rule:	Pattern Rule:
My Pattern Rule:	Pattern Rule:	Pattern Rule:	Pattern Rule:
My Pattern Rule:	Pattern Rule:	Pattern Rule:	Pattern Rule:
My Pattern Rule:	Pattern Rule:	Pattern Rule:	Pattern Rule:
My Pattern Rule:	Pattern Rule:	Pattern Rule:	Pattern Rule:

Score: _____

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42

32

50

96

120

35

18

4

8

0

5

÷

x

7

7

1

8

3

9

3

6

9

12

MATH SORT



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. 2×2 is 4. Then 4×2 is 8.

GAME #1

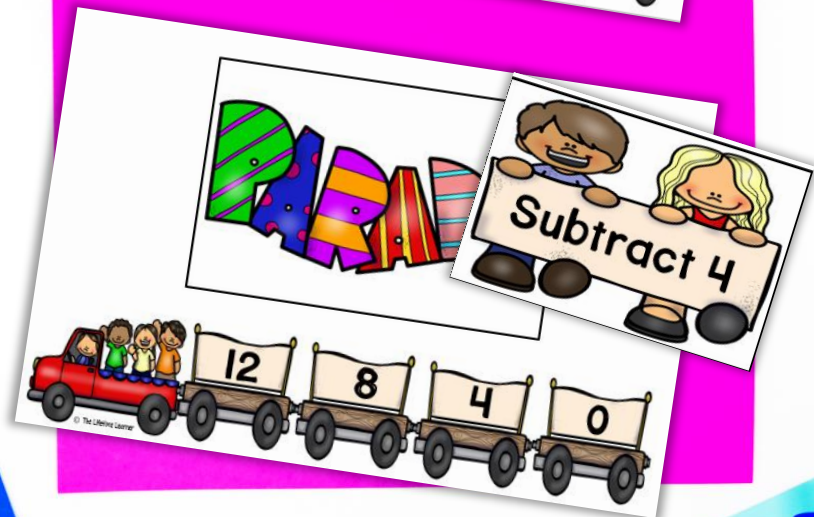
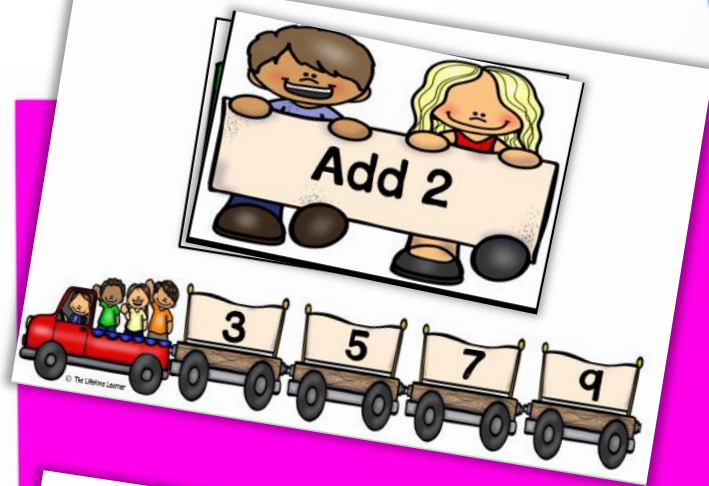
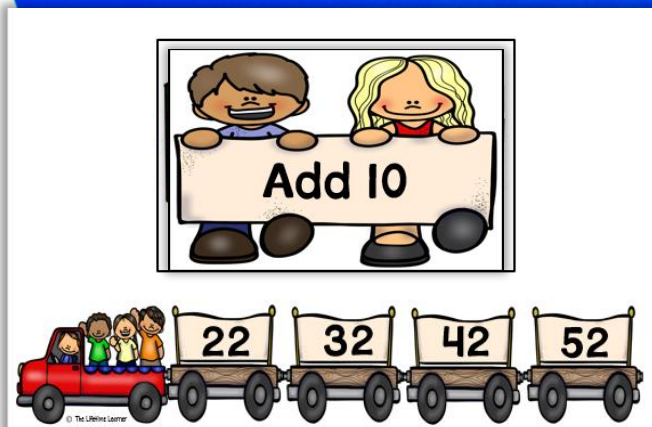
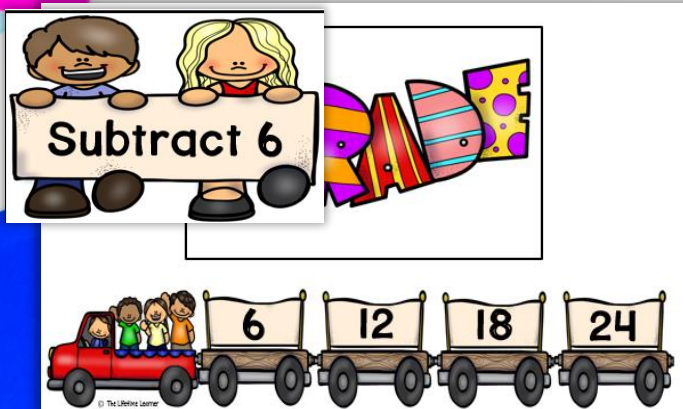


Figure out the rule for each parade float.

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

#20

Figure out the rule of the pattern below.

In	Out
63	9
21	3
49	7
56	8

#19 $\div 7$

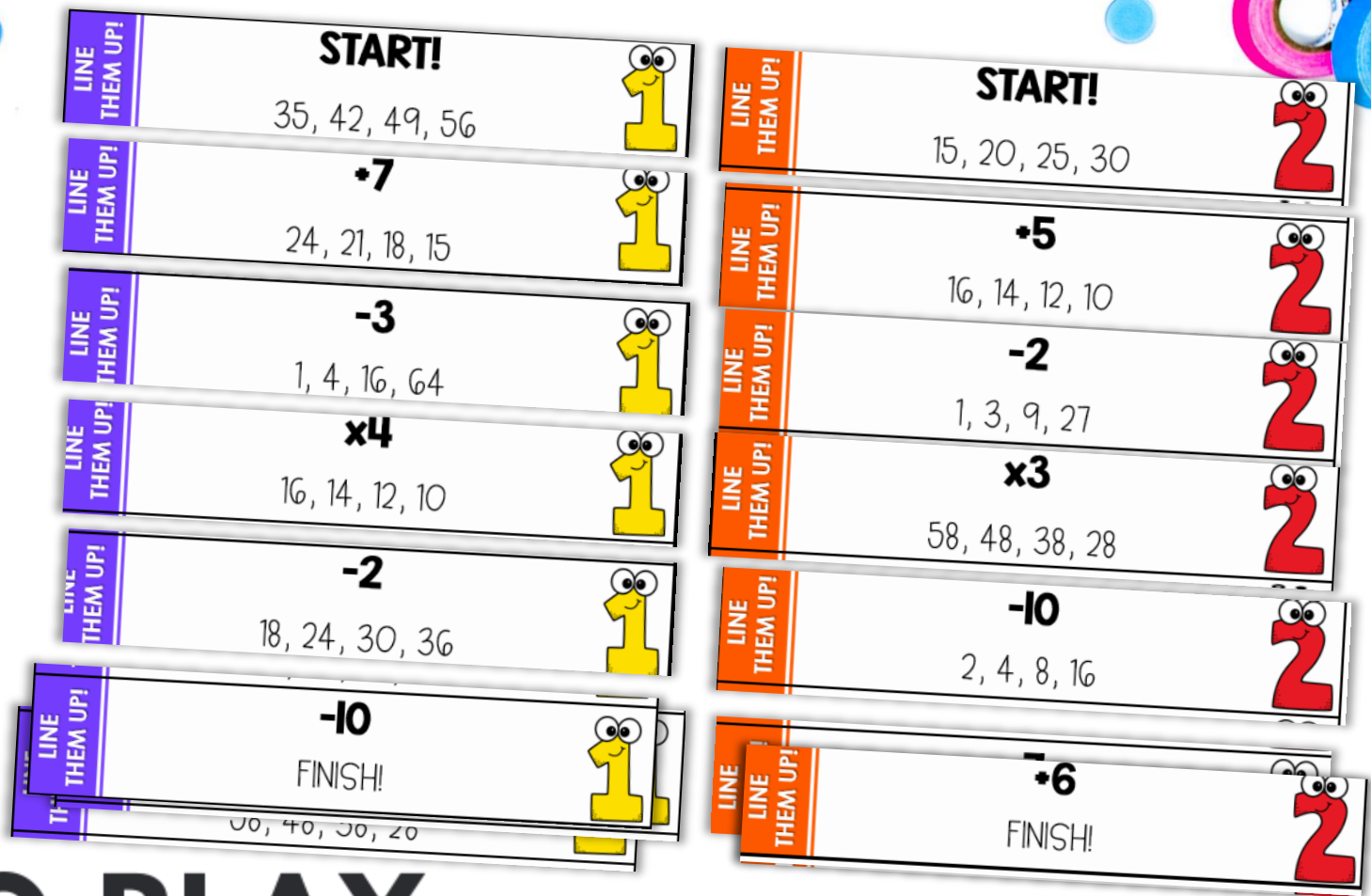
Figure out the rule of the pattern below.

In	Out
23	9
70	56
87	73
51	37

#17



GAME #3

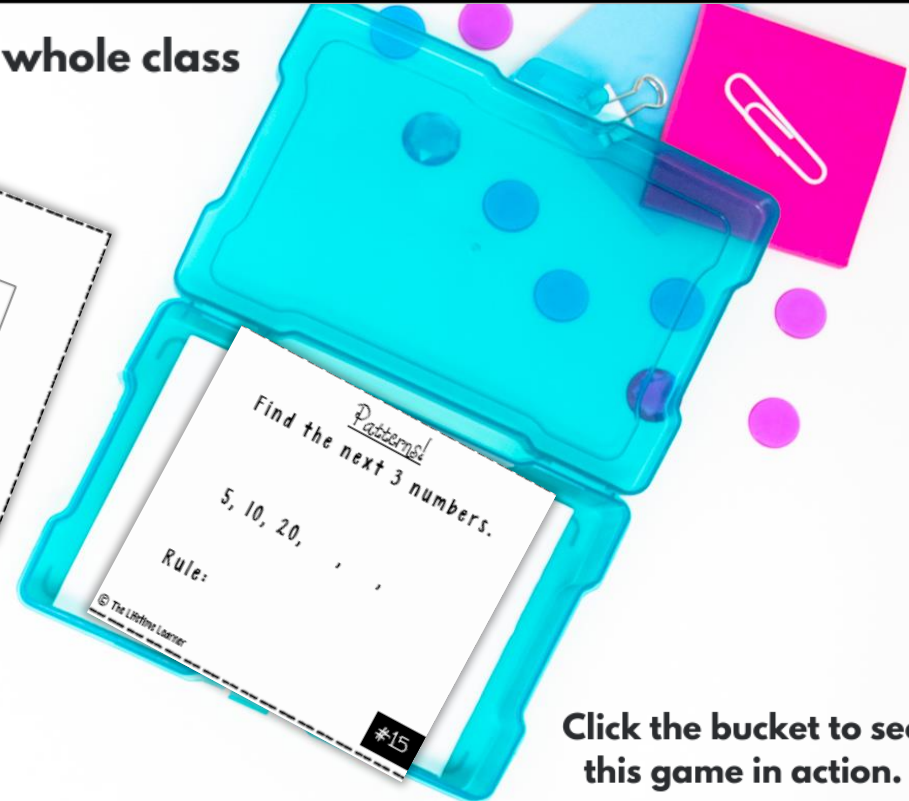
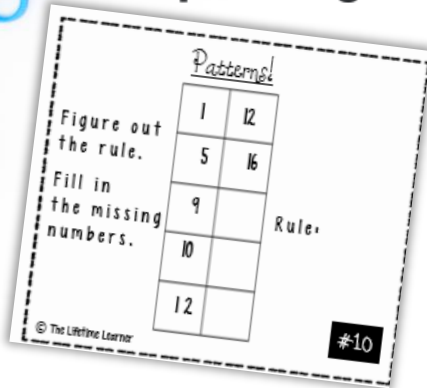


HOW TO PLAY:

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

GAME #4

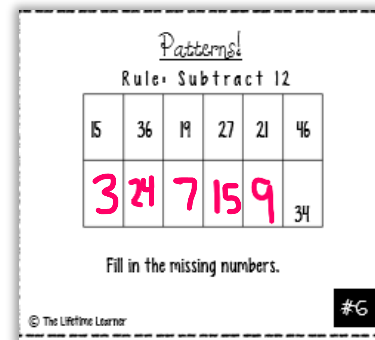
the perfect game to play with the whole class



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!

4TH GRADE MATH BUNDLE

Partial Products
Name: *ericka*
Use your knowledge of partial products to solve each equation.

1. Equations: $2 \times 5,096$
 $5000 \times 2 = 10000$
 $0 \times 2 = 0$
 $90 \times 2 = 180$
 $6 \times 2 = 12$

2. Equations: $4 \times 8,923$
 $8000 \times 4 = 32000$
 $900 \times 4 = 3600$
 $20 \times 4 = 80$
 $3 \times 4 = 12$

3. Equations: $8 \times 5,624$
 $5000 \times 8 = 40000$
 $600 \times 8 = 4800$
 $20 \times 8 = 160$
 $4 \times 8 = 32$

4. Equations: $5 \times 2,089$
 $2000 \times 5 = 10000$
 $0 \times 5 = 0$
 $80 \times 5 = 400$
 $9 \times 5 = 45$

My Space Scene
To win, you must have 10 items in your space scene.
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6000+ PAGES

GAMES **ACTIVITIES** **WORKSHEETS**

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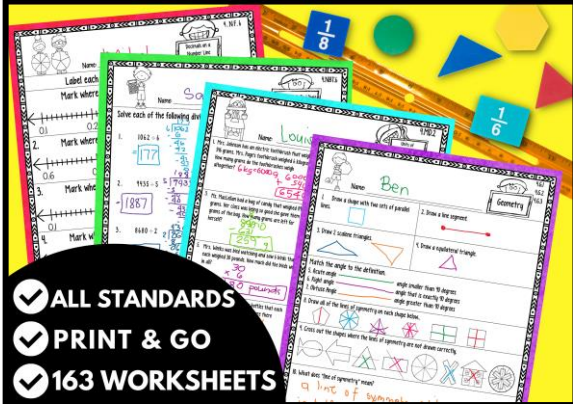
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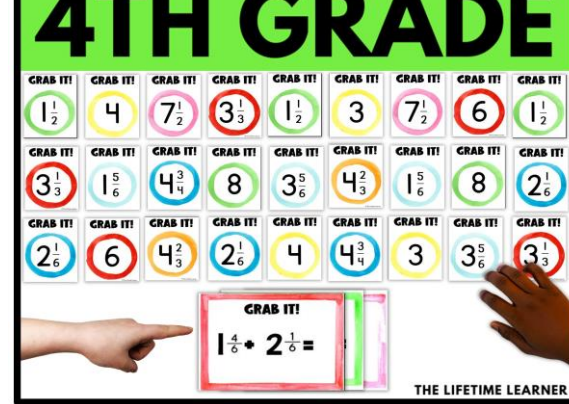
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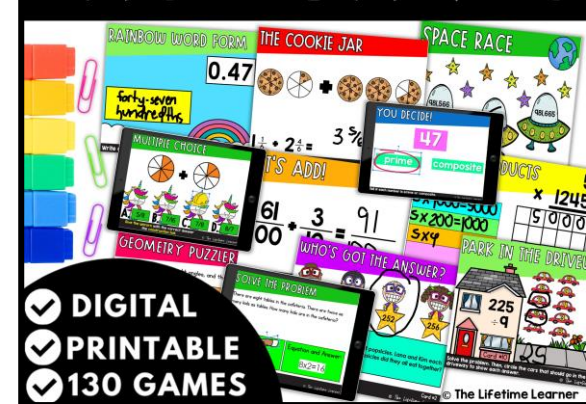
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4TH GRADE



GRAB IT! $1\frac{4}{8} \div 2\frac{1}{6} =$

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