



Dear Third Grade Families,

In Unit 8, students will work on the following third grade Common Core standard in the Operations and Algebraic Thinking (OA) domain.

3.OA.9	Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. <i>For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.</i>
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Unit 8 Concepts:

- Patterns on an Addition Table
- Patterns on a Hundreds Chart
- Patterns on a Multiplication Table
- Find Patterns Using Input and Output Tables
- Find a Pattern to Solve Word Problems

Unit 8 Vocabulary:

- Pattern
- Even and odd numbers
- Columns and rows
- Commutative Properties of Addition and Multiplication

Properties of Operations

Commutative Property
 $6 + 2$ and $2 + 6$ both = 8
 6×2 and 2×6 both = 12

Need a review? Check out our lesson videos on-line!

swunmath.com/student-videos

If you don't know the class's special name, ask your child's teacher.

The Addition Table, Multiplication Table, Hundreds Chart, and an In & Out Table are provided on the back of this letter. Refer to these as you ask your child to justify their math reasoning using patterns.

Ask questions like these to help your child become a productive mathematical thinker:

- On the Addition Table, look at the row and column for sums with 4. What happens with the digit in the ones place? Where do the row and column intersect? How does that change when we look at the row and column for sums with 5?
- On the Multiplication Table, look at the row and column for products with 4. What happens with the digit in the ones place? Where do the row and column intersect? How does that change when we look at the row and column for products of 5?
- On the Hundreds Chart, shade all the multiples of 5. What pattern do you see? What happens to the digits in the ones place?
- What other patterns do you know about on these tables?
- How can you use and In & Out Table to look at patterns and solve a problem?

We encourage you to talk with your child daily about what was learned in math class.

Thank you for your support!

Grade 3 – Unit 8

Identifying Patterns



+	1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10	11
2	3	4	5	6	7	8	9	10	11	12
3	4	5	6	7	8	9	10	11	12	13
4	5	6	7	8	9	10	11	12	13	14
5	6	7	8	9	10	11	12	13	14	15
6	7	8	9	10	11	12	13	14	15	16
7	8	9	10	11	12	13	14	15	16	17
8	9	10	11	12	13	14	15	16	17	18
9	10	11	12	13	14	15	16	17	18	19
10	11	12	13	14	15	16	17	18	19	20

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

×	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

In	Out