How Numbers Work

Line Master 1

(Assessment Master)
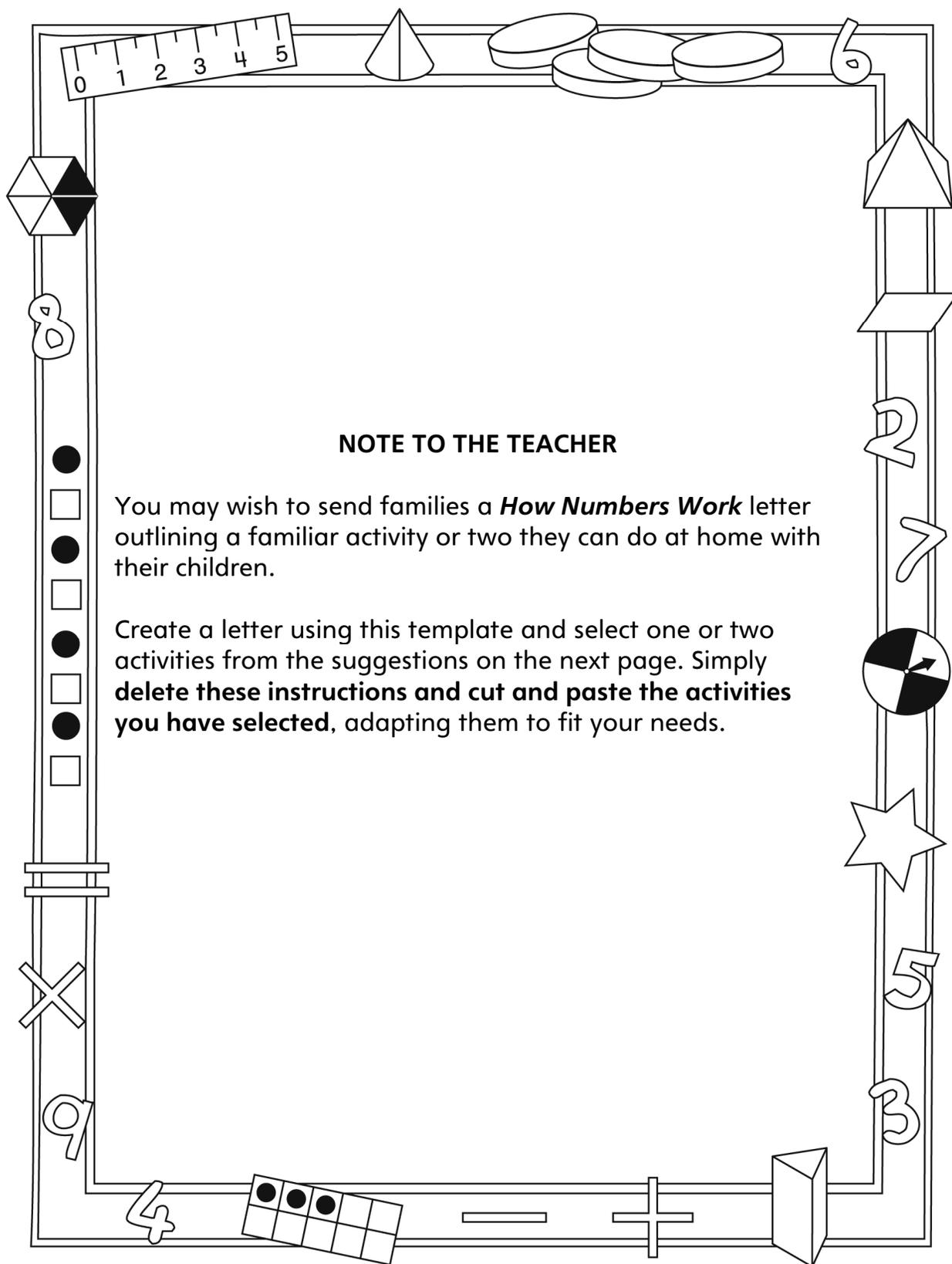
Name: _____

Compose and Decompose 3-digit Numbers	Not observed	Sometimes	Consistently
Identifies and represents the value of a digit in a number according to its position in the number			
Writes and reads 3-digit numbers as 100s, 10s, and 1s			
Represents and explains the relationship among 1, 10, 100, and 1000			
Groups quantities based on units of 10 (to 1000)			
Find and Use Number Patterns			
Identifies and describes numerical patterns			
Determines 10 or 100 more/less than a given number without counting			
Counts forward or back by 5s, 10s, 25s, and 100s to 1000			

Strengths:

Next Steps:

Connecting Home and School Line Master 2–1

NOTE TO THE TEACHER

You may wish to send families a *How Numbers Work* letter outlining a familiar activity or two they can do at home with their children.

Create a letter using this template and select one or two activities from the suggestions on the next page. Simply **delete these instructions and cut and paste the activities you have selected**, adapting them to fit your needs.

Connecting Home and School Line Master 2–2

Dear Family:

We have been working on **How Numbers Work**, which engages children in conversations, investigations, and activities that help to develop their understanding of the big math idea that "Quantities and numbers can be grouped by units or split into units." Particular focus is placed on composing and decomposing 3-digit numbers. Try this activity at home with your child.

✂ –

Reading the Story: As you read the story, enjoy discussing the different number systems. We have answered many of the code breaker's questions and your child can share responses with you. Together, create numbers in different systems. Your child can bring these numbers to class and take on the role of code breaker, offering the numbers to classmates to decipher. Please send them in by (date).

✂ –

Numbers in Our World: The book **How Numbers Work** ends with a presentation of some of the many ways we use numbers. Be on the lookout together for numbers in the environment. Photograph interesting numbers found in your environment and/or collect numbers from print sources. Send them to class where we will sort, compare, and order them.

✂ –
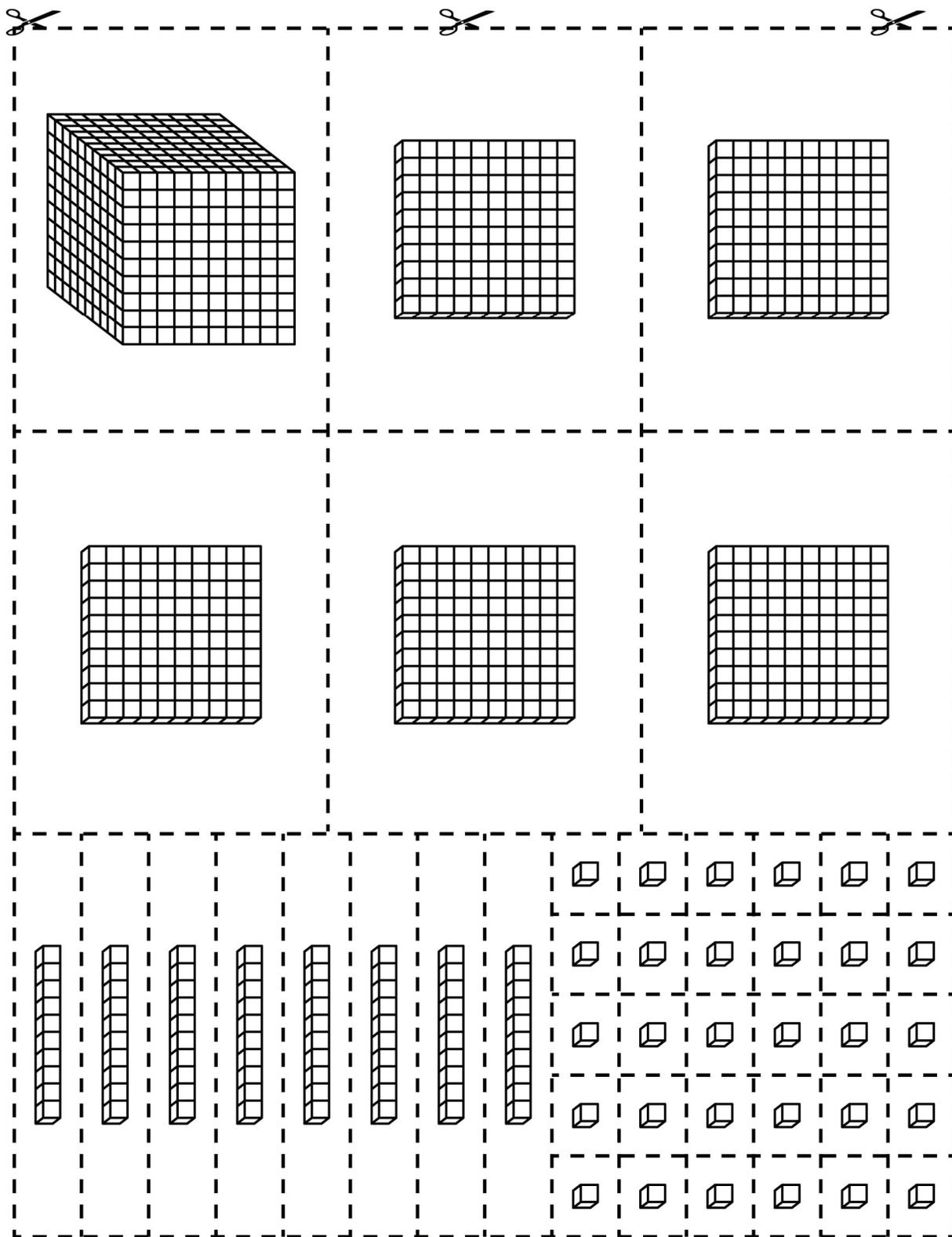
First to 1000: In this game, players practise adding 1, 10, and 100 to numbers as they try to get to 1000 first. Adding 1, 10, and 100 to numbers helps your child to see patterns in our number system. Together, choose a 2-digit number. On your turn, you can add 1, 10, or 100. Record as you go. The player who reaches exactly 1000 wins the round. You might then play starting at 1000 and subtract 1, 10, or 100 with the goal of reaching 0.

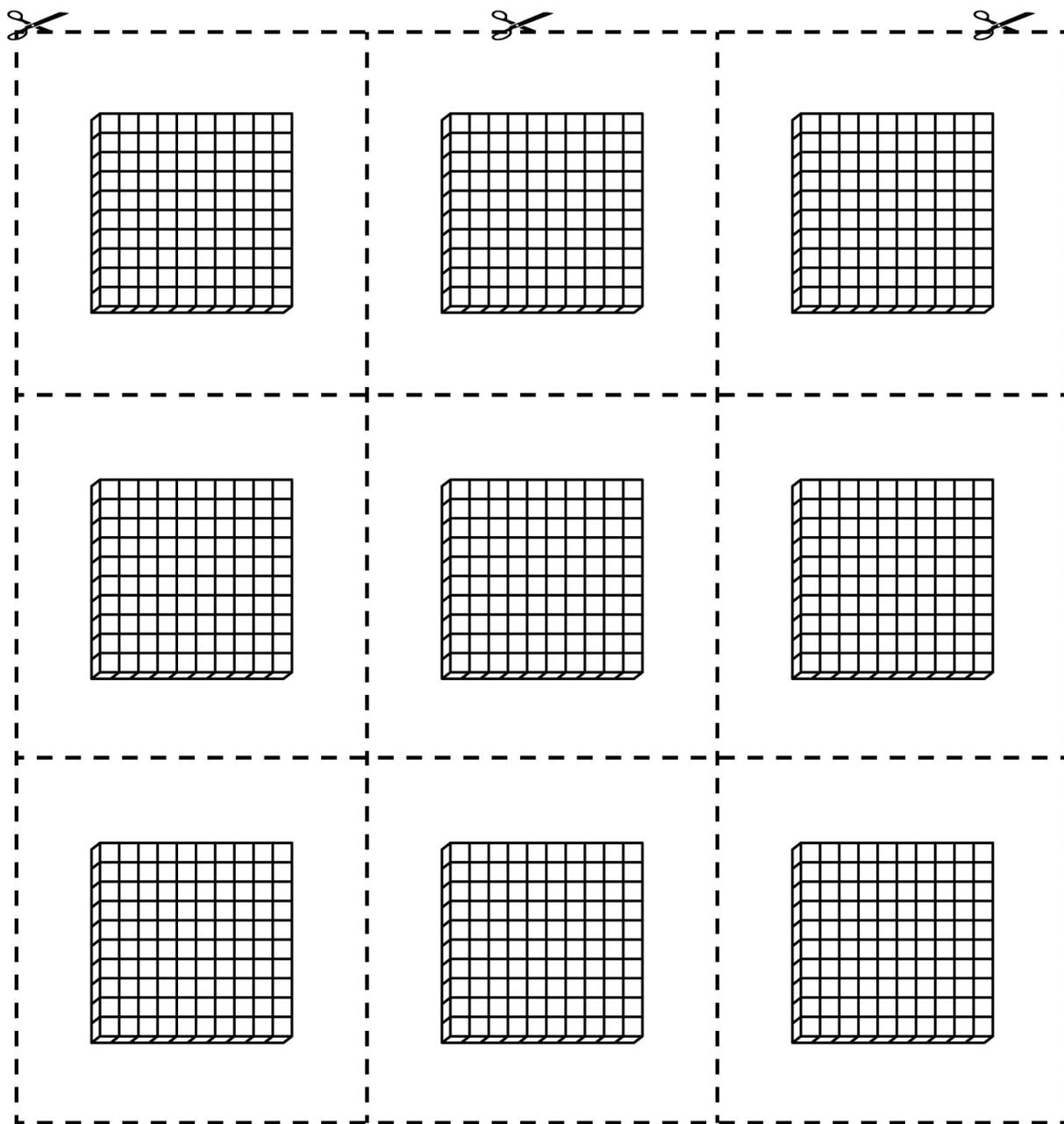✂ –

Sincerely,

_____

Base Ten Cutouts

Line Master 3–1

Base Ten Cutouts

Base Ten Cutouts
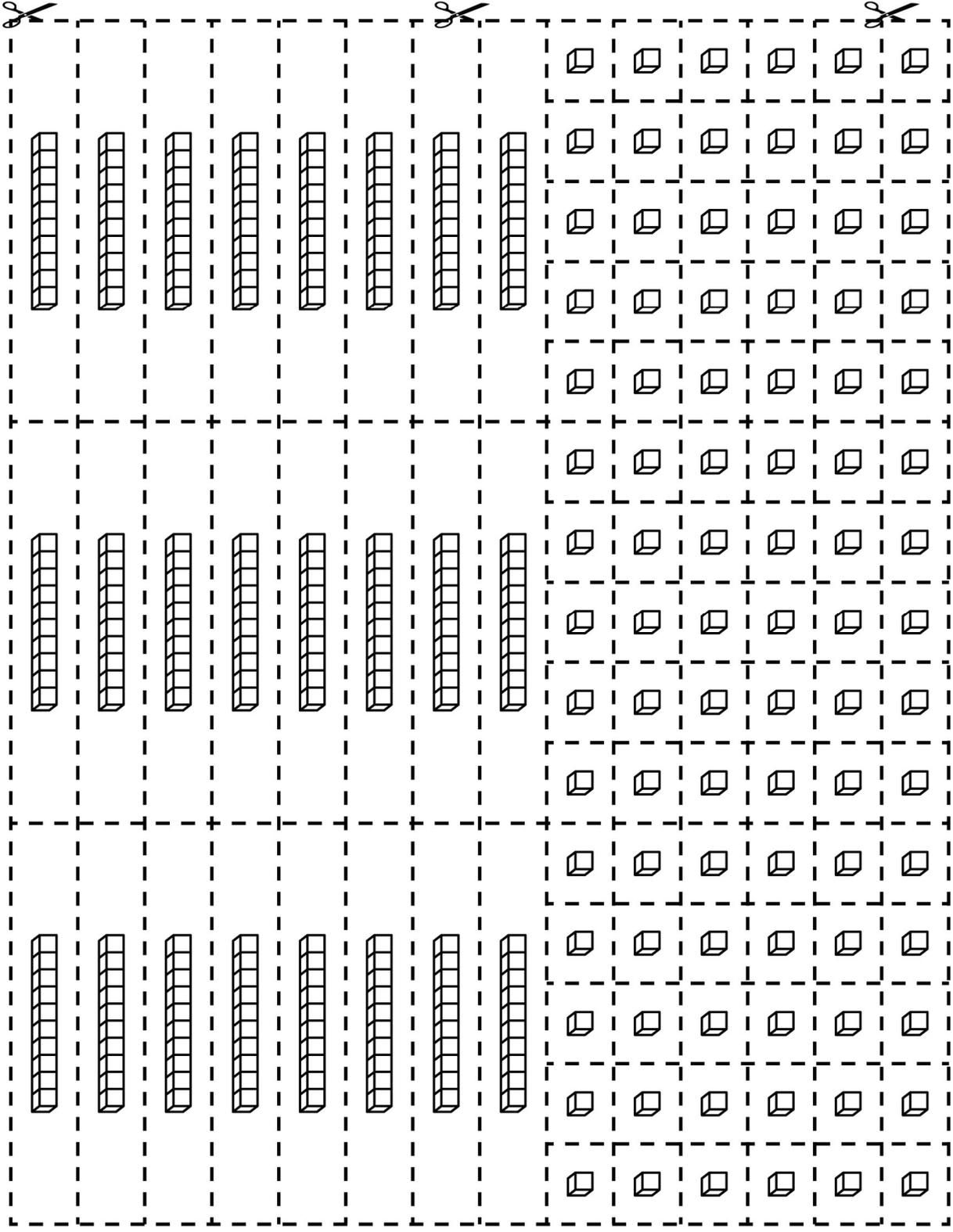
How Numbers Work
Math Mat
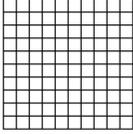
Hundreds	Tens	Ones

Many Numbers

Name: _____

Use these 3 digits: _____ _____ _____

What numbers can you make?

2-digit Numbers	3-digit Numbers

Choose one number and describe it. You might tell and show:
• the number of 100s, 10s, and 1s
• how you can draw it
• whether it is odd or even
• what number is 10 greater or less
• what number is 100 greater or less
• whether it is greater or less than 500

Mini Hundred Charts   Line Master 6–1

Name: _____

Colour all numbers with a 3 in them.

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

Colour all numbers with an 8 in them.

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

Colour all numbers you say when you count by 5.

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

Colour all numbers you say when you count by 4.

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

Mini Hundred Charts

Name: _____

Colour all the numbers with digits that add to 10.

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

Colour all the numbers with digits that add to 8.

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

Colour all the numbers with digits that add to 13.

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

Colour all the numbers with 2 digits that are the same.

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

Mini Hundred Charts

Line Master 6–3

Name: _____

Colour all the even numbers.

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

Colour all the odd numbers.

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

Colour all the numbers with digits that differ by 1 (for example, 23 and 98).

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

Colour all the numbers with the tens digit greater than the ones digit.

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

Mini Hundred Charts

Name: _____

Write your own rules for colouring numbers.

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

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

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

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

Many Ways

Name: _____

Number	Draw It	Draw It Another Way	Draw It Another Way

Make 1000 Cards

Line Master 8

10	20	30
40	50	60
70	80	90
100	200	300
400		

Line Master 8, *Make 1000 Cards*
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Make 1000

Line Master 9

Name: _____

Turn	Card	Total
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		

Turn	Card	Total
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		

1000 in 10 Rolls

What You Need:
• number cube

How to Play:
1. Take turns rolling the number cube.
2. On your turn, you can use the number to make a multiple of 100 or 10. For example, if you roll 3 you can make the number 300 or the number 30.
3. Make a recording sheet and record your decision.
4. Each of you has 10 turns.
5. The player who is closest to 1000 wins.

Turn	I roll...	I make...	My running total
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
How close are you to 1000?			

Numbers in Our World   Line Master 11

Name: _____

Numbers That Tell When	Numbers That Tell Where
Numbers That Tell How Much	**Numbers That Tell How Many**

Number Problems
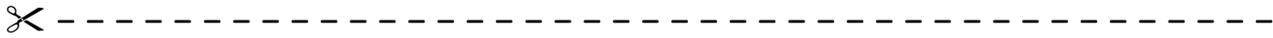
✂ -

Choose a 3-digit number.
Show 3 different ways to represent it. You can use words, numbers, and drawings.

✂ -

Write the number 65 using these ancient number systems.

Babylonian   Egyptian   Maya

✂ -
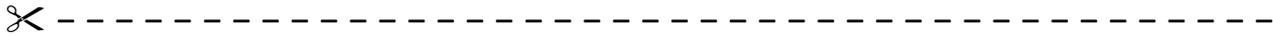
I am a 3-digit odd number.
I have 3 hundreds and 6 tens.
What numbers can I be?

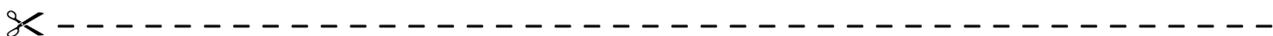✂ -
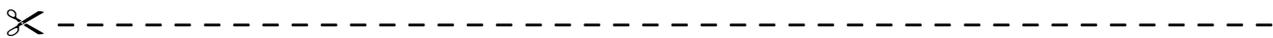
You say me when you count by 5s.
I have 3 digits.
I am an even number.
I have 6 hundreds.
I have an odd number of tens.

✂ -
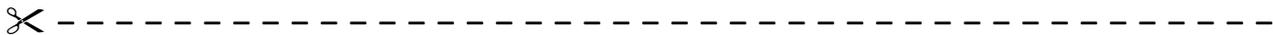
How can you show 345 using Base Ten Blocks if you only have
2 flats?

✂ -
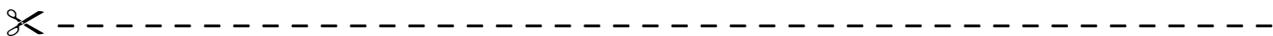
Make up a number riddle.
Use at least 3 clues.
Use these words in your clue:
        hundreds, *tens*, *ones*

✂ -

Number Problems

- -

Choose a 3-digit number.
Show 3 different ways to represent it. You can use words, numbers, and drawings.
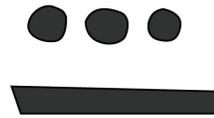
answers will vary

- -

Write the number 65 using these ancient number systems.

Babylonian   Egyptian   Maya

- -
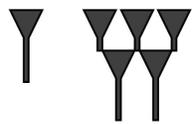
I am a 3-digit odd number.   *360, 361, 362, 363, 364,*
I have 3 hundreds and 6 tens.   *365, 366, 367, 368, 369*
What numbers can I be?

- -

You say me when you count by 5s.
I have 3 digits.   *600, 610, 620, 630, 640,*
I am an even number.   *650, 660, 670, 680, 690*
I have 6 hundreds.
I have an odd number of tens.

- -

How can you show 345 using Base Ten Blocks if you only have 2 flats?

2 flats, 14 rods, and 5 cubes

- -

Make up a number riddle.
Use at least 3 clues.   *answers will vary*
Use these words in your clue:
hundreds, *tens*, *ones*

- -