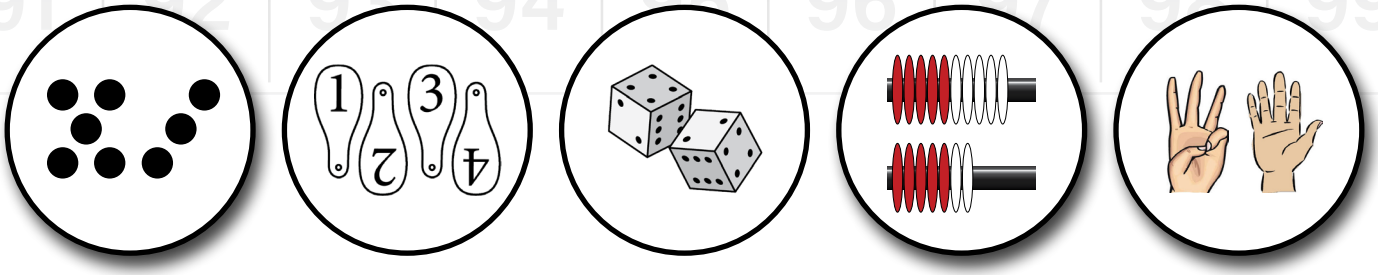
Math Tool Kits

Tools to Support Thinking and Learning in the Early Years' Mathematics Classroom



Manitoba

Manitoba Education
Winnipeg, Manitoba, Canada

This resource is available on the Manitoba Education website at www.edu.gov.mb.ca/k12/cur/math/index.html.

Websites are subject to change without notice.

While the department is committed to making its publications as accessible as possible, some parts of this document are not fully accessible at this time.

Available in alternate formats upon request.

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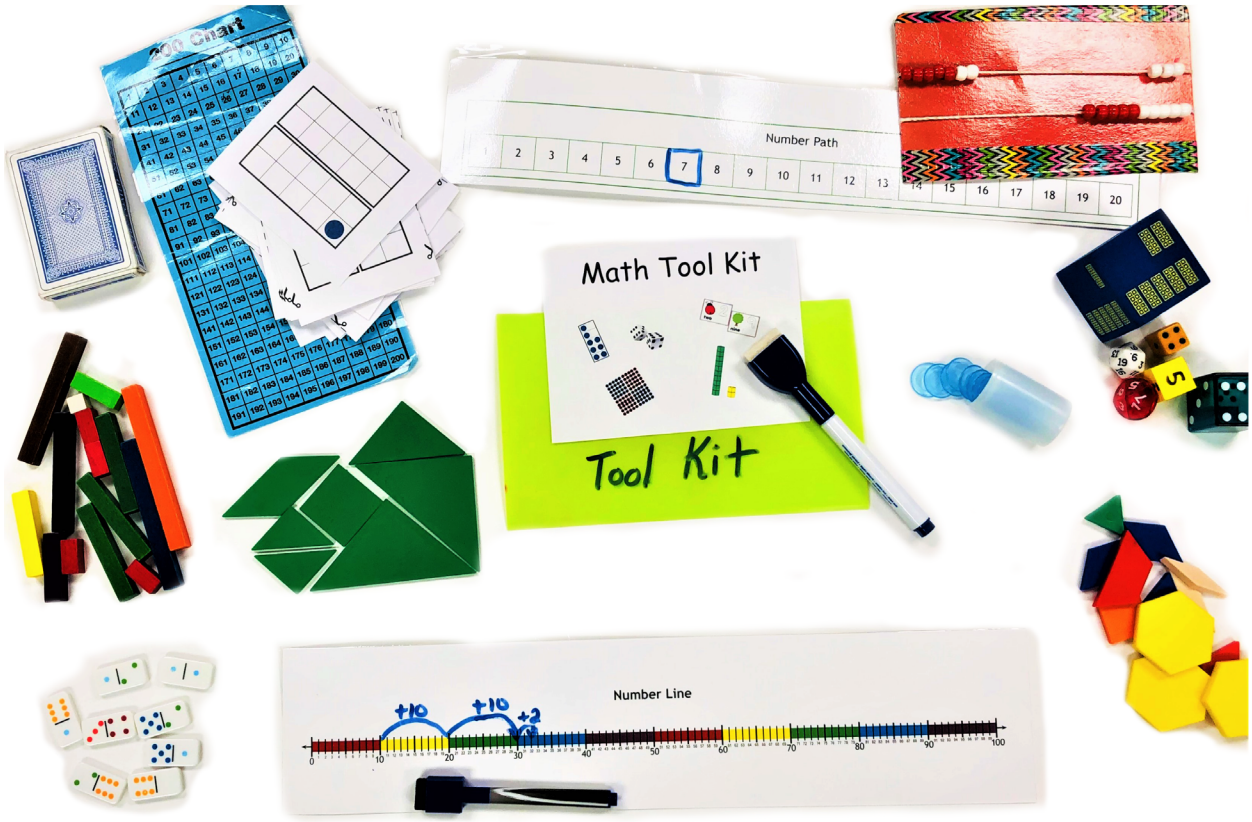
Early Years Math Tool Kit:
Tools to Support Thinking and Learning of Mathematics

What Are Math Tool Kits?

Math tool kits are an organizational item for math tools and manipulatives that are used regularly during mathematics classes to support students when they solve problems or engage in math games. The tools may include items such as dice, number charts and lines, number cards, counters, rulers, and other math manipulatives. All students will benefit from having a collection of tools that are stored in one place and are easily accessible and portable. The aim of math tool kits is to have a selection of tools readily available to support students' thinking and learning as they develop skills such as reasoning, visualizing, communicating, and making connections with mathematical concepts and their thinking.



To make math tool kits user-friendly and useful, use see-through bags and containers to hold the tools. See-through plastic containers such as pencil boxes are another way to store items. It would be advantageous for each student to have their own math tool kit. Tool kits can be tailor-made for students to meet their specific mathematical needs.

see-through reusable plastic bags

see-through plastic containers

The tools that go in the tool kit are dependent on the teacher and the needs of the students. Math tool kits should be filled with materials/manipulatives/tools that are used often in math class or at times when instruction is focused on particular concepts. Dice, cards, number charts, number lines, and show-me boards with erasable markers are staples of the math tool kit. The items should not be placed in the kit all at once but should instead be introduced gradually. Showing students how to use the tools is also important. Students must learn that the tool kit is a resource for them.

The items in the tool kits

- Provide students with access to materials that will help them deepen their conceptual understanding;
- Foster independence in students by reinforcing the idea that using the tools will nurture their growth as problem solvers and promote mathematical thinking and reasoning;
- Help represent, prove, and record their reasoning and thinking skills as they prove their strategies and problem-solving abilities; and
- Provide essential links among concrete, pictorial and symbolic representations of mathematics.

The managing of the math tool kits depends on the class. The tool kits can be stored in students' desks, or hung on the side of students' desks/chairs/tables with a hook.

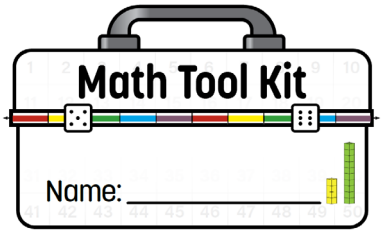
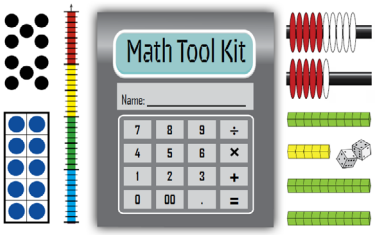
Both concrete tools and printed material can be included in the bag. Many items can be purchased inexpensively at dollar stores or from publisher vendors. Printed material can be copied onto stock paper and laminated.

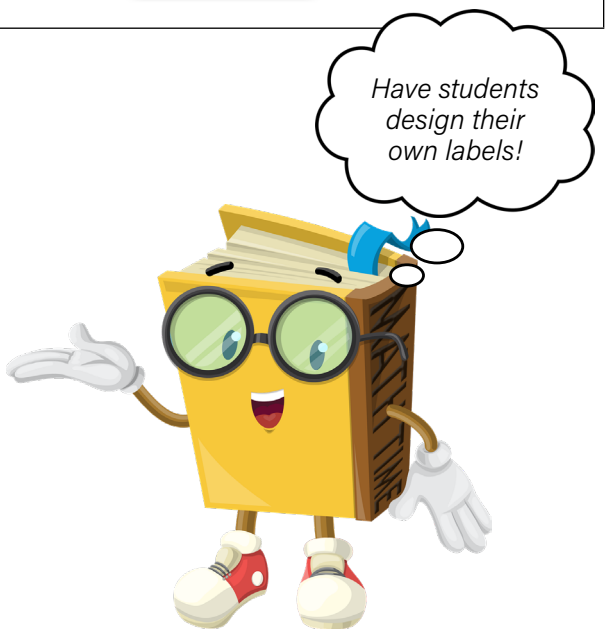
Suggested Tips

- Ensure that the tool kit is easily accessible for students.
- Store tools in more durable plastic bags and boxes.
- Place duct tape around the edges of the bag to make them more durable.
- Place students' names on the kits.
- Copy tools onto cardstock and laminate.
- When introducing tools, model different ways to use them and create a visual record on a class chart showing these different ways.
- If possible, make two tool kits for each student. A tool kit for classroom use and one for home.
- Tools can be a vehicle that allows students to show their understanding of concepts while working individually or in small groups, or during whole-class instruction.
- When learning remotely, students can have their math tool kit readily available to use.

Math Tool Kit Labels

The following three BLMs can be used as tool kit labels.

Math Tool Kit Labels	
Label Number	Visual Sample
1	
2	
3	

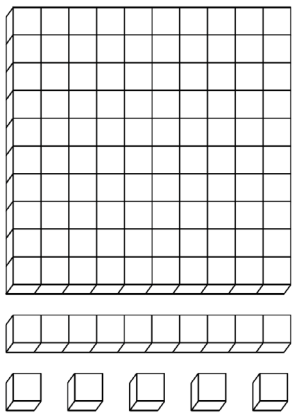
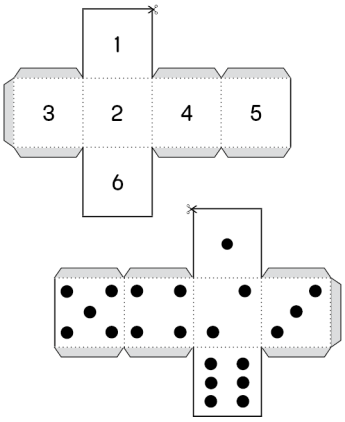


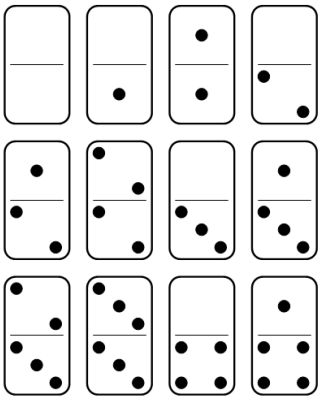
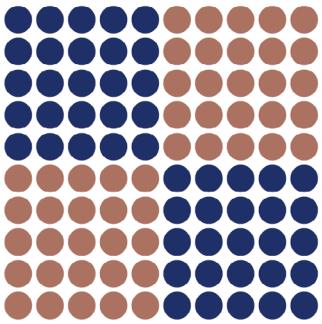
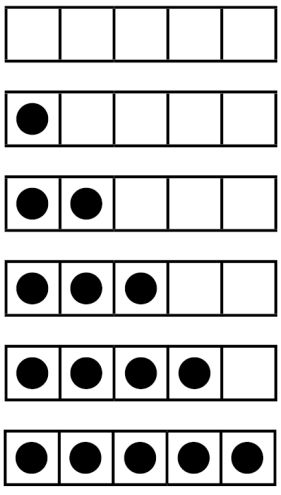
Blackline Masters (BLMs)

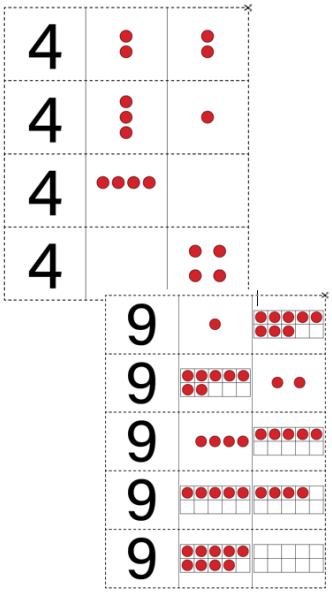
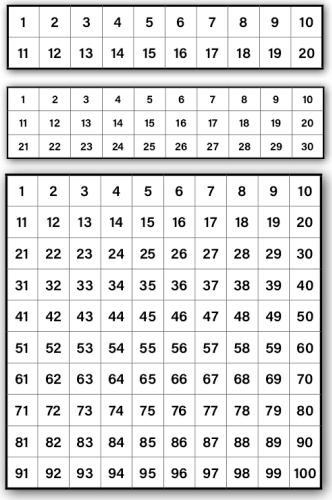
Many tools for the kit can be created using blackline masters (BLMs) that are printable tools. Manipulatives such as number lines, number paddles, and number charts can be copied onto stock paper, laminated, and included in the kit.

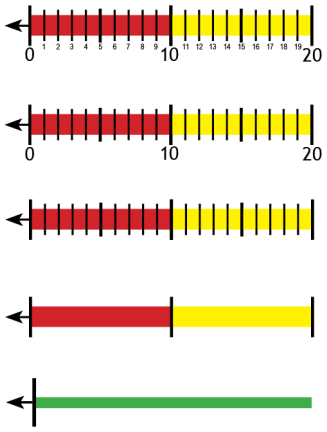
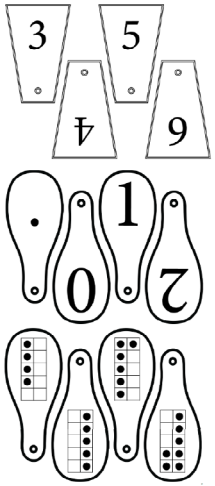
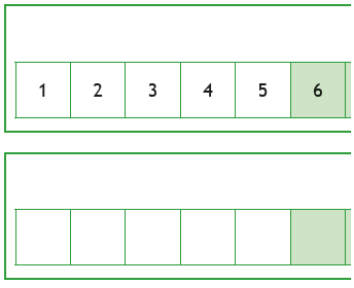
NOTE: When copying the BLMs from the hyperlink, set the printer or copier to the correct setting. In some instances, you must print the BLMs in landscape mode. Depending on the printer or copier, you can print some of the BLMs on letter (8.5" x 11"), legal (8.5" x 14"), and ledger/tabloid (11" x 17") paper. Each BLM is hyperlinked from the document and the Math Tool Kit website.

The following BLMs can be copied and laminated for students to place in their tool kits. The BLMs listed alphabetically below are a sample of what can be included. The list is not exhaustive.

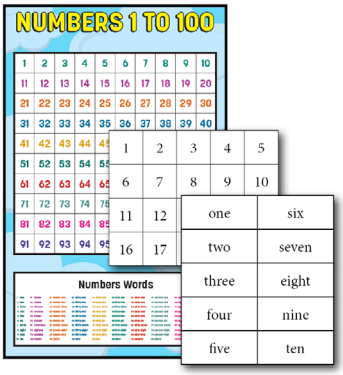
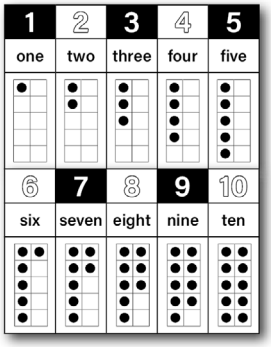
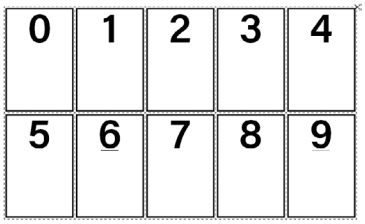
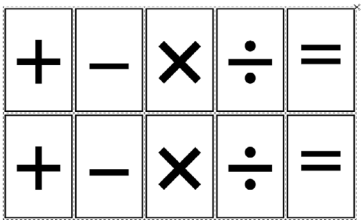
Blackline Masters (BLMs) List		
BLM	Visual Sample	Description of Use
Base Ten Blocks		Students need to use the concrete models to represent numbers before using the pictorial representation of the blocks.
Dice		The BLM of a dice can be copied onto stock paper and used for math activities and games. The paper dice can be used for the take-home math tool kit.

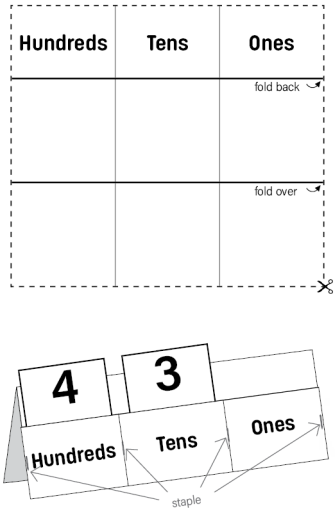
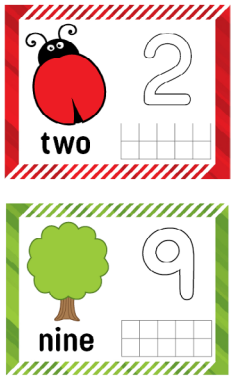
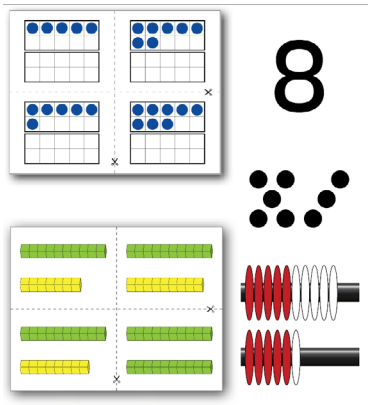
Blackline Masters (BLMs) List		
BLM	Visual Sample	Description of Use
Dominoes (Total of Pips to Ten)		Dominoes can be used to • Prompt different mental images of numbers • Develop part-whole understanding • Compare quantities • Order numbers • Relate given numbers to 5 and 10 • Solve addition and subtraction problems • Explore patterns • Play different math games
Dot Array		Dot arrays help students visualize numbers and their relationships, and develop part-whole understanding. Arrays are models for using when learning about multiplication. Use the dot array to teach commutative and distributive property.
Five Frames • Small • Large		Five frames are a visual aid to help students • Relate a numeral, 1 to 5, to its respective quantity • Prompt different mental images of numbers • Develop part-whole understanding • Compare quantities • Order numbers • Relate given numbers to 5 and 10 • Solve addition and subtraction problems

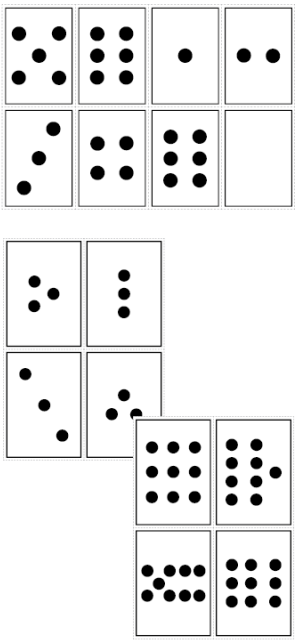
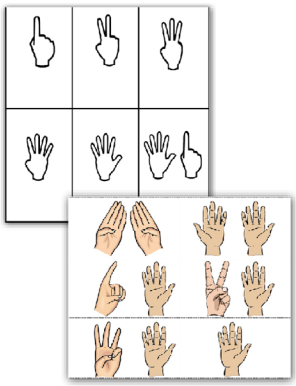
Blackline Masters (BLMs) List		
BLM	Visual Sample	Description of Use
Missing Part Cards		Based on an activity by John Van de Walle, missing part cards can be used for problem solving, part-whole relationships, and math-fact practice. Students are given the whole (the numeral) and one of the parts and they must find the "missing part."
Number Charts ▪ 1–20 ▪ 1–30 ▪ 1–100 ▪ 0–99 ▪ 100 Blank ▪ 100 (four 1–100) ▪ 1–120 ▪ 1–200 ▪ Bottom up 1–100		Number charts are a visual aid to help students • Count • Skip count • Identify numerals • Explore patterns • Problem solve • Add and subtract Read the National Council of Teachers of Mathematics (NCTM) article "*A Bottom-Up Hundred Chart?*" at www.nctm.org/Publications/Teaching-Children-Mathematics/2017/Vol24/Issue3/A-Bottom-Up-Hundred-Chart_/ to find out about the benefits of using a bottom-up number chart.

Blackline Masters (BLMs) List		
BLM	Visual Sample	Description of Use
Number Lines (Horizontal) ▪ 0 to 100 with Accentuated Units and Each Number from 0 to 100 ▪ 0 to 100 with Accentuated Units and Numbers Showing the Multiples of Tens ▪ Blank with Accentuated Units ▪ Blank with Fewer Accentuated Units ▪ Open Number Line		The number line is a shift away from counting a number of objects to a length model that appears as a continuous line. Students must learn to count the unit length rather than the numbers.
Number Fans and Paddles ▪ Fan (0–9) with decimal ▪ Paddle (0–9) with decimal ▪ Ten Frames		Students can show their solution by showing the answer with the number paddles. Have students show • A spoken number • The number before/after • An answer to a story problem • The sum/difference or product/ quotient of a problem
Number Path ▪ 1–20 and Blank Number Path		The step before using number lines is to use number paths. The units are easy to recognize on a number path. Each number is represented by a rectangle and can be counted. The path is shaded in groups of five so students can start to use benchmark numbers.

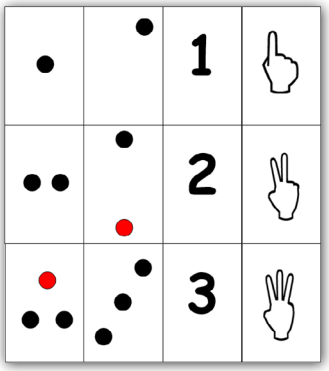
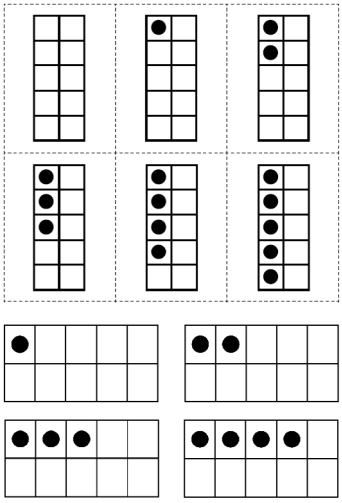
Blackline Masters (BLMs) List

BLM	Visual Sample	Description of Use
Number Words and Numerals ▪ 1–20 ▪ 1–100		The numerals along with the written words of the numbers 1 to 20.
Number Words and Ten Frame Path		Number Path featuring numbers, words and ten frames 1 to 10. It can be used as a reference for students.
Numeral Cards ▪ 0–9 ▪ 0–100		The cards can be cut apart and used to • Order numbers • Make equations • Match numerals to visual representations • Engage in math games
Operation Symbols		The cards match the size of the 0–9 numeral cards. They can be cut apart and students can make equations.

Blackline Masters (BLMs) List		
BLM	Visual Sample	Description of Use
Place Value Pockets ▪ Hundreds ▪ Thousands ▪ Ten Thousands		The pockets can be used after the introduction of place value to represent numbers. Copy 2- to 4-digit cards depending on the numbers that will be represented. To make the pocket • Cut out the pocket on the dotted lines. • Fold back the place value words. • Fold over the last line the other way to make a tent. • Staple along all the vertical lines of place value representation. • Use 0-9 Numeral Cards for pockets.
Representation of Ten Frame with Numeral and Word (1–10)		Students can represent objects in the ten frame of the number. They can also use rocks, counters, and leaves and arrange them in different ways.
Representations to 20 Cards ▪ Large ▪ Small		Representation of numbers from 1 to 20 on both small cards and teacher demonstration cards. The representations include numerals, ten frames, dots, Rekenrek, and Base-10. The cards can be used to build number sense and for different games. Students can arrange the numbers in sequential order.

Blackline Masters (BLMs) List		
Subitizing Cards—Dot Patterns ▪ Regular (1–6) ▪ Regular and Irregular (1–10)		Subitizing is the ability to rapidly determine the quantity of a small group of objects without counting. There are two types of subitizing. Perceptual subitizing is the ability to recognize the quantity of a set without counting. It is the basis for counting and cardinality. Conceptual subitizing is seeing number patterns within a set (part—whole) and then determining the quantity by putting the number patterns together.
Subitizing Cards—Finger Patterns		Finger patterns can be used for subitizing activities including • Matching finger patterns to a numeral (quick images) • Showing finger patterns of one more or less of a numeral • Showing finger patterns to come after or before a numeral • Showing an answer to a story problem • Showing what the finger pattern represents on a show-me board • Showing different representations of a numeral (Ten Frame or Base 10 Card) to match a finger pattern • Communicating how students see a finger pattern through a number talk These activities can be used with any subitizing set of cards.

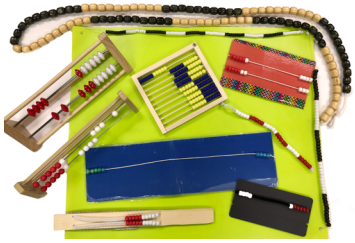
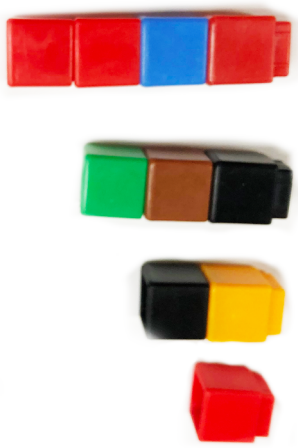
Blackline Masters (BLMs) List

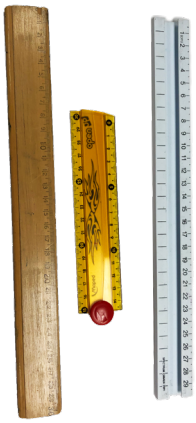
Subitizing Cards—Matching (1–10)		Have students order the numbers and then place the matching numeral with the representation. Use the cards to play games such as "Go Fish" and "Concentration."
Ten Frames ▪ Small (five-wise) ▪ Large ▪ Double Ten Frame Mat – Horizontal – Vertical		Five frames are a visual aid that helps students • Relate a numeral, 1 to 5, to its respective quantity. • Prompt different mental images of numbers • Develop part-whole understanding • Compare quantities • Order numbers • Relate given numbers to 5 and 10 • Solve addition and subtraction problems • Visualize mental math strategies

Concrete Math Manipulatives for the Early Years Math Tool Kit

There are number of concrete math manipulatives that can be included in the tool kit to support students' thinking and learning of mathematics. Some suggestions of items include those in the following list. Many of the manipulatives can be purchased from publisher vendors who sell mathematics manipulatives. Check publishers' catalogues or online for items. Many items can be purchased inexpensively at dollar stores.

Concrete Tools List		
Concrete Tool	Visual	Description of Use
Calculators		Use the constant feature to look for patterns.
Counters		Counters can be encased in smaller bags or small containers. Counters can be bingo chips, buttons, beans, teddy bears, or tiles. Two-sided counters that have different colours on each side are good to add in the bag to generate number combinations.
Base-10 Material		The standard base-ten blocks and DigiBlocks can be added for students who have a better grasp of place value. For pre-place value learning, use materials such as ten frames, craft sticks, or interlocking blocks.

Concrete Tools List		
Concrete Tool	Visual	Description of Use
Beaded Number Lines and Rekenreks		Beaded counting frames and lines from 5 to 100 can be used to show number relationships. Students can make their own or they can be purchased.
Dice (Number Cubes)		Dice come in a variety of forms and sides (6 to 20 and above). Dice can be made from small cubes of wood or foam. A variety of symbols, dots, and words can be placed onto the sides. Many vendors sell dice and dollar stores sell the basic six-sided dice. Dice can be used to • Generate numbers • Play math games • Make equations to practice math facts
Interlocking Cubes		Interlocking cubes can be used to show number combinations or for graphing. They should be used in the Early Years' classroom because they are easier to manipulate.

Concrete Tools List		
Concrete Tool	Visual	Description of Use
Playing Cards		Different vendors and dollar stores sell cards that can be used for games. There are a variety of sizes of cards that can be used for demonstration and student use. Cards can be purchased with symbols other than the standard forms.
Rulers		Use rulers for standard measure.
Show-Me Board/White Board with Dry Erase Marker and Eraser		Students can show their thinking or an answer using the show-me board. There are many different kinds of show-me boards that can be purchased from vendors or dollar stores. Show-me boards can be made from laminated stock paper or plastic cutting boards, or by placing stock paper into sturdy page protectors. Erasers can be purchased or they can be made from material such as towels, little mitts, or socks.

Other concrete materials that can be added in tool kits include the following:

- Cuisenaire rods
- Pattern blocks
- Tangrams
- Numicon shapes
- Money
- Attribute blocks
- Tiles
- Fraction circles, tiles, and bars
- Clocks
- Links
- Shapes

Websites for other BLMs

The following sites contain more items that can be used for the tool kit depending on your needs. Items can be copied and laminated.

- http://lrt.ednet.ns.ca/PD/BLM/table_of_contents.htm
- https://wps.ablongman.com/ab_vandewalle_math_6/0,12312,3547876-,00.html
- www.nzmaths.co.nz/numeracy/materialmasters.aspx
- www.sparklebox.co.uk/maths/

If you have suggestions for other BLMs for an Early Years Math Tool Kit, please contact the Kindergarten to Grade 4 Mathematics Consultant at www.edu.gov.mb.ca/k12/cur/math/contacts.html.

Math Tool Kit

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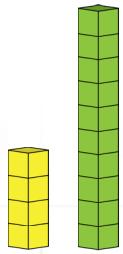

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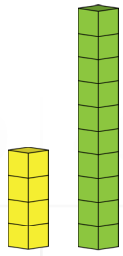

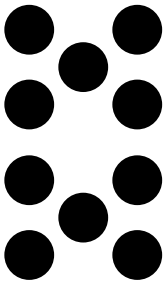

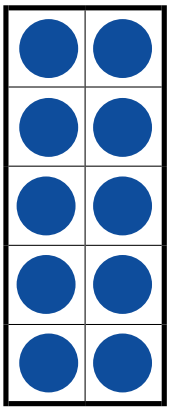

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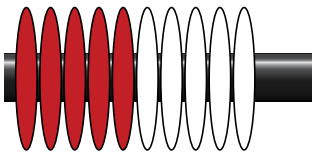

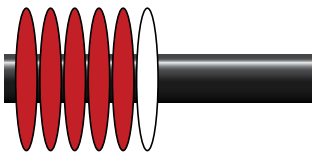

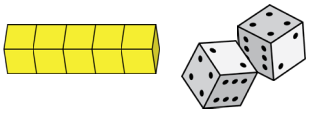

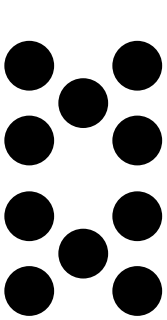

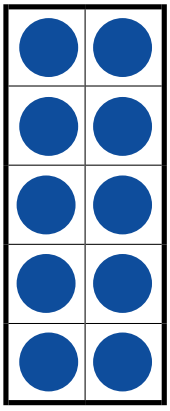

Math Tool Kit

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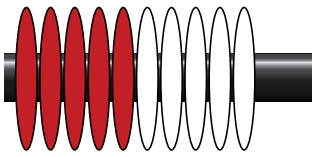
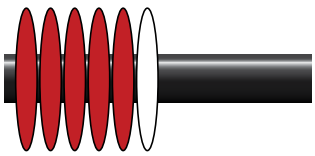
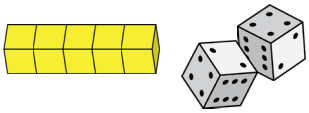
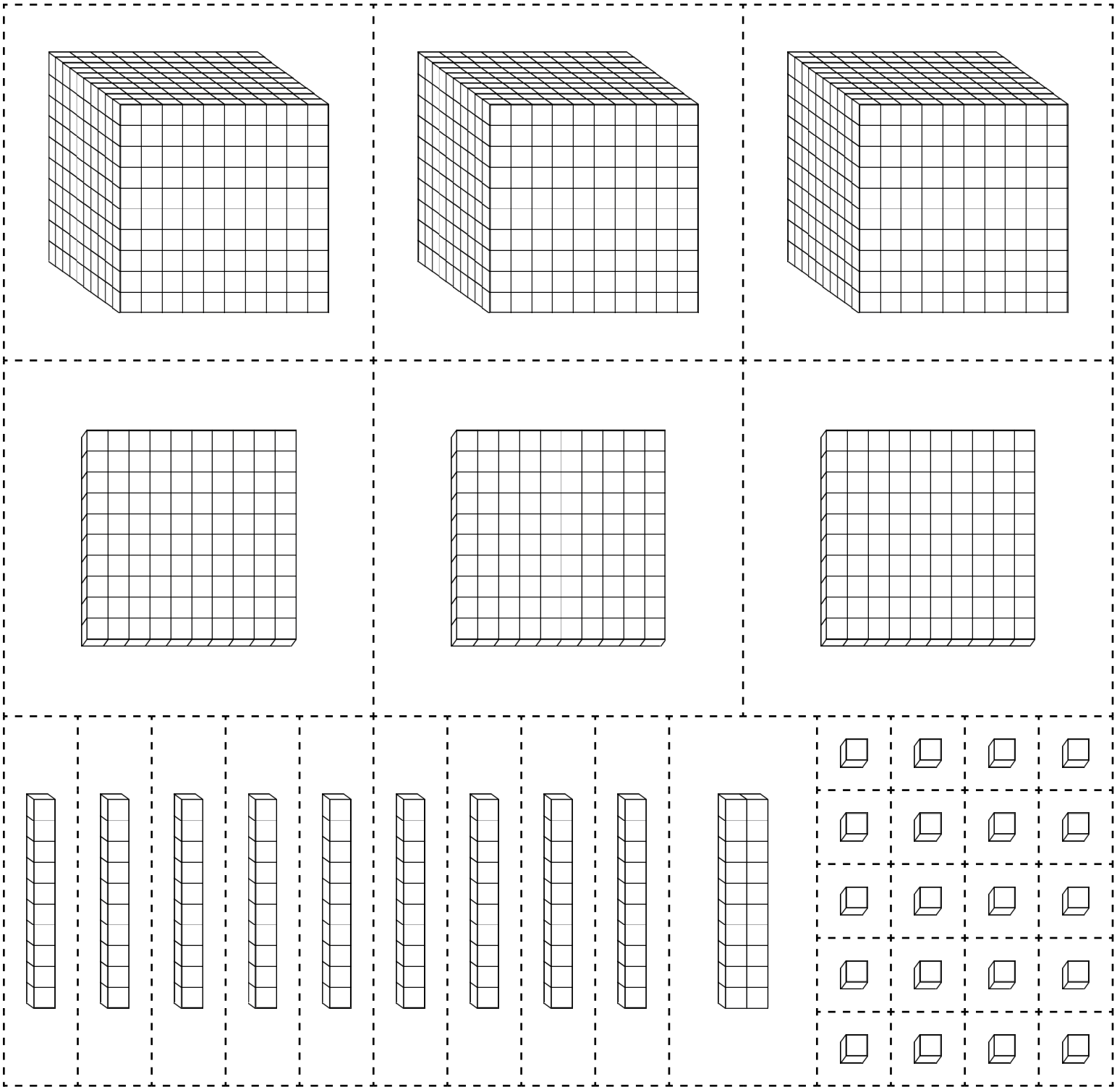




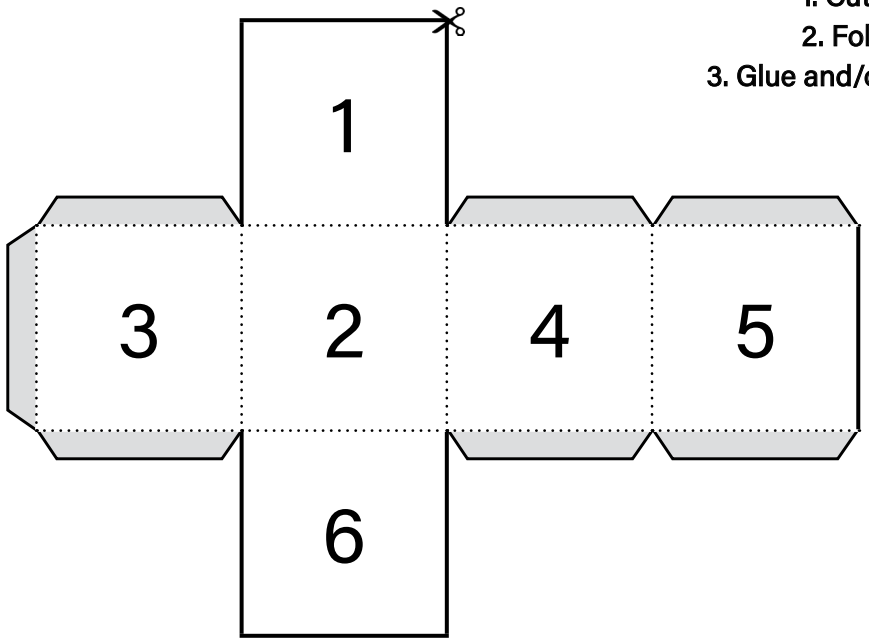


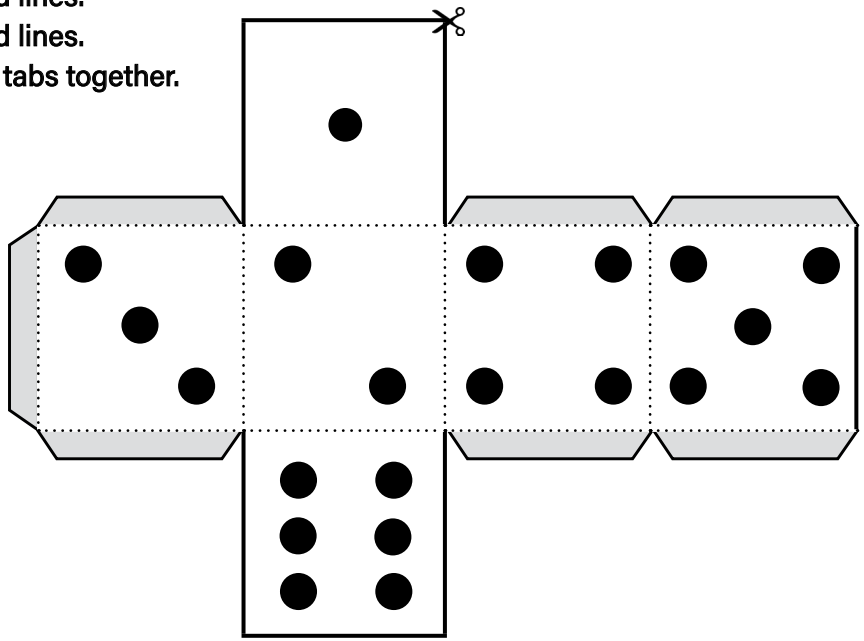
Base 10 Blocks

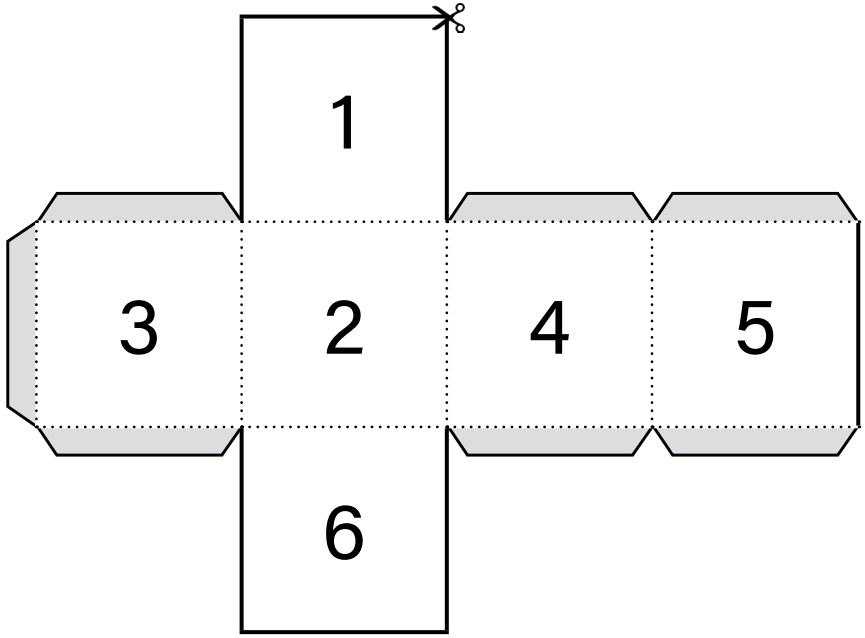


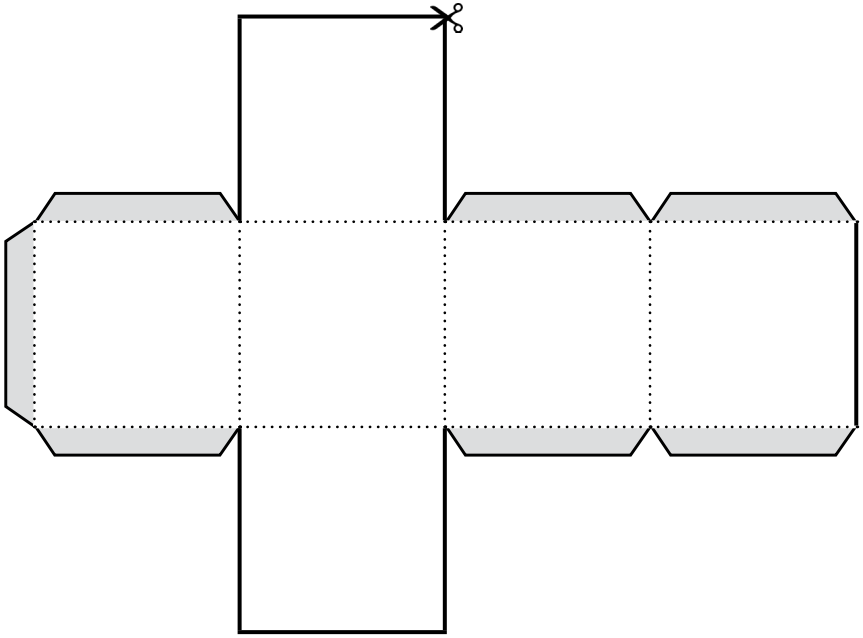
Cutout Dice

1. Cut along solid lines.
2. Fold on dotted lines.
3. Glue and/or tape the tabs together.

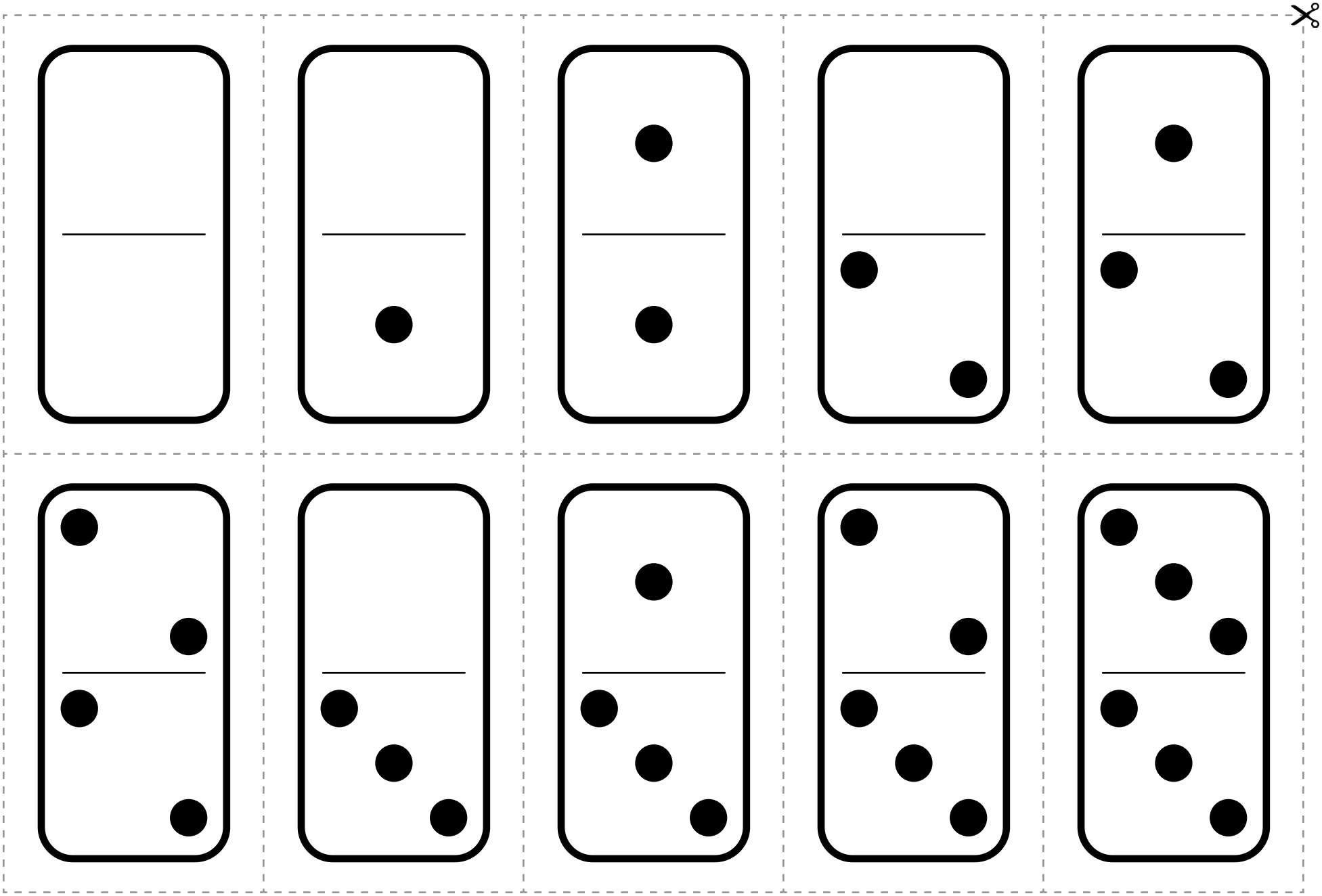




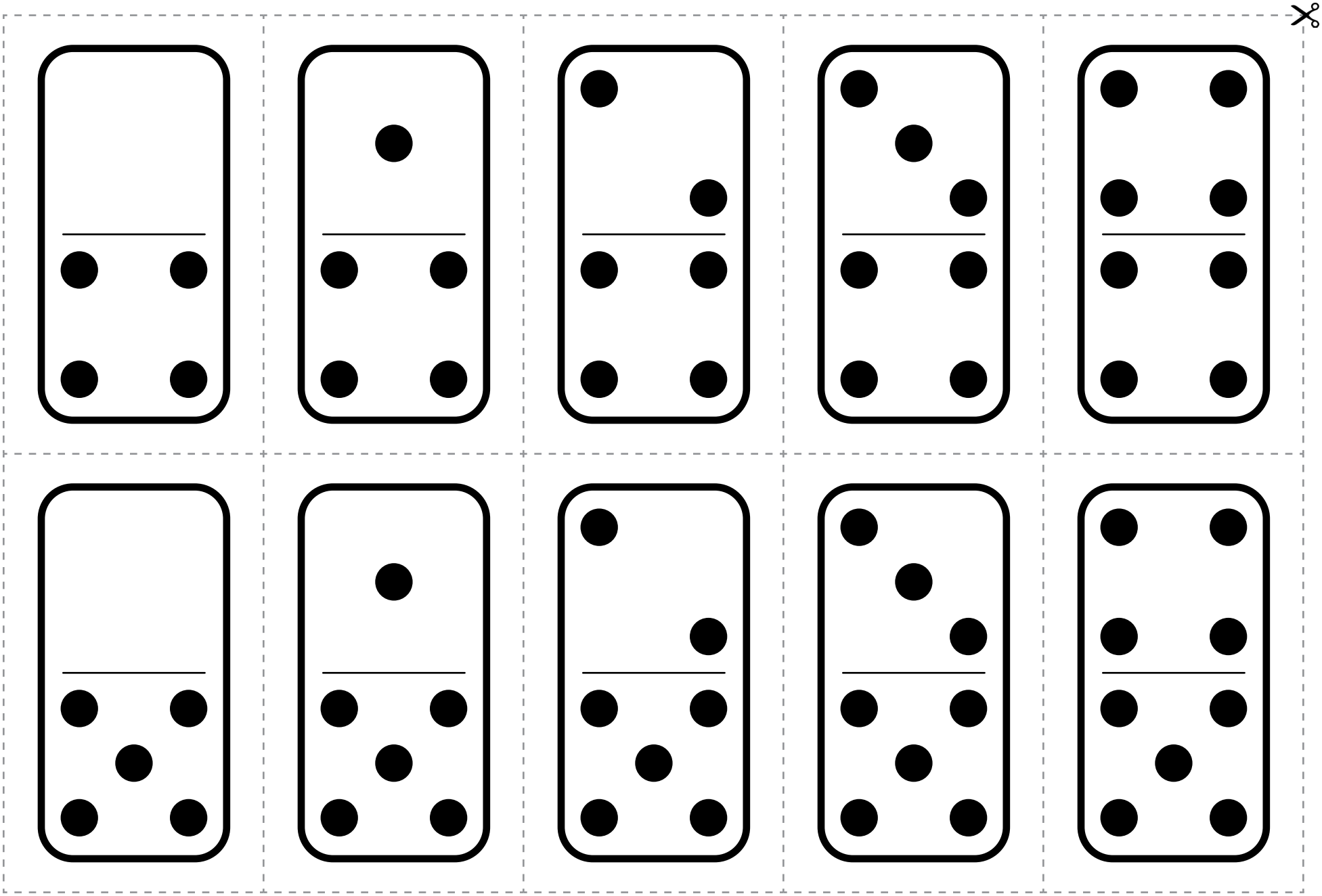




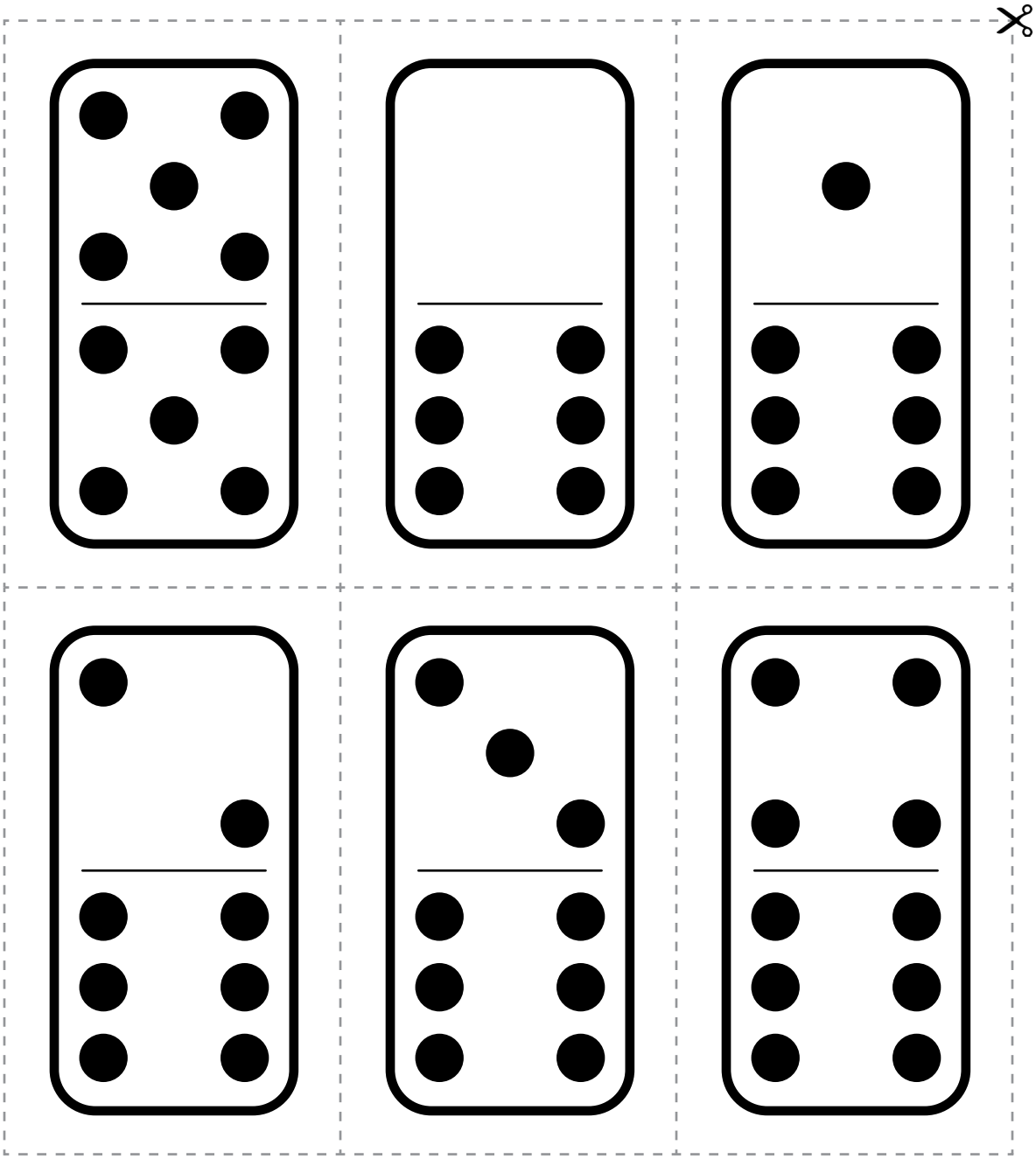
Dominoes—Total of Pips to Ten



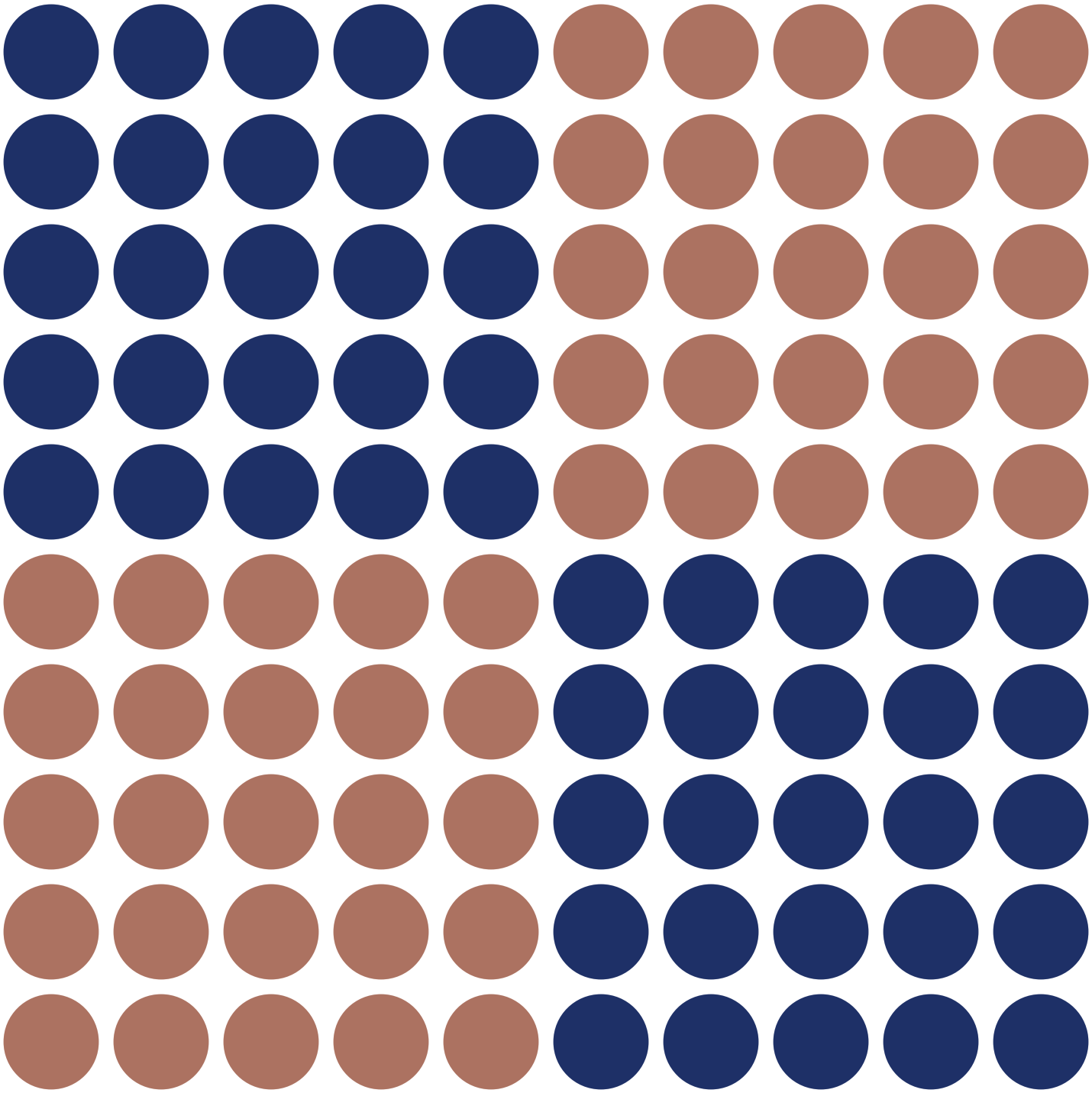
Dominoes—Total of Pips to Ten
(continued)



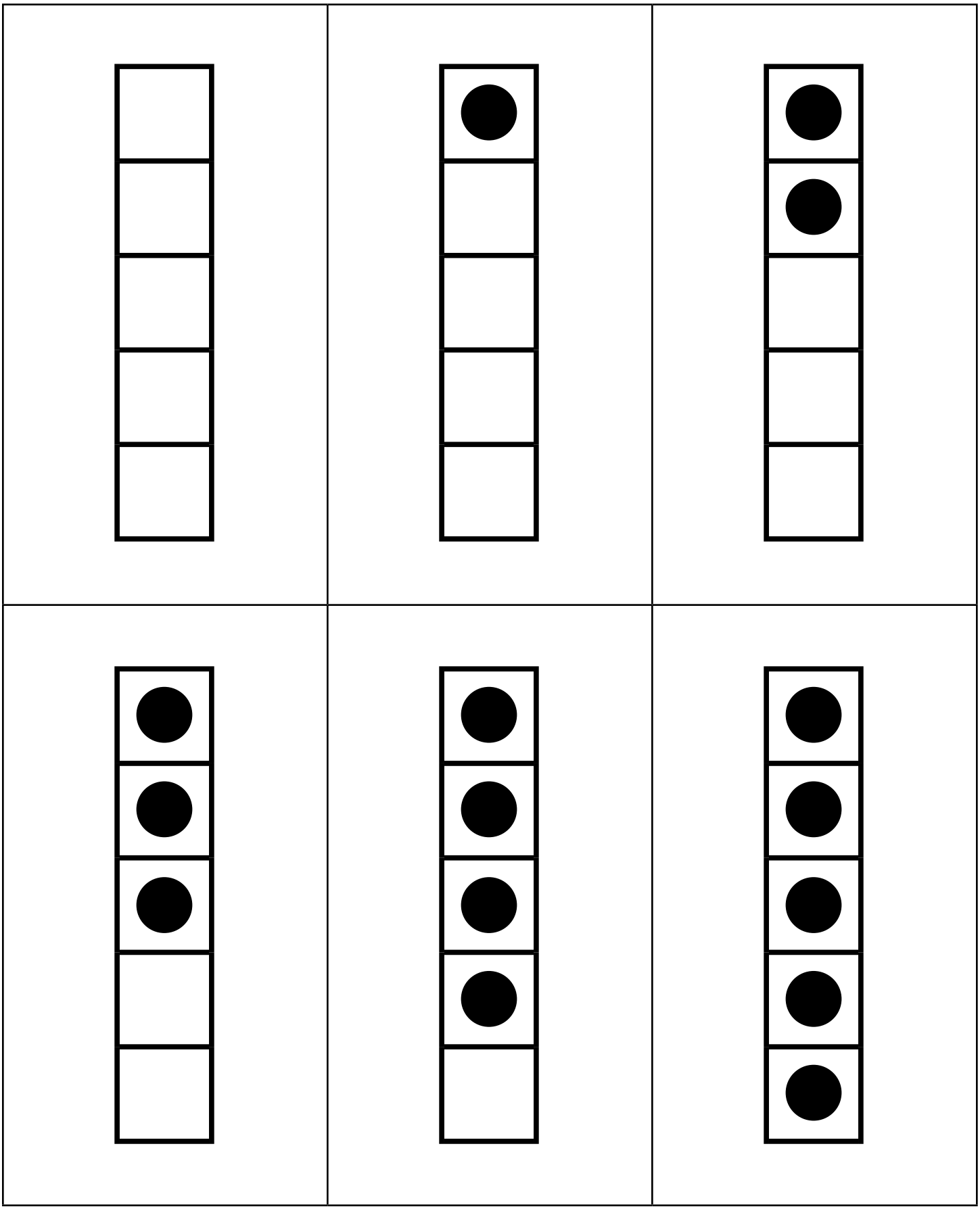
Dominoes—Total of Pips to Ten
(continued)



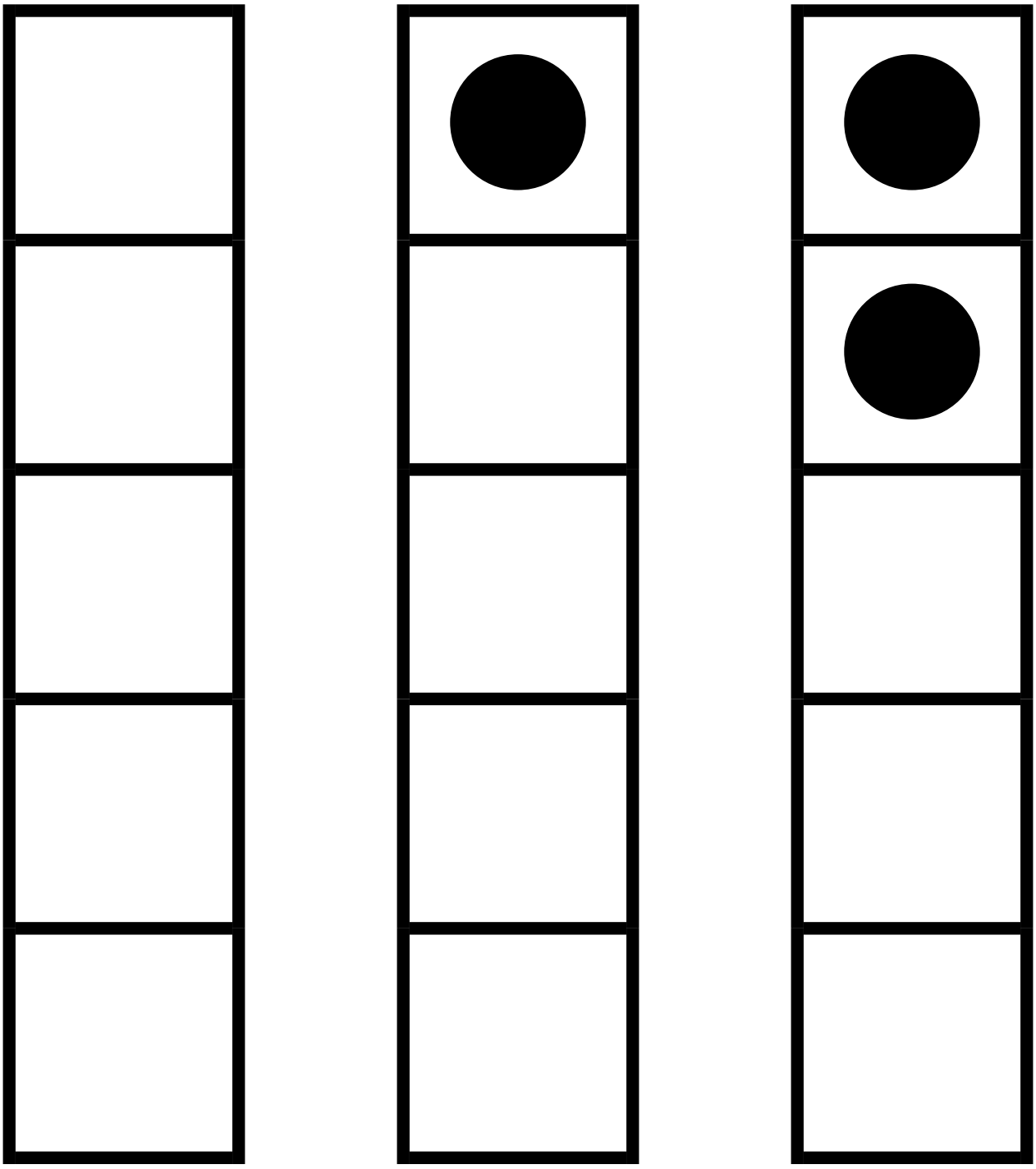
Dot Array



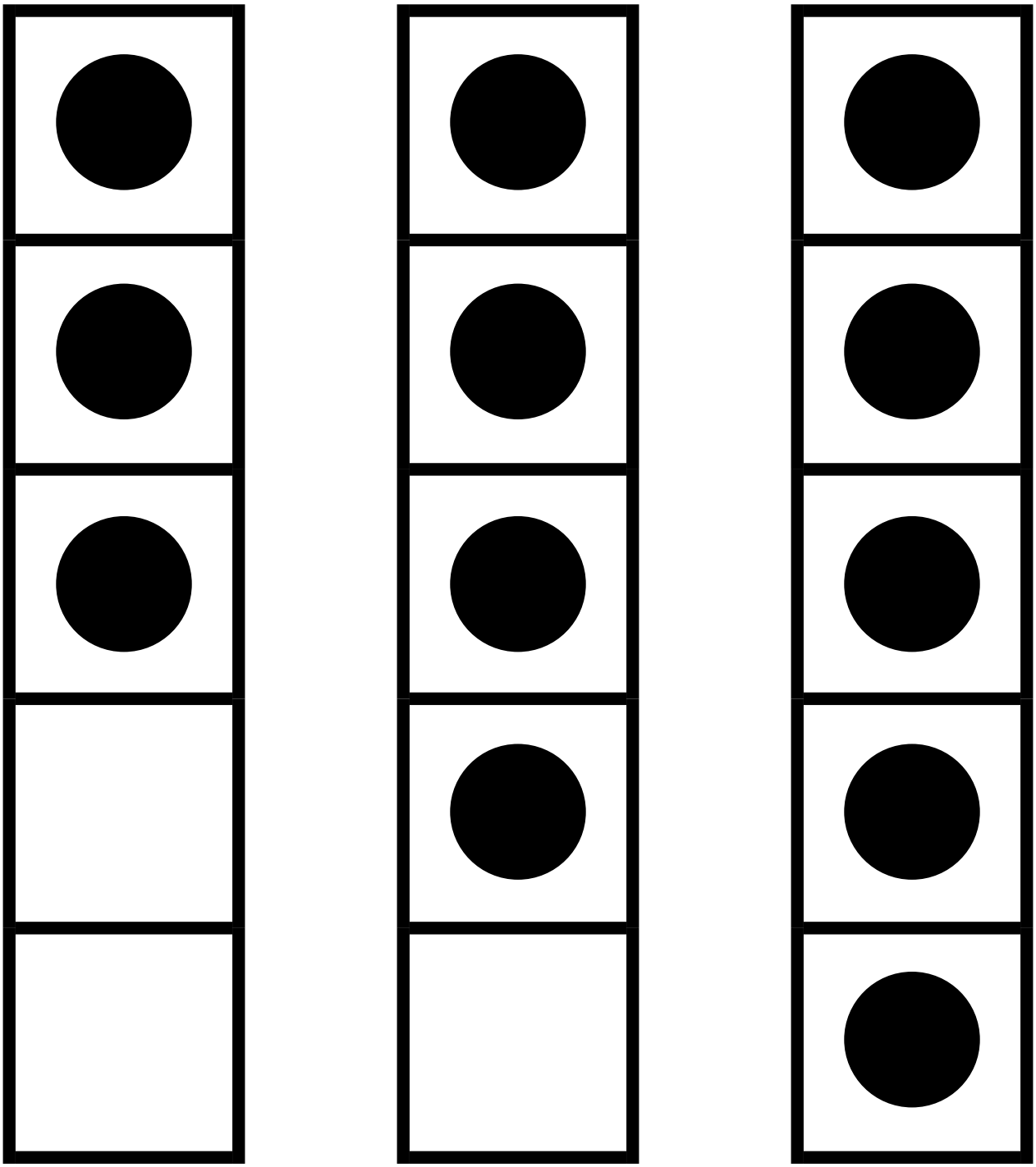
Small Five Frames



Large Five Frames

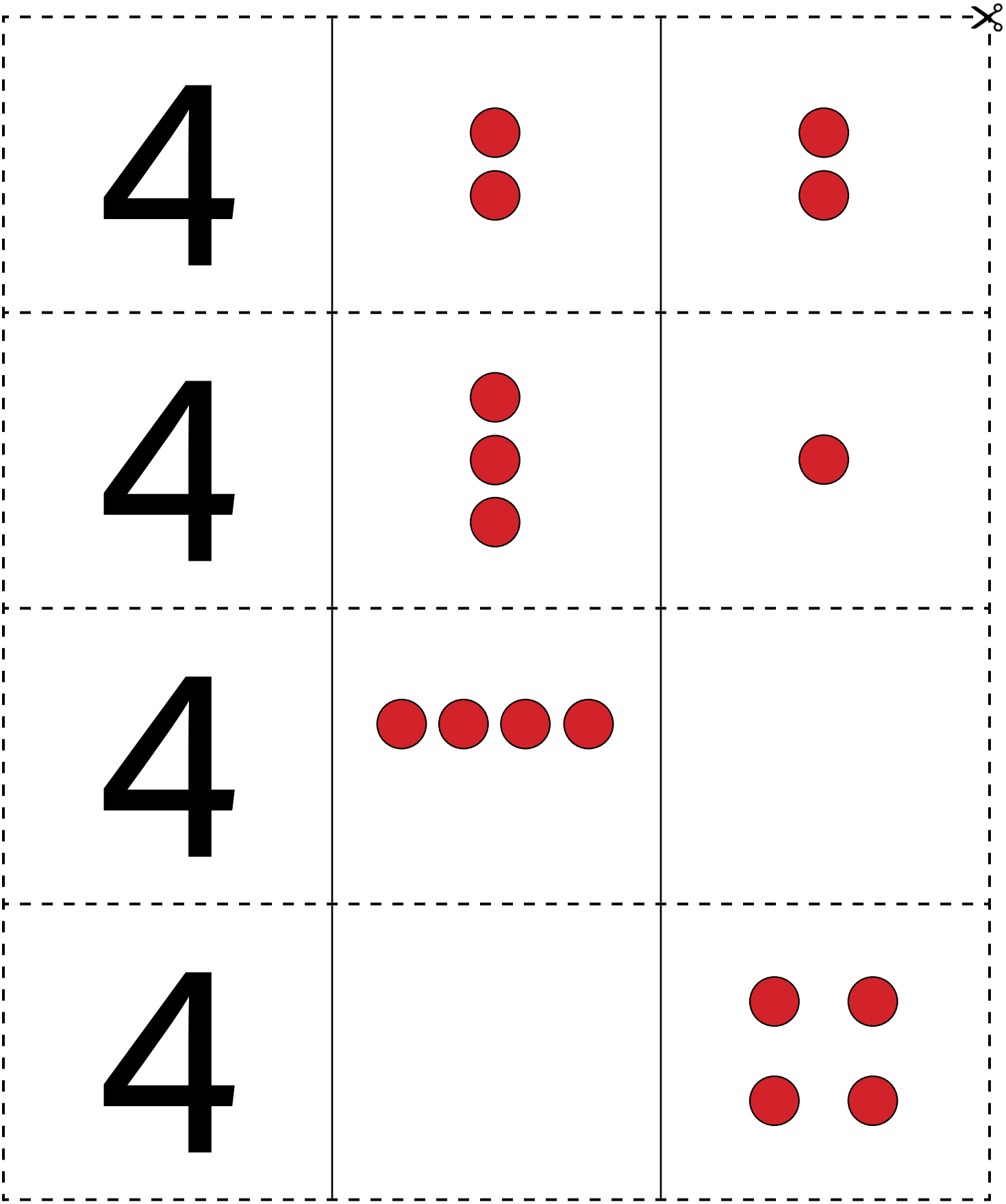


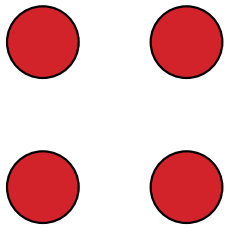
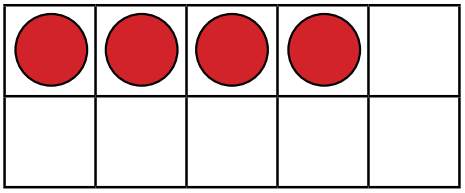
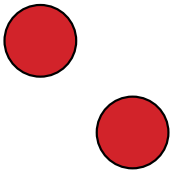
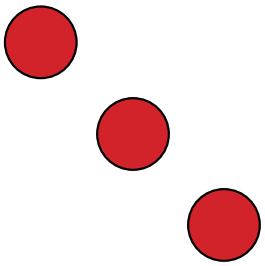
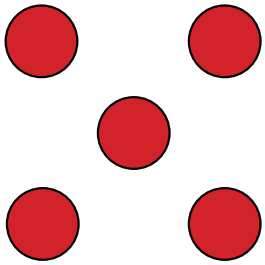
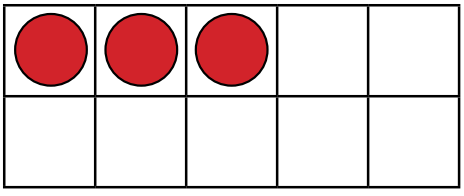
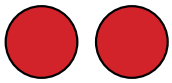
Large Five Frames (continued)

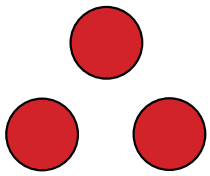
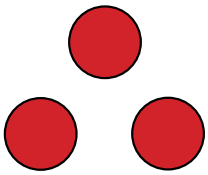
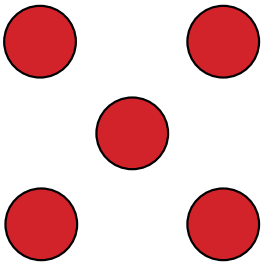
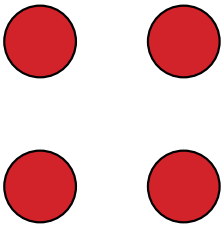
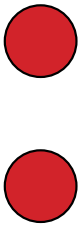
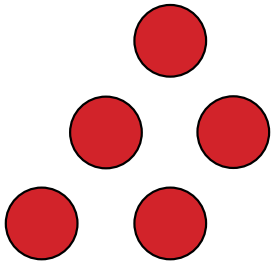
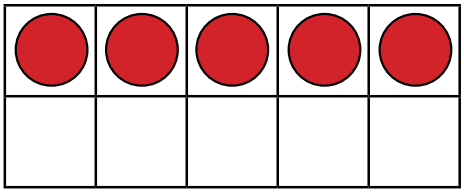


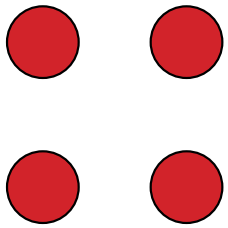
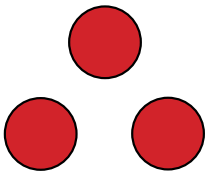
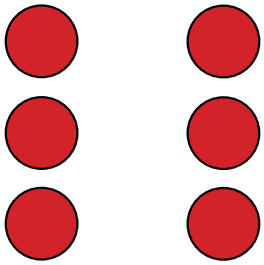
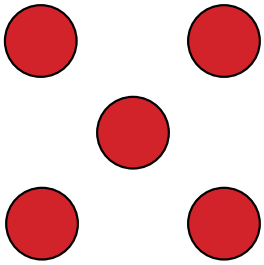
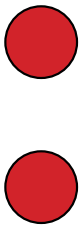
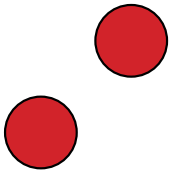
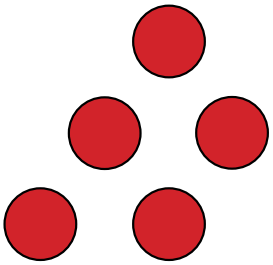
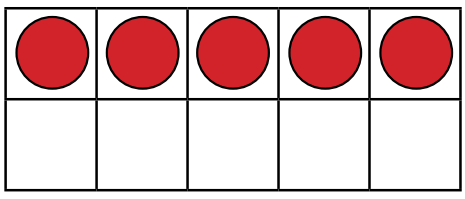
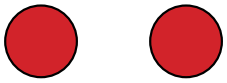
Missing Part Cards

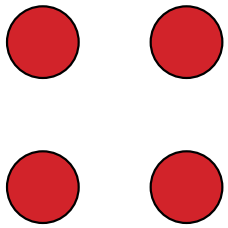
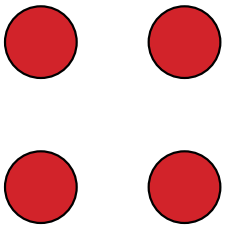
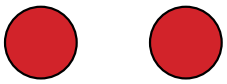
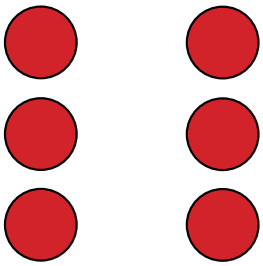
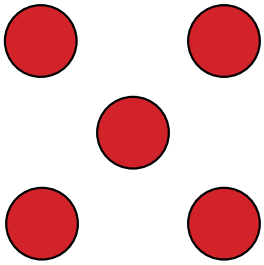
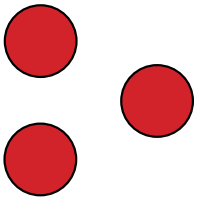
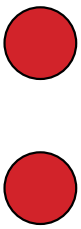
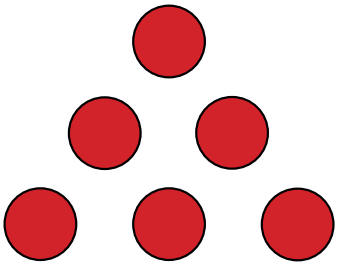
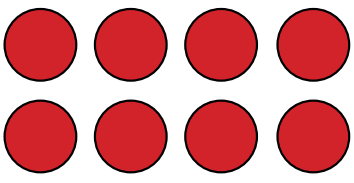
Directions: Cover one part with a post-it note.

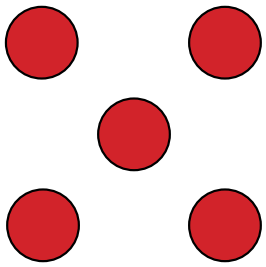
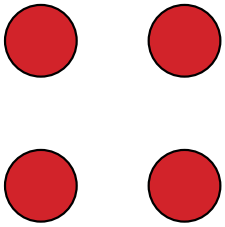
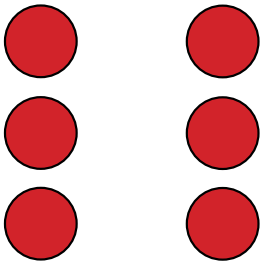
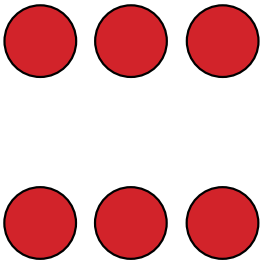
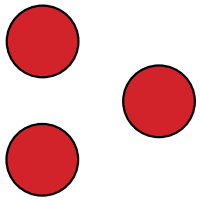
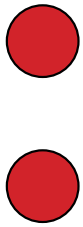
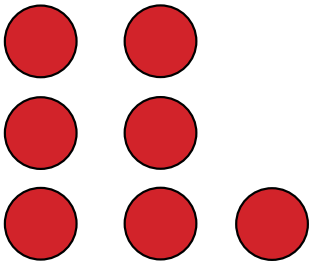
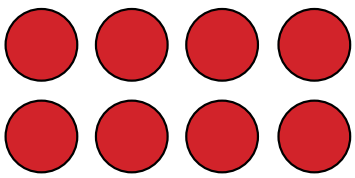


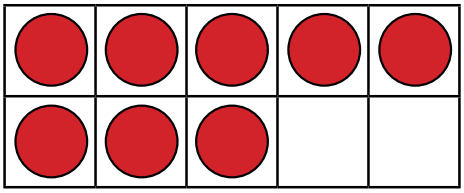
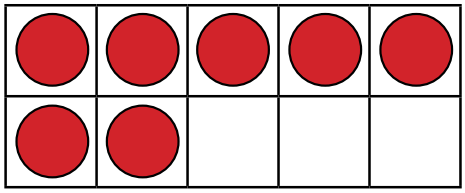
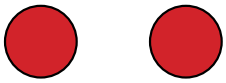
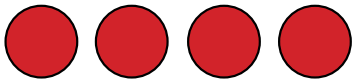
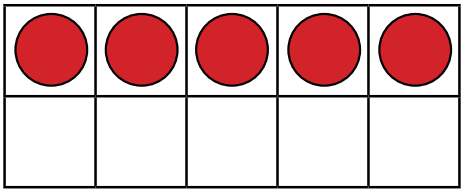
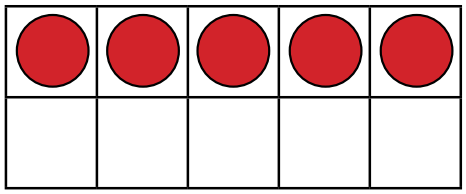
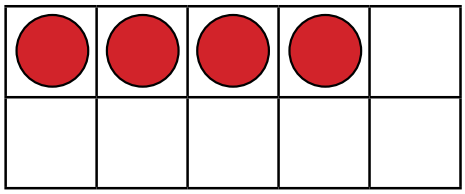
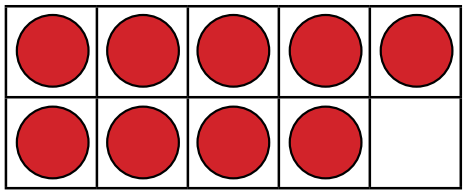
5		
5		
5		
5		
5		

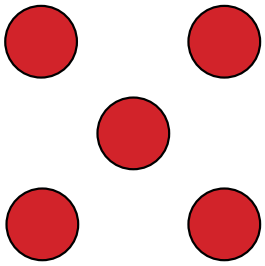
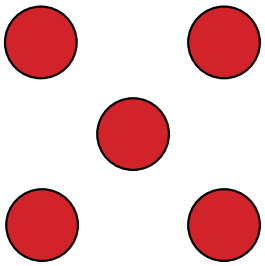
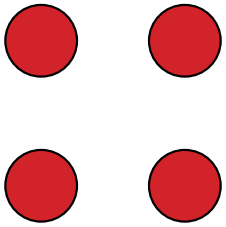
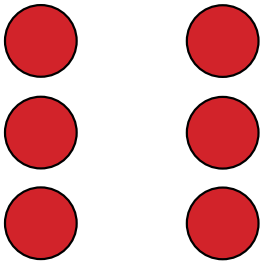
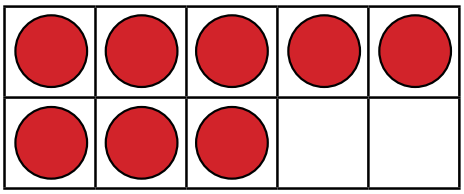
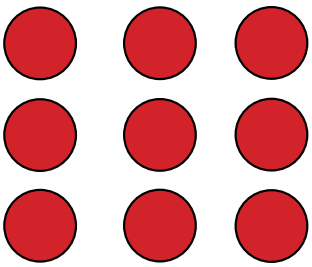
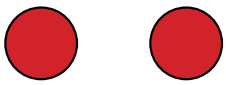
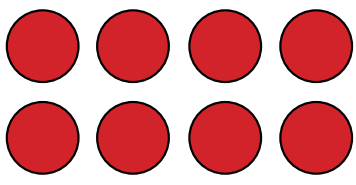
6		
6		
6		
6		
6		

7		
7		
7		
7		
7		

8		
8		
8		
8		
8		

9		
9		
9		
9		
9		

9		
9		
9		
9		
9		

10		
10		
10		
10		
10		

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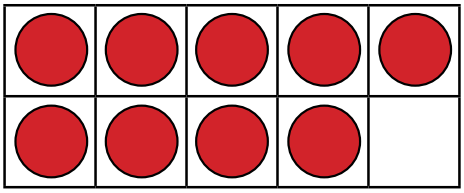

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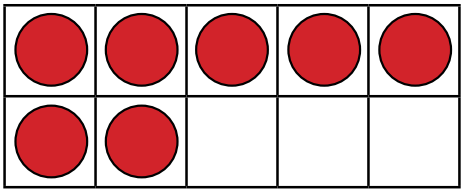

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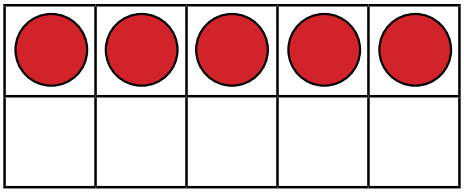

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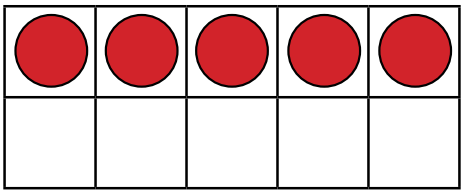

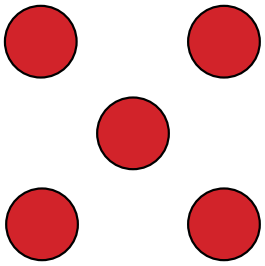

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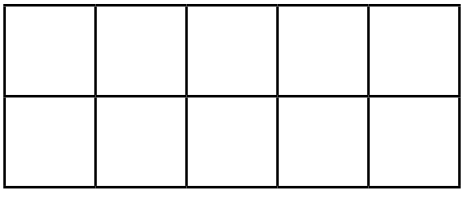
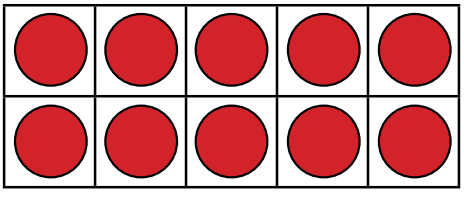
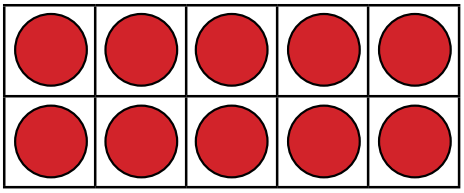
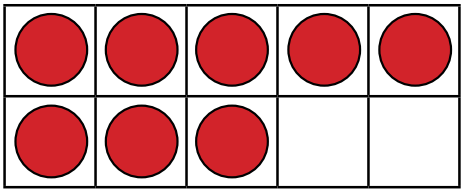
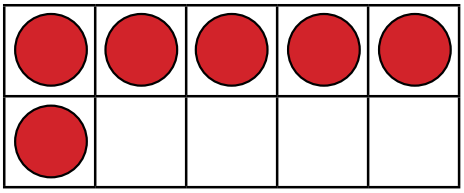
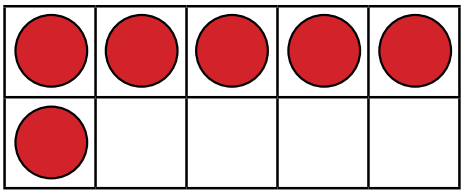
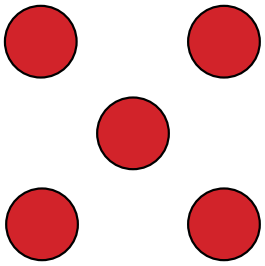
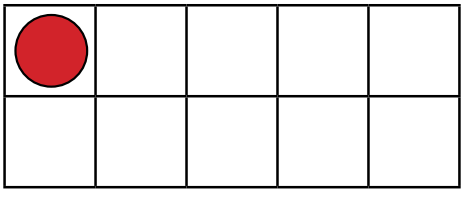
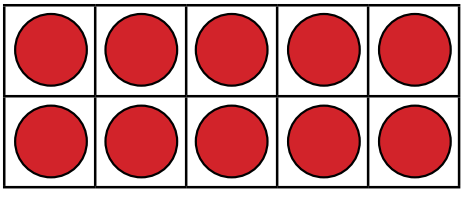
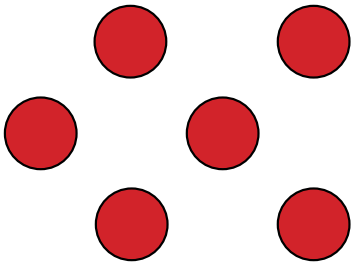
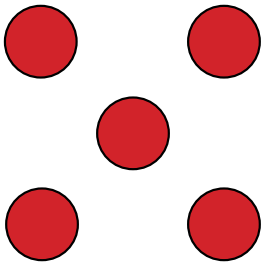
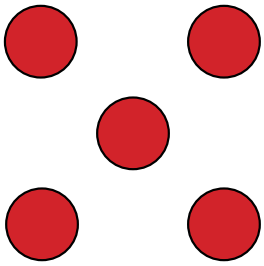
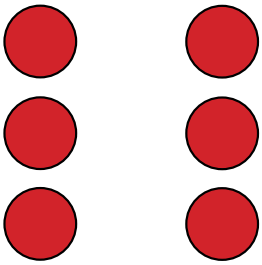
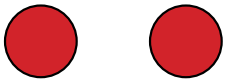
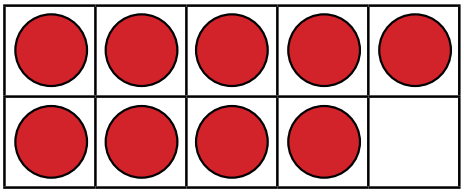
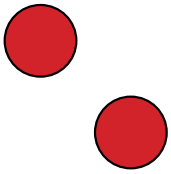
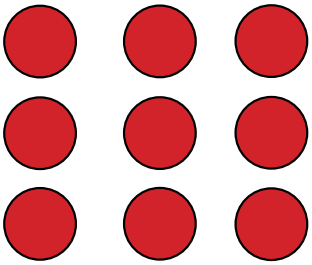
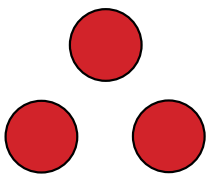
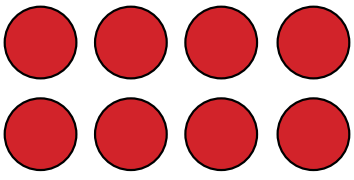




11		
11		
11		
11		
11		

11		
11		
11		
11		
11		

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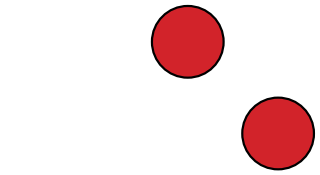

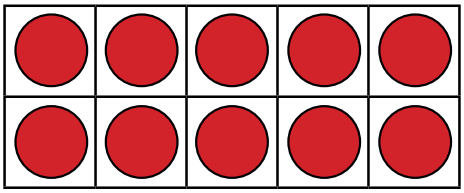

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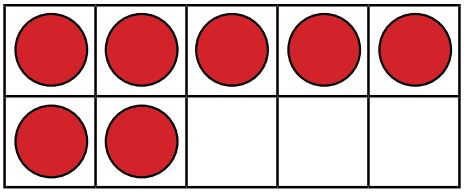

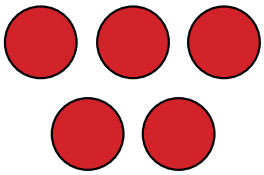

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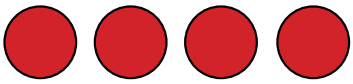

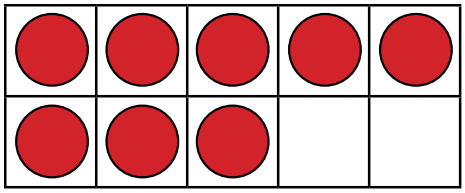

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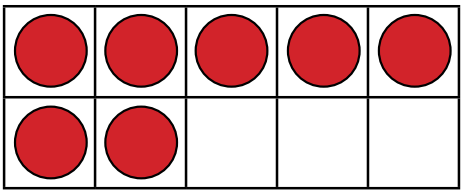

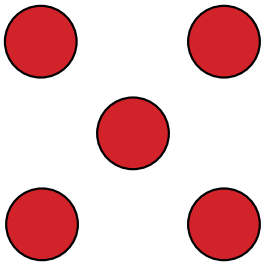

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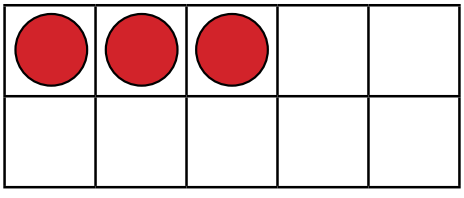
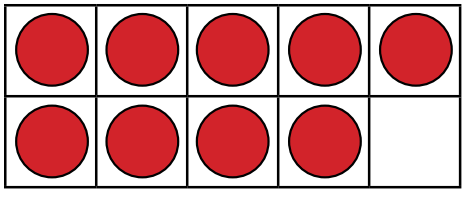
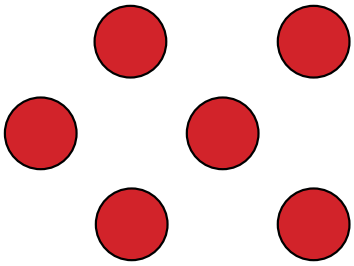
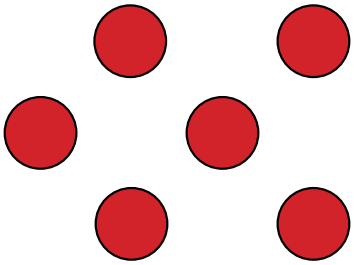
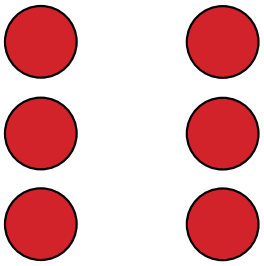
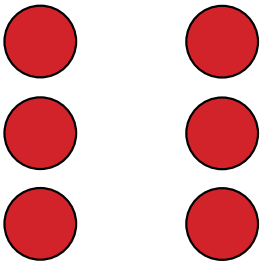
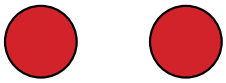
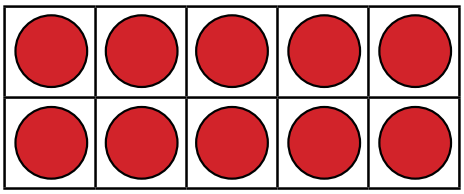
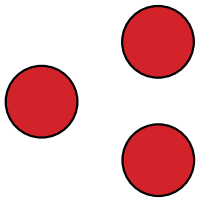
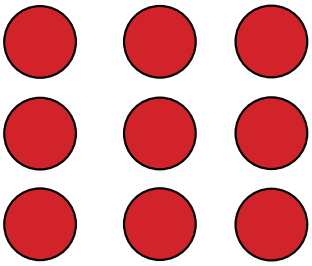
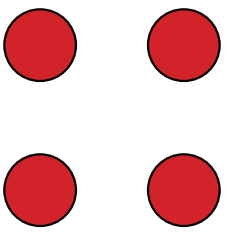
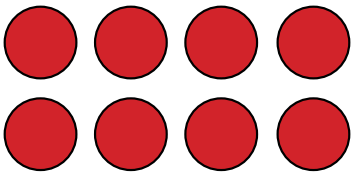
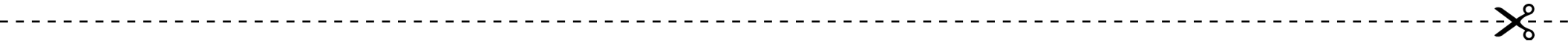




12		
12		
12		
12		
12		

Number Chart (1 —20)

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



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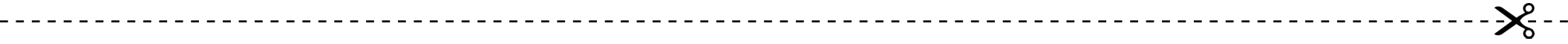
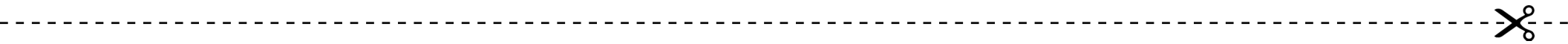
11	12	13	14	15	16	17	18	19	20



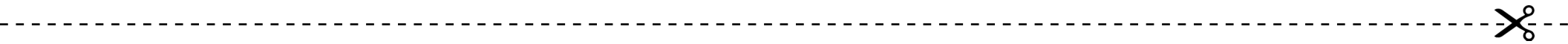
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Number Chart (1 —30)

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



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



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

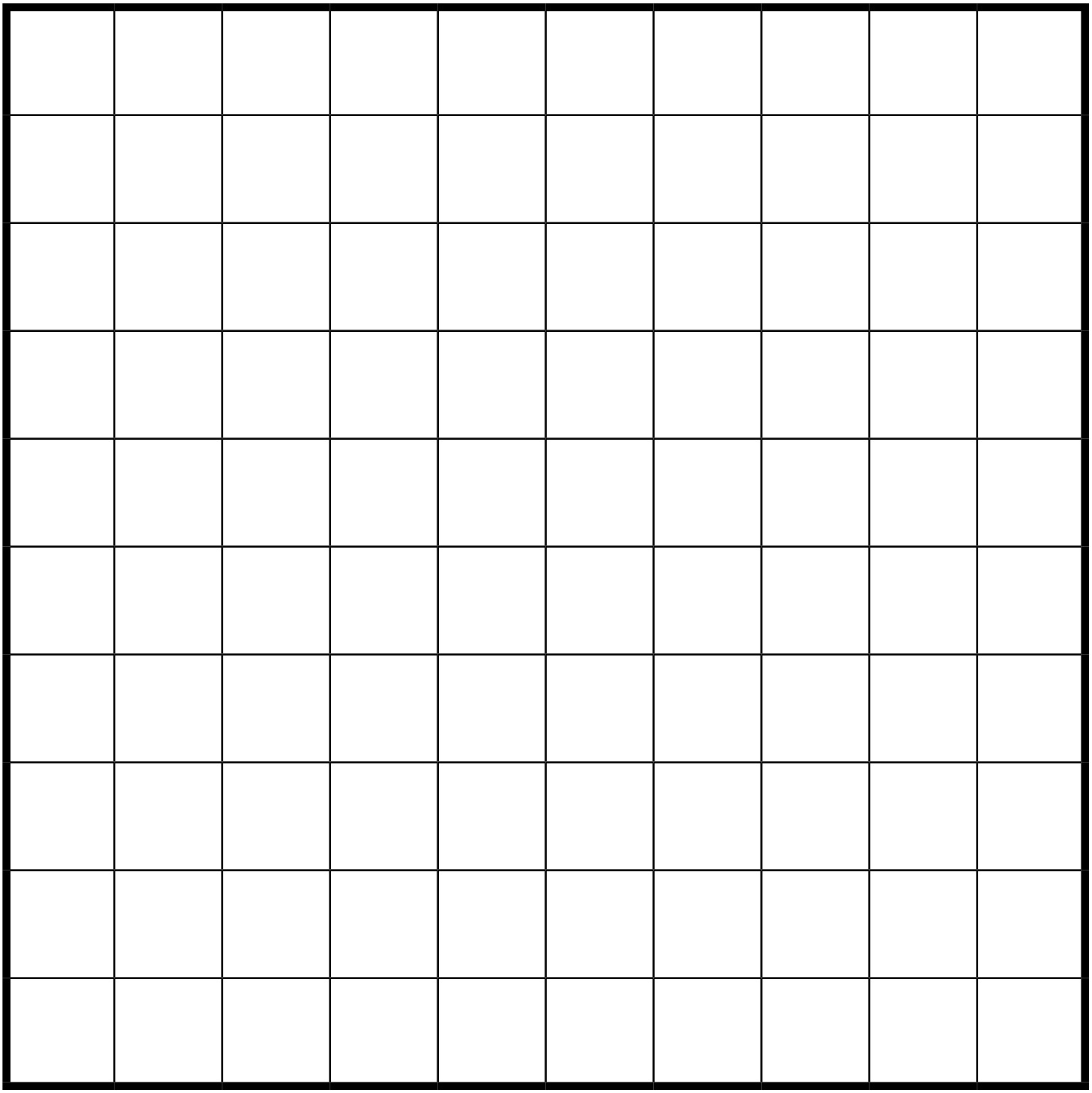
Hundreds Chart
(10 x 10 square)

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

Number Chart (0–99)

0	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

Blank Hundreds Chart
(10 x 10 square)



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

120 Chart

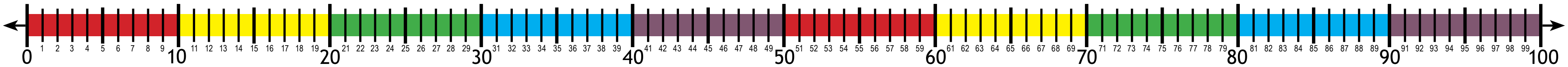
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

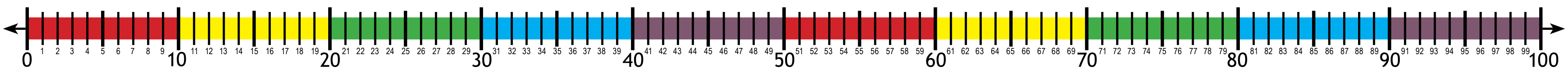
200 Chart

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
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200

Bottom Up Hundreds Chart

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


0 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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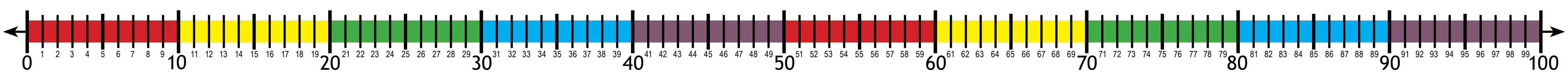
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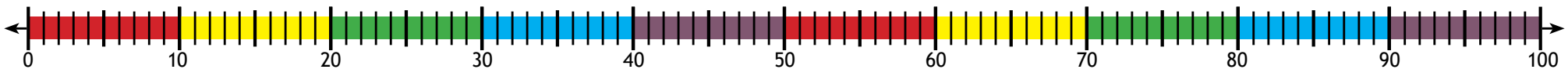
0
10
20
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50
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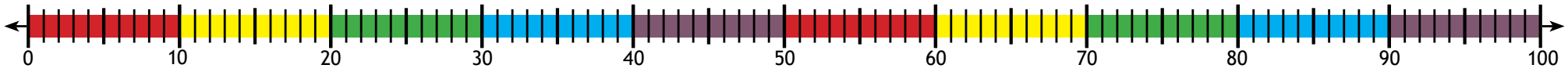
70
80
90
100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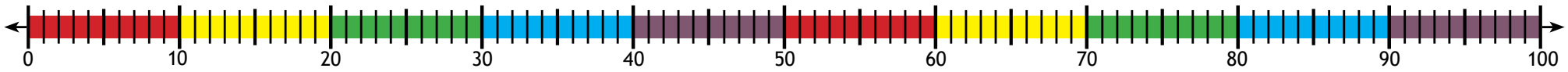
0
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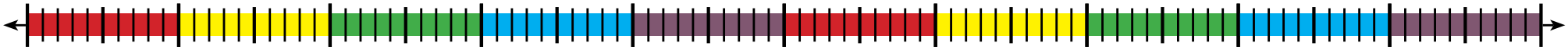
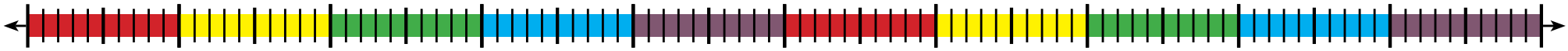
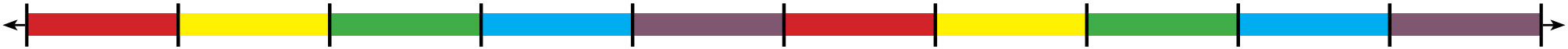
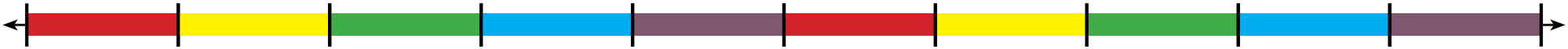
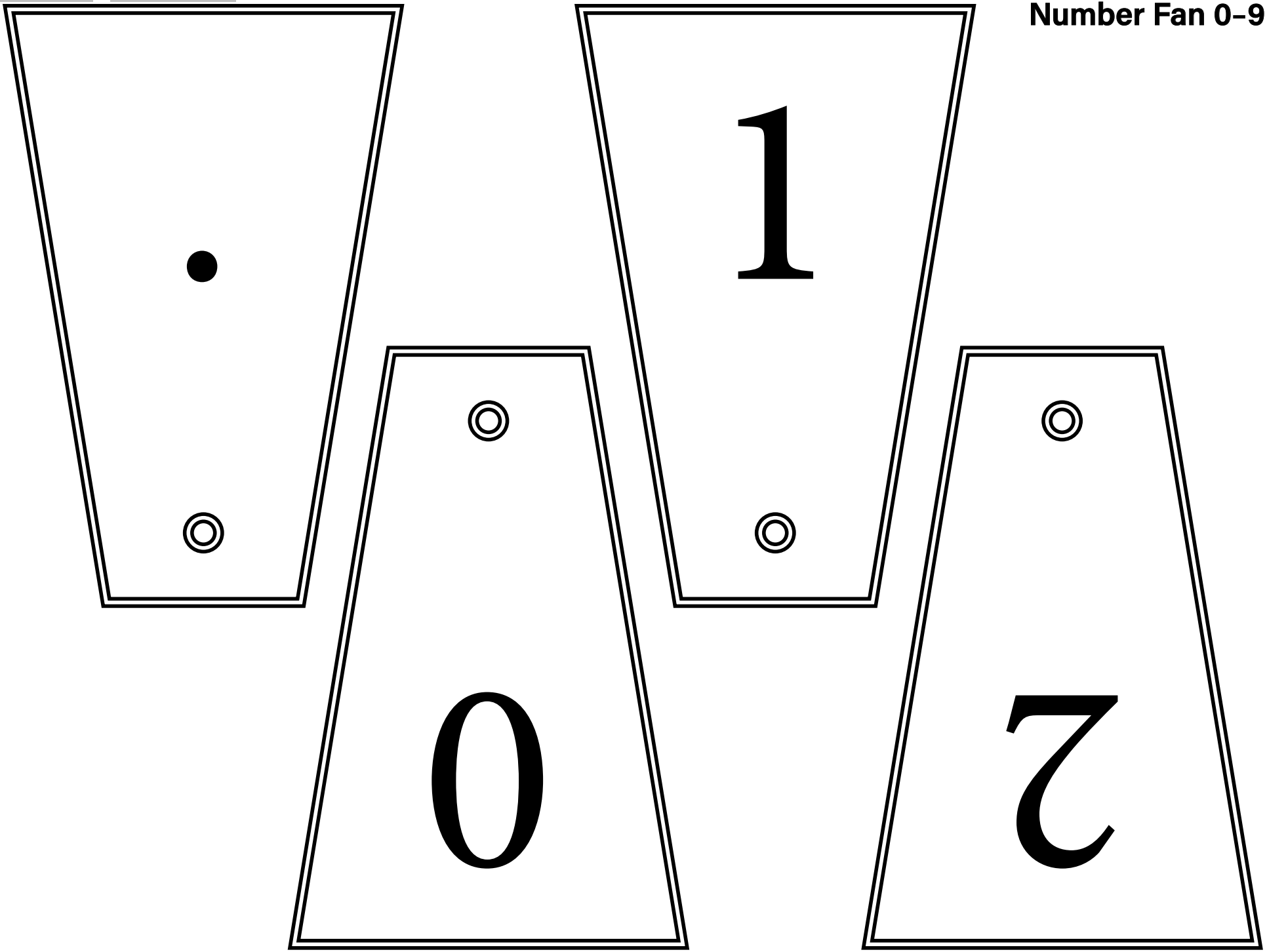




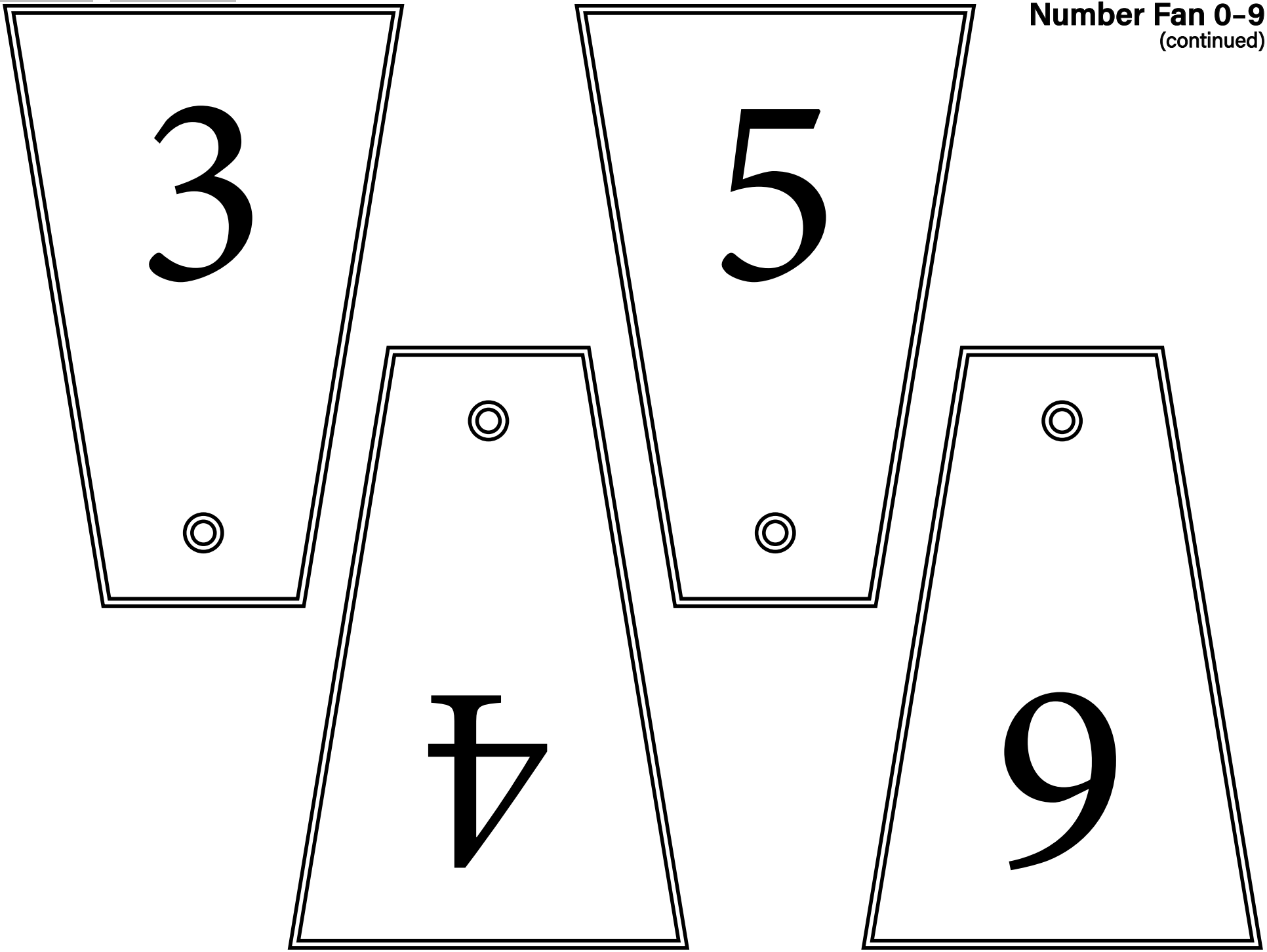




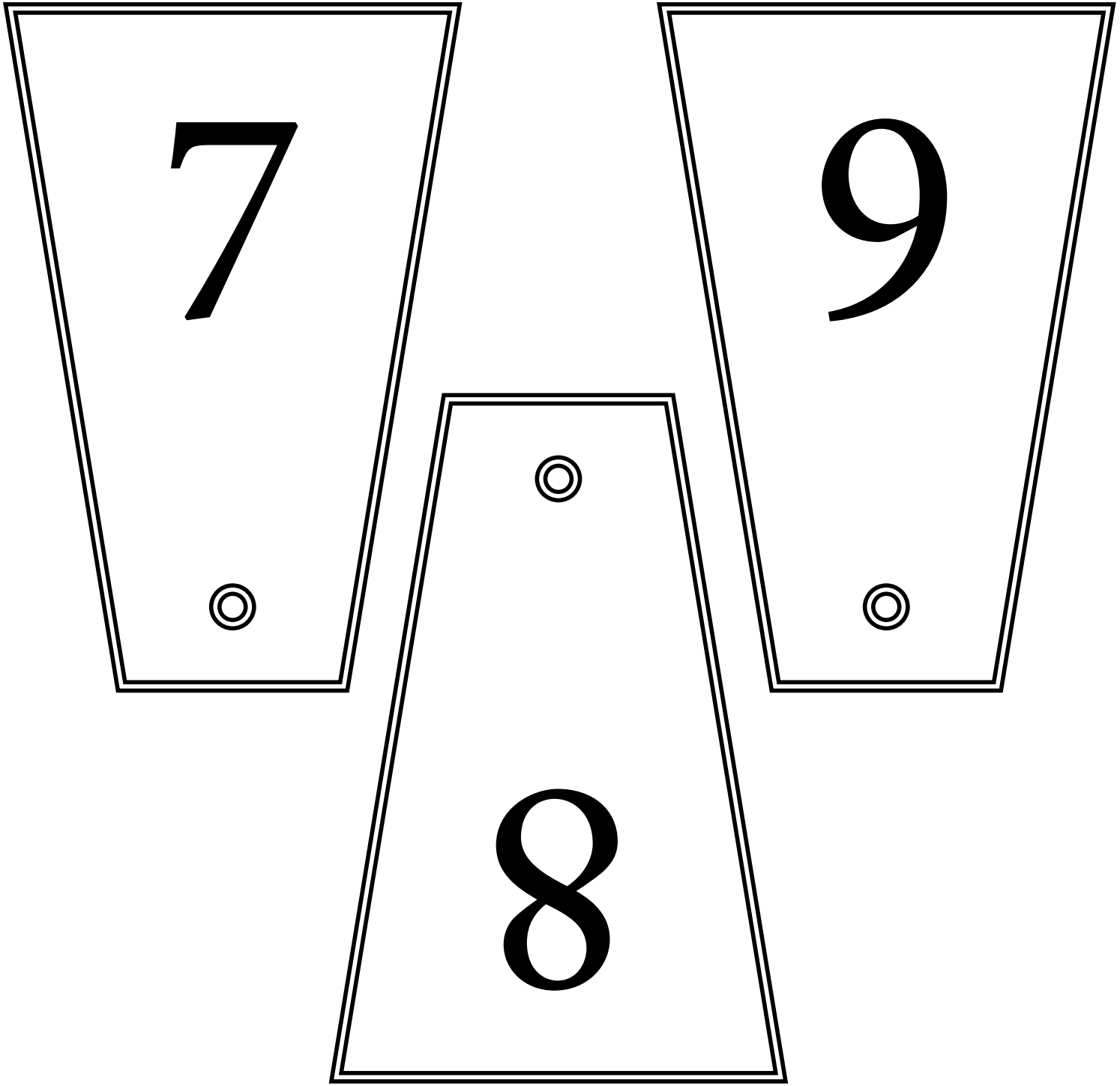
Number Fan 0–9



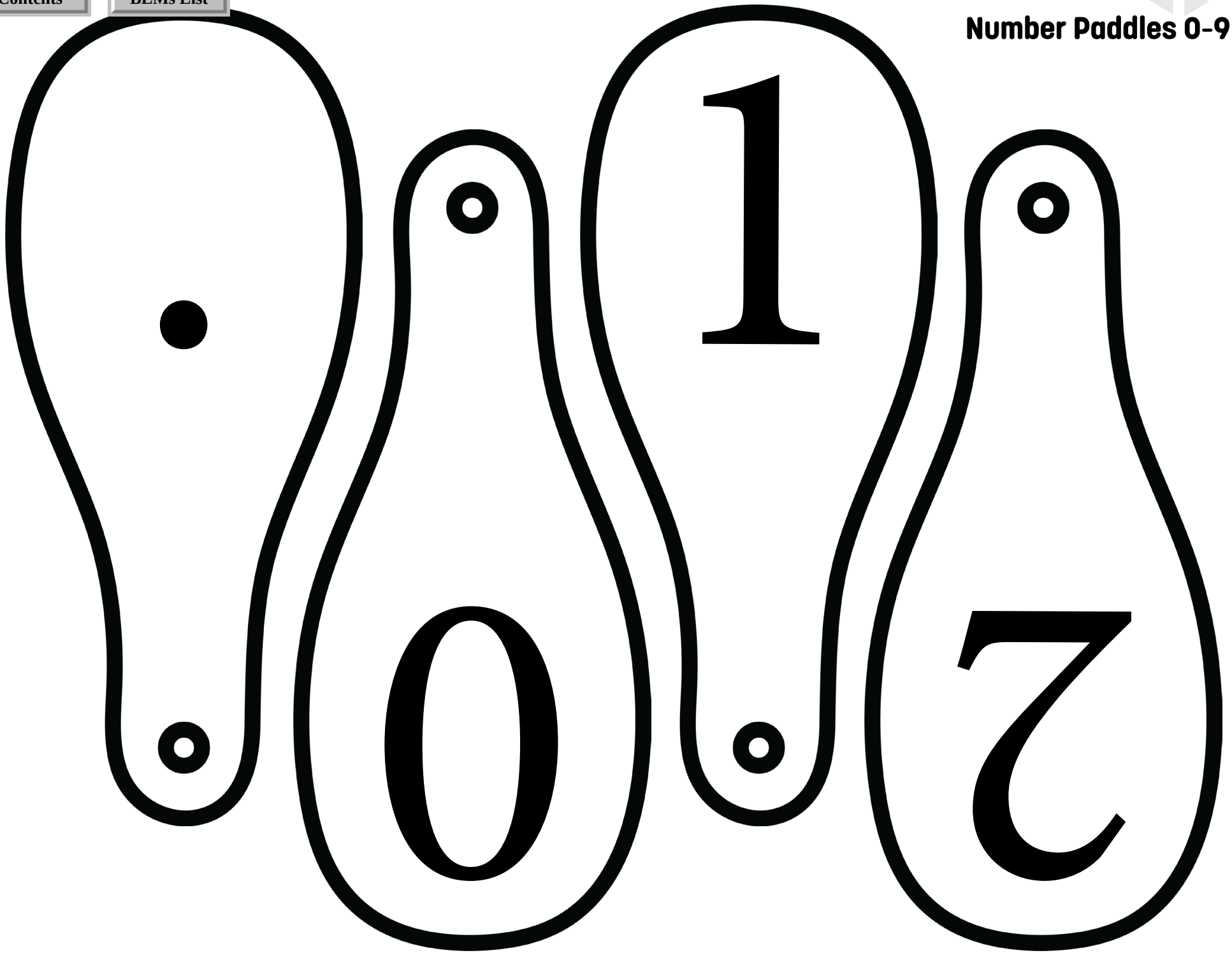
Number Fan 0–9
(continued)



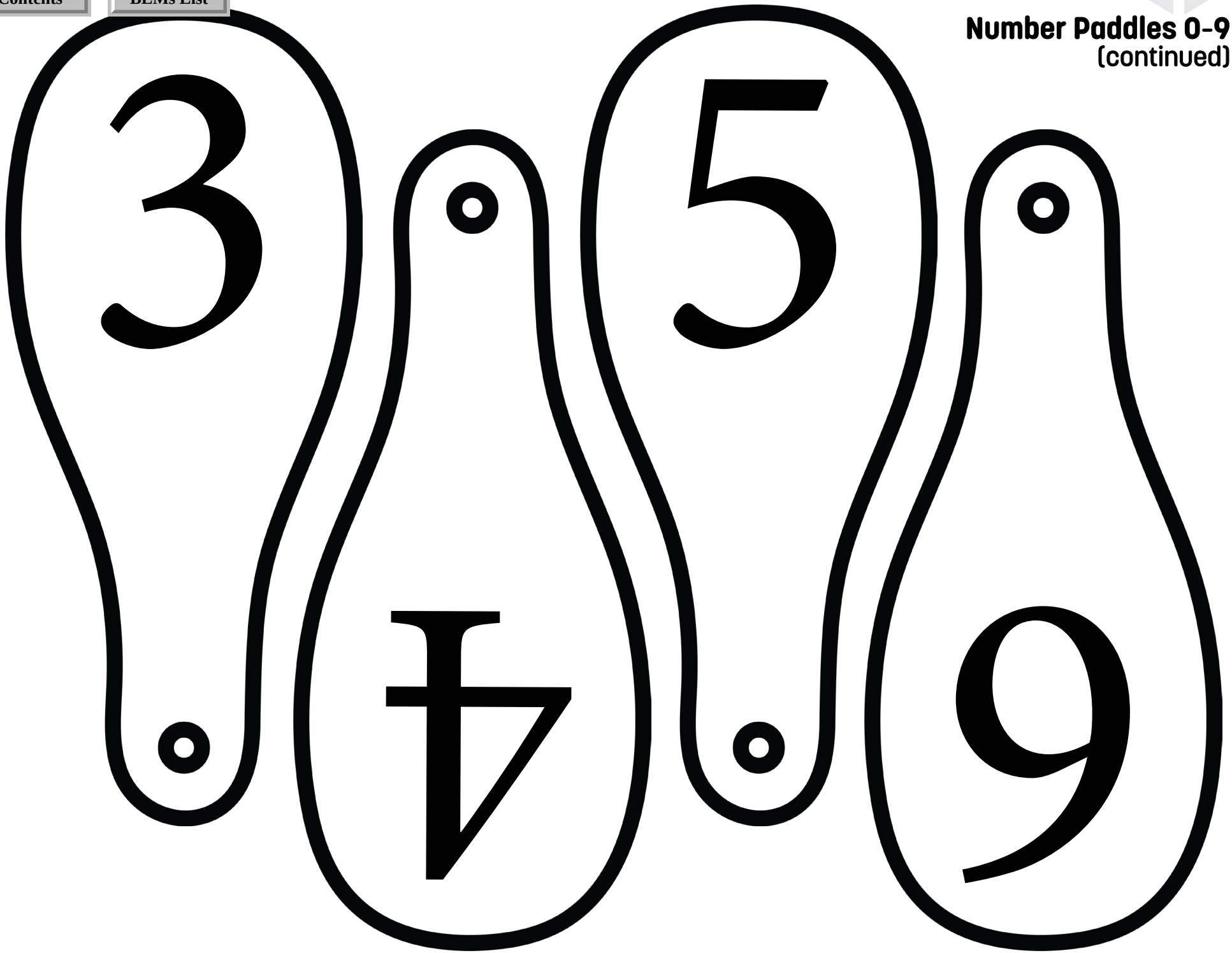
Number Fan 0–9
(continued)



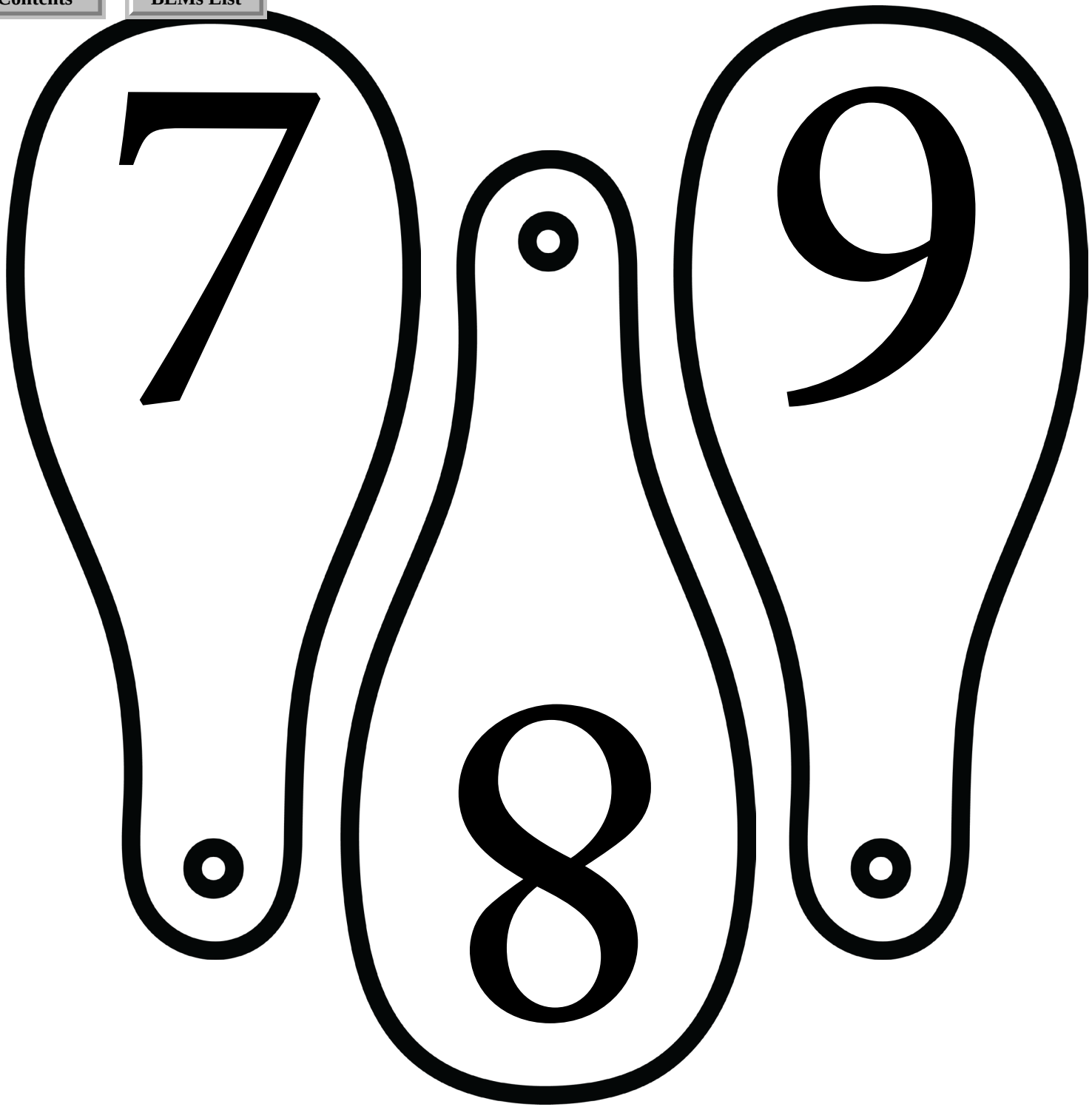
Number Paddles 0-9



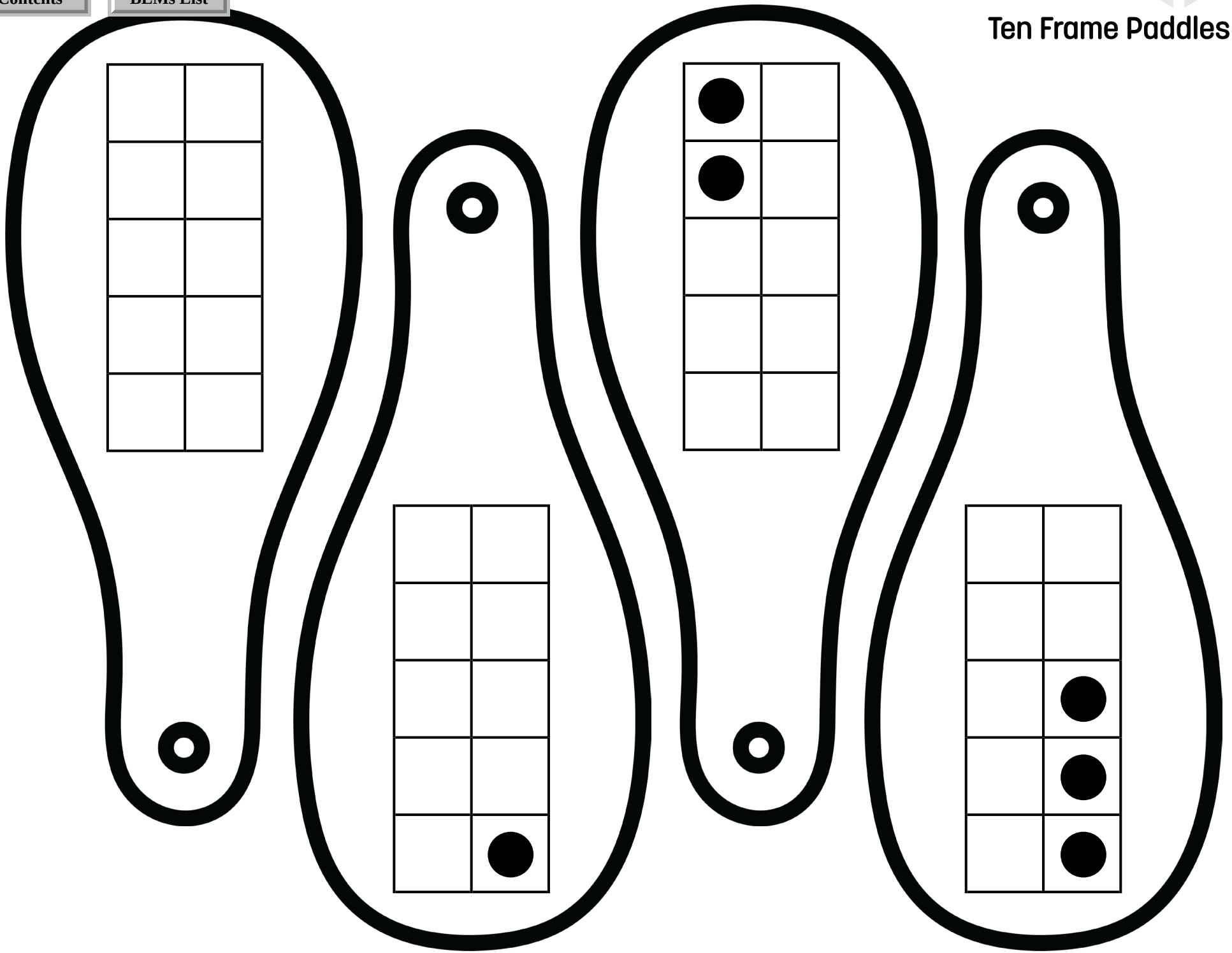
Number Paddles 0–9 (continued)



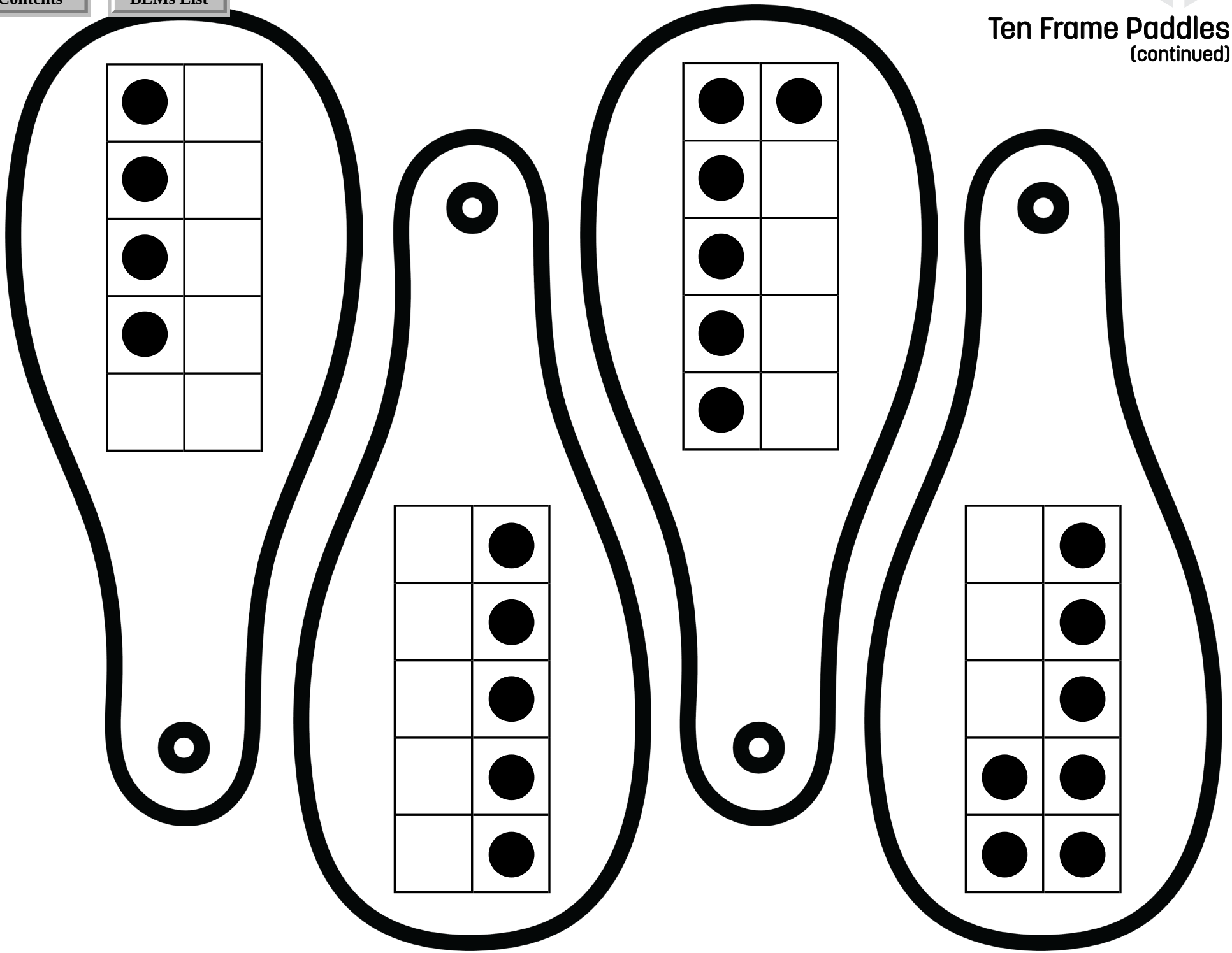
Number Paddles 0-9
(continued)



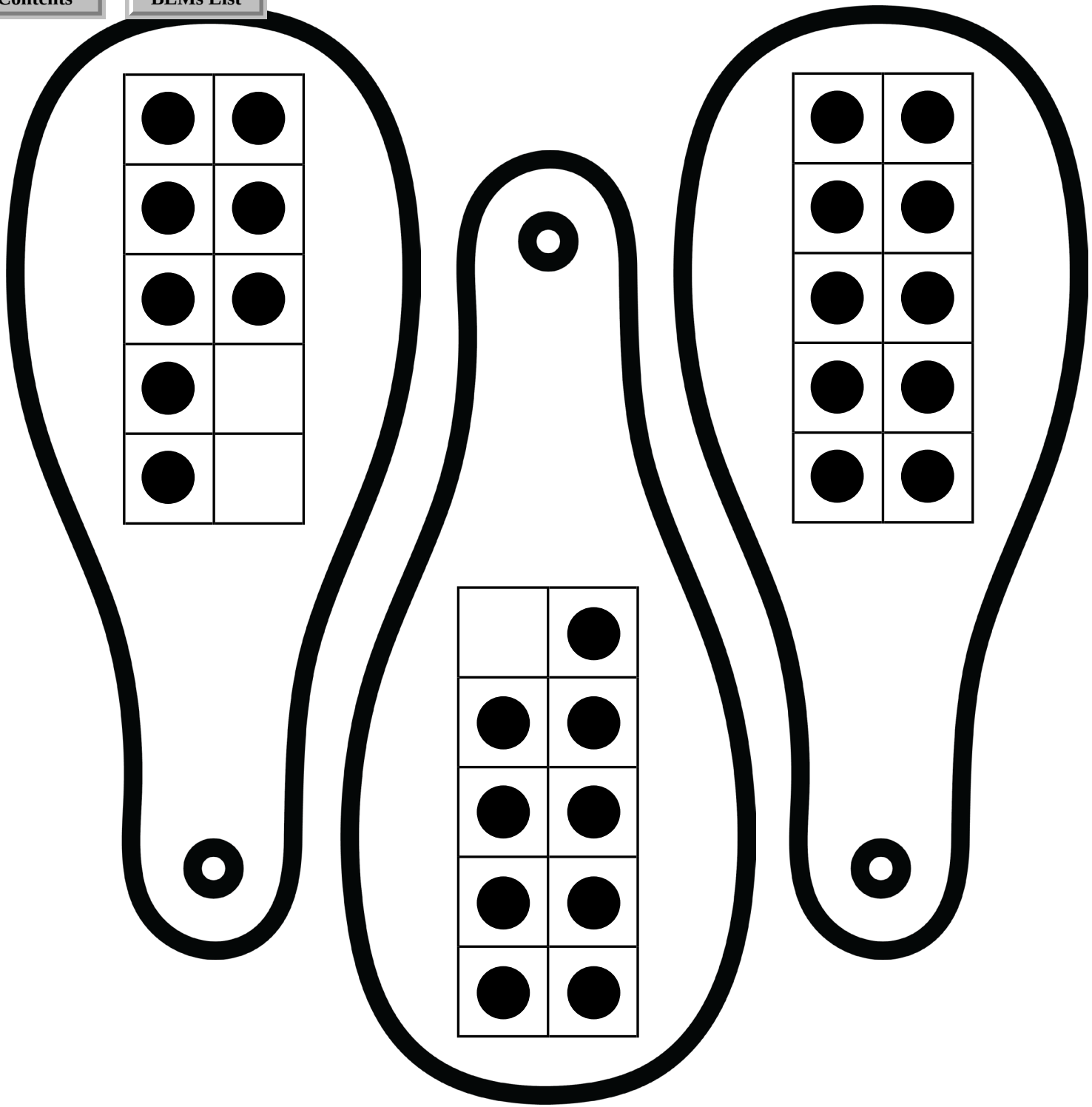
Ten Frame Paddles



Ten Frame Paddles
(continued)



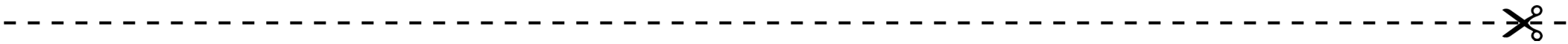
Ten Frame Paddles
(continued)



Number Path

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

Number Path



Number Path

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

Number Path

Number Words and Numerals (1—20)

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

Number Words and Numerals (1—20)

(continued)

one	six
two	seven
three	eight
four	nine
five	ten

Number Words and Numerals (1—20)

(continued)

eleven	sixteen
twelve	seventeen
thirteen	eighteen
fourteen	nineteen
fifteen	twenty

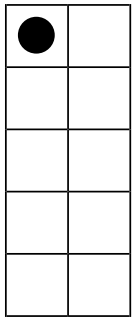
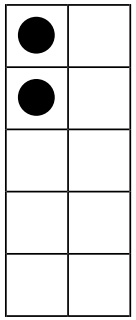
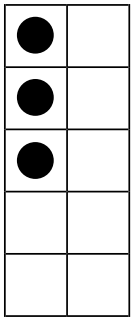
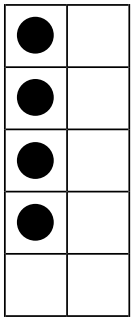
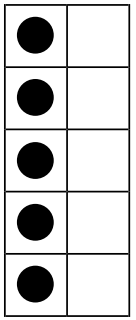
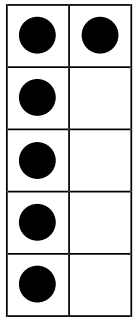
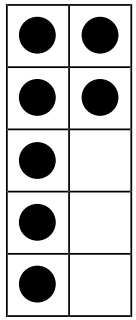
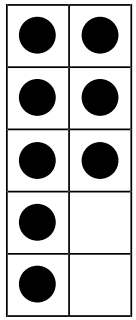
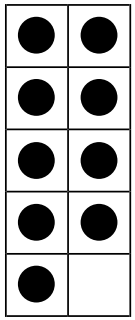
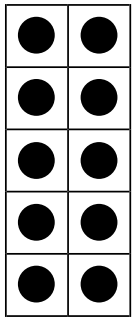
NUMBERS 1 TO 100

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

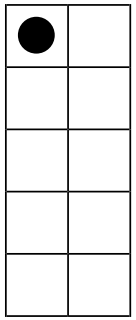
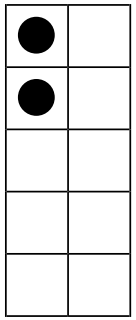
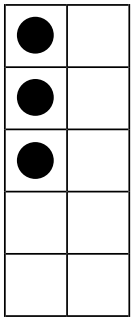
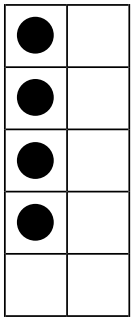
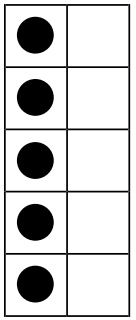
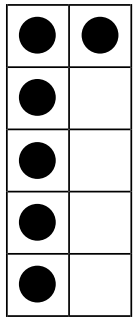
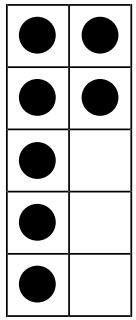
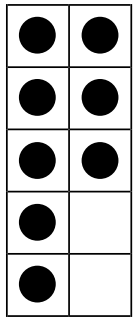
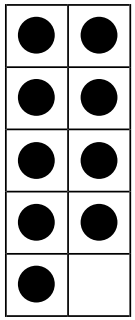
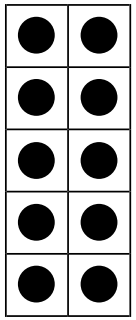
Numbers Words

1 one	11 eleven	21 twenty-one	31 thirty-one	41 forty-one	51 fifty-one	61 sixty-one	71 seventy-one	81 eighty-one	91 ninety-one
2 two	12 twelve	22 twenty-two	32 thirty-two	42 forty-two	52 fifty-two	62 sixty-two	72 seventy-two	82 eighty-two	92 ninety-two
3 three	13 thirteen	23 twenty-three	33 thirty-three	43 forty-three	53 fifty-three	63 sixty-three	73 seventy-three	83 eighty-three	93 ninety-three
4 four	14 fourteen	24 twenty-four	34 thirty-four	44 forty-four	54 fifty-four	64 sixty-four	74 seventy-four	84 eighty-four	94 ninety-four
5 five	15 fifteen	25 twenty-five	35 thirty-five	45 forty-five	55 fifty-five	65 sixty-five	75 seventy-five	85 eighty-five	95 ninety-five
6 six	16 sixteen	26 twenty-six	36 thirty-six	46 forty-six	56 fifty-six	66 sixty-six	76 seventy-six	86 eighty-six	96 ninety-six
7 seven	17 seventeen	27 twenty-seven	37 thirty-seven	47 forty-seven	57 fifty-seven	67 sixty-seven	77 seventy-seven	87 eighty-seven	97 ninety-seven
8 eight	18 eighteen	28 twenty-eight	38 thirty-eight	48 forty-eight	58 fifty-eight	68 sixty-eight	78 seventy-eight	88 eighty-eight	98 ninety-eight
9 nine	19 nineteen	29 twenty-nine	39 thirty-nine	49 forty-nine	59 fifty-nine	69 sixty-nine	79 seventy-nine	89 eighty-nine	99 ninety-nine
10 ten	20 twenty	30 thrirty	40 forty	50 fifty	60 sixty	70 seventy	80 eighty	90 ninety	100 one hundred

Number Words and Ten Frame Path

1	2	3	4	5	6	7	8	9	10
one	two	three	four	five	six	seven	eight	nine	ten
									

Number Words and Ten Frame Path

1	2	3	4	5	6	7	8	9	10
one	two	three	four	five	six	seven	eight	nine	ten
									

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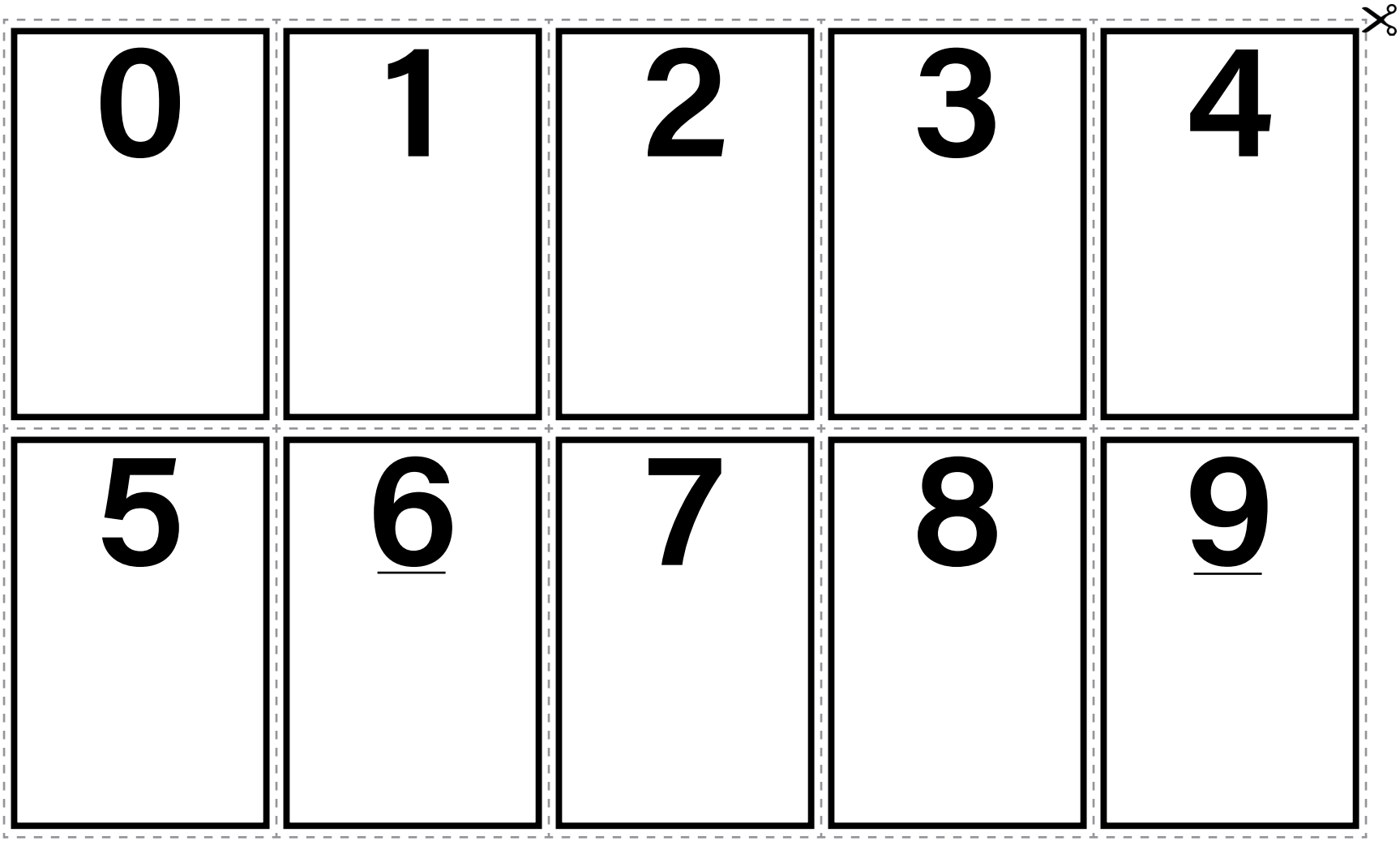
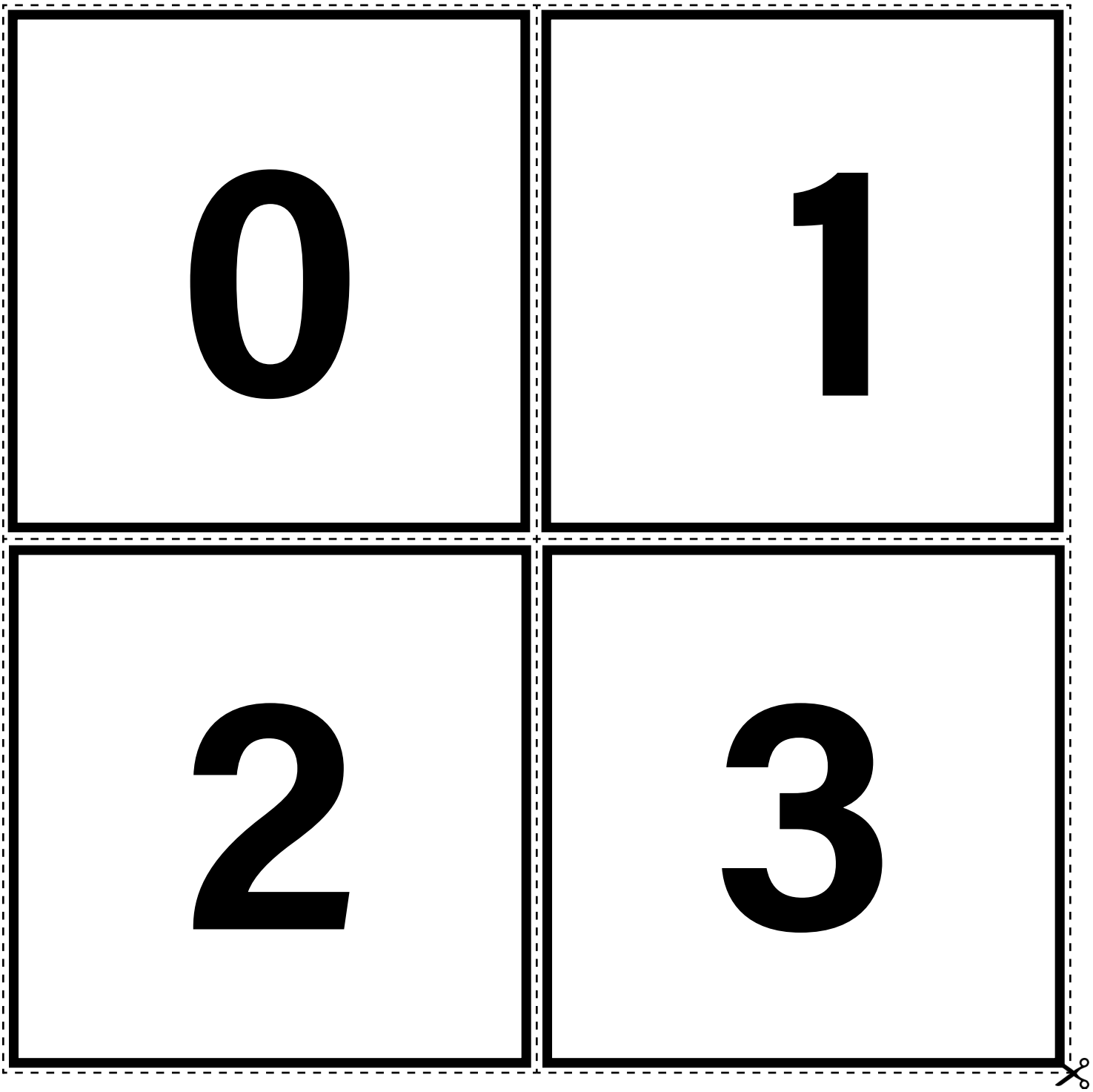


Numeral Cards 0–100



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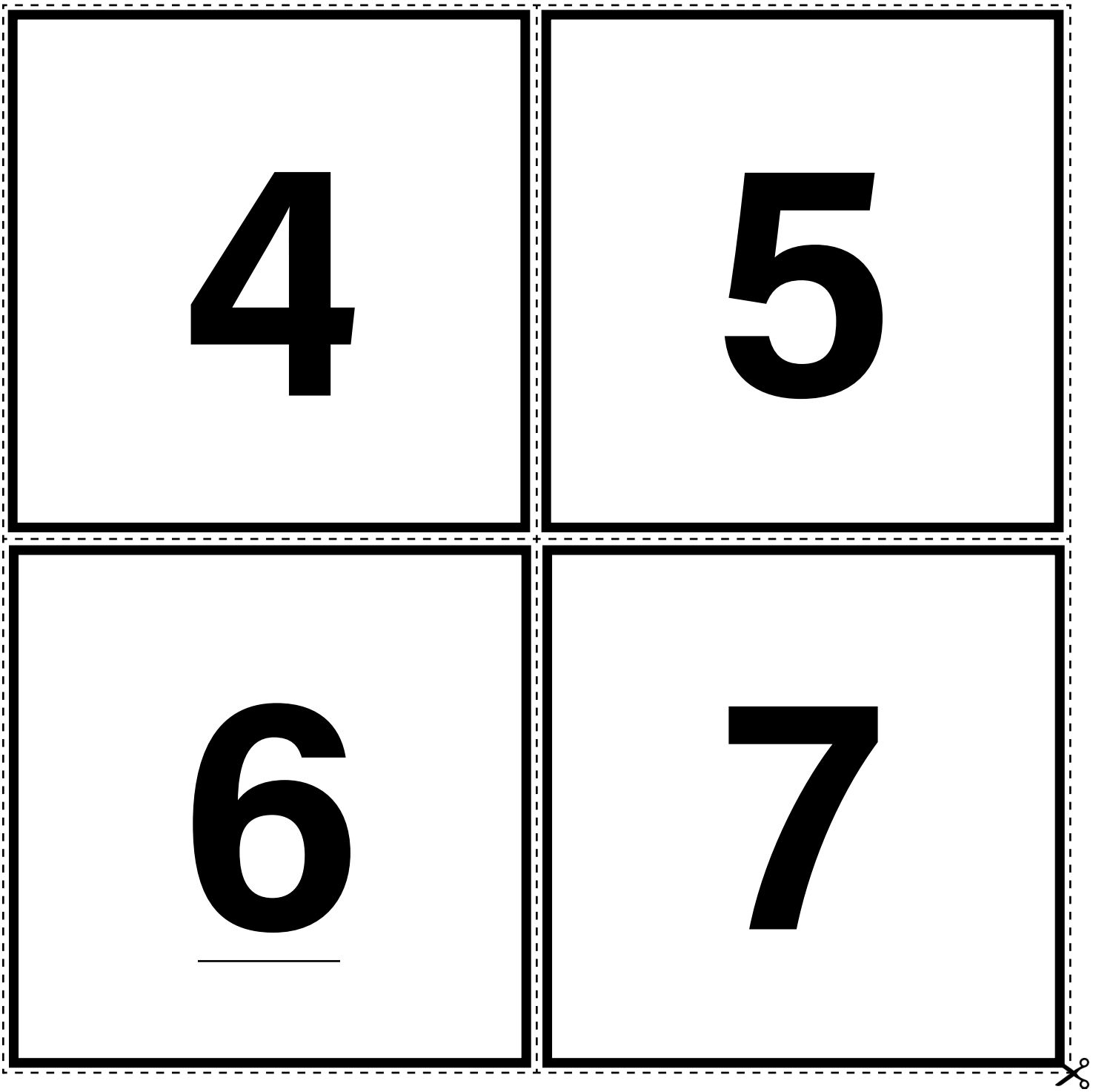

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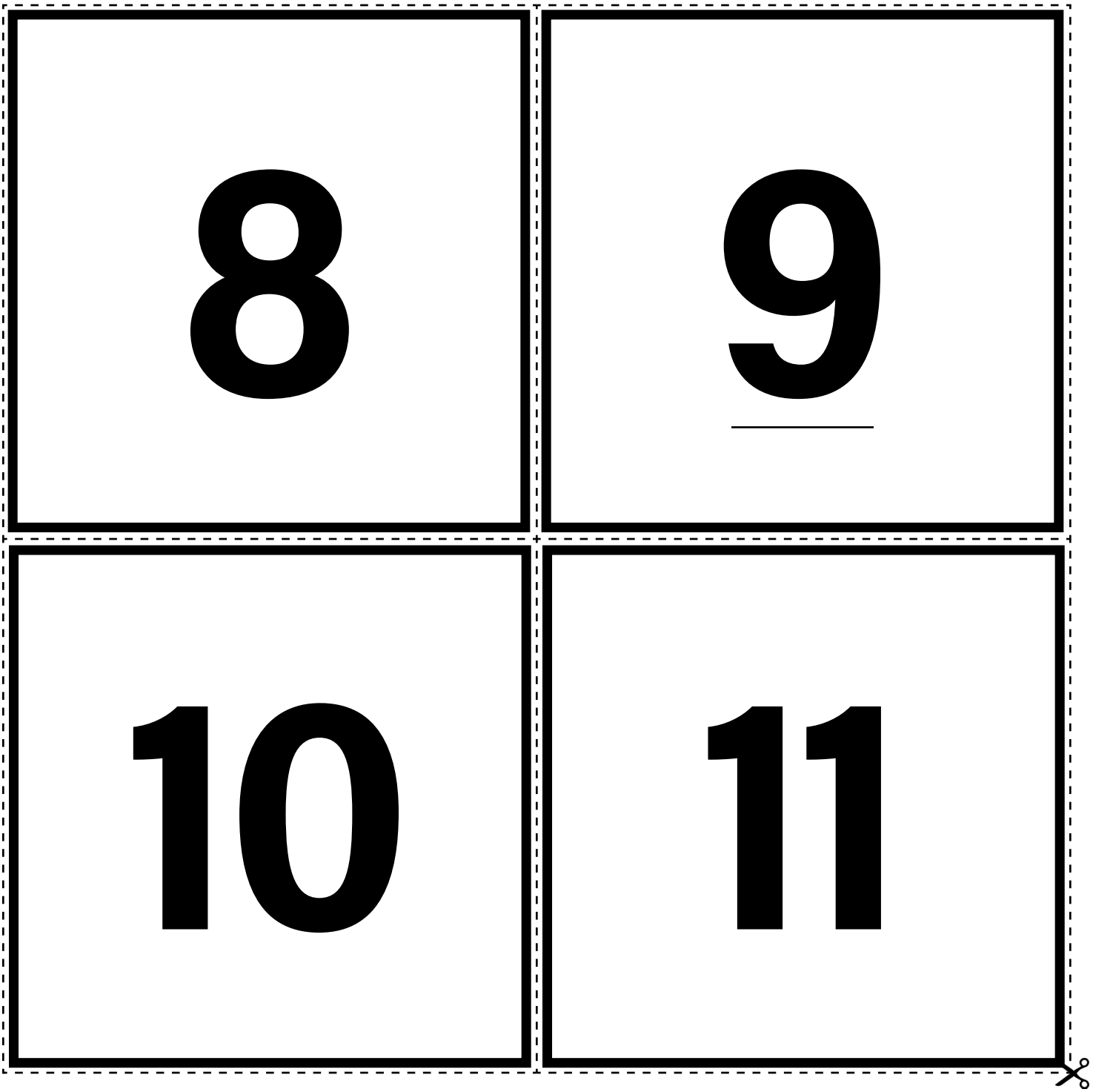

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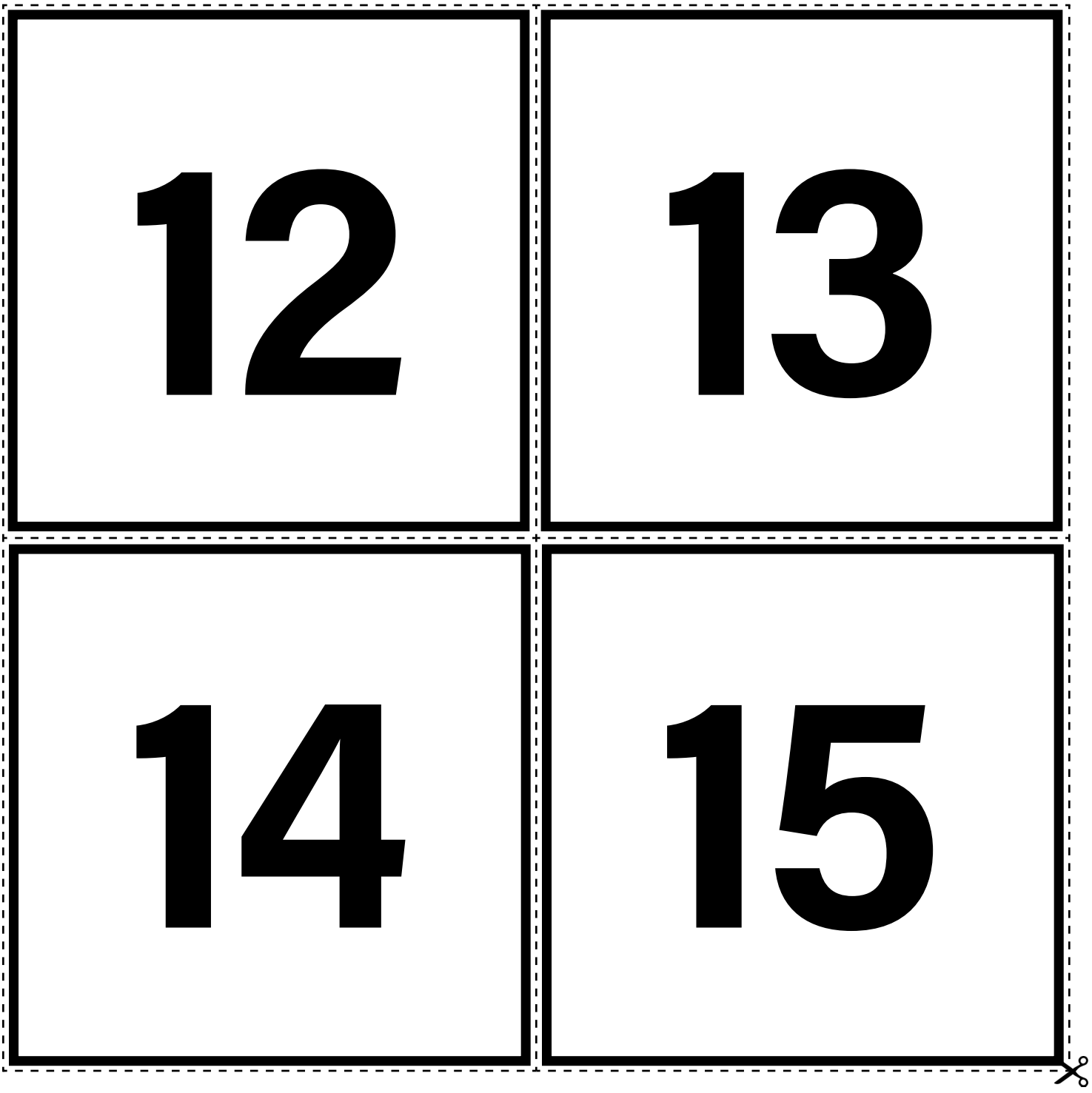

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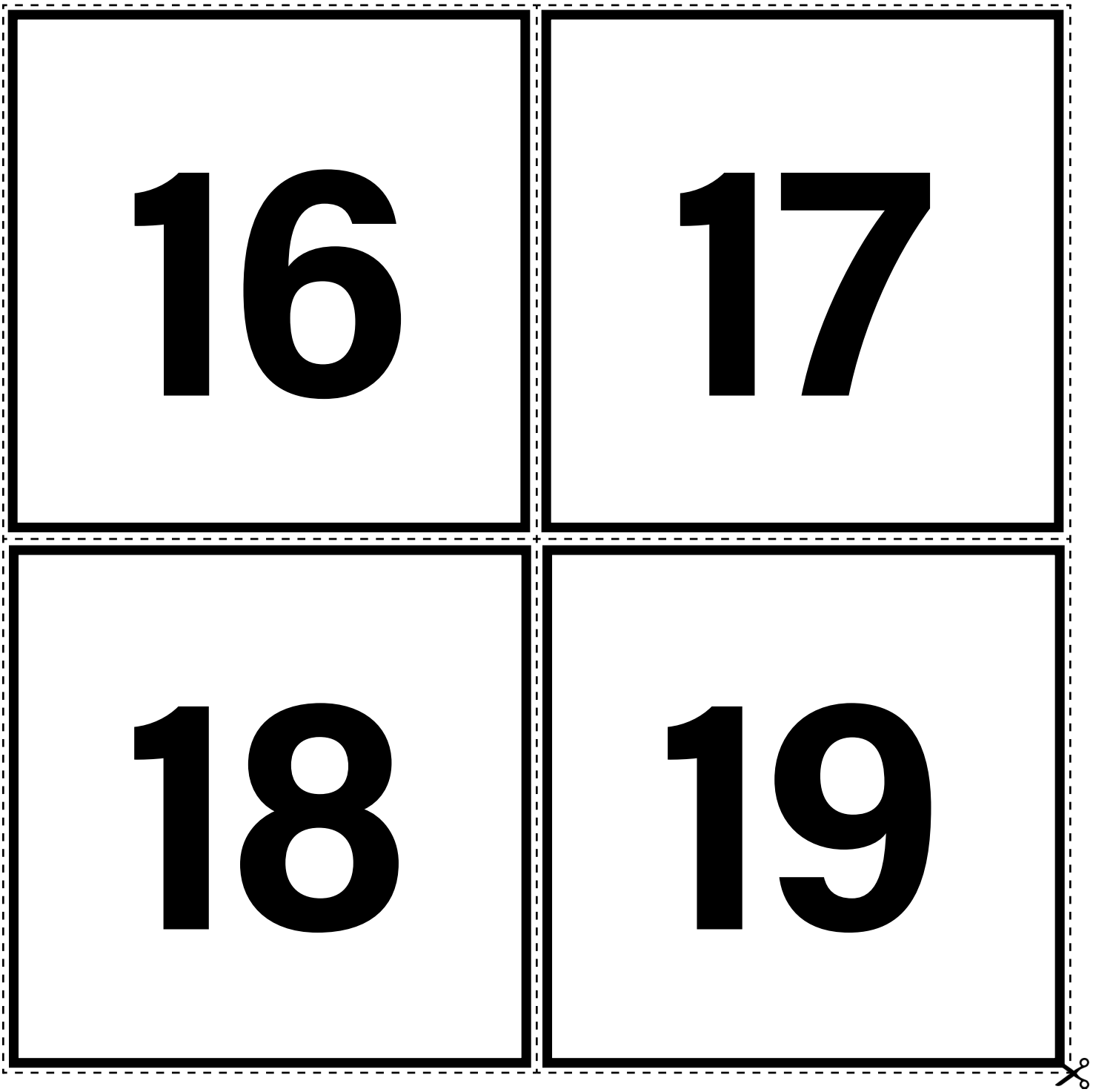

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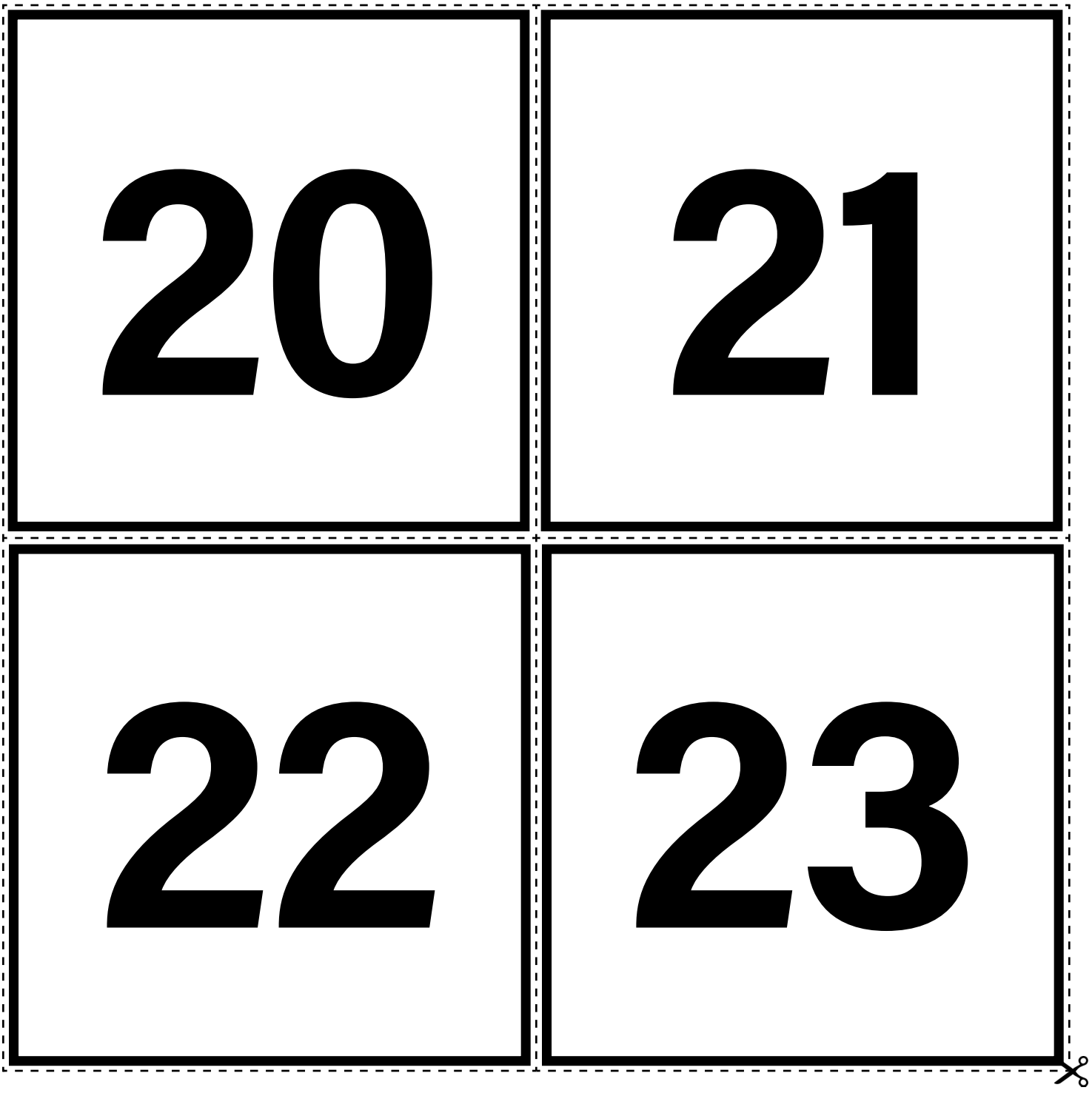

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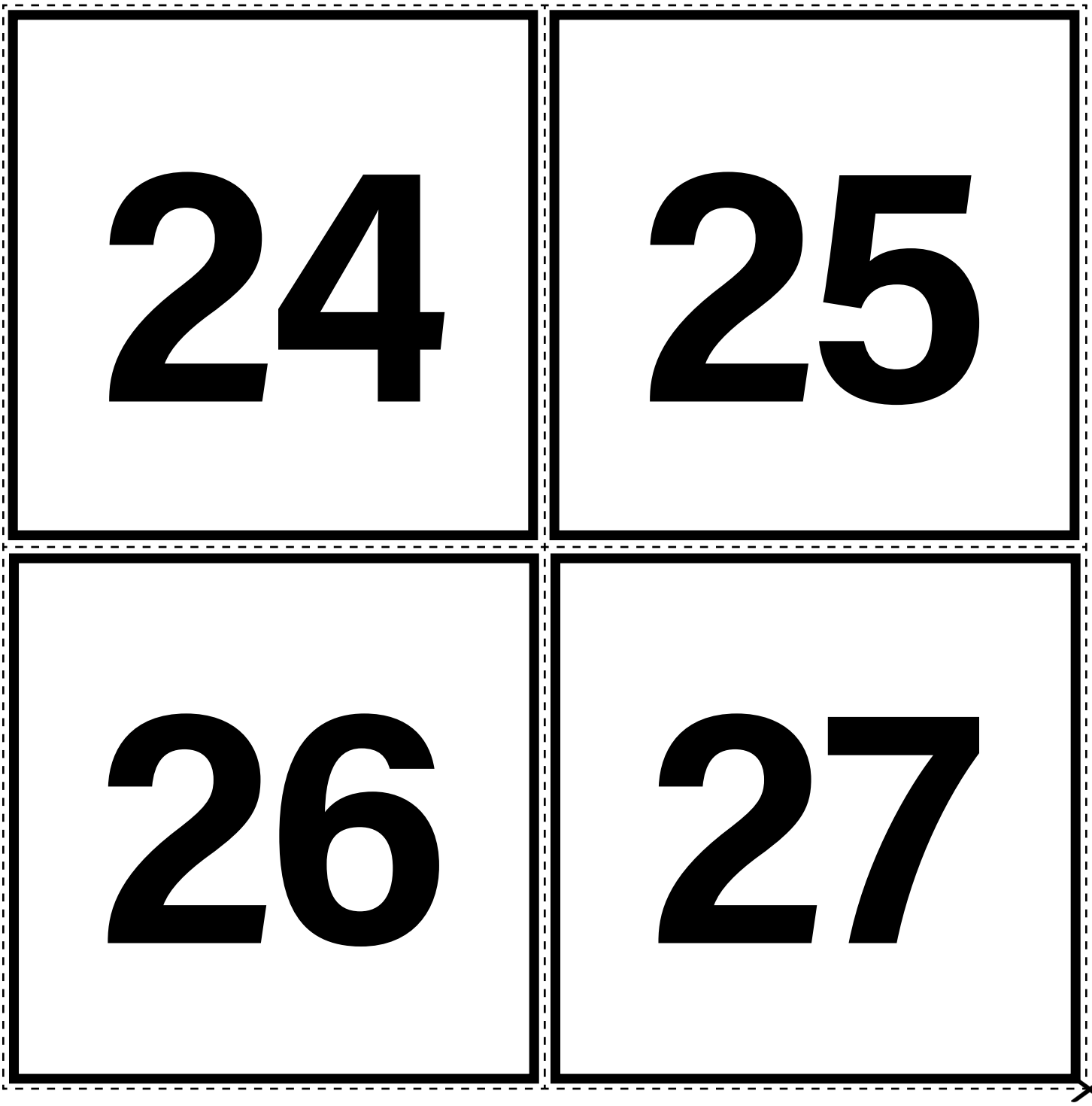

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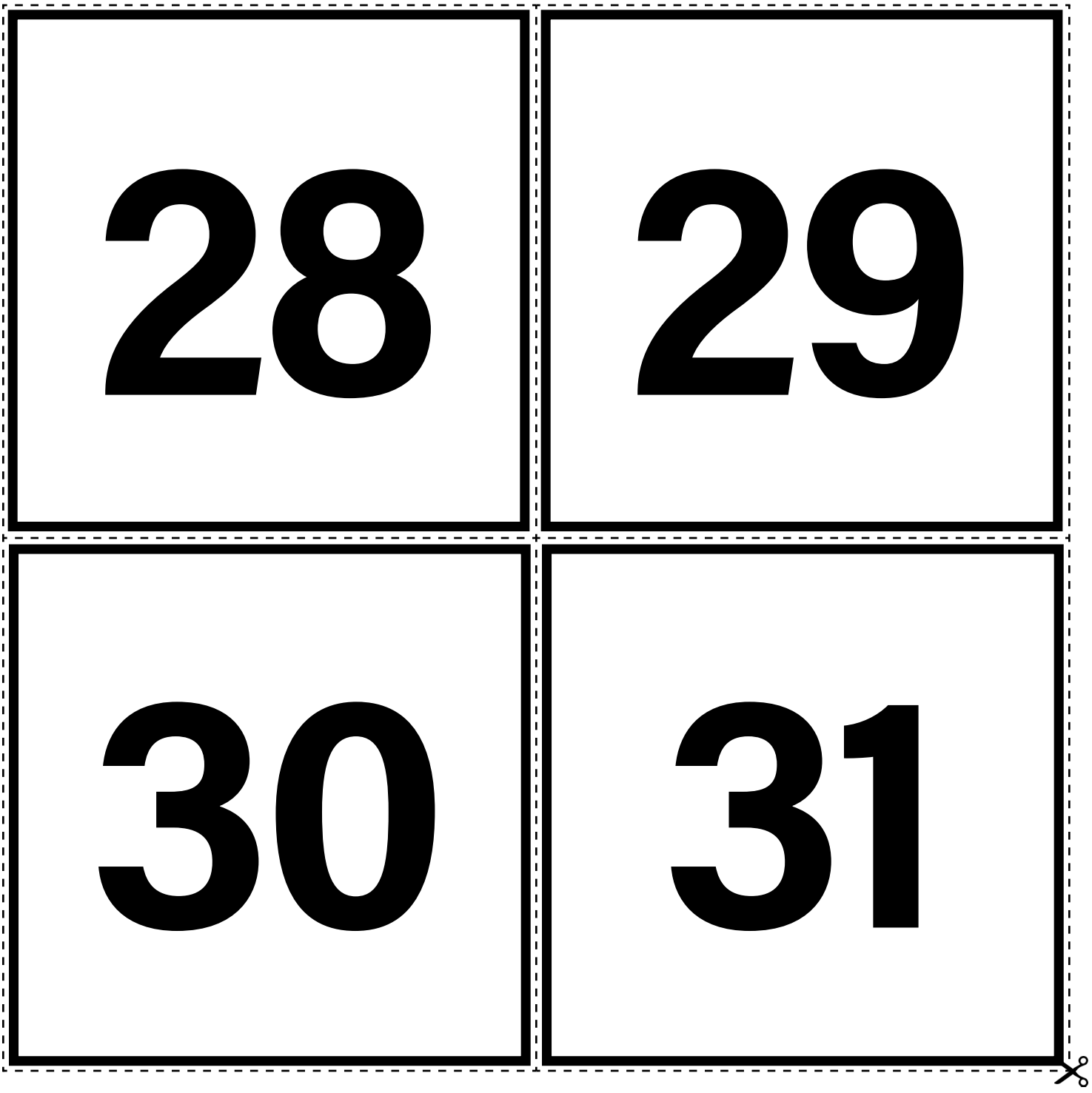

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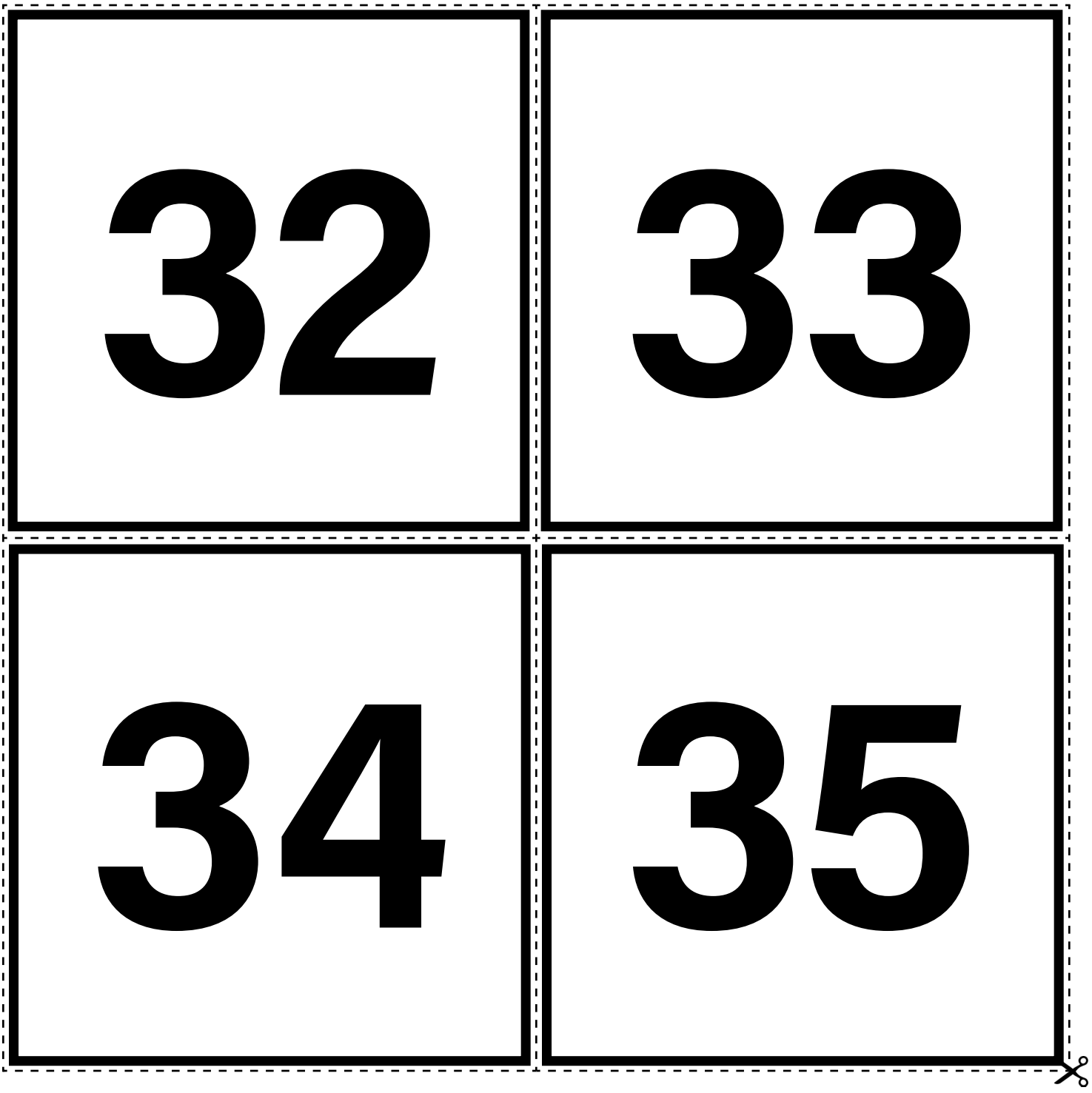

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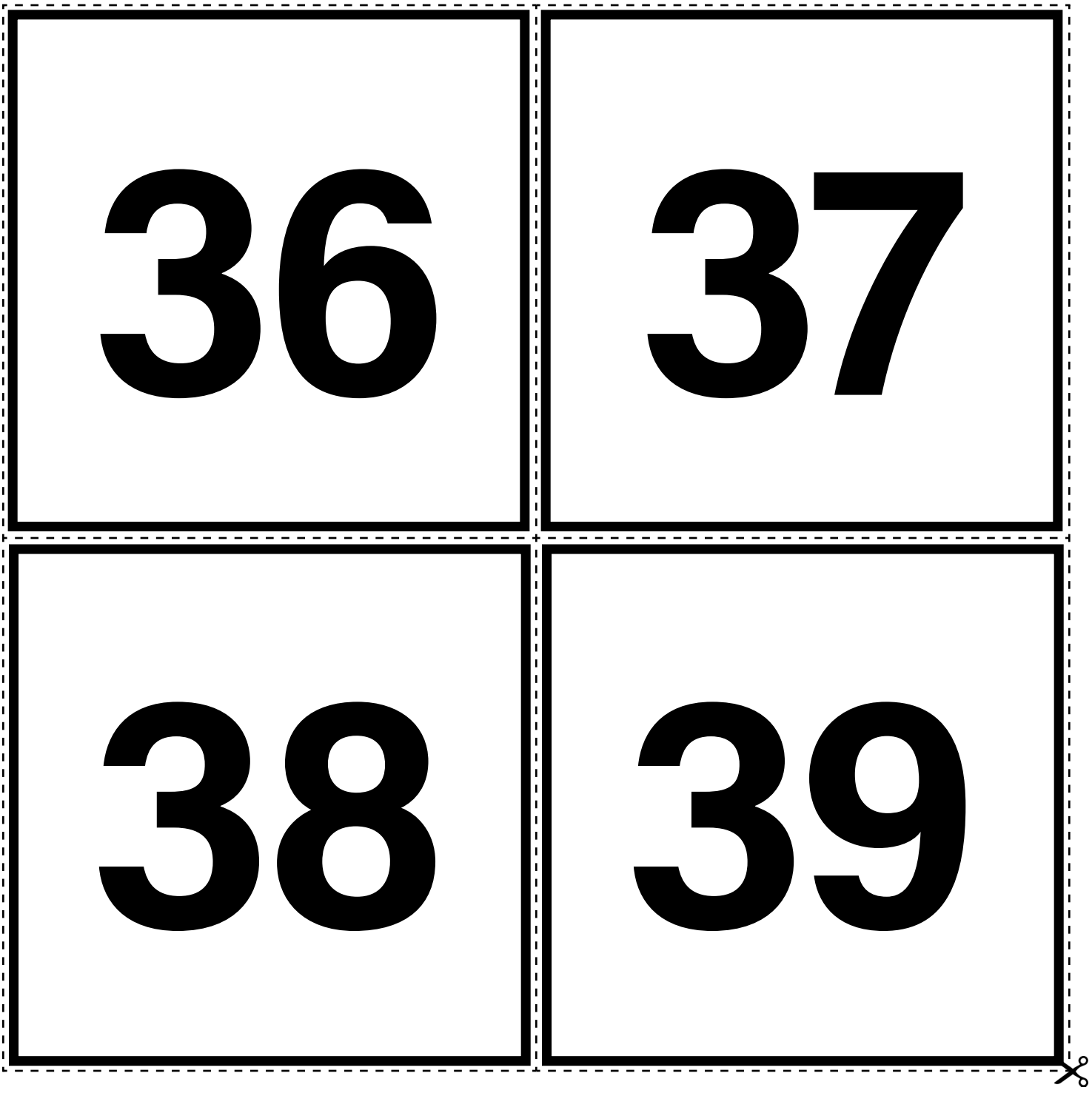

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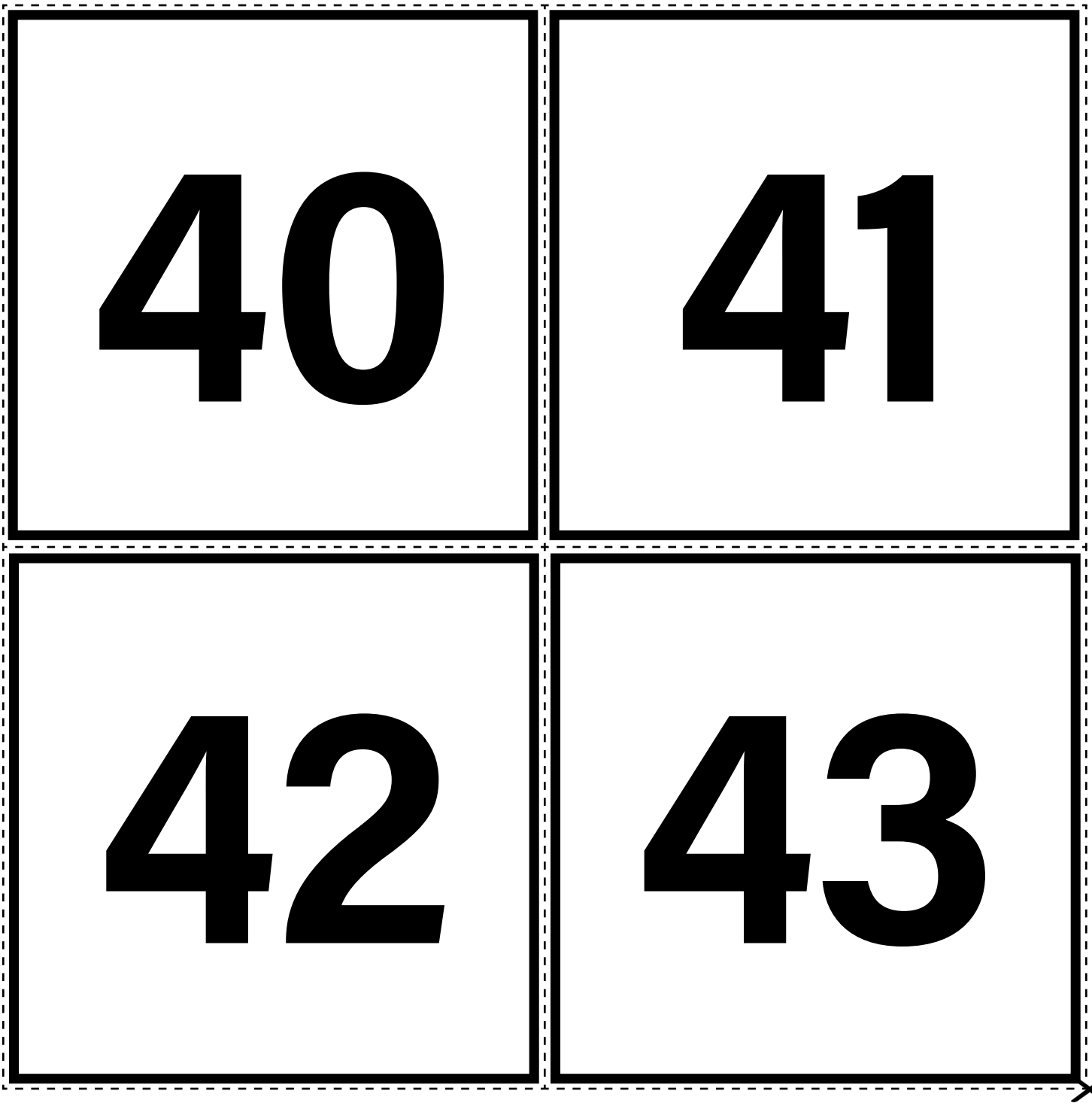

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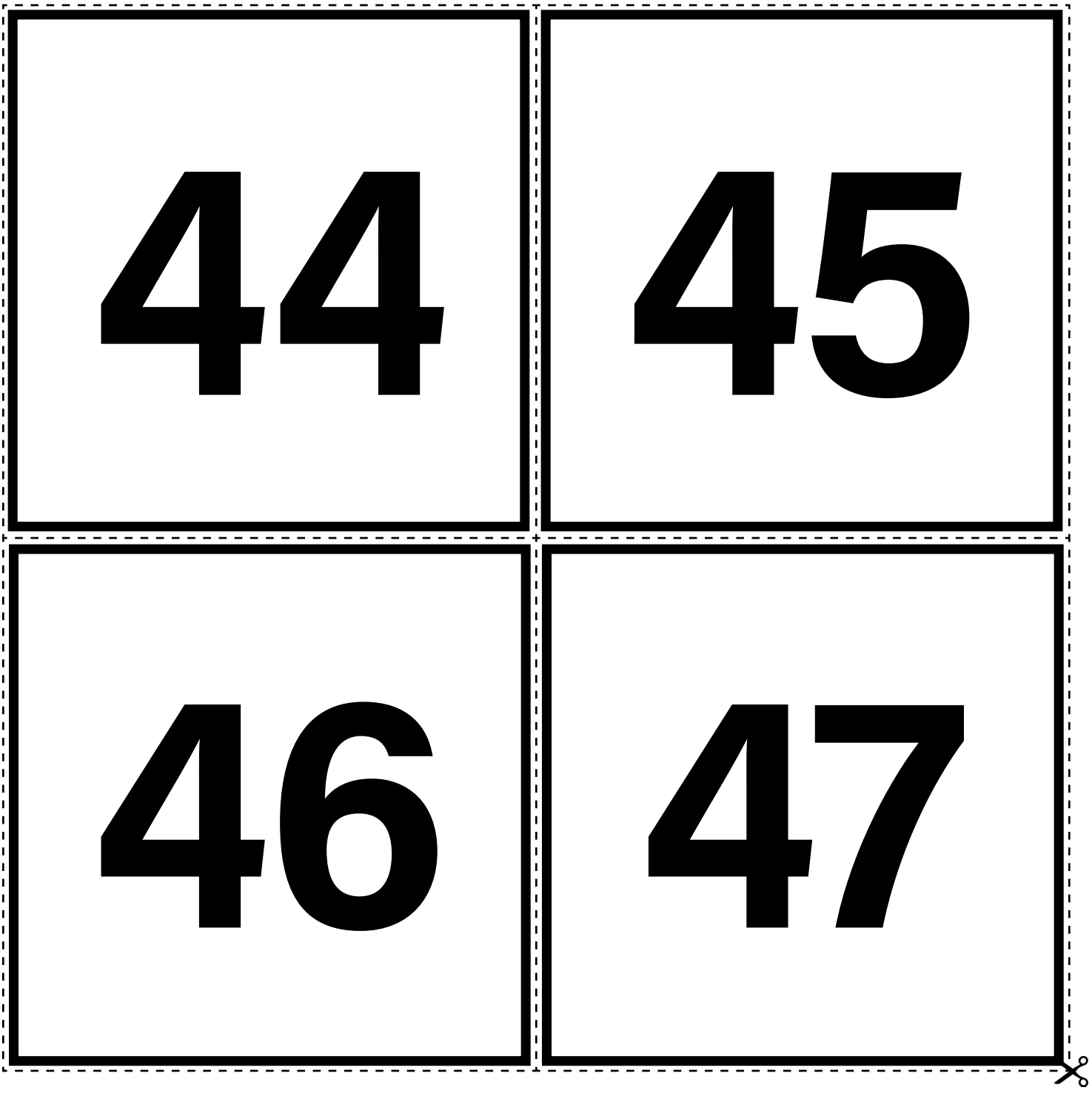

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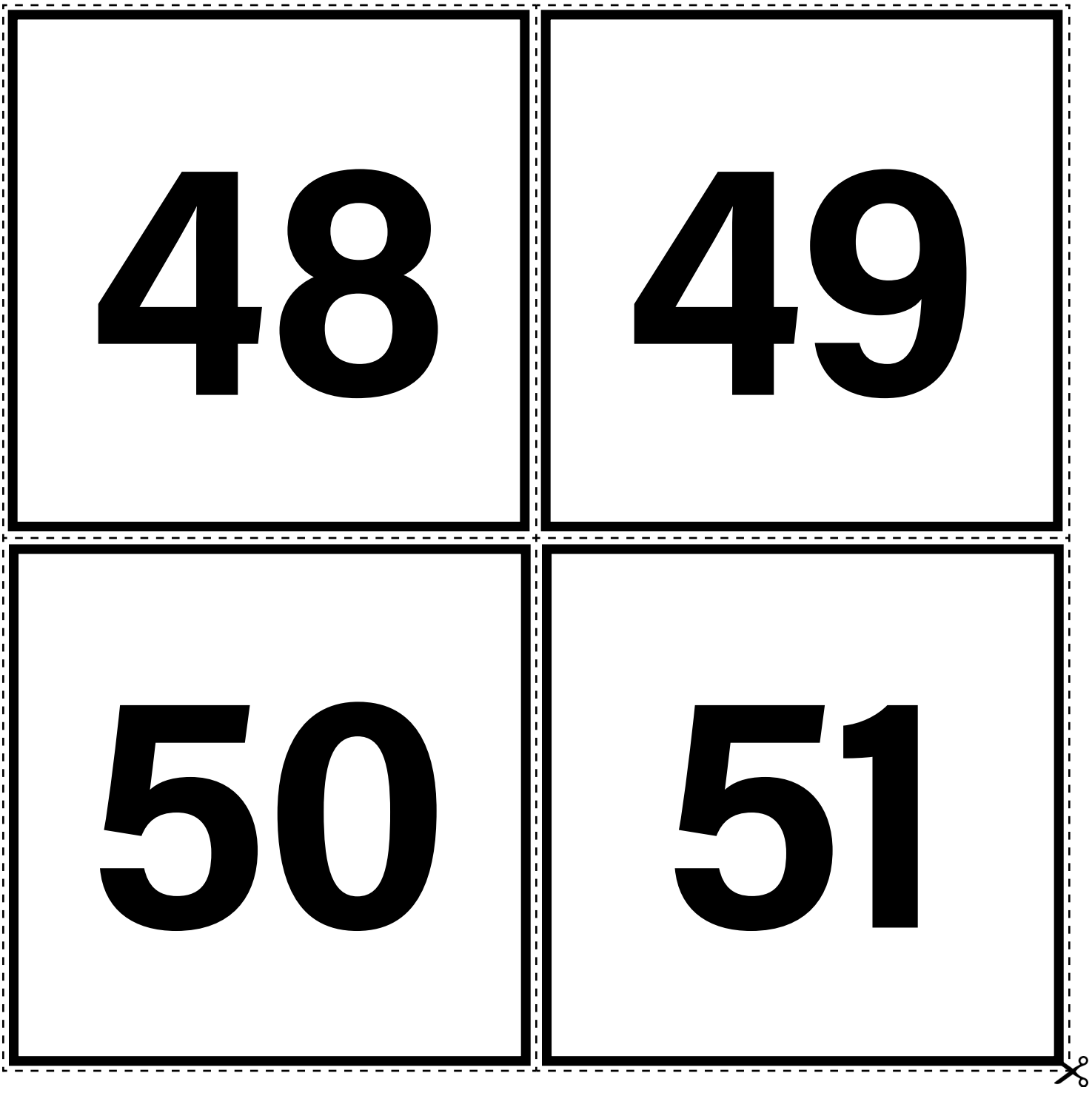

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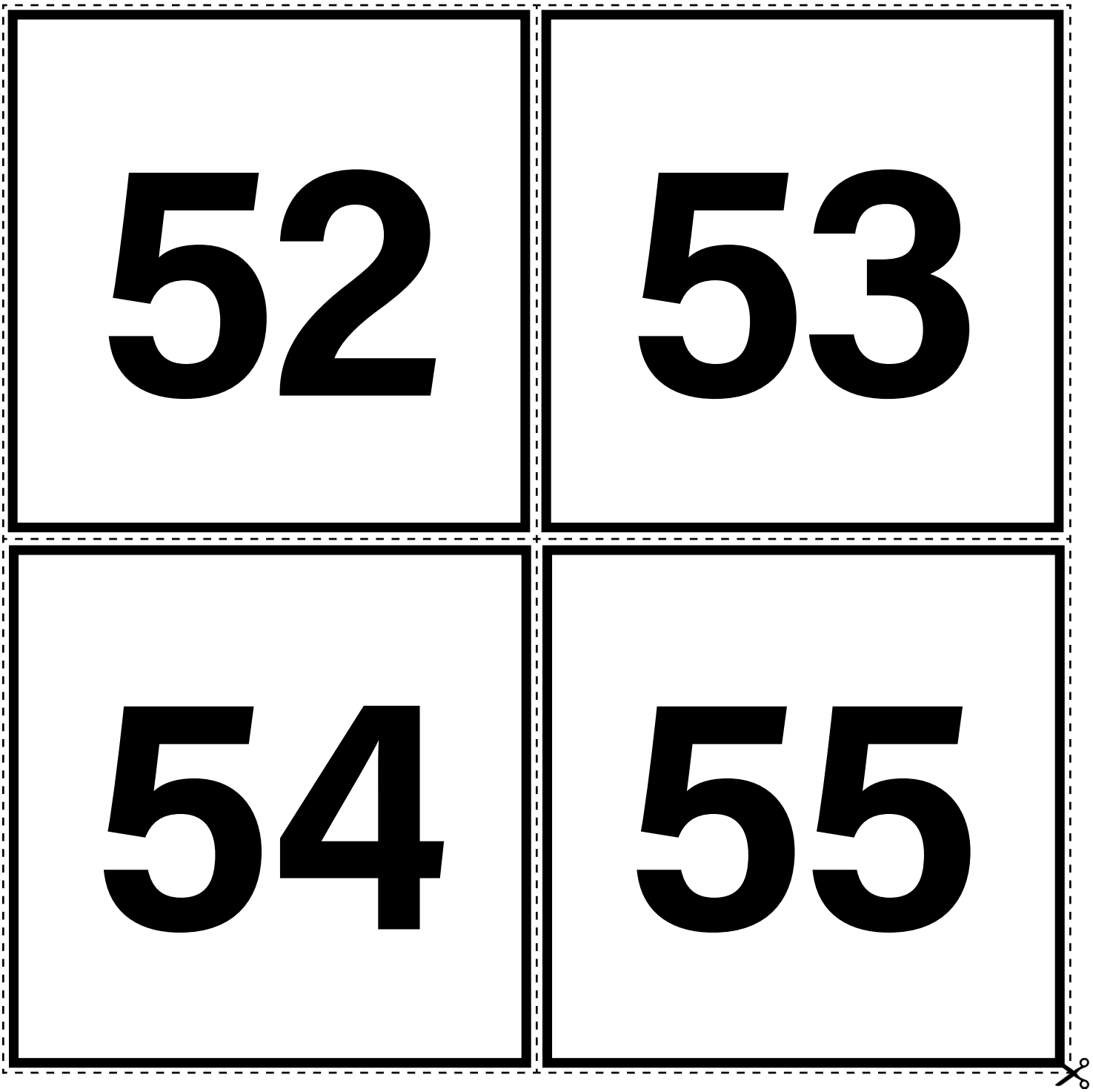

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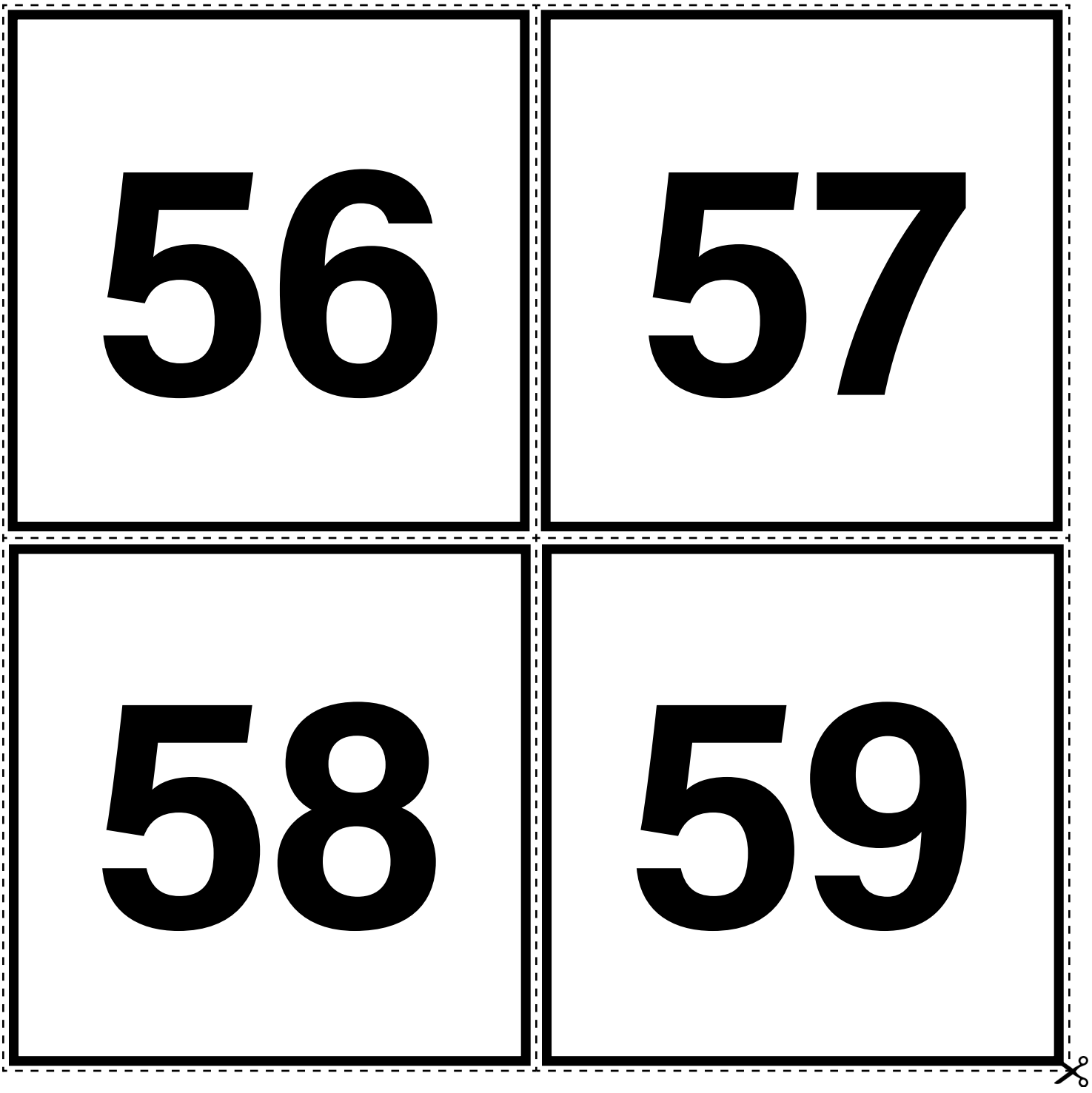

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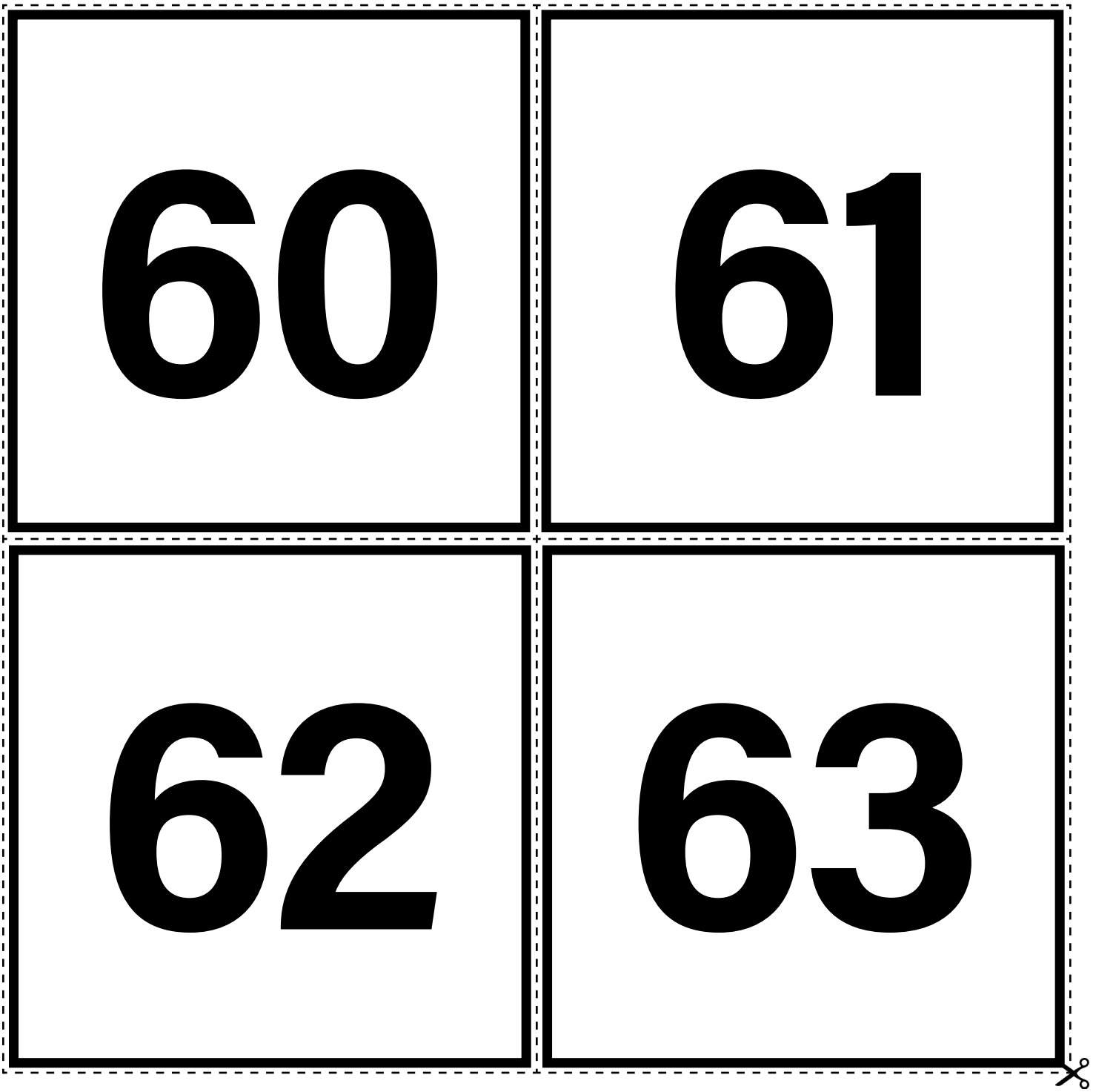

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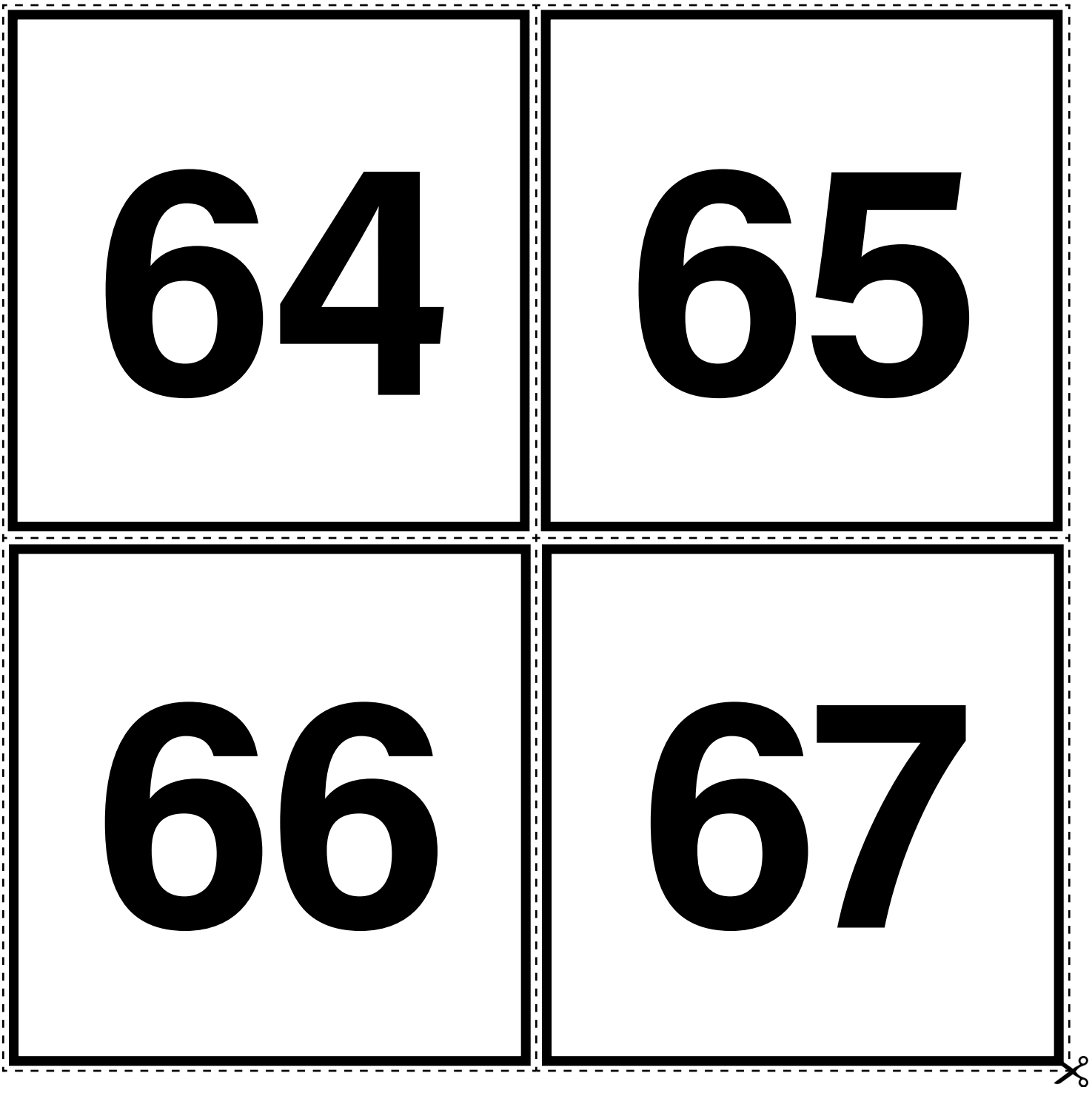

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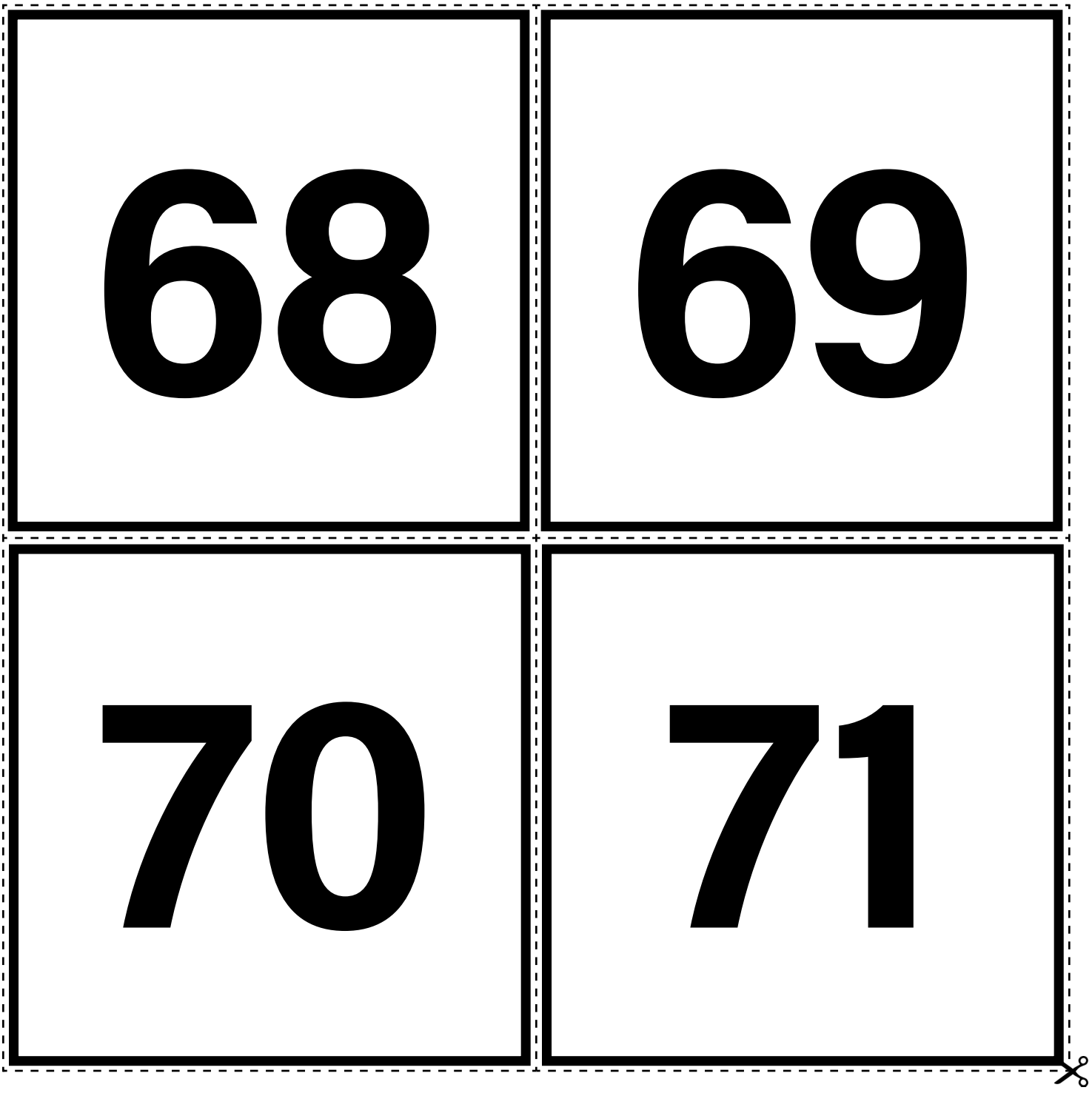

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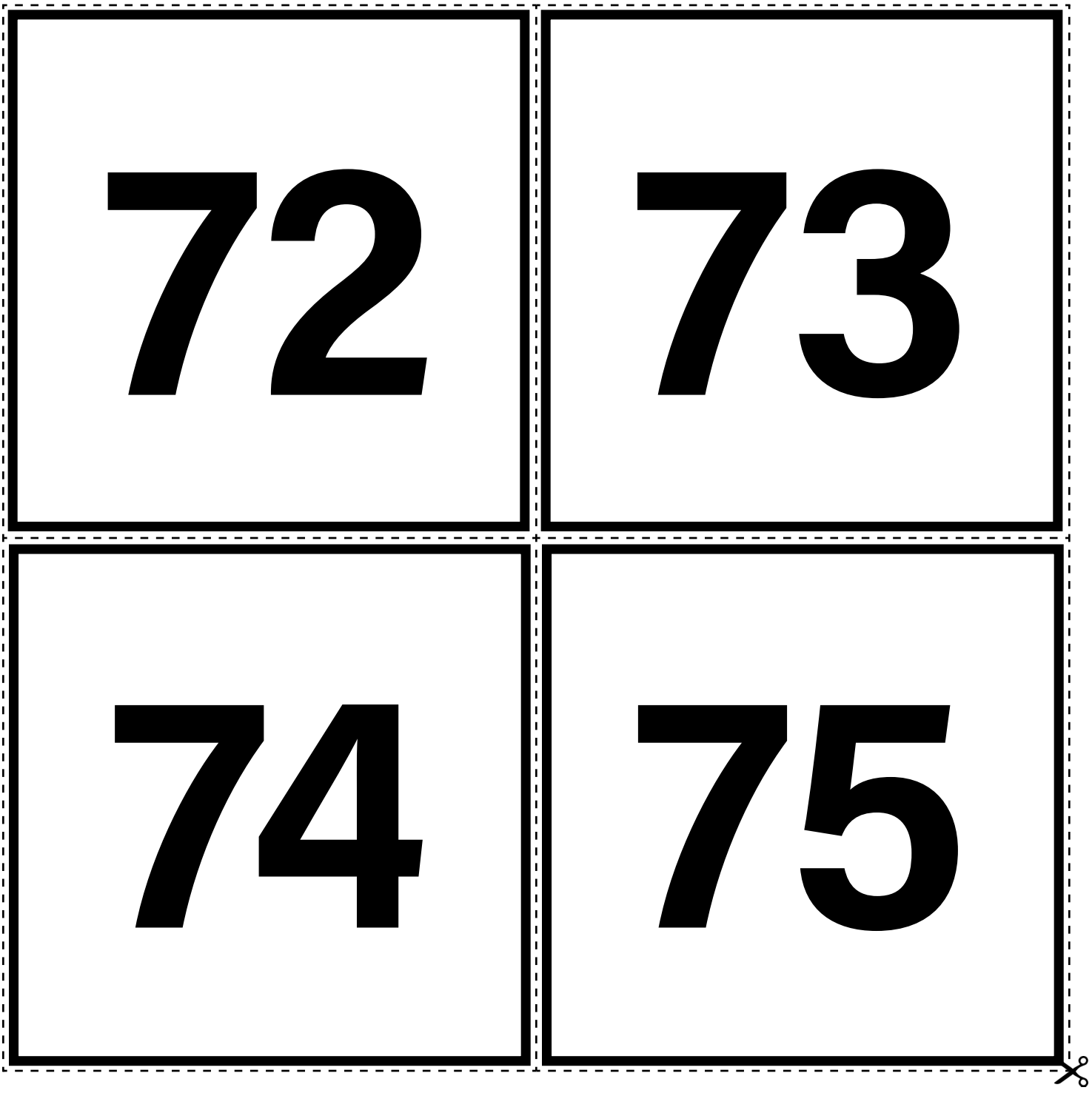

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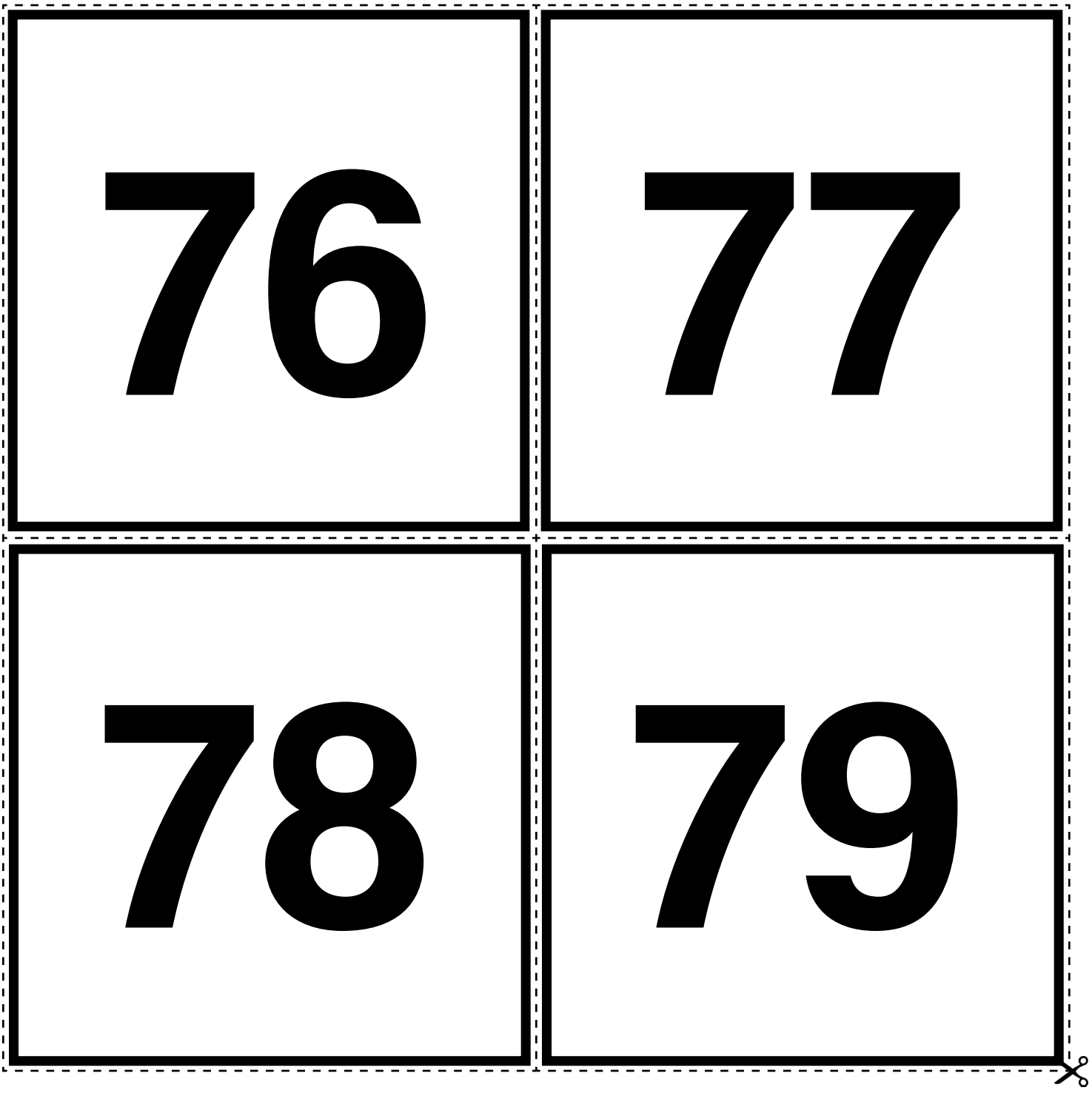

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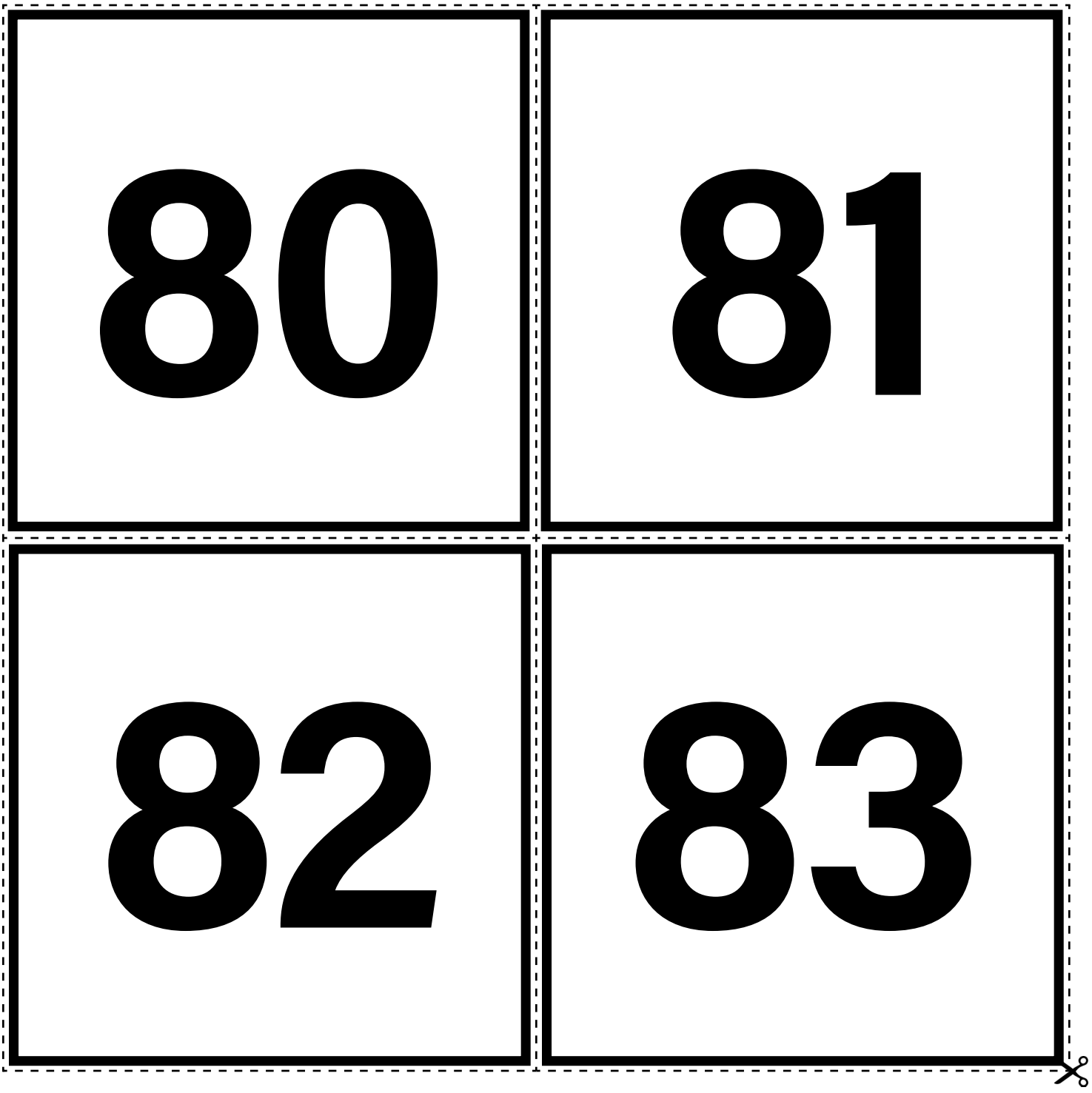

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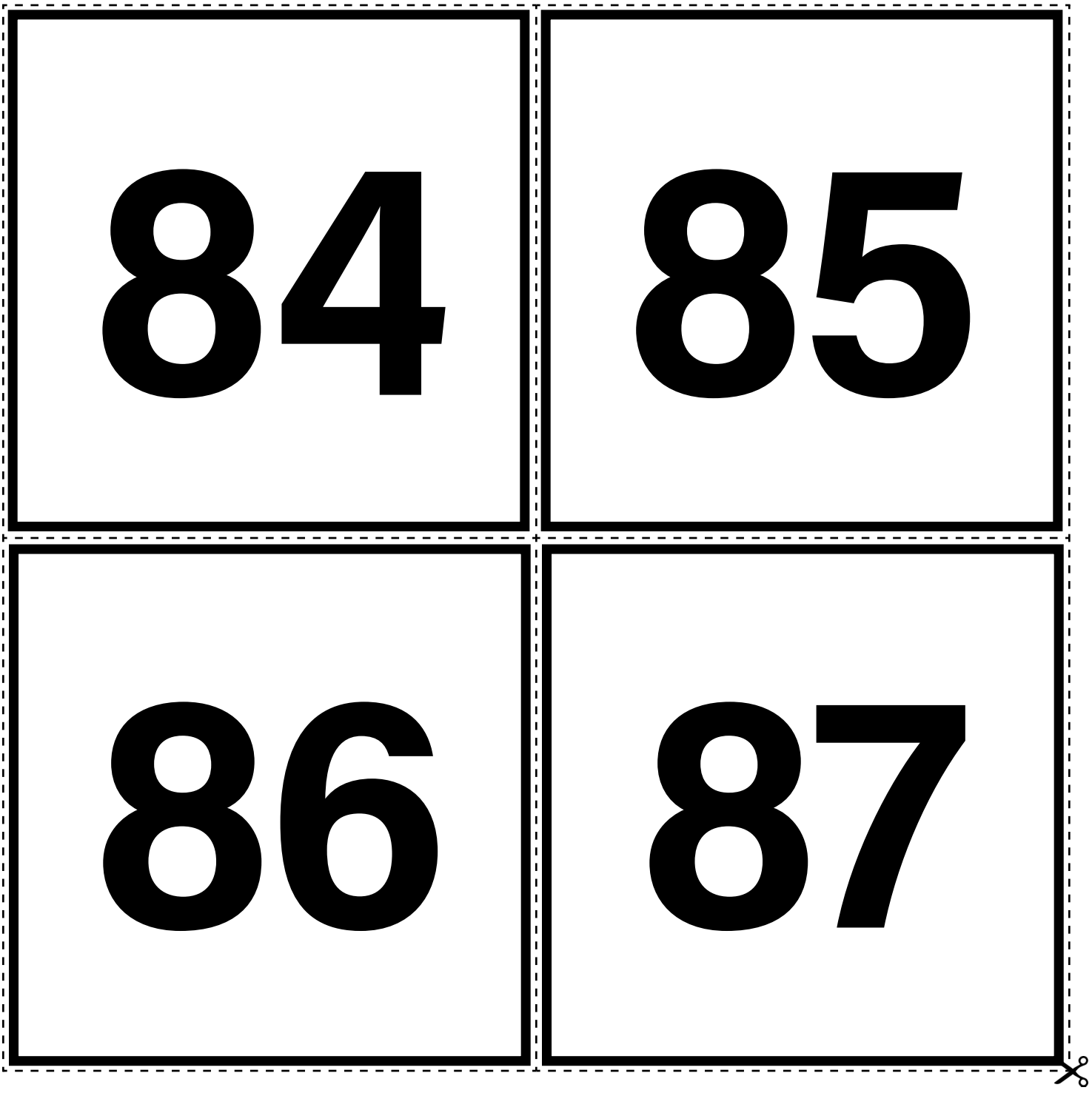

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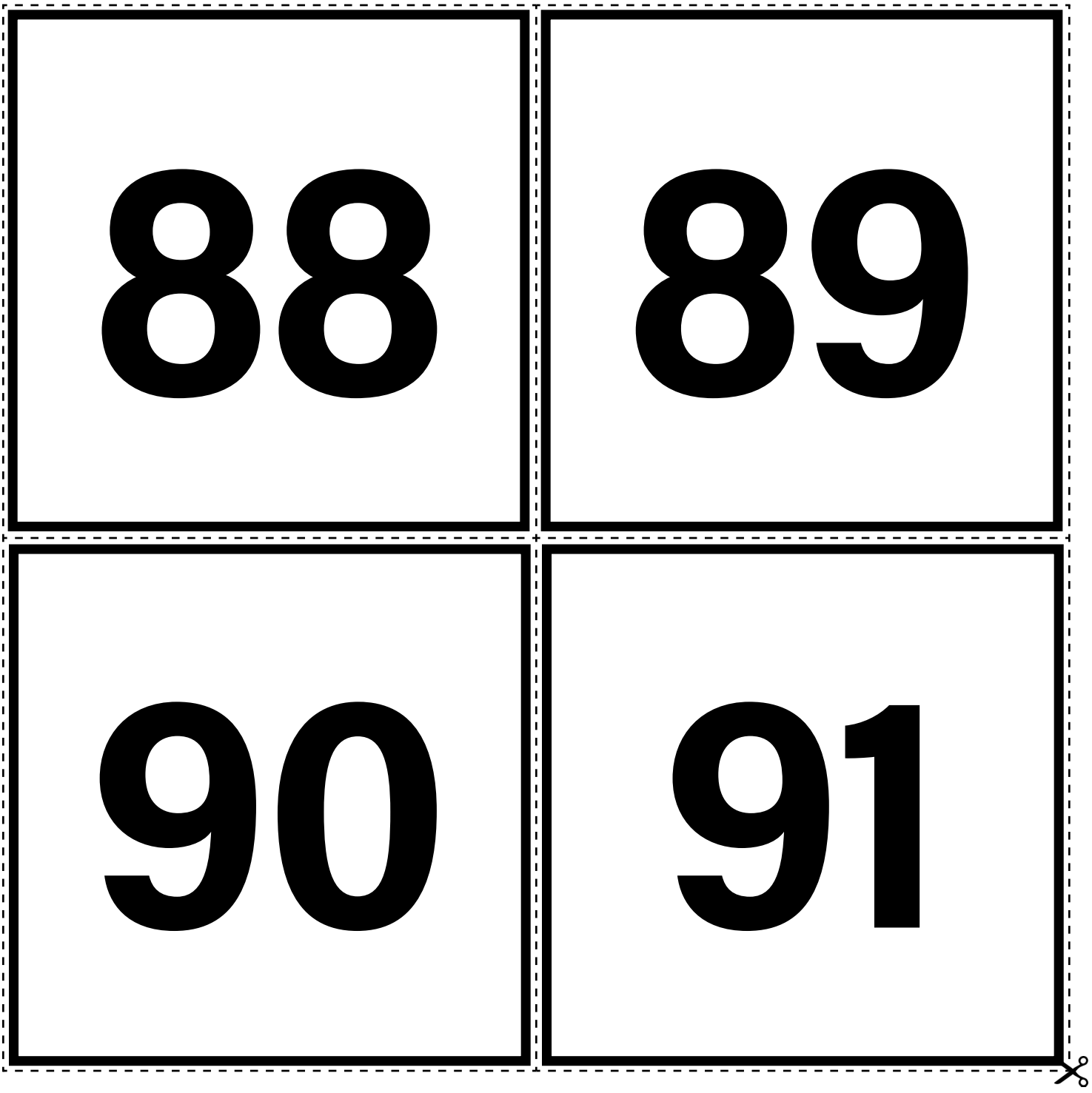

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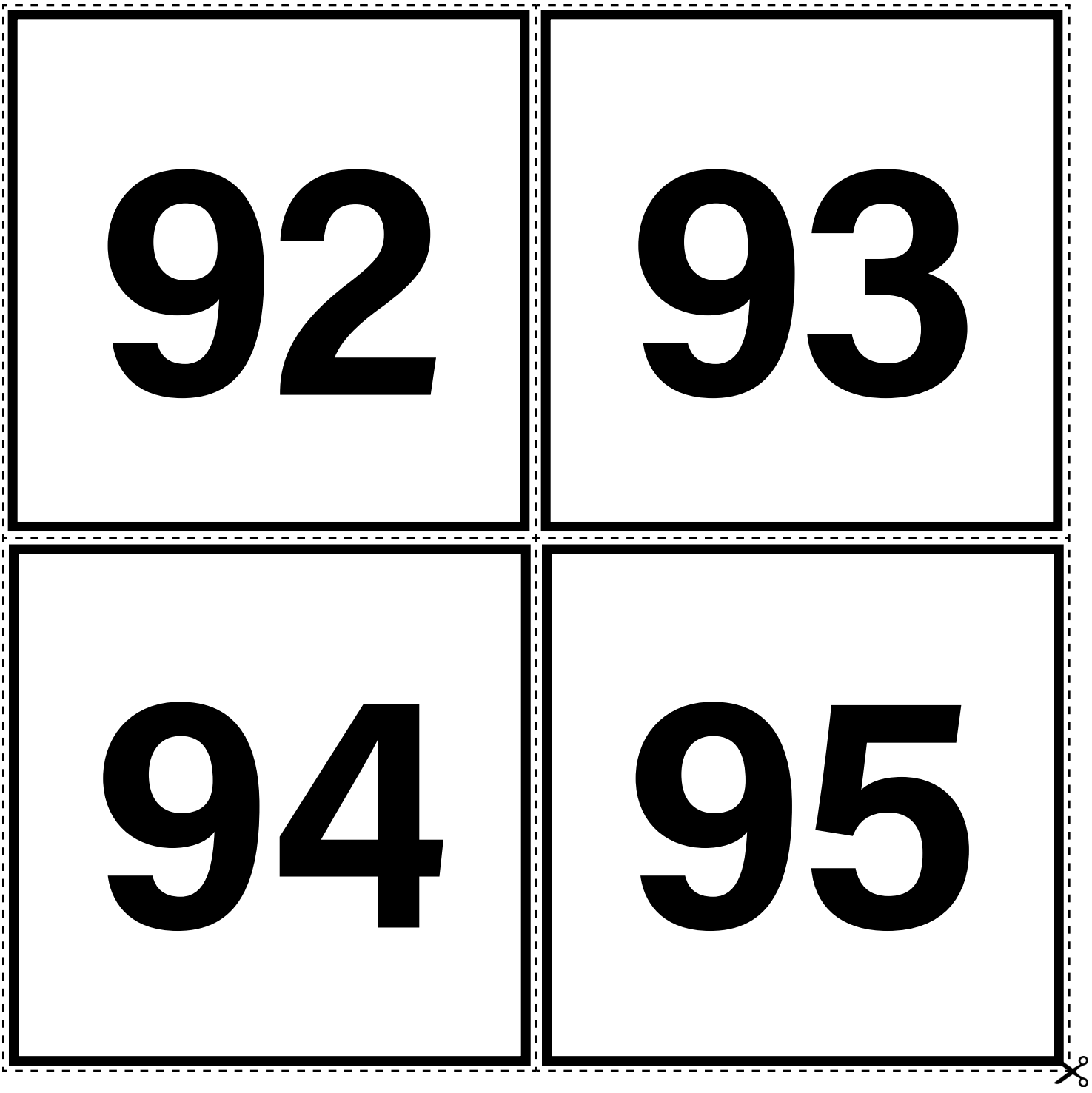

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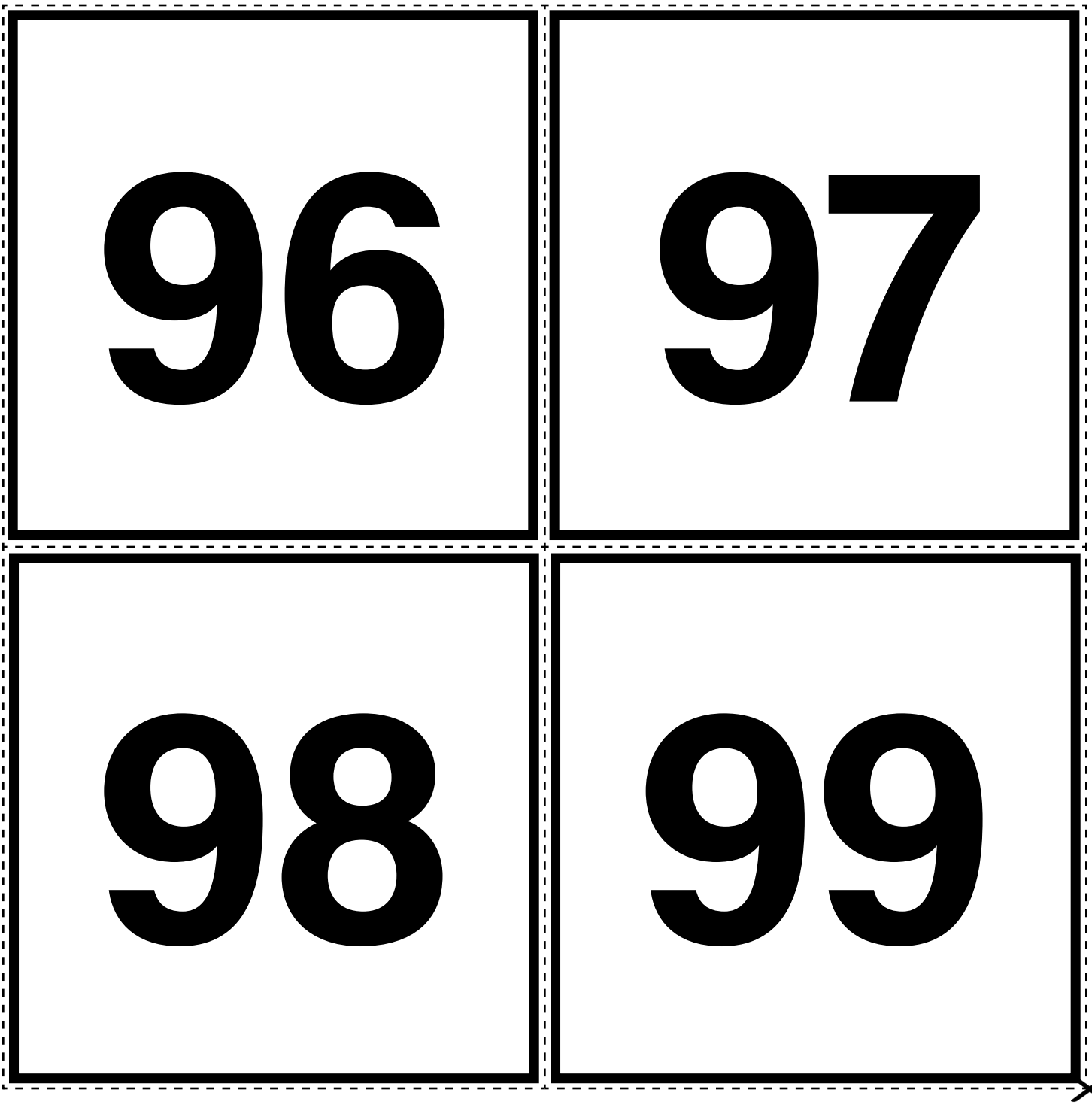

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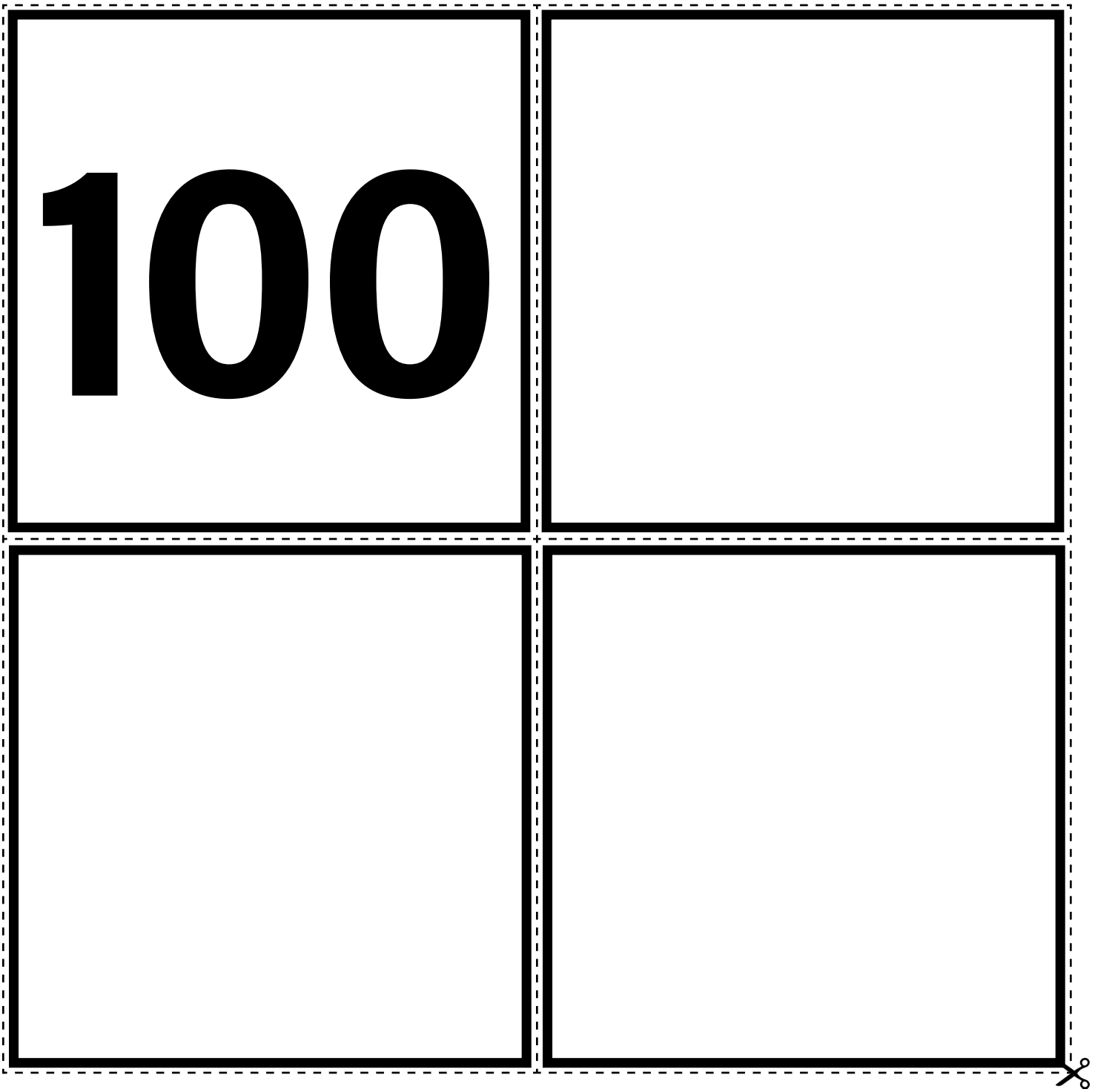
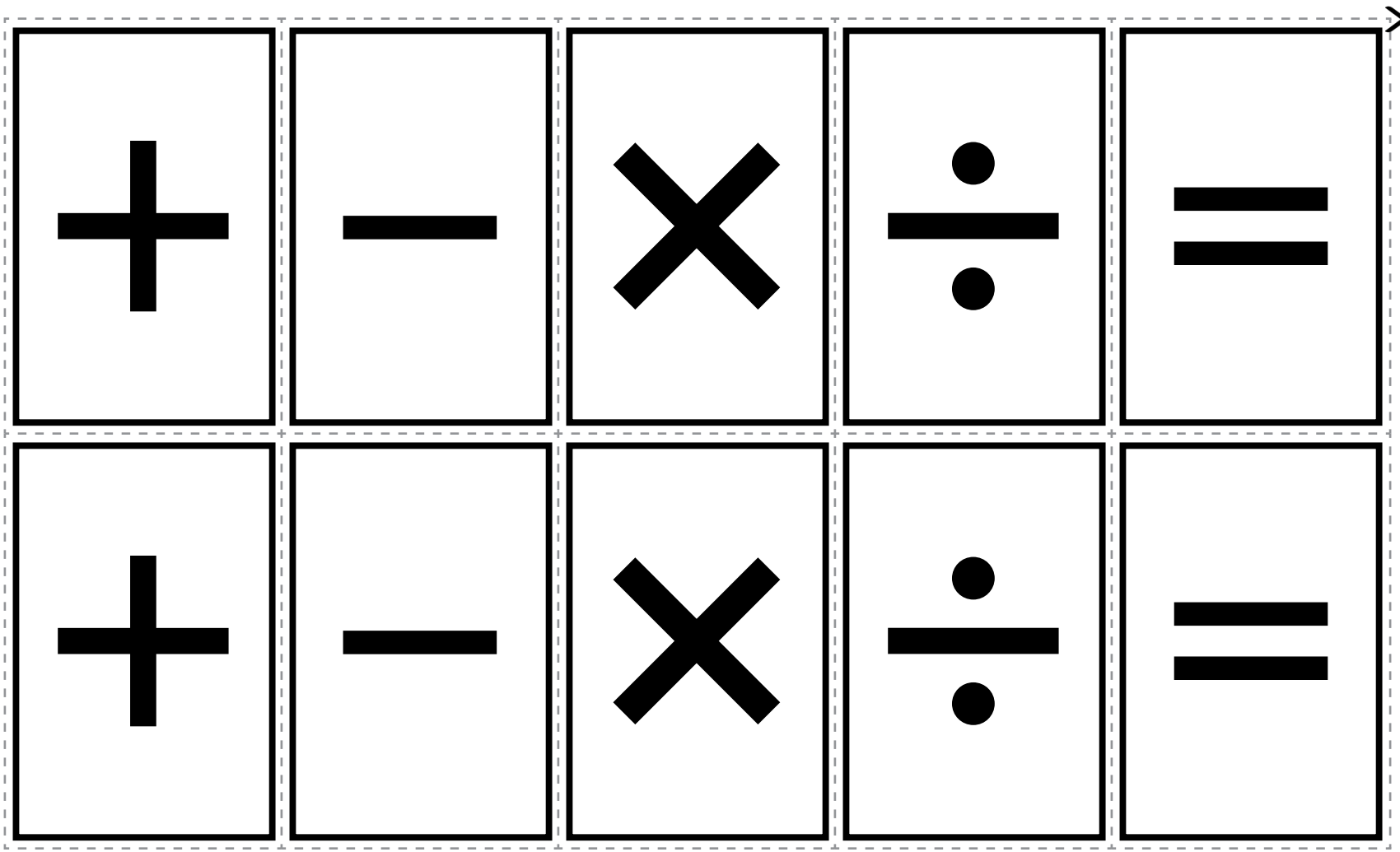
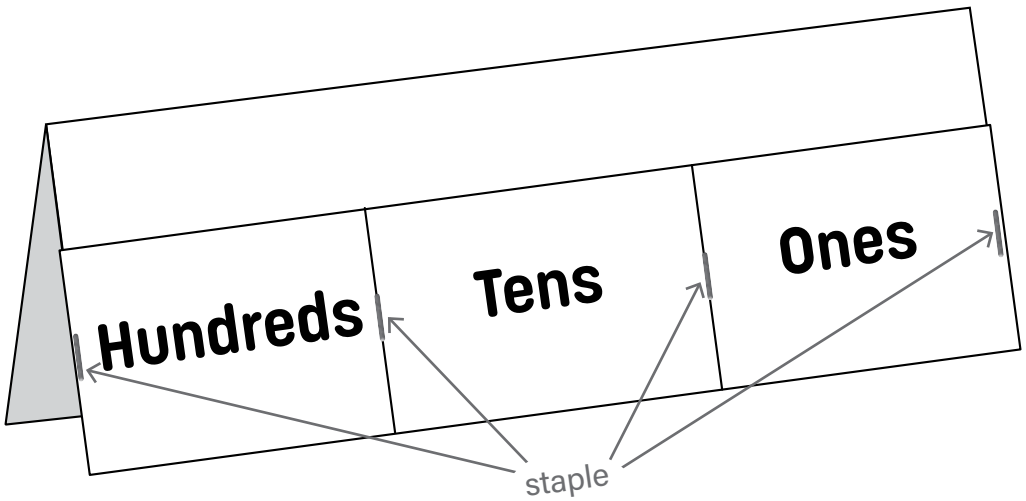


Operation Symbols



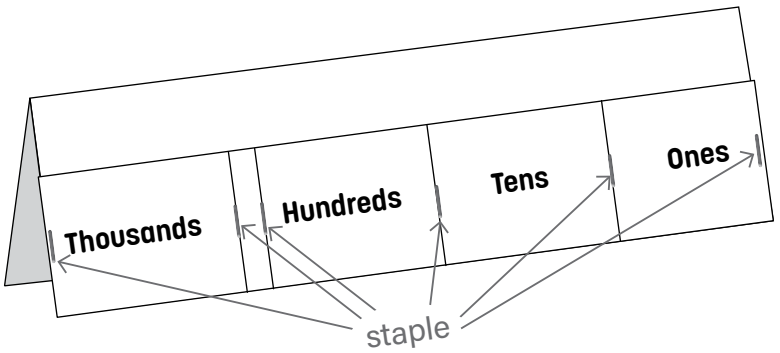
Place Value Pockets

Hundreds	Tens	Ones
		fold back
		fold over



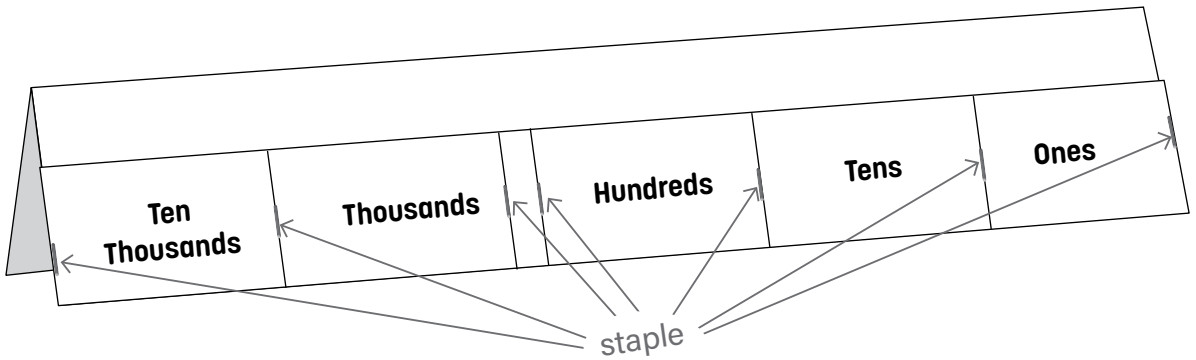
Place Value Pockets

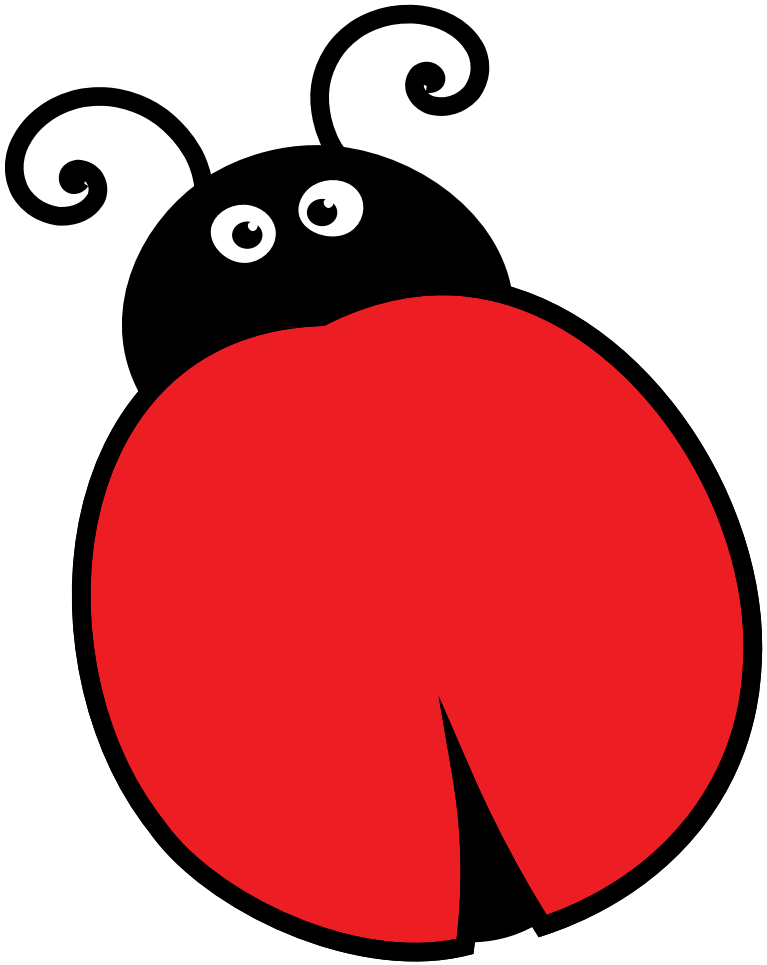
Thousands		Hundreds	Tens	Ones
				fold back
				fold over



Place Value Pockets

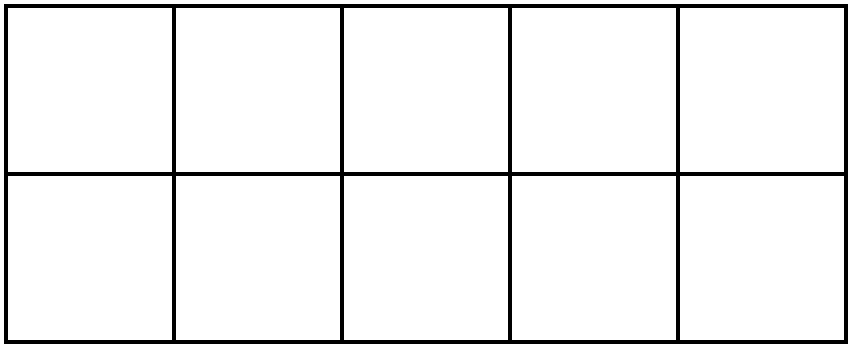
Ten Thousands	Thousands		Hundreds	Tens	Ones
					fold back
					fold over

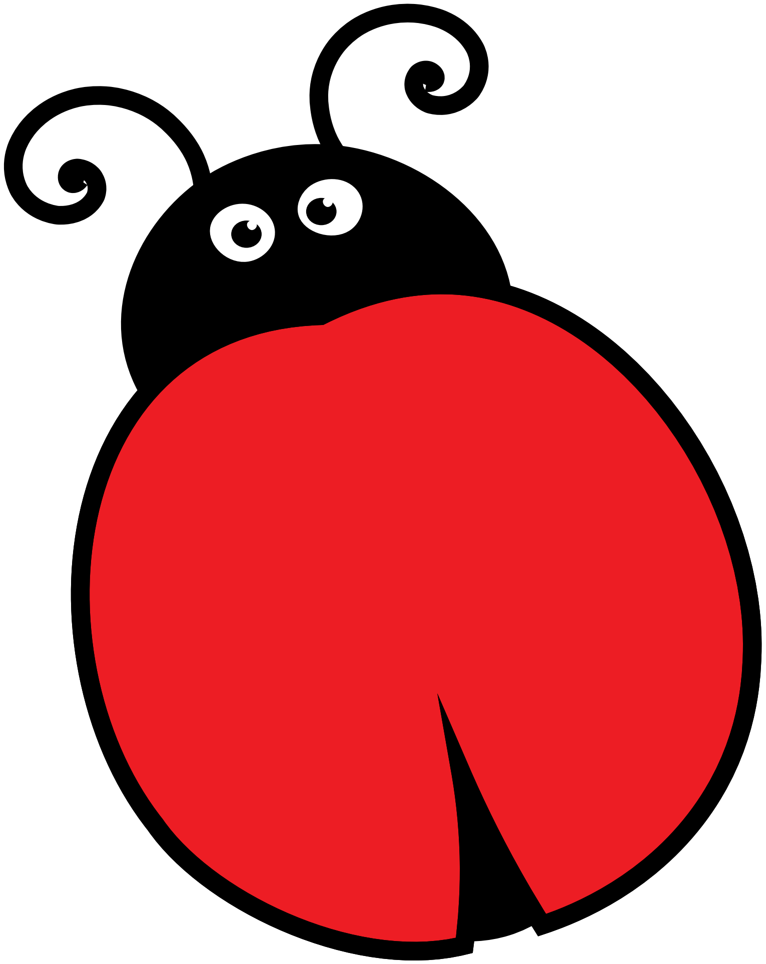




one

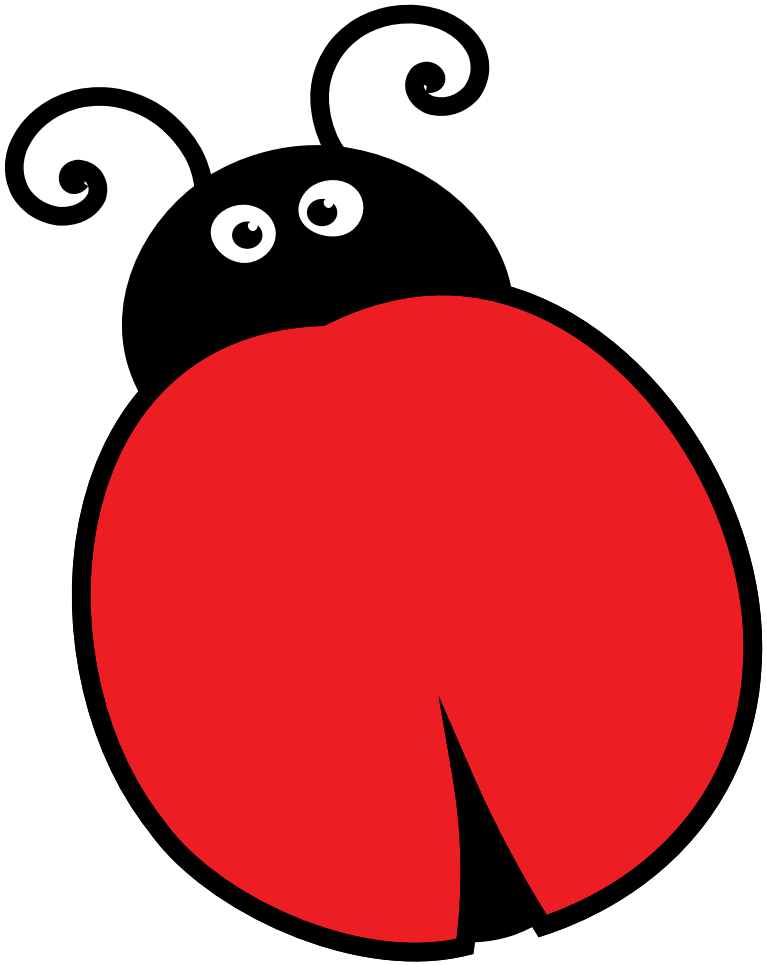
1





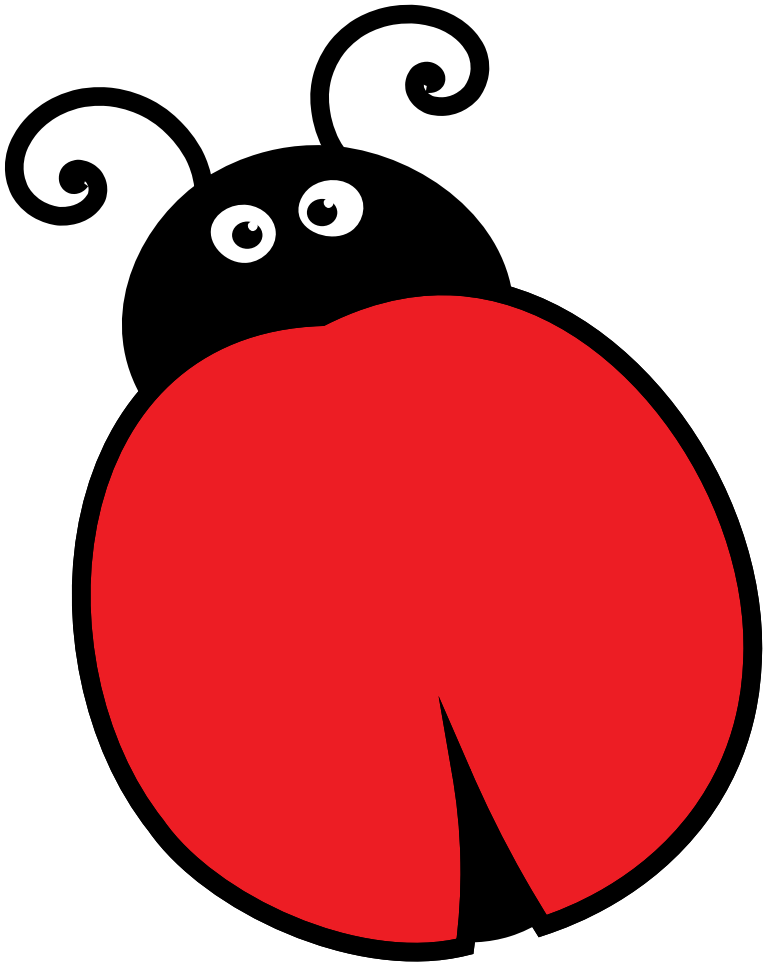
2

two



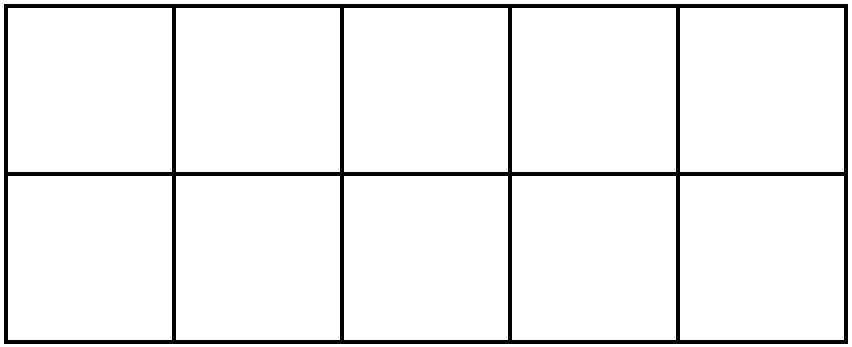
3

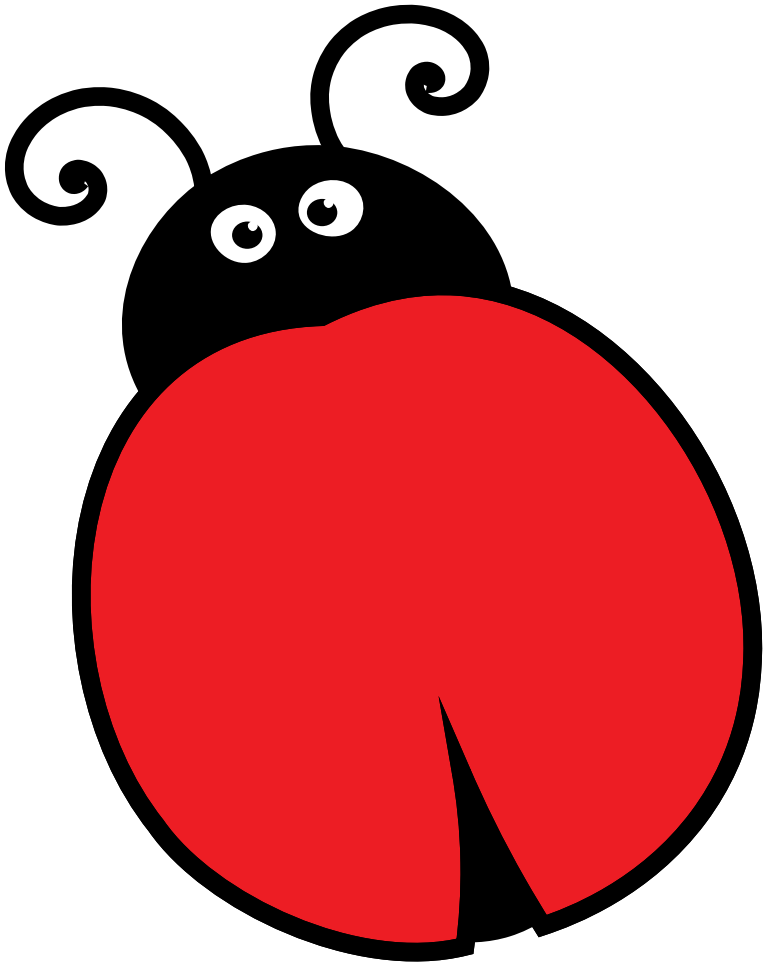
three



four

4





five

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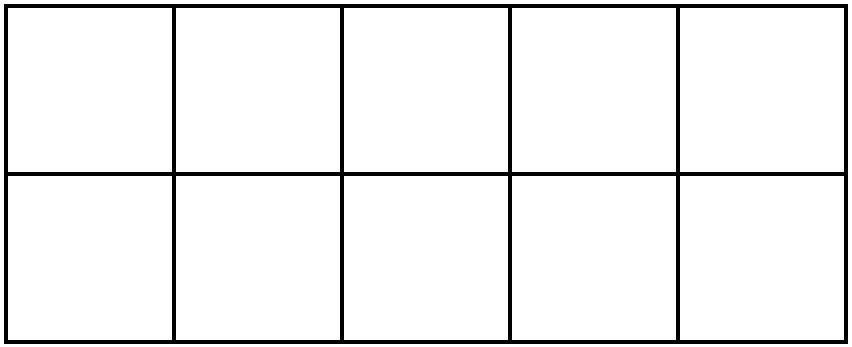

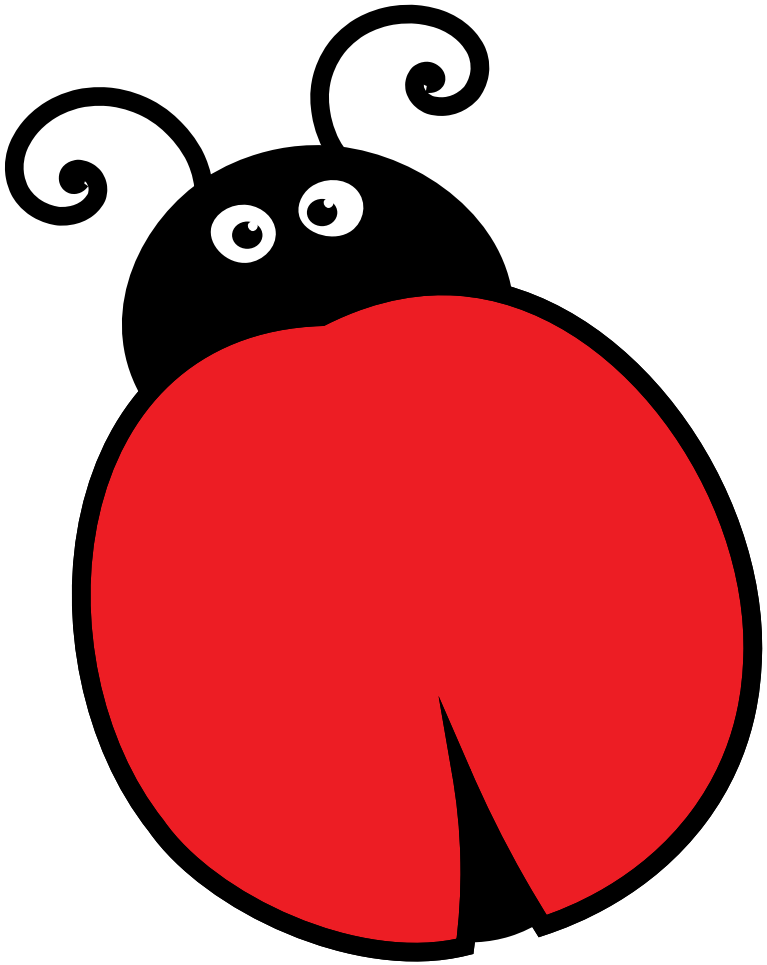

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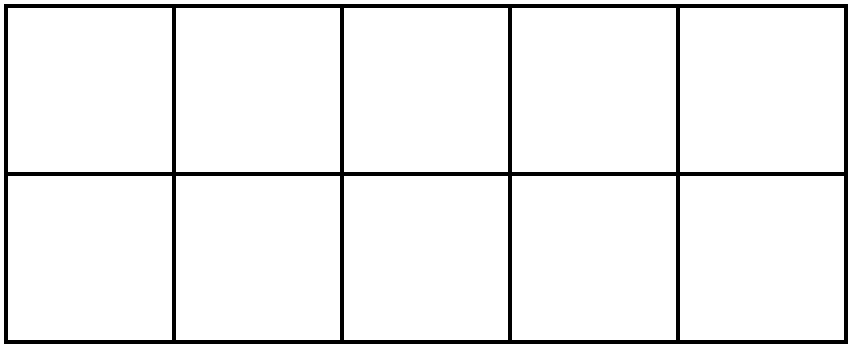

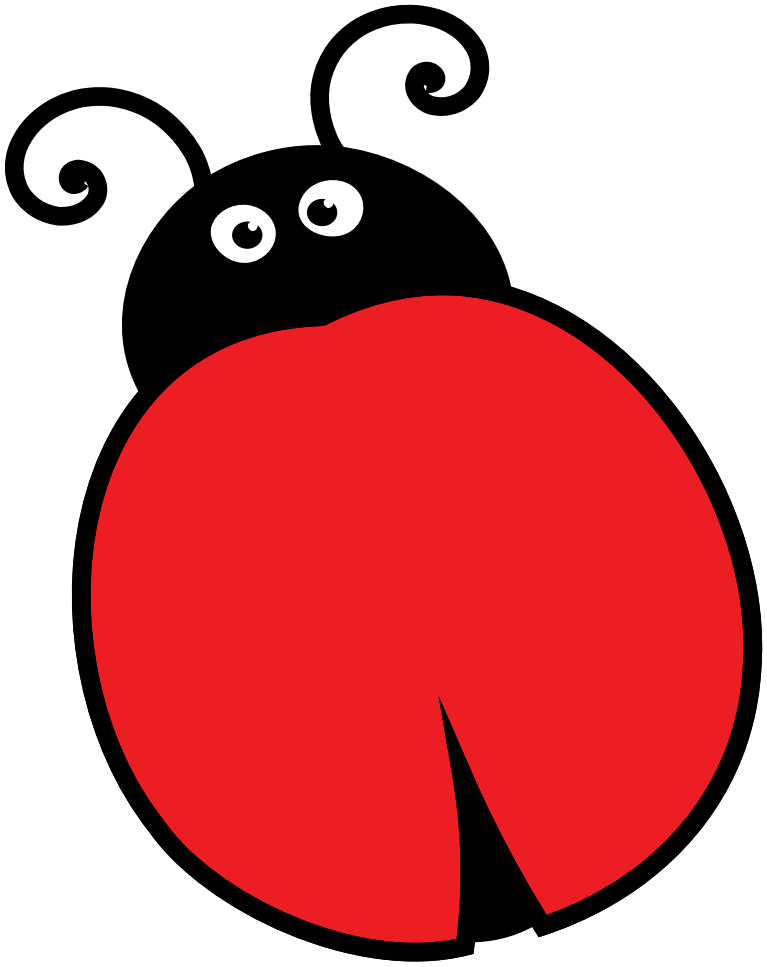

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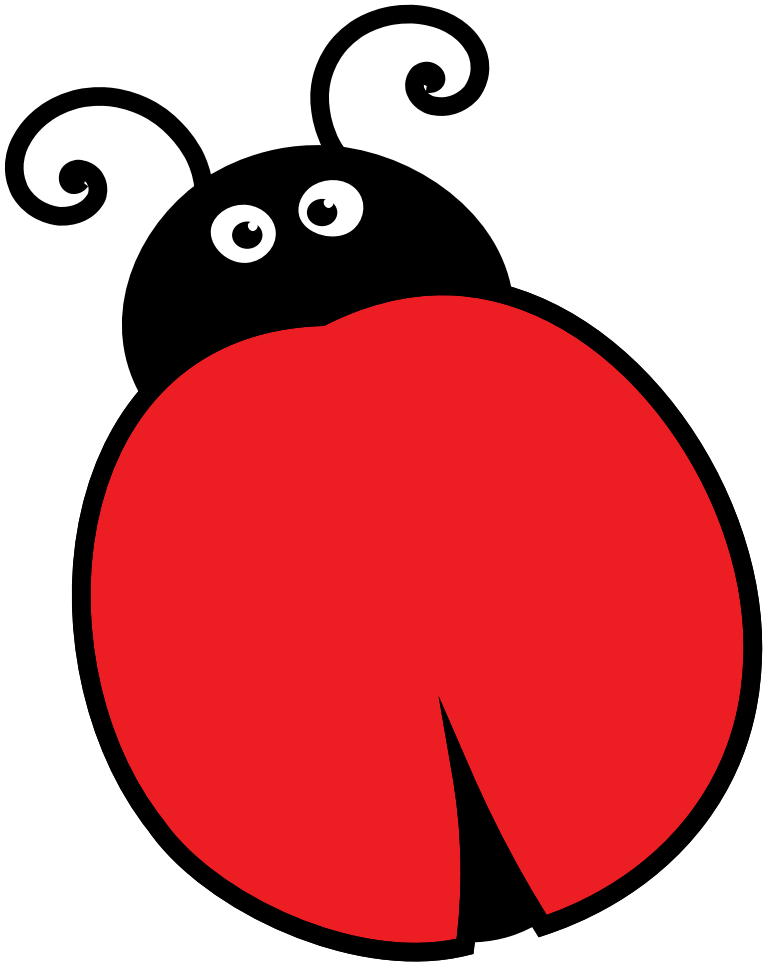

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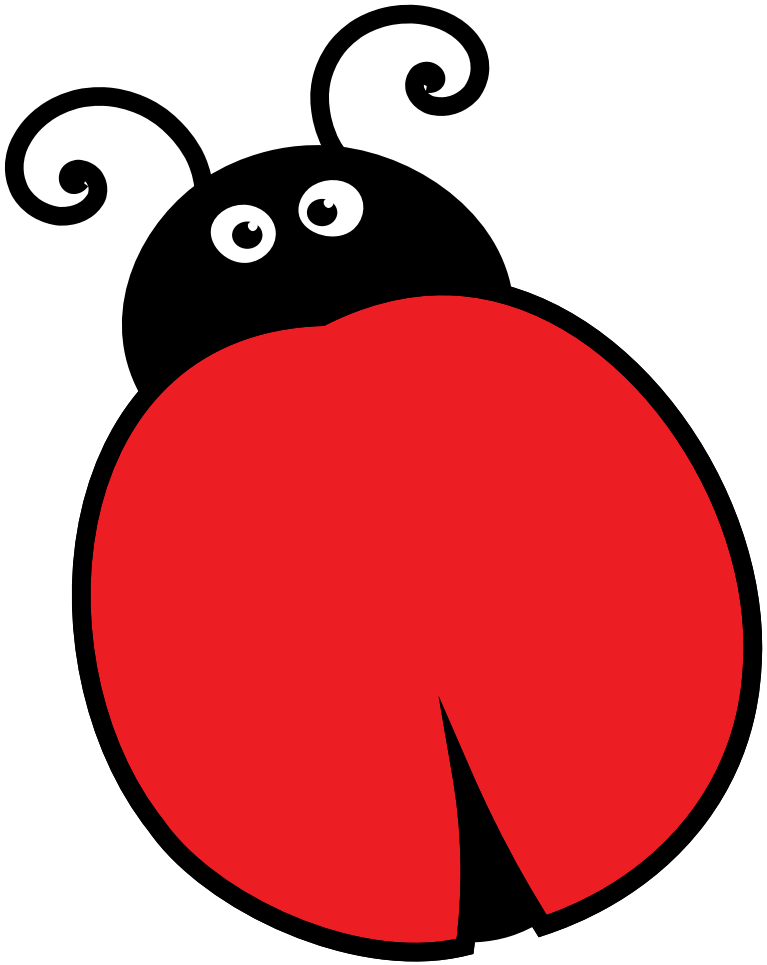

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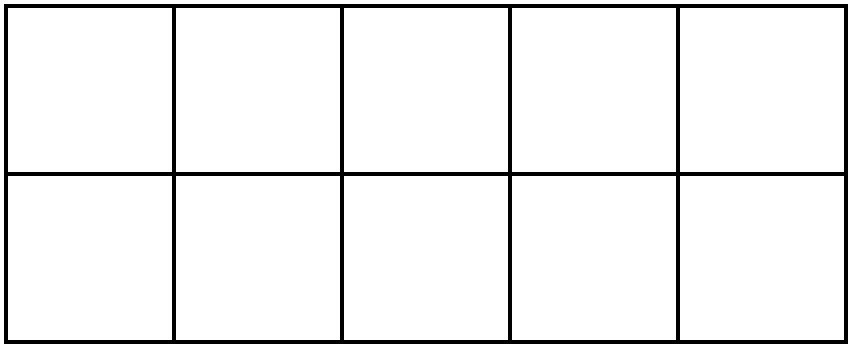

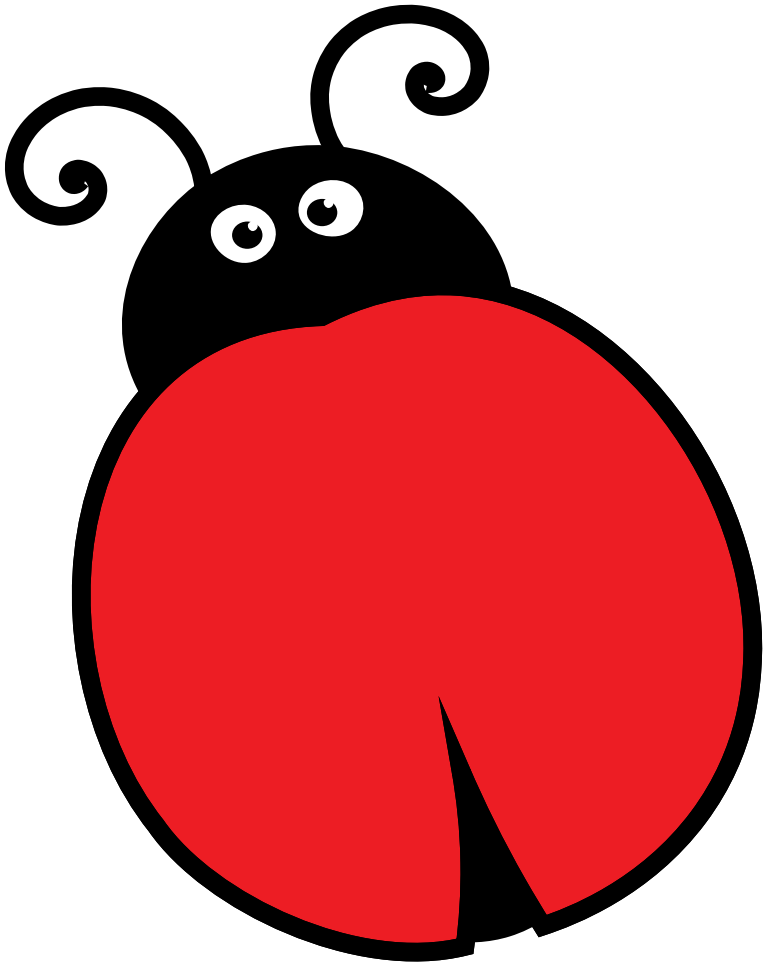

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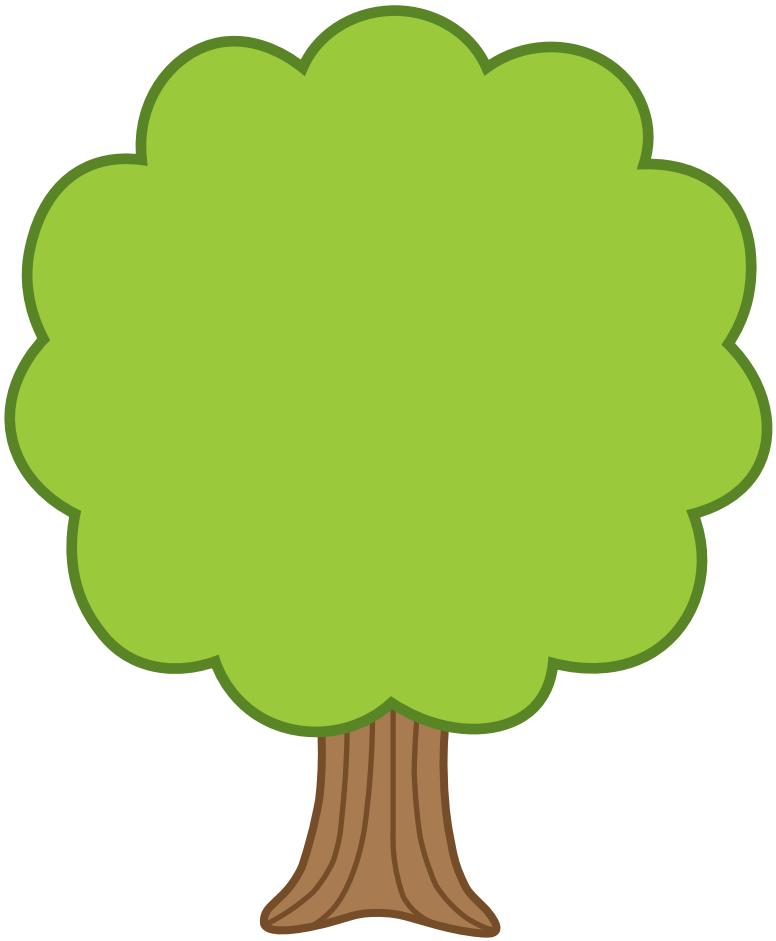

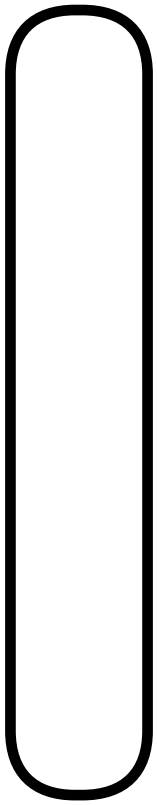

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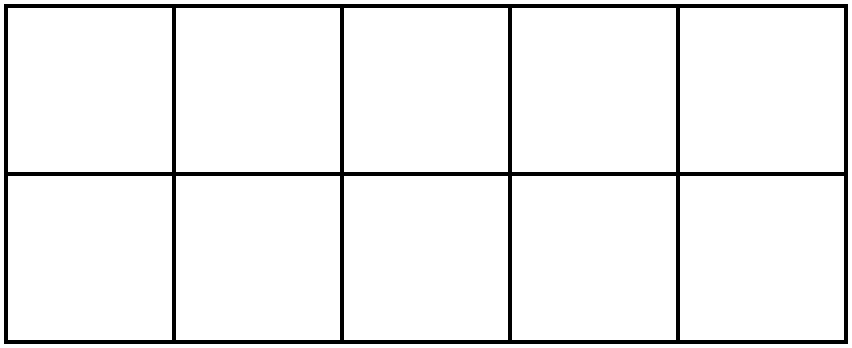

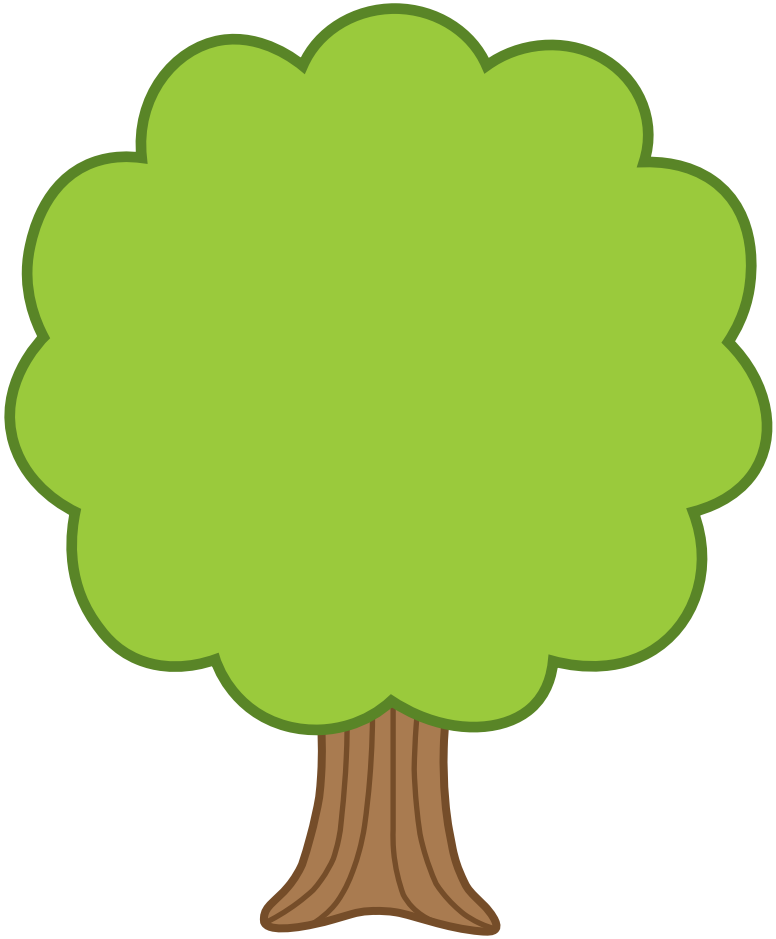

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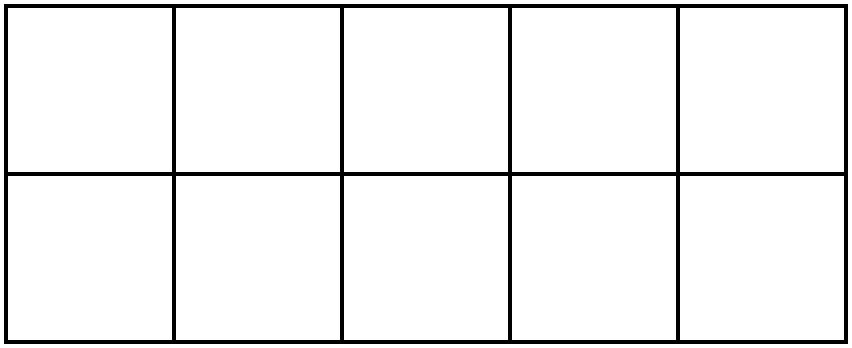

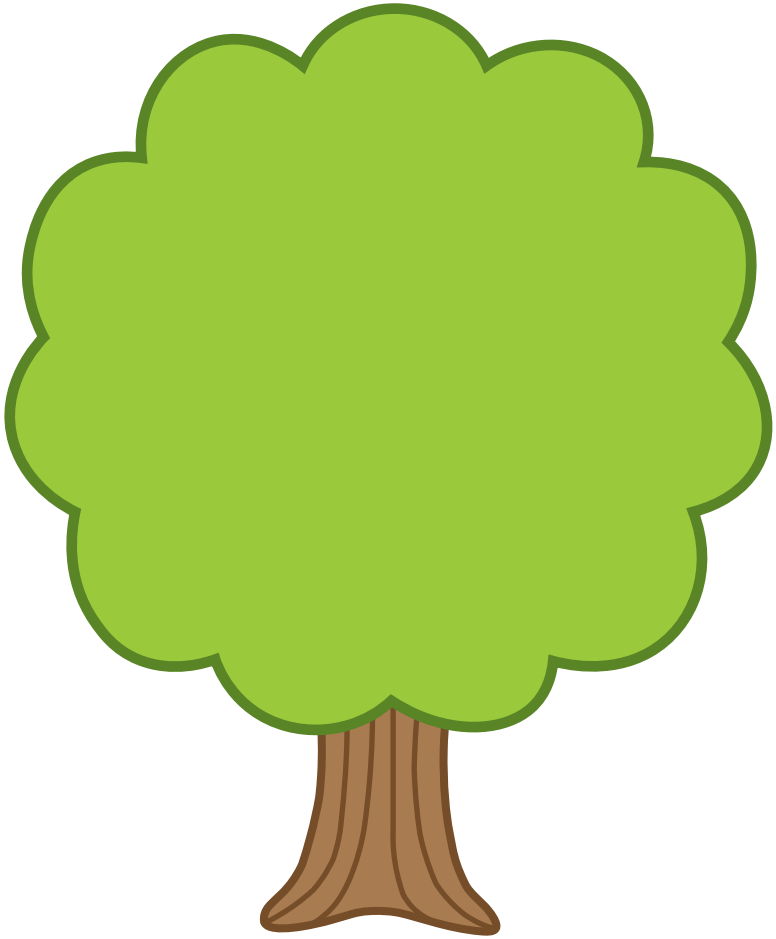

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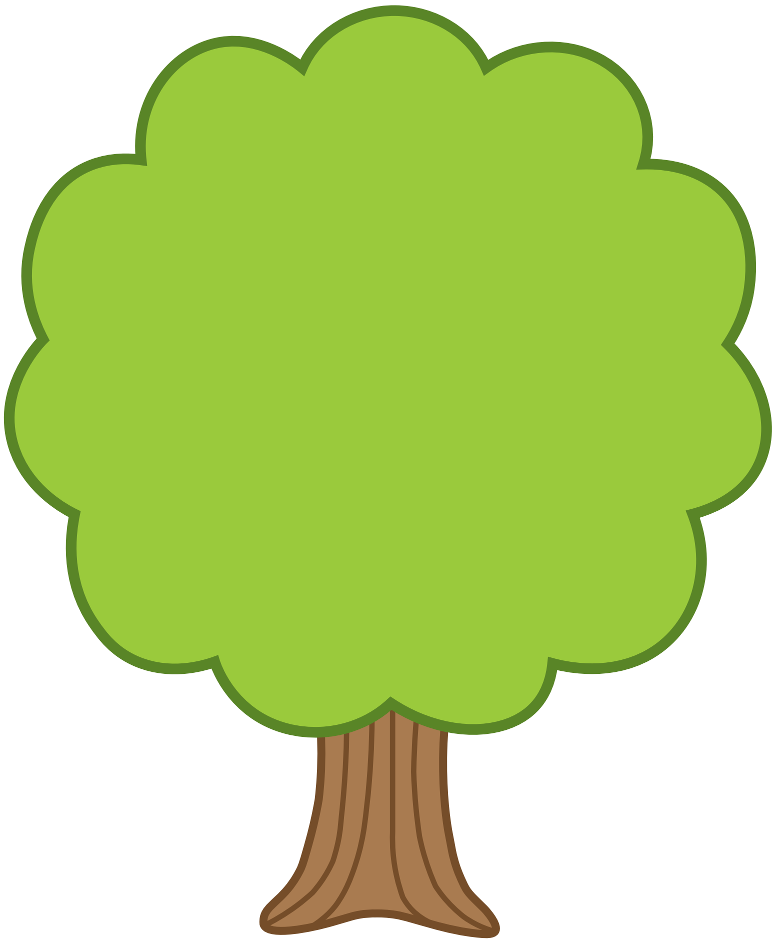

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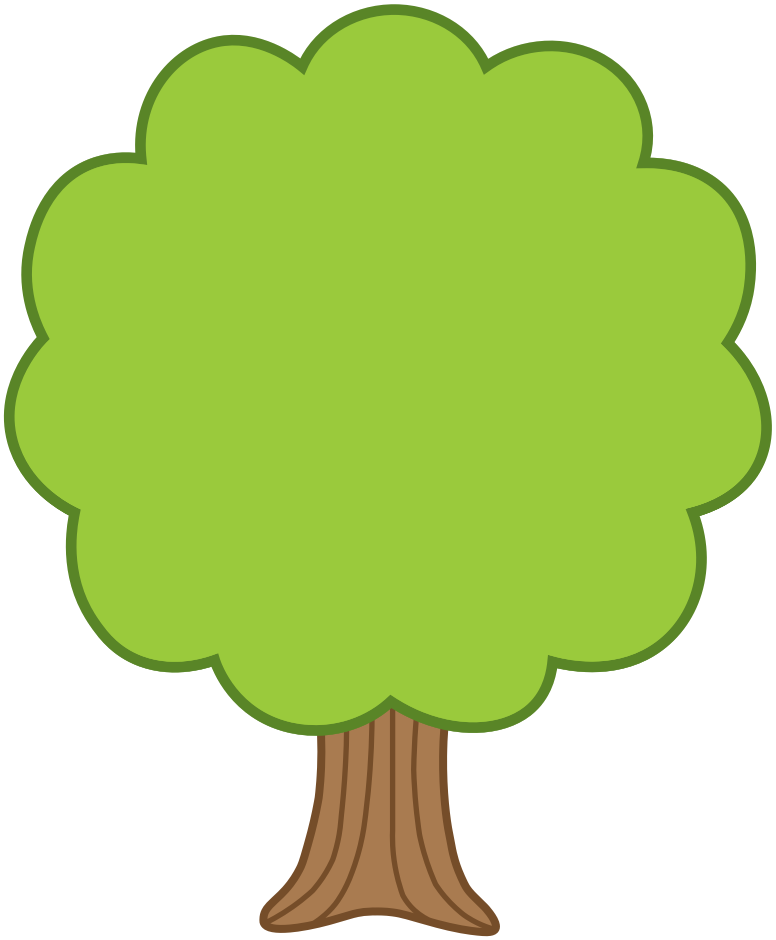

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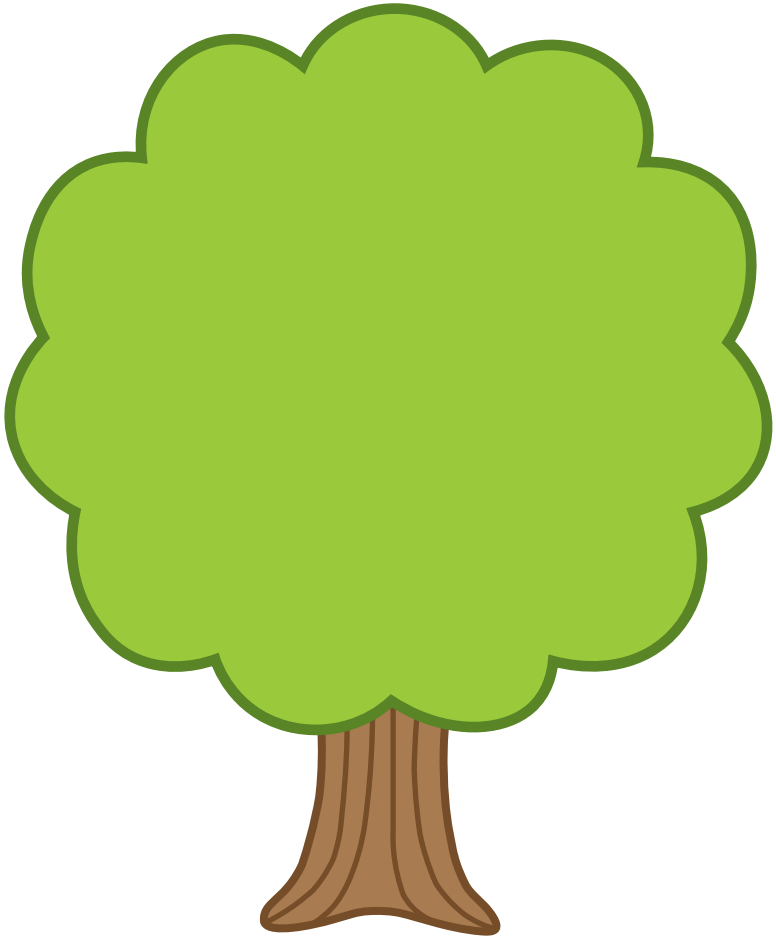

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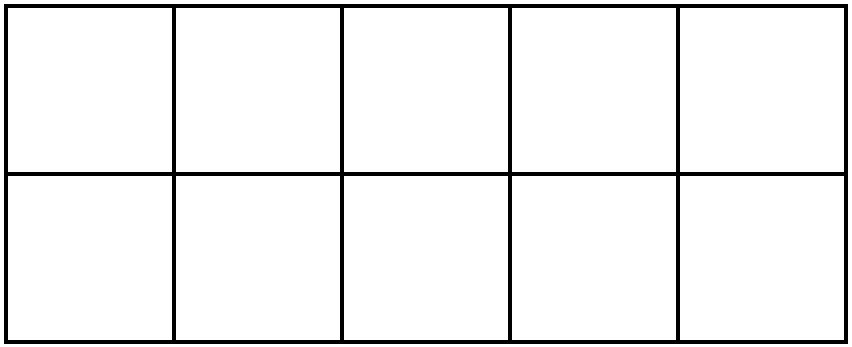

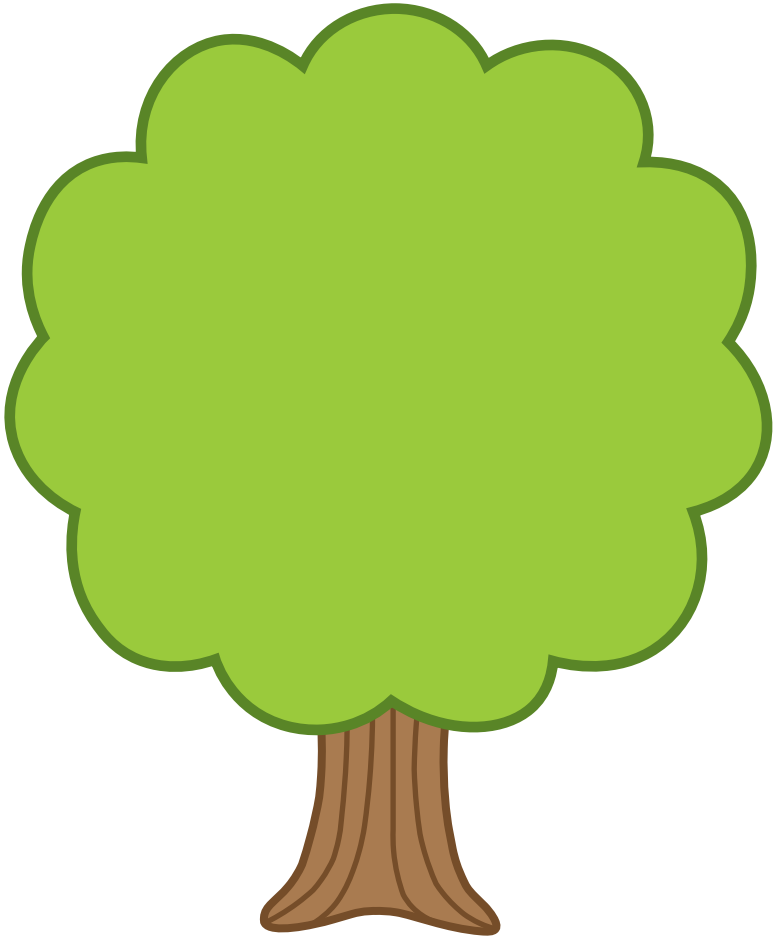

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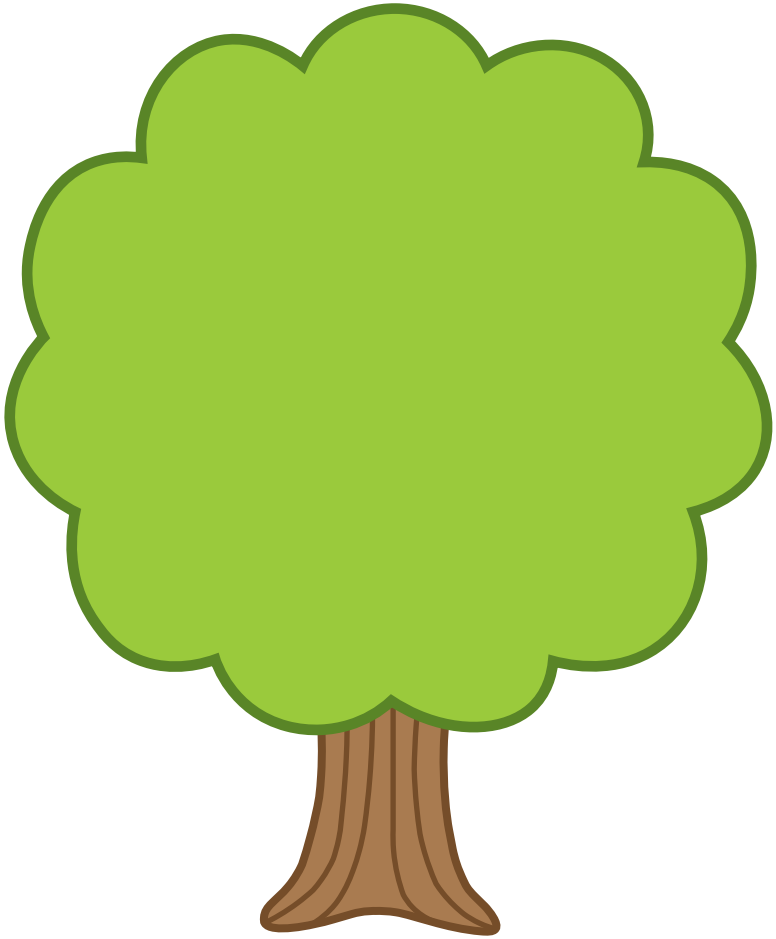

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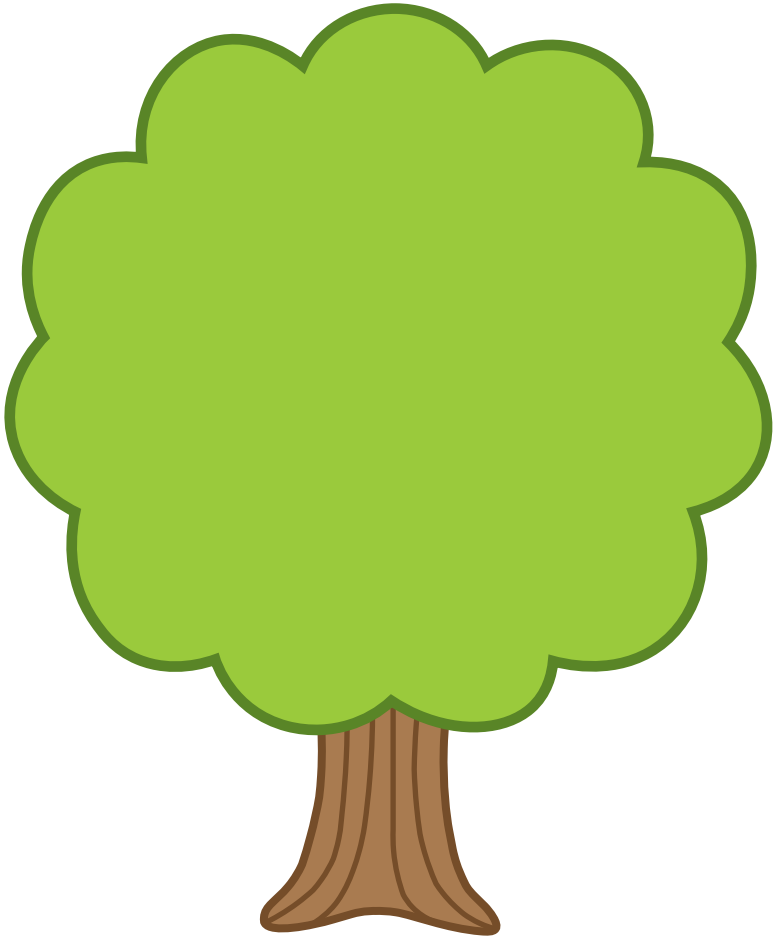

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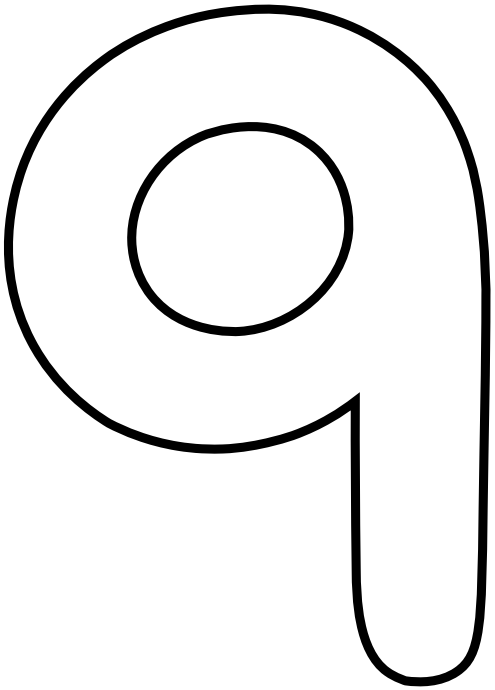

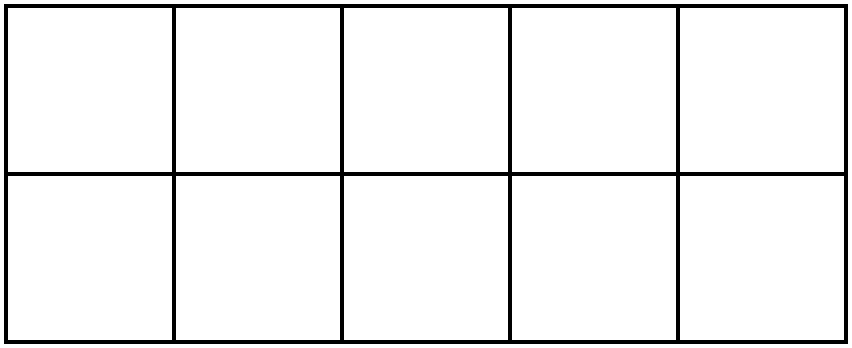

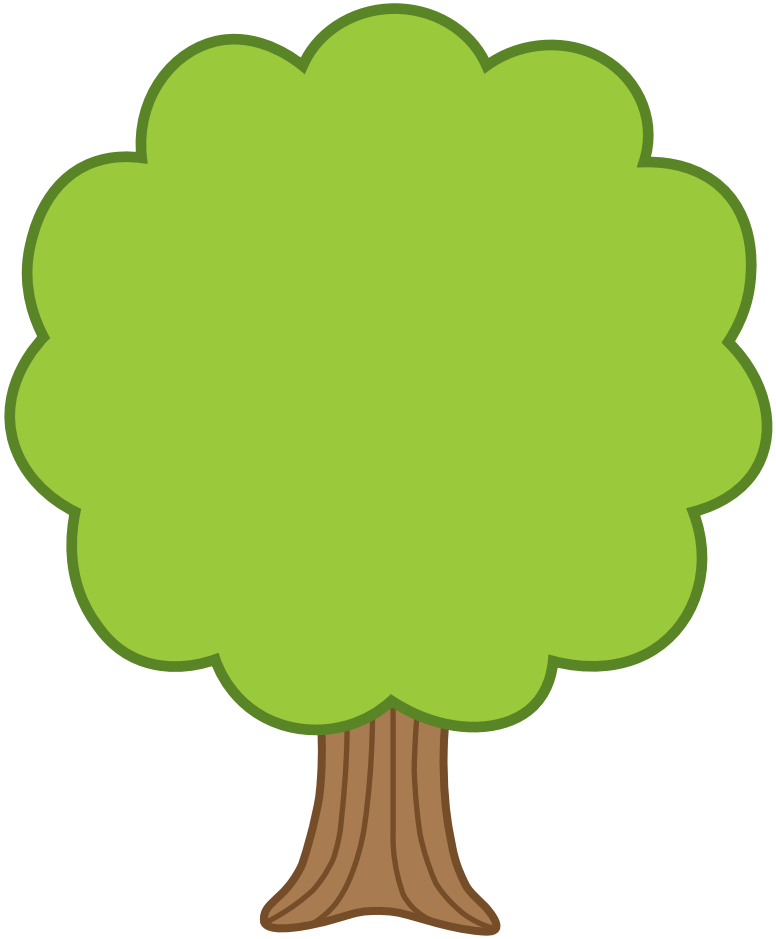

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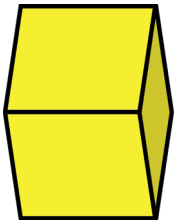

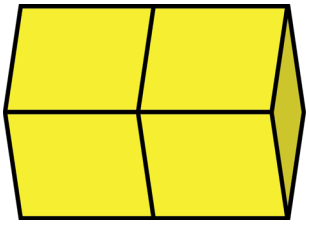

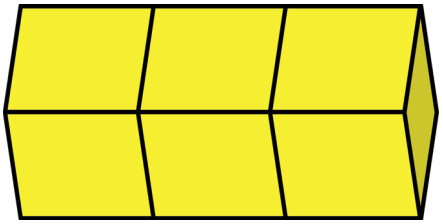

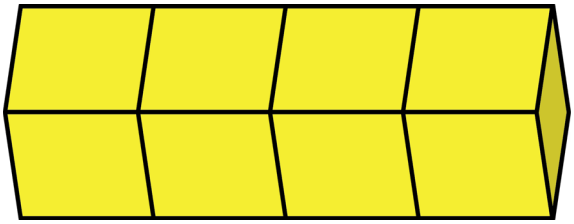

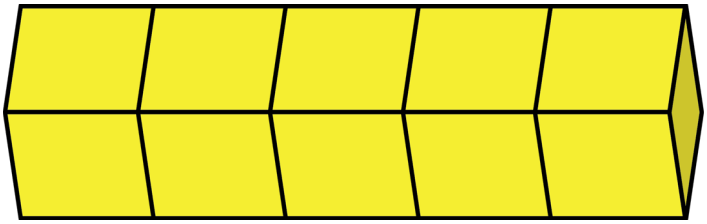

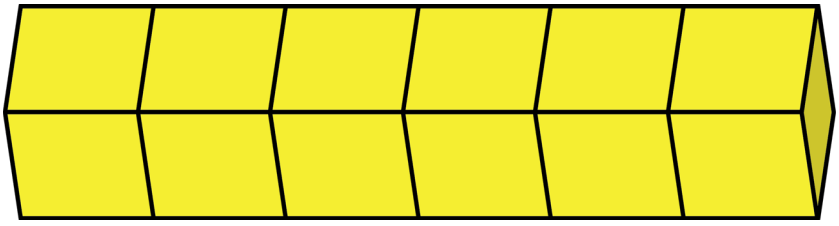

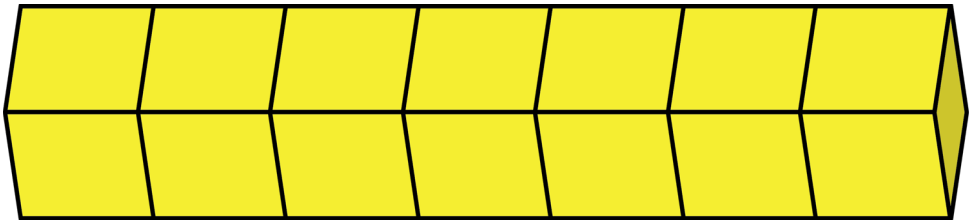

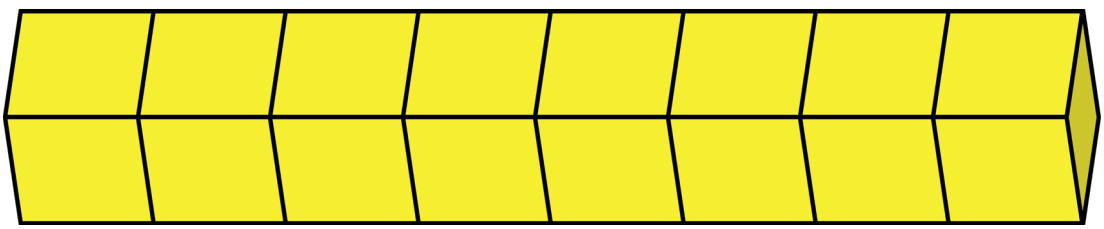

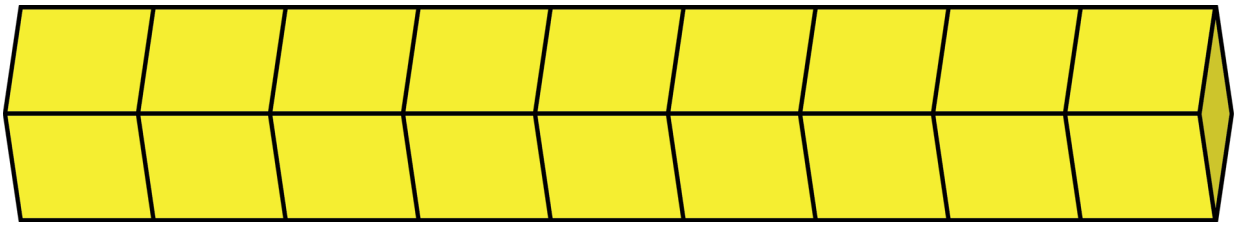

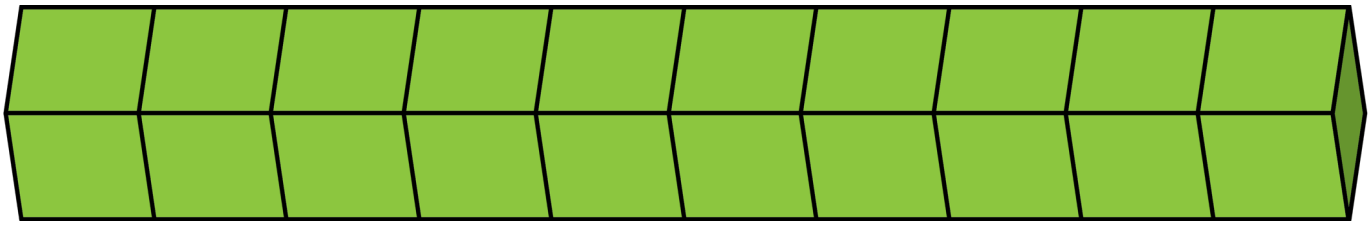

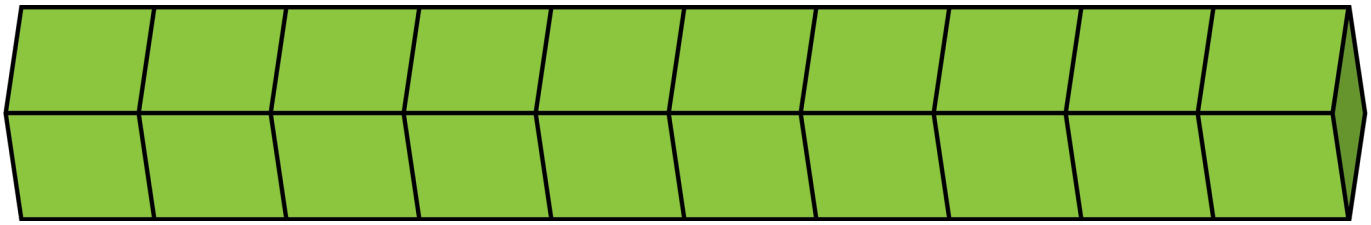

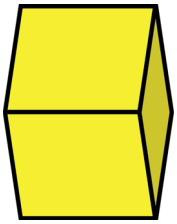

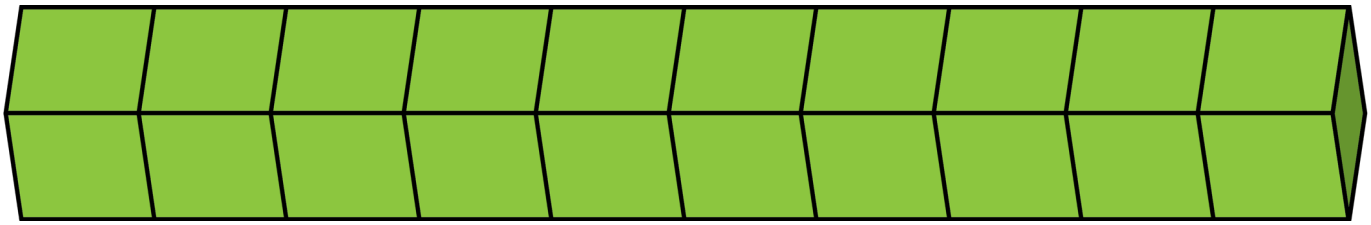

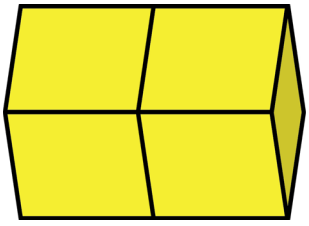

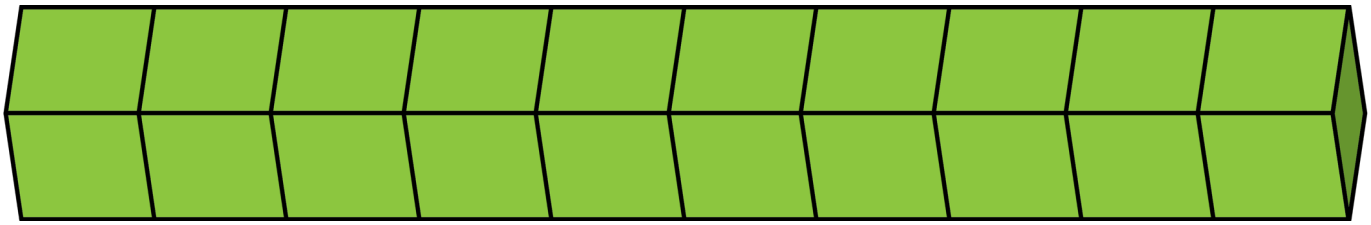

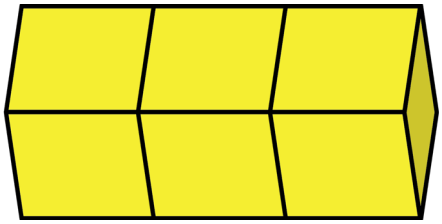

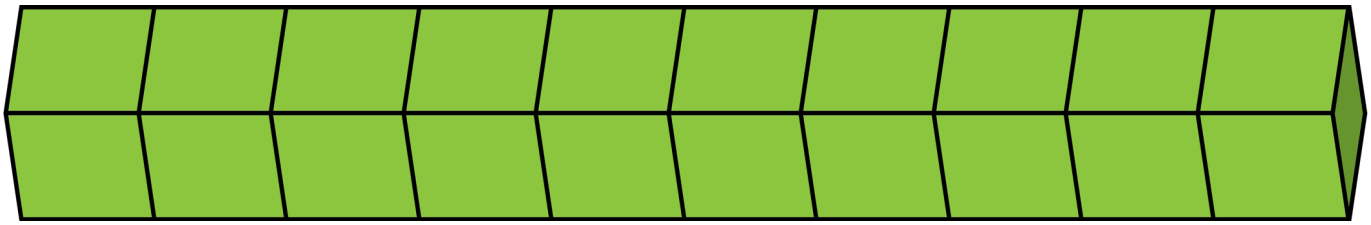

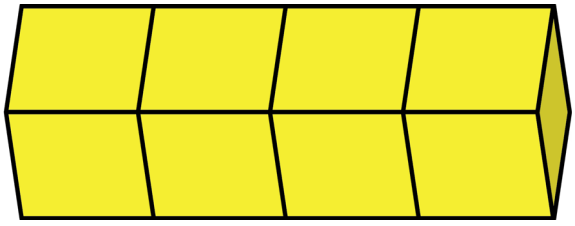

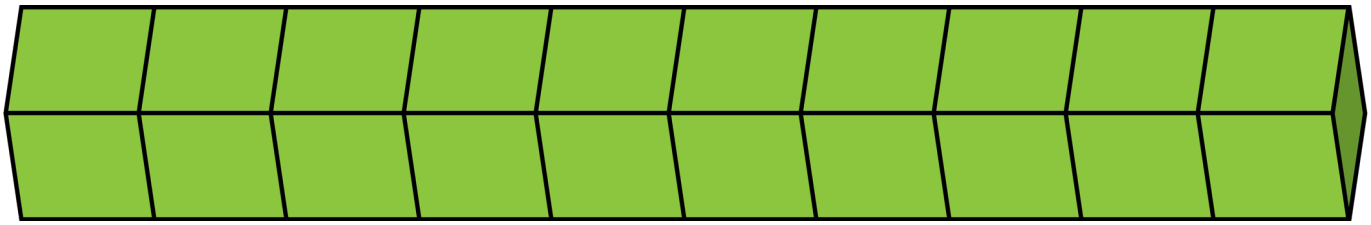

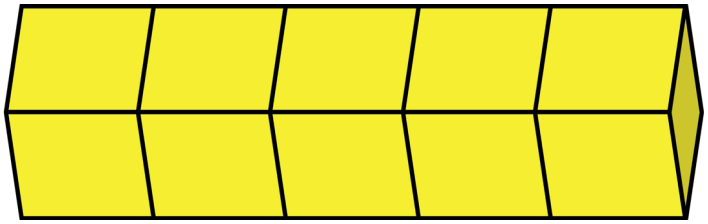

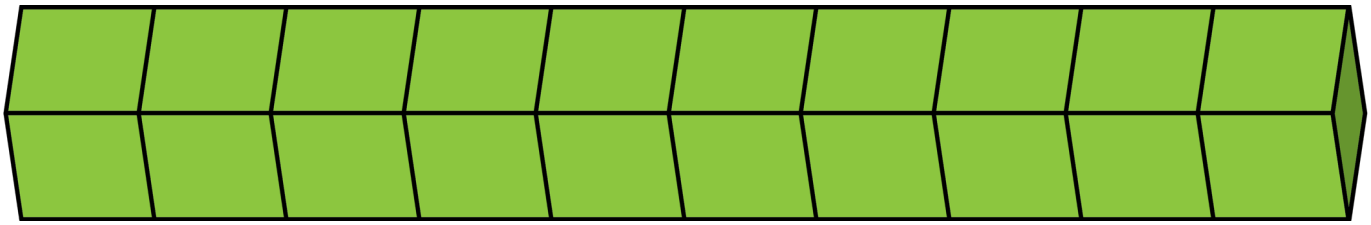

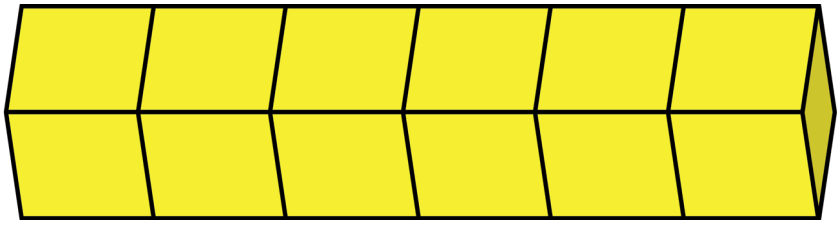

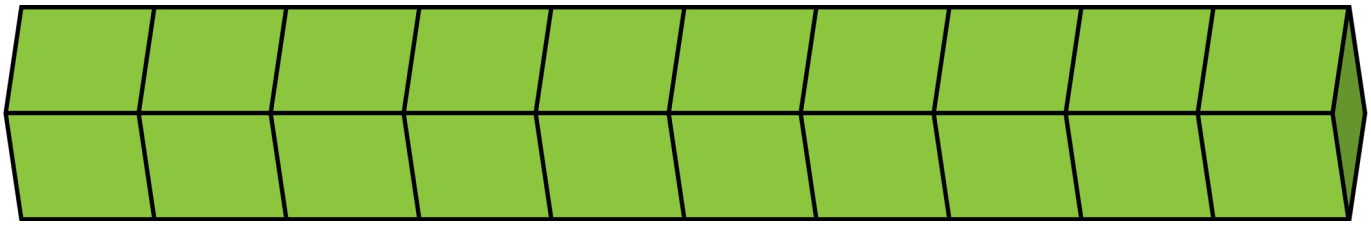

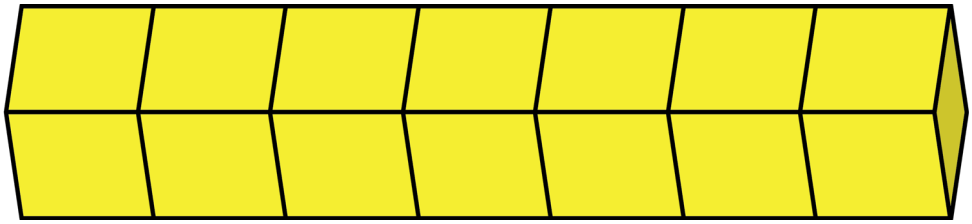

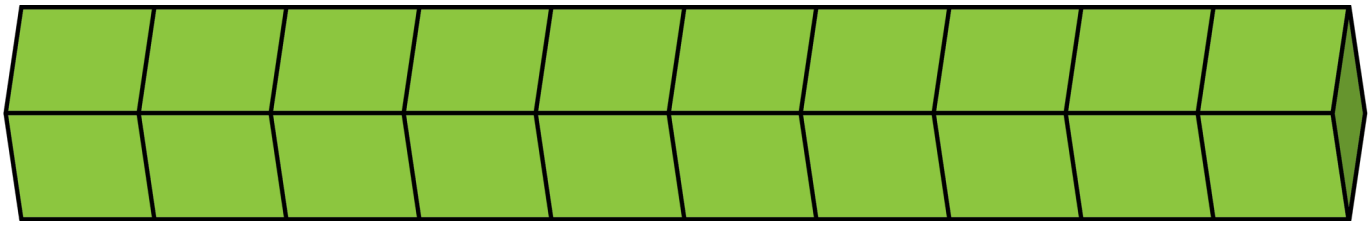

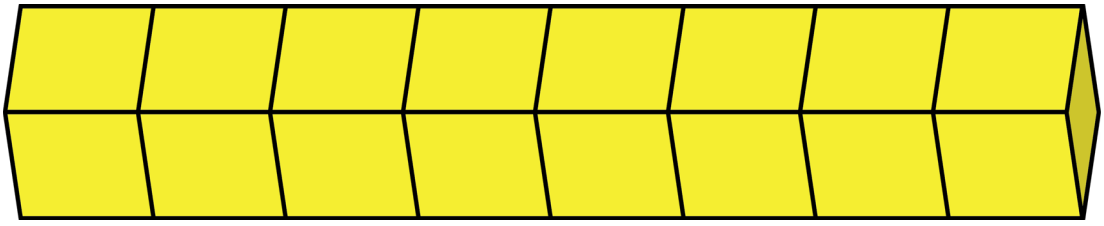

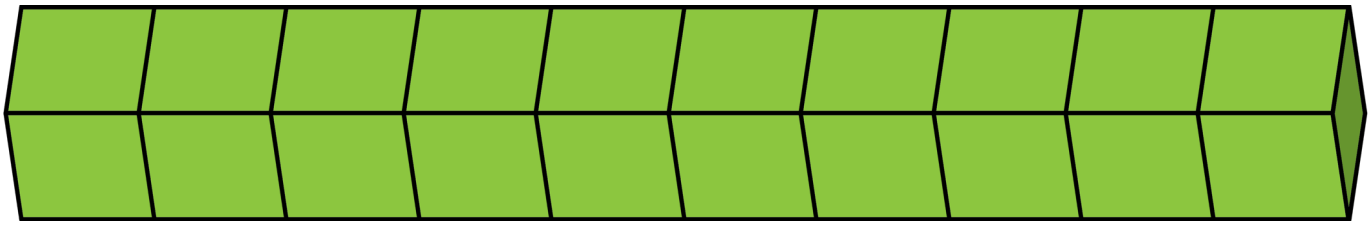

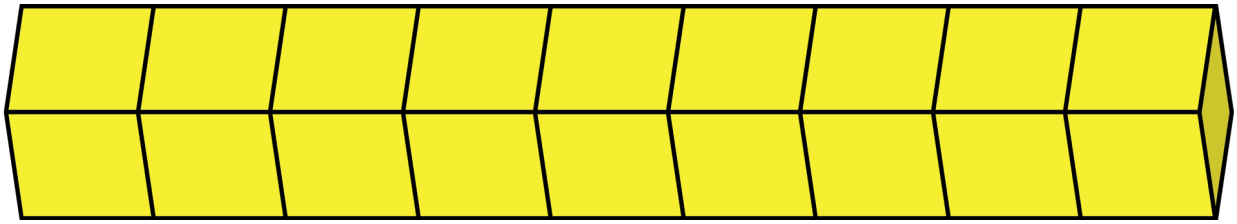

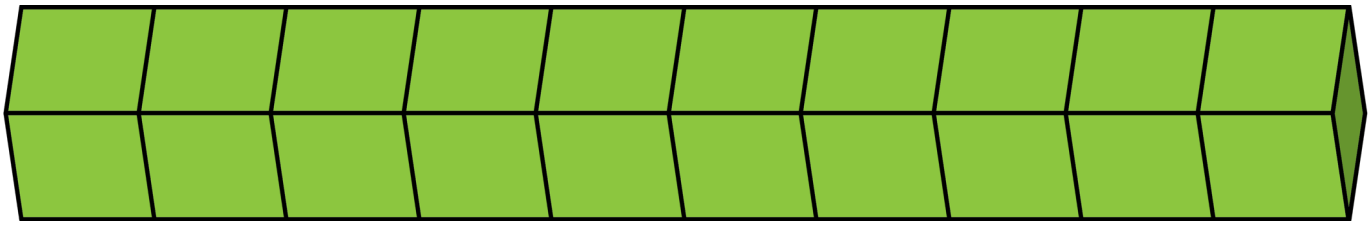

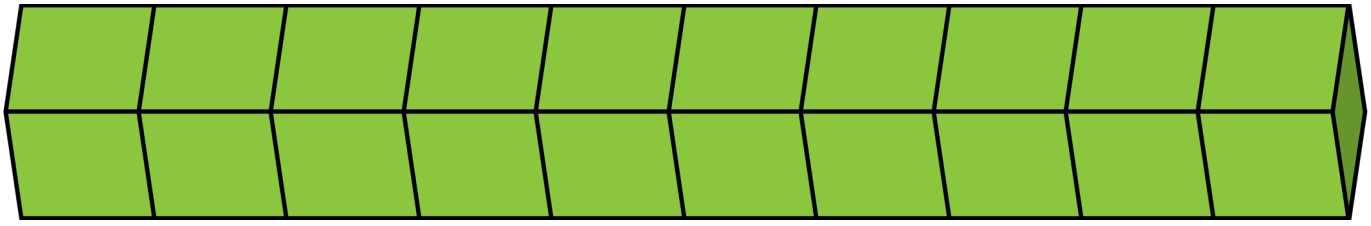

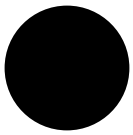

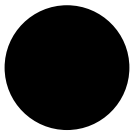

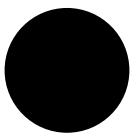

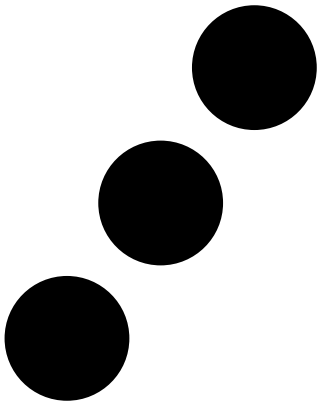

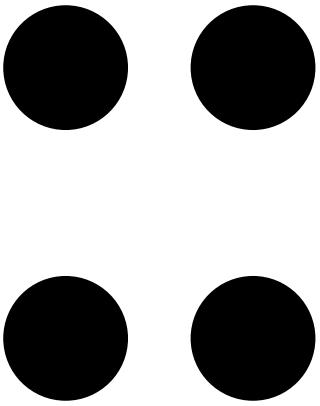

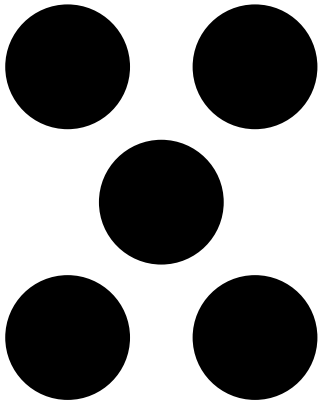

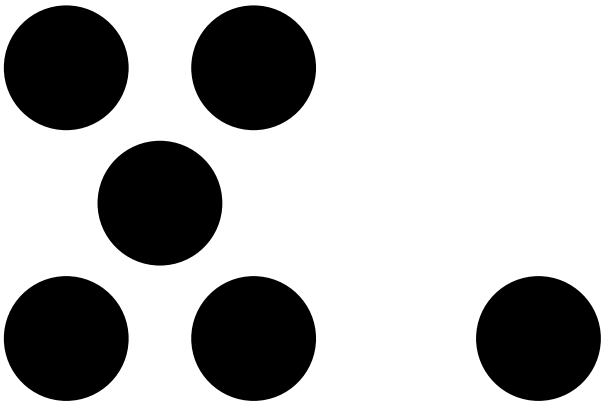

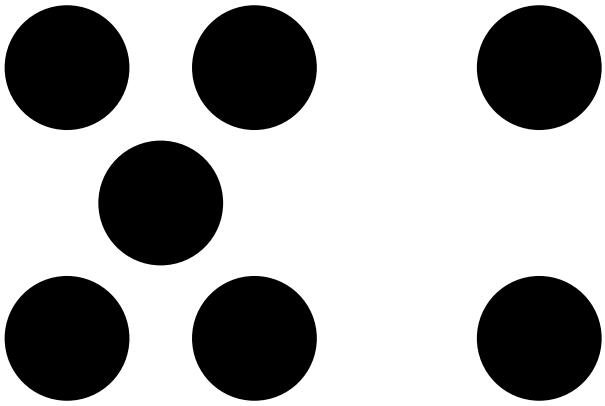

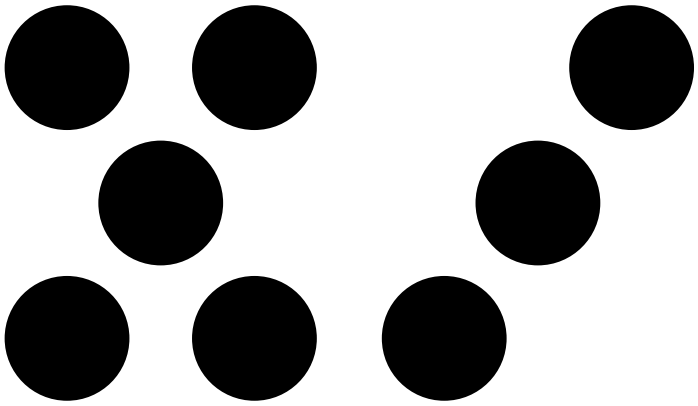

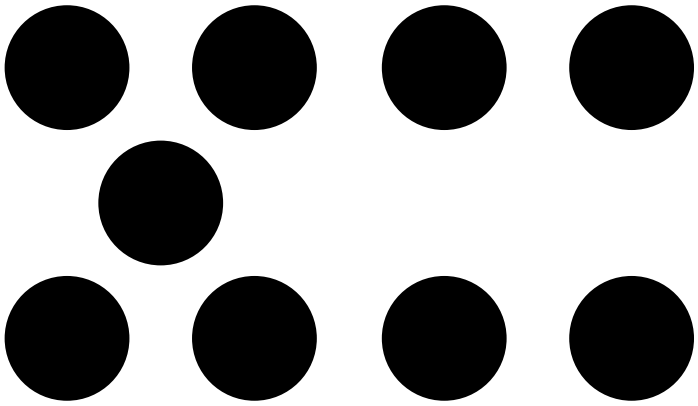

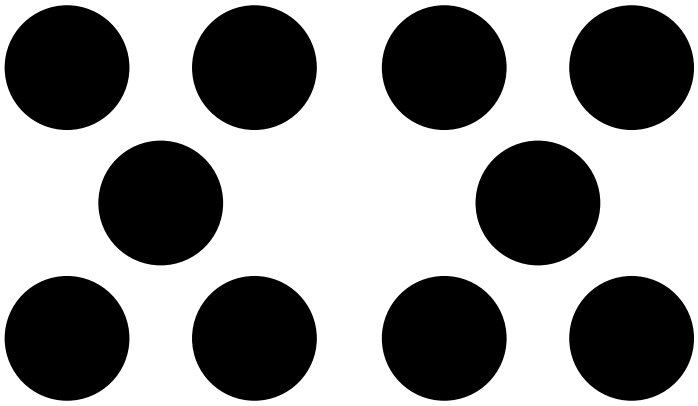

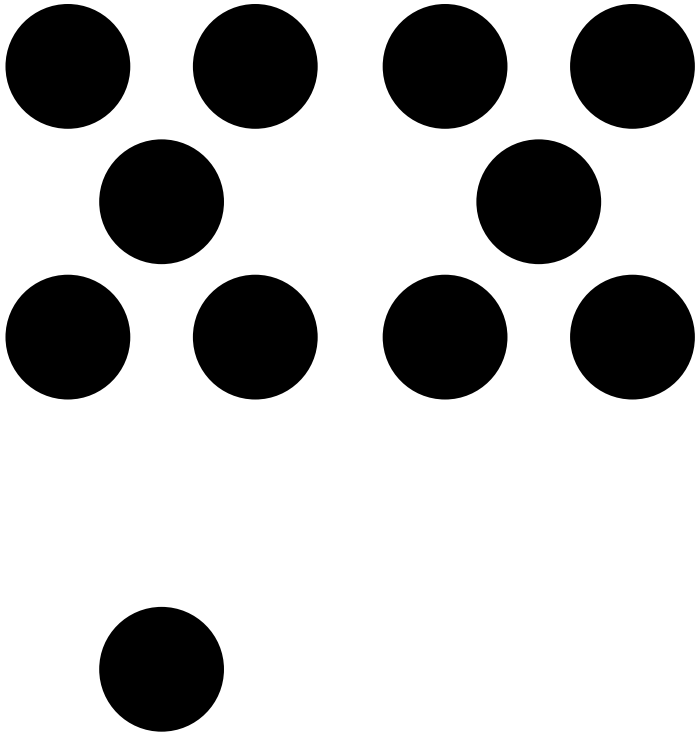

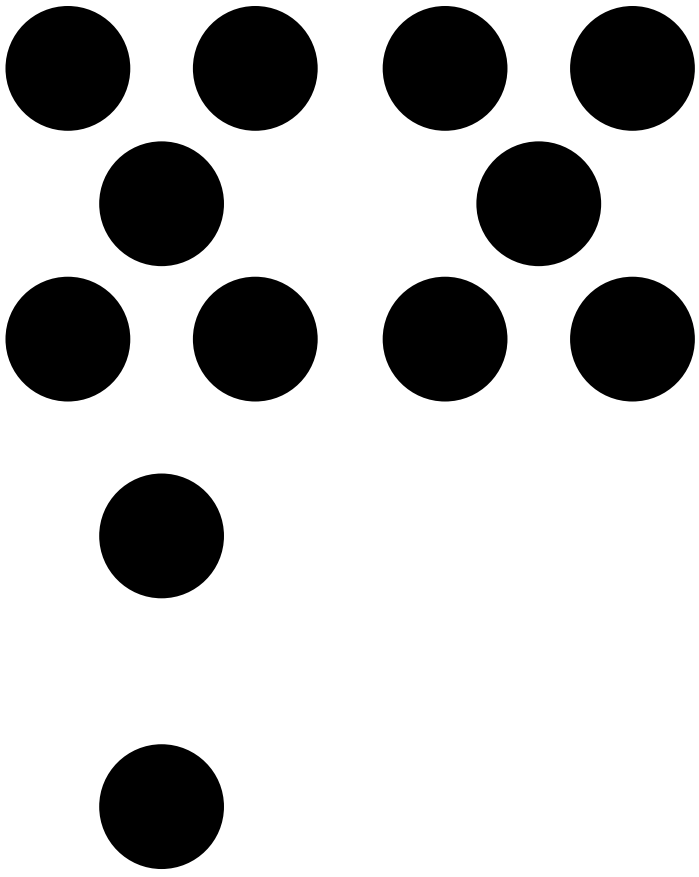

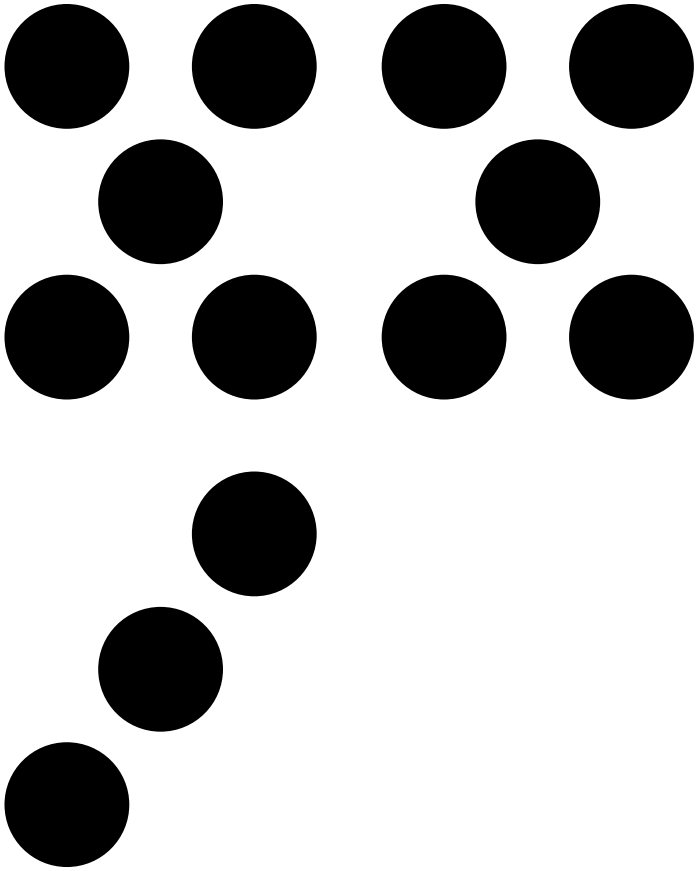

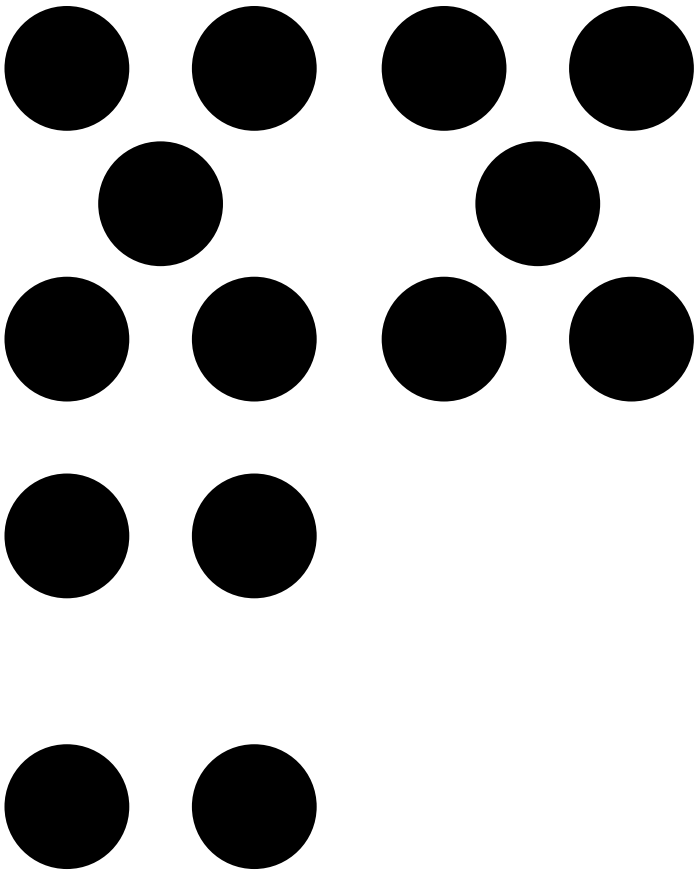

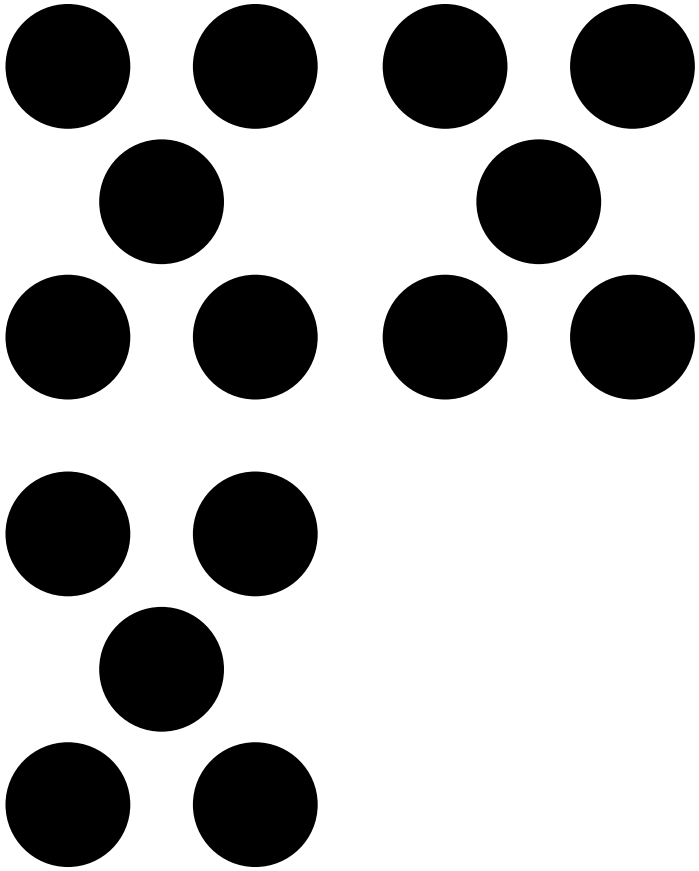

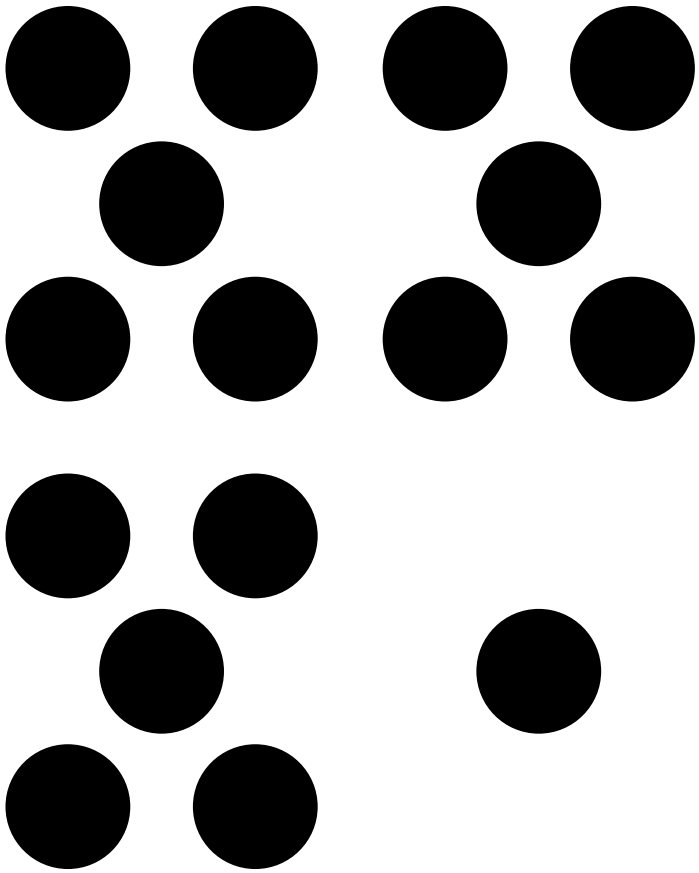

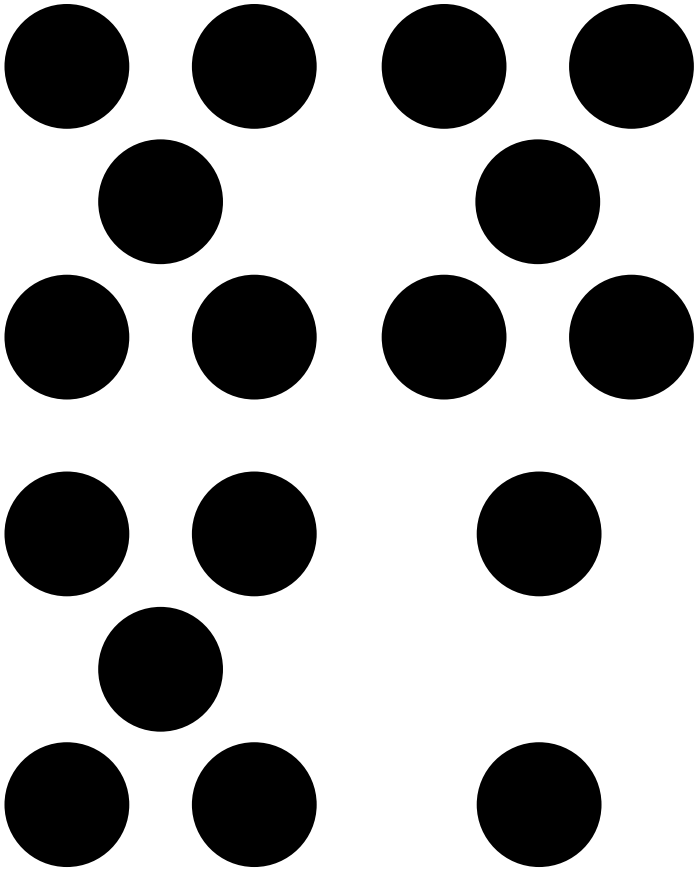

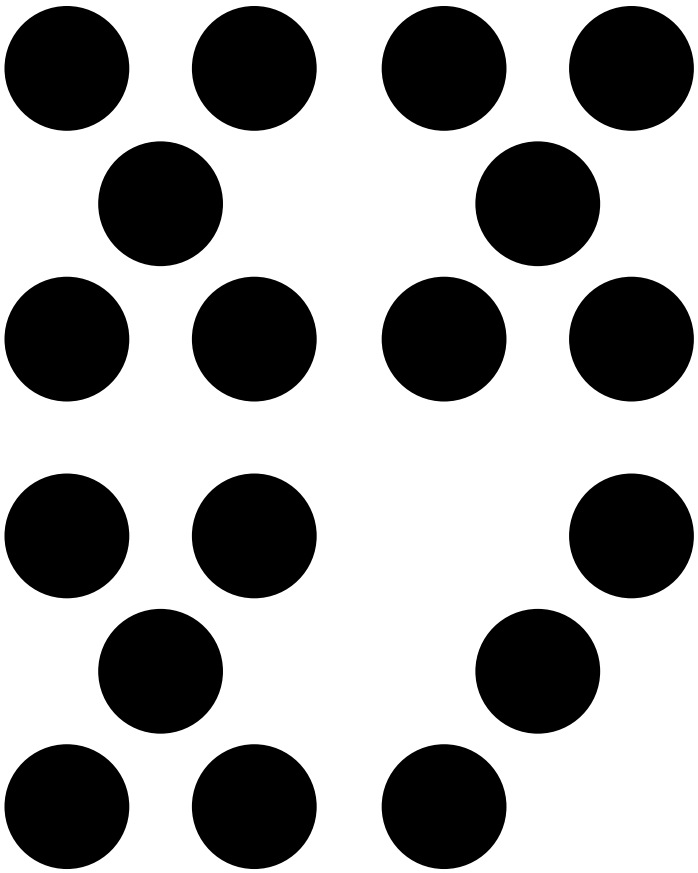

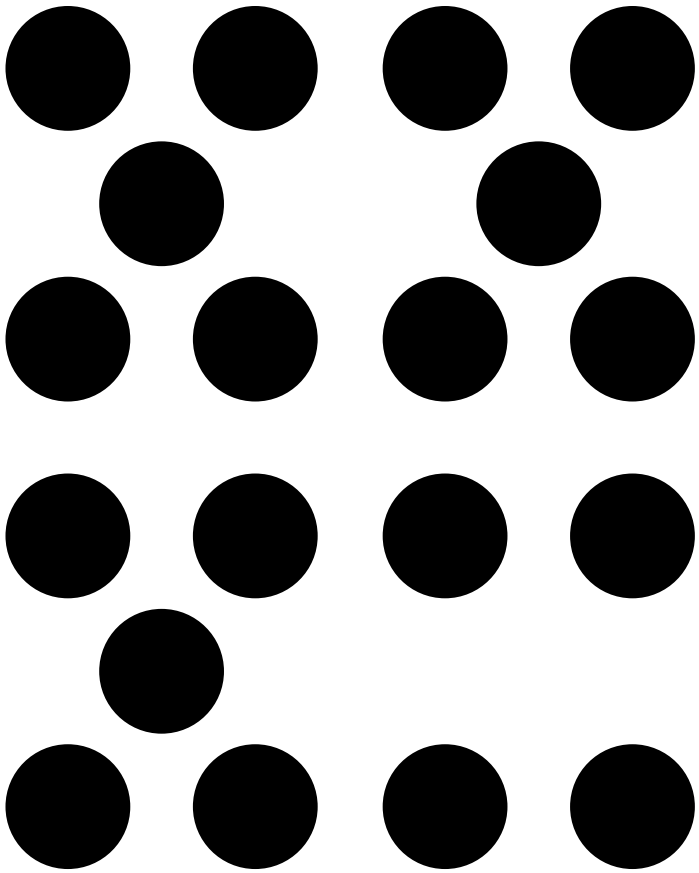

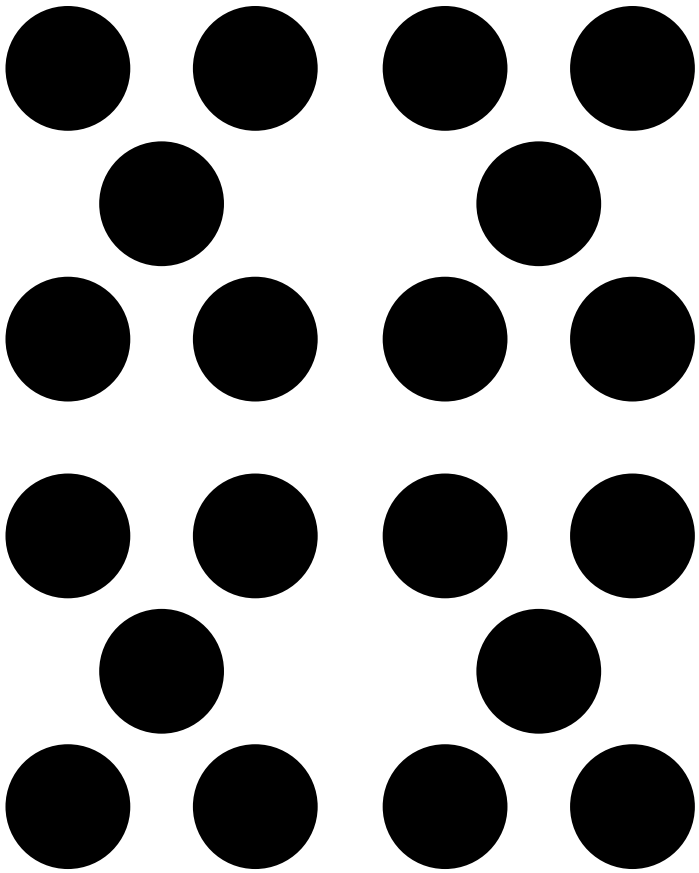

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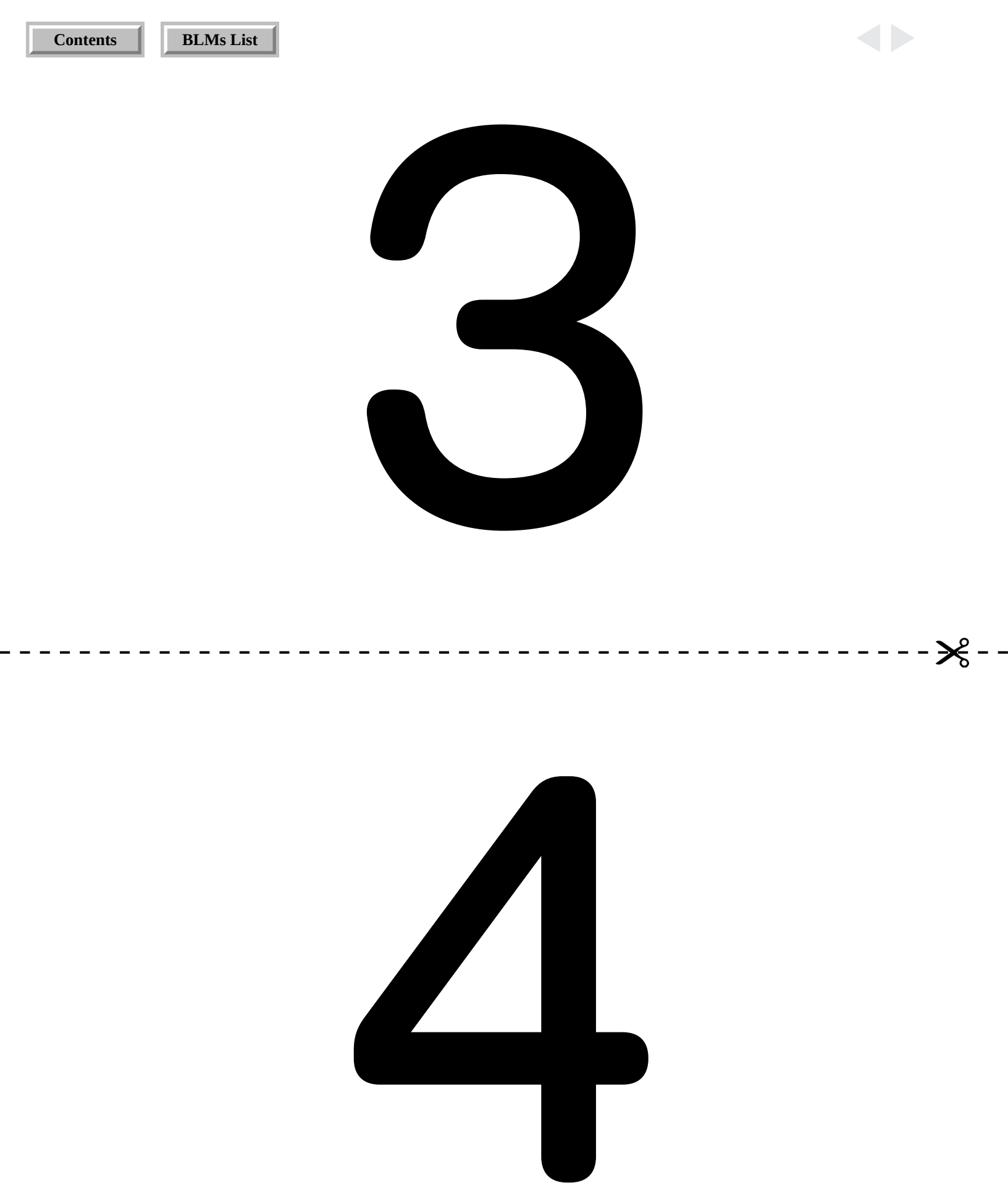
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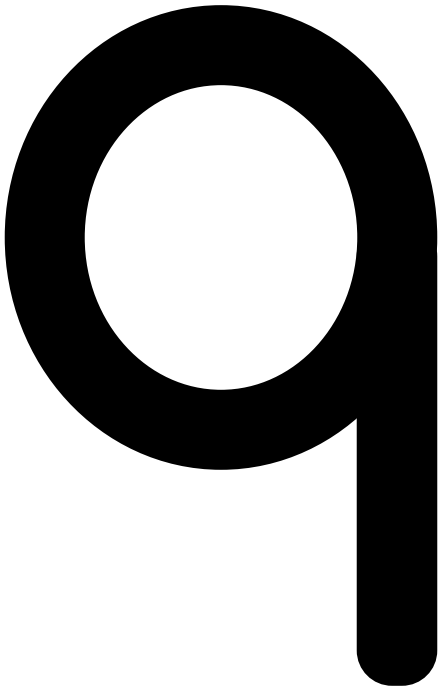

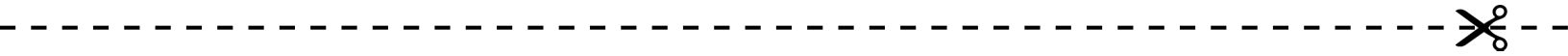

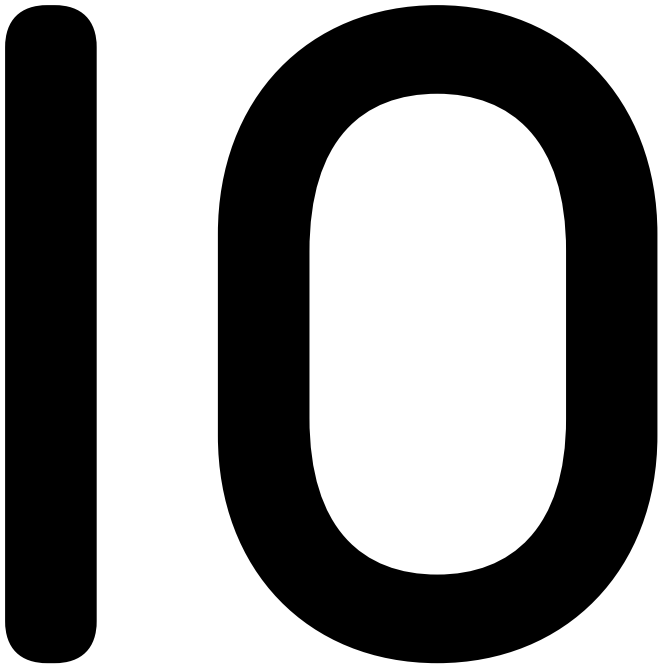

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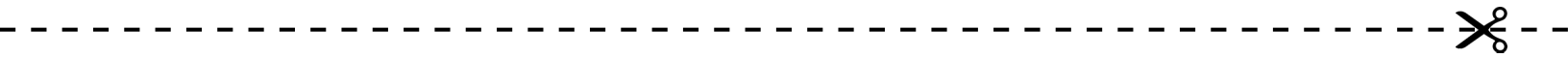

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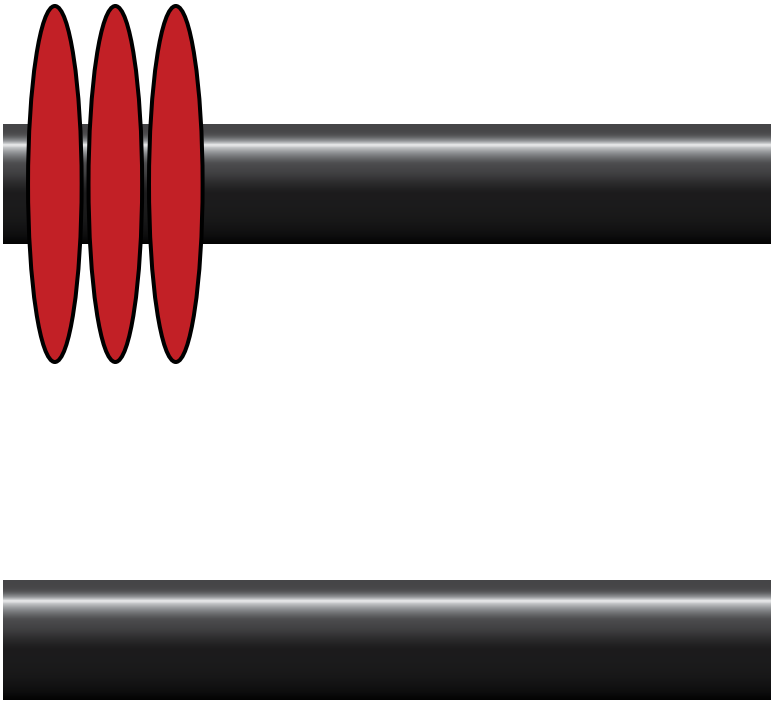

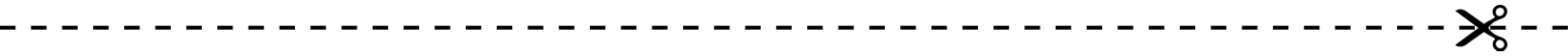

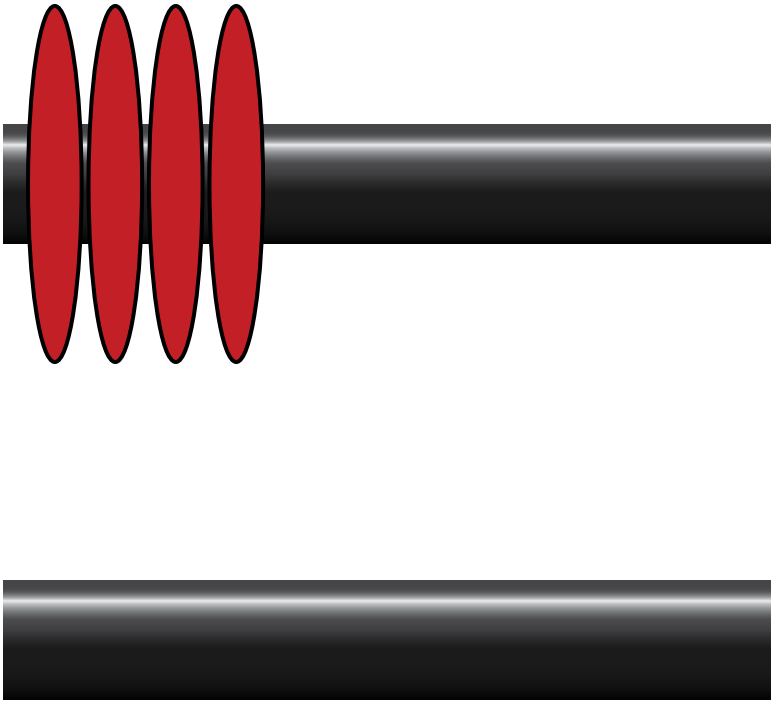

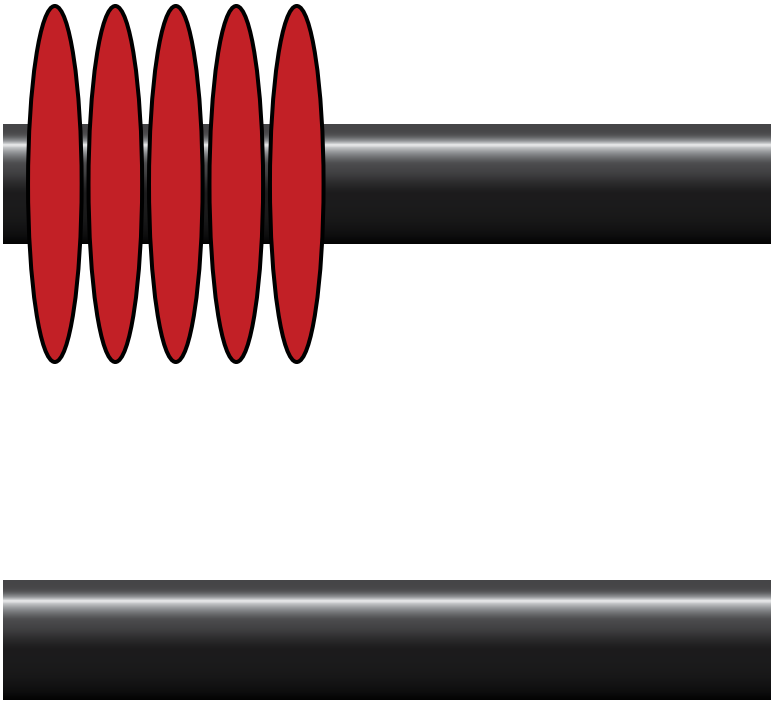

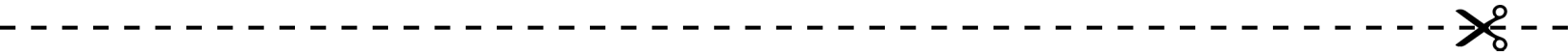

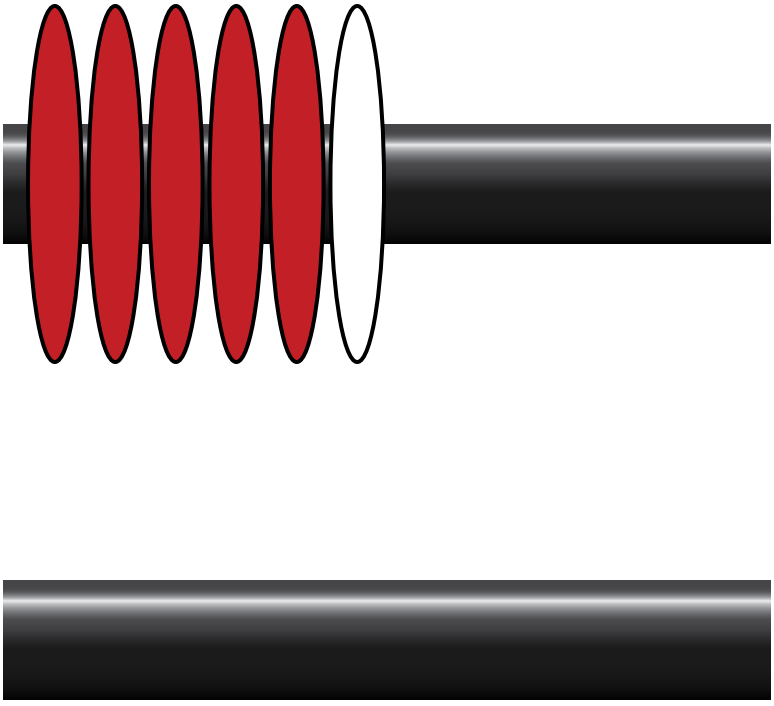

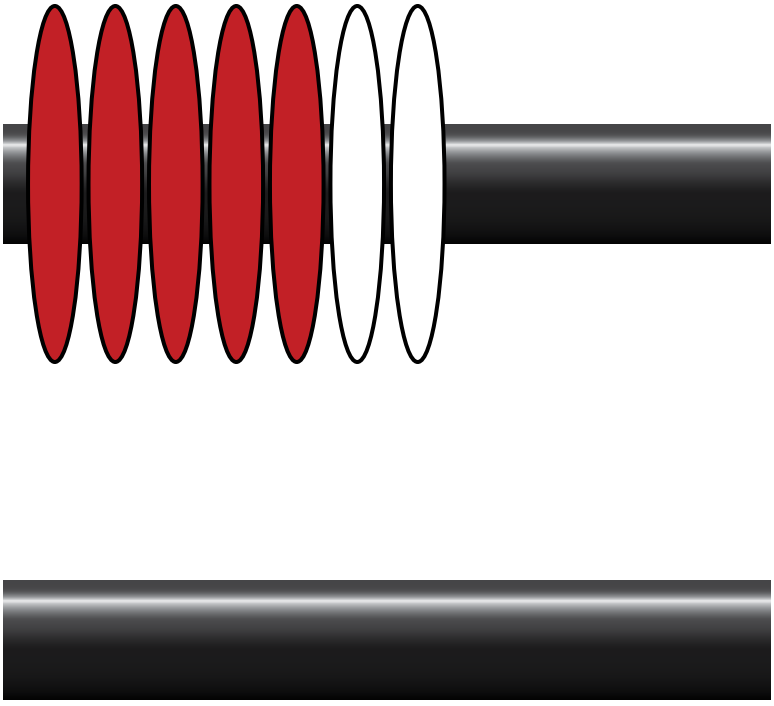

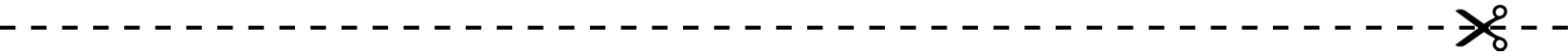

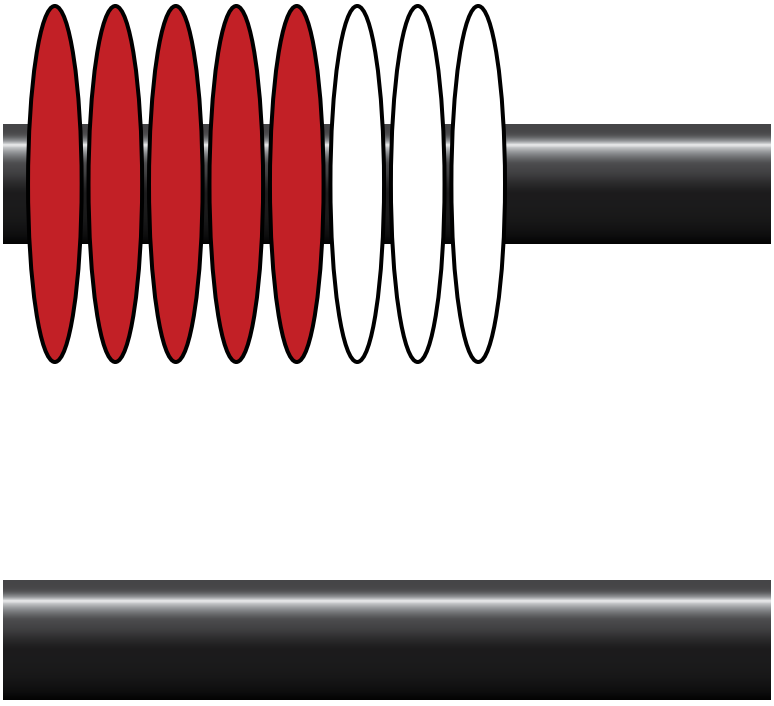

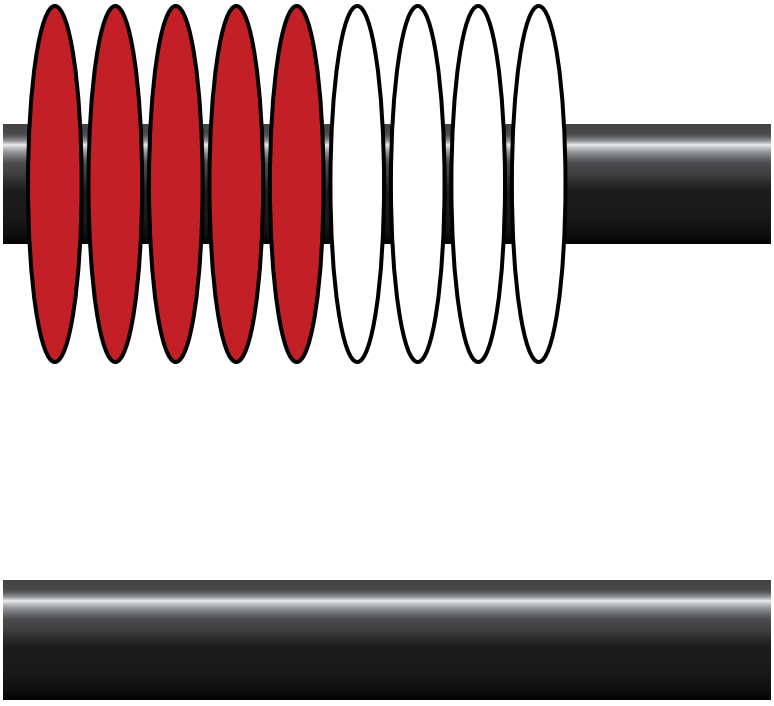

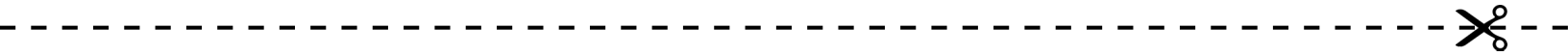

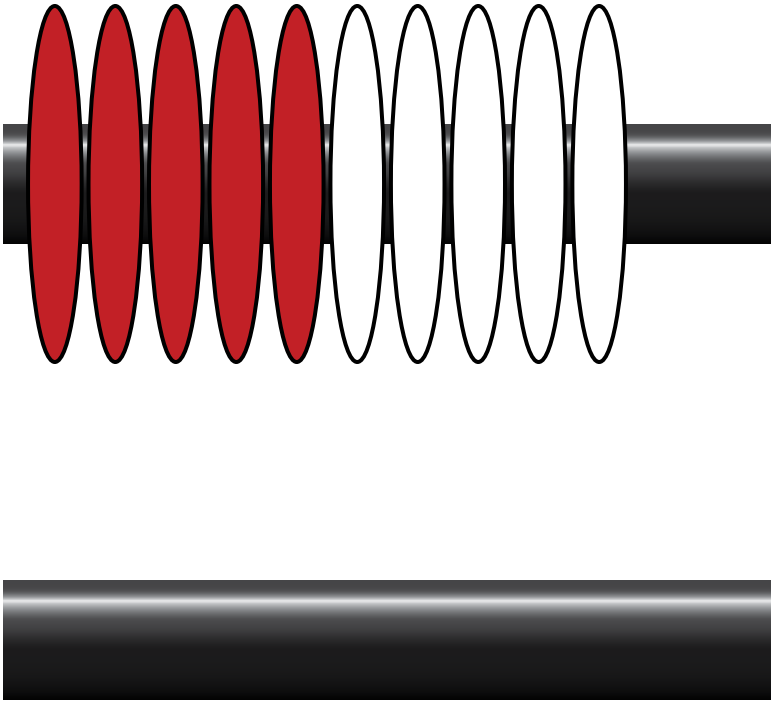

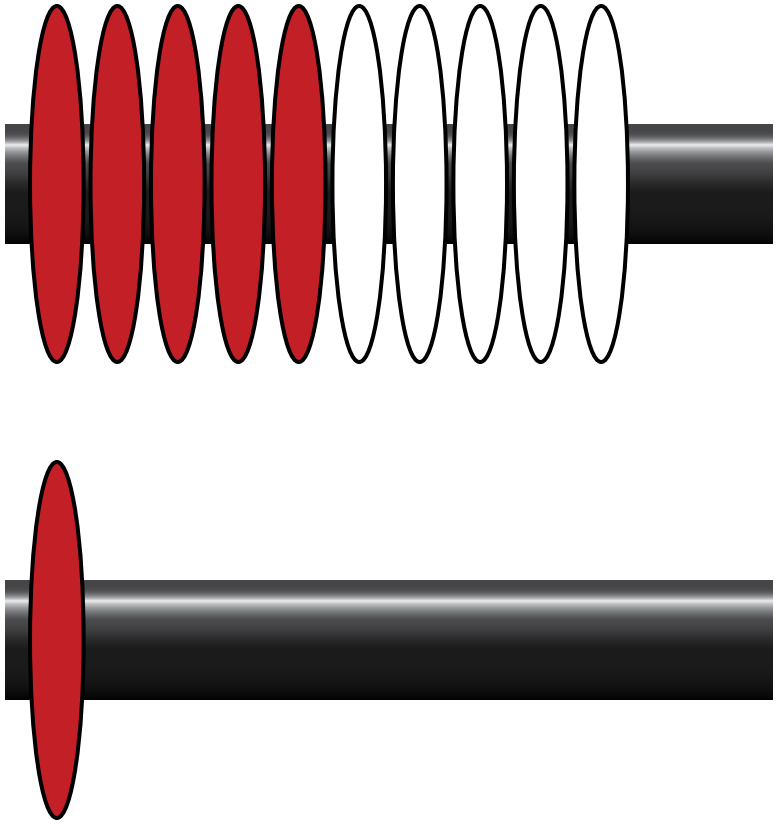

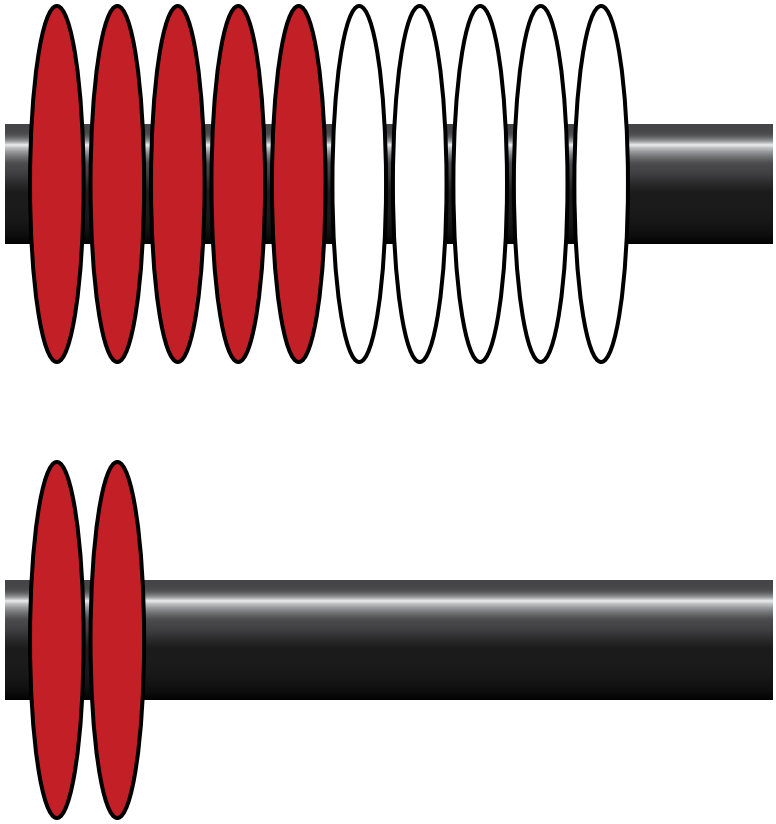

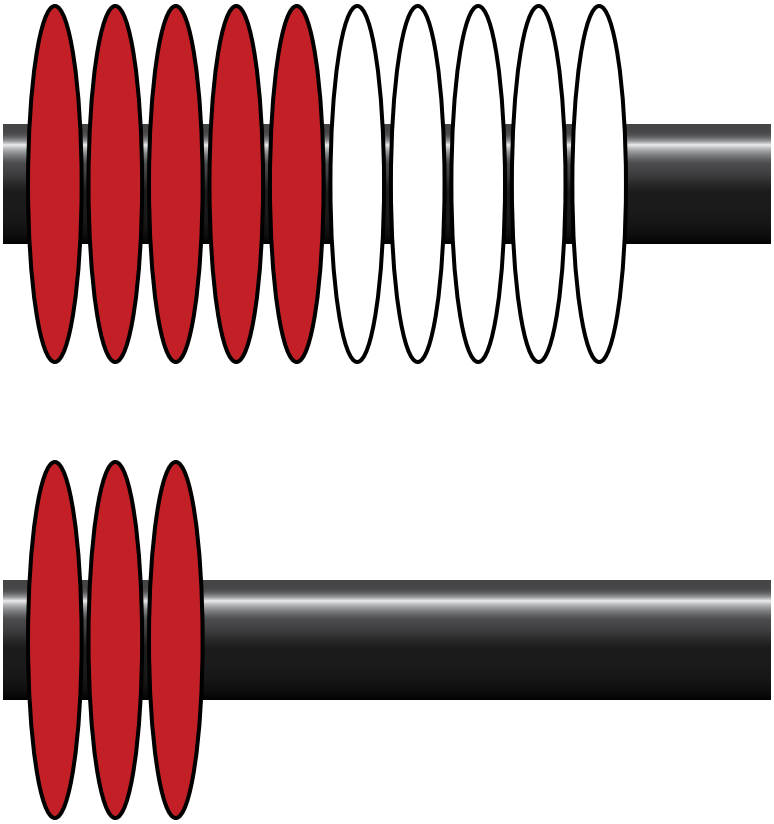

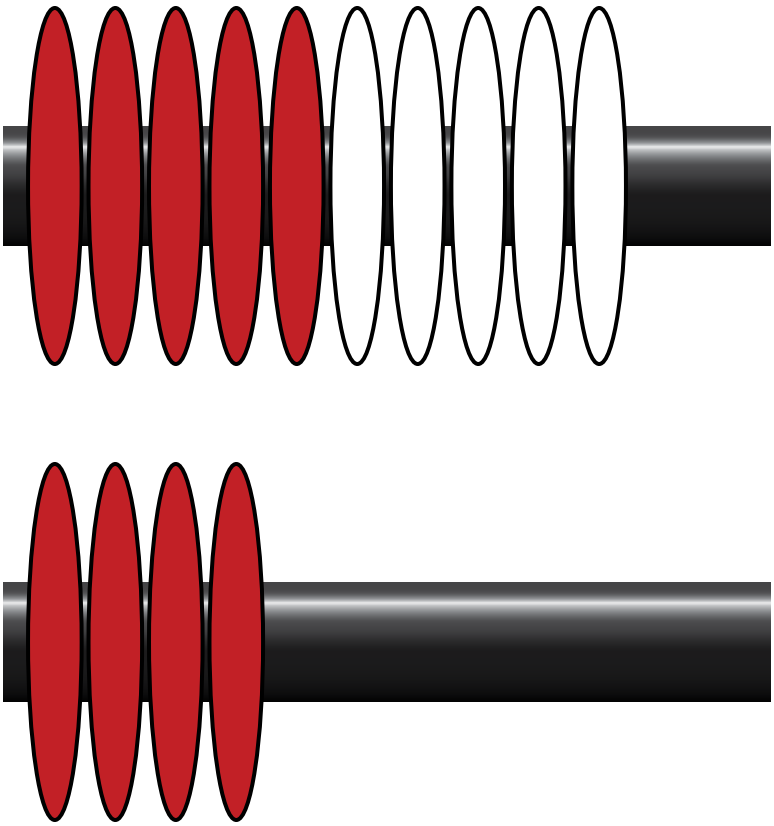

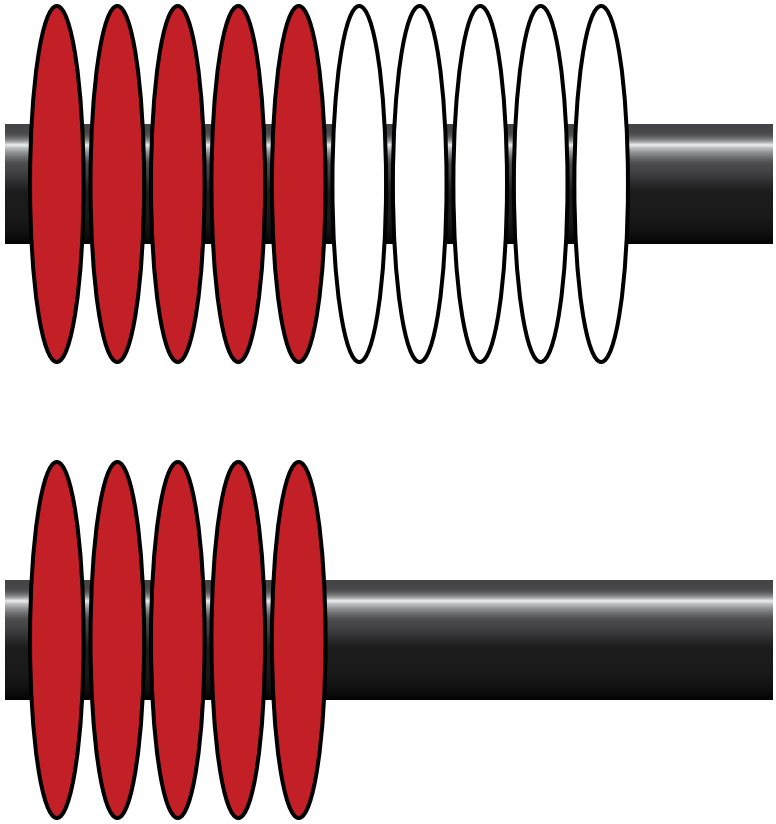

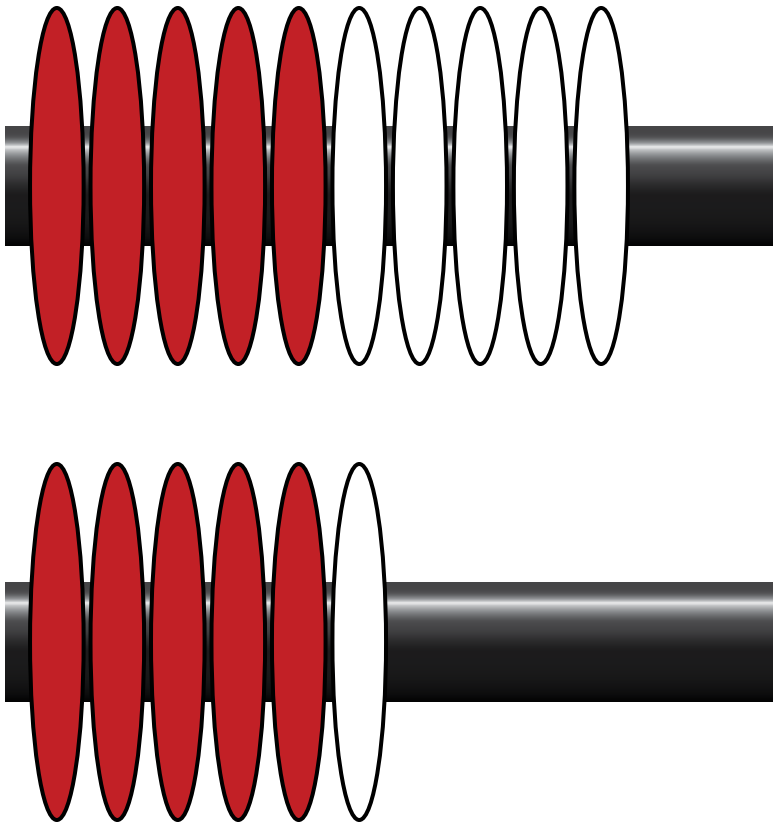

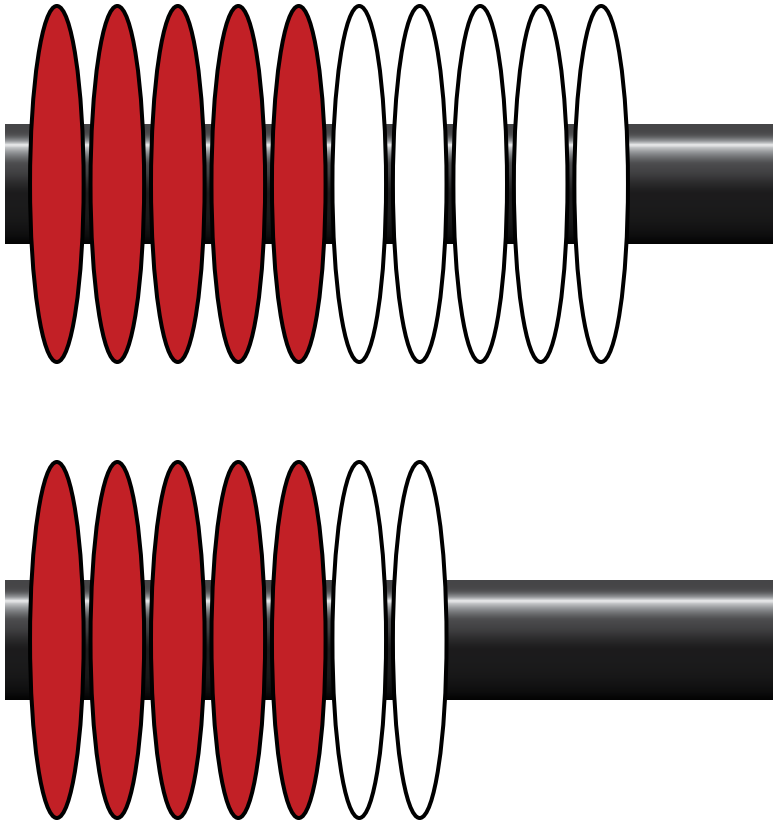

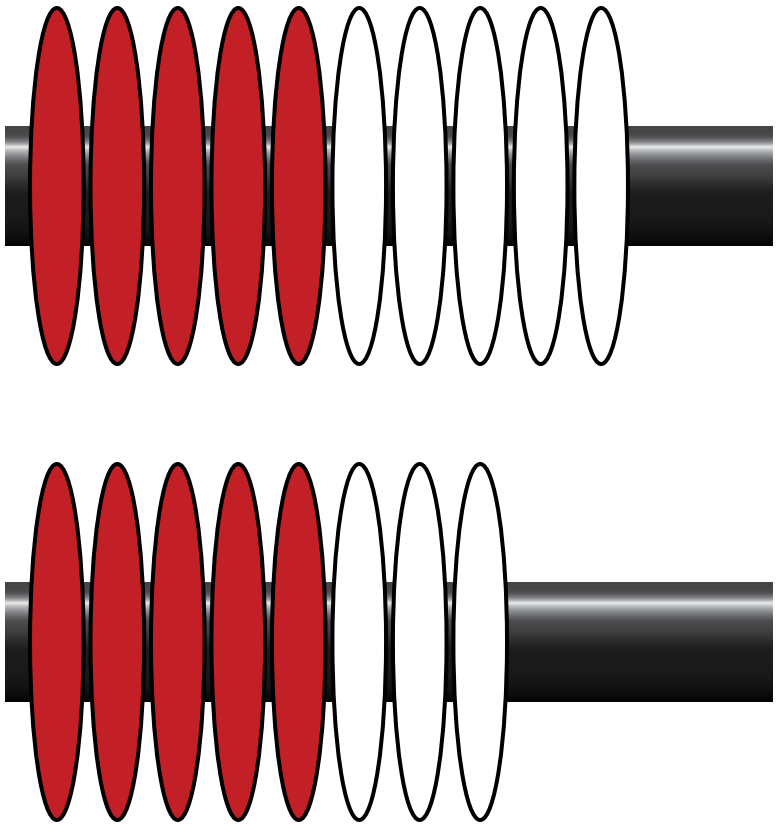

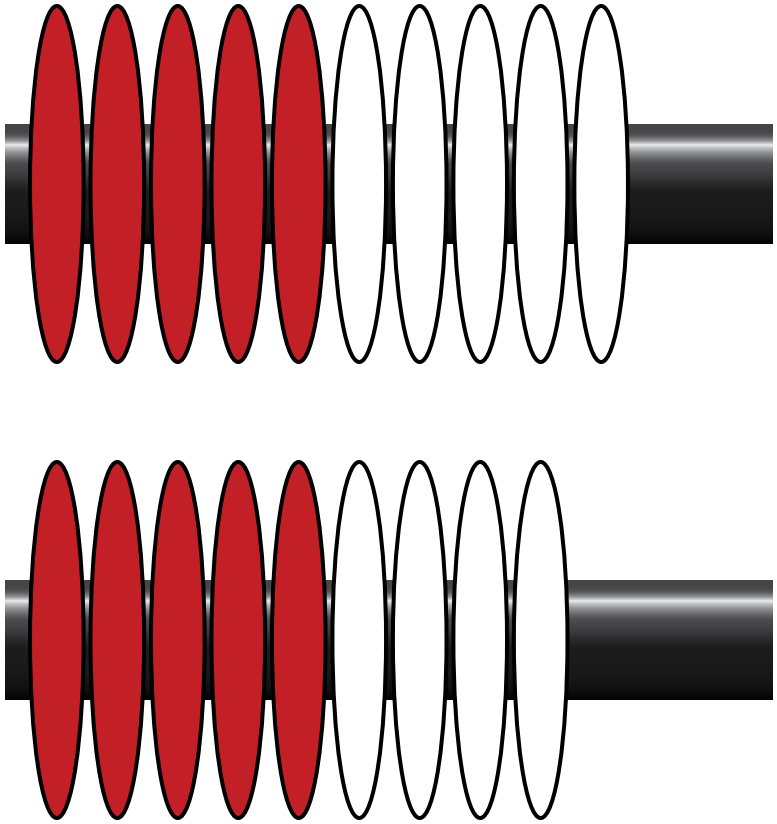

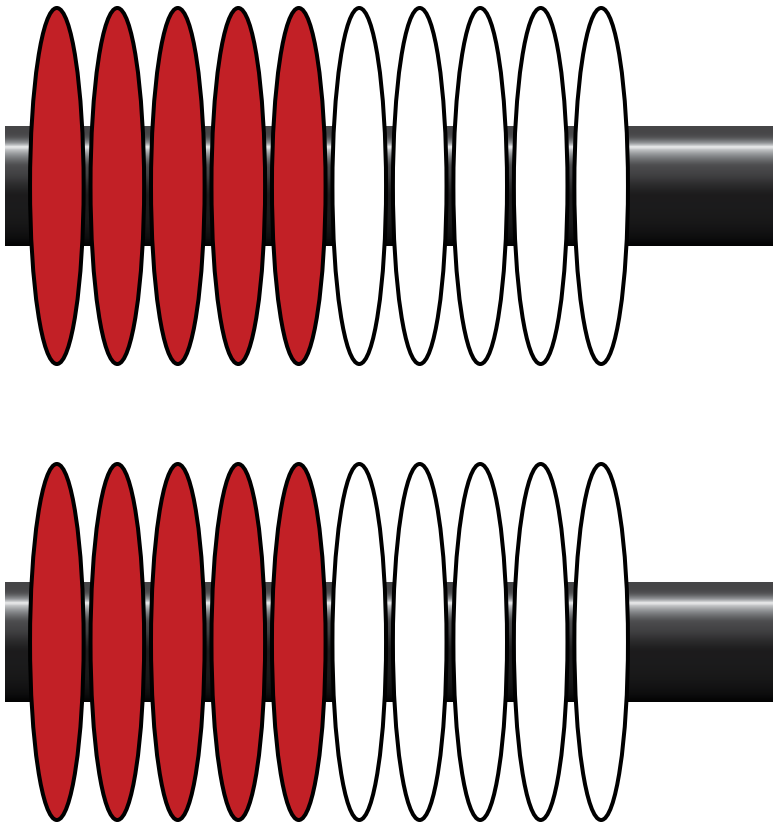

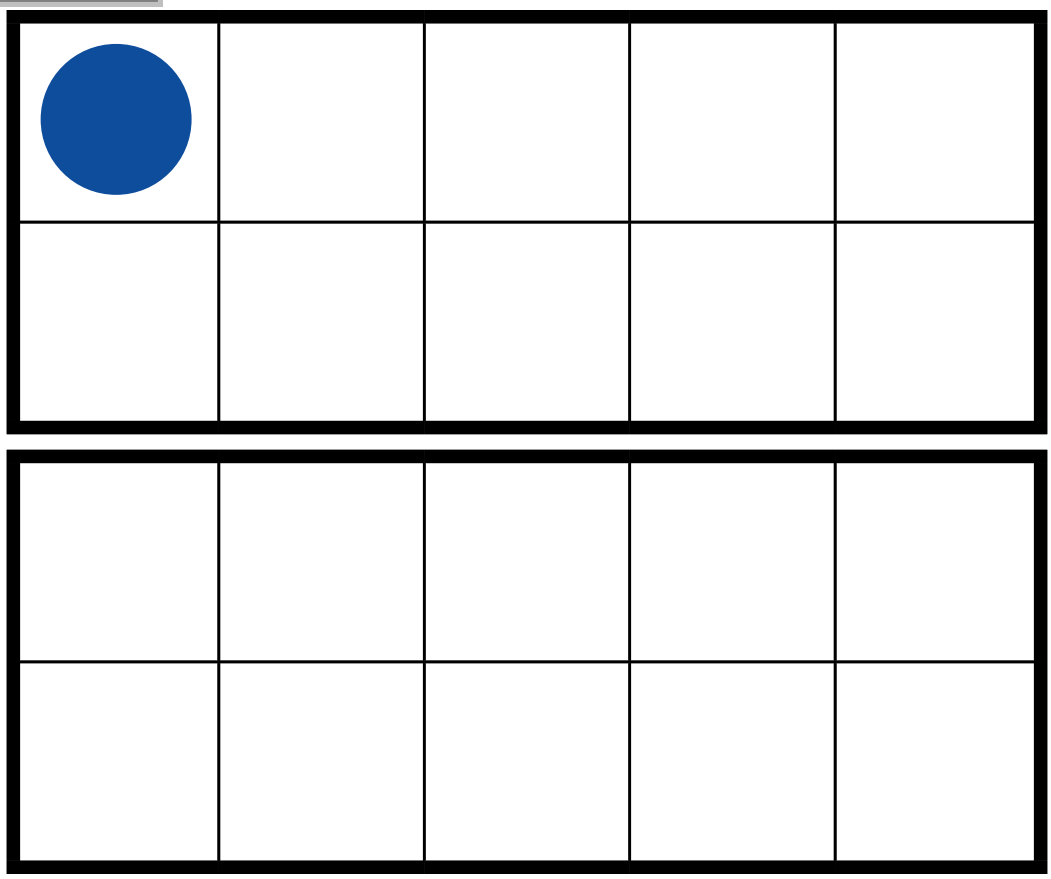

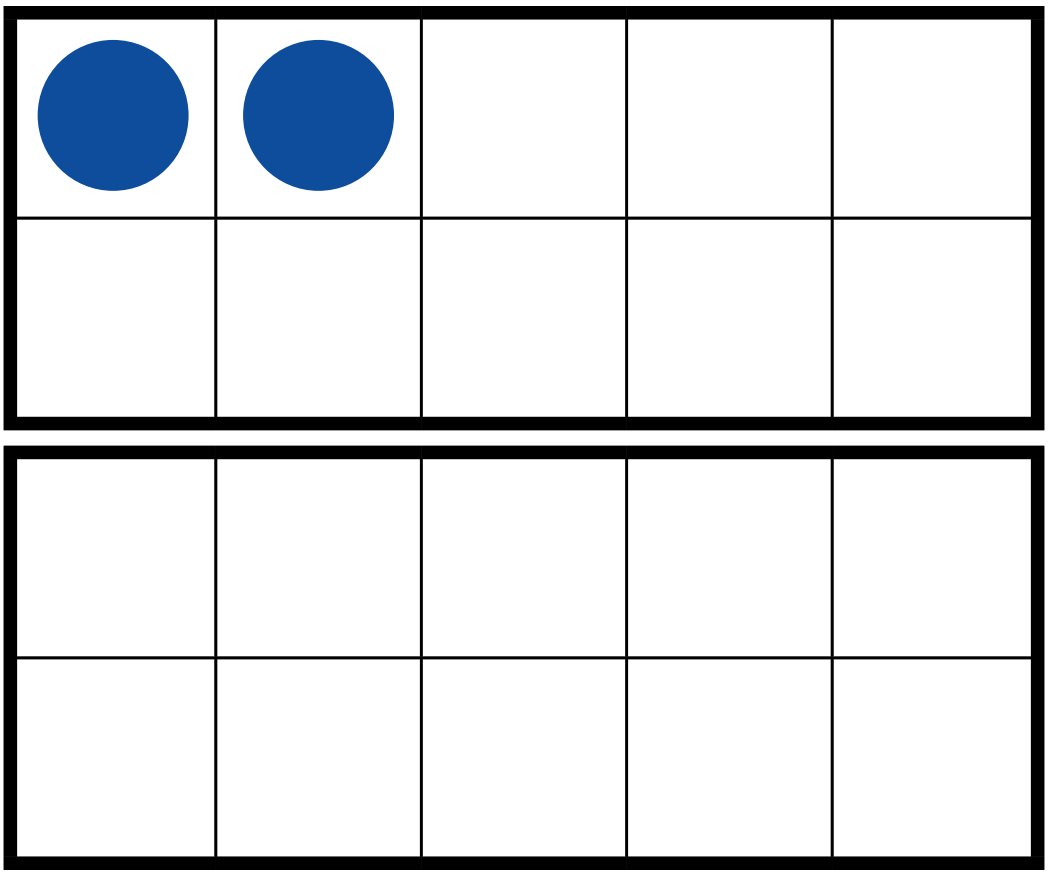

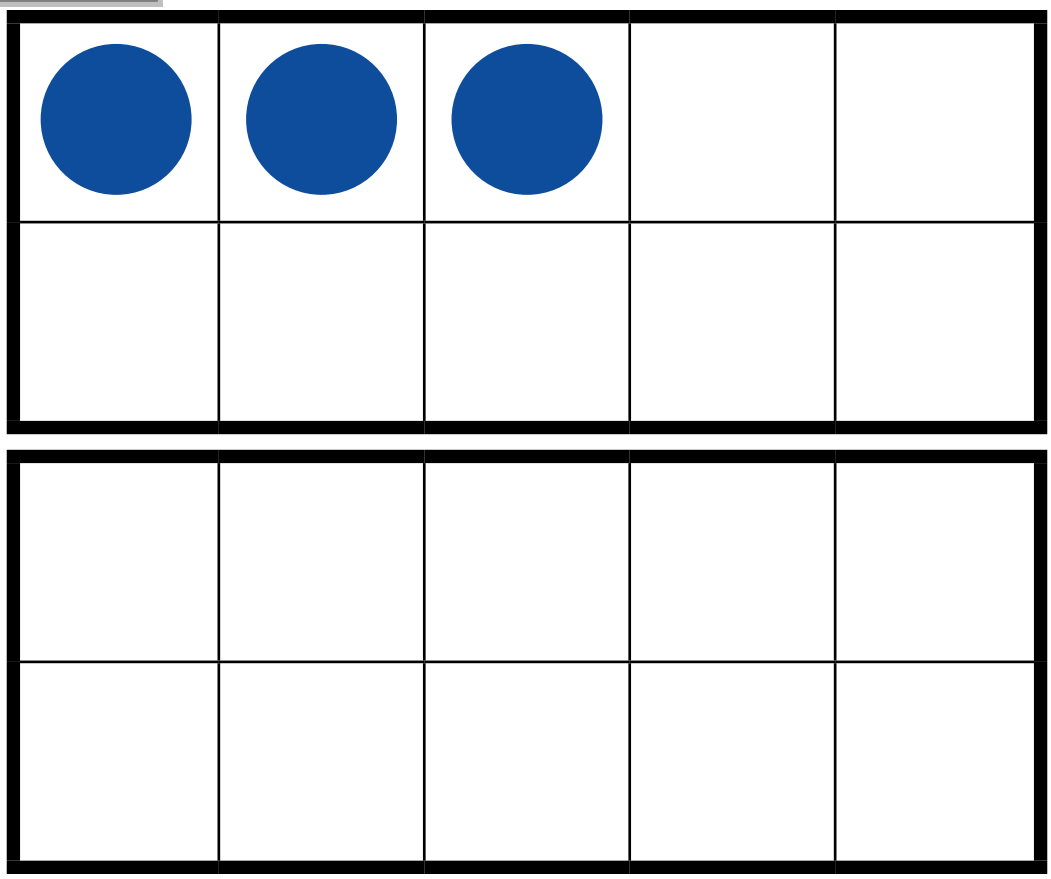

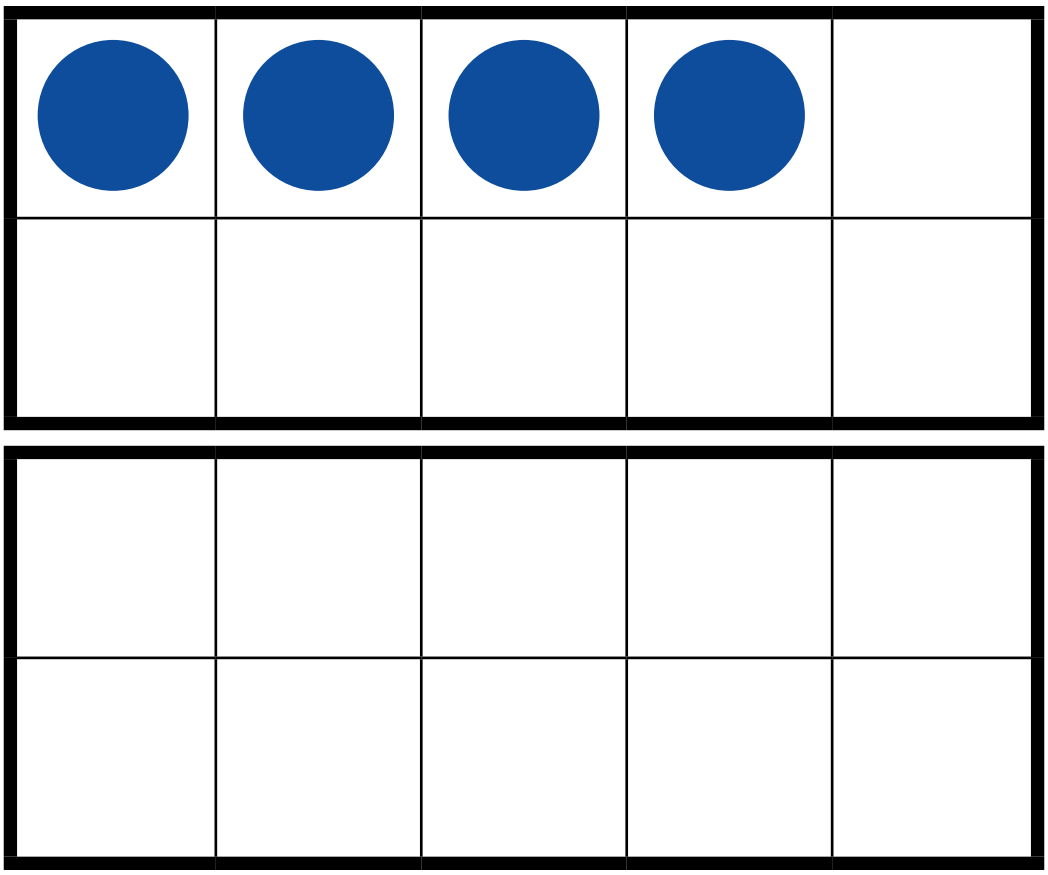

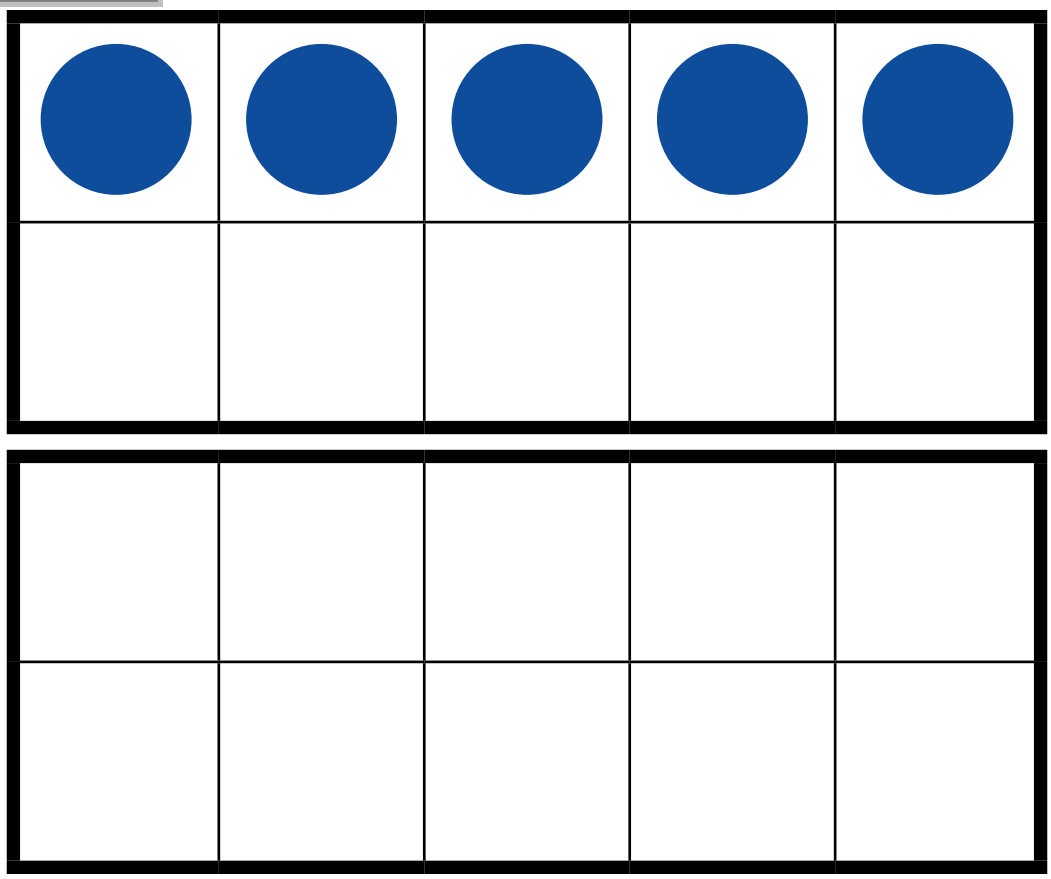

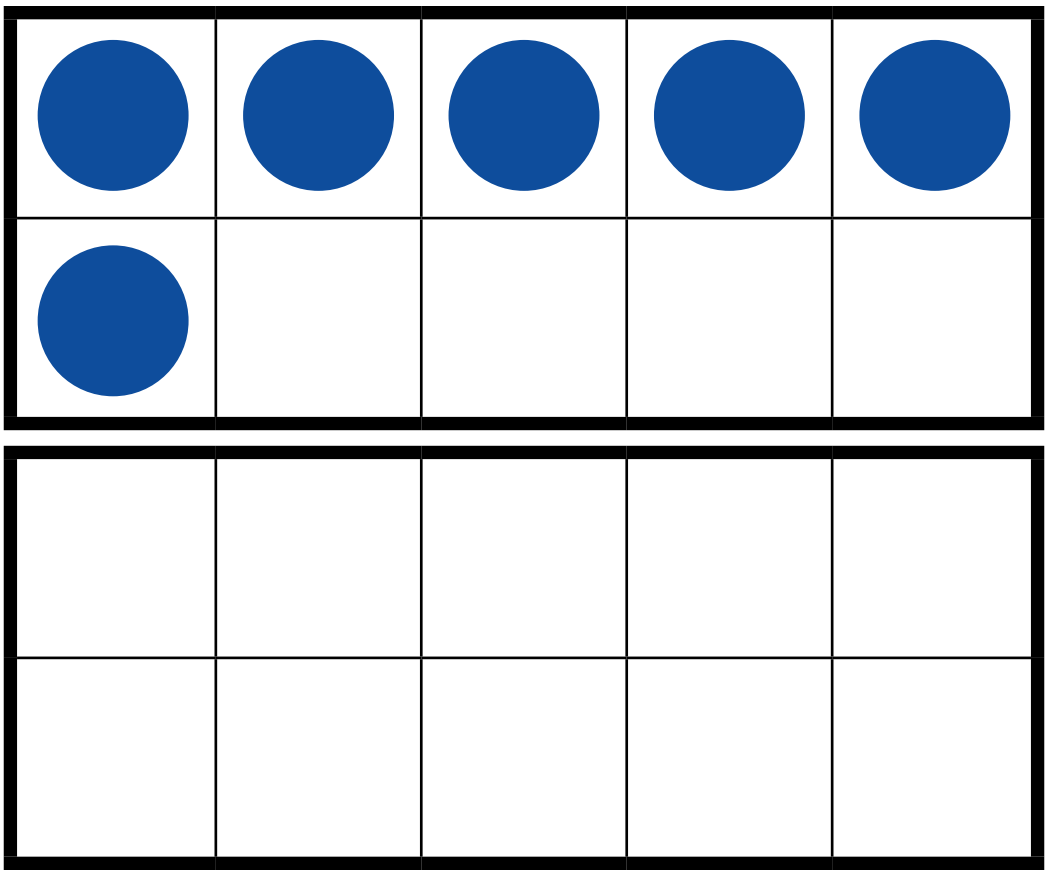

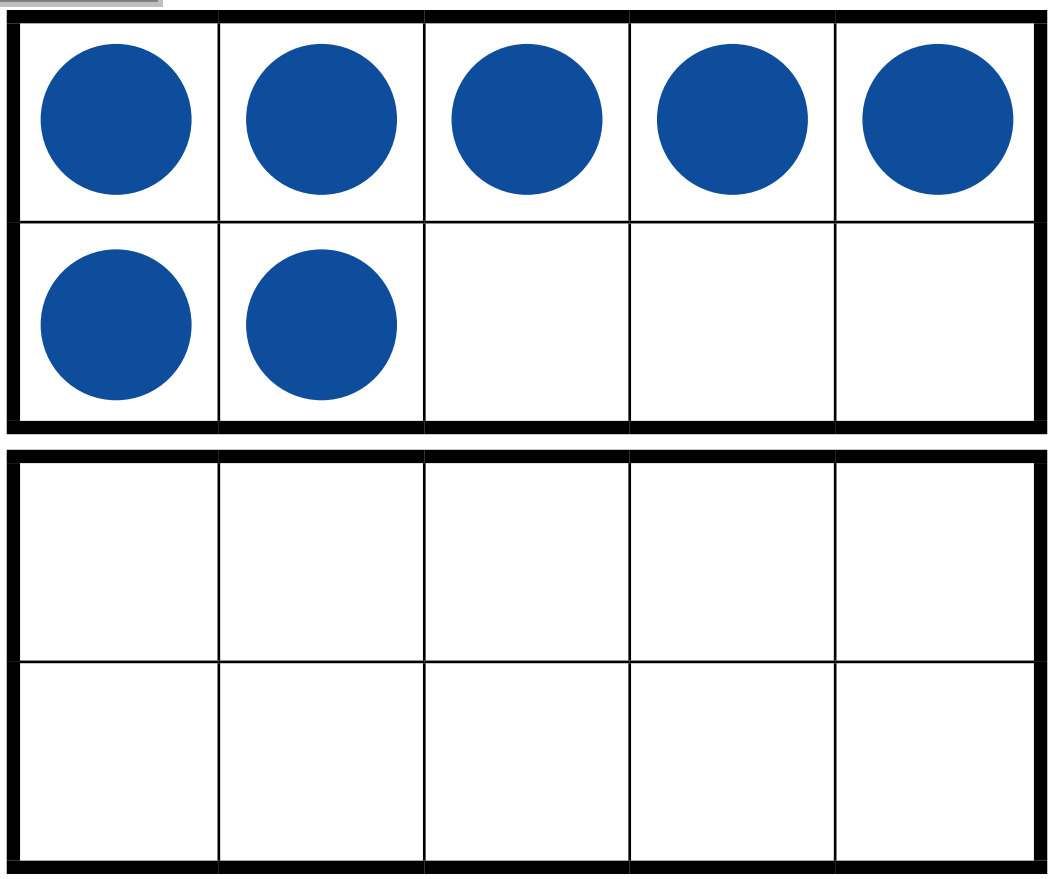

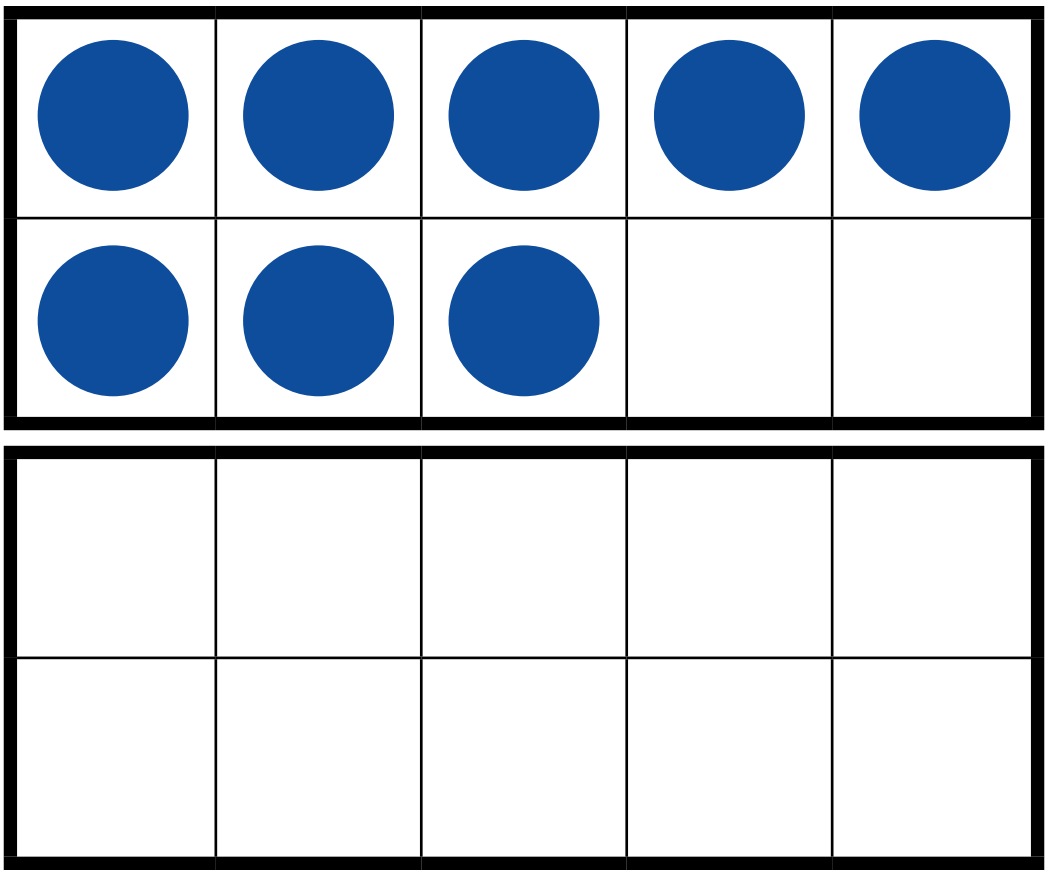

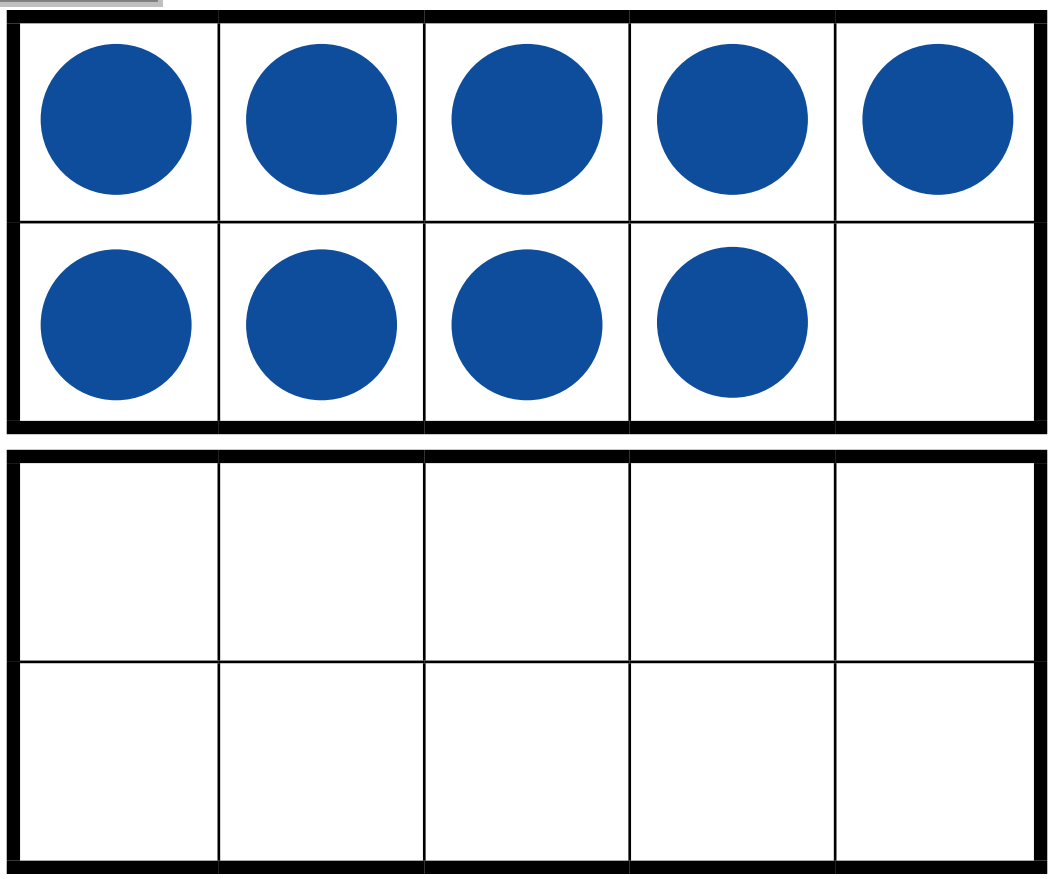

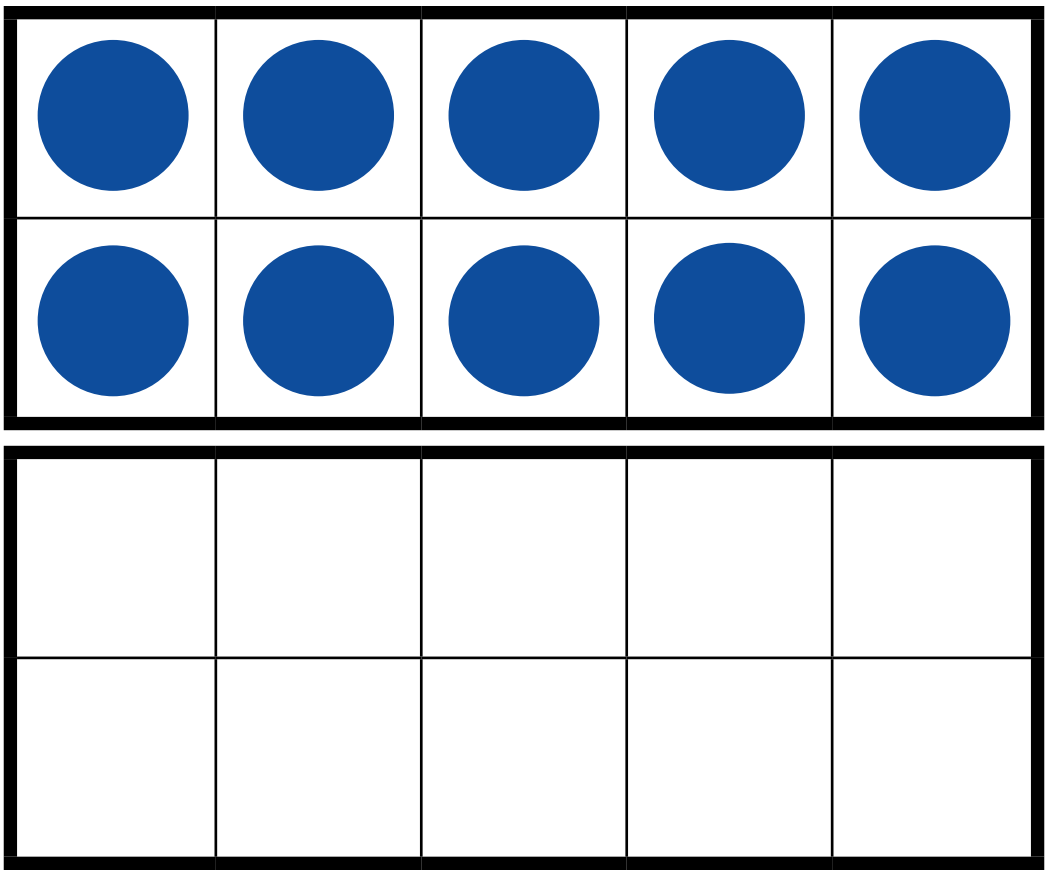

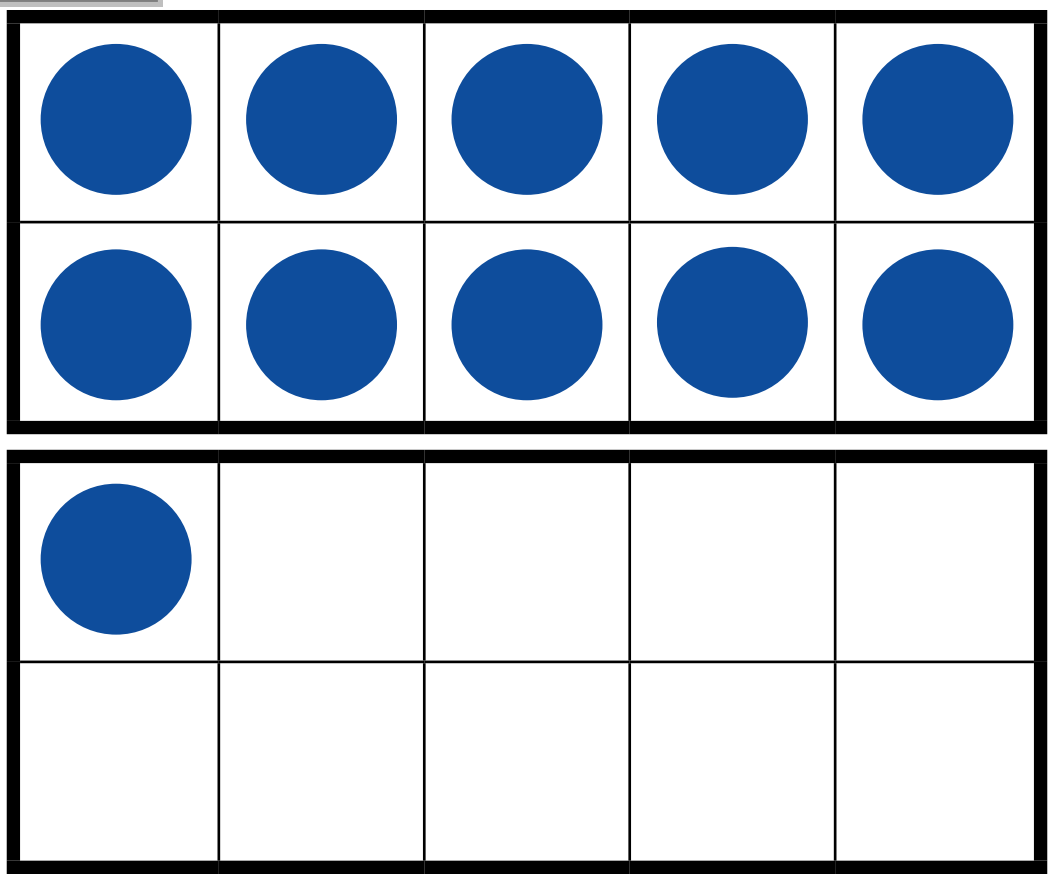

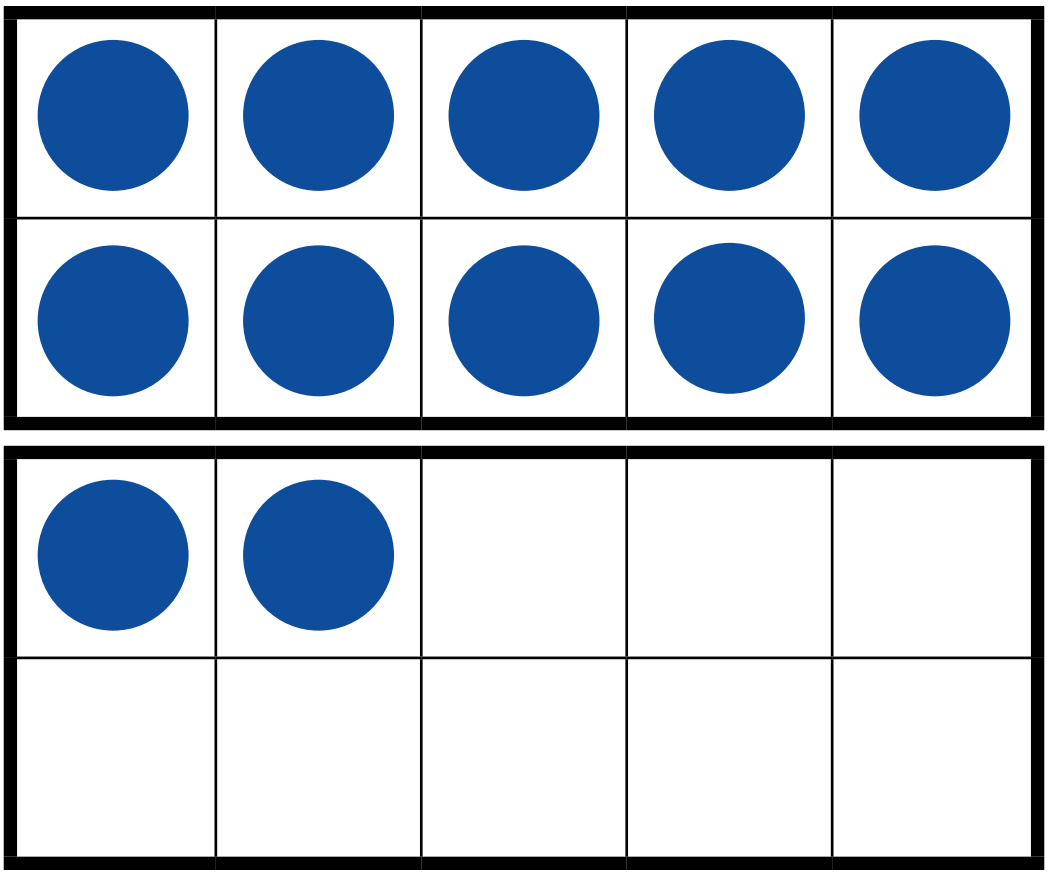

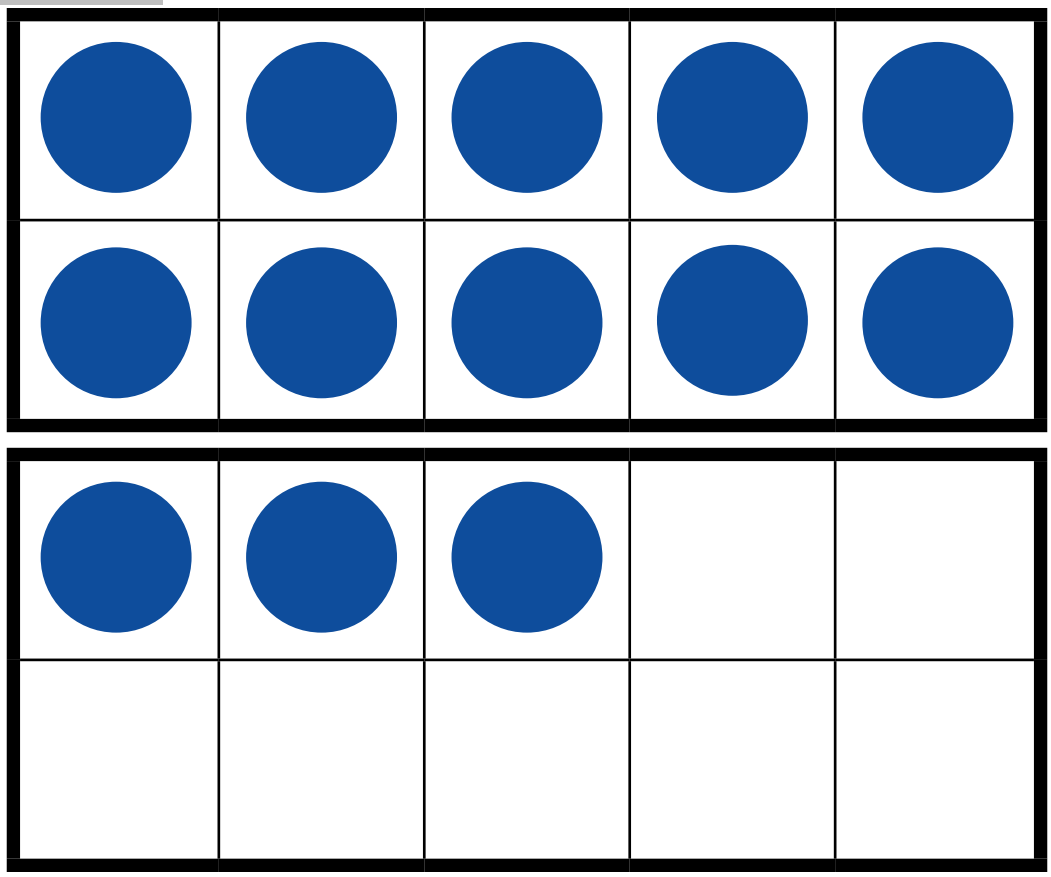

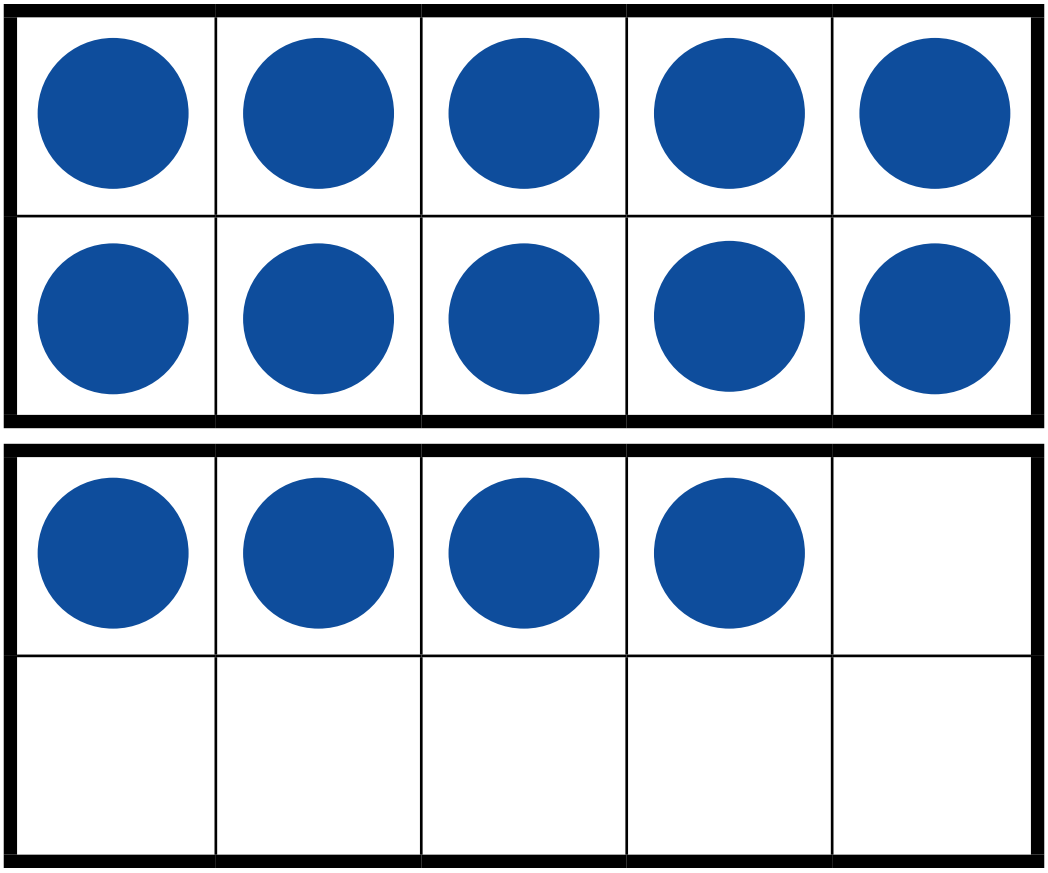

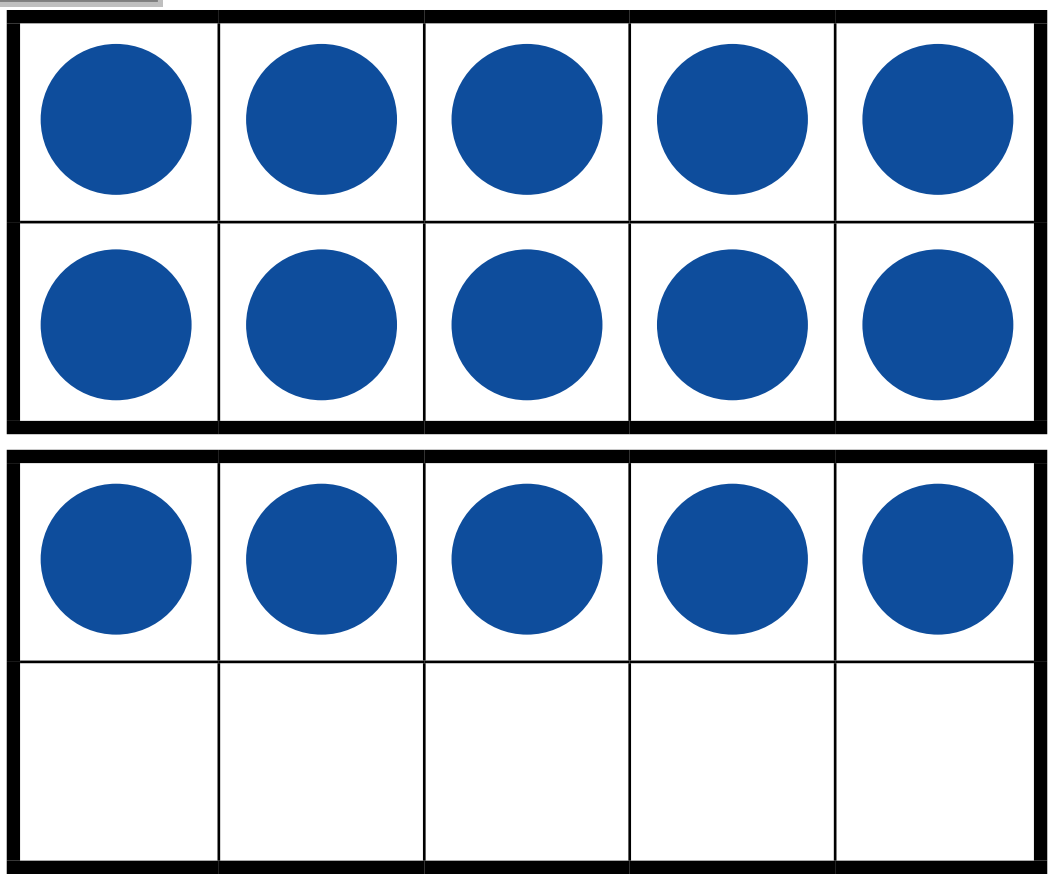

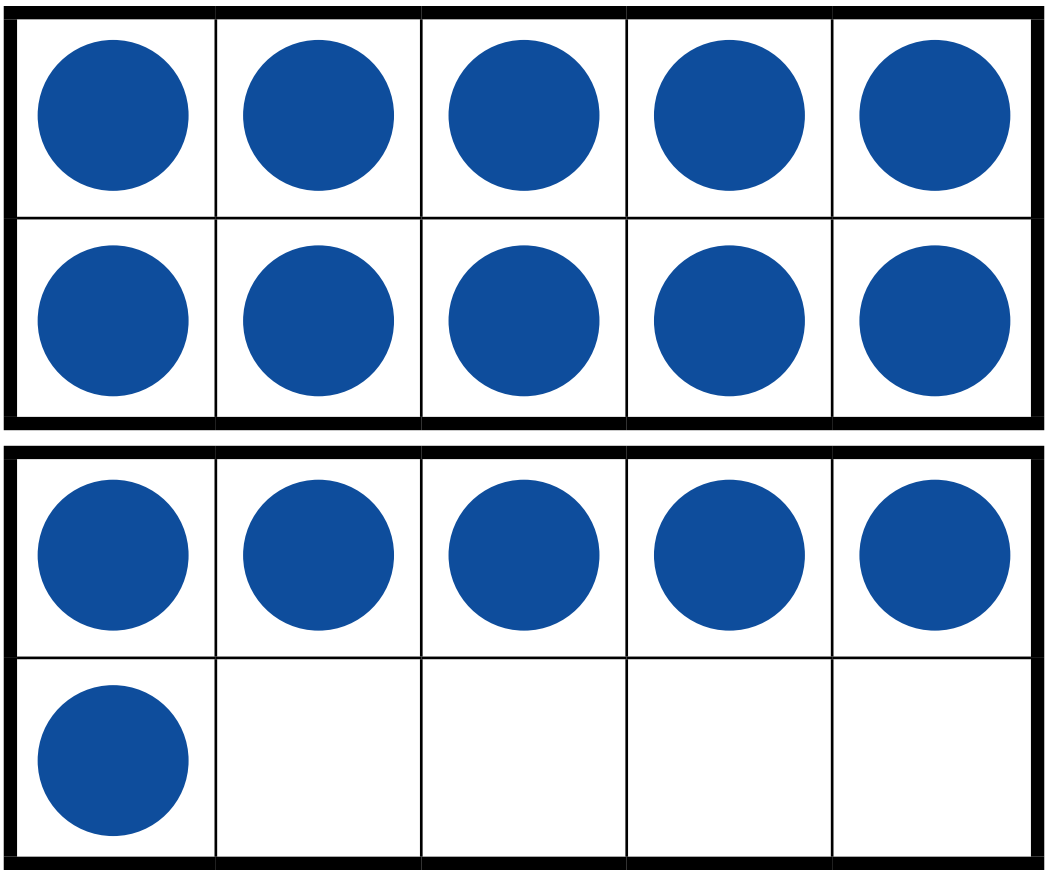

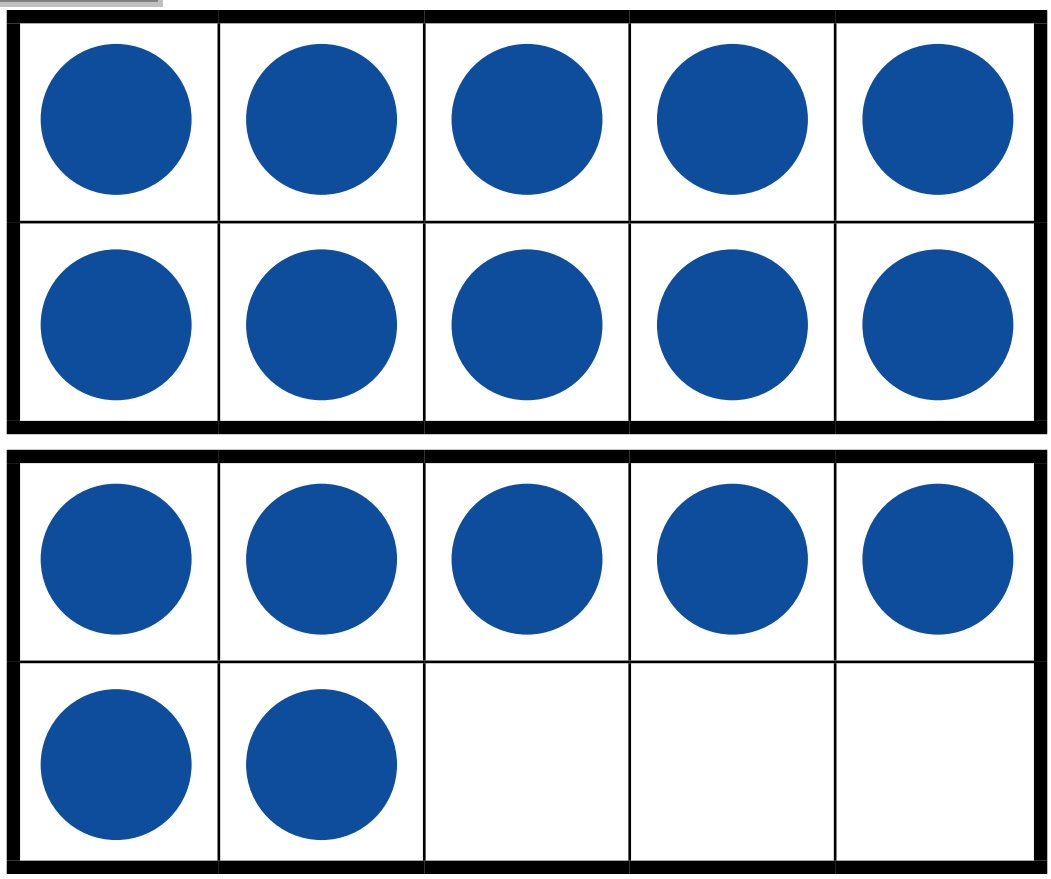

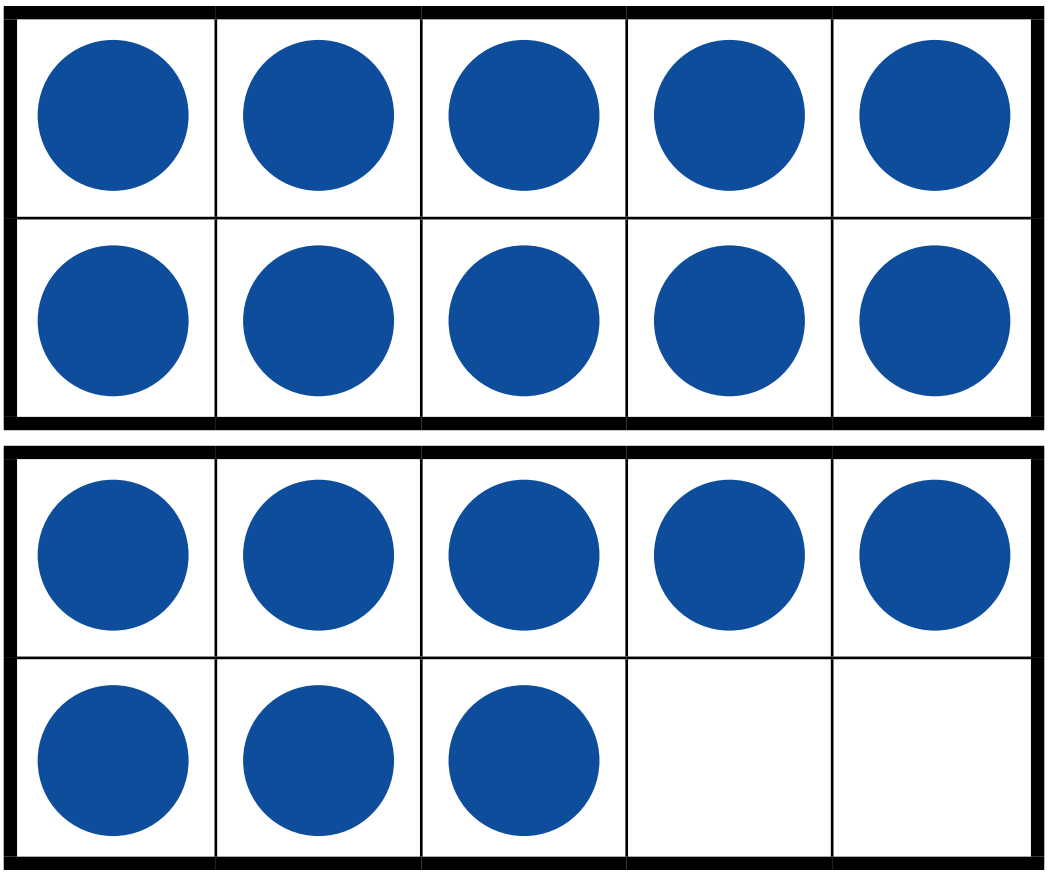

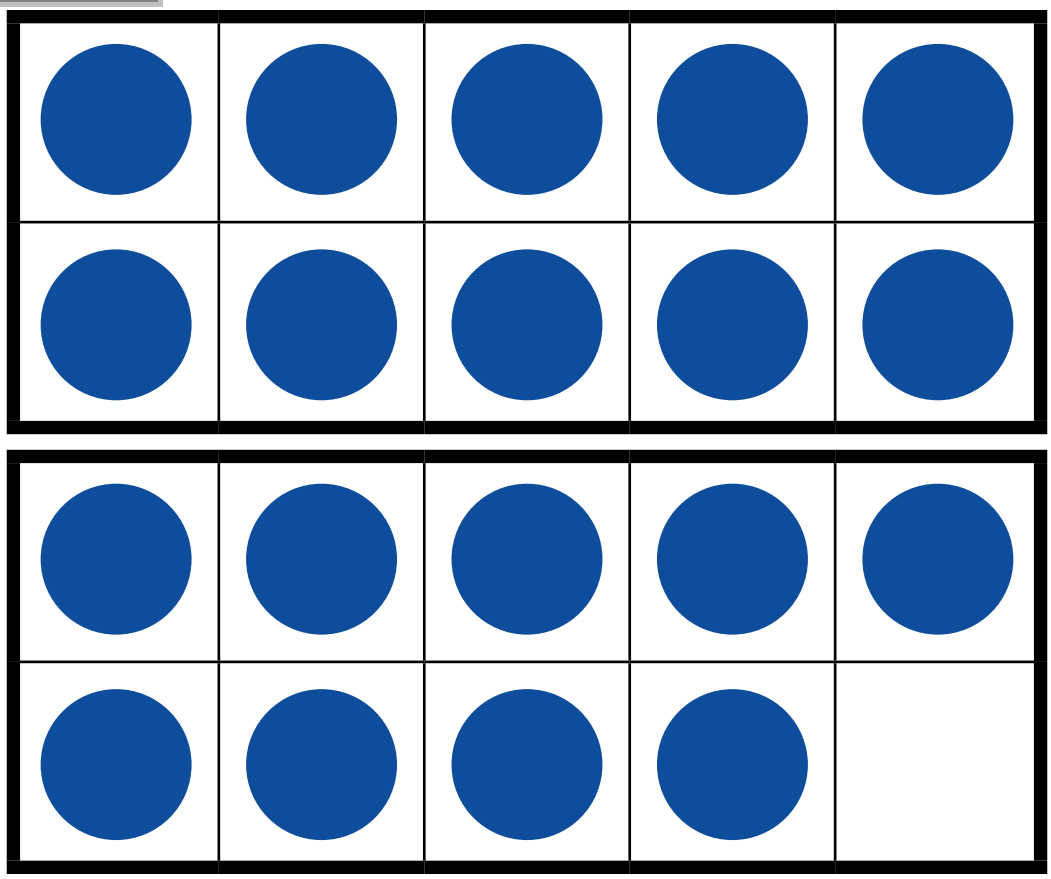

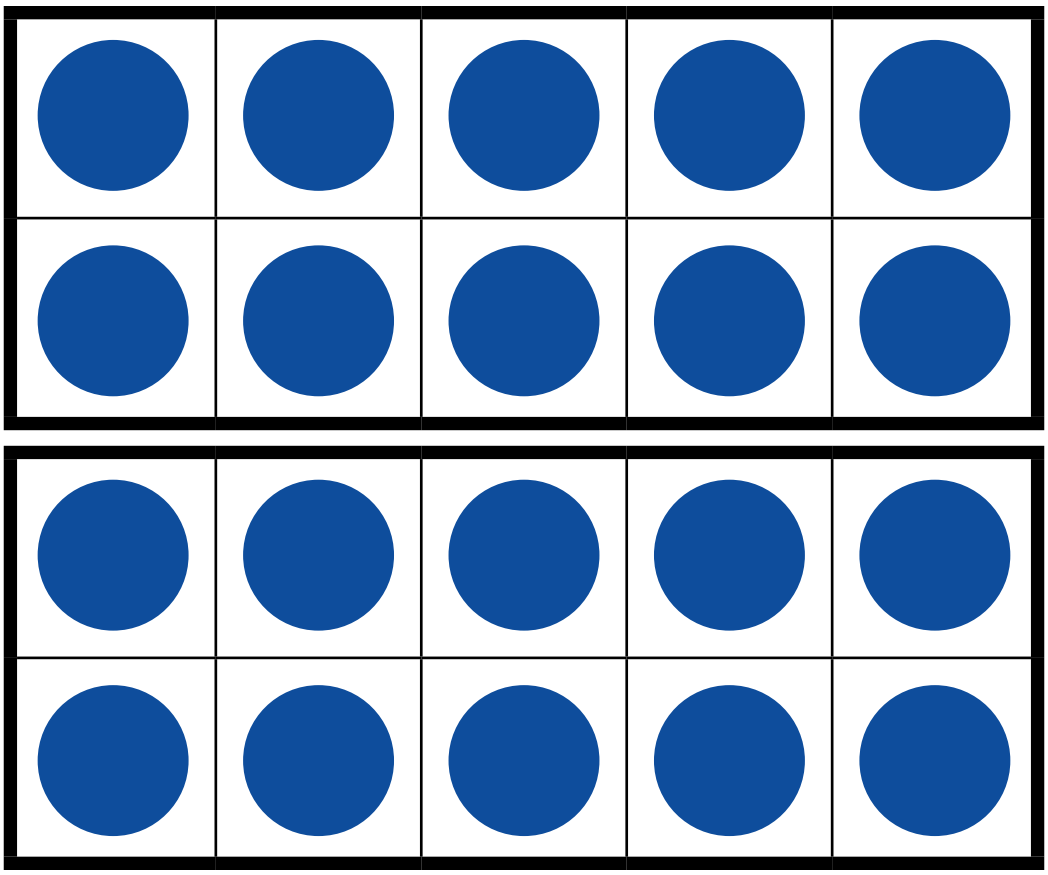

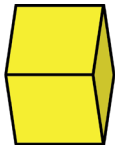

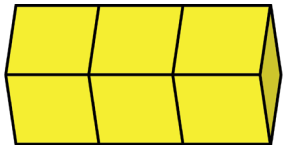

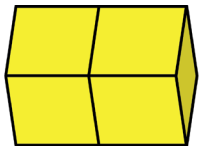

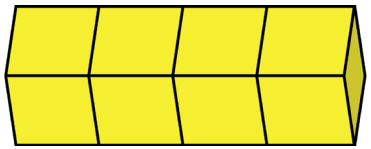

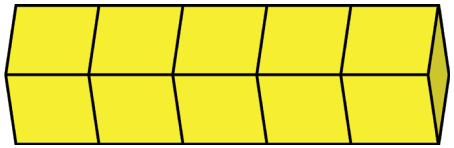

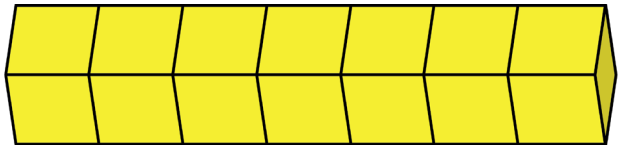

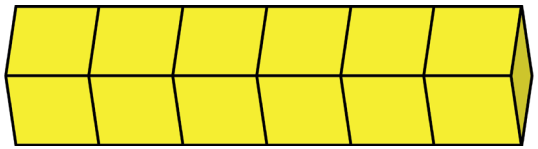

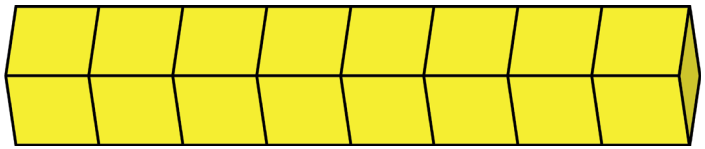

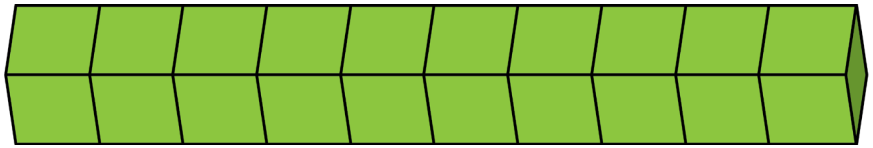

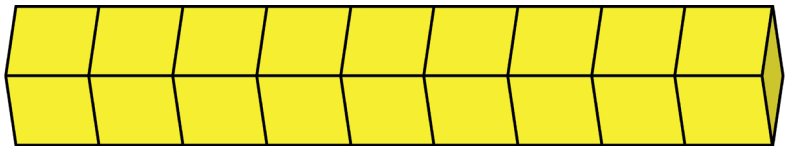

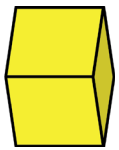

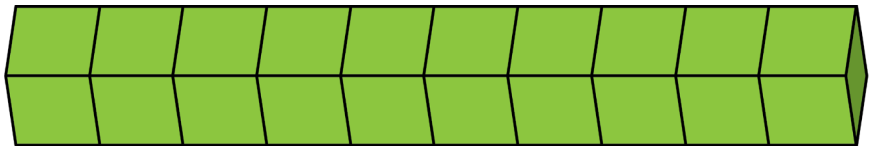

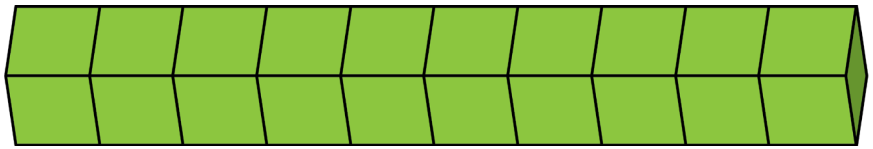

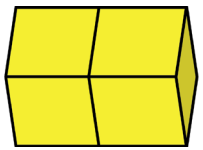

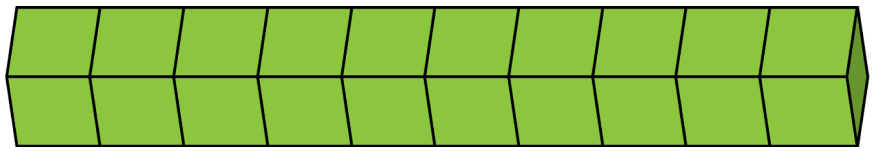

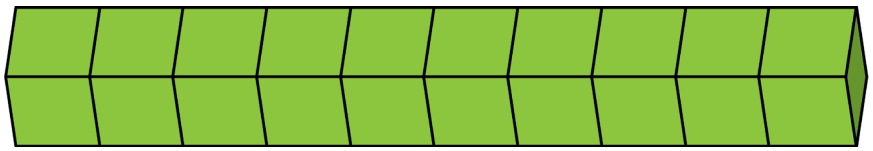

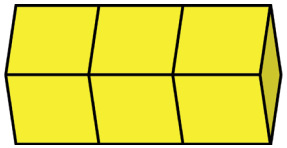

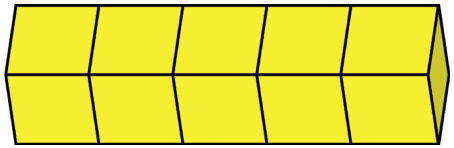

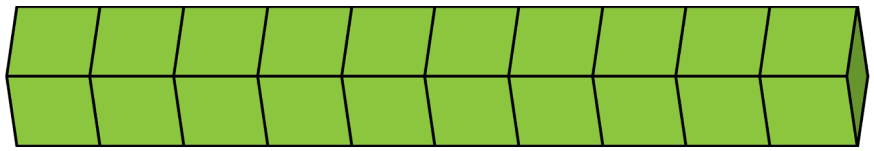

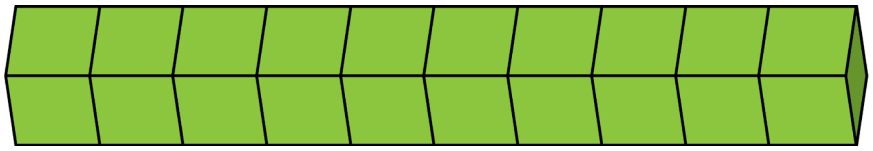

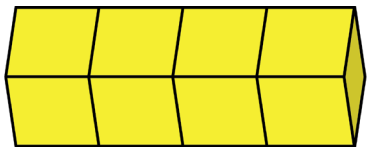

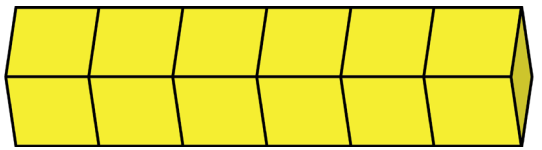

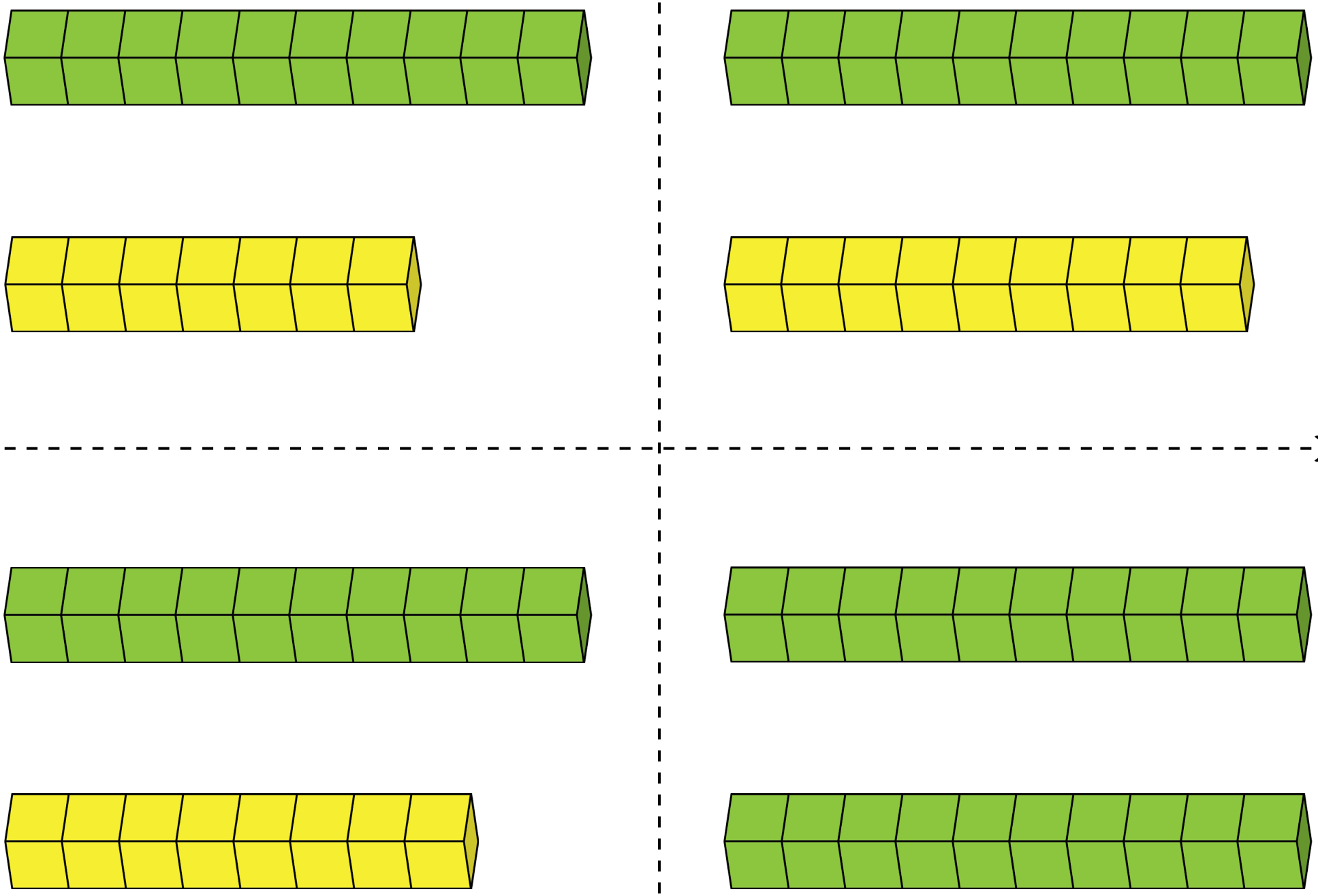

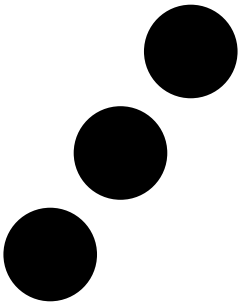

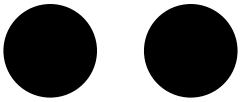

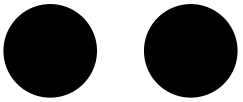

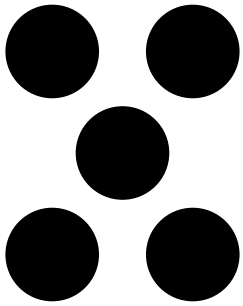

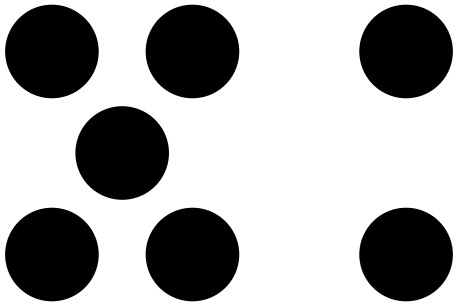

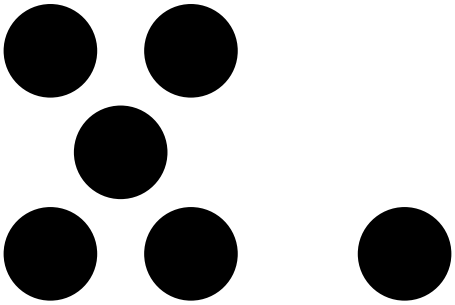

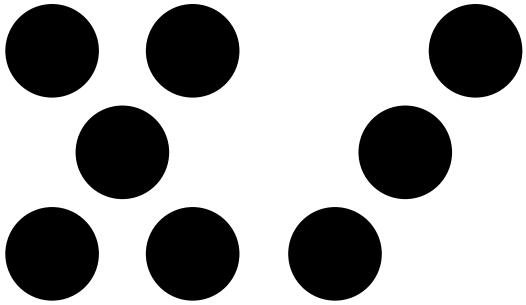

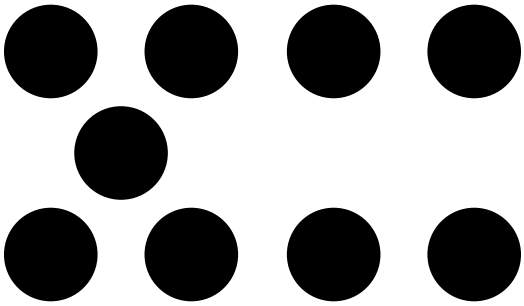

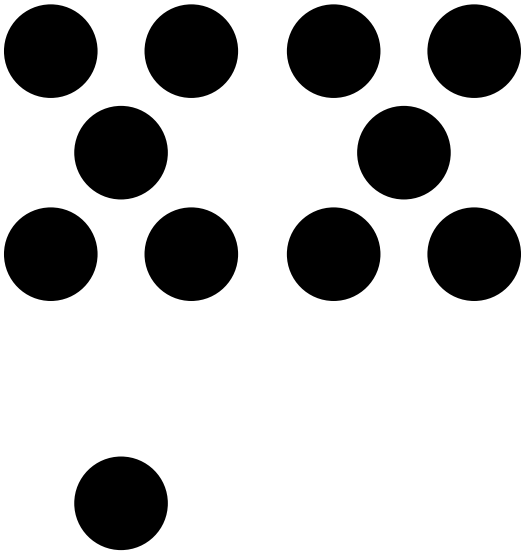

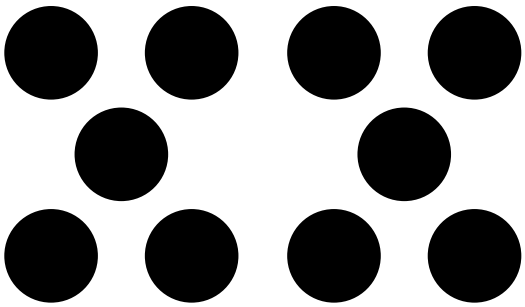

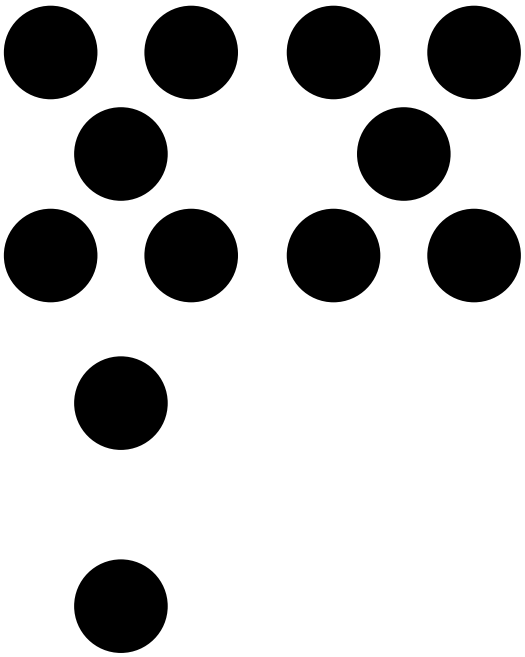

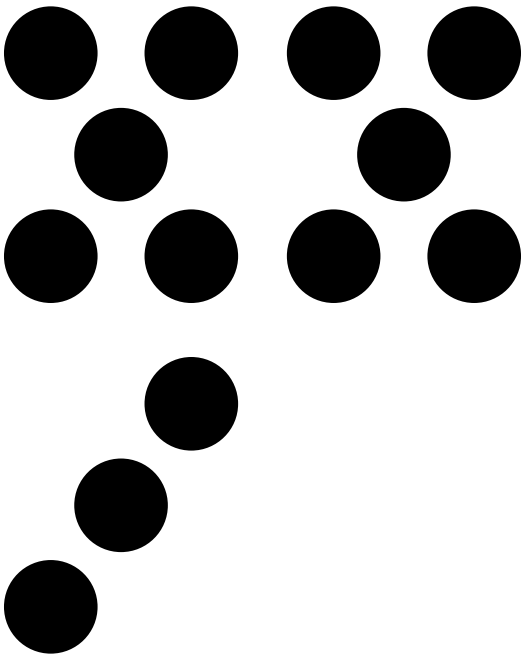

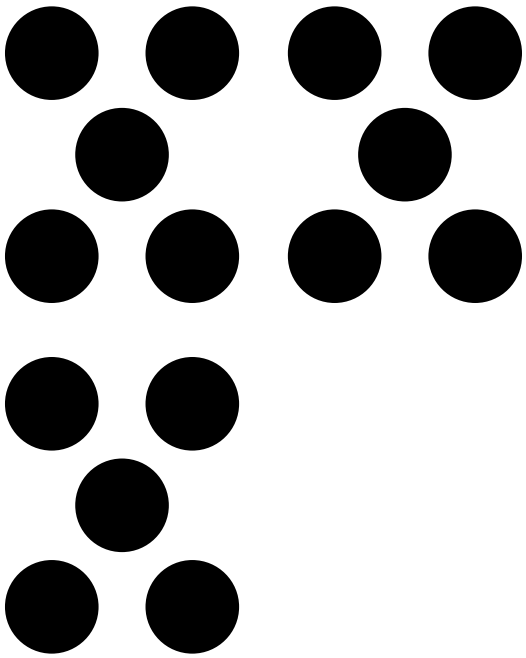

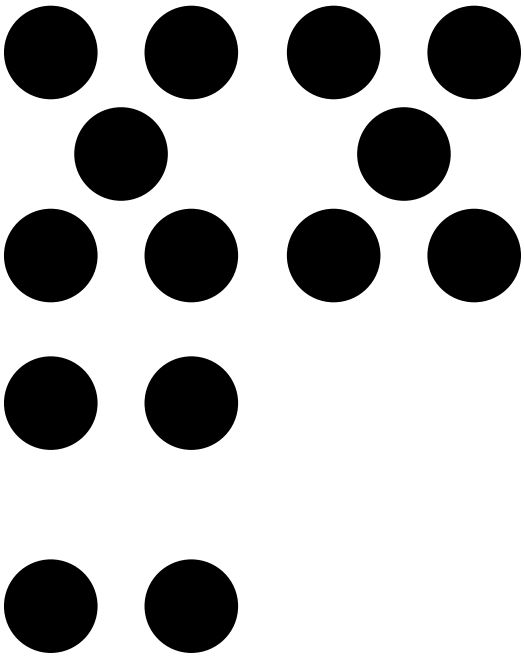

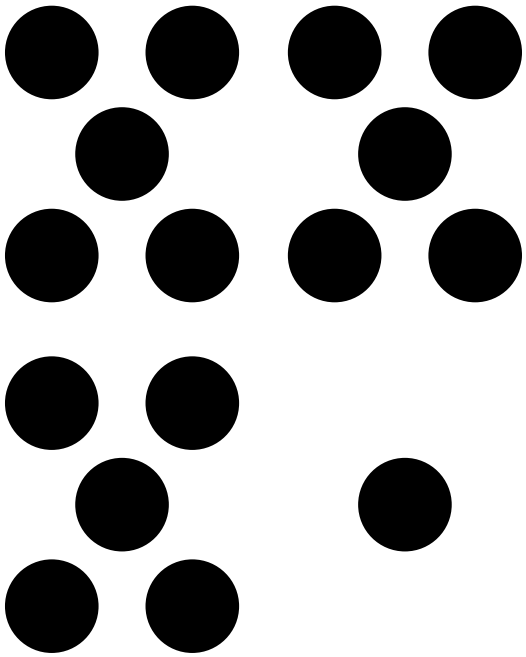

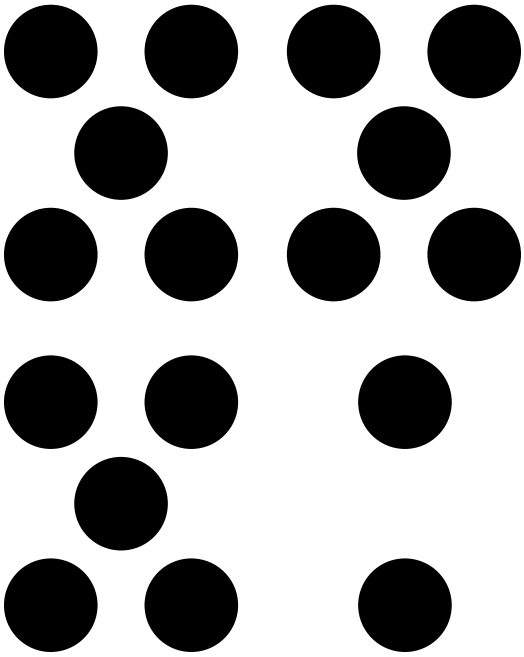

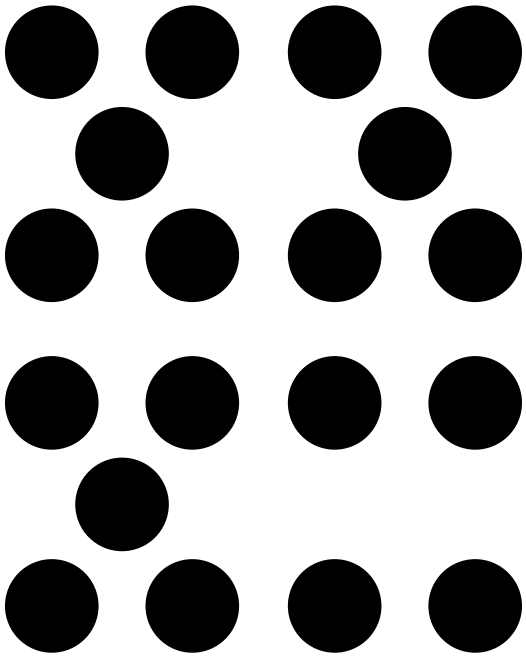

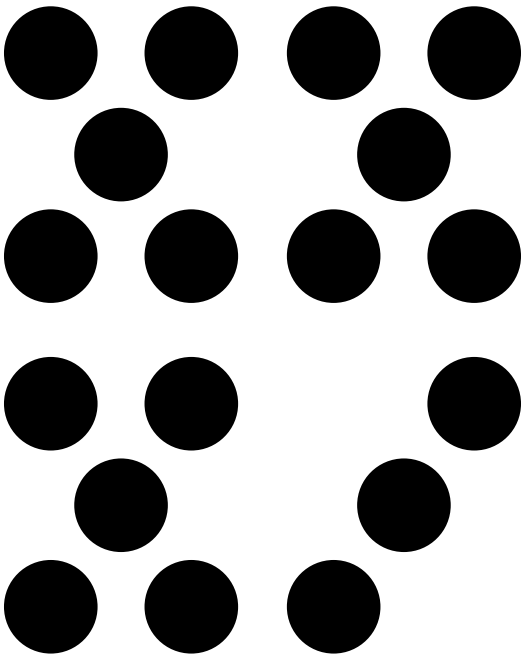

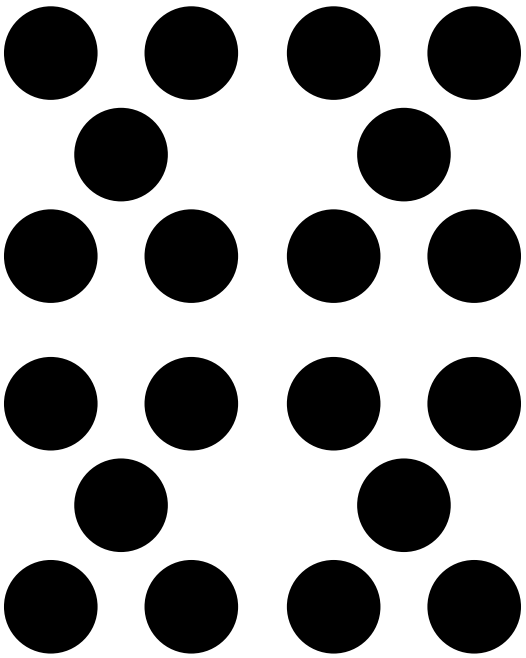

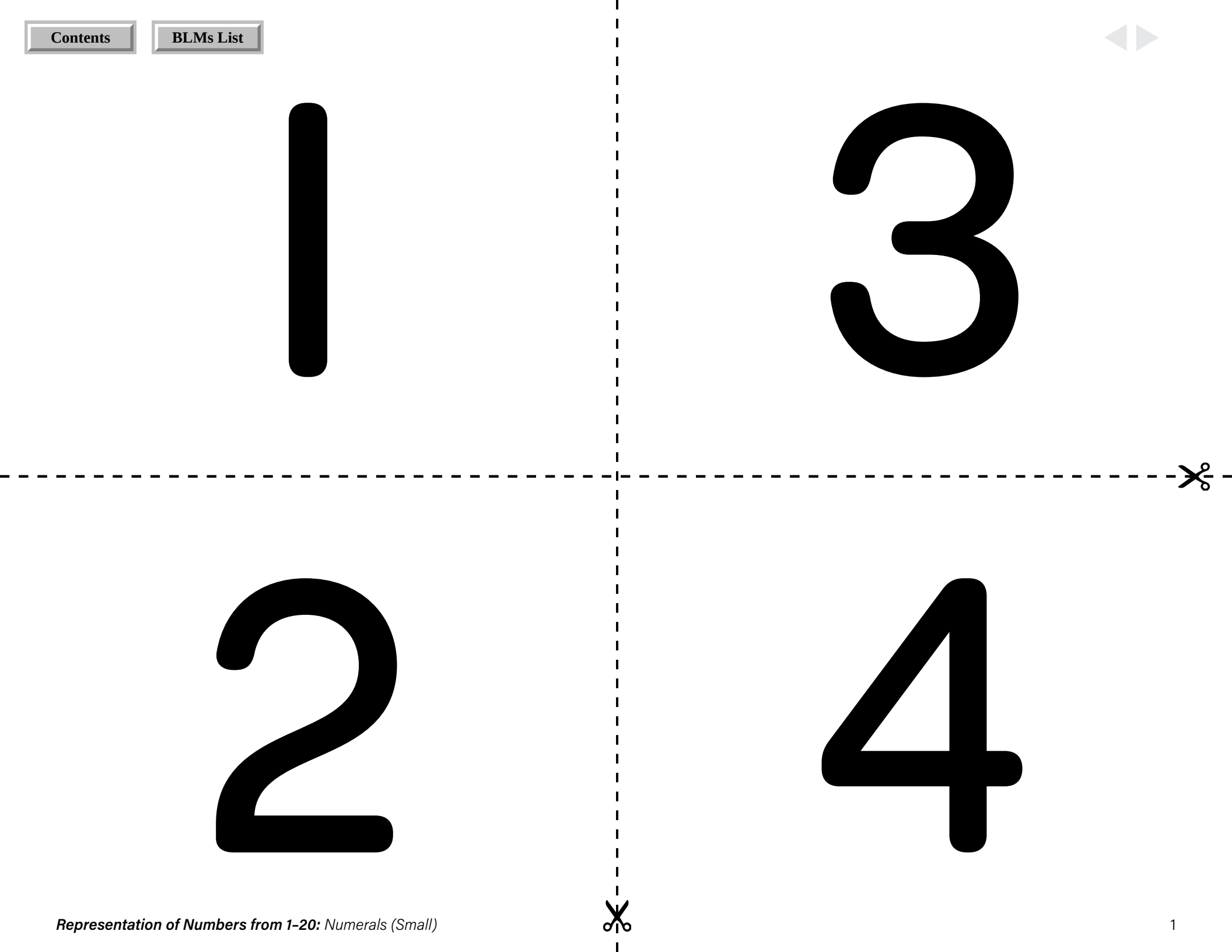
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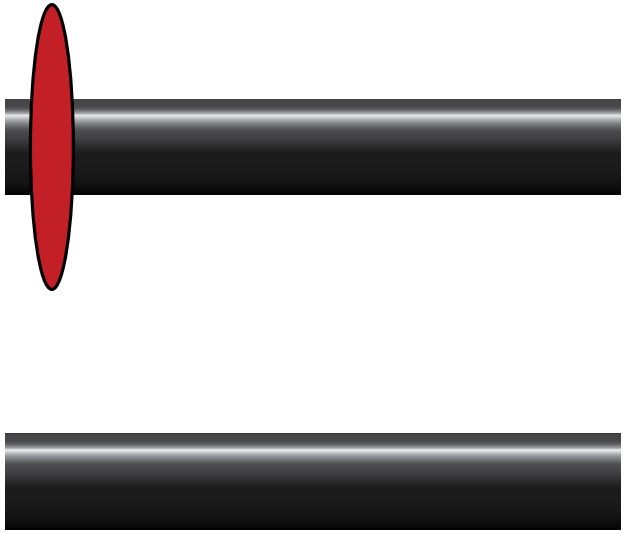
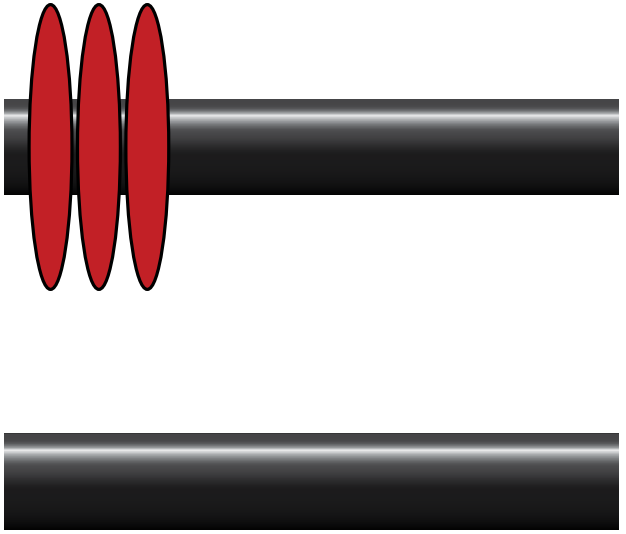
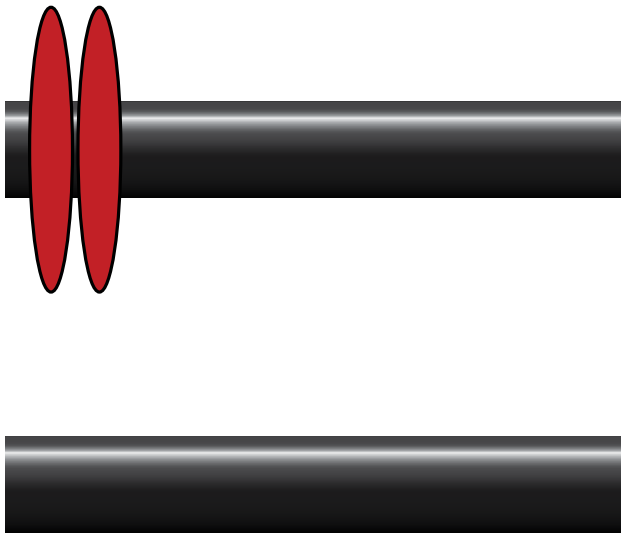
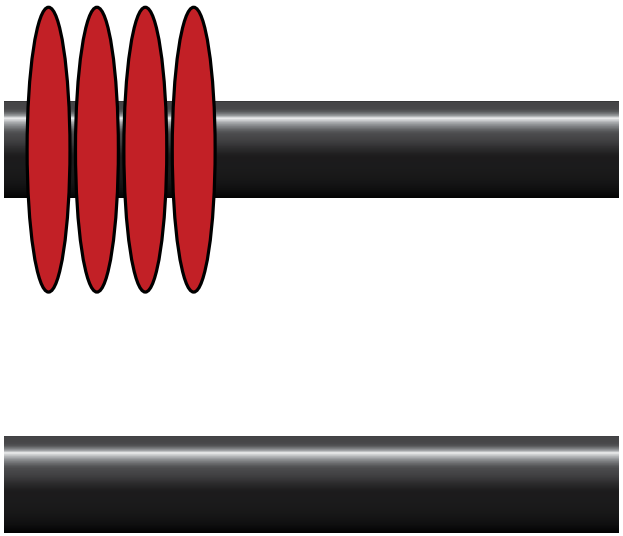
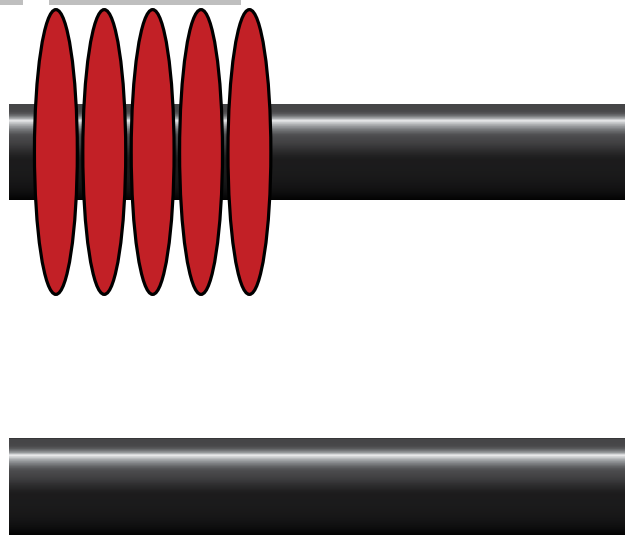
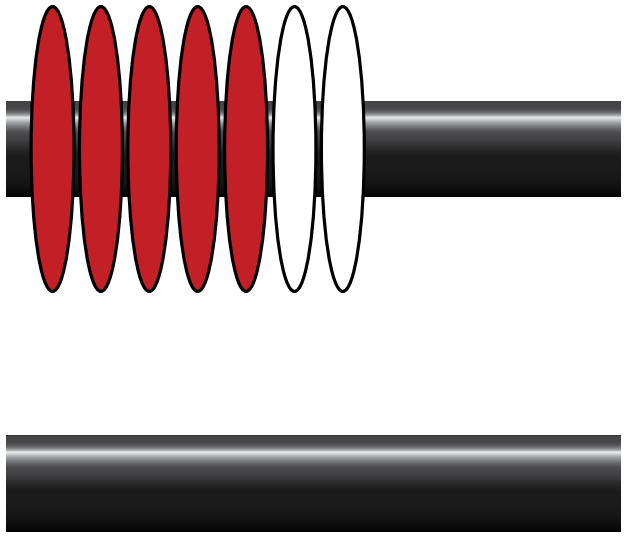


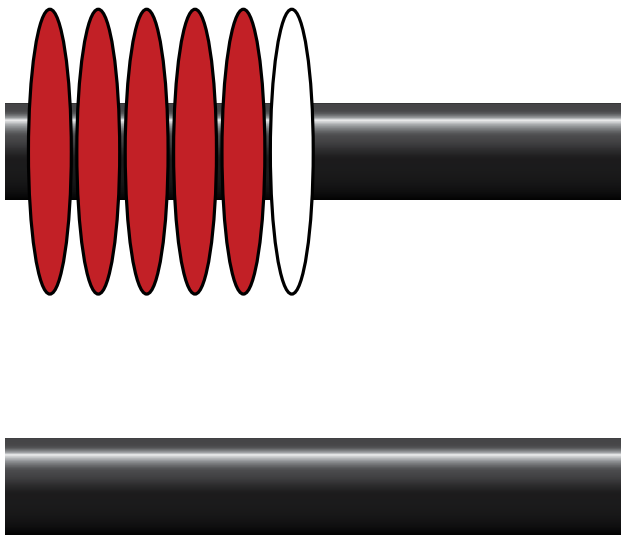


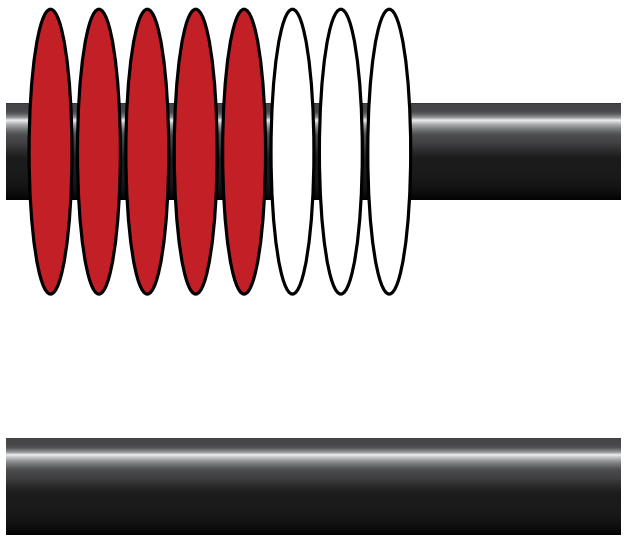


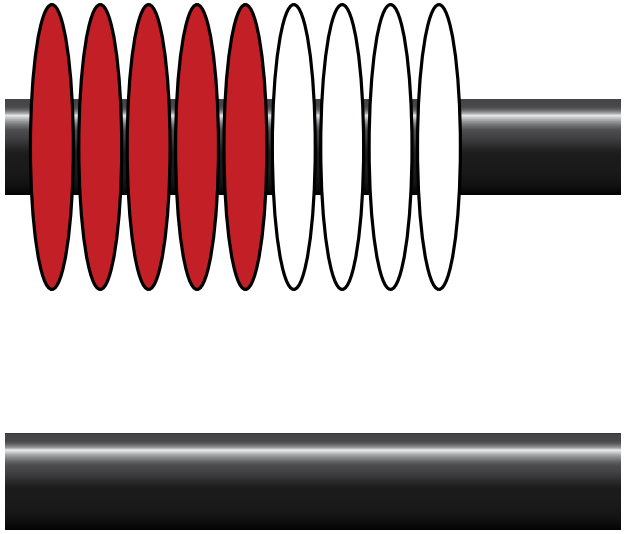


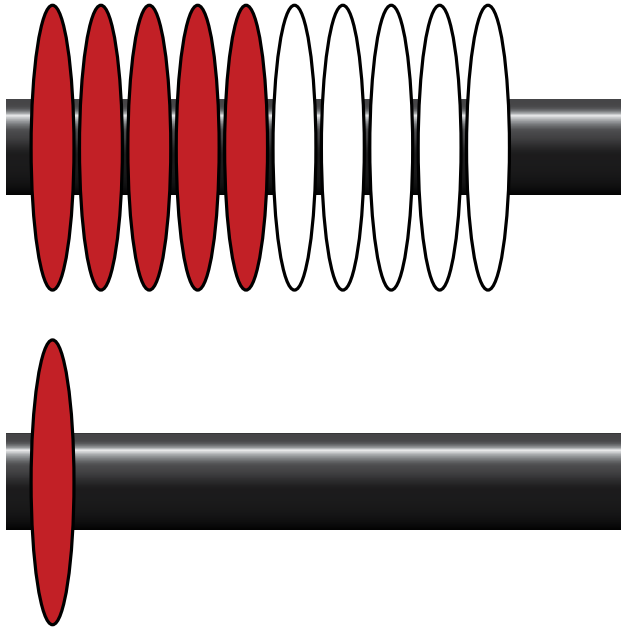


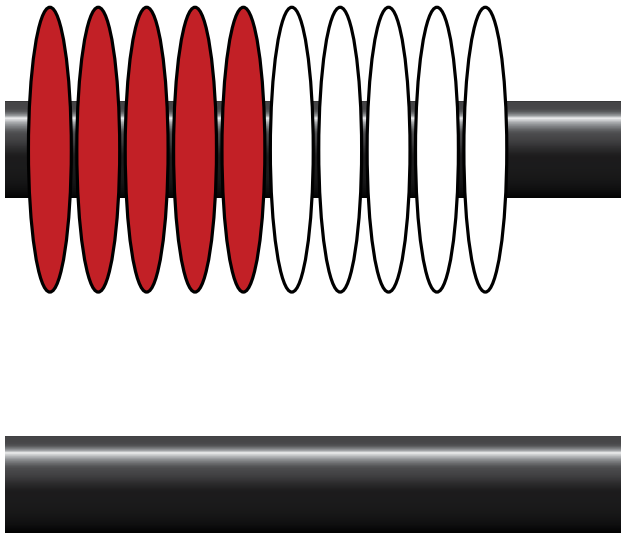


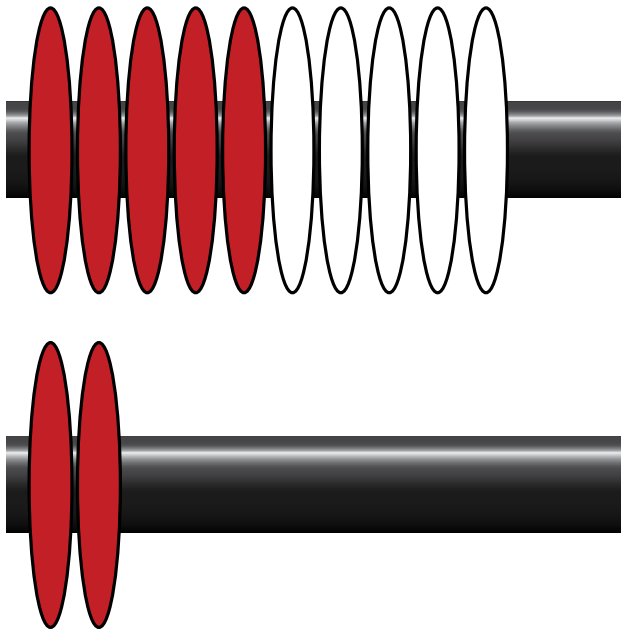


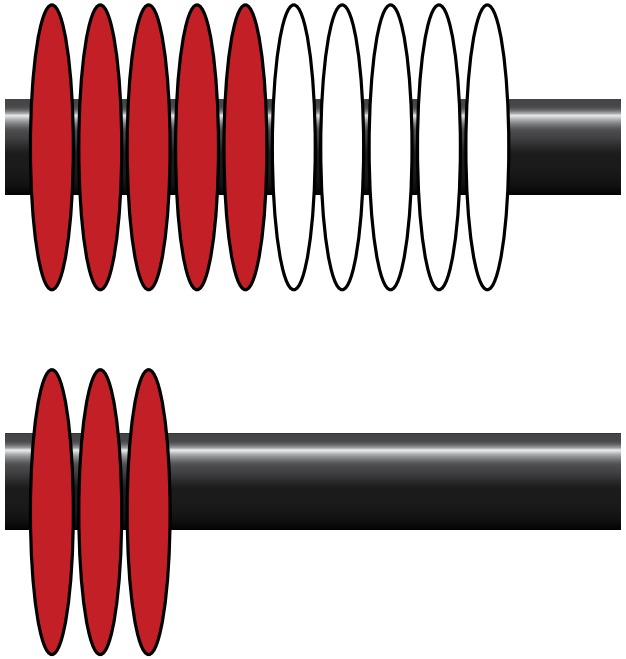


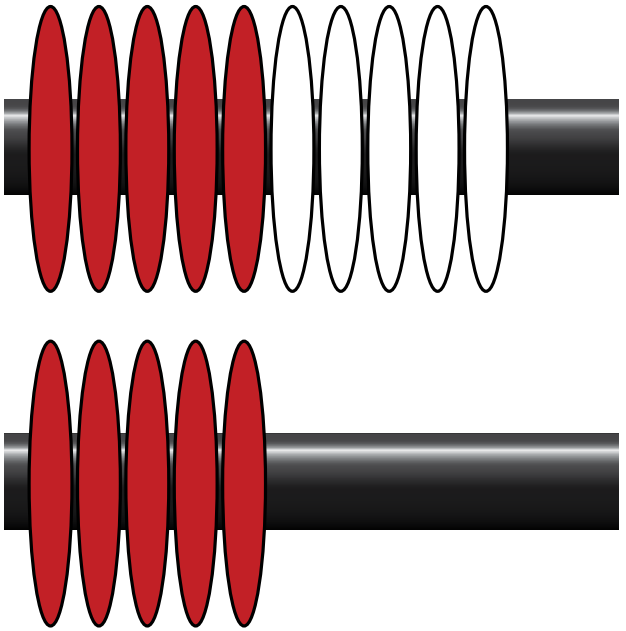


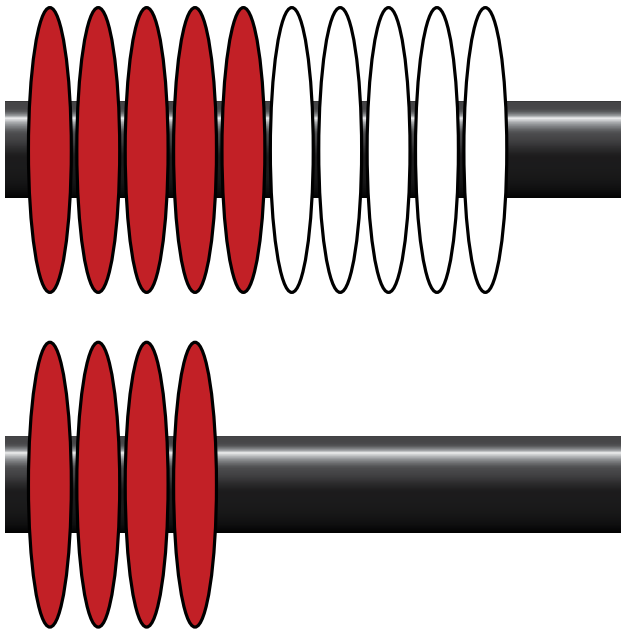


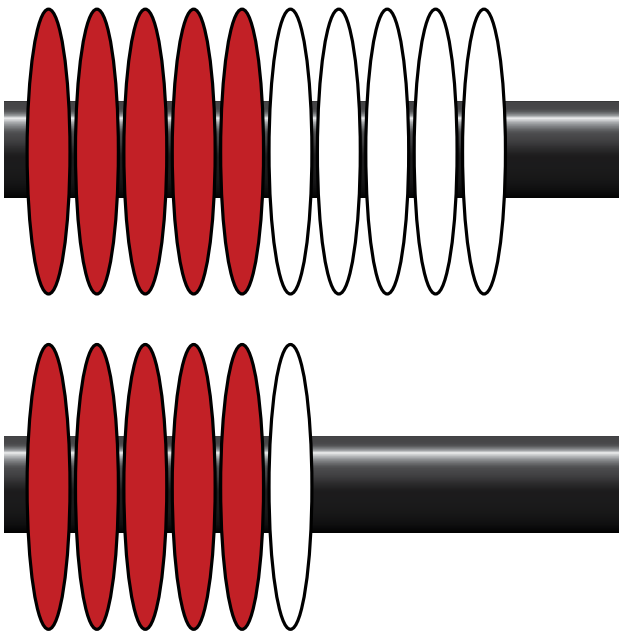


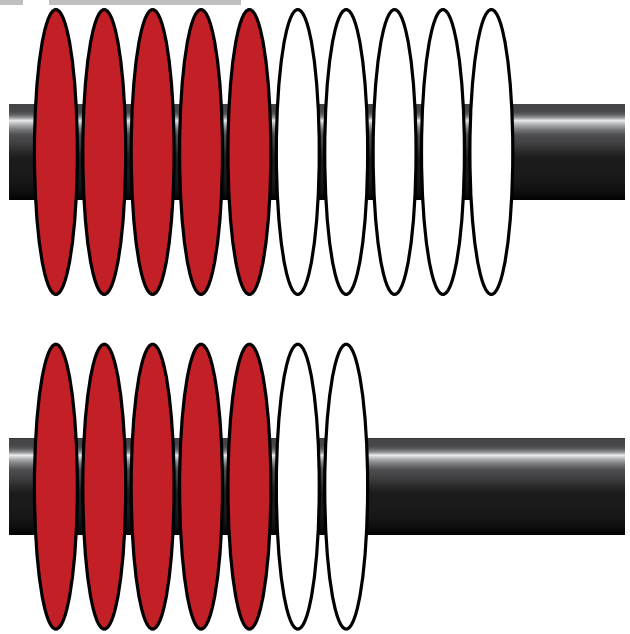


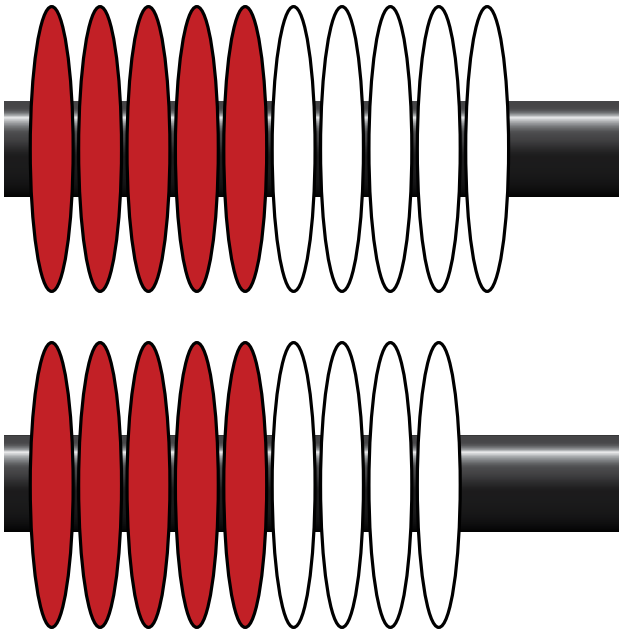


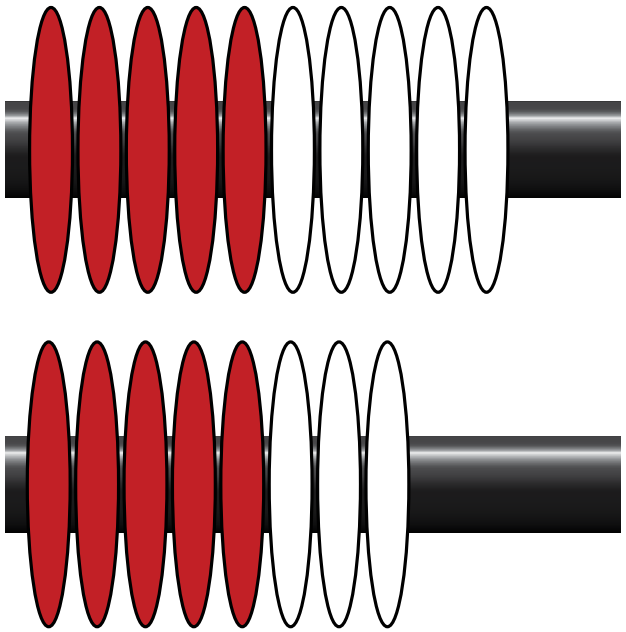


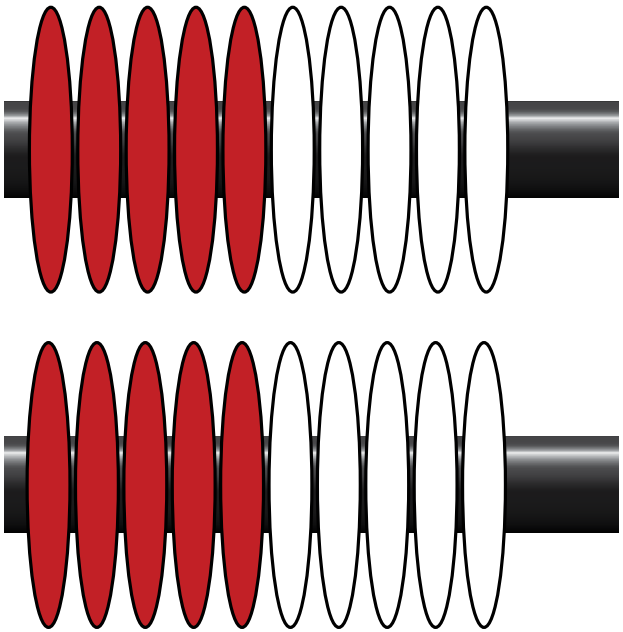


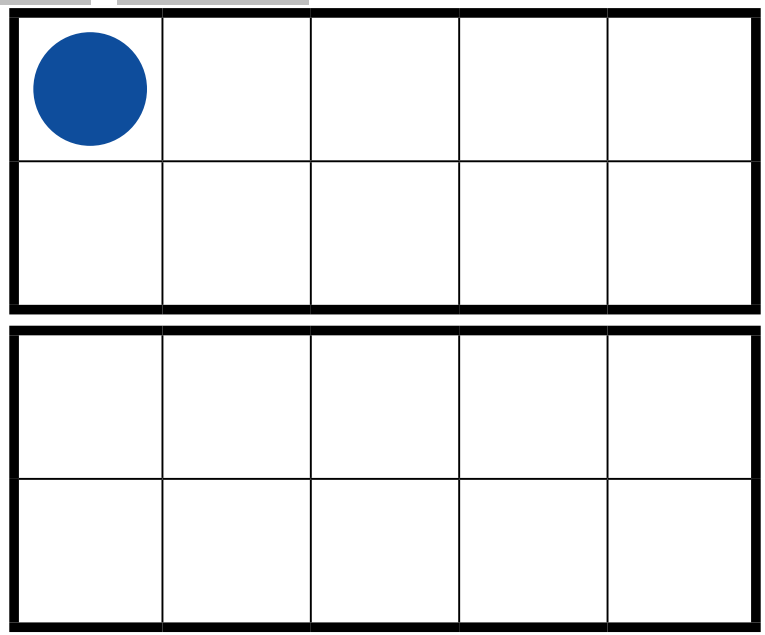


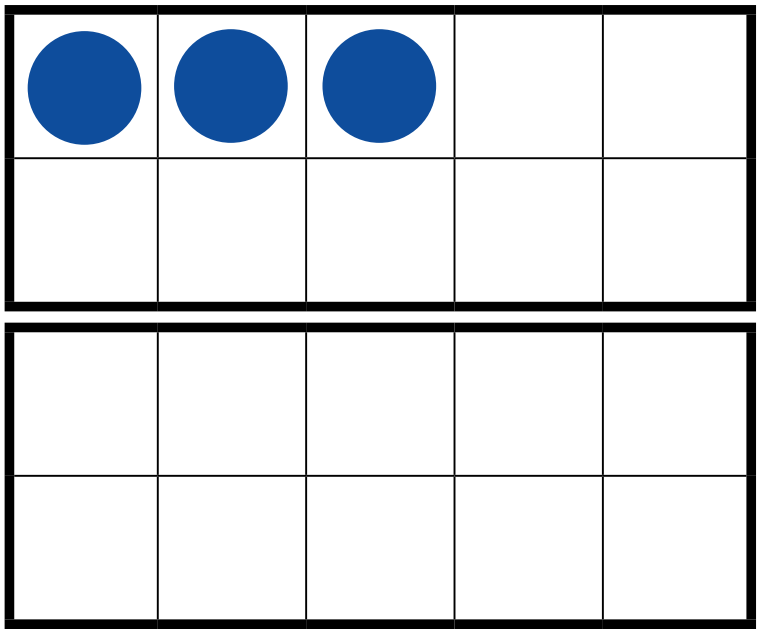


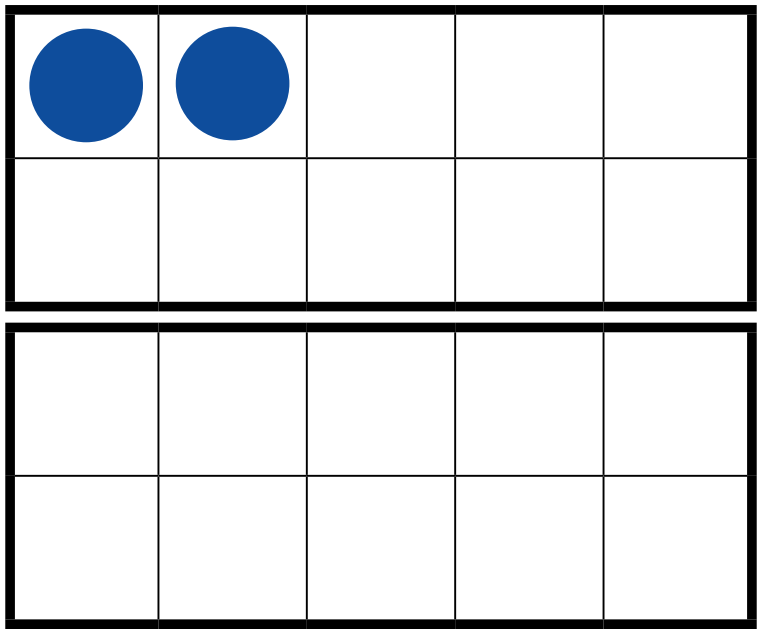


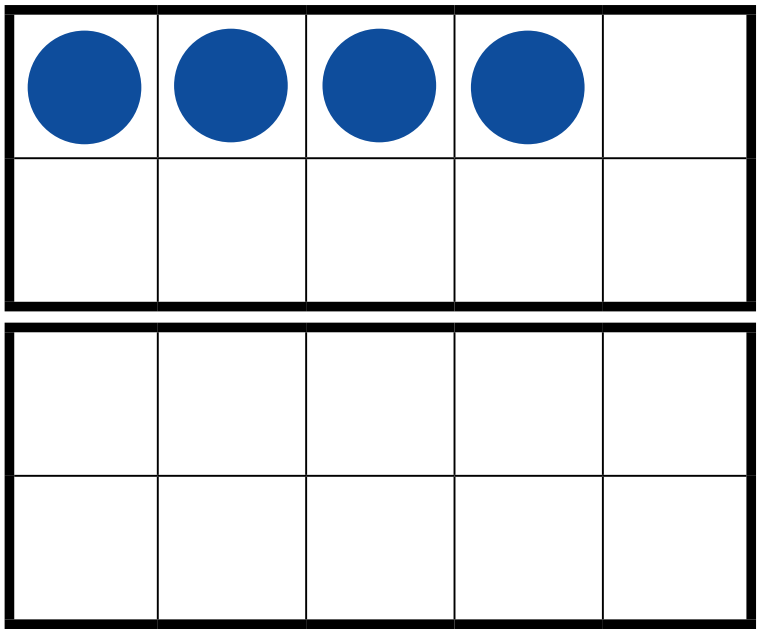


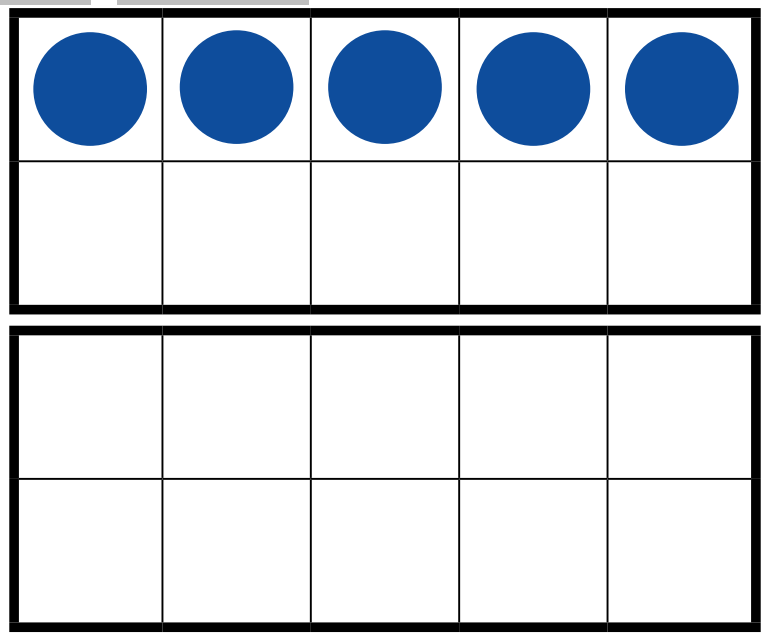


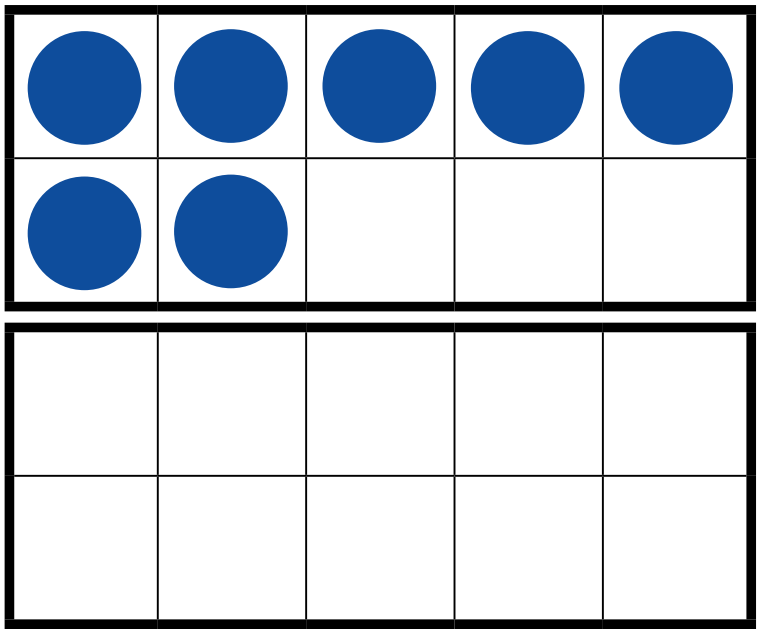


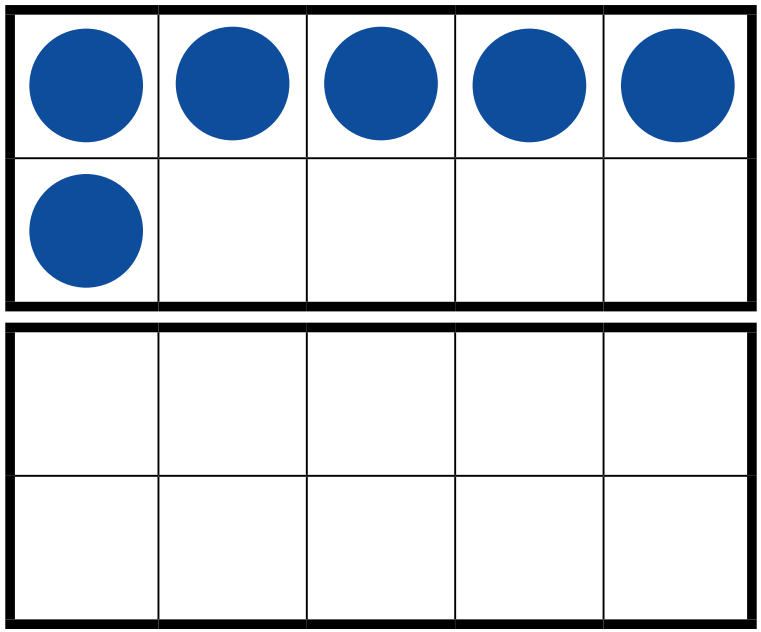


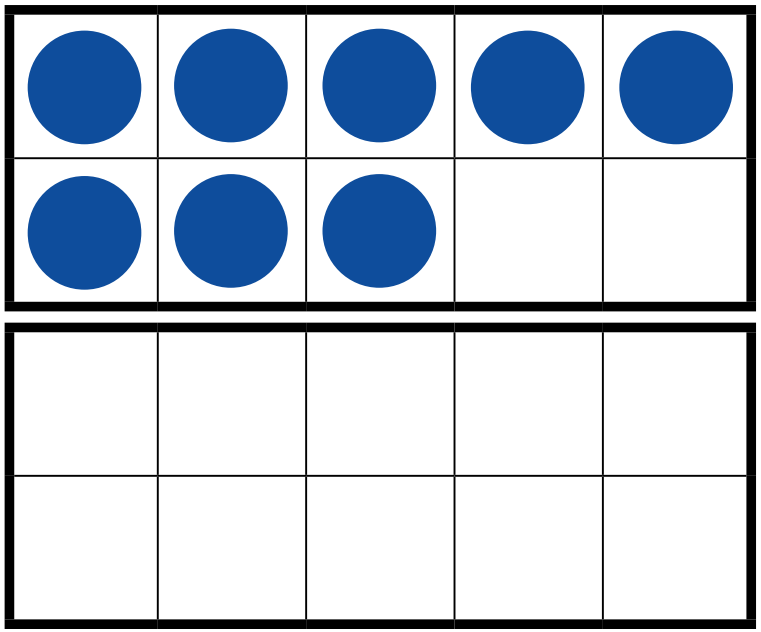


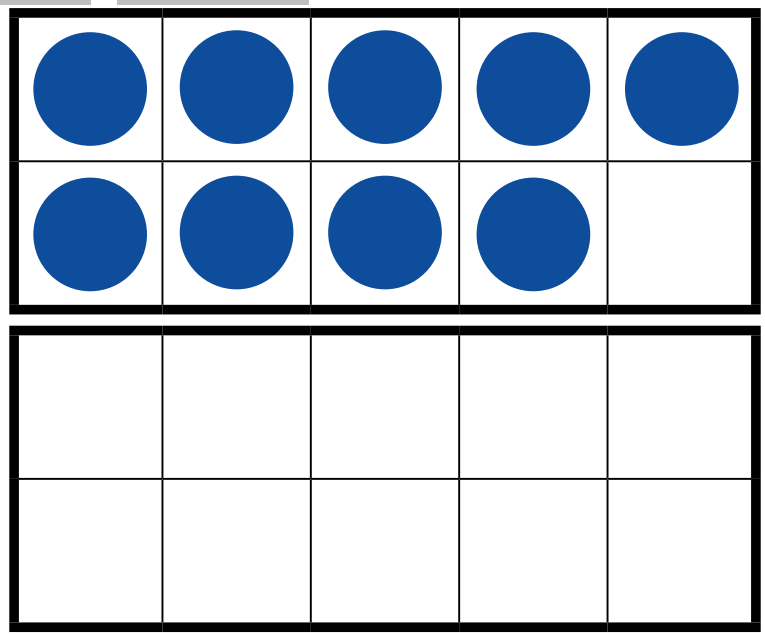


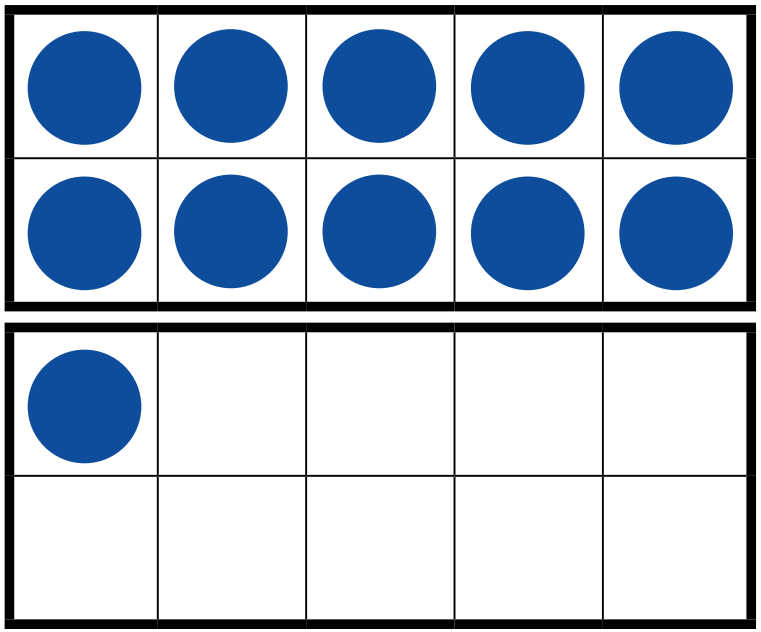


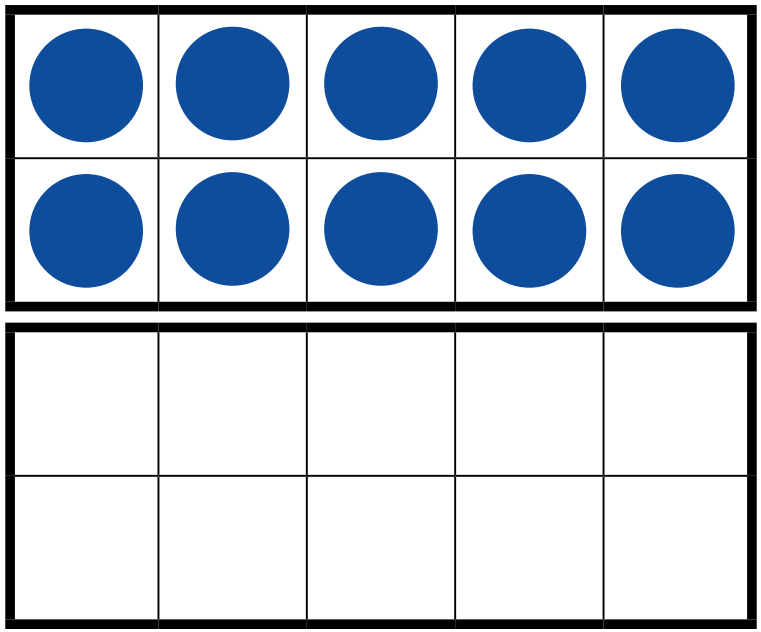


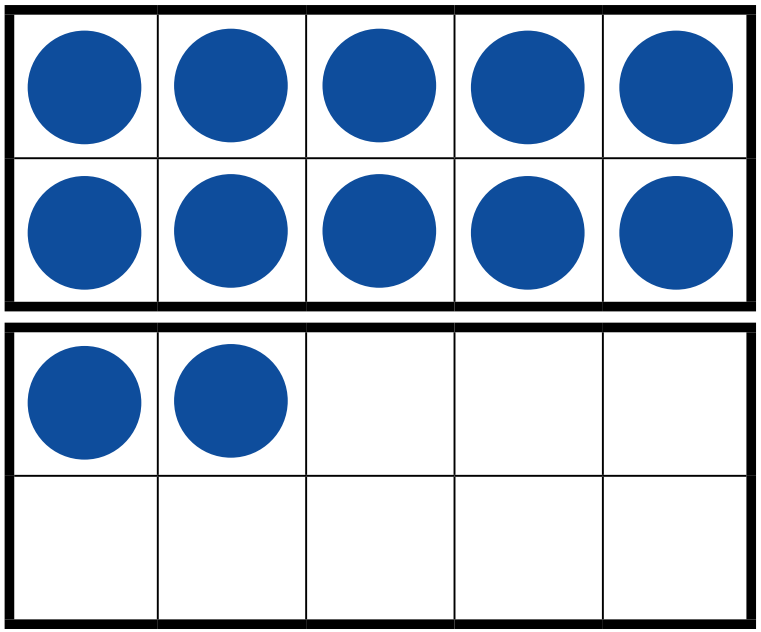


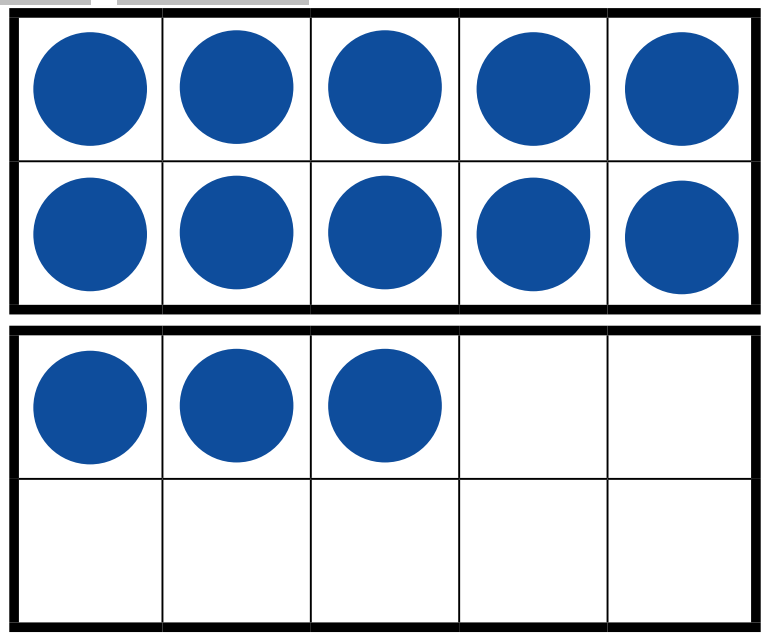


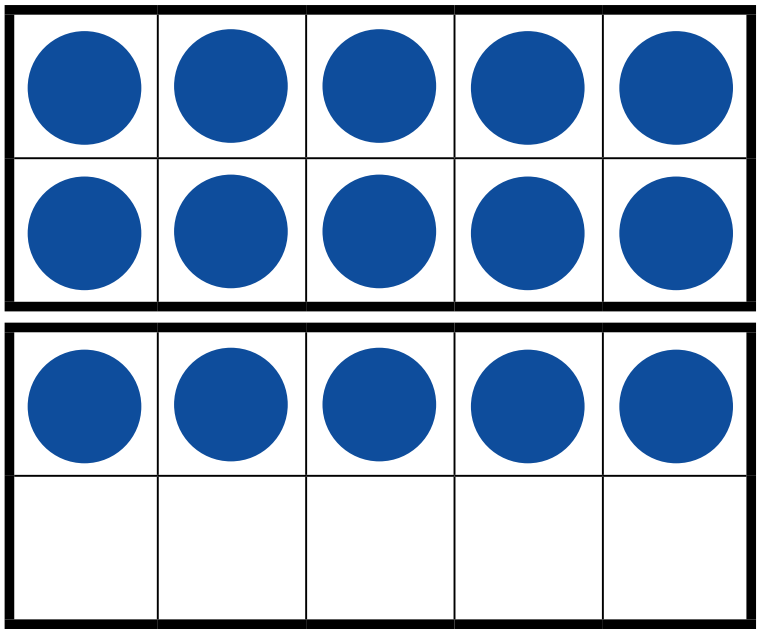


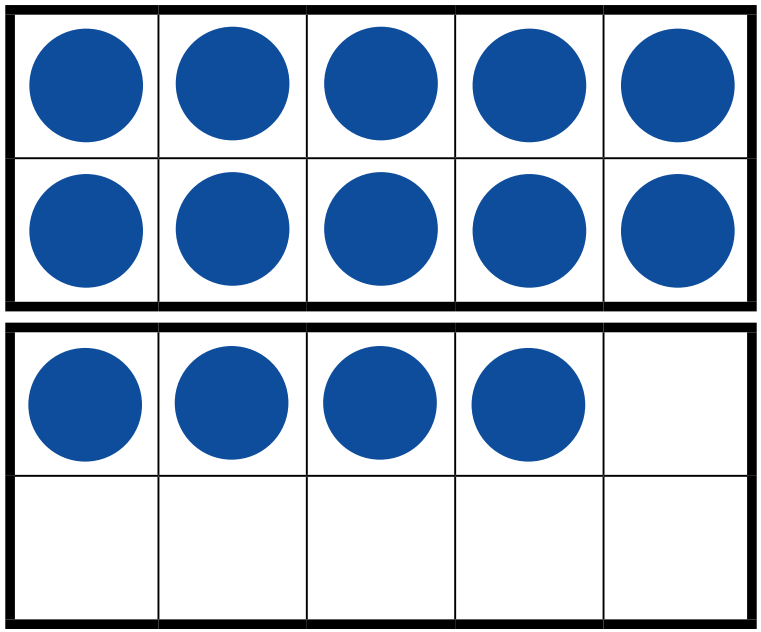


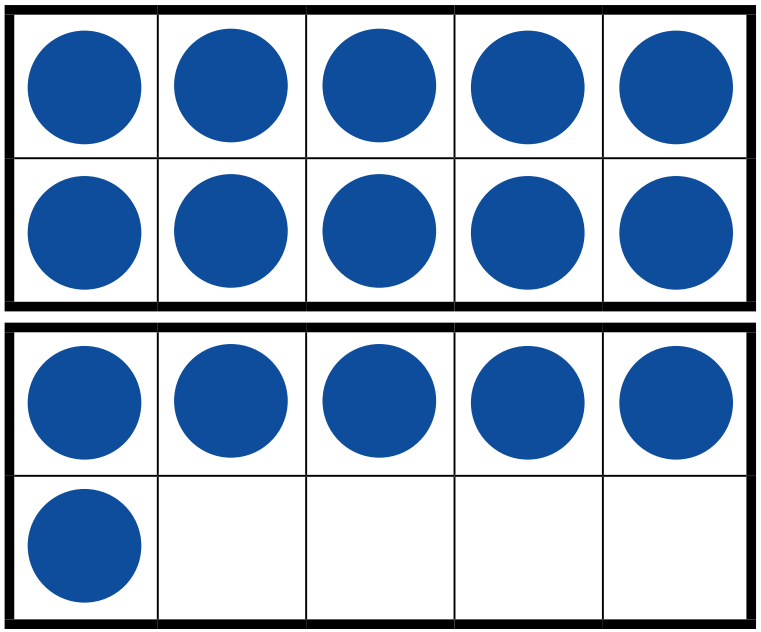


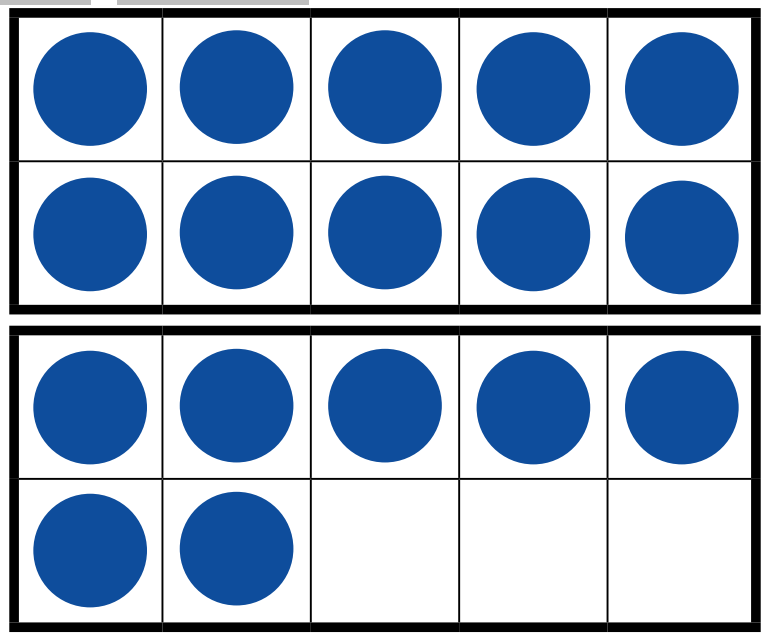


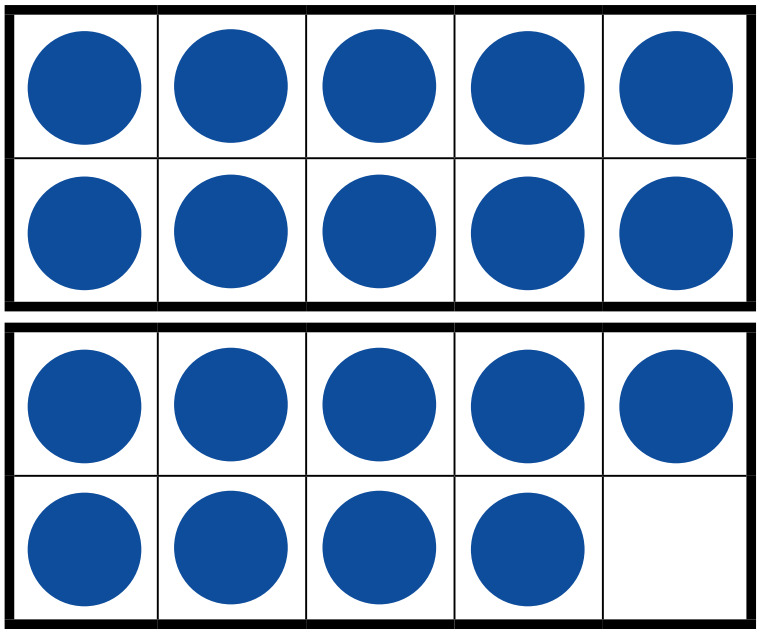


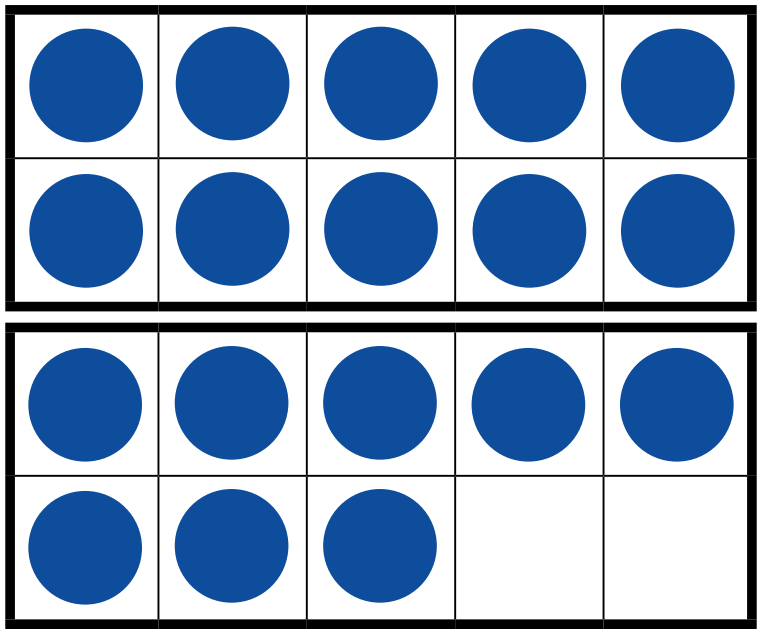


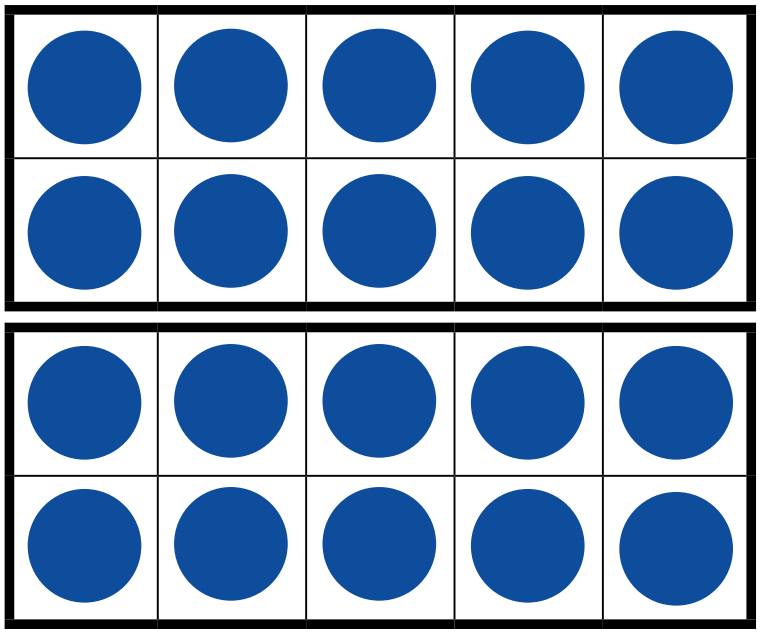




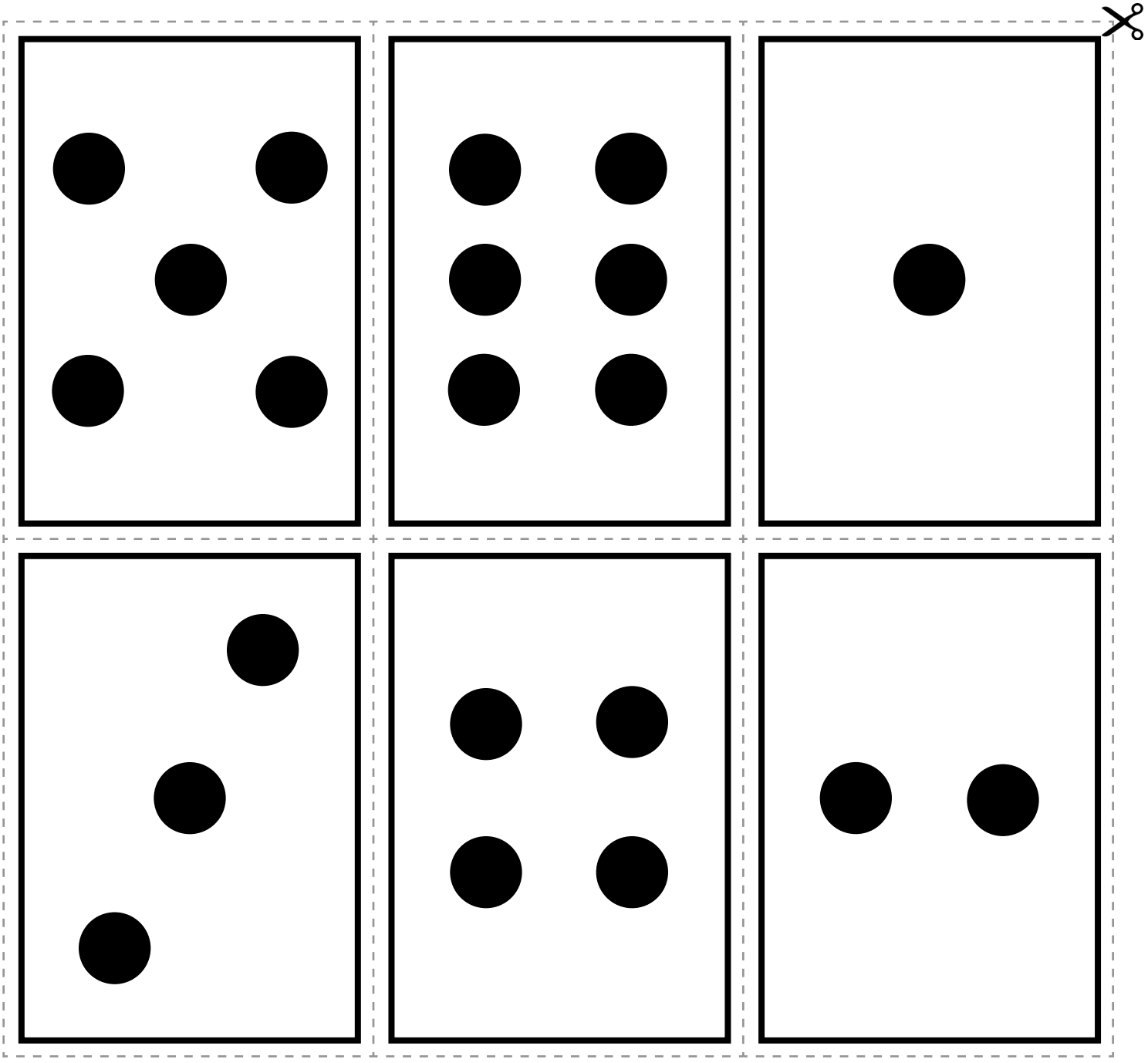




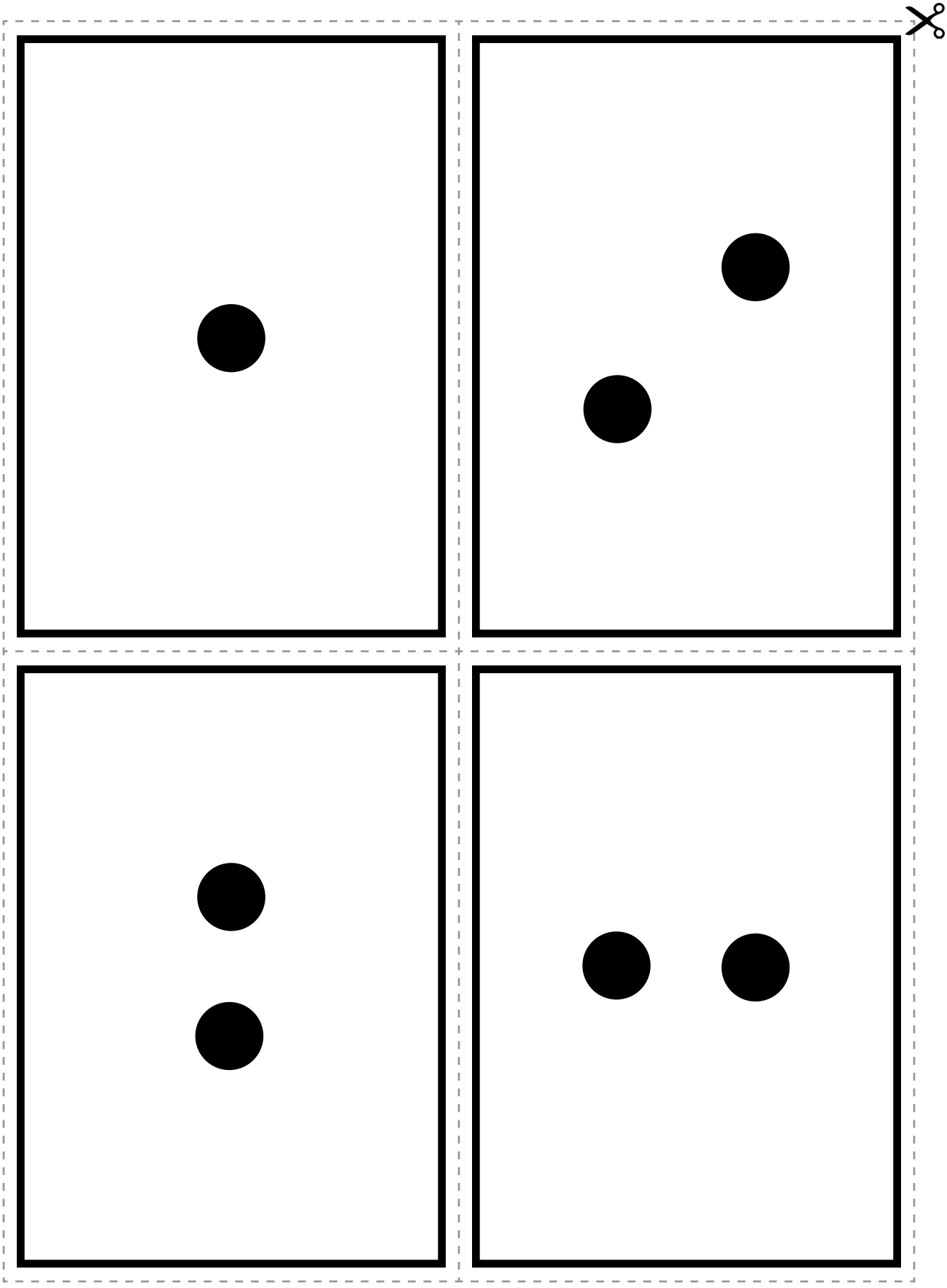




Subitizing Cards—Regular Dot Patterns (1—6)



Subitizing Cards—Regular and Irregular Dot Patterns (1—10)



Subitizing Cards—Regular and Irregular Dot Patterns (1—10)

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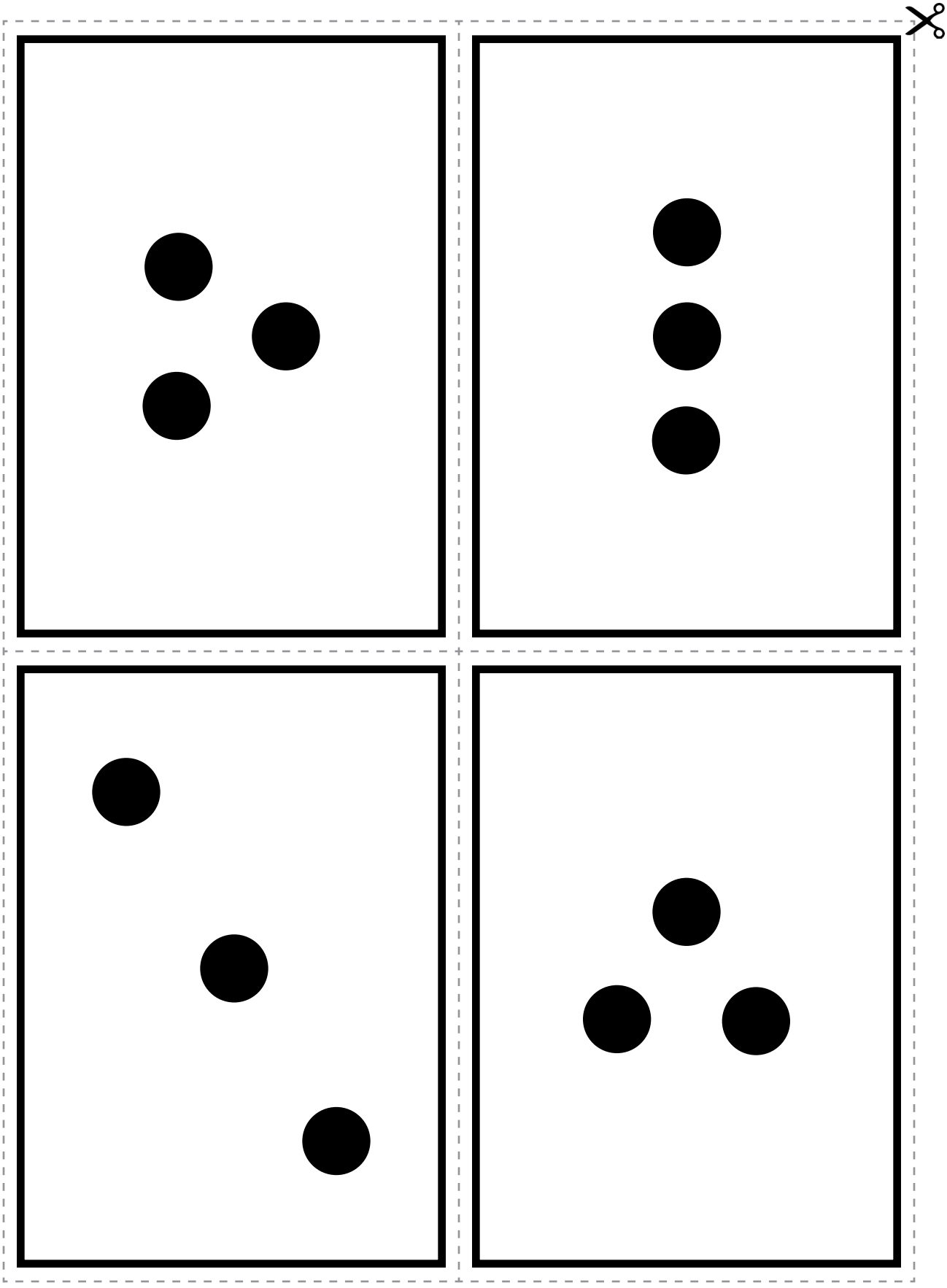

Subitizing Cards—Regular and Irregular Dot Patterns (1—10)

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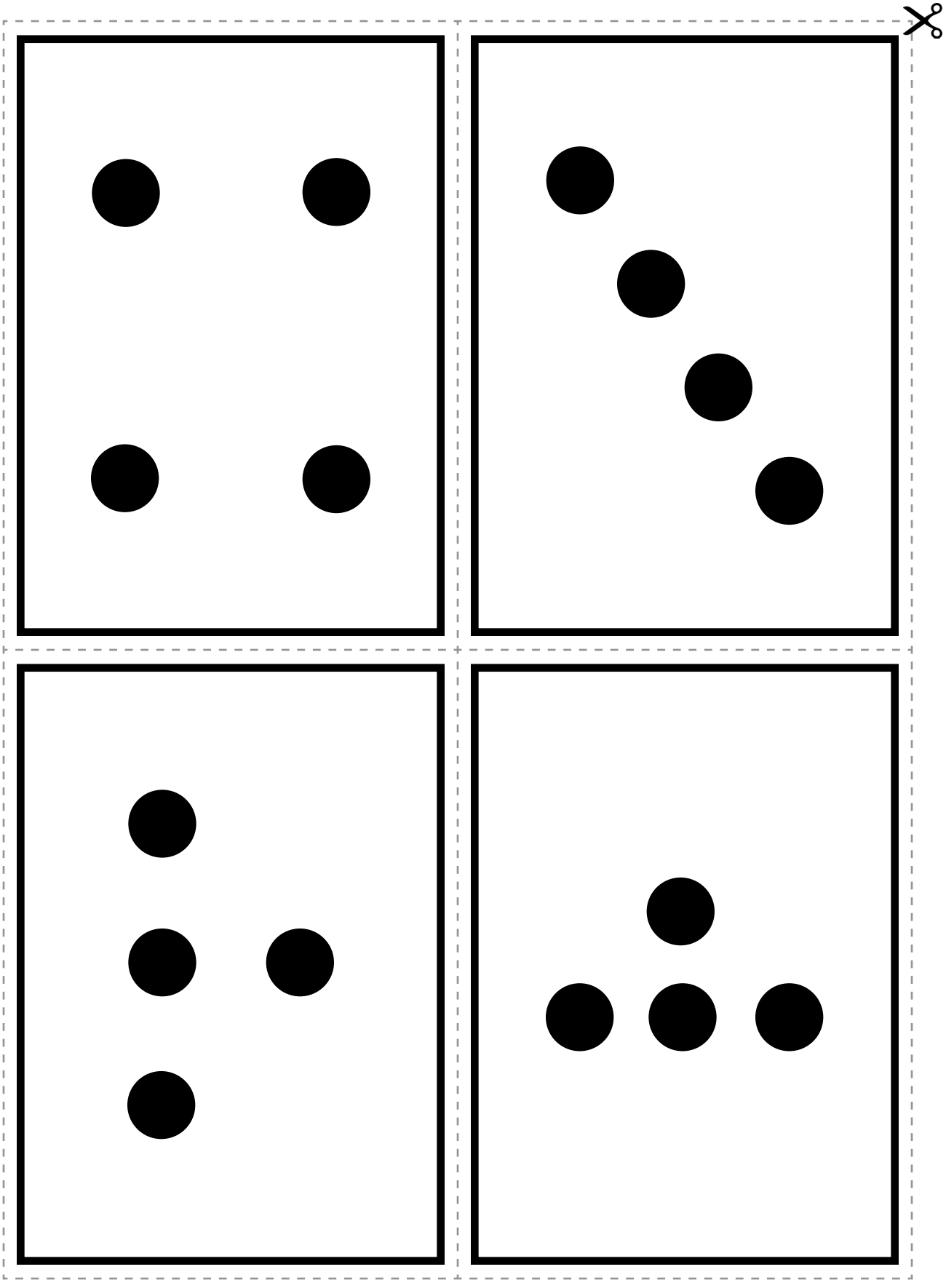

Subitizing Cards—Regular and Irregular Dot Patterns (1—10)

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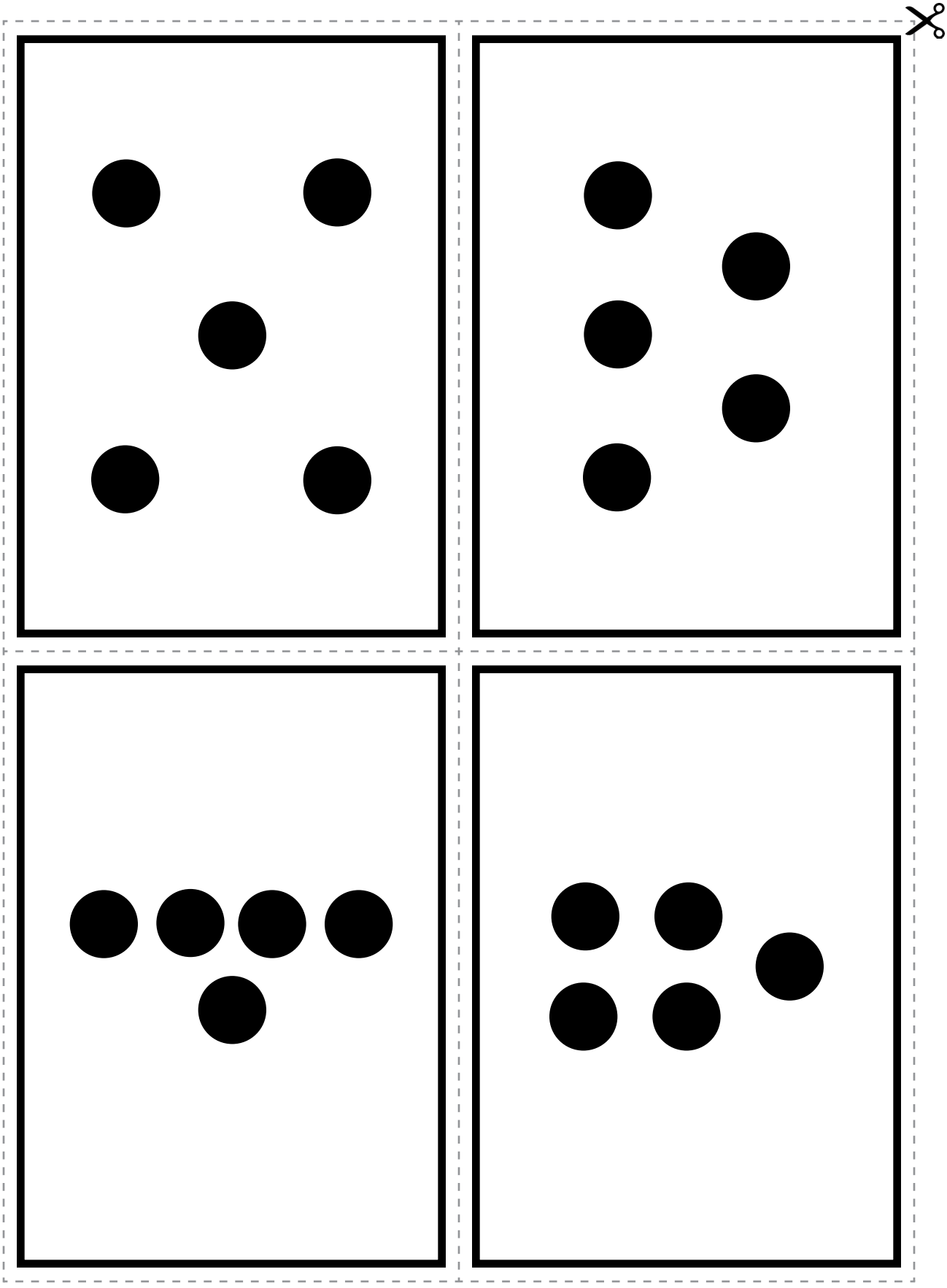

Subitizing Cards—Regular and Irregular Dot Patterns (1—10)

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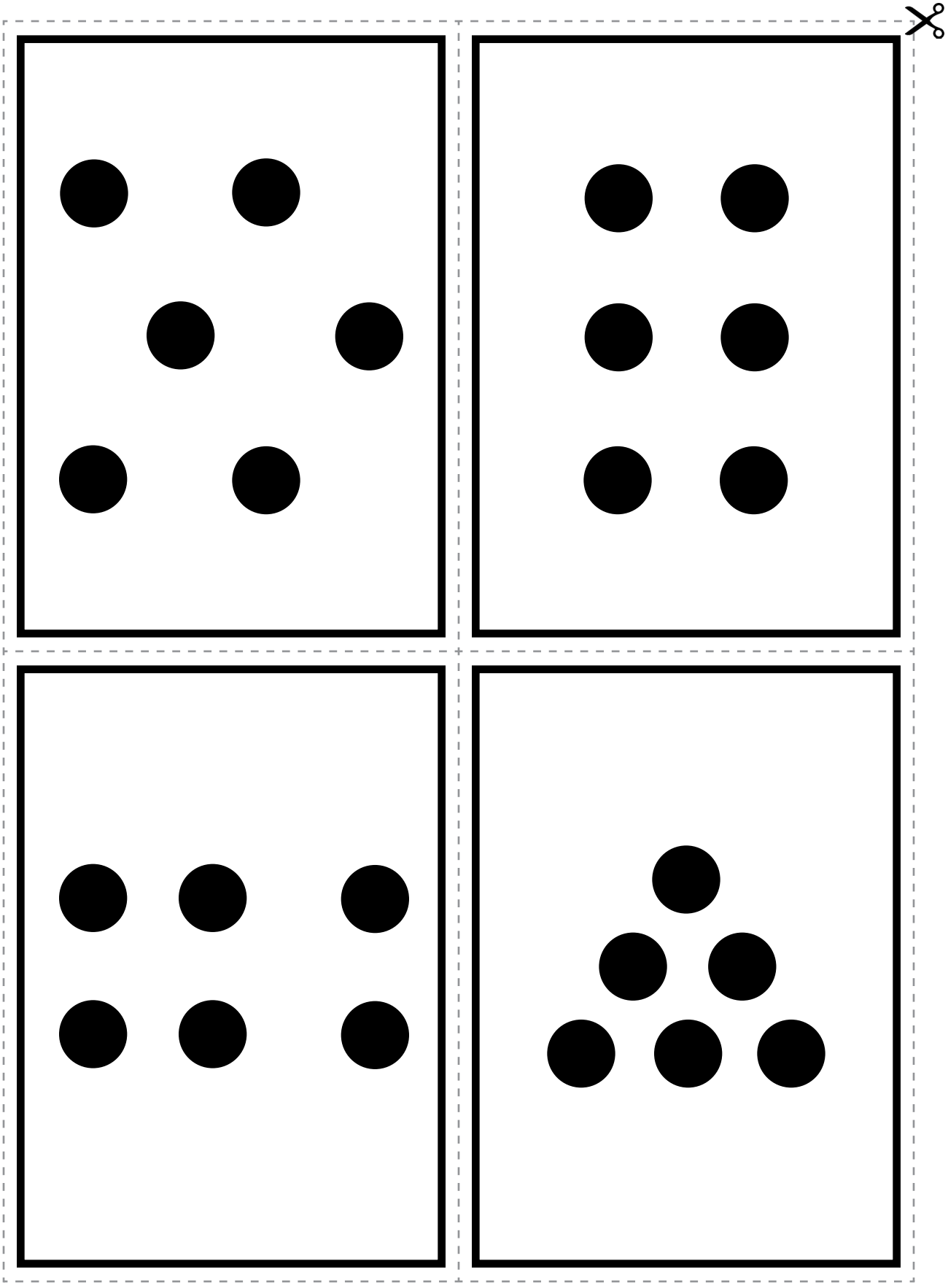
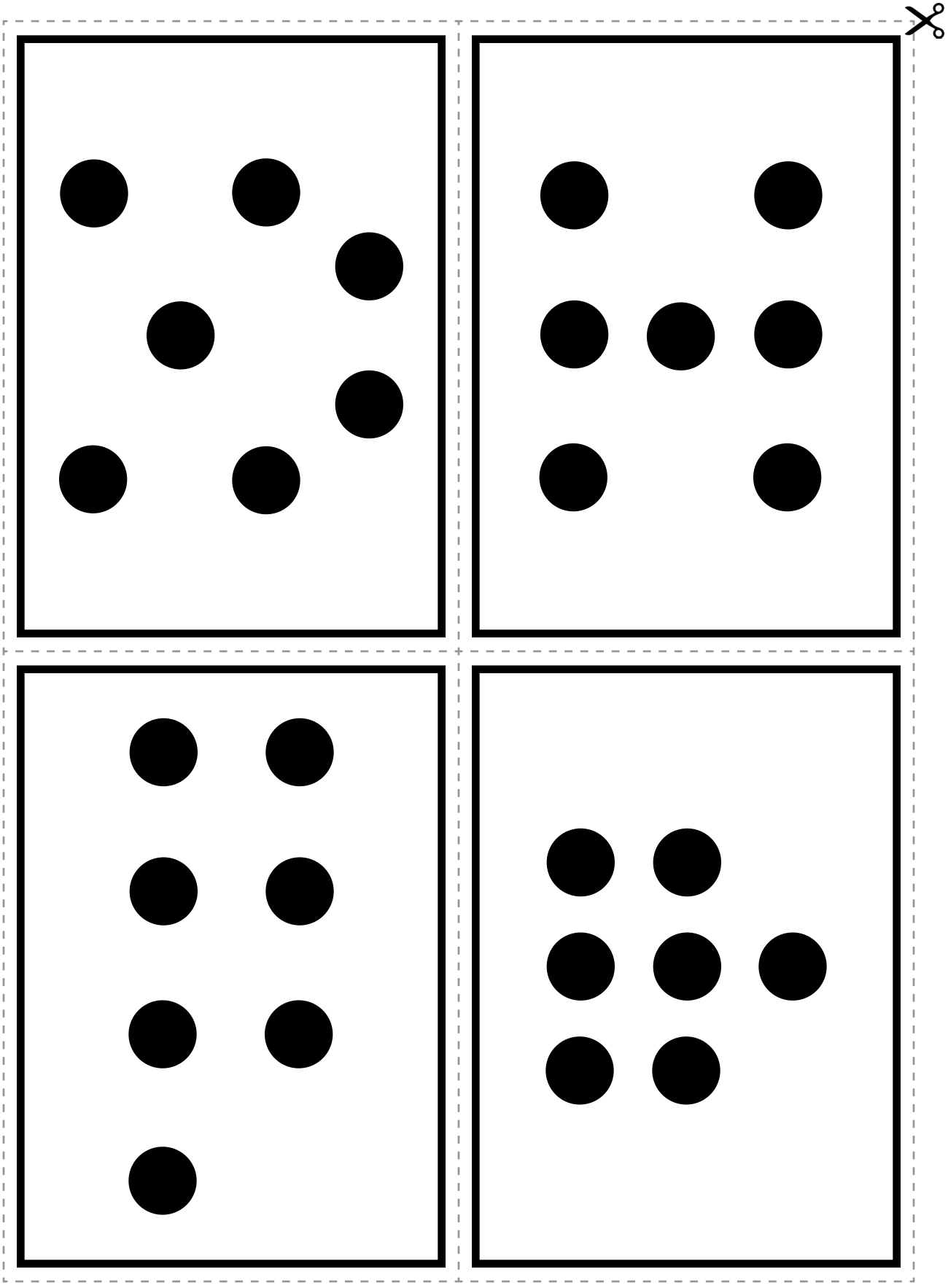


Subitizing Cards—Regular and Irregular Dot Patterns (1—10)

(continued)



Subitizing Cards—Regular and Irregular Dot Patterns (1—10)

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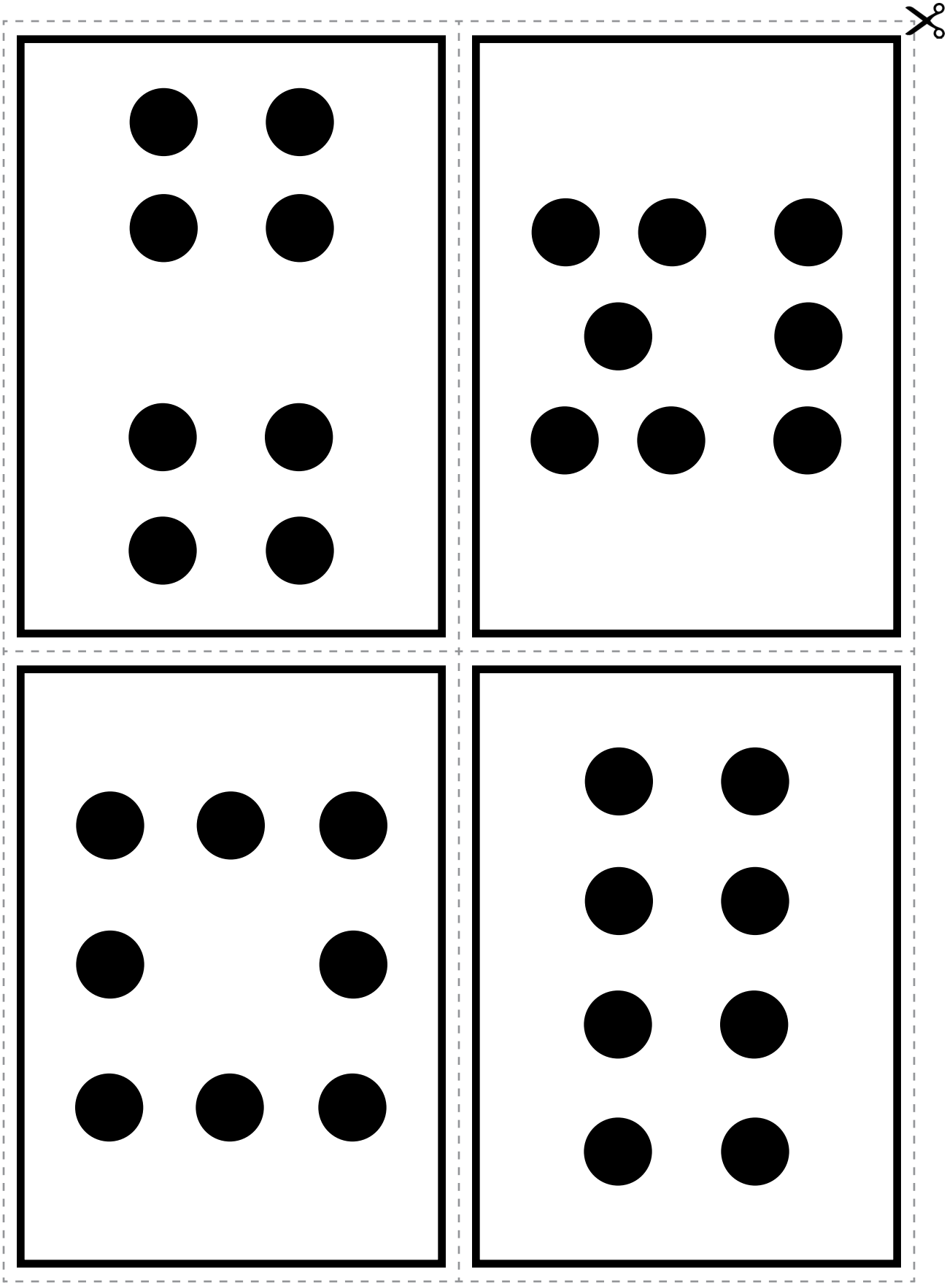

Subitizing Cards—Regular and Irregular Dot Patterns (1—10)

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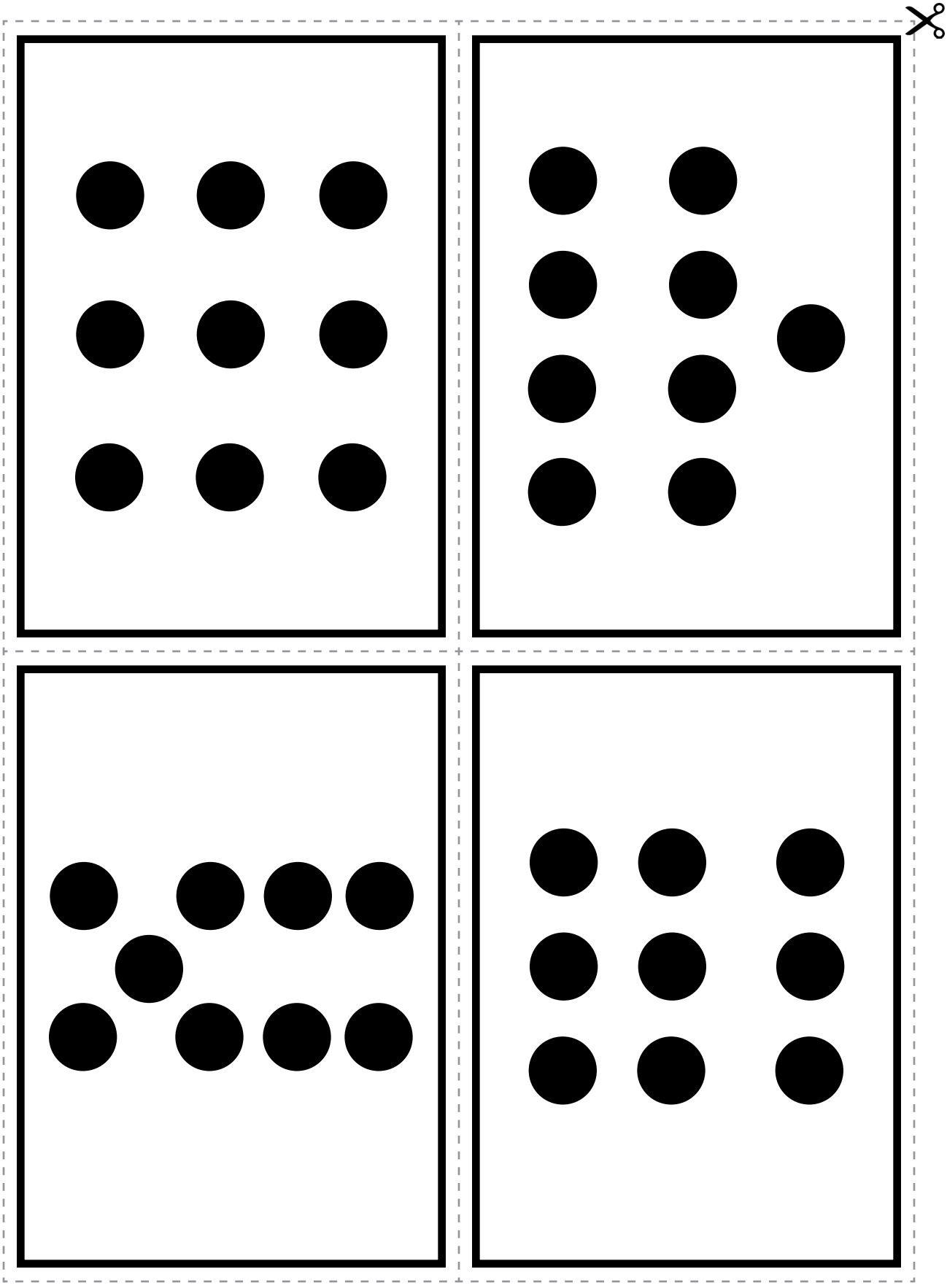

Subitizing Cards—Regular and Irregular Dot Patterns (1—10)

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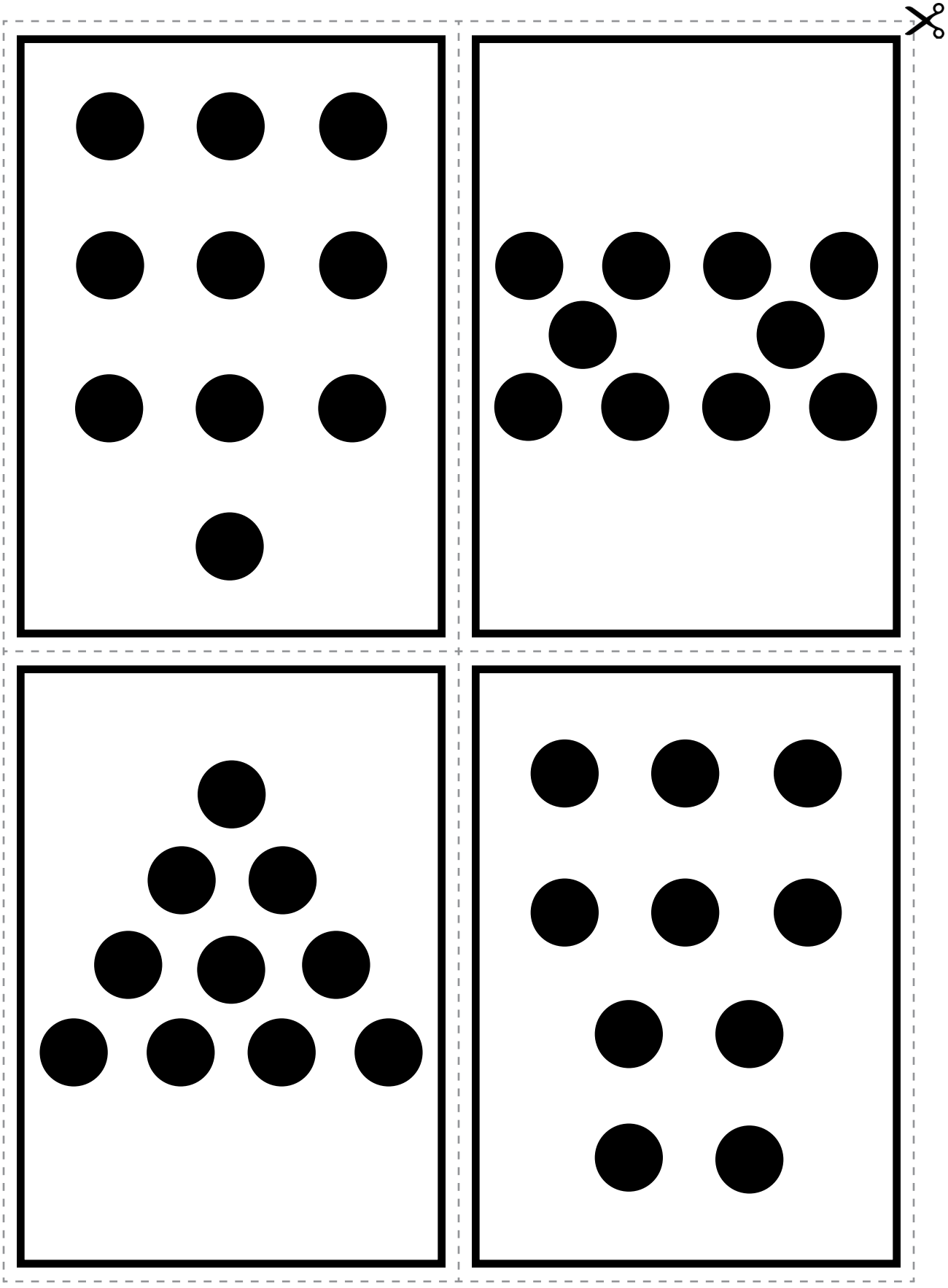
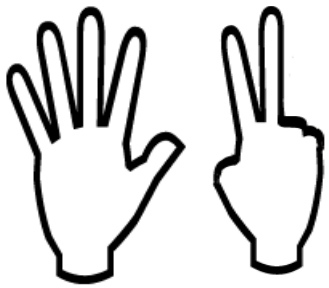
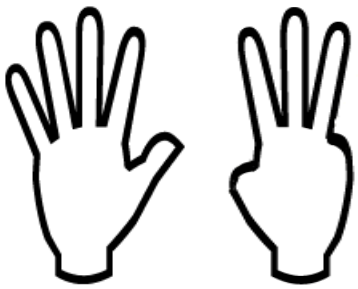
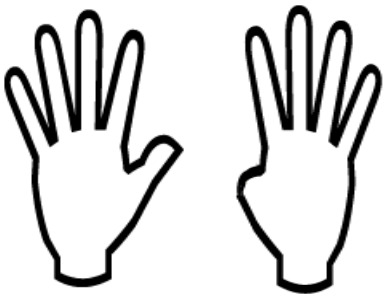
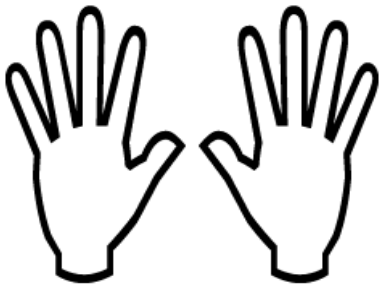


Subitizing Cards—Finger Patterns

Subitizing Cards—Finger Patterns

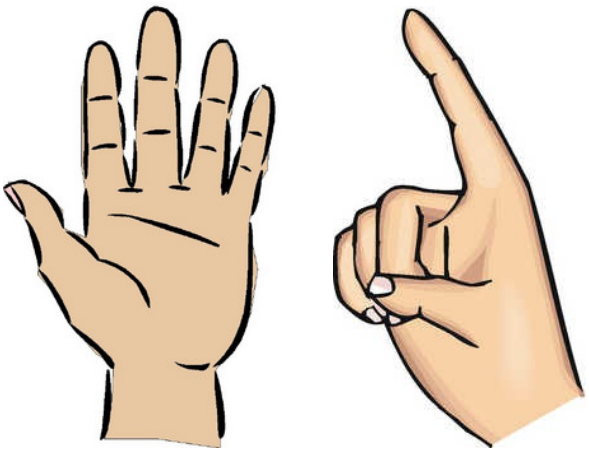
	
	

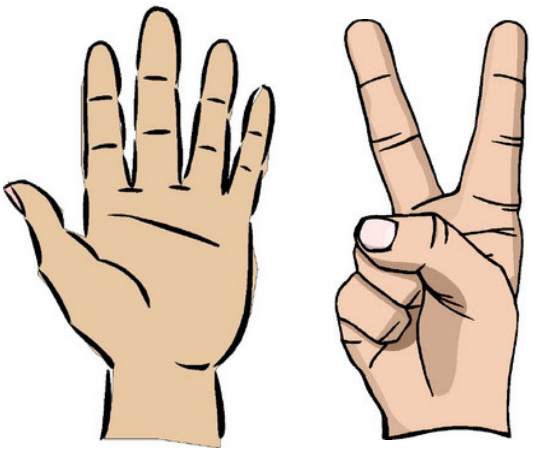
Subitizing Cards—Finger Patterns

(continued)

Subitizing Cards—Finger Patterns

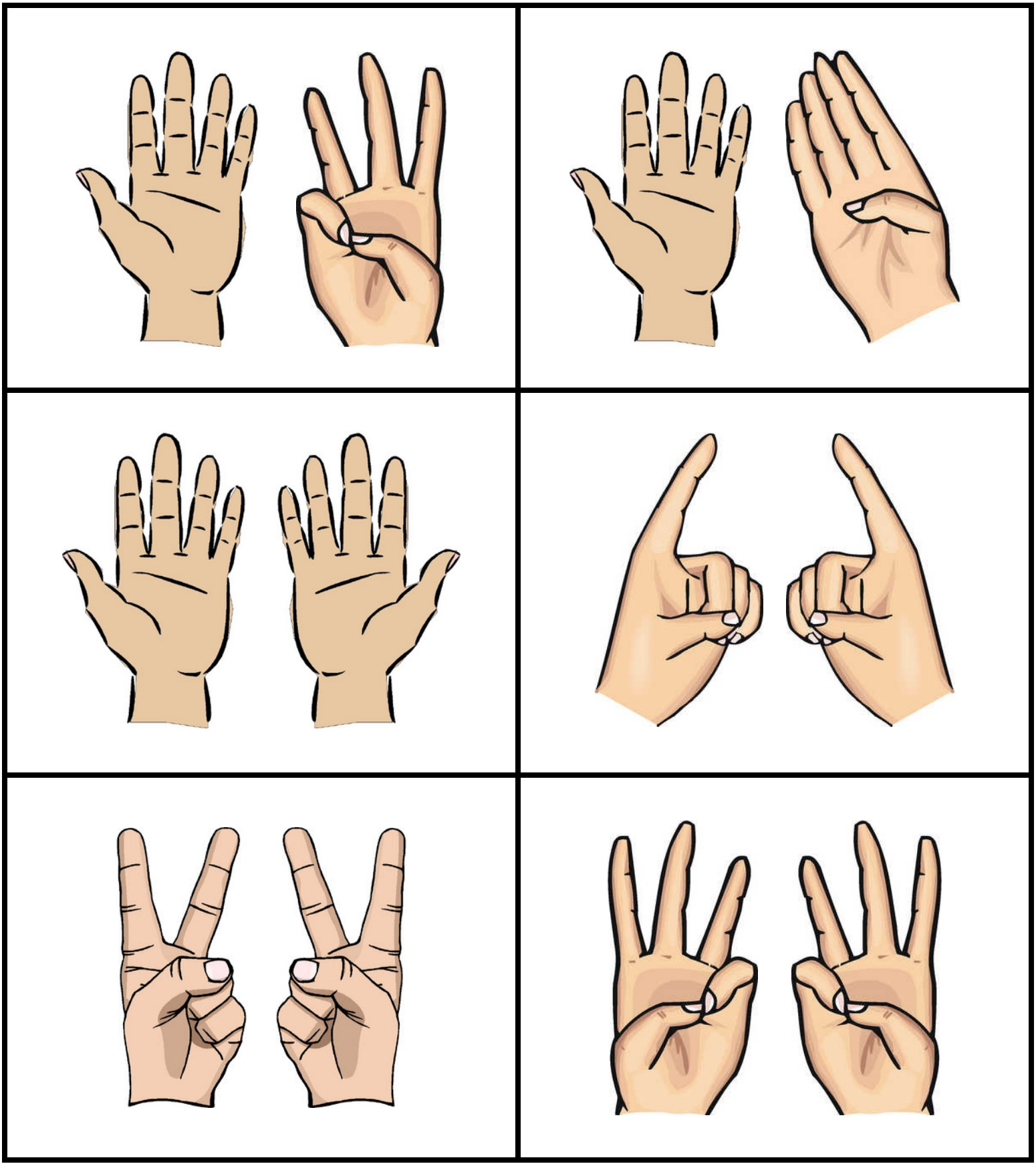
(continued)





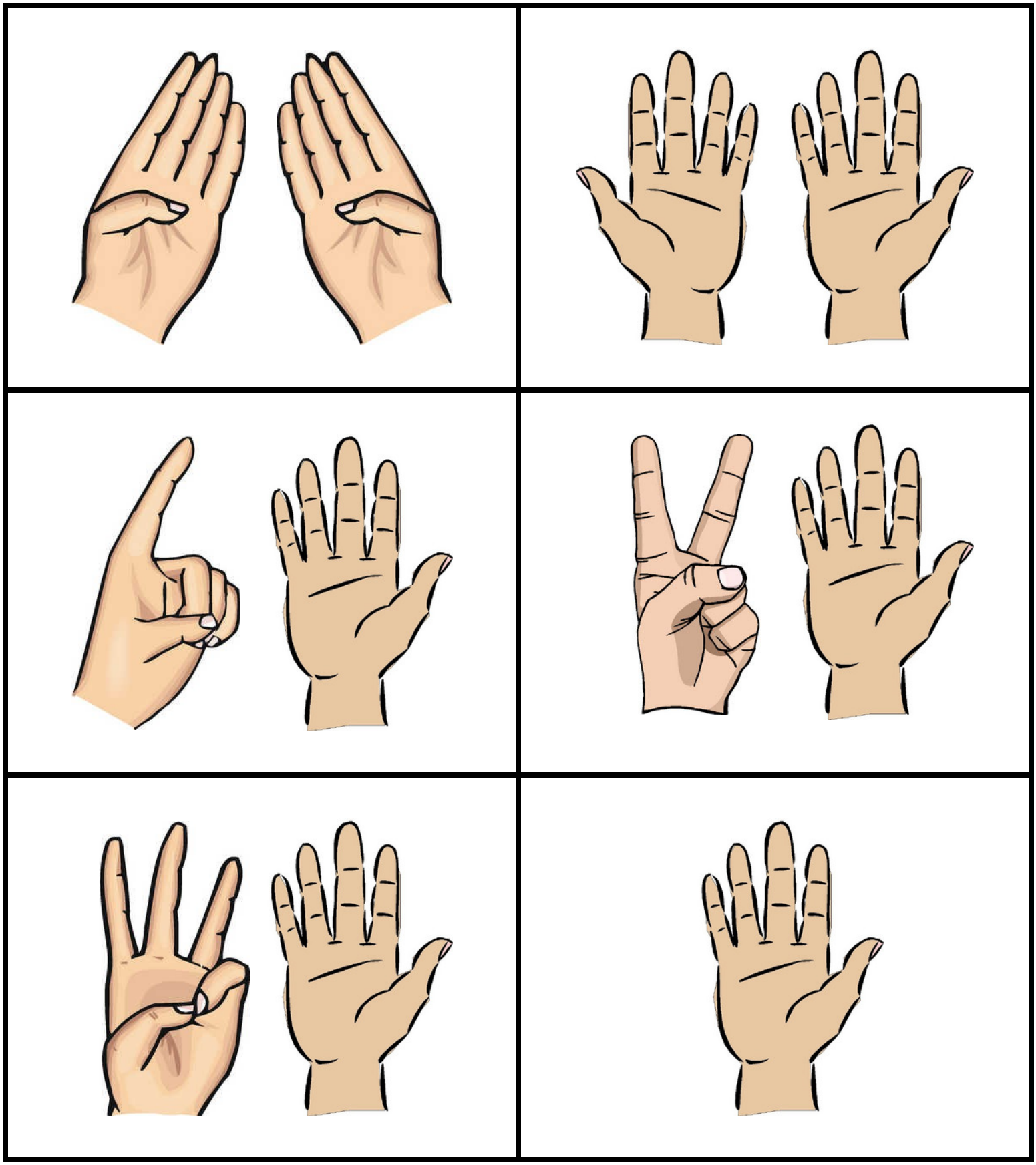
Subitizing Cards—Finger Patterns

(continued)

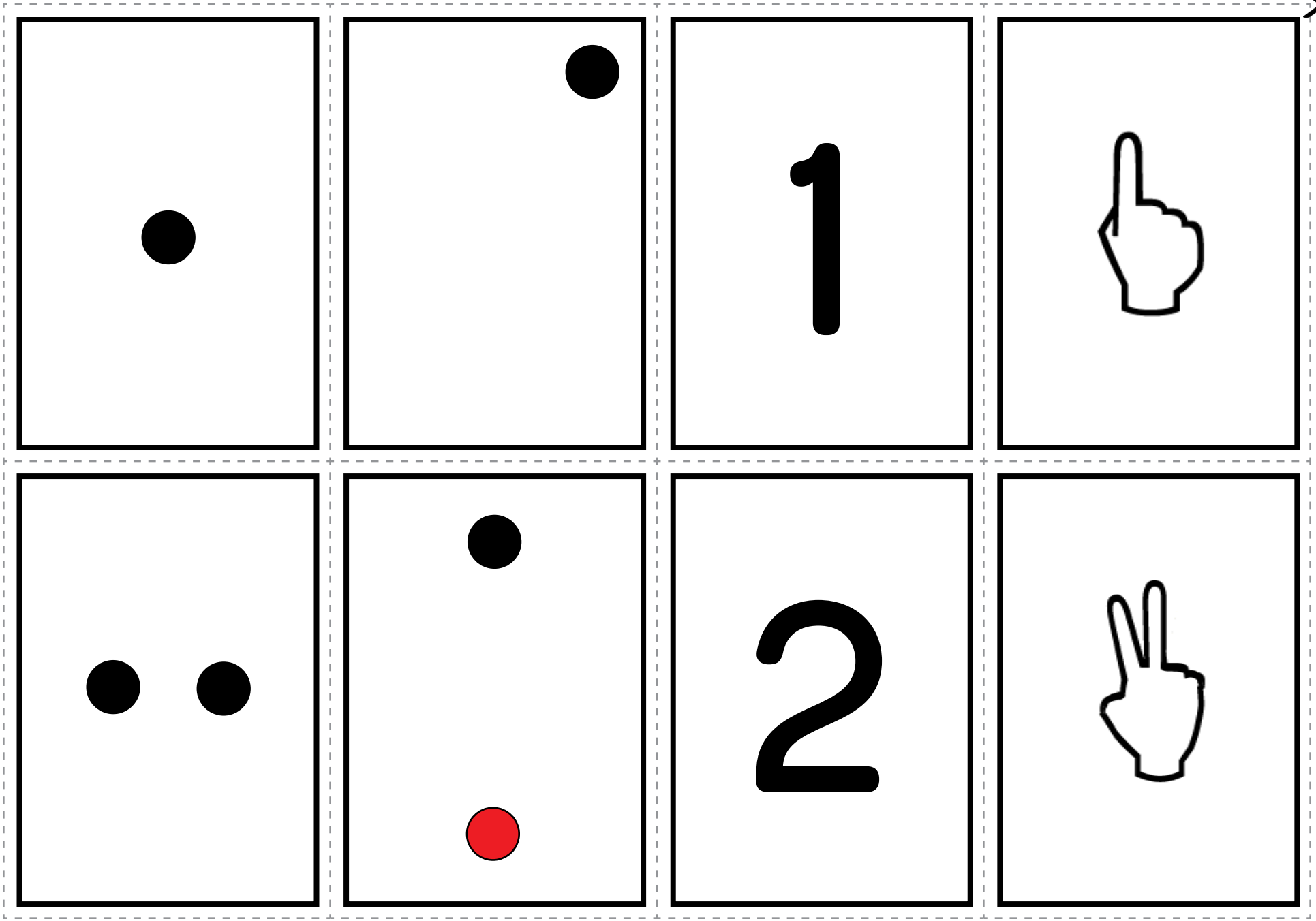


Subitizing Cards—Finger Patterns

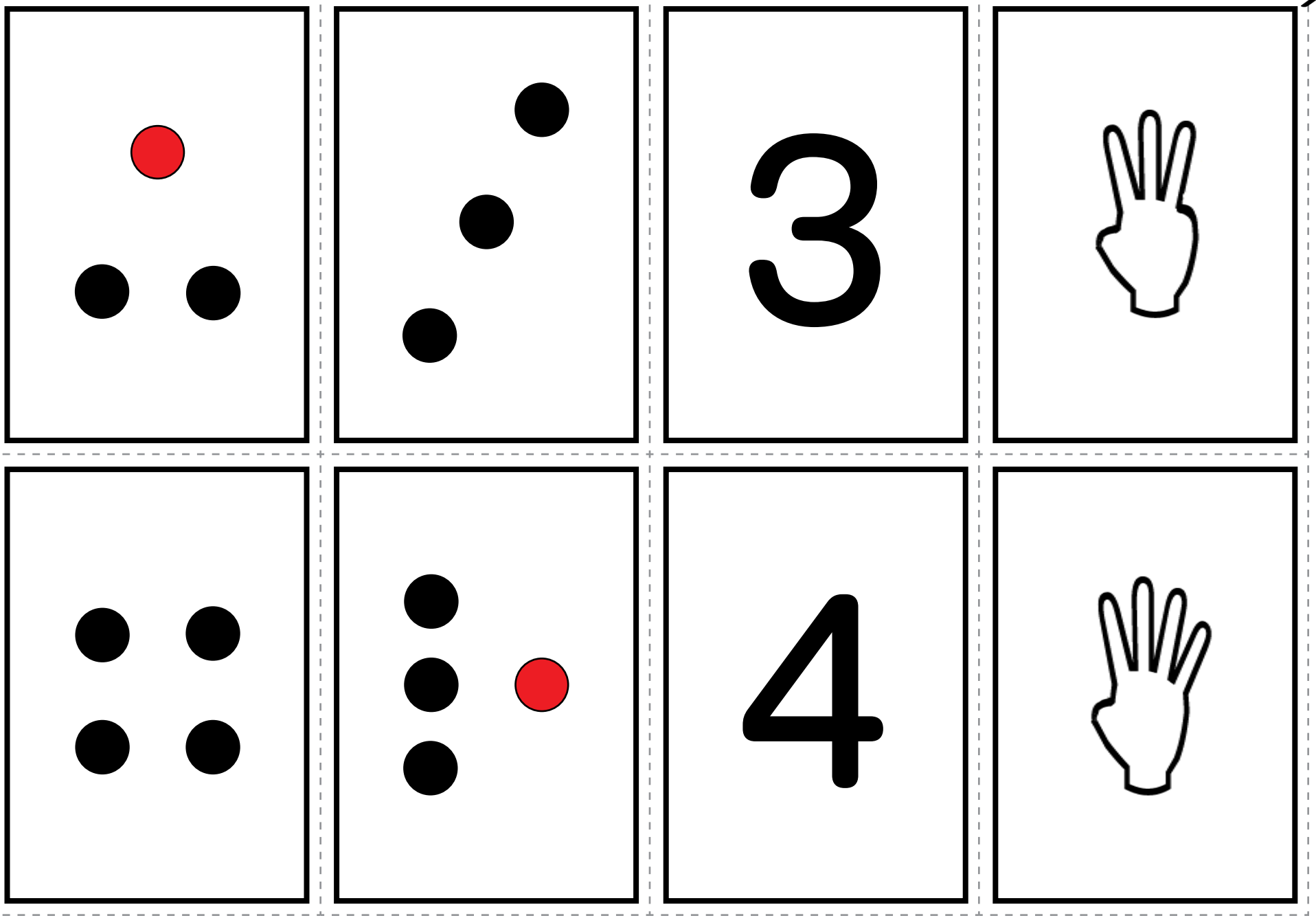
(continued)



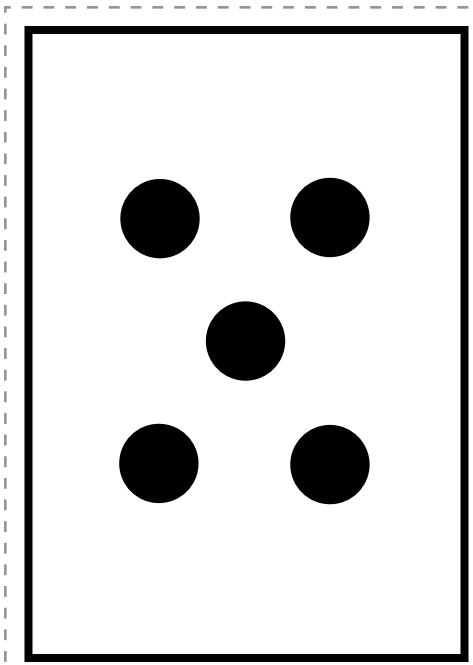
Subitizing Cards—Matching (1 —10)

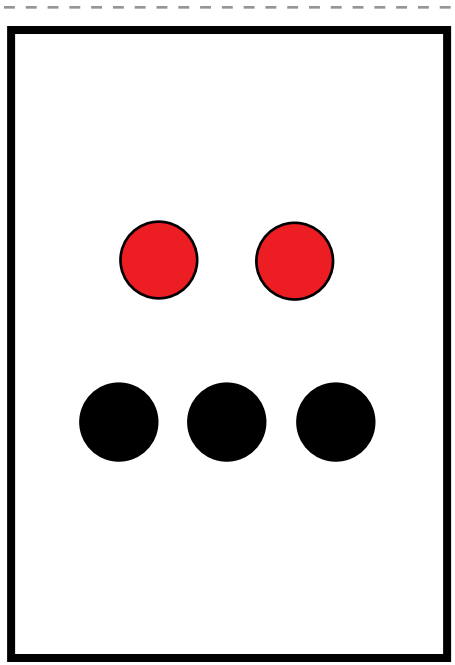


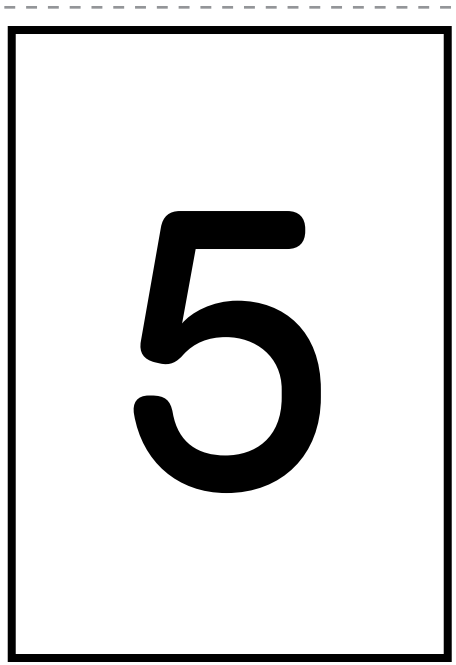
Subitizing Cards—Matching (1 —10)
(continued)

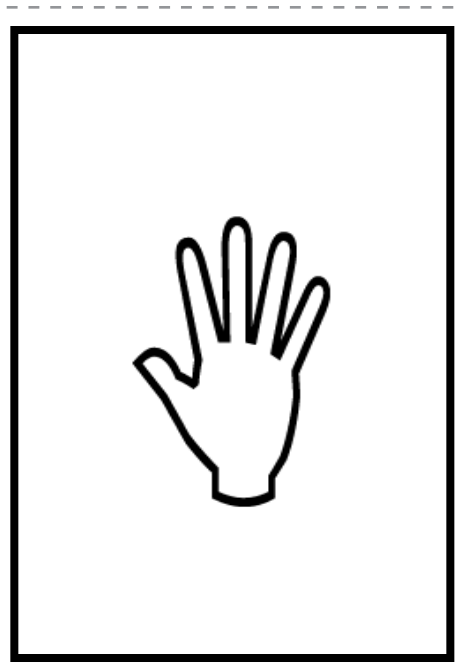


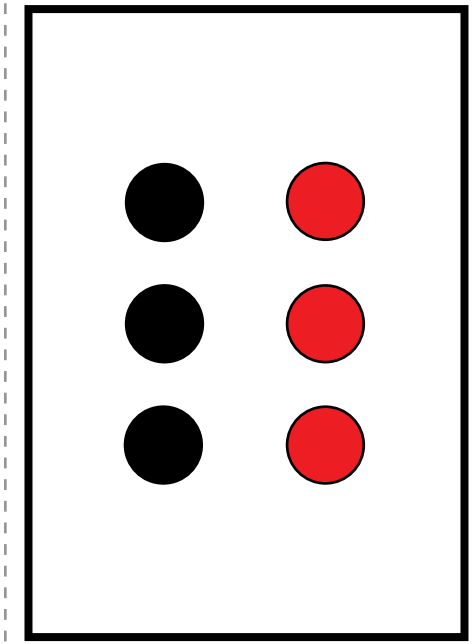
Subitizing Cards—Matching (1 —10)
(continued)

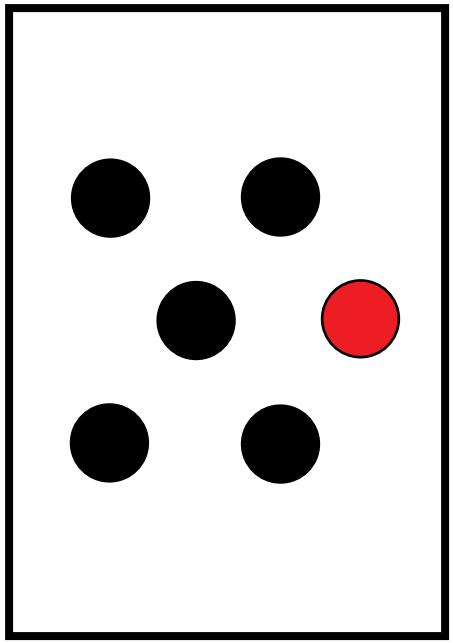


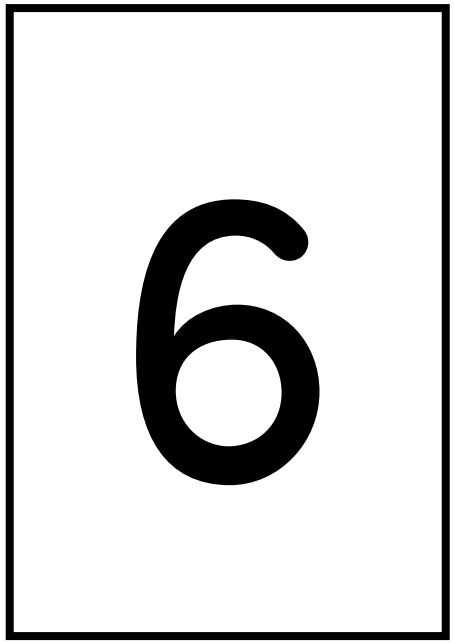


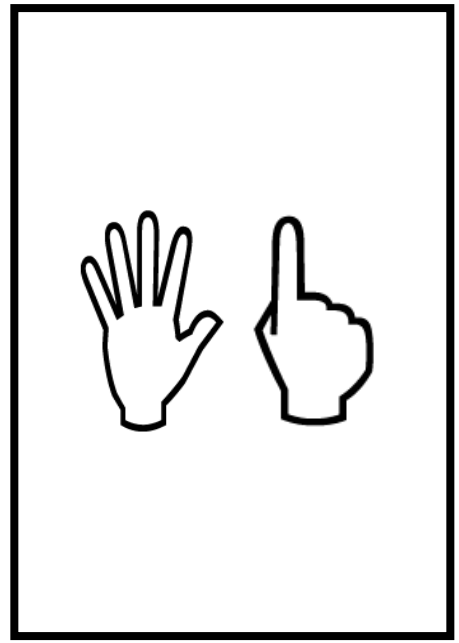




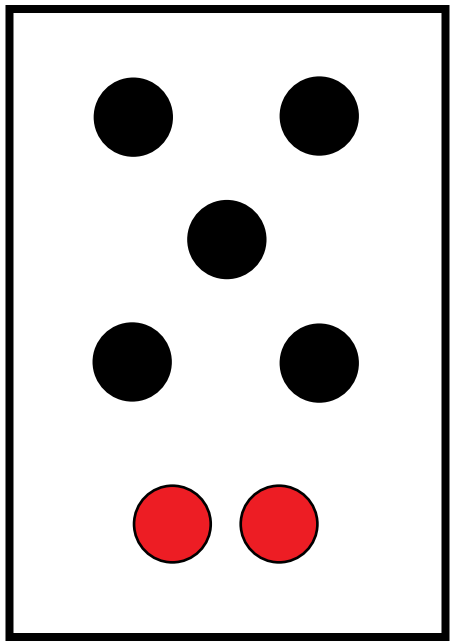


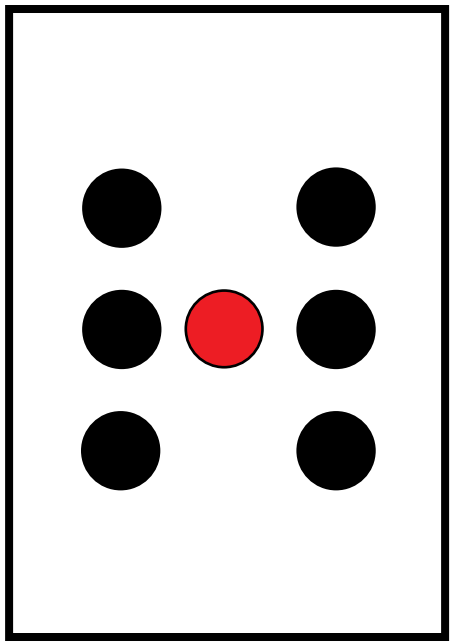






Subitizing Cards—Matching (1 —10)
(continued)





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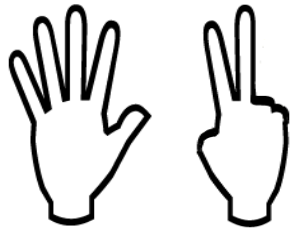

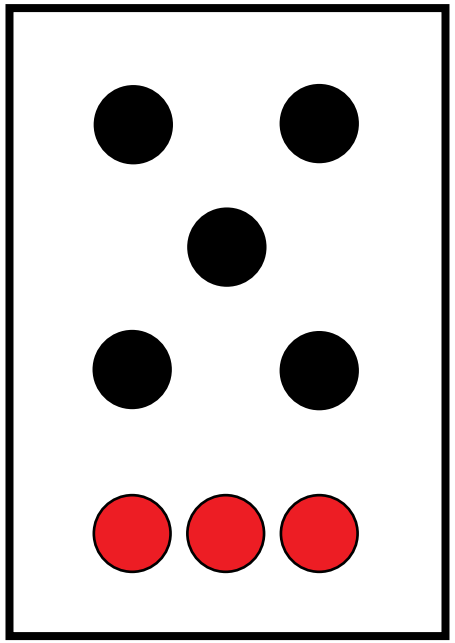

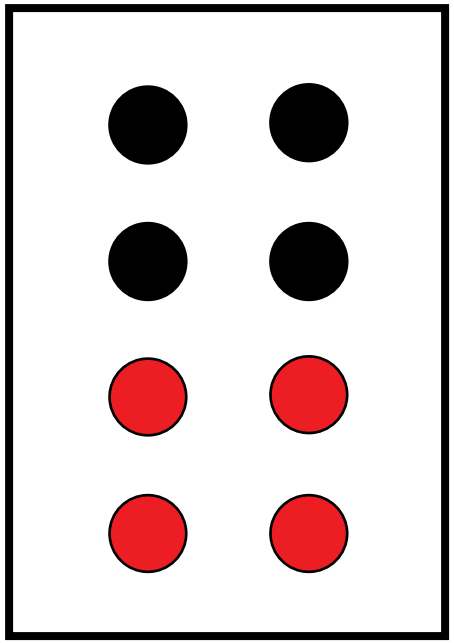

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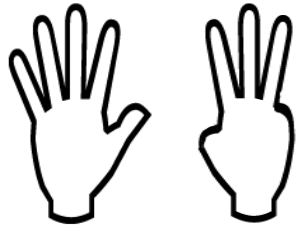

Subitizing Cards—Matching (1 —10)
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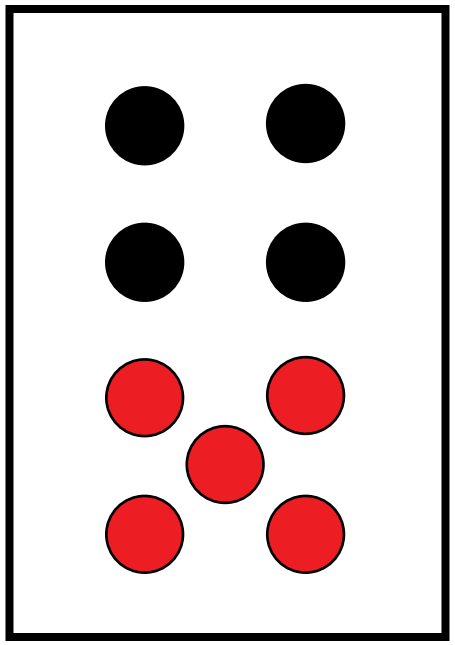
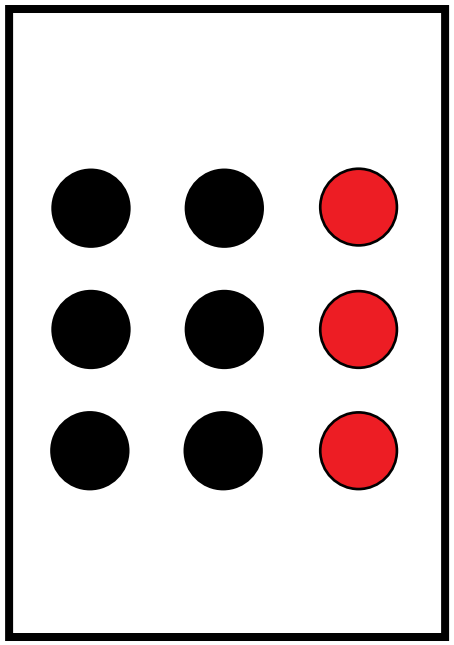
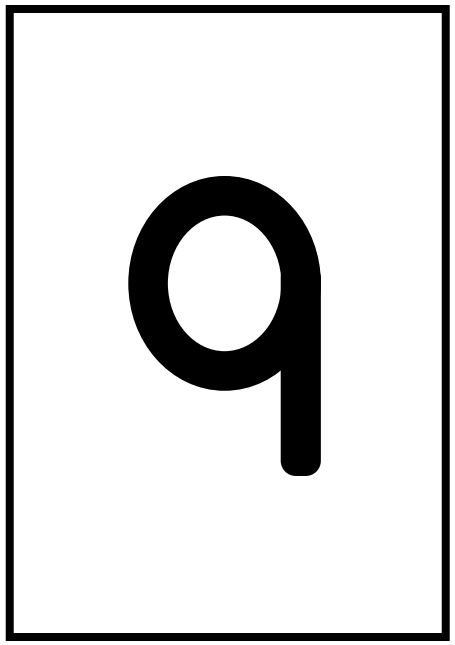
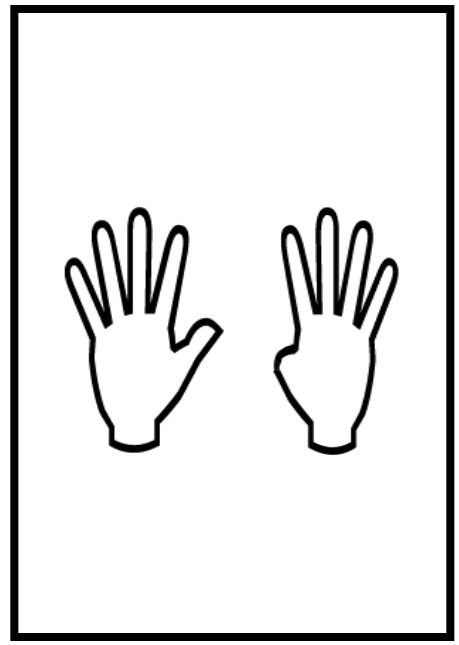
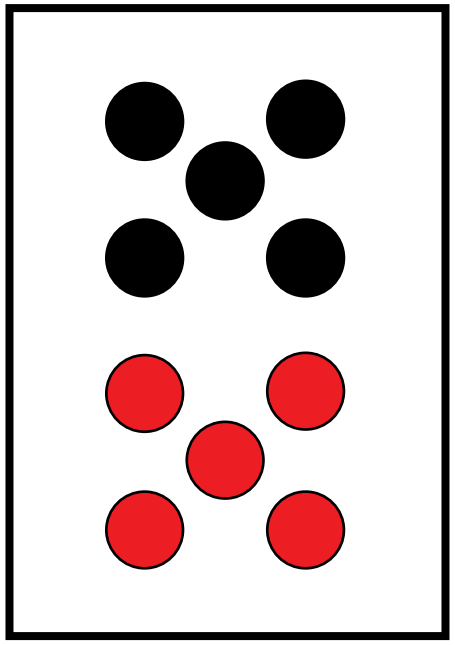
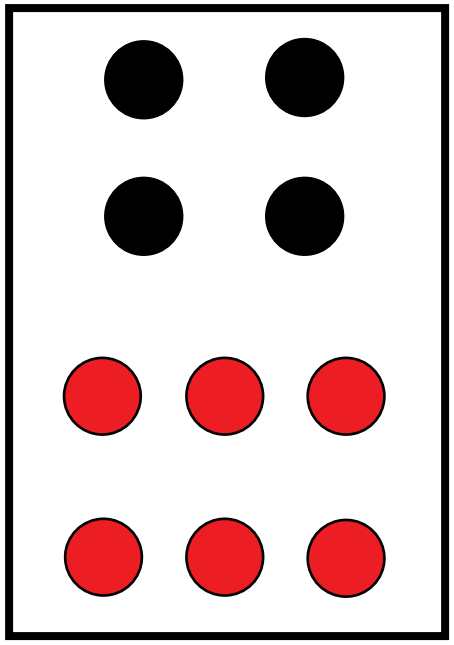


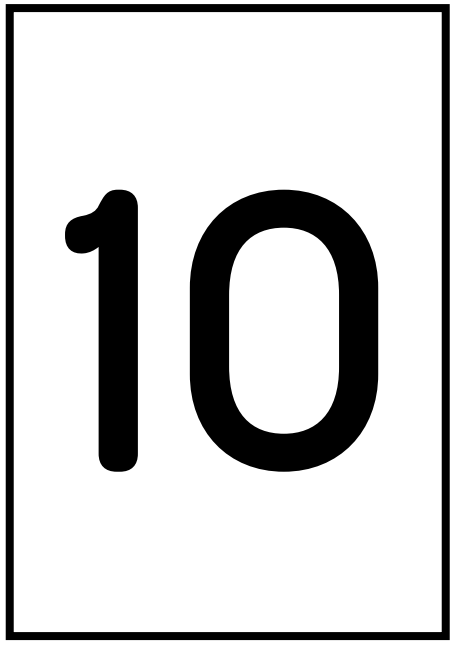


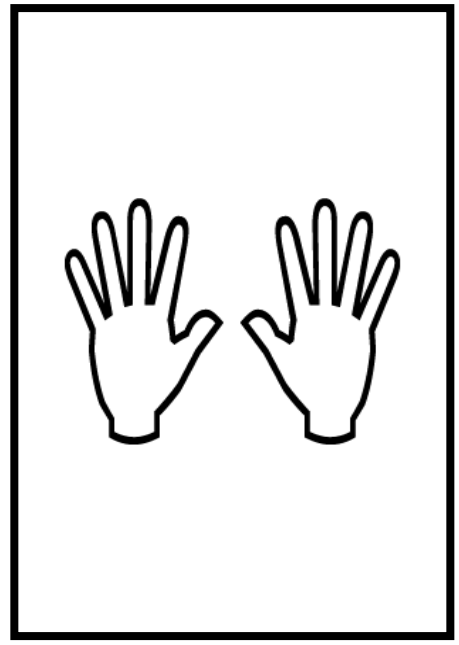




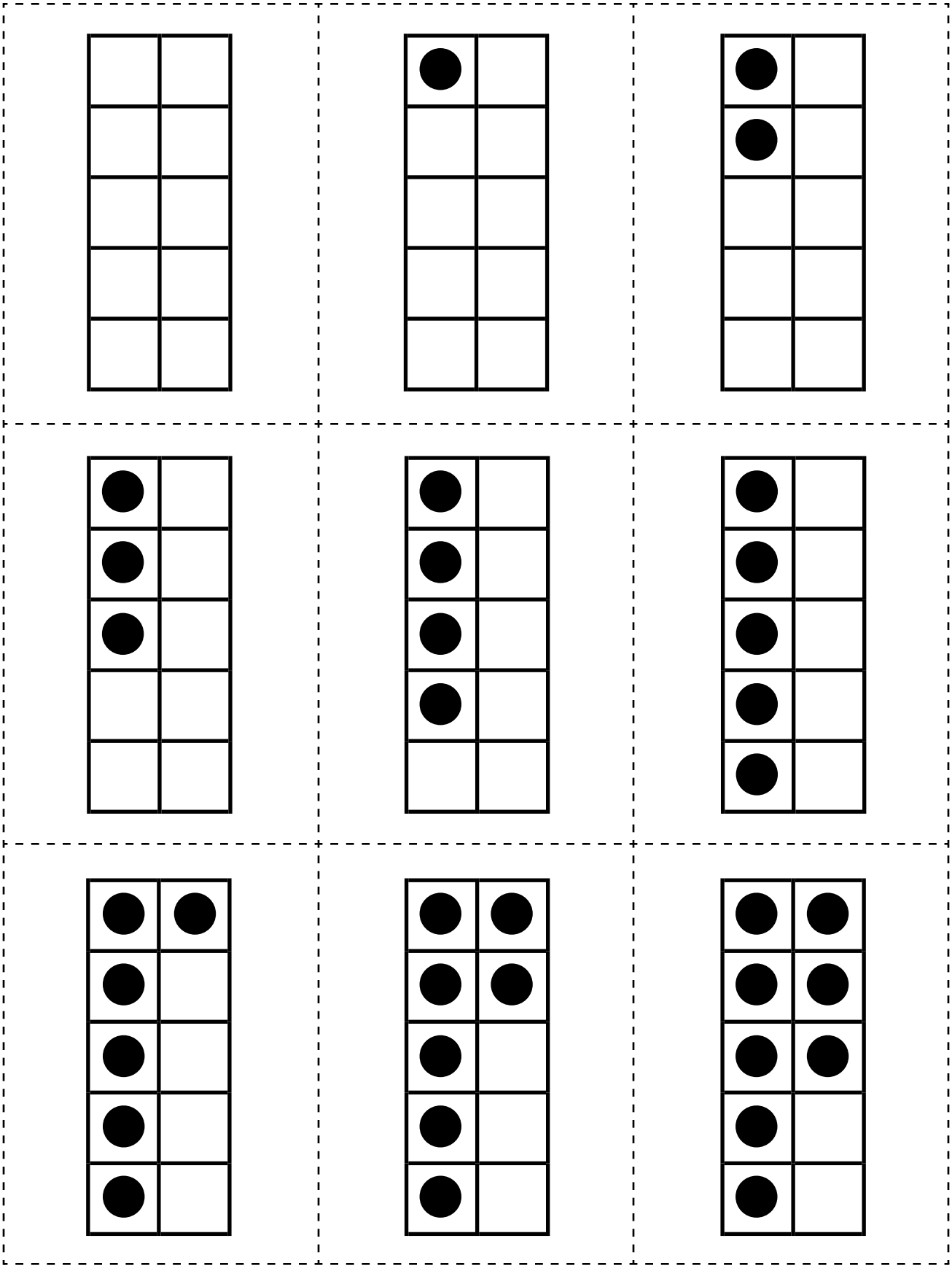






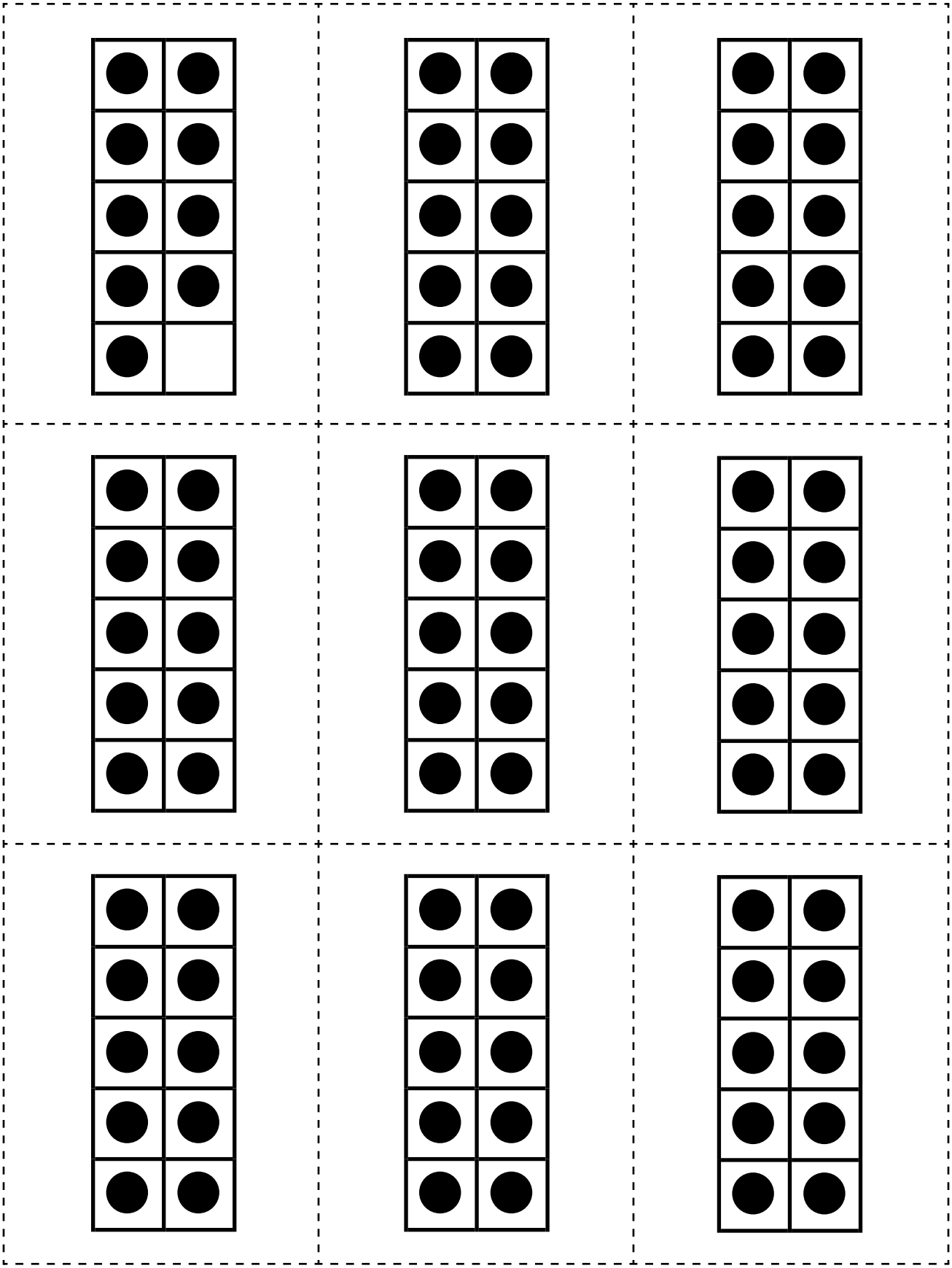


Small Ten Frames (five-wise)

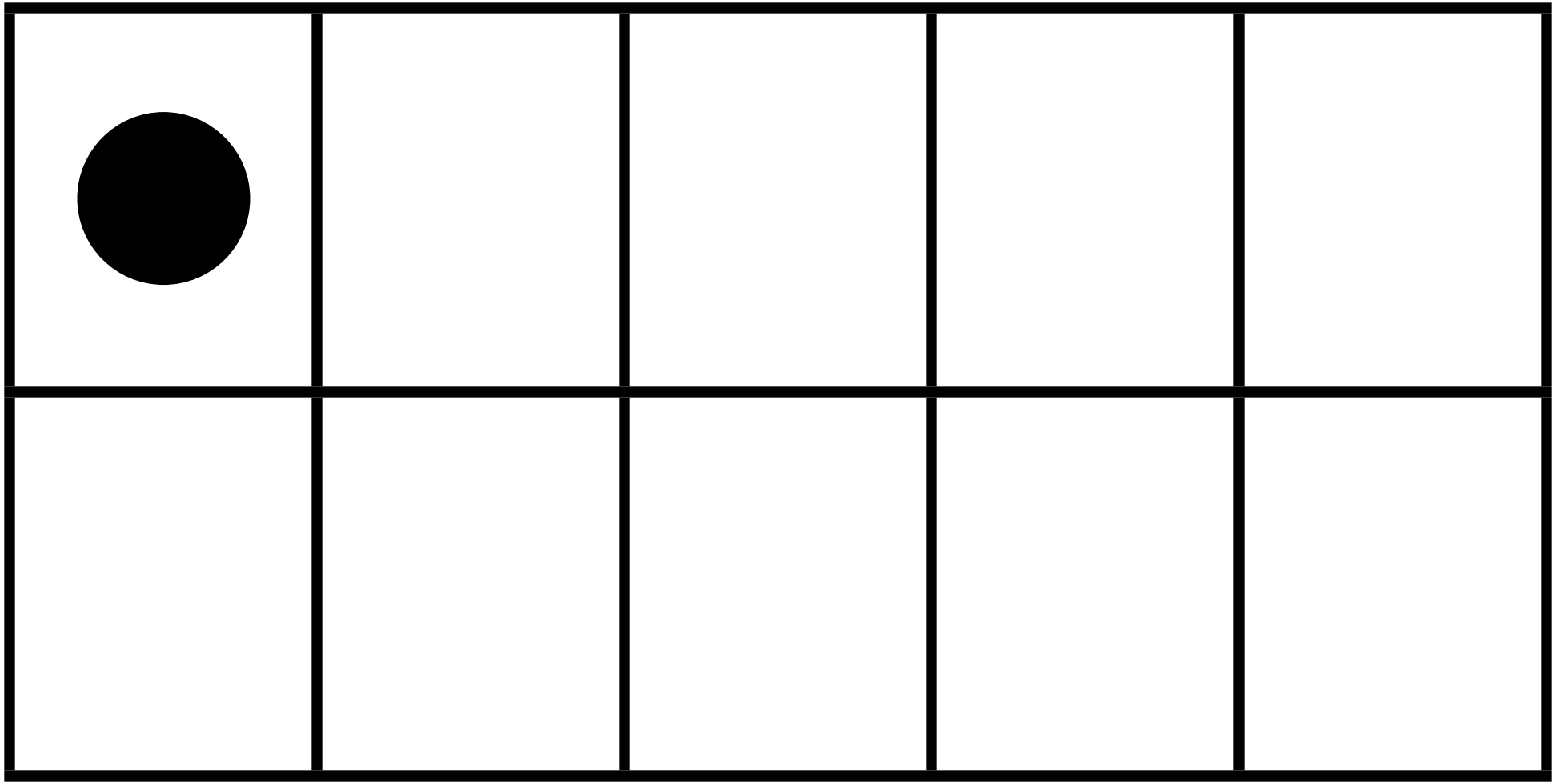


Small Ten Frames (five-wise)

(continued)



Large Ten Frames



Large Ten Frames

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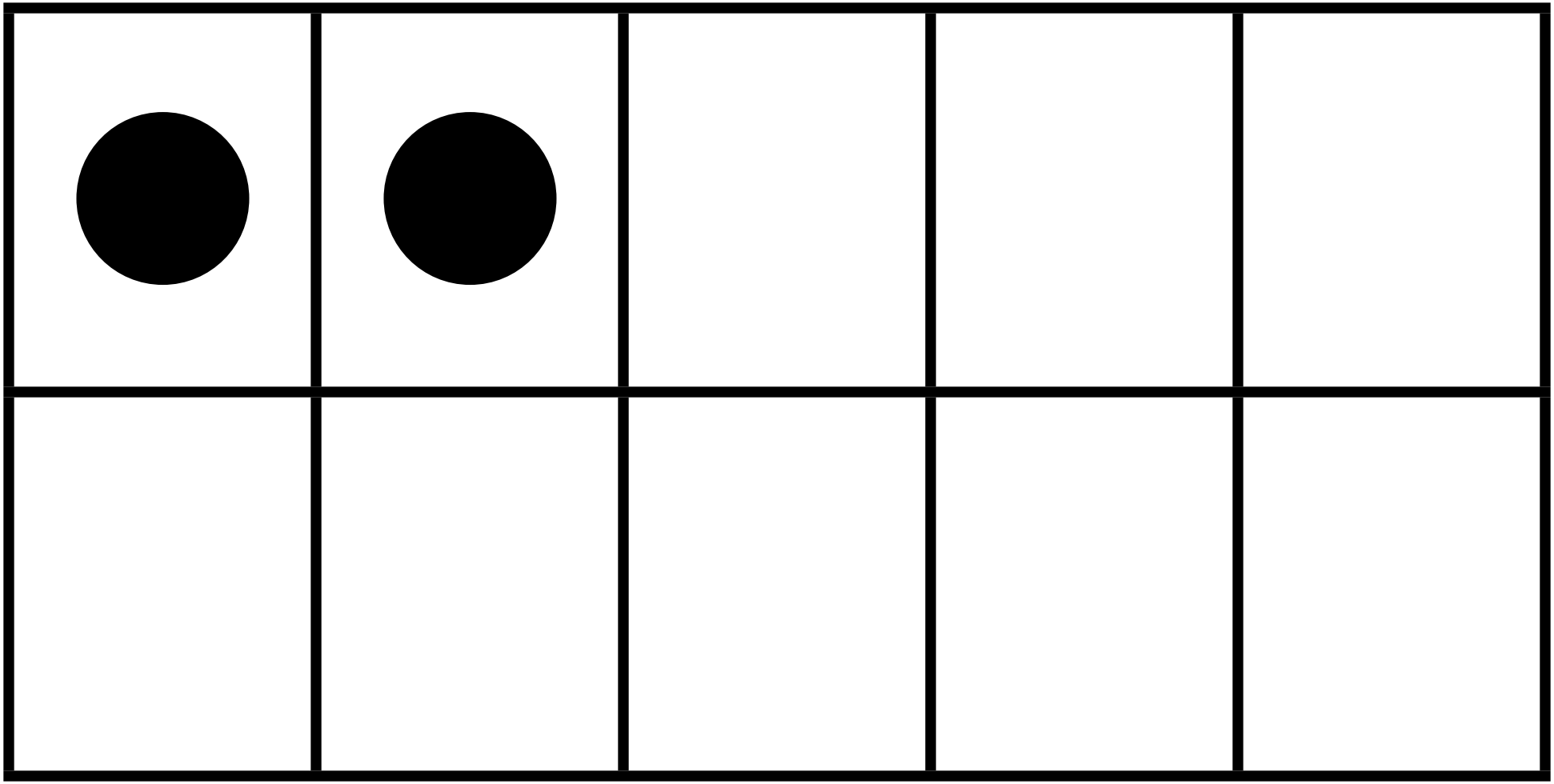

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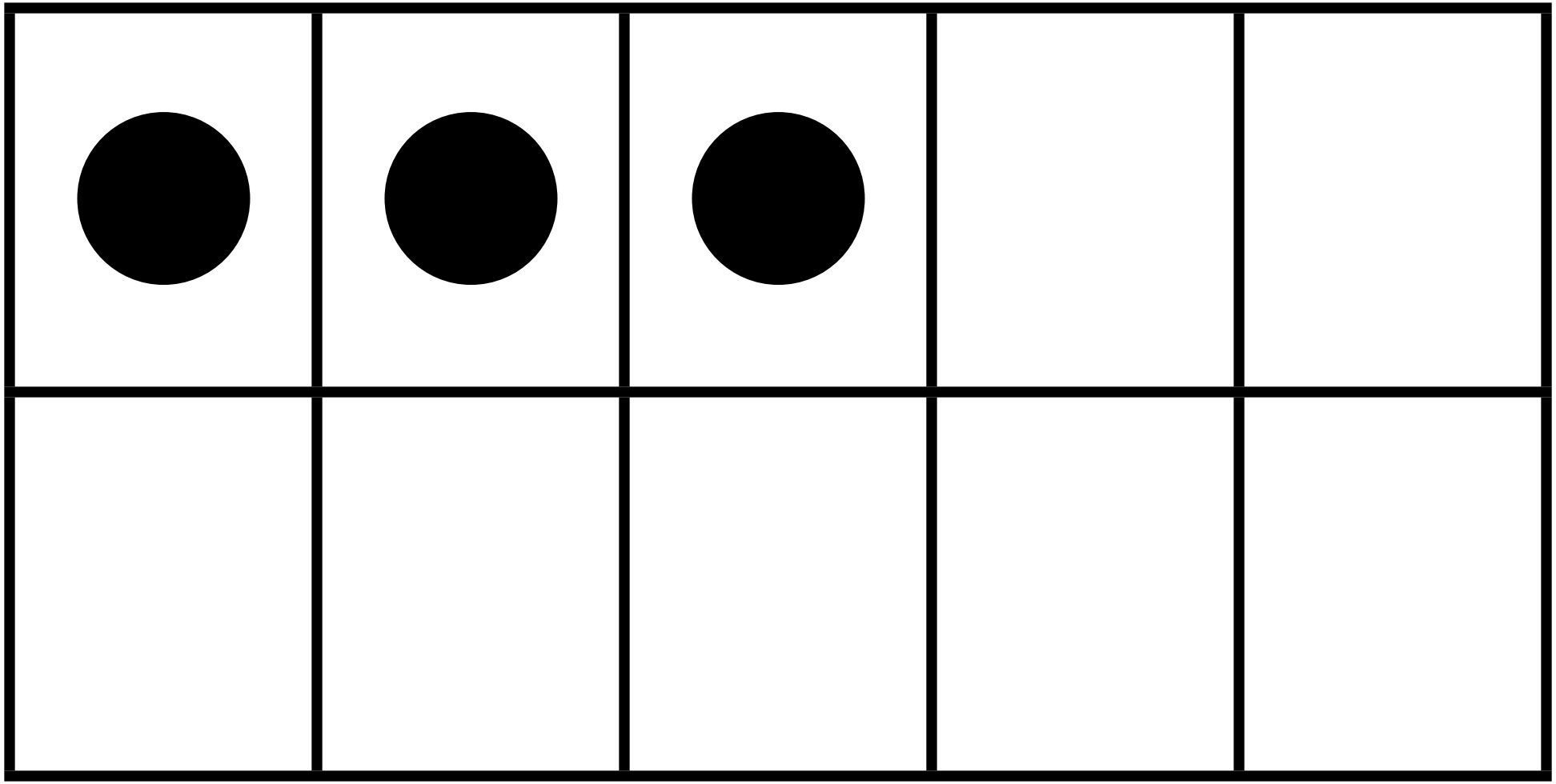

Large Ten Frames

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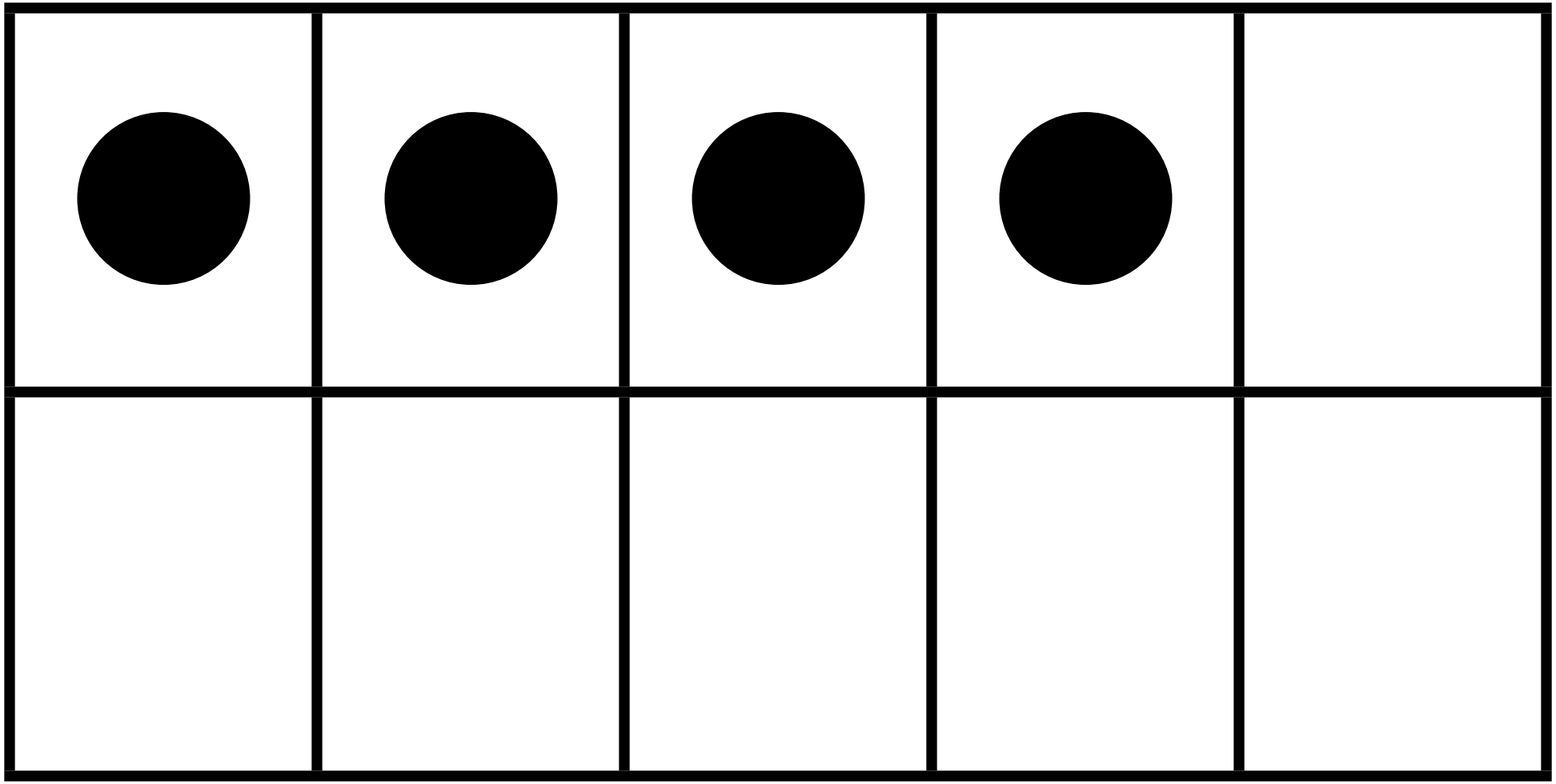

Large Ten Frames

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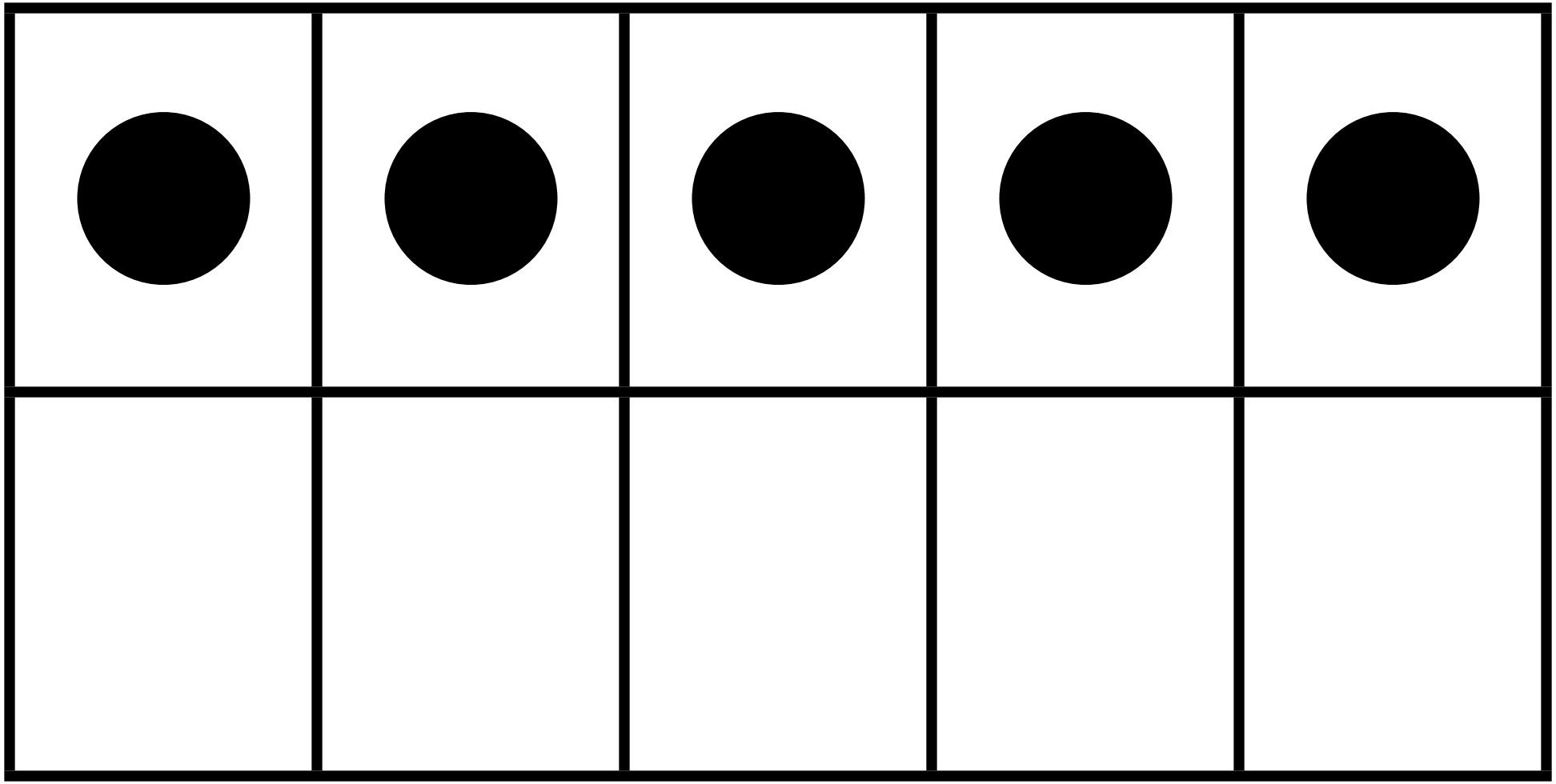

Large Ten Frames

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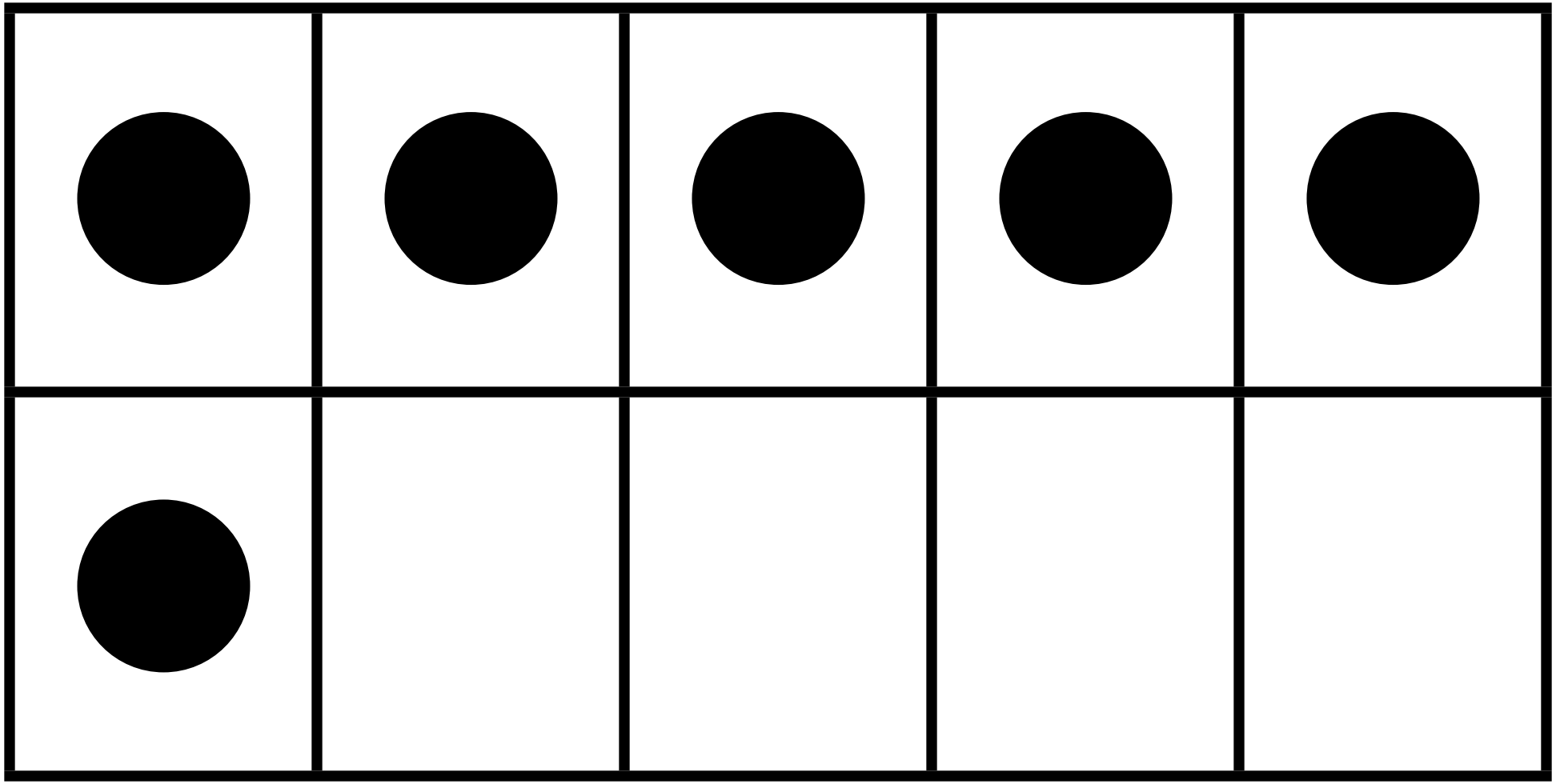

Large Ten Frames

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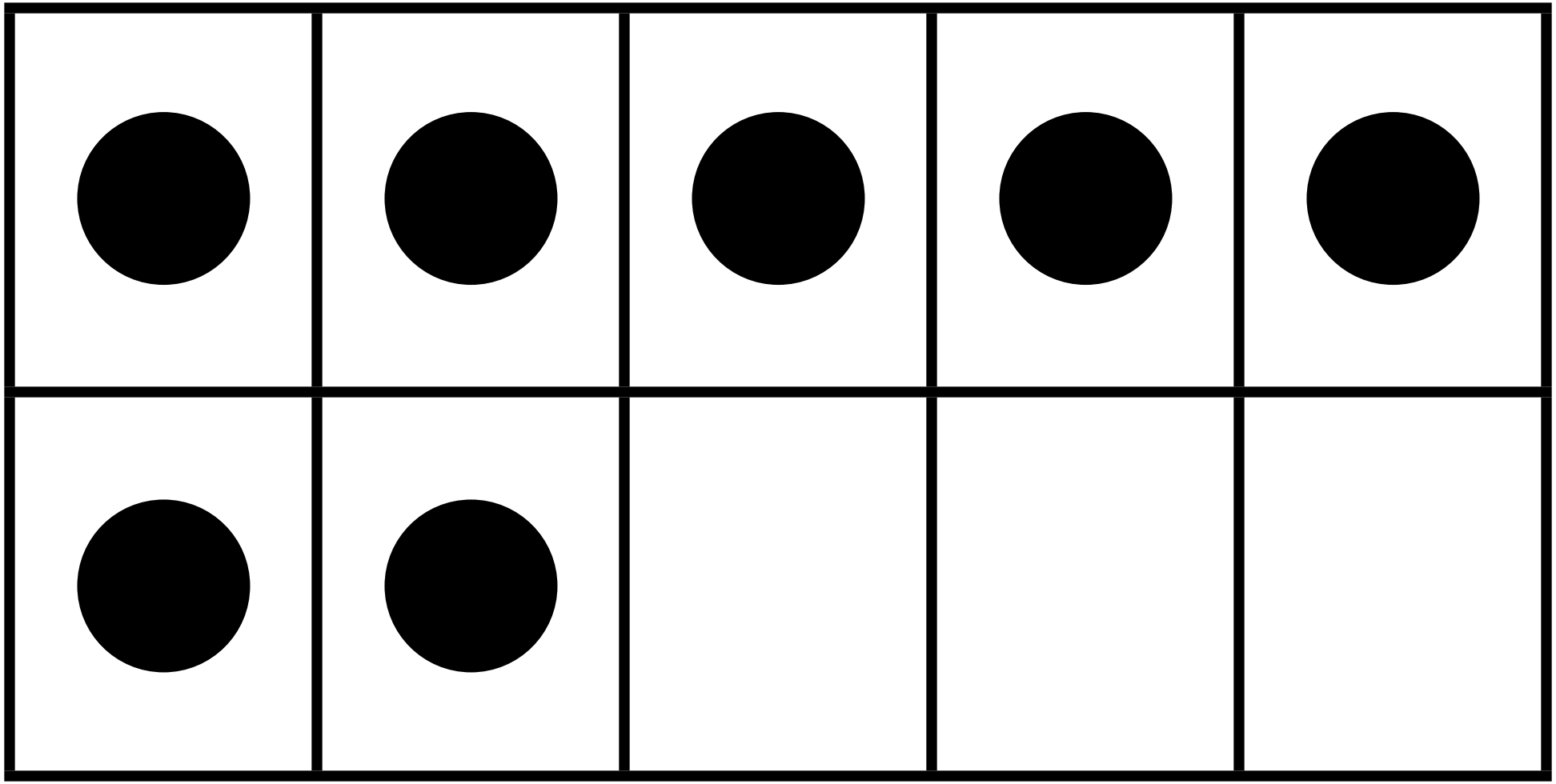

Large Ten Frames

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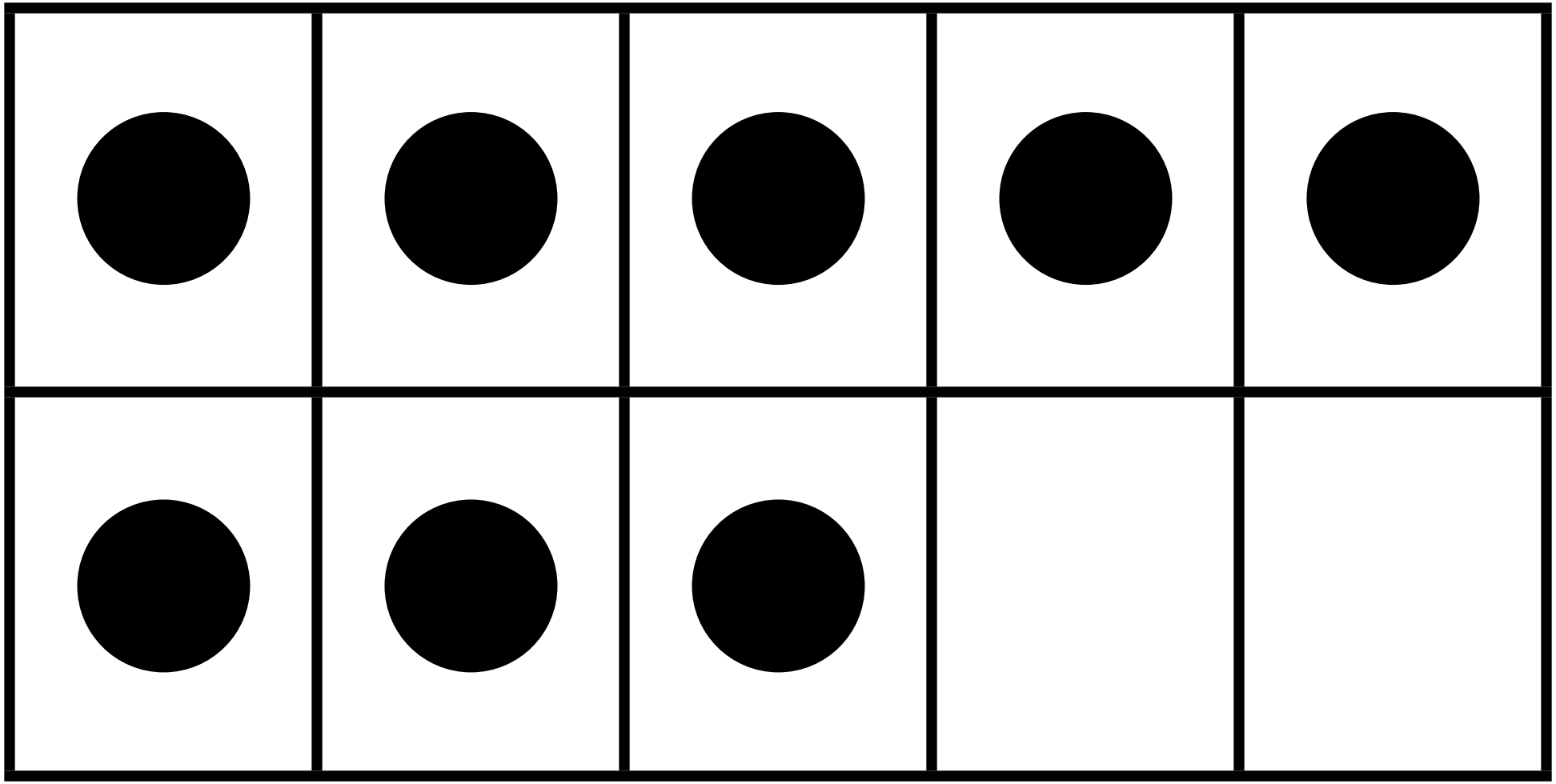

Large Ten Frames

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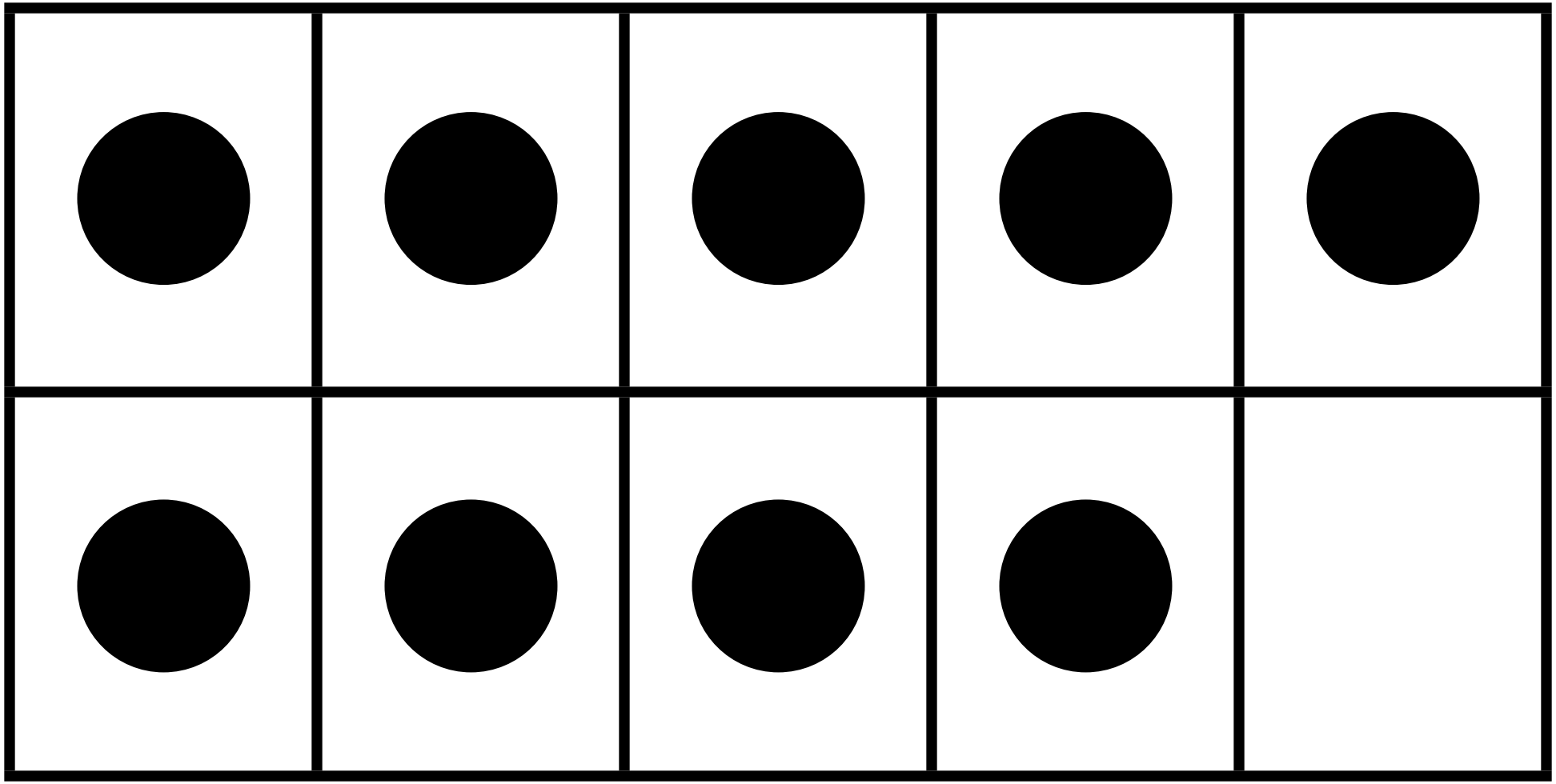

Large Ten Frames

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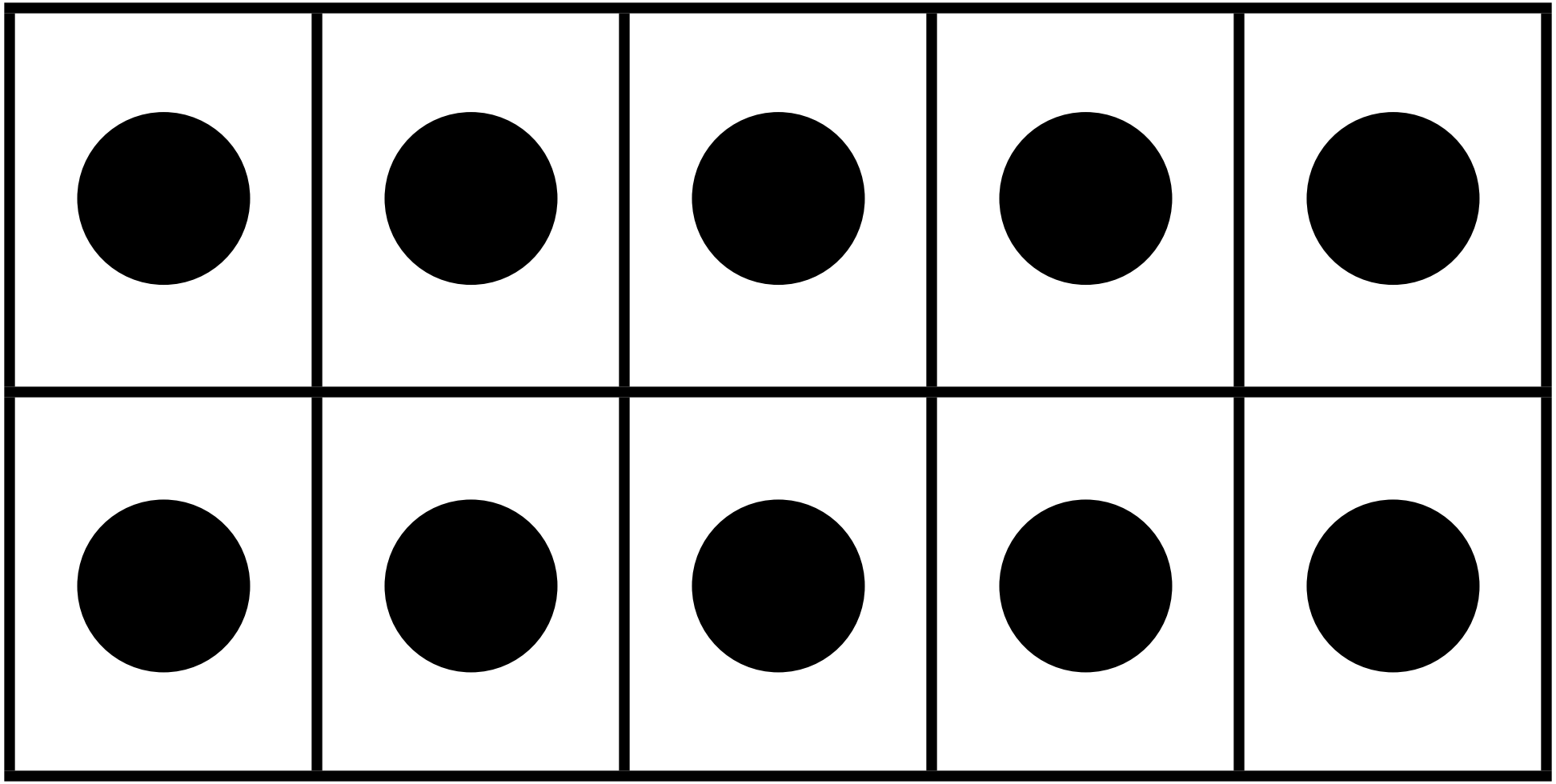

Large Ten Frames

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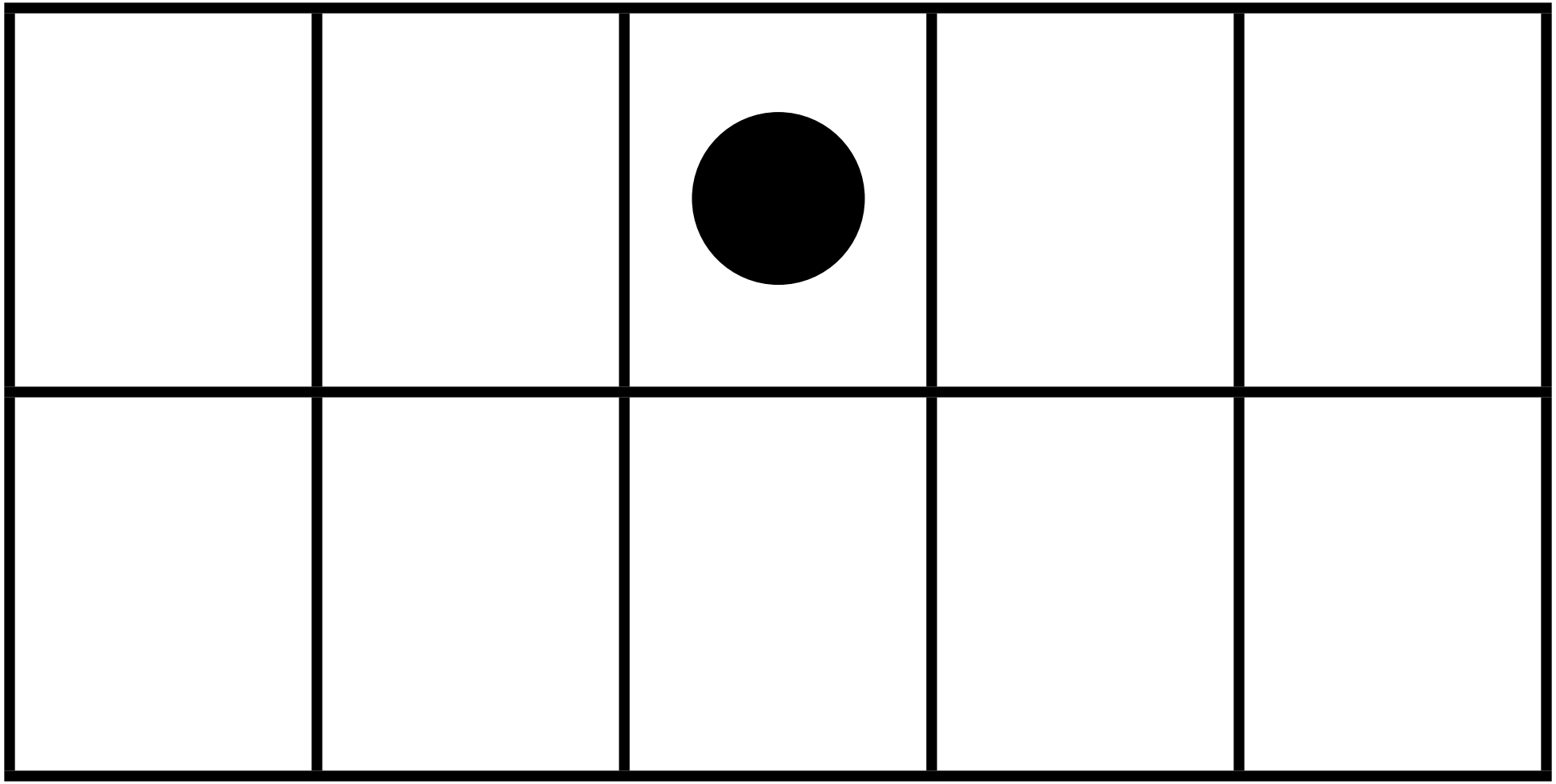

Large Ten Frames

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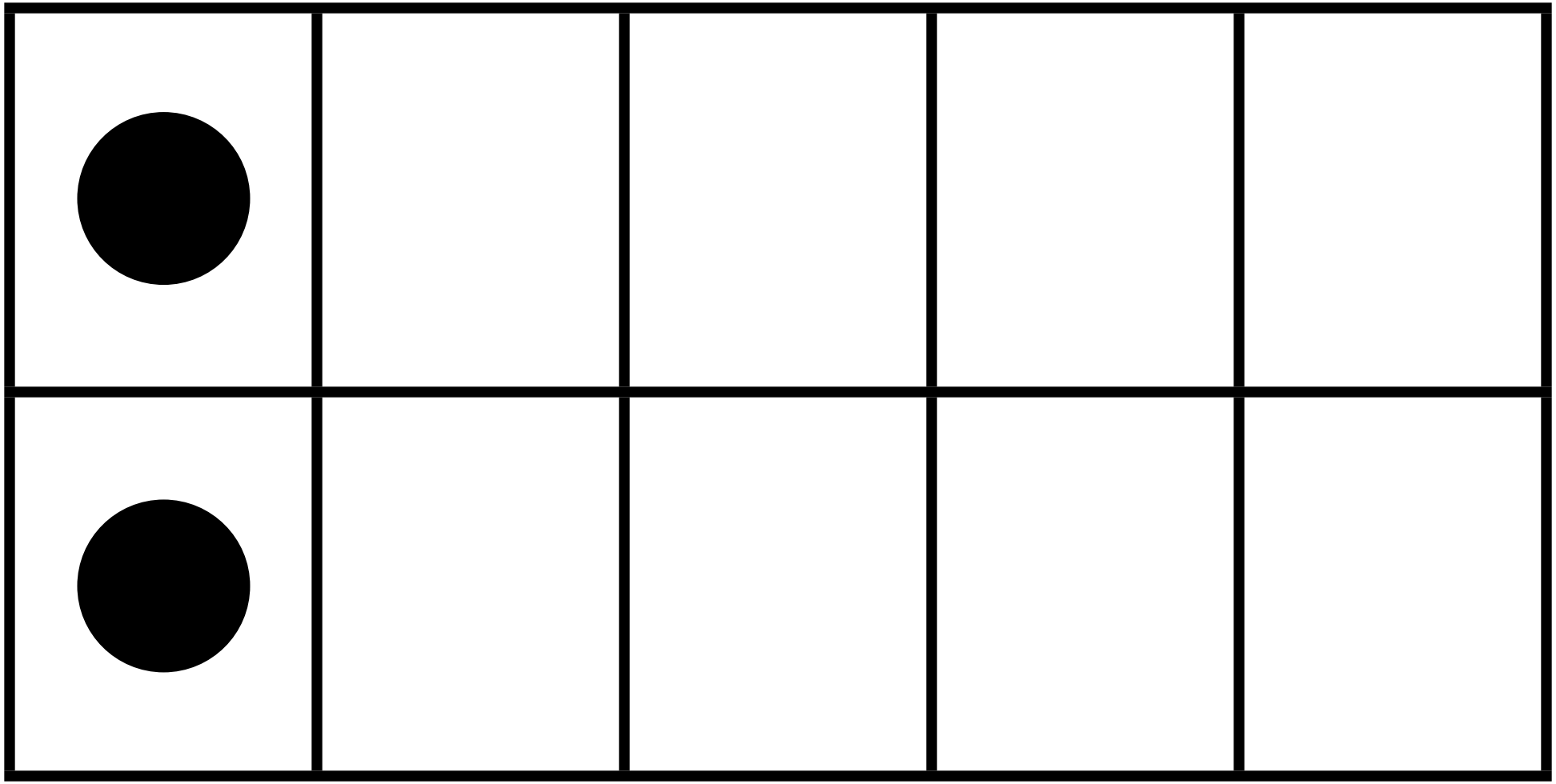

Large Ten Frames

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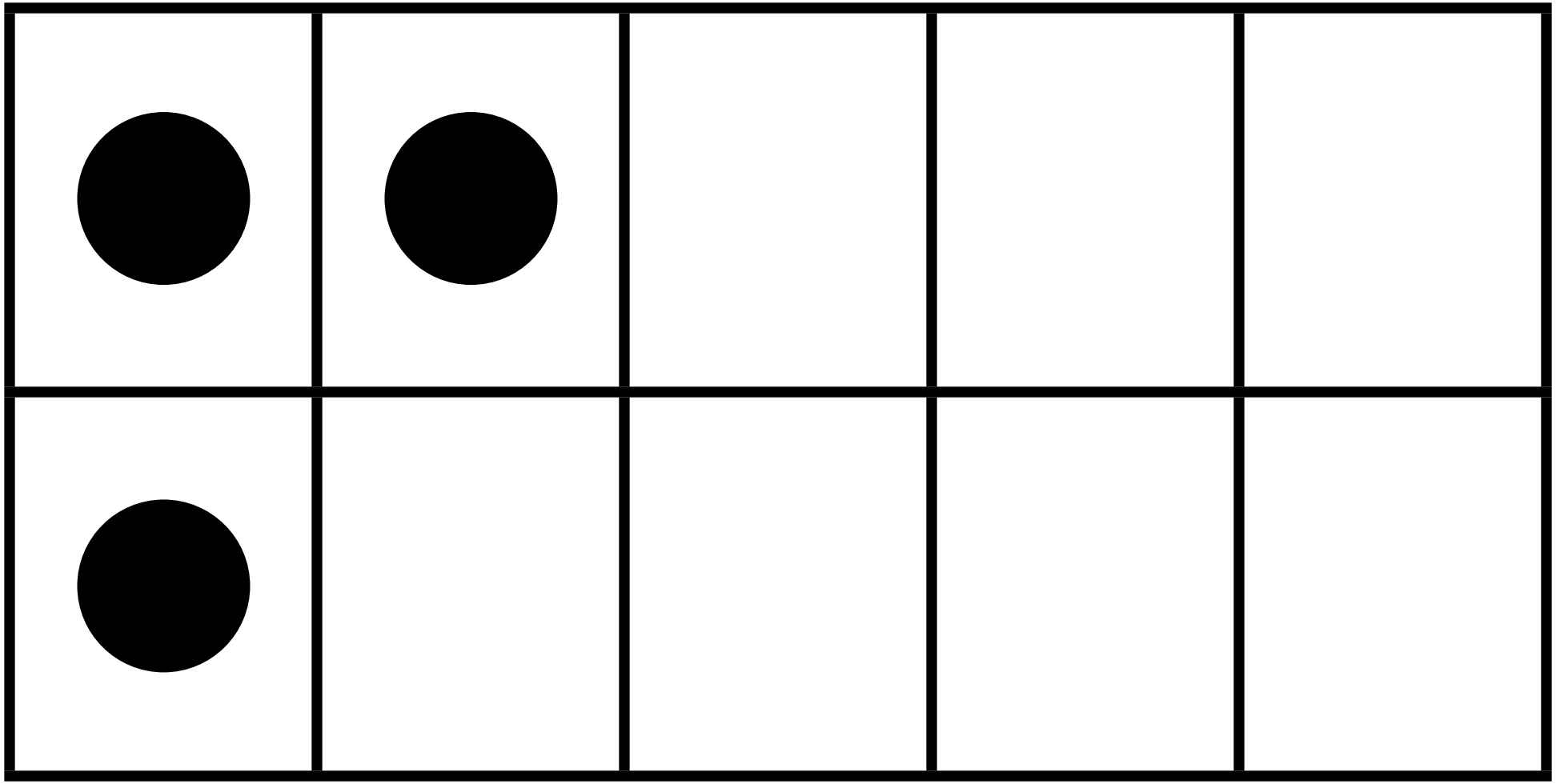

Large Ten Frames

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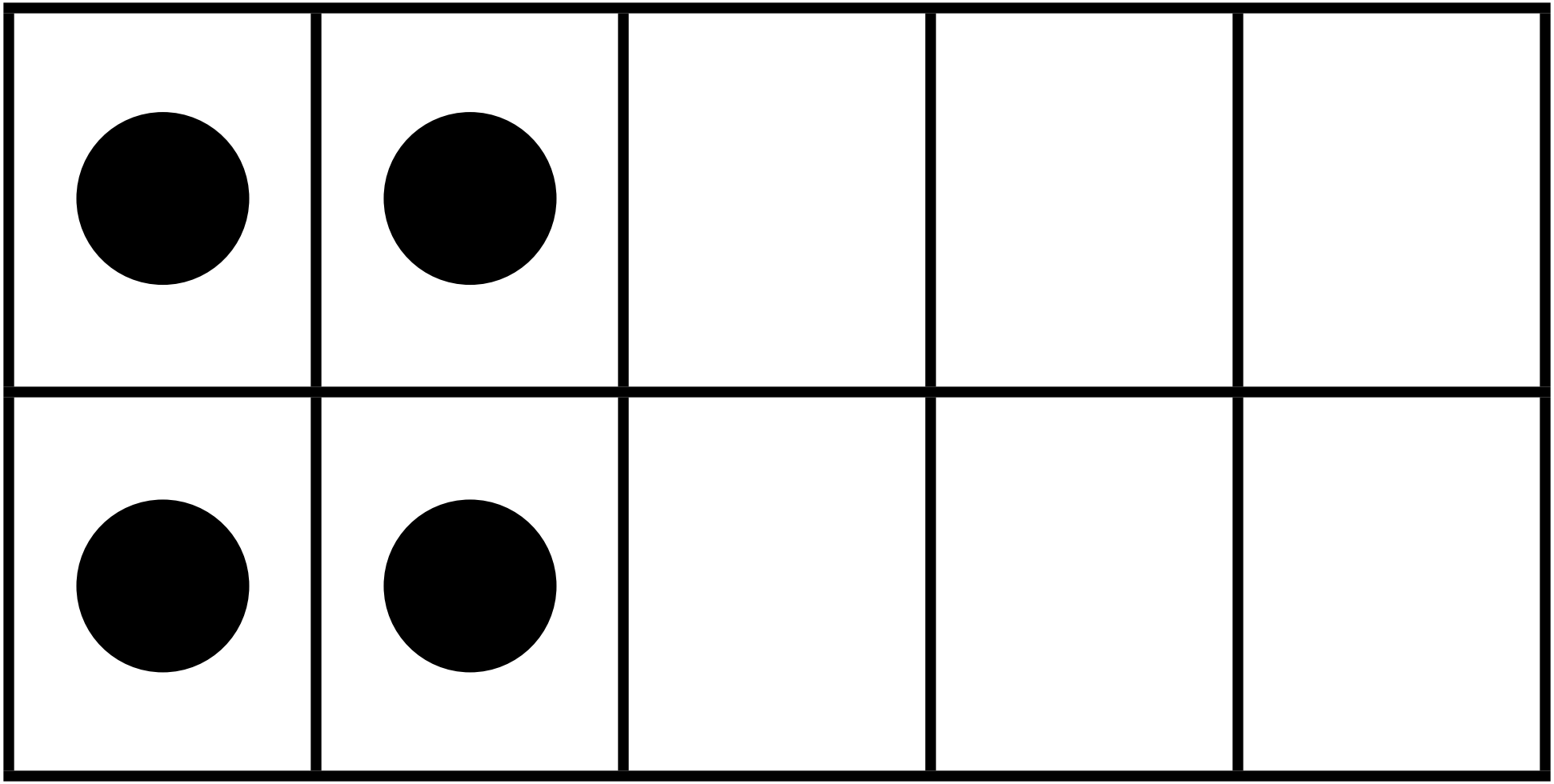

Large Ten Frames

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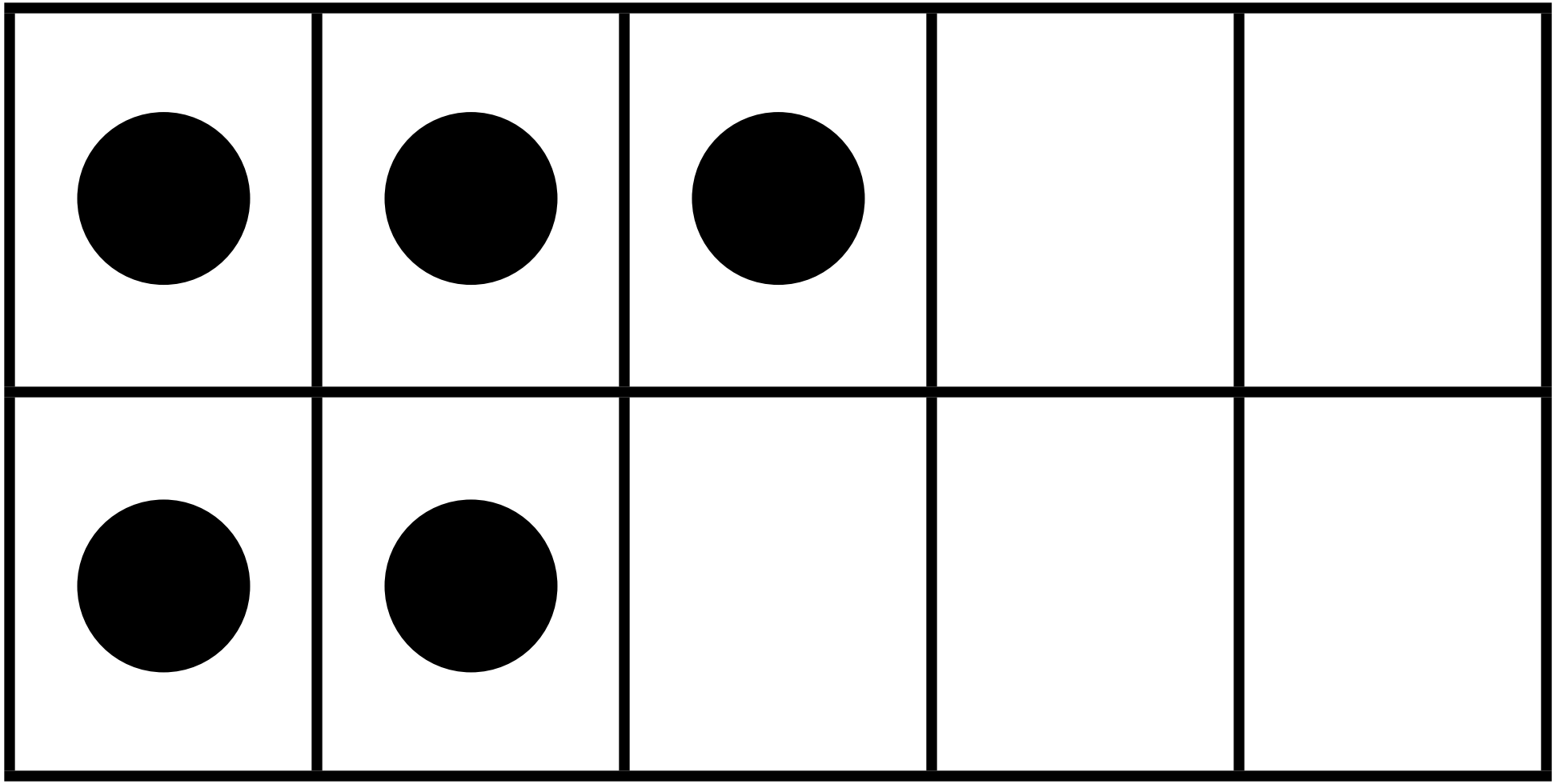

Large Ten Frames

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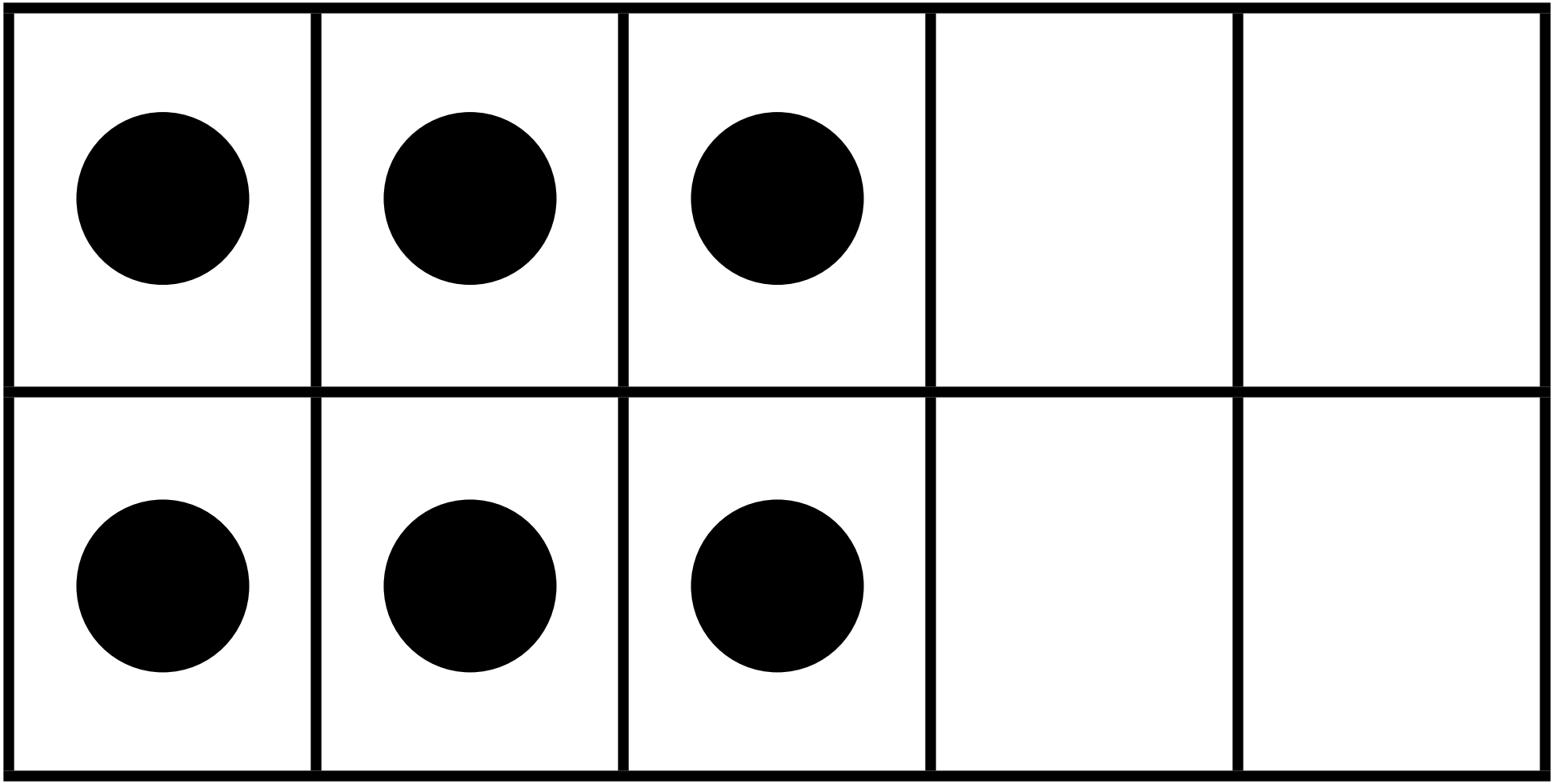

Large Ten Frames

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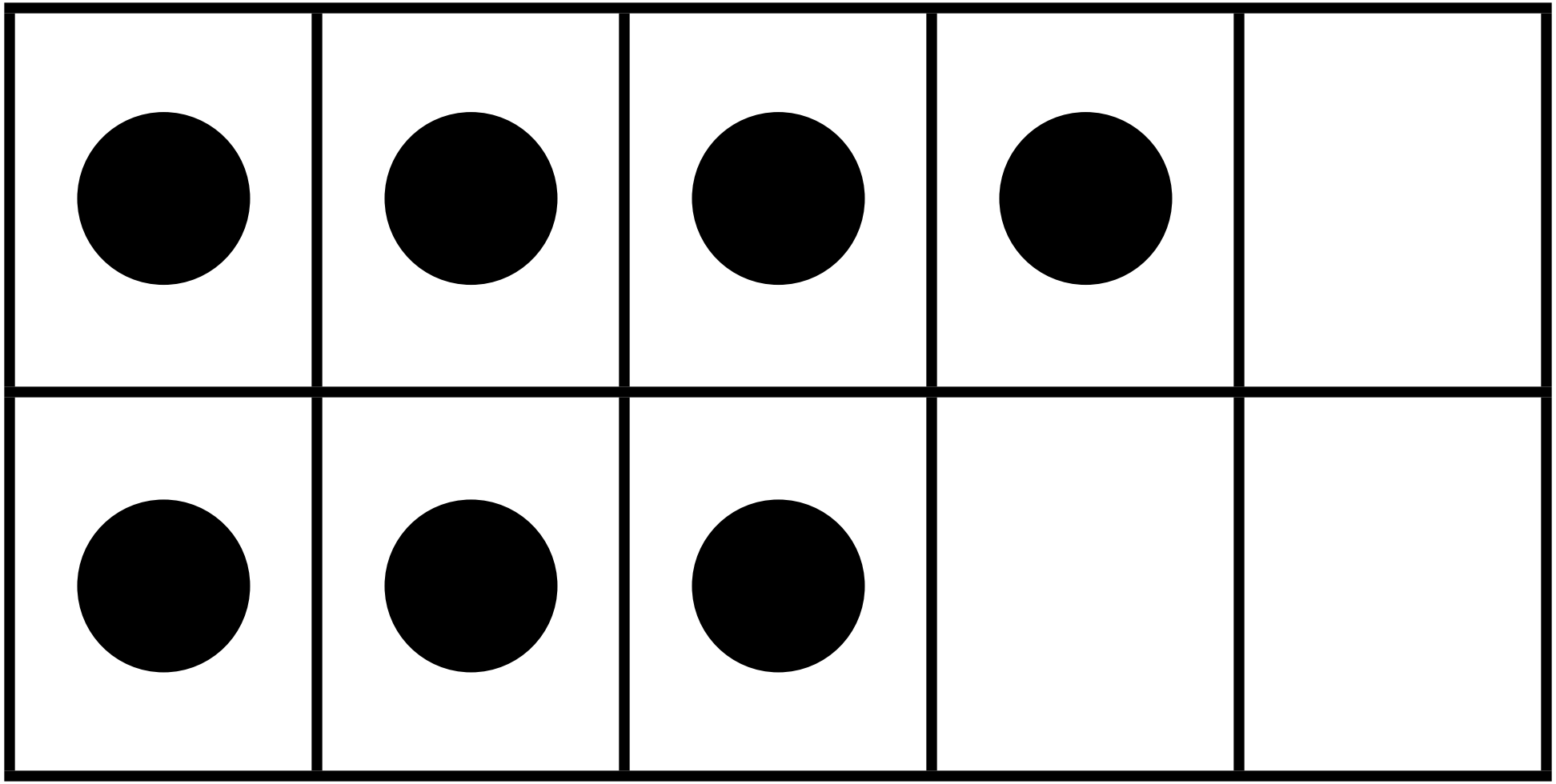

Large Ten Frames

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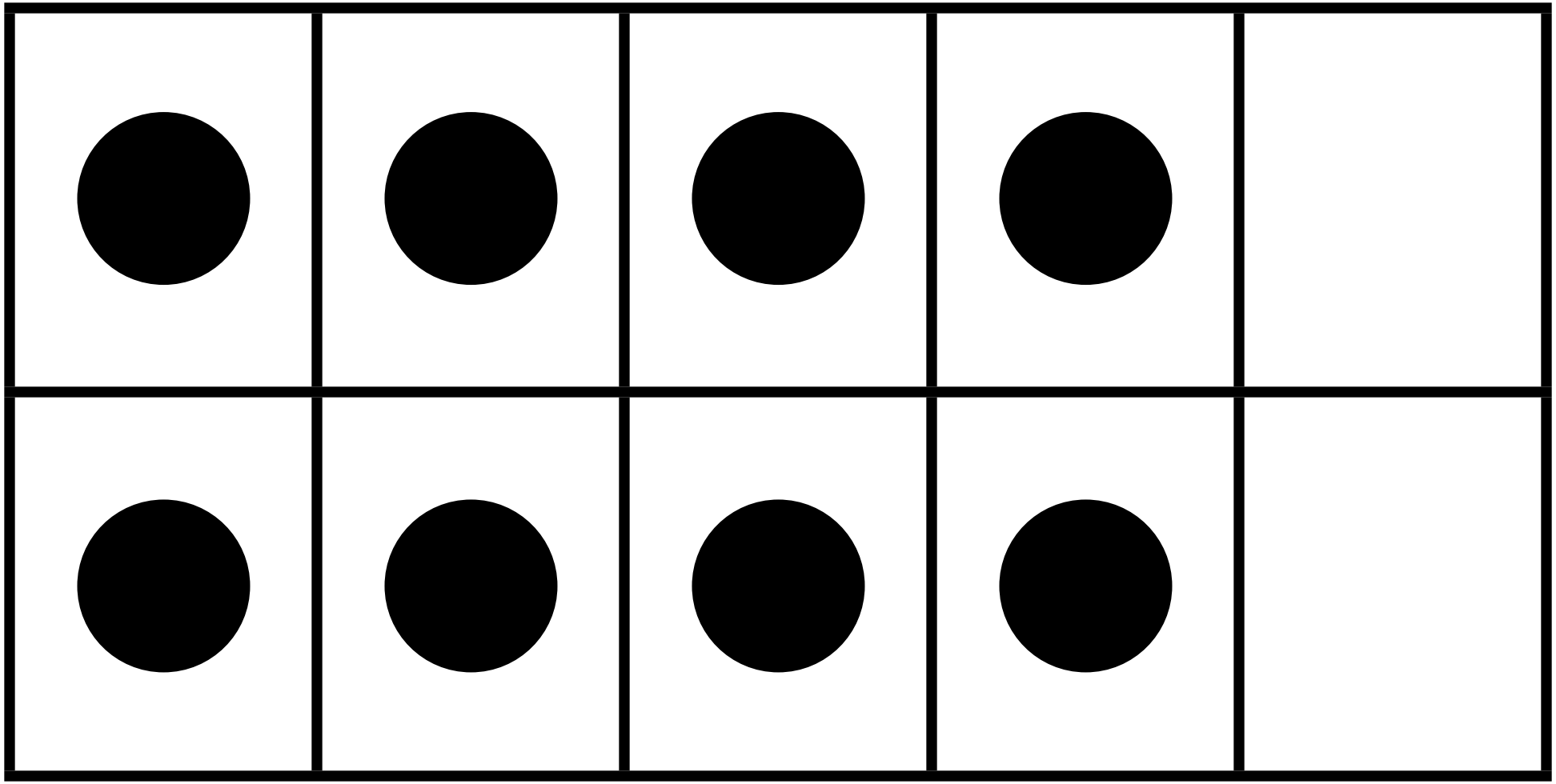

Large Ten Frames

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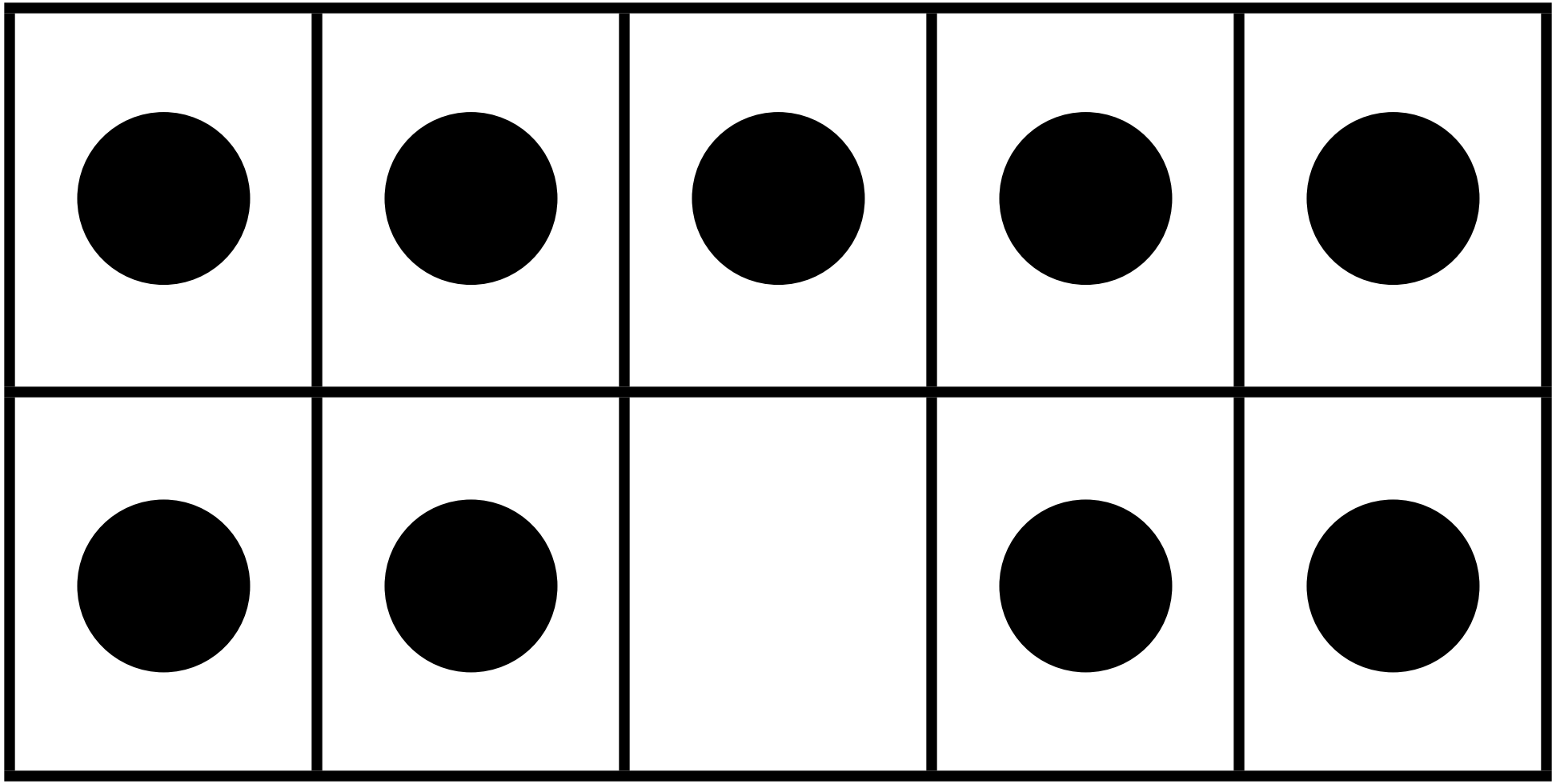

Large Ten Frames

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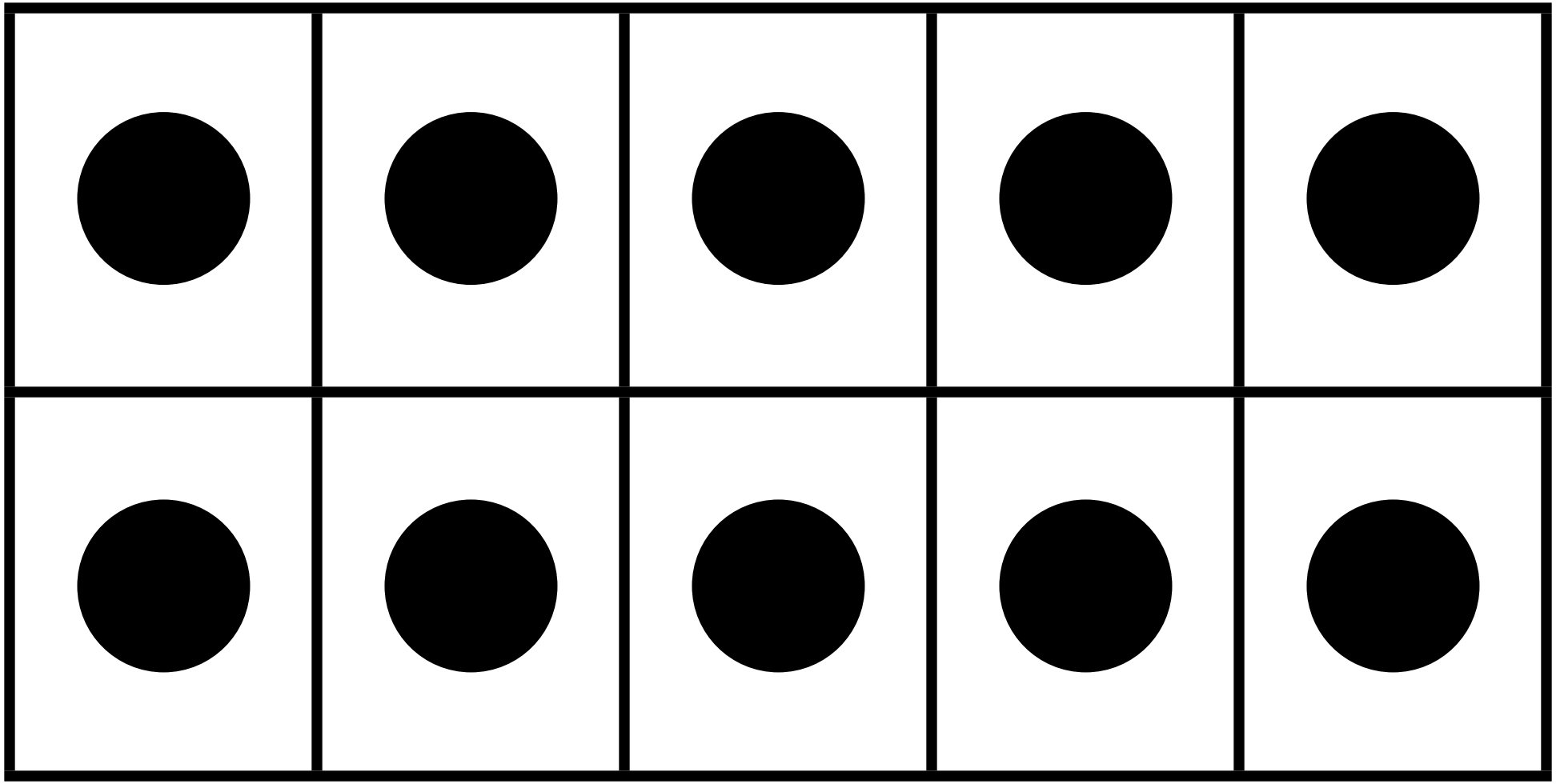

Empty Large Double Ten Frame Mat (Horizontal)

Empty Large Double Ten Frame Mat (Vertical)