



GRAPHING NUMERICAL PATTERNS



TABLE OF CONTENTS

Teacher Tips	3
Content Vocabulary	5
Graph It	11
Explain It	18
QR Codes	22
Fill It In	26
Create It (A Just for Fun Extension Activity)	33
Roll a Rule	36
Spin a Pattern	41
Pick a Card	45
Graph Match	51
Identify the Rule	59
Test Bridge Questions	65

TO THE TEACHER

- This product is meant to be a no frills, all action tool for cementing the concept of graphing numerical patterns in preparation for standardized testing.
- Each activity can be completed in a variety of ways to fit your classroom needs.
- It was created with the following standards in mind:
 - TEKS
 - 5.4c generate a numerical pattern when given a rule in the form $y=ax$ or $y=x+a$ and graph
 - COMMON CORE
 - CCSS.MATH.CONTENT.5.OA.B.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two pattern, and graph the ordered pairs on a coordinate plane. For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.

PREP RECOMMENDATIONS

- Each activity is created in black and white to conserve color ink.
 - Using colored paper to differentiate different parts in each activity or the different stations will help students to stay organized.
- If you plan to use the activities for small group or partner activities over time, I would recommend laminating them for durability.

CONTENT VOCABULARY

generate

graph

numerical pattern

rule

graph

points

ordered pairs

equation

coordinate plane

quadrant

table

satisfy

additive

multiplicative

input

output

x-axis

y-axis

generate

graph

numerical
pattern

rule

graph

points

ordered
pairs

equation

coordinate
plane

quadrant

table

satisfy

additive

multiplicative

input

output

x-axis

y-axis

preview

GRAPH IT

Use the tables to graph the
given coordinate pairs.

TEACHER SUGGESTIONS

GRAPH.IT

- In this activity students are asked to use the tables with provided coordinate pairs to graph the points.
- This activity can be used in a variety of ways.
 - ✓ Small group with teacher guidance
 - ✓ A partner activity for practice
 - ✓ Independently to assess

Materials

Included:

- Tables
- Recording Sheet
- Answer Key

Not Included:

- Pencil

1

X	Y
1	2
2	4
3	6

2

X	Y
4	2
6	3
8	4

3

X	Y
3	4
5	7
7	10

4

X	Y
3	9
4	8
5	7

5

X	Y
6	4
8	3
10	2

6

X	Y
9	1
8	2
7	3

7

X	Y
3	7
4	8
5	9

8

X	Y
10	10
9	9
8	8

9

X	Y
6	6
5	7
4	8

10

X	Y
	1
3	1
5	1

11

X	Y
9	7
10	6
11	5

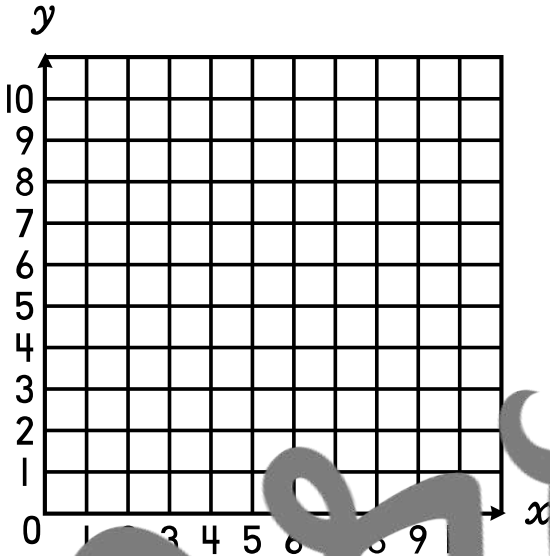
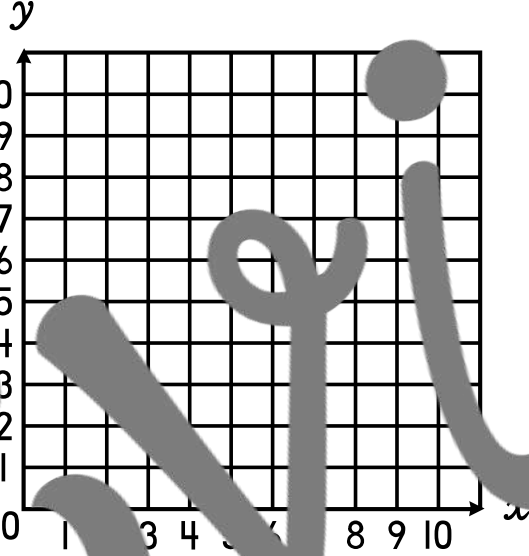
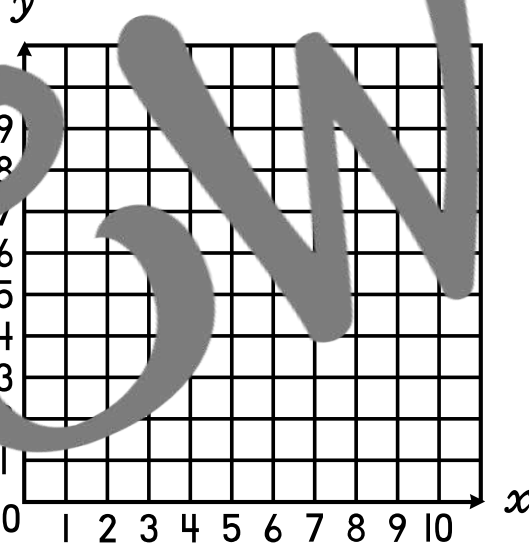
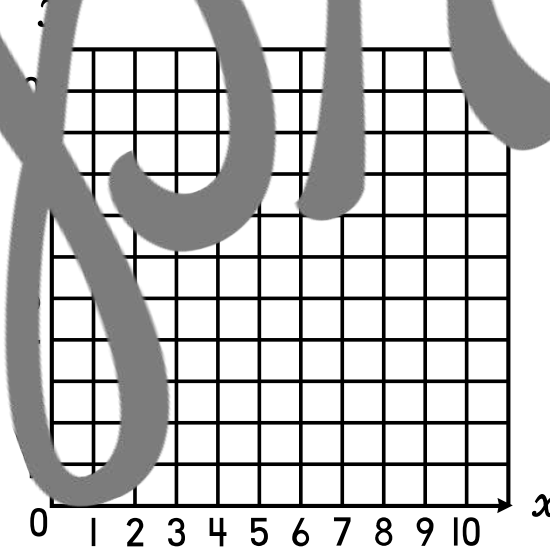
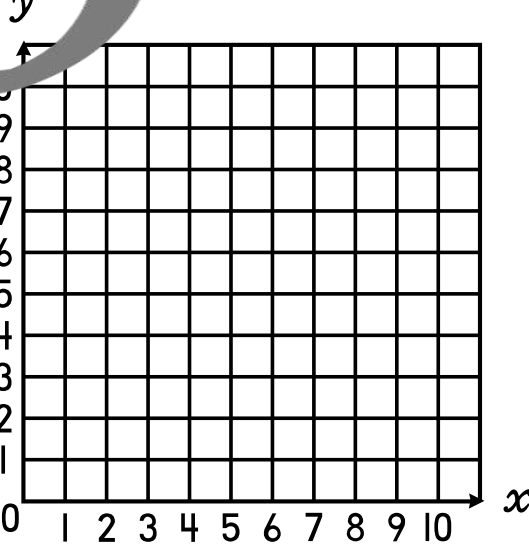
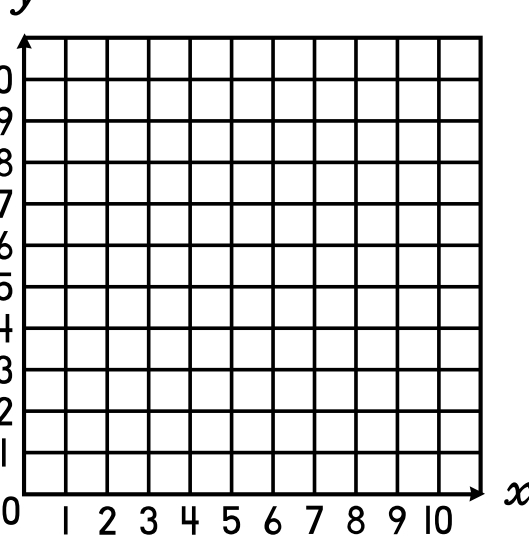
12

X	Y
3	5
5	5
7	5

Name _____ # _____ Date _____

GRAPH IT RESPONSE SHEET

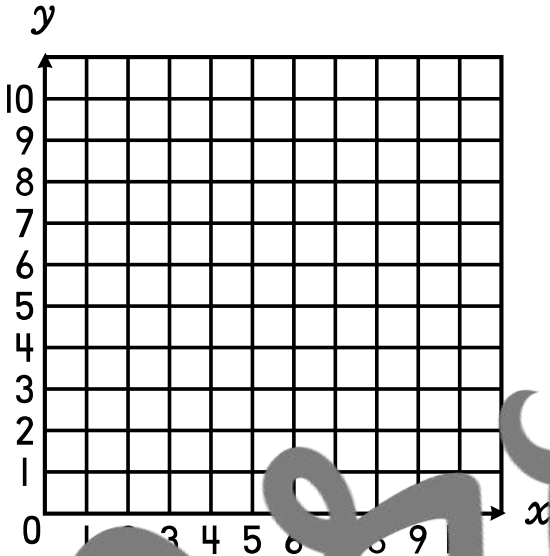
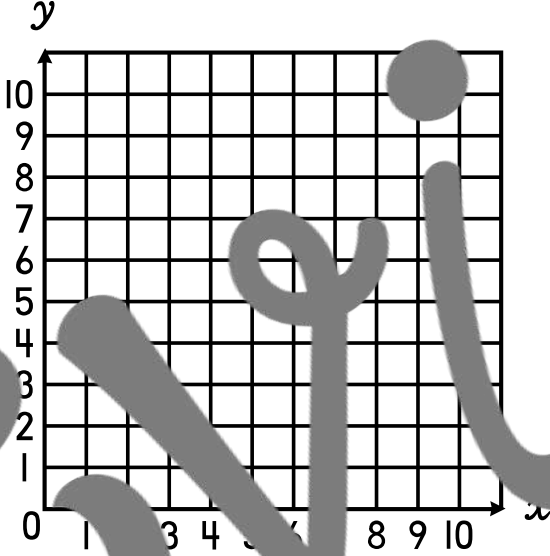
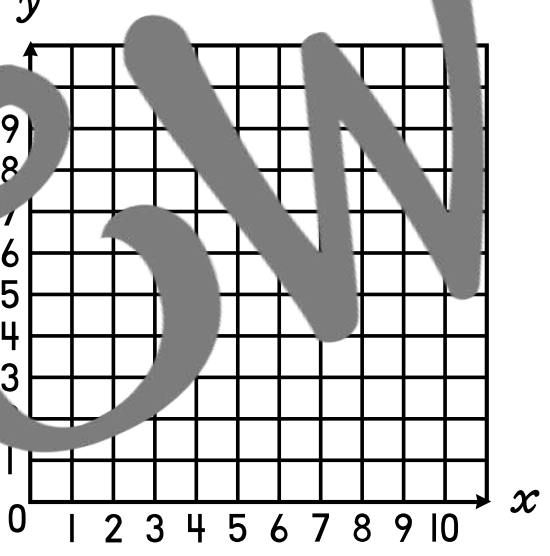
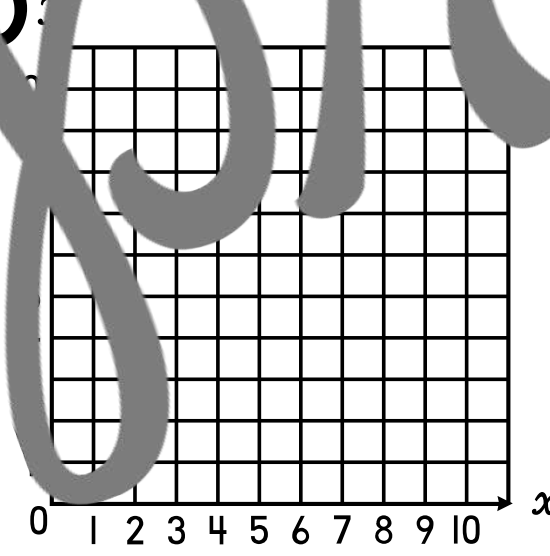
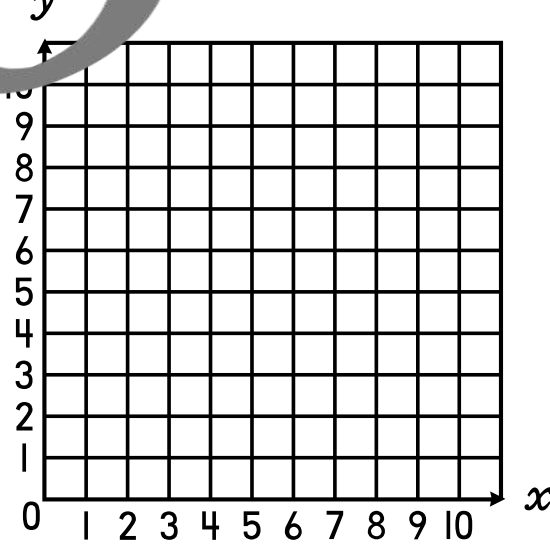
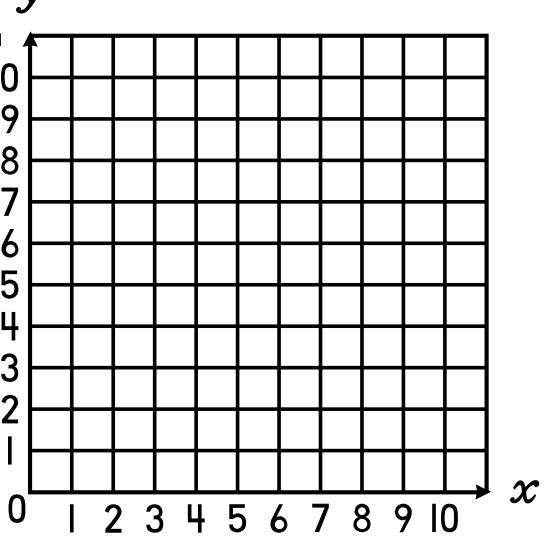
Use the tables to graph the given ordered pairs.

1 	2 	3 
4 	5 	6 

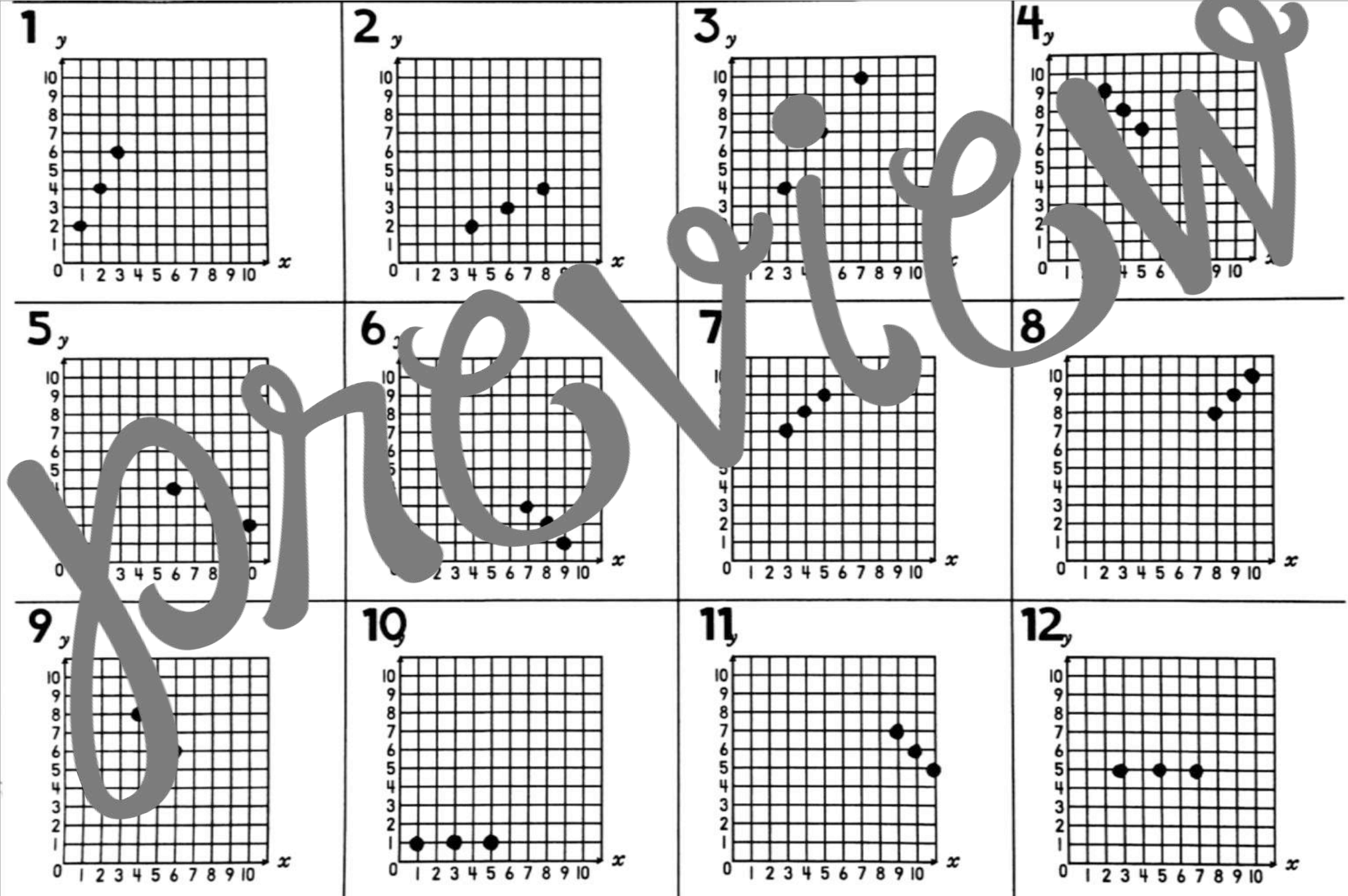
Name _____ # _____ Date _____

GRAPH IT RESPONSE SHEET

Use the tables to graph the given ordered pairs.

<p>7</p> 	<p>8</p> 	<p>9</p> 
<p>10</p> 	<p>11</p> 	<p>12</p> 

GRAPH IT ANSWER KEY



EXPLAIN IT

Use your math vocabulary to respond to the writing prompt.

TEACHER SUGGESTIONS

EXPLAIN IT

- In this activity students are asked to use their math vocabulary to respond to the prompt.
- This activity can be used in a variety of ways.
 - ✓ Small group with teacher guidance
 - ✓ A partner activity for practice
 - ✓ Independently to assess

Materials

Included:

- Recording Sheet with Prompt

Not Included:

- Pencil
- Answer Key

Name _____ # _____ Date _____

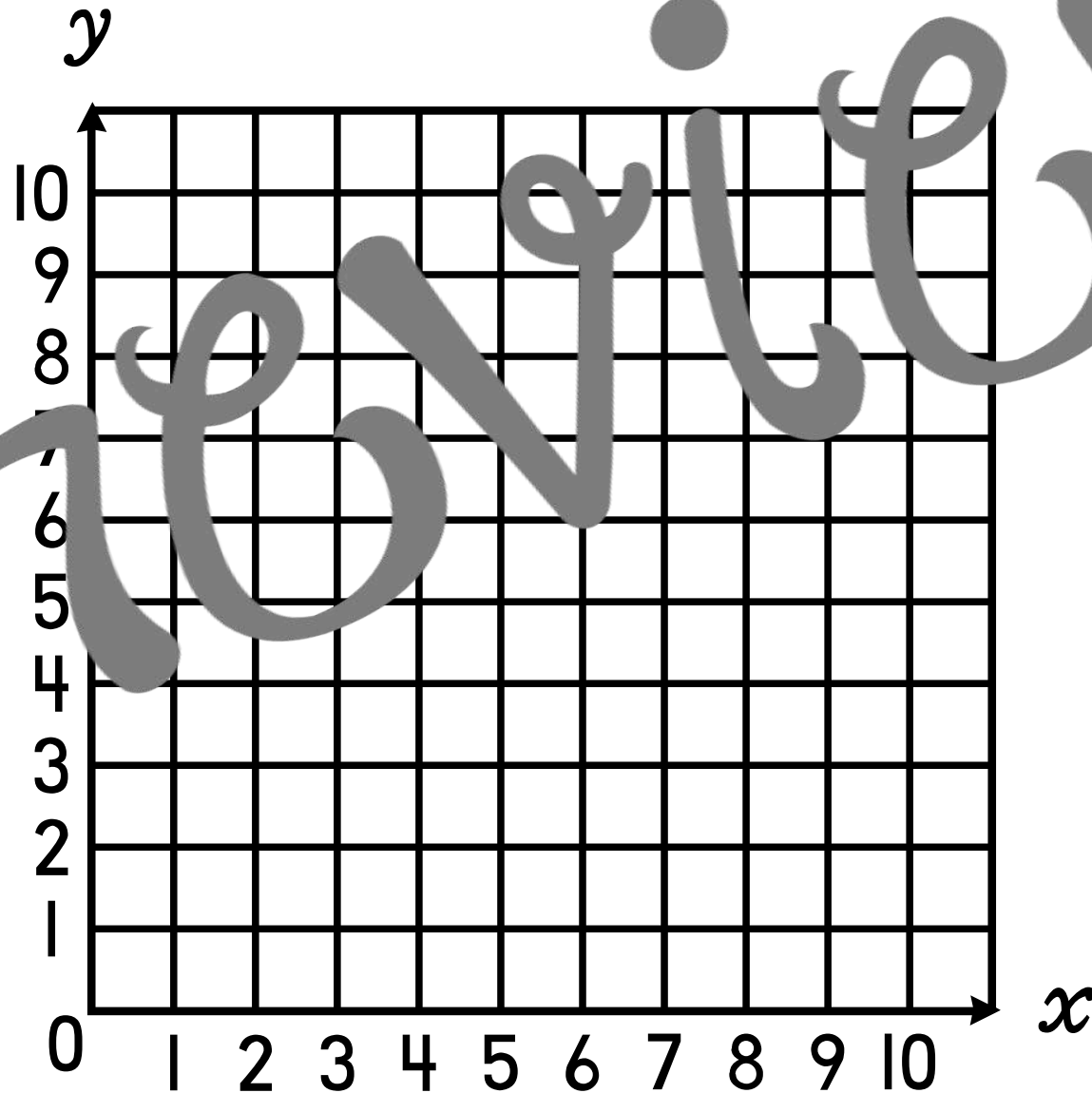
EXPLAIN IT RESPONSE SHEET

Explain the process that you would use to determine the numerical pattern of a set of graphed coordinate pairs. Use the back of this page to show an example.

Name _____ # _____ Date _____

EXPLAIN IT RESPONSE SHEET

Use the graph below to show your example.



QR CODES

Scan the “START” card and follow the directions to use all cards stopping at the “END” card.

TEACHER SUGGESTIONS

QR CODES

- In this activity students are asked to scan QR codes and follow the directions by identifying ordered pairs.
- This activity can be used in a variety of ways
 - ✓ Small group with teacher guidance
 - ✓ A partner activity for practice
 - Independently to assess

Materials

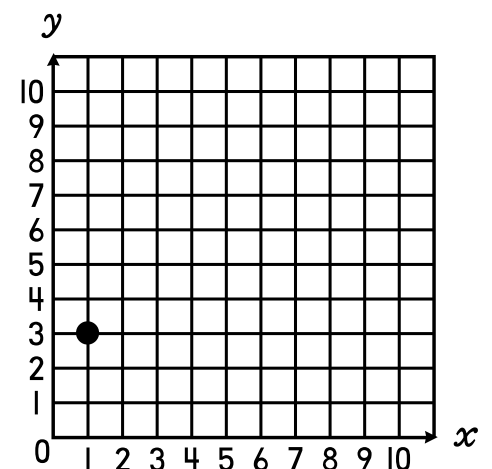
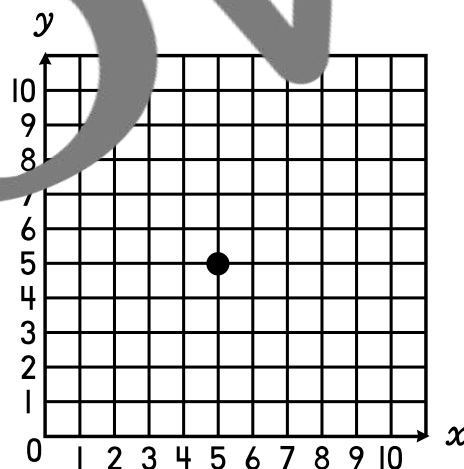
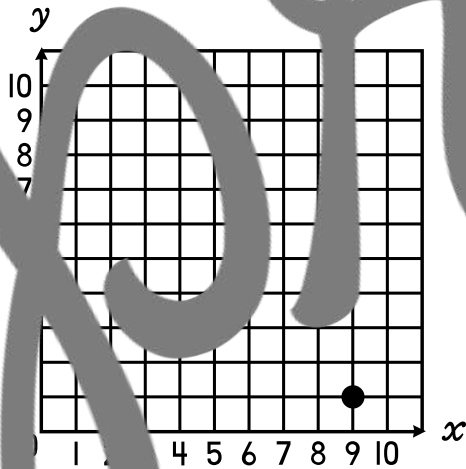
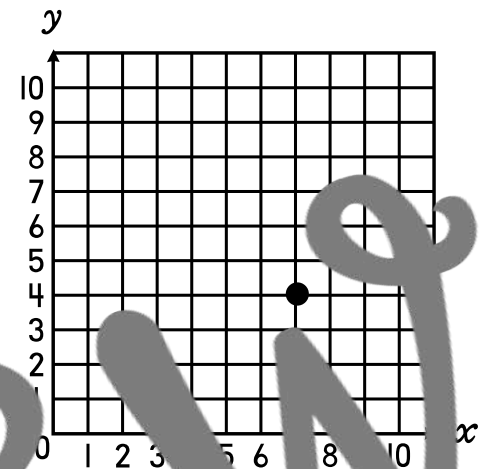
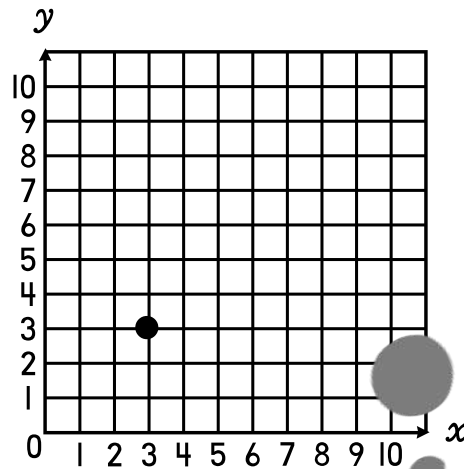
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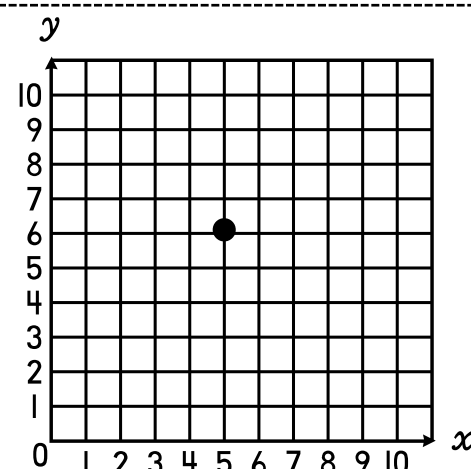
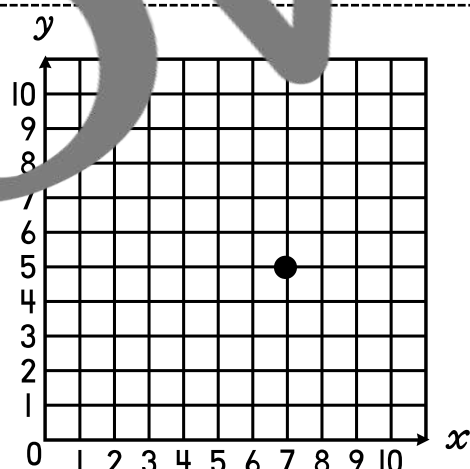
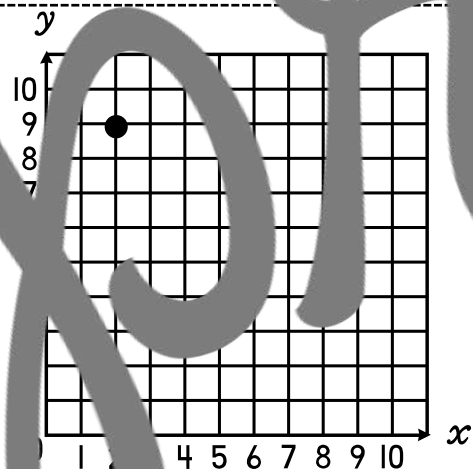
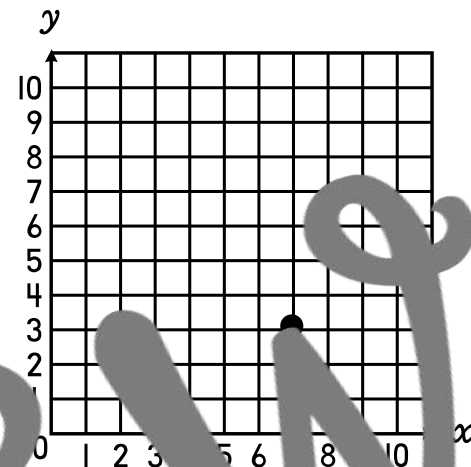
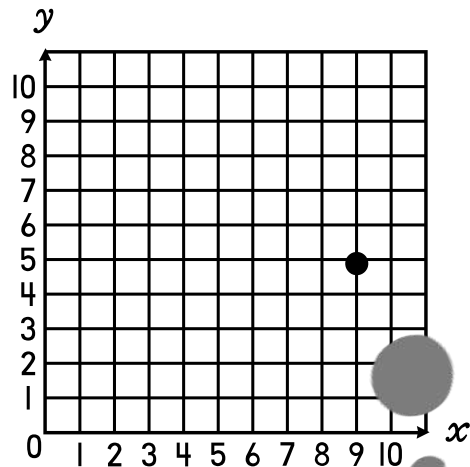
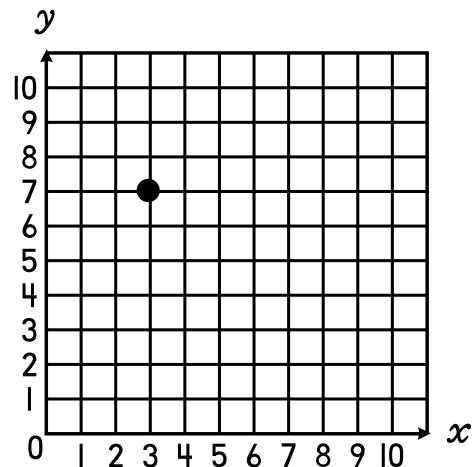
- QR Code Cards

Not Included:

- A device capable of scanning QR Codes such as a smartphone or tablet

START





END

FILL IN

Complete a table based on a graph.

TEACHER SUGGESTIONS

FILL IT IN

- In this activity students are asked to complete tables based on a given graph.
- This activity can be used in a variety of ways:
 - ✓ Small group with teacher guidance
 - ✓ Partner activity for practice
 - ✓ Independently to assess

Materials

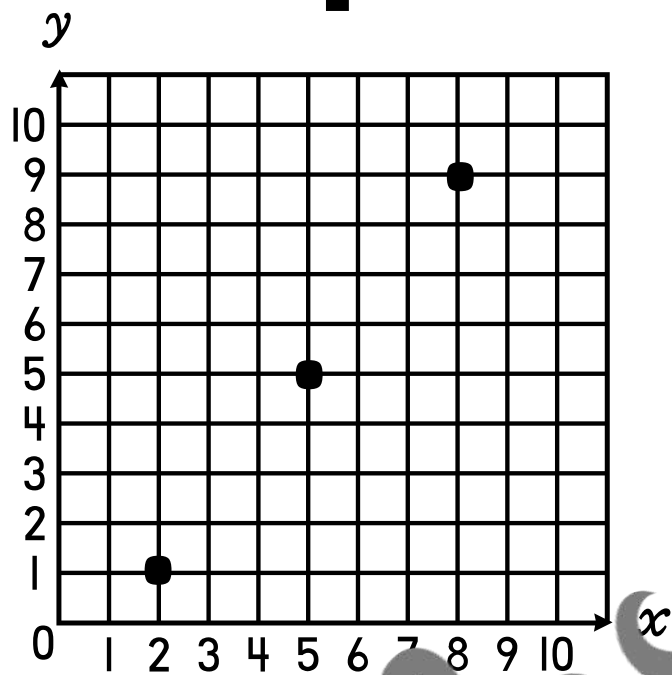
Included:

- Graphs
- Recording Sheet with Blank Tables
- Answer Key

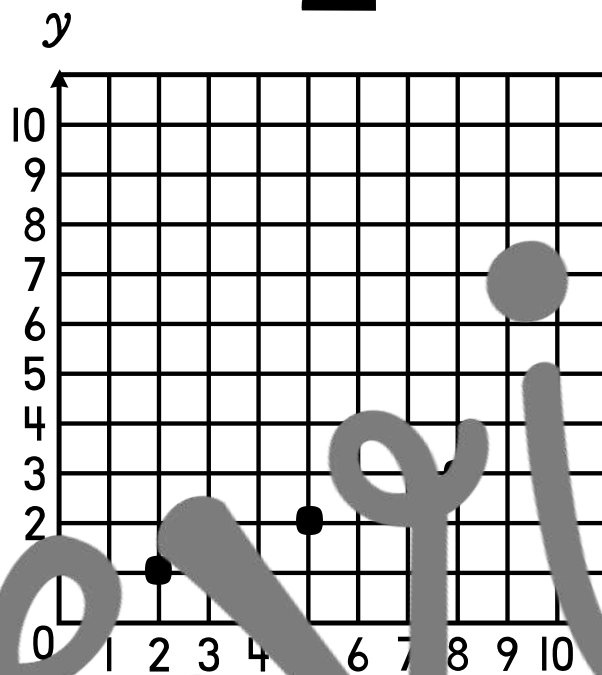
Not Included:

- Pencil

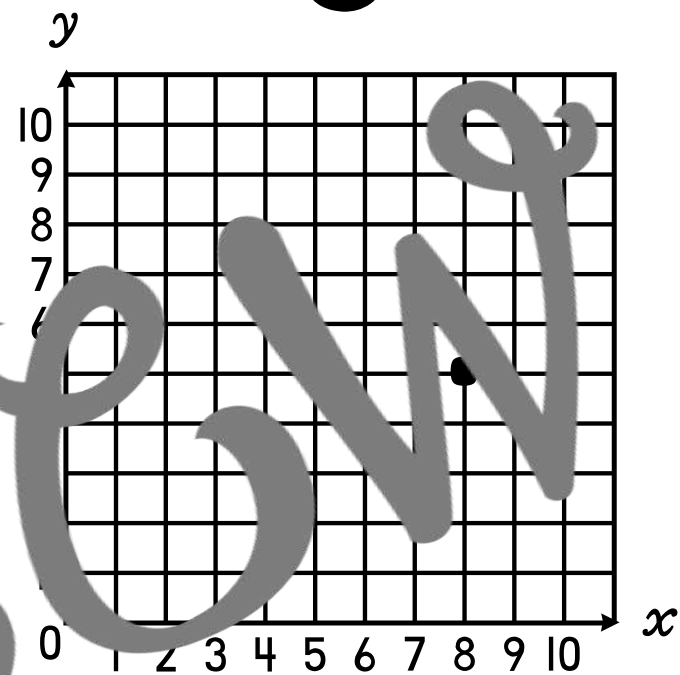
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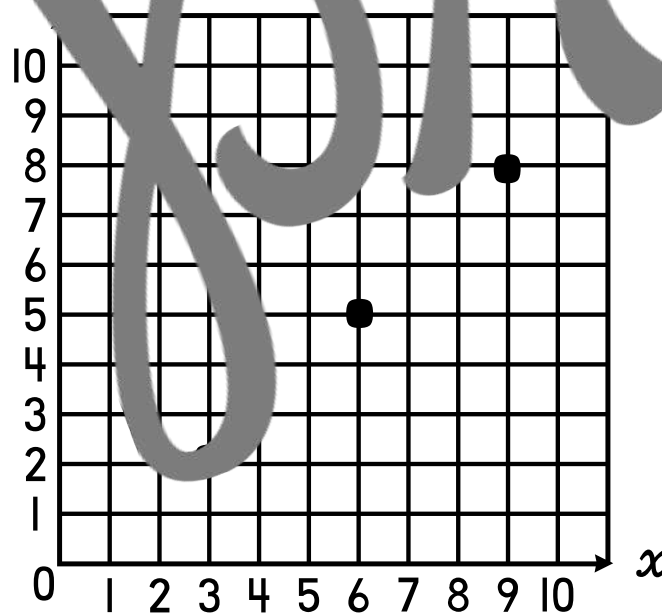
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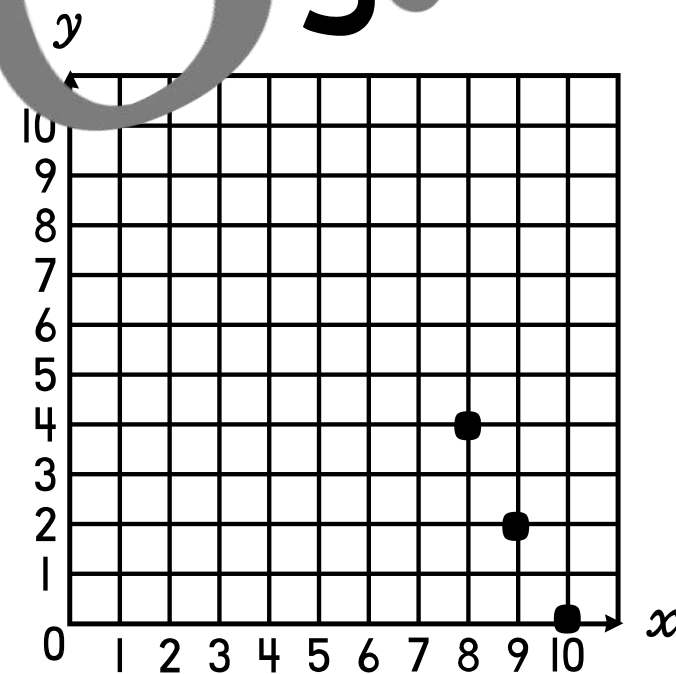
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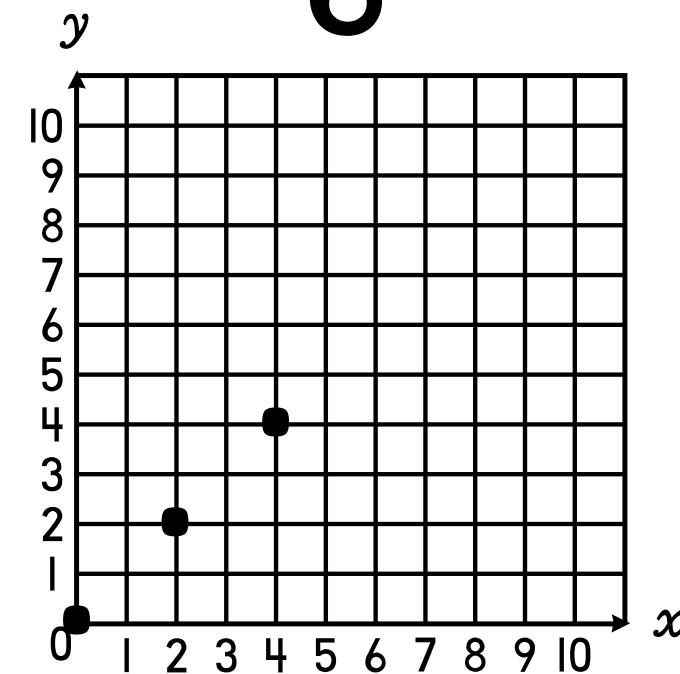
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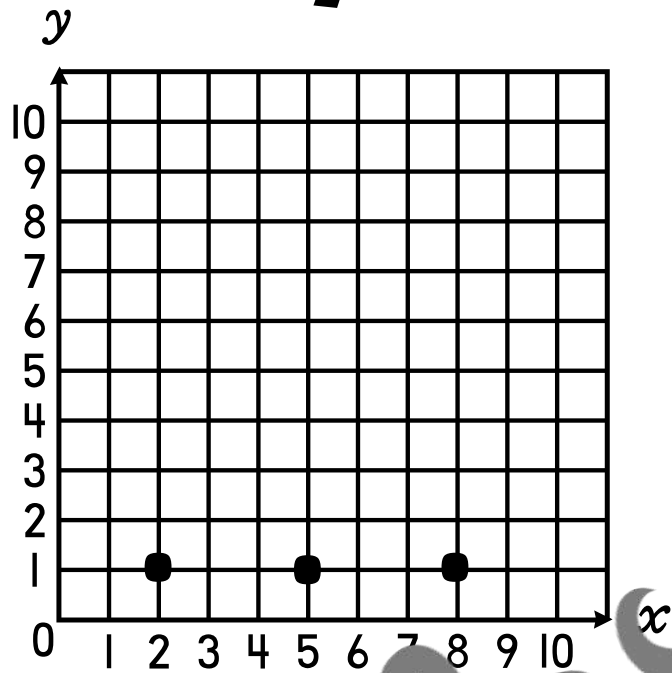
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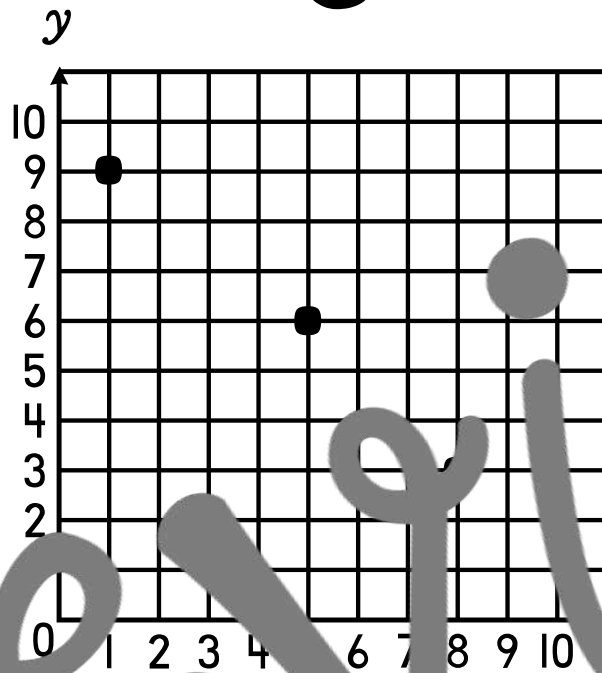
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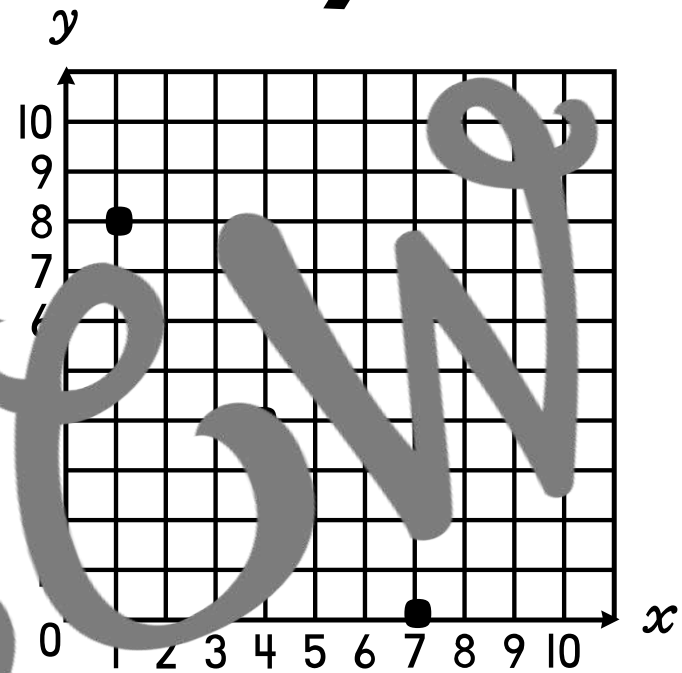
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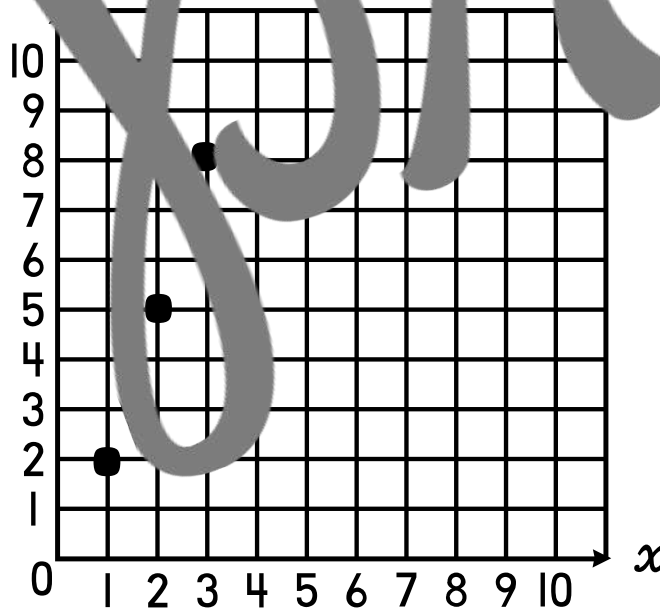
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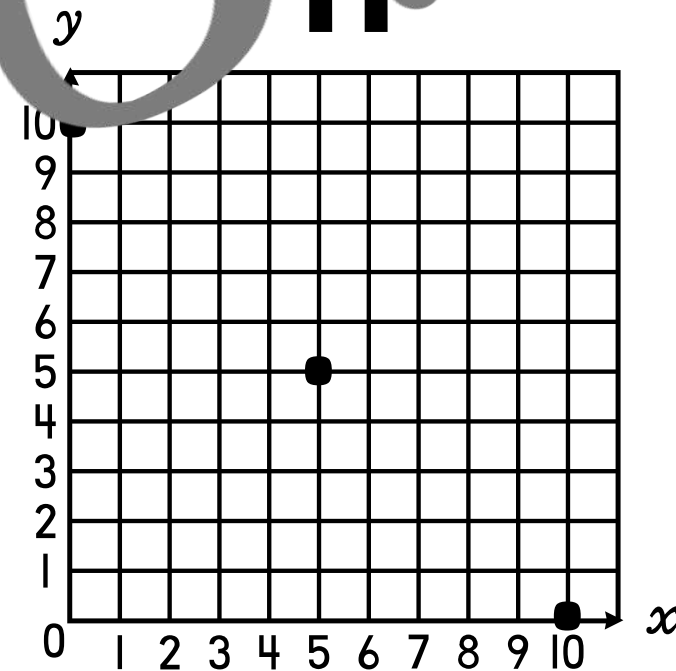
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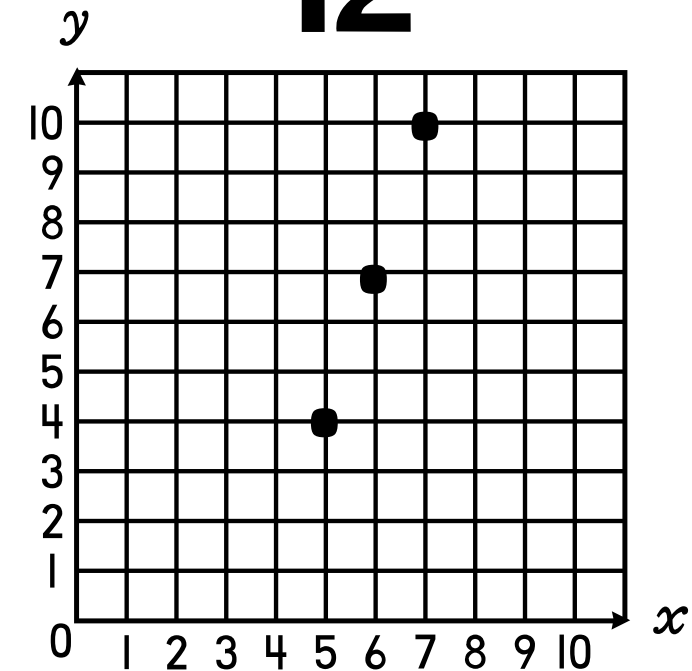
10



11



12



Name _____ # _____ Date _____

FILL IT IN RESPONSE SHEET

Complete each table based on the graph.

1	2	3																								
<table border="1"><thead><tr><th>X</th><th>Y</th></tr></thead><tbody><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></tbody></table>	X	Y							<table border="1"><thead><tr><th>X</th><th>Y</th></tr></thead><tbody><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></tbody></table>	X	Y							<table border="1"><thead><tr><th>X</th><th>Y</th></tr></thead><tbody><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></tbody></table>	X	Y						
X	Y																									
X	Y																									
X	Y																									
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X	Y																									
X	Y																									
X	Y																									

Name _____ # _____ Date _____

FILL IT IN RESPONSE SHEET

Complete each table based on the graph.

7

X	Y

8

X	Y

9

X	Y

10

X	Y

11

X	Y

12

X	Y

FILL IT IN ANSWER KEY

1

X	Y
2	1
5	5
8	9

2

X	Y
2	1
5	2
8	3

3

X	Y
6	1
4	3
8	5

4

X	Y
3	2
6	5
9	8

5

X	Y
8	4
	2
0	1

6

X	Y
	0
2	2
4	4

7

X	Y
2	1
5	1
8	1

8

X	Y
1	9
5	6
8	3

9

X	Y
1	8
4	4
7	0

10

X	Y
1	2
2	5
3	8

11

X	Y
0	10
5	5
10	0

12

X	Y
5	4
6	7
7	10

CREATE IT

Use coordinate pairs to create an image, and then record the ordered pairs needed for someone to recreate the image.

TEACHER SUGGESTIONS

CREATE IT

- In this activity students are asked to create their own image on a coordinate plane and then record the ordered pairs needed for someone to recreate the image.

This activity can be used in a variety of ways:

- ✓ Small group with teacher guidance
- ✓ A partner activity for practice
- ✓ Independently to assess

Materials

Included:

- Blank Coordinate Plane

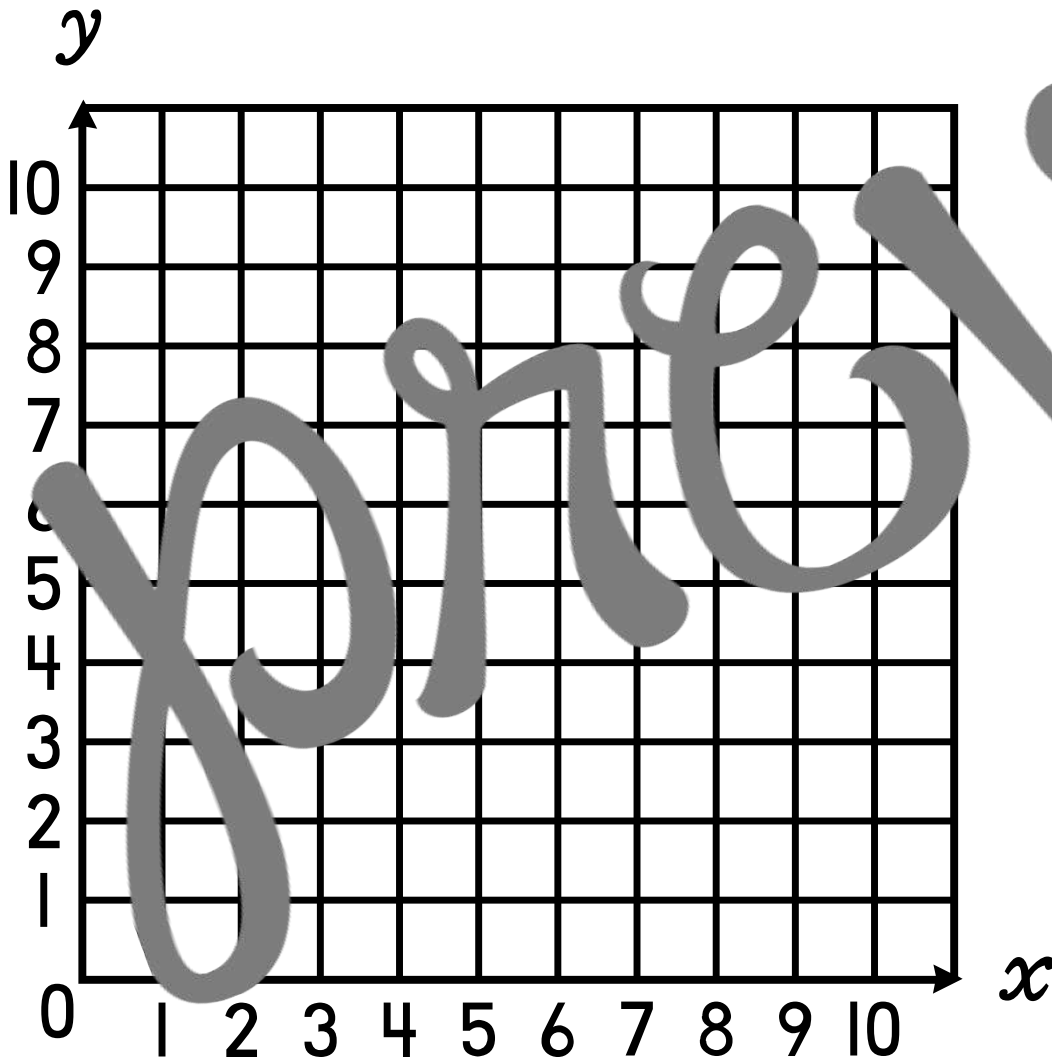
Not Included:

- Pencil
- Answer Key

Name _____ # _____ Date _____

CREATE IT RESPONSE SHEET

Use the graph below to create a picture using coordinate pairs, and then record the coordinate pairs so that someone else could recreate your picture.



X	Y

X	Y

ROLL A RULE

Use the dice to roll a rule for X and Y to complete the table.

TEACHER SUGGESTIONS

ROLL A RULE

- In this activity students are asked to use the dice to roll a rule for X and Y to complete the table.
- This activity can be used in a variety of ways.
 - ✓ Small group with teacher guidance
 - ✓ A partner activity for practice
 - ✓ Independently to assess

Materials

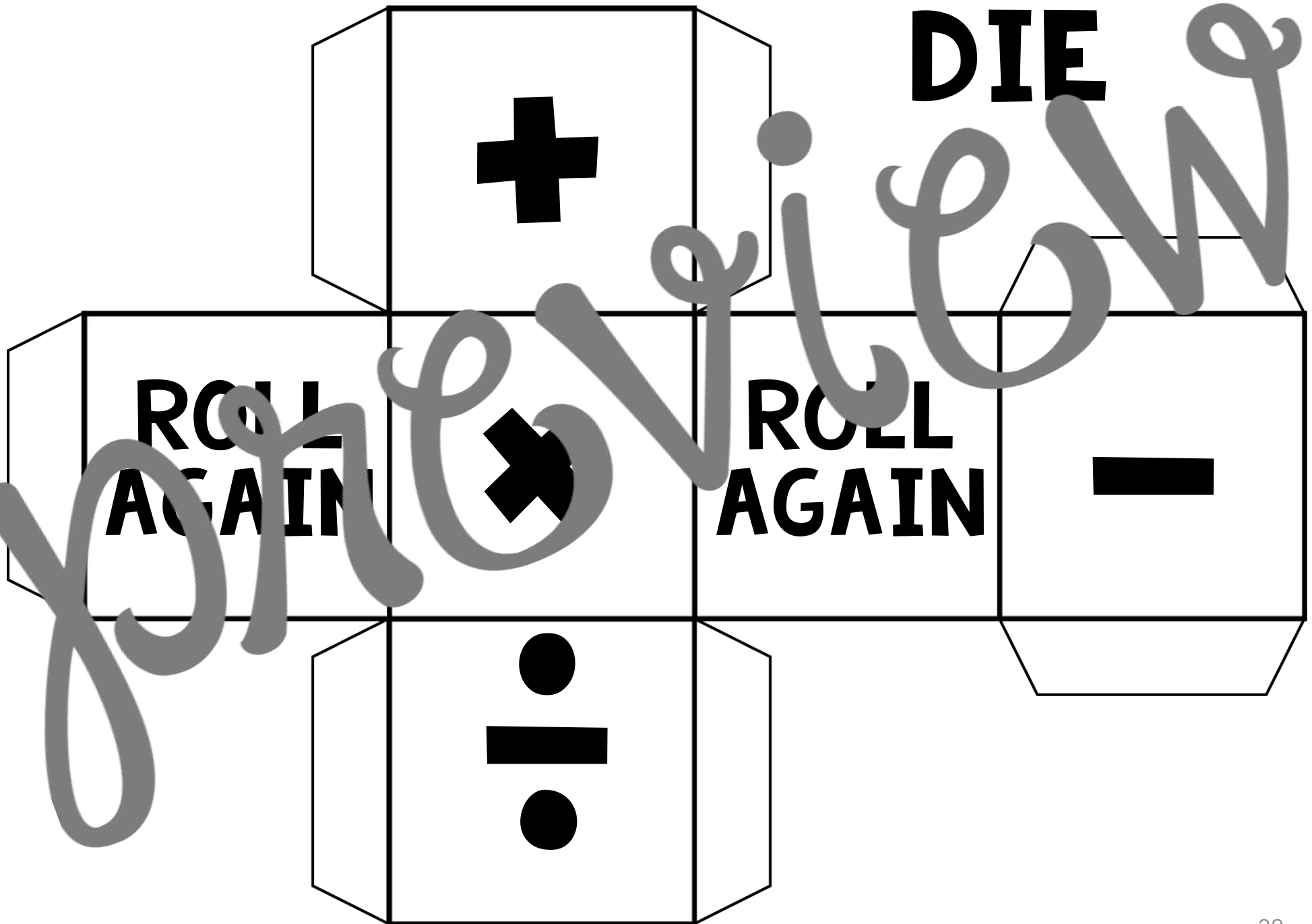
Included:

- Operation Die
- Number Die
- Recording Sheet with Blank Tables

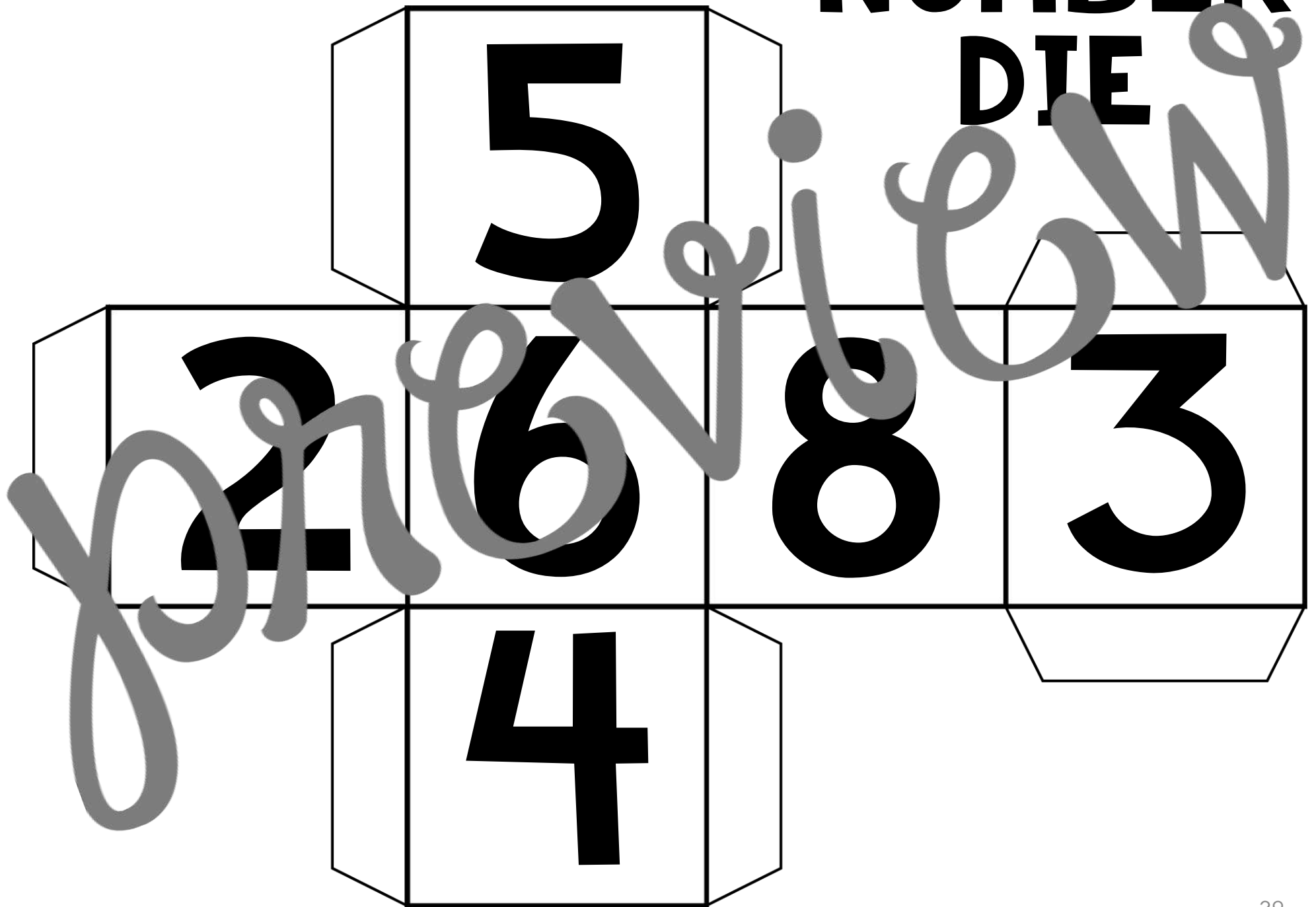
Not Included:

- Pencil
- Answer Key

OPERATION DIE



NUMBER DIE



ROLL A RULE RESPONSE SHEET

Roll the dice to determine the X and Y rule to complete the tables.

1

INPUT	OUTPUT

X rule: _____
Y rule: _____

2

INPUT	OUTPUT

X rule: _____
Y rule: _____

3

INPUT	OUTPUT

X rule: _____
Y rule: _____

4

INPUT	OUTPUT

X rule: _____
Y rule: _____

5

INPUT	OUTPUT

X rule: _____
Y rule: _____

6

INPUT	OUTPUT

X rule: _____
Y rule: _____

7

INPUT	OUTPUT

X rule: _____
Y rule: _____

8

INPUT	OUTPUT

X rule: _____
Y rule: _____

SPIN A PATTERN

Use the spinners to create a numerical pattern, and record at least 4 numbers in the pattern.

TEACHER SUGGESTIONS

SPIN A PATTERN

- In this activity students are asked to use the spinners to create a numerical pattern and record at least 4 numbers in the pattern. This activity can be used in a variety of ways:
 - ✓ Small group with teacher guidance
 - ✓ A partner activity for practice
 - ✓ Independently to assess

Materials

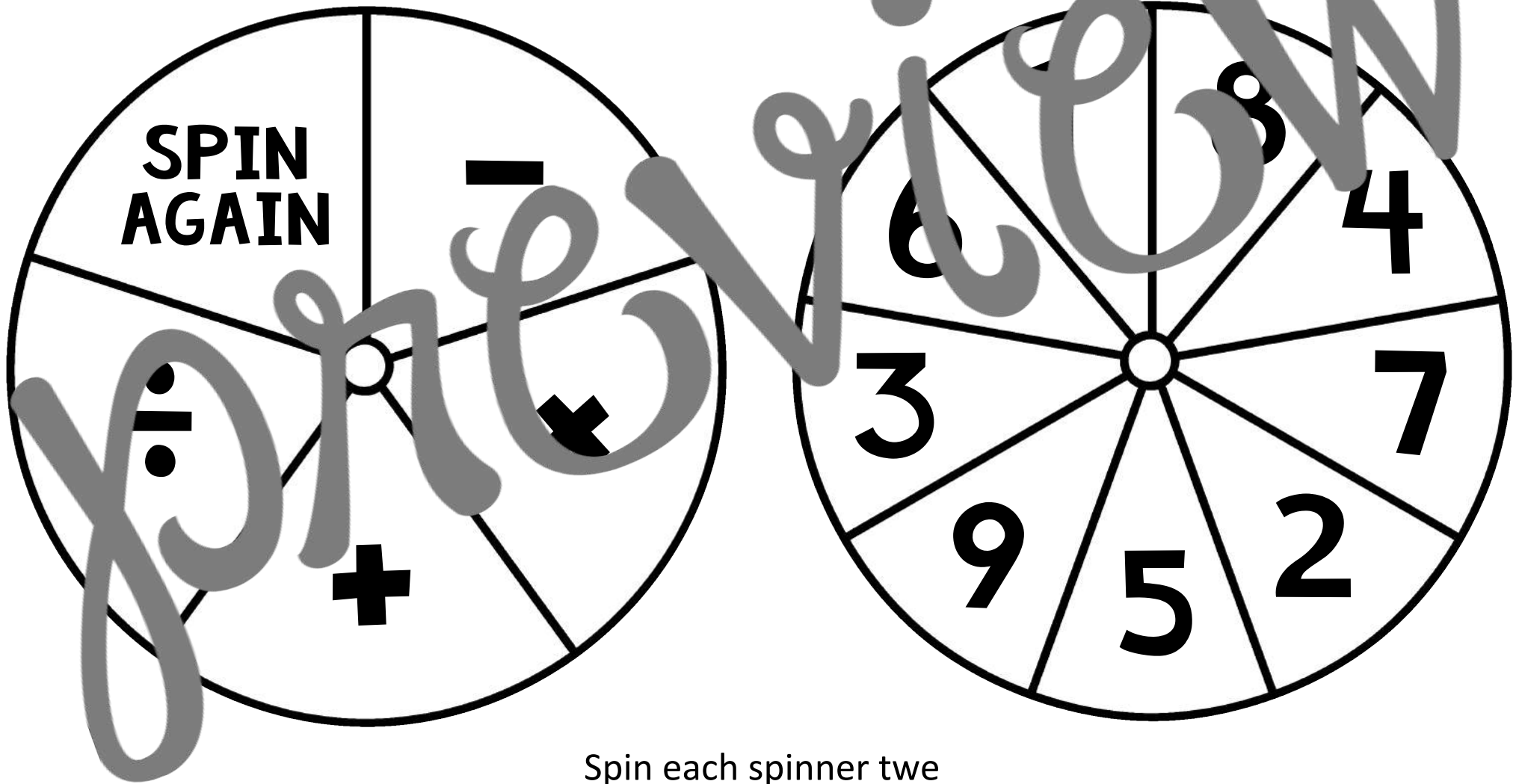
Included:

- Spinners
- Recording Sheet

Not Included:

- Pencil
- Paper Clip
- Answer Key

SPIN A PATTERN



Spin each spinner two

Name _____ # _____ Date _____

SPIN A PATTERN RESPONSE SHEET

Create a number pattern based on the rule that you spin. Make sure that your pattern has at least four numbers in it.

1 <i>EXAMPLE: Spin +4 5, 9, 13, 17</i>	2	3
4	5	6
7	8	9
10	11	12

PICK A CARD

Draw cards to identify the X and Y rules, and then graph at least three ordered pairs.

TEACHER SUGGESTIONS

PICK A CARD

- In this activity students are asked to draw cards to identify the X and Y rules, and then graph at least three ordered pairs.

This activity can be used in a variety of ways:

- ✓ Small group with teacher guidance
- ✓ A partner activity for practice
- ✓ Independently to assess

Materials

Included:

- X Rule Cards
- Y Rule Cards
- Recording Sheet

Not Included:

- Pencil
- Answer Key

X RULE
+2

X RULE
-2

X RULE
+4

X RULE
-4

X RULE
+3

X RULE
-3

X RULE
+1

X RULE
-1

X RULE
+5

X RULE
-5

X RULE
+6

X RULE
-6

Y RULE
+2

Y RULE
-2

Y RULE
+4

Y RULE
-4

Y RULE
+3

Y RULE
-3

Y RULE
+1

Y RULE
-1

Y RULE
+5

Y RULE
-5

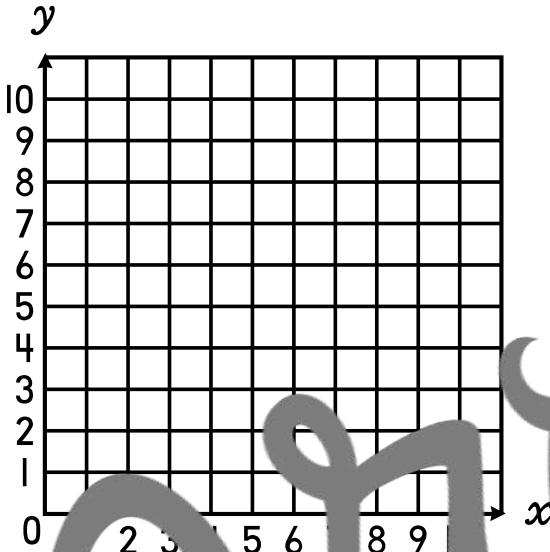
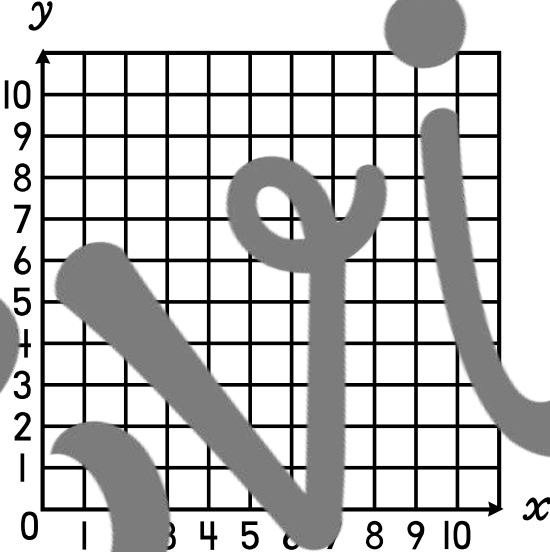
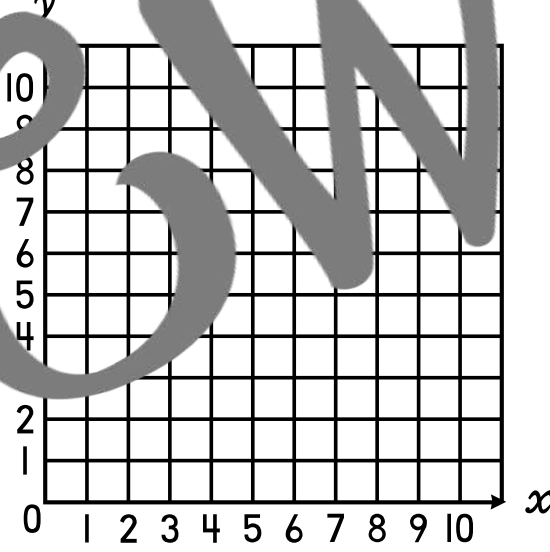
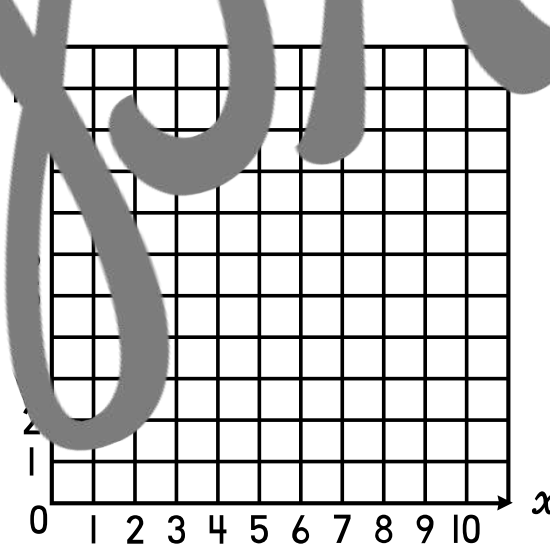
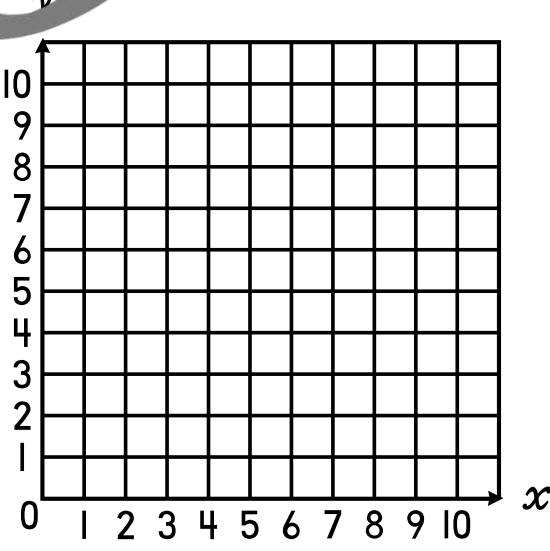
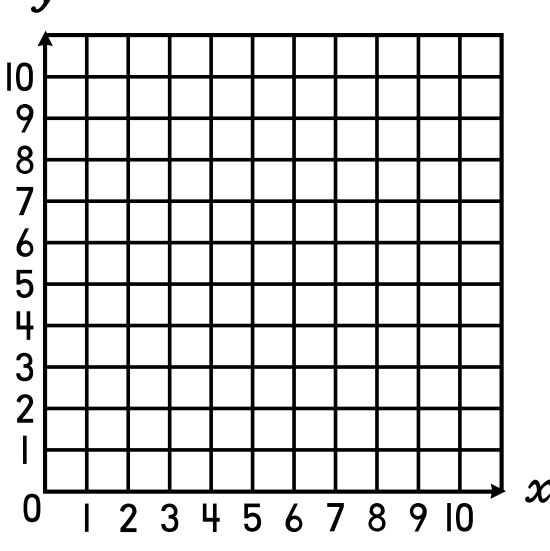
Y RULE
+6

Y RULE
-6

Name _____ # _____ Date _____

PICK A CARD RESPONSE SHEET

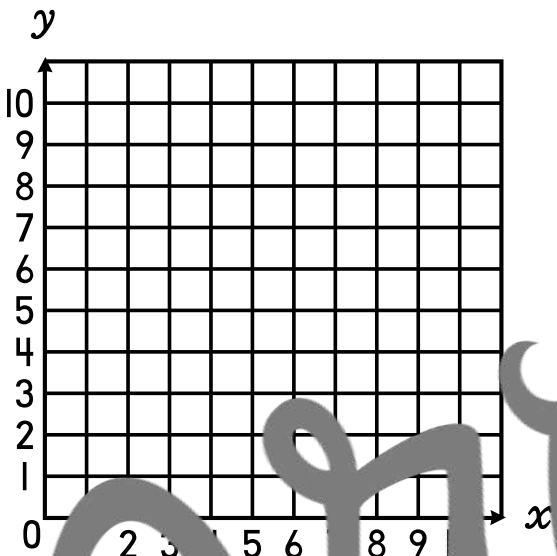
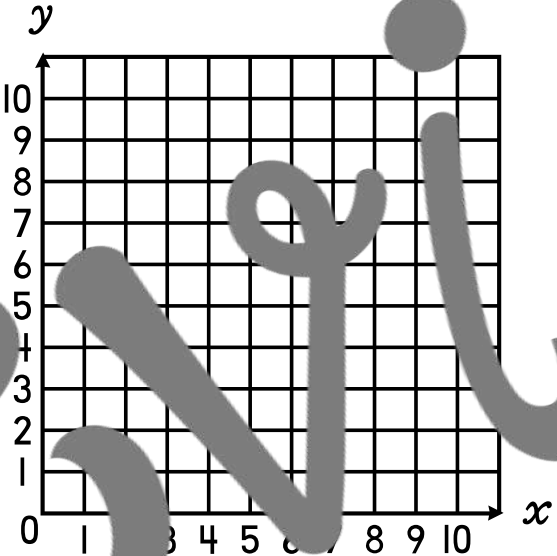
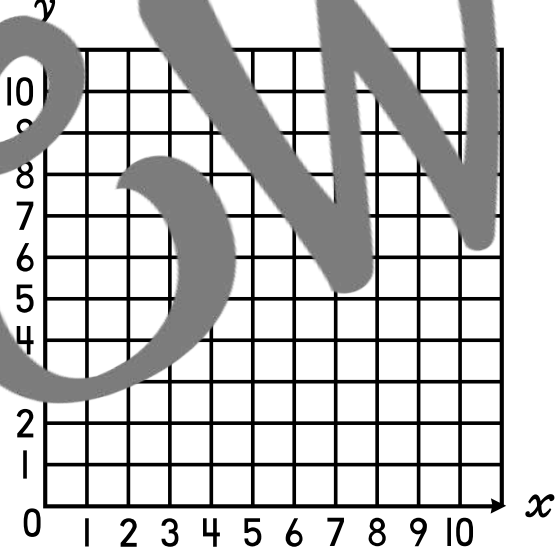
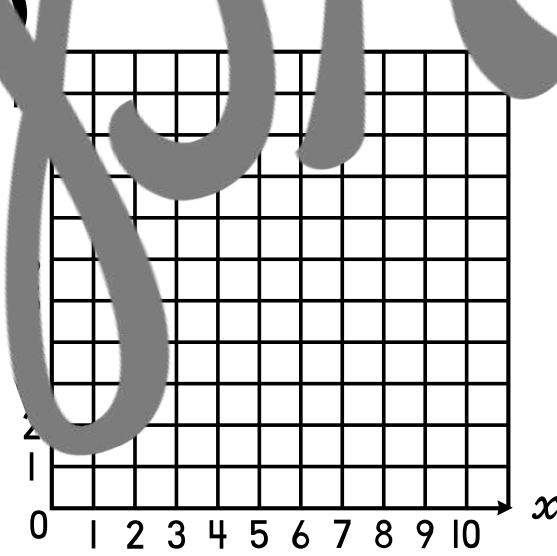
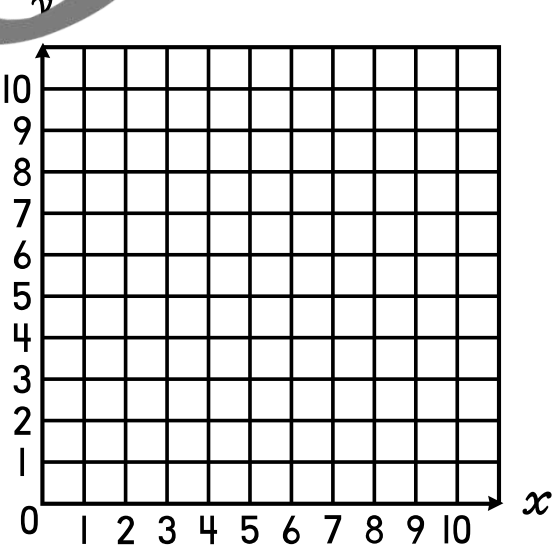
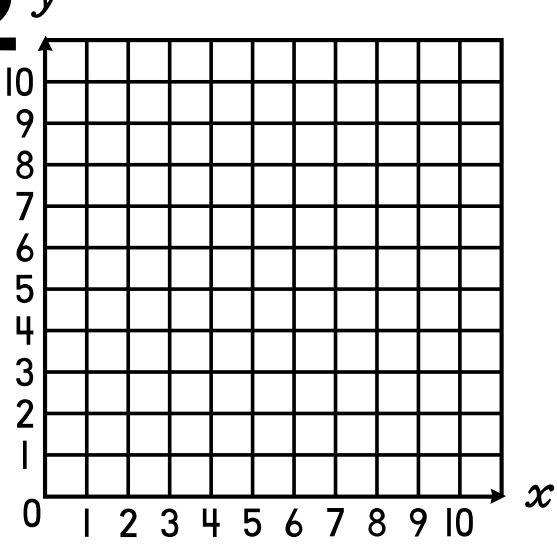
Draw cards to determine the rules for X and Y then graph at least 3 ordered pairs starting at (0,0).

1 	2 	3 
4 	5 	6 

Name _____ # _____ Date _____

PICK A CARD RESPONSE SHEET

Draw cards to determine the rules for X and Y then graph at least 3 ordered pairs starting at (0,0).

7 	8 	9 
10 	11 	12 

GRAPH MATCH

Match each graph to the table that shows the same numerical pattern.

TEACHER SUGGESTIONS

GRAPH MATCH

- In this activity students are asked to match each table to the graph that shows the same numerical pattern.
- This activity can be used in a variety of ways.
 - ✓ Small group with teacher guidance
 - ✓ A partner activity for practice
 - ✓ Independently to assess

Materials

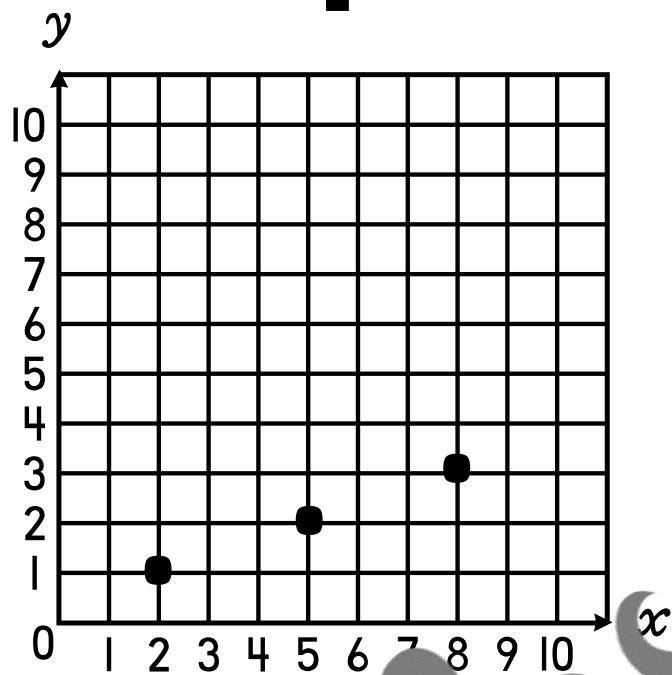
Included:

- Graph Cards
- Table Cards
- Recording Sheet
- Answer Key

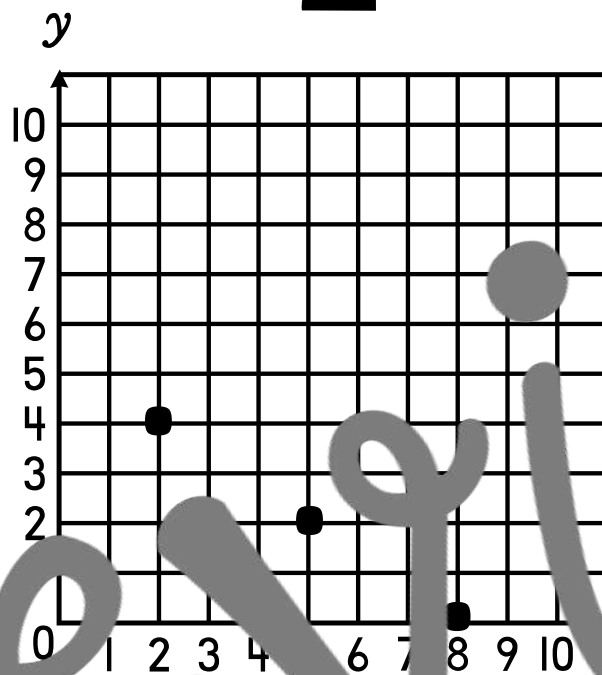
Not Included:

- Pencil

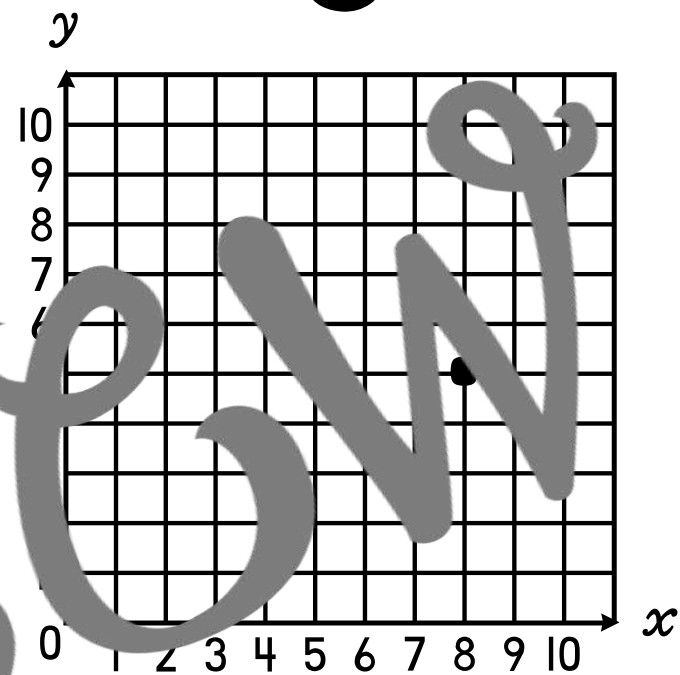
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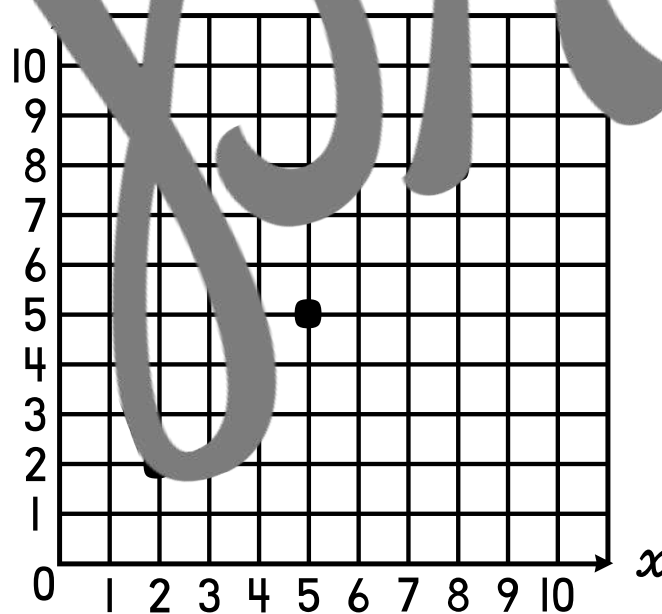
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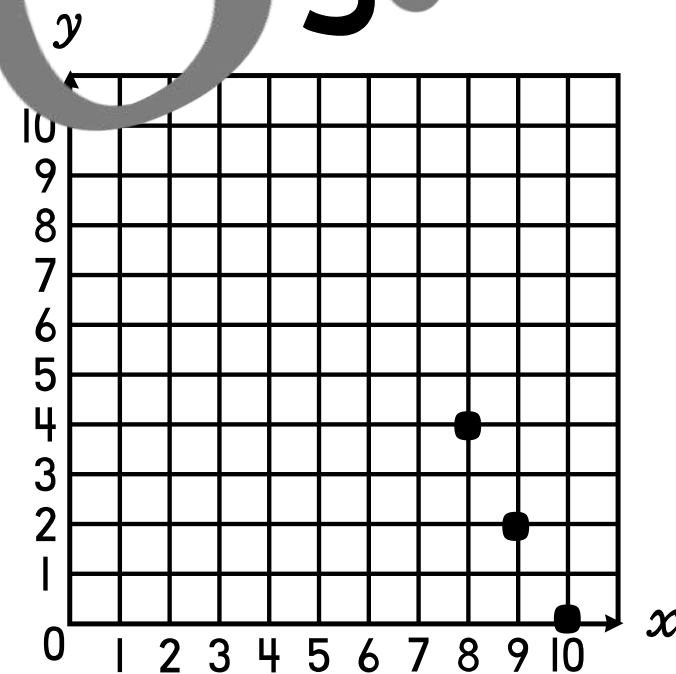
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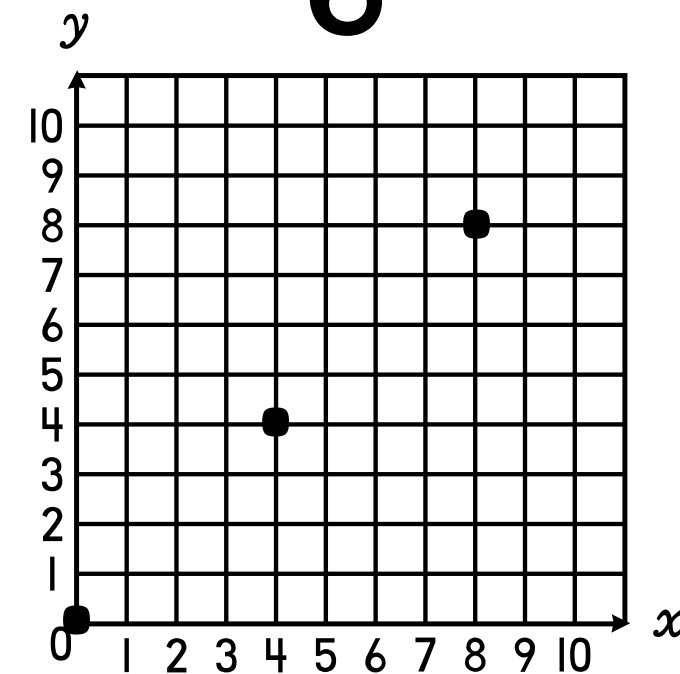
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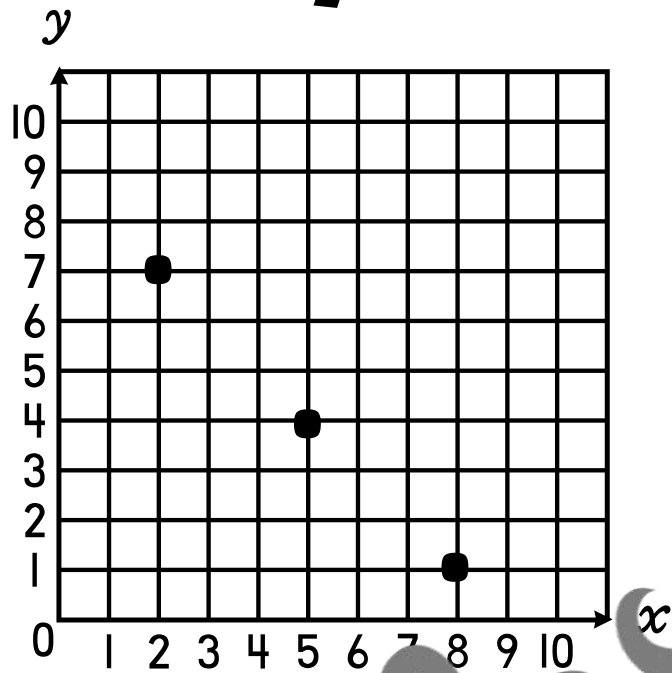
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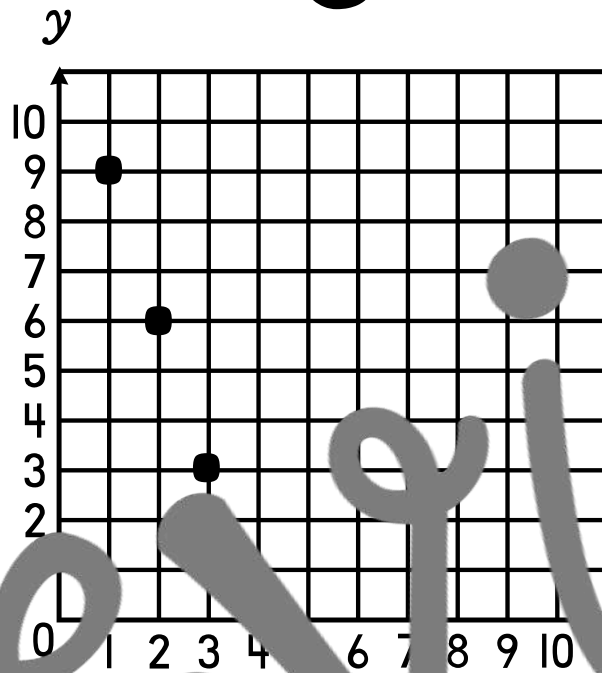
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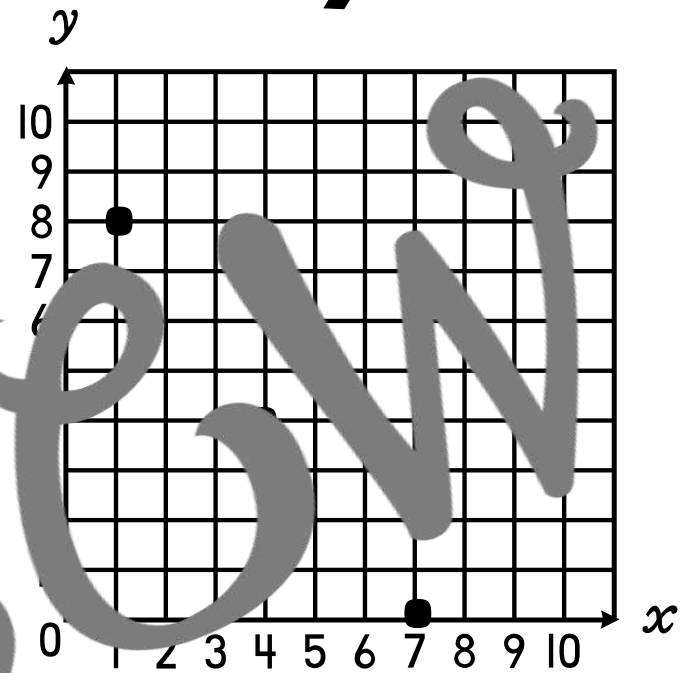
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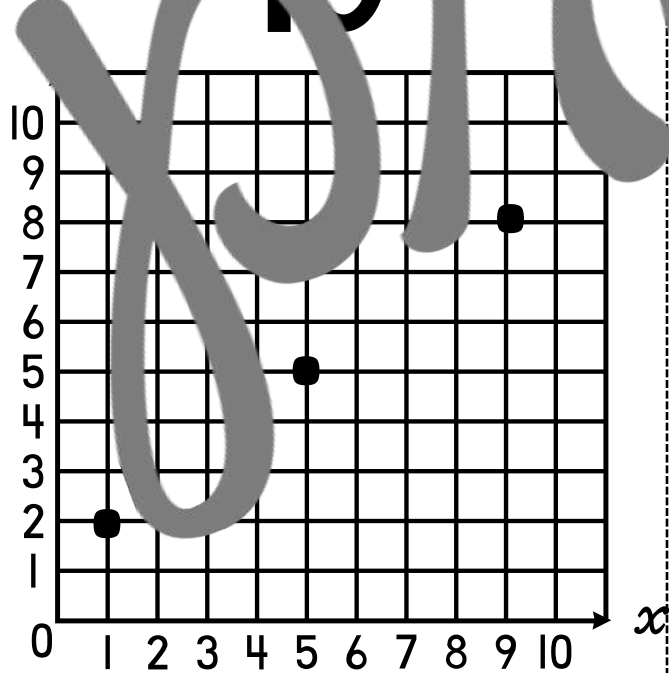
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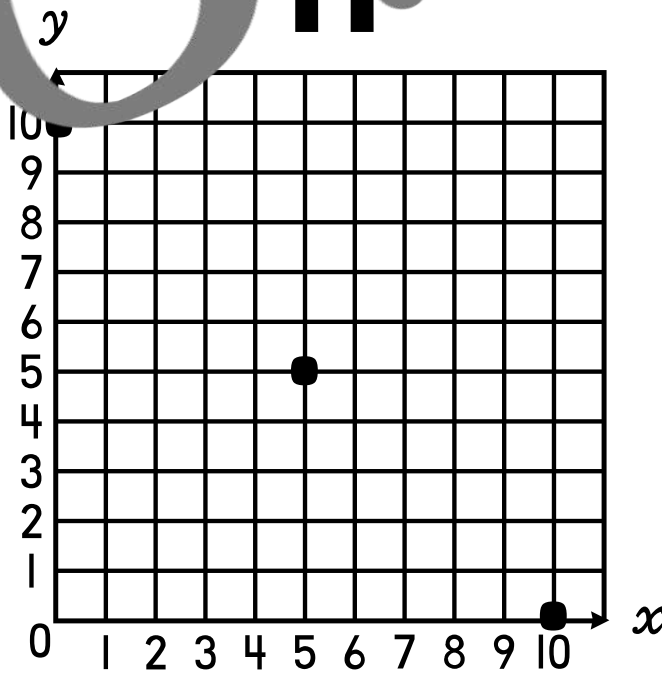
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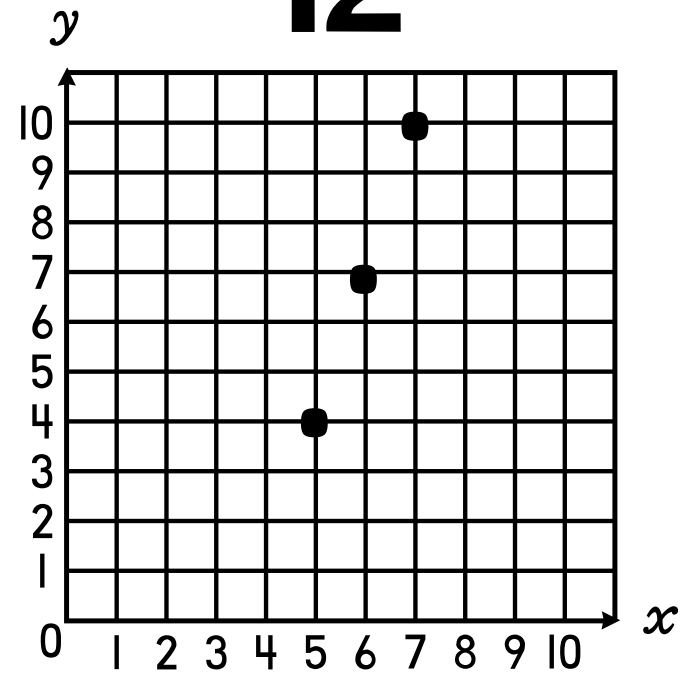
10



11



12



C

X	Y
2	1
5	2
8	3

E

X	Y
2	4
5	2
	0

I

X	Y
0	1
4	3
8	5

B

X	Y
2	2
5	5
8	8

L

X	Y
8	4
9	2
10	0

F

X	Y
0	0
4	4
8	8

A

X	Y
2	7
5	4
8	1

K

X	Y
1	9
2	6
	3

D

X	Y
1	8
4	4
7	0

H

X	Y
1	2
5	5
7	8

G

X	Y
0	10
5	5
10	0

J

X	Y
5	4
6	7
7	10

Name _____ # _____ Date _____

GRAPH MATCH RESPONSE SHEET

Match each graph to the table with the corresponding ordered pairs.

1	2	3
4	5	6
7	8	9
10	11	12

GRAPH MATCH ANSWER KEY

1C

2E

3I

4B

5L

6F

7A

8K

9D

10H

11G

12J

IDENTIFY THE RULE

Identify the rule for X and Y on the graph and record.

TEACHER SUGGESTIONS

IDENTIFY THE RULE

- In this activity students are asked to identify the rules for X and Y on the graph.
- This activity can be used in a variety of ways:
 - ✓ Small group with teacher guidance
 - ✓ Partner activity for practice
 - ✓ Independently to assess

Materials

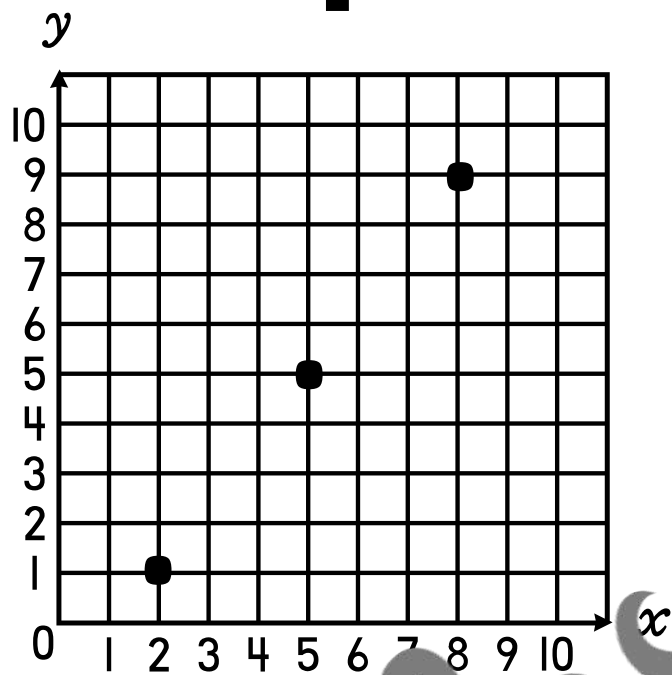
Included:

- Graph Cards
- Recording Sheet
- Answer Key

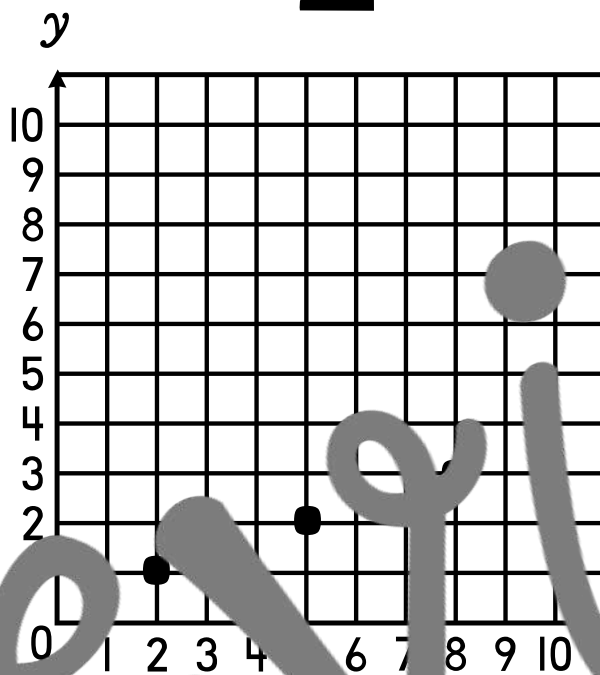
Not Included:

- Pencil

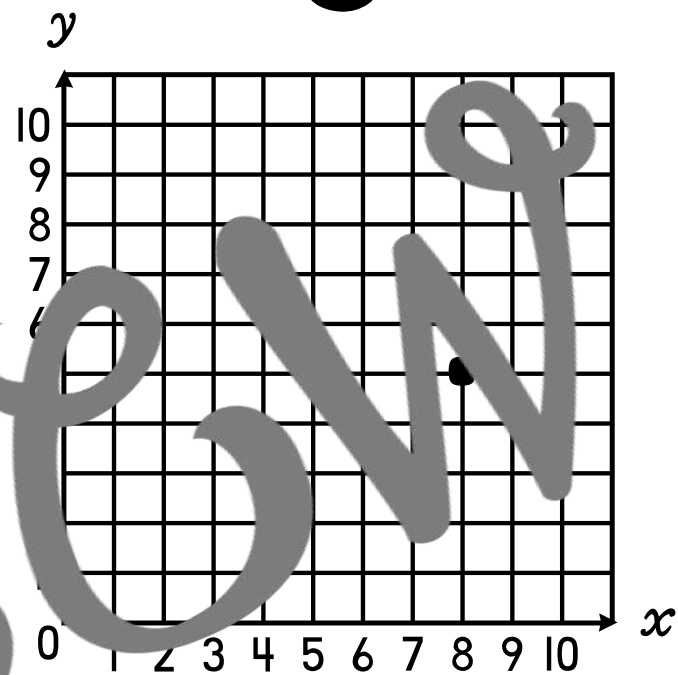
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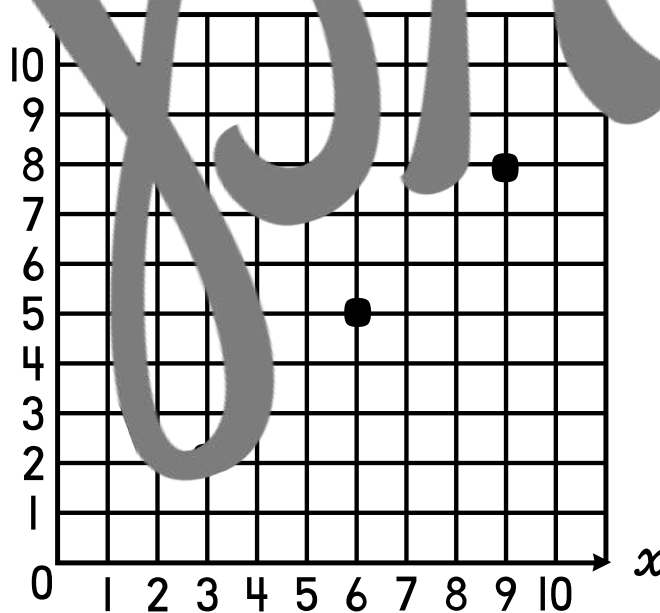
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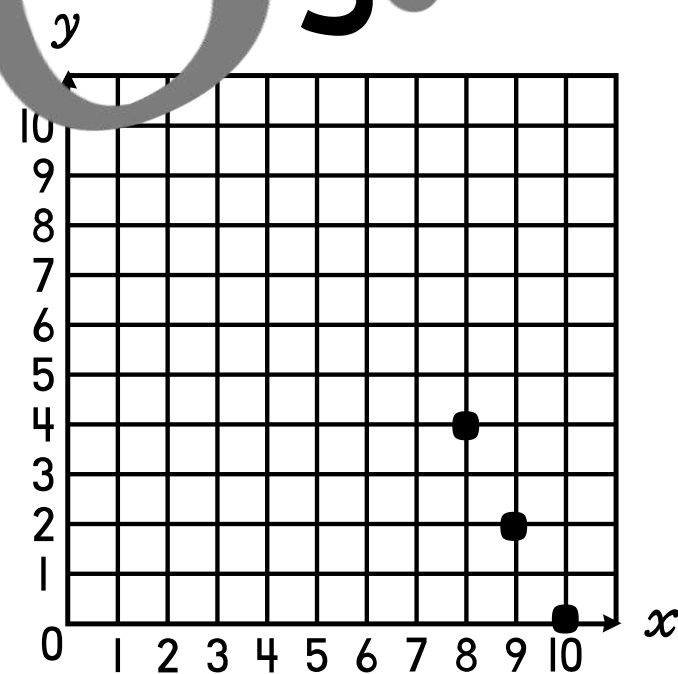
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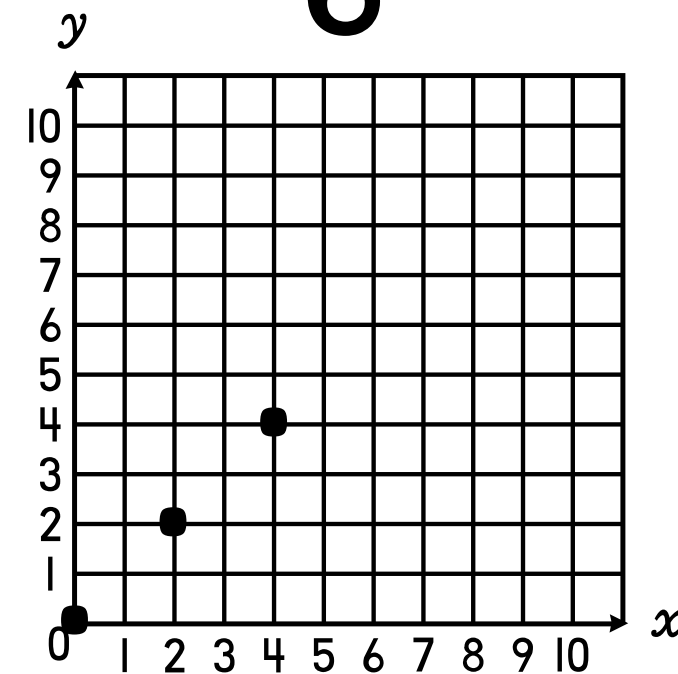
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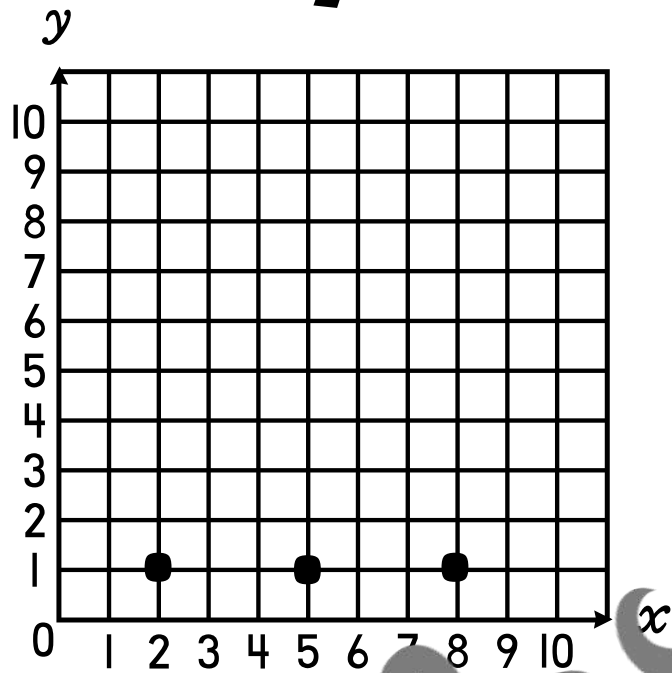
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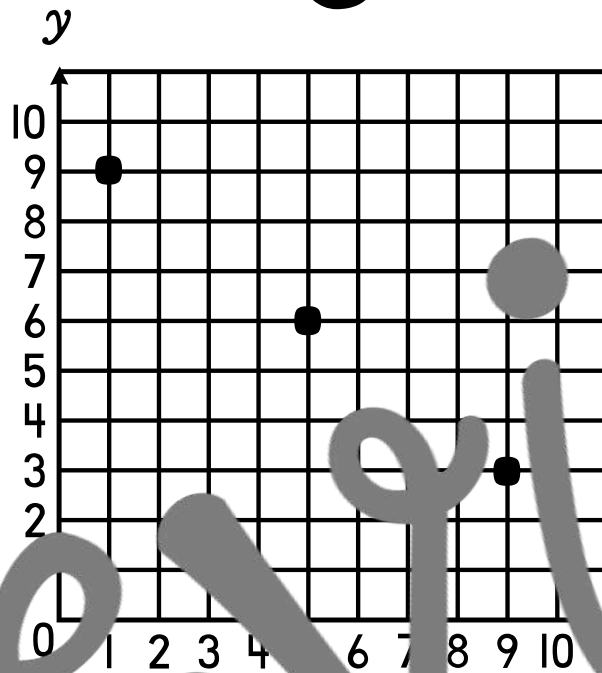
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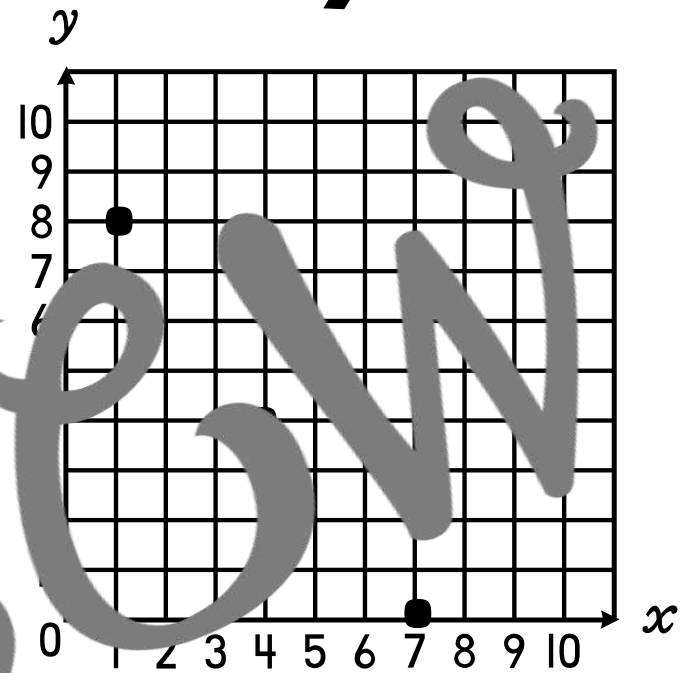
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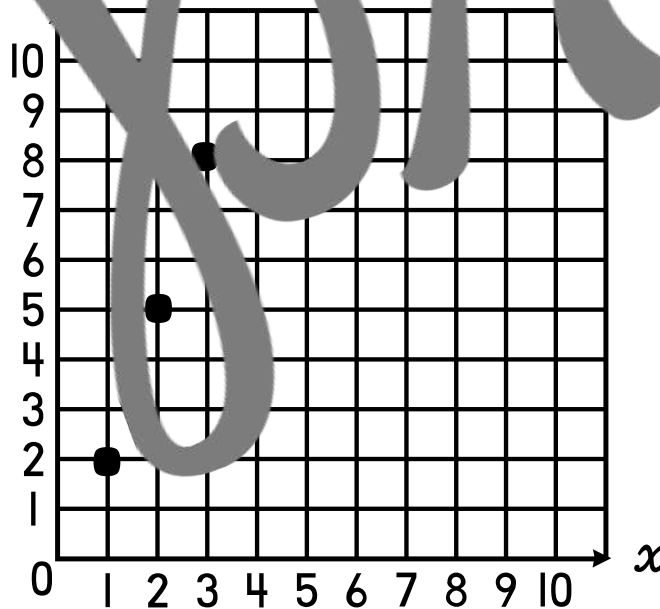
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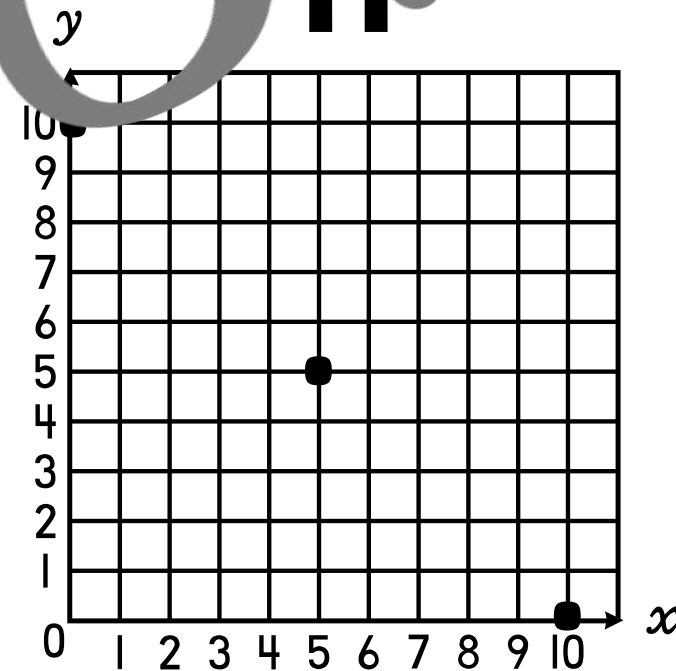
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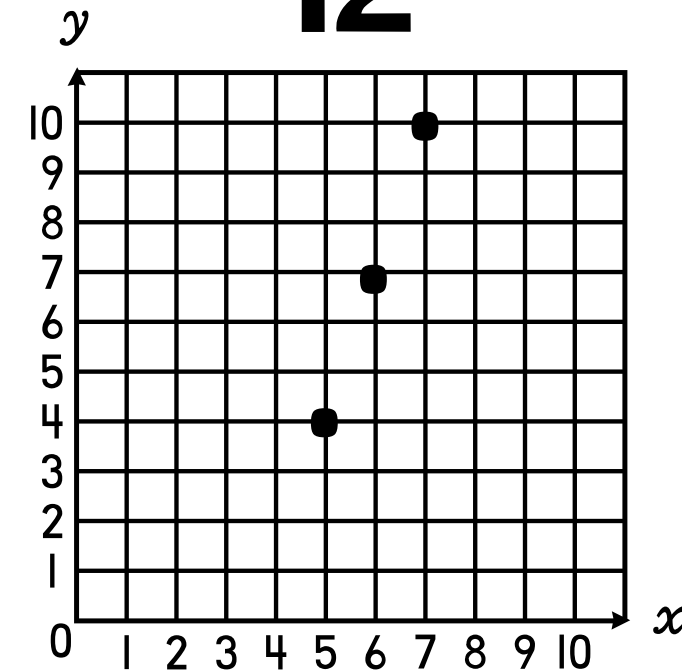
10



11



12



Name _____ # _____ Date _____

IDENTIFY THE RULE RESPONSE SHEET

Identify the rule for X and Y and record.

1 X Rule: Y Rule:	2 X Rule: Y Rule:	3 X Rule: Y Rule:
4 X Rule: Y Rule:	5 X Rule: Y Rule:	6 X Rule: Y Rule:
7 X Rule: Y Rule:	8 X Rule: Y Rule:	9 X Rule: Y Rule:
10 X Rule: Y Rule:	11 X Rule: Y Rule:	12 X Rule: Y Rule:

IDENTIFY THE RULE

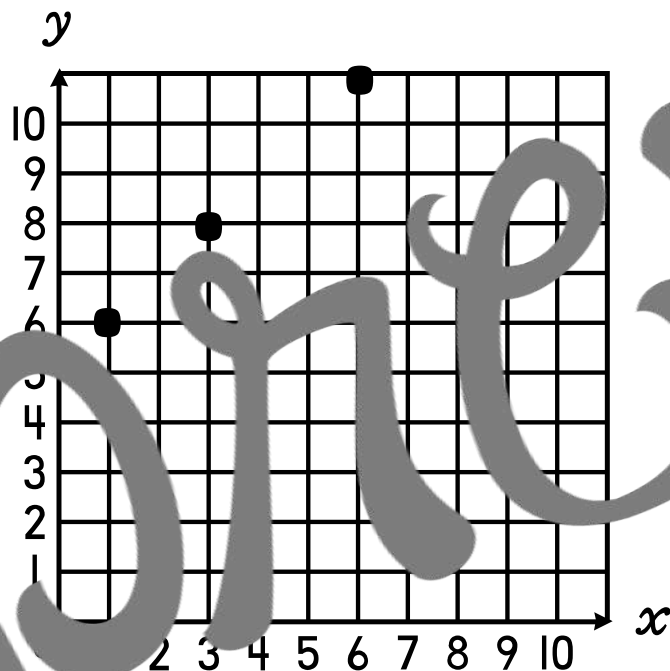
ANSWER KEY

1 X Rule: +3 Y Rule: +4	2 X Rule: +3 Y Rule: +1	3 X Rule: +1 Y Rule: +2
4 X Rule: +3 Y Rule: +3	5 X Rule: -1 Y Rule: +2	6 X Rule: +2 Y Rule: +2
7 X Rule: +3 Y Rule: +0	8 X Rule: +4 Y Rule: -3	9 X Rule: +3 Y Rule: -4
10 X Rule: +1 Y Rule: +3	11 X Rule: +5 Y Rule: -5	12 X Rule: +1 Y Rule: +3

Name _____ # _____ Date _____

TEST BRIDGE QUESTIONS

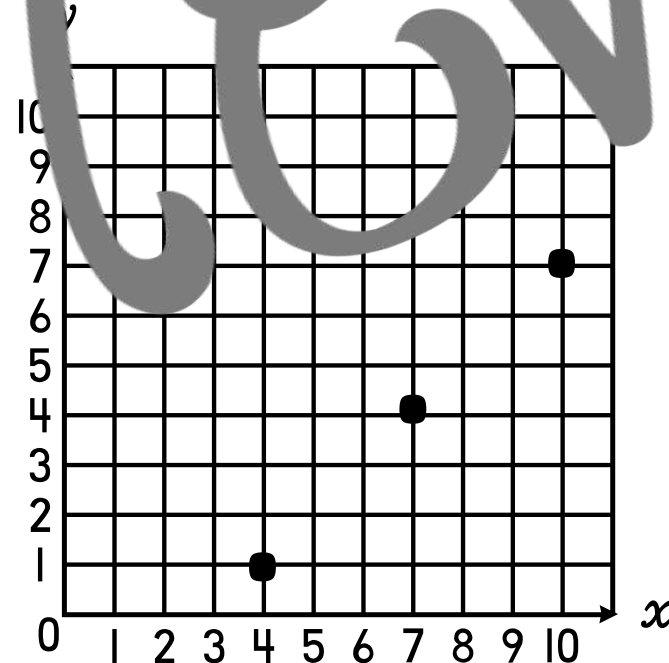
1. The ordered pairs for the points on the coordinate plane satisfy the equation $y=x+5$



Which ordered pair could also satisfy this equation?

- a. (6,9) b. (11,15)
c. (11,16) d. (15,11)

2. The ordered pairs for the points on the coordinate plane satisfy the equation $y=x-3$

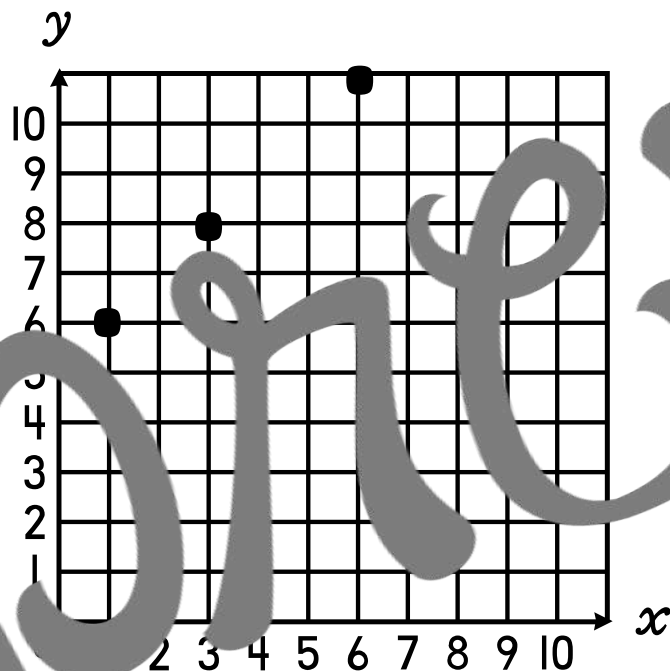


Which ordered pair could also satisfy this equation?

- a. (12,9) b. (4,7)
c. (11,9) d. (15,11)

TEST BRIDGE ANSWER KEY

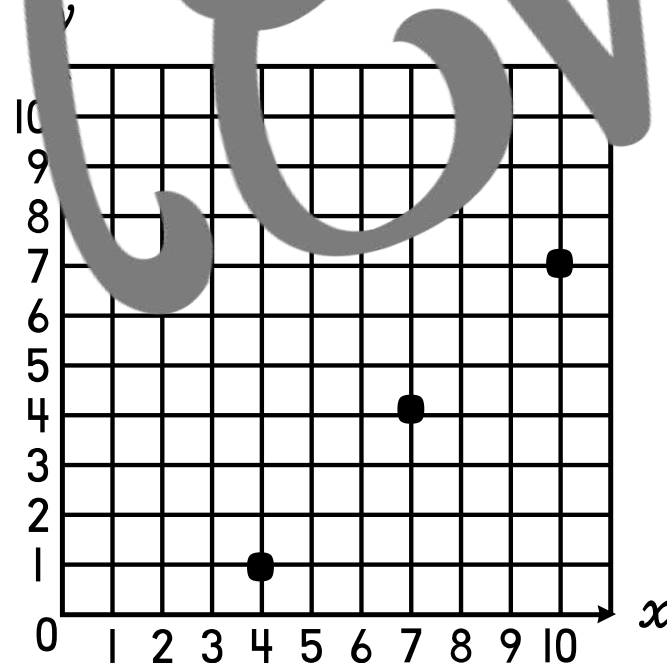
1. The ordered pairs for the points on the coordinate plane satisfy the equation $y=x+5$



Which ordered pair could also satisfy this equation?

- a. (6,9) b. (11,15)
c. (11,16) d. (15,11)

2. The ordered pairs for the points on the coordinate plane satisfy the equation $y=x+3$



Which ordered pair could also satisfy this equation?

- a. (12,9) b. (4,7)
c. (11,9) d. (15,11)

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