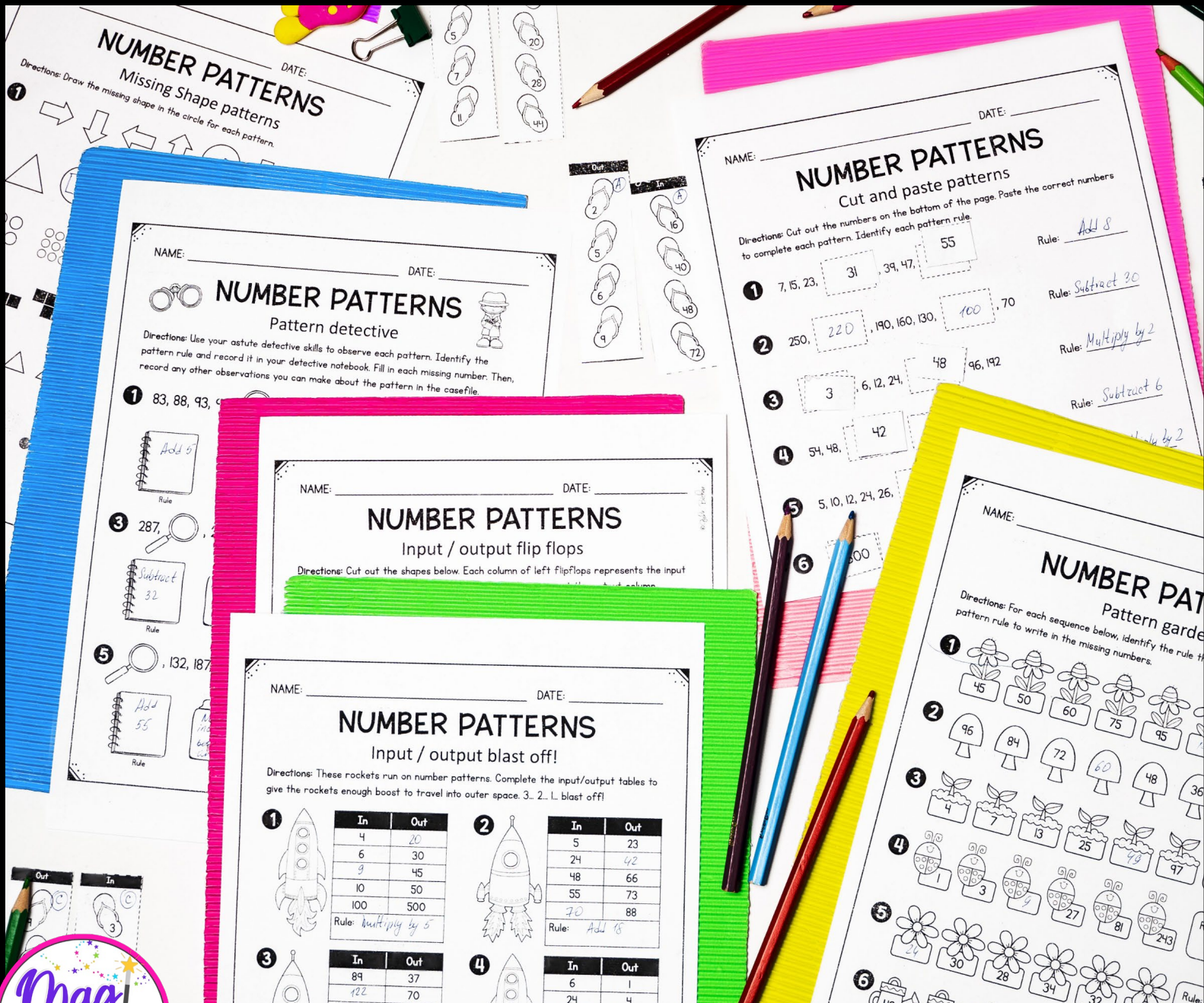


NUMBER PATTERNS

4th Grade



Printable & Google Slides



NUMBER PATTERNS

pattern garden

Directions: For each sequence below, identify the rule the pattern follows. Use the pattern rule to fill in the missing numbers.

1

2

3

RULE

RULE

RULE

NAME: _____ DATE: _____

NUMBER PATTERNS

Input / output blast off!

Directions: These rockets run on number patterns. Complete the input/output tables to give the rockets enough boost to travel into outer space. 3... 2... 1... blast off!

1

In	Out
4	20
6	30
9	45
10	50
100	500

Rule: multiply by 5

2

In	Out
5	23
24	42
48	66
55	73
70	88

Rule: Add 18

3

In	Out
89	37
122	70
167	115
206	154
244	192

Rule: Subtract 52

4

In	Out
6	1
24	4
36	6
48	8
54	9

Rule: Divide by 6

5

In	Out
8	80
56	560
72	720
113	720
789	1,130

6

In	Out
3	7

NAME: _____ DATE: _____

NUMBER PATTERNS

Pattern garden

Directions: For each sequence below, identify the rule the pattern follows. Use the pattern rule to write in the missing numbers.

1

Rule: Add 5, then 10, then 15, then 20, then 25

2

Rule: Subtract 12

3

Rule: Add 3, then 6, then 12, then 24, then 48

4

Rule: Multiply by 3

5



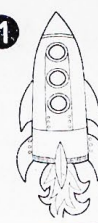
NAME: _____

NUMBER P

Input / output

Directions: These rockets run on number patterns. Give the rockets enough boost to travel into a

1



In	Out
4	20
6	30
9	45
10	50
100	500

Rule: *multiply by 5*

NAME: _____

NUMBER

Cut and p

Directions: Cut out the numbers on the to complete each pattern. Identify each

1

7, 15, 23, 31, 39, 47,

2

250, 220, 190, 160, 130



NAME: _____

NUMBER

Patte

Directions: Use your astute detective skills to observe each pattern. Identify the pattern rule and record it in your detective notebook. Fill in each missing number in the magnifying glass. Then, record any other observations you can make about the pattern in the casefile.

1

83, 88, 93, 98, 103, 108

Add 5

Rule

Numbers increase, alternate between add and even

Observations

3

287, 223, 191, 159,

Subtract 32

Rule

Numbers decrease, are always odd

Observations

5

132, 187, 242, 297

Add 55

Rule

Numbers increase, alternate between odd and even

Observations



NUMBER PATTERNS

pattern detective

Directions: Use your astute detective skills to observe each pattern. Identify the pattern rule and record it in your detective notebook. Fill in each missing number in the magnifying glass. Then, record any other observations you can make about the pattern in the casefile.

1 83, 88, 93, 98, 103, 108

2 1, 2, 3, 5, 8, 13

Rule

Observations

Rule

Observations

© 2015 B&B

NAME: _____ DATE: _____

NUMBER PATTERNS

Missing Shape patterns

Directions: Draw the missing shape in the circle for each pattern.



NAME: _____ DATE: _____

NUMBER PATTERNS

Pattern detective

Directions: Use your astute detective skills to observe each pattern. Identify the pattern rule and record it in your detective notebook. Fill in each missing number and record any other observations you can make about the pattern in the observations column.

1 83, 88, 93, 98, , 108

Rule: Add 5

Observations: Numbers increase, alternate between odd and even

2 1, 2, 3, 5, 8, 

Rule: Add previous 2 numbers

Observations: alternate add and even

3 287, , 223, 191, 159, 127

Rule: Subtract 32

Observations: Numbers decrease, are always odd

4 4, 6, 10, , 24

Rule: Add 2, 4, 6, 8, 10...

5 , 132, 187, 242, 297, 352

Rule: Add 55

Observations: Numbers increase, alternate between odd and even

6 3, 6, 

Rule: Add 3

NAME: _____ DATE: _____

NUMBER PATTERNS

Pattern detective

Directions: Use your astute detective skills to observe each pattern. Identify the pattern rule and record it in your detective notebook. Fill in each missing number and record any other observations you can make about the pattern in the observations column.

1 7, 15, 23, , 31

2 250, , 220

3 , 3

4 54, 48, 

5 5, 10, 15, 

6 1, 50, 

7 96, 84, 72, 

8 4, 7, 13, 25, 

9 1, 3, 9, 27, 

10 24, 30, 36, 42, 

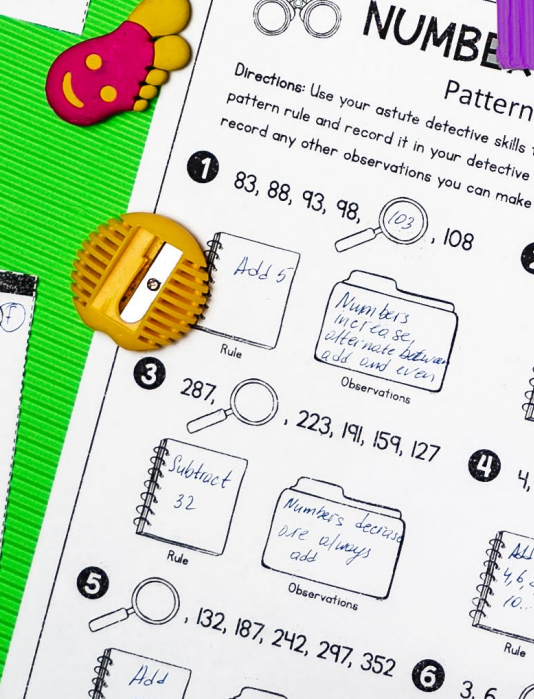
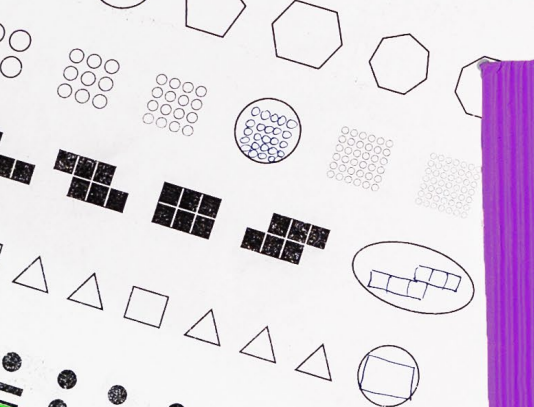
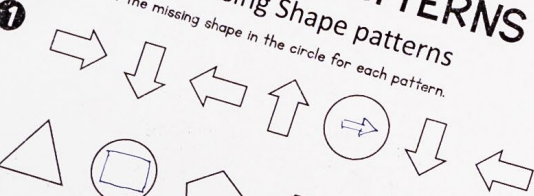
11 42, 36, 30, 24, 

12 30, 22, 12, 

NUMBER PATTERNS

Missing Shape patterns

Directions: Draw the missing shape in the circle for each pattern.



DATE: _____

NAME: _____

NUMBER PATTE

Input / output flip fl

Directions: Cut out the shapes below. Each column of left 1 column of an input/output table. The right flipflops repres Match the left flipflops with the right flipflops.

NUMBER PATTERNS

input / output tables

Directions: Complete the input/output tables below. Write the rule you used to find the missing numbers.

1

In	Out
3	6
5	
8	16
12	24
18	
Rule:	

2

In	Out
12	
25	53
33	
49	77
60	88
Rule:	

3

In	Out
102	30
134	62
165	
212	
227	155
Rule:	

NUMBER PATTERNS

Pattern detective

Directions: Use your astute detective skills to observe each pattern. Identify the pattern rule and record it in your detective notebook. Fill in each missing number. Then, record any other observations you can make about the pattern in the casefile.

1 83, 88, 93, 98, 103, 108

Rule: Add 5

Observations: Numbers increase, alternate between add and even

2 1, 2, 3, 5, 8, 13

Rule: Add previous 2 numbers

Observations: Numbers increase, alternate between add and even

3 287, 223, 191, 159, 127

Rule: Subtract 32

Observations: Numbers decrease, are always odd

4 4, 6, 10, 16, 24, 44

Rule: Add 2, 4, 6, 8, 10...

Observations: Numbers increase slowly at first, then faster, are always even

5 132, 187, 242, 297, 352

Rule: Add 55

Observations: Numbers increase, are always even

NAME: _____

DATE: _____

NUMBER PATTERNS

Cut and paste patterns

Directions: Cut out the numbers on the bottom of the page. Paste the correct number to complete each pattern. Identify each pattern rule.

1 7, 15, 23, 31, 39, 47, 55

Rule: Add 8

2 250, 220, 190, 160, 130, 100, 70

Rule: Subtract 30

3 3, 6, 12, 24, 48, 96, 192

Rule: Multiply by 2

DATE: _____

NUMBER PATTERNS

and paste patterns
the bottom of the page. Paste the correct numbers
each pattern rule.

Rule: Add 8

55
100
96, 192
24, 18
25
DATE: _____
ER
pattern.

NAME: _____ DATE: _____

NUMBER PATTERNS

Input / output blast off!

Directions: These rockets run on number patterns. Complete the input/output tables to give the rockets enough boost to travel into outer space. 3... 2... 1... blast off!



In	Out
4	
6	
9	
10	
100	

Rule: multipl

NAME: _____

NUMBER PATTERNS

Pattern

Directions: For each sequence below, identify the pattern rule to write in the missing number.

1

2

3

NUMBER PATTERNS

Input / output blast off!

Directions: These rockets run on number patterns. Complete the input/output tables to give the rockets enough boost to travel into outer space. 3... 2... 1... blast off!

3

In	Out
89	37
	70
167	
206	154
244	192

Rule: _____

4

In	Out
6	1
24	4
36	6
	8
54	

Rule: _____

DATE: _____

NUMBER PATTERNS

Missing Shape patterns

Draw the missing shape in the circle for each pattern.

NUMBER PATTERNS

Input / output PA

Directions: Cut out the shapes below. Each column of left column of an input/output table. The right flipflops represent. Match the left flipflops with the right flipflops.

Out

500

700

900

Out

5

6

9

Out

16

40

48

72

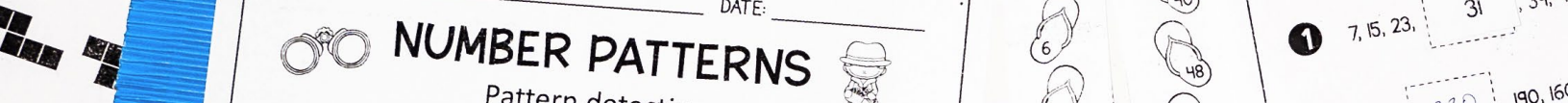
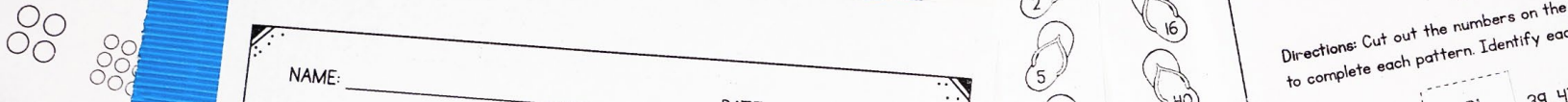


NAME: _____

DATE: _____

NUMBER PATTERNS

Directions: Draw the missing shape in the circle for each pattern.



NAME: _____

DATE: _____



NUMBER PATTERNS

Pattern detective

Directions: Use your astute detective skills to observe each pattern. Identify the pattern rule and record it in your detective notebook. Fill in each missing number. Then, record any other observations you can make about the pattern in the casefile.

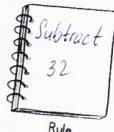


1 83, 88, 93, _____



Rule

3 287, _____



Rule

5 _____, 132, 187



Rule

NAME: _____

DATE: _____

NUMBER PATTERNS

Input / output flip flops

Directions: Cut out the shapes below. Each column of left flipflops represents the input

NAME: _____

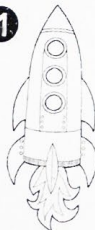
DATE: _____

NUMBER PATTERNS

Input / output blast off!

Directions: These rockets run on number patterns. Complete the input/output tables to give the rockets enough boost to travel into outer space. 3... 2... 1... blast off!

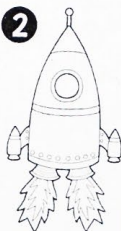
1



In	Out
4	20
6	30
9	45
10	50
100	500

Rule: multiply by 5

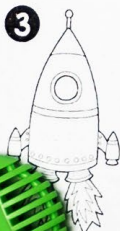
2



In	Out
5	23
24	42
48	66
55	73
70	88

Rule: Add 18

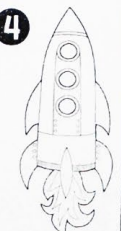
3



In	Out
89	37
122	70
167	115
206	154
244	192

Rule: Subtract 52

4



In	Out
6	1
24	4
36	6
48	8
54	9

Rule: Divide by 6

- 6
- 
- 42 40 36

NAME: _____ DATE: _____

NUMBER PATTERNS

Missing Shape patterns

Directions: Draw the missing shape in the circle for each pattern.



NAME: _____

DATE: _____

NUMBER PATTERNS

Input / output flip flops

Directions: Cut out the shapes below. Each column of left flipflops represents the input column of an input/output table. The right flipflops represent the output column. Match the left flipflops with the right flipflops.

Out	In	In	Out	Out	In
2	16	1	100	20	42
5	40	5	500	41	63
6	48	7	700	64	86
9	72	9	900	76	98

Out	In	Out	In	Out	In
2	8	19	12	9	3

NUMBER PATTERNS

Directions: Draw the missing shape in the circle for each pattern. To draw each shape, use the shape tool.

4

5

6

DATE: _____

NUMBER PATTERNS

Pattern detective

Use your astute detective skills to observe each pattern. Identify the rule and record it in your detective notebook. Fill in each missing number. Then, any other observations you can make about the pattern in the casefile.

88, 93, 98, 103, 108

2 1, 2, 3, 5, 8, 13

Rule	Observations
Add 5	Numbers increase, alternate between odd and even

7, 223, 191, 159, 127

4 4, 6, 10, 24, 44

Rule	Observations
Subtract 32	Numbers decrease, are always odd

132, 187, 242, 297, 352

6 3, 6, 12, 24, 48, 96

Rule	Observations
Add 55	Numbers increase, alternate between odd and even

Directions: These rockets run on number patterns. Complete the input/output tables to give the rockets enough boost to travel into outer space. 3... 2... 1... blast off!

In	Out
4	20
6	30
9	45
10	50
100	500

Rule: multiply by 5

In	Out
5	23
24	42
48	66
55	73
70	88

Rule: Add 18

In	Out
89	37
122	70
167	115
206	154
244	192

Rule: Subtract 52

In	Out
6	1
24	4
36	6
48	8
54	9

Rule: Divide by 6

In	Out
8	80
56	560
72	720
113	1,130
789	7,890

Rule: multiply by 10

In	Out
3	7
6	13
7	15
9	19
12	25

Rule: multiply by 2 and add 1

NUMBER PATTERNS

4th grade

Table of Contents

1. Number Patterns (7 pages)
2. Input/Output Tables (3 pages)
3. Shape Patterns (3 pages)
4. Word Problems with Number Patterns (4 pages)
5. Test Review (3 pages)
6. Test (3 pages)



Thank you for purchasing this Common Core Kingdom digital resource!

The Google Slides version of this resource requires that you make a copy of the resource to your own Google Drive.

* You MUST have a Google account in order to access this resource. [Click HERE](#) if you need help setting up a Google account.

NAME: _____ DATE: _____

NUMBER PATTERNS

complete the pattern

Directions: Write the next 3 numbers in each pattern. Identify the rule.

1 91, 78, 65, 52, , , Rule:

2 1, 2, 4, 8, , , Rule:

3 4,800, 2,400, 1,200, , , Rule:

4 67, 64, 61, 58, , , Rule:

5 24, 35, 46, 57, , , Rule:

6 8, 32, 56, 80, , , Rule:

7 7, 70, 700, 7,000, , , Rule:

8 342, 378, 414, 450, , , Rule:

9 $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, , , Rule:

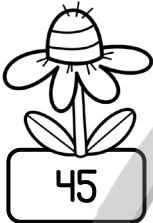
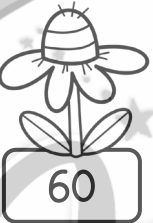
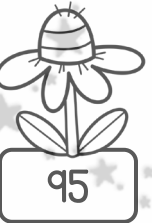
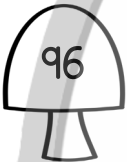
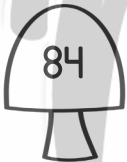
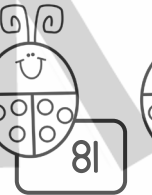
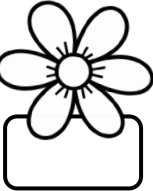
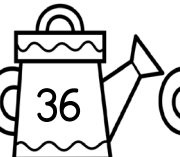
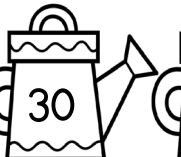
10 $\frac{2}{10}$, $\frac{3}{10}$, $\frac{4}{10}$, $\frac{5}{10}$, , , Rule:

NAME: _____ DATE: _____

NUMBER PATTERNS

pattern garden

Directions: For each sequence below, identify the rule the pattern follows. Use the pattern rule to write in the missing numbers.

1	 45	 50	 60	 75	 95	 	Rule:
2	 96	 84	 72	 	 48	 36	Rule:
3	 4	 7	 13	 25	 	 97	Rule:
4	 1	 3	 	 27	 81	 243	Rule:
5	 	 30	 28	 34	 32	 38	Rule:
6	 42	 	 36	 30	 22	 12	Rule:

NAME: _____

DATE: _____



NUMBER PATTERNS

pattern detective



Directions: Use your astute detective skills to observe each pattern. Identify the pattern rule and record it in your detective notebook. Fill in each missing number. Then, record any other observations you can make about the pattern in the casefile.

1 83, 88, 93, 98, , 108



Rule

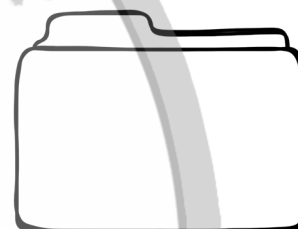


Observations

2 1, 2, 3, 5, 8, 



Rule



Observations

3 287, , 223, 191, 159, 127



Rule

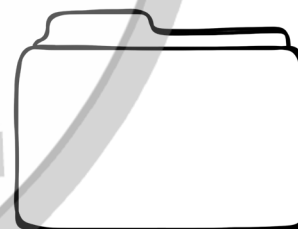


Observations

4 4, 6, 10, , 24, 44



Rule

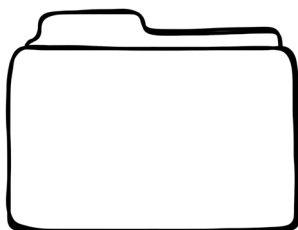


Observations

5 , 132, 187, 242, 297, 352

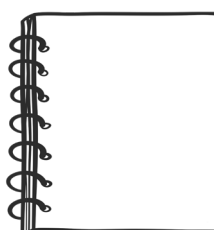


Rule

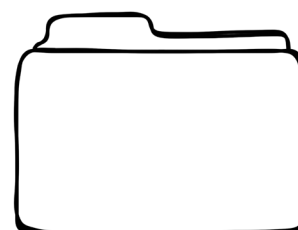


Observations

6 3, 6, , 24, 48, 96



Rule



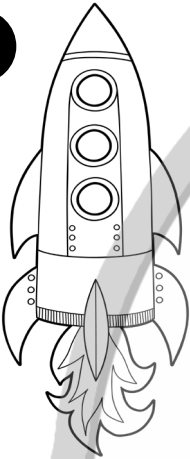
Observations

NAME: _____ DATE: _____

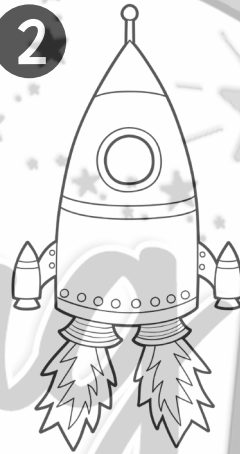
NUMBER PATTERNS

input / output blast off!

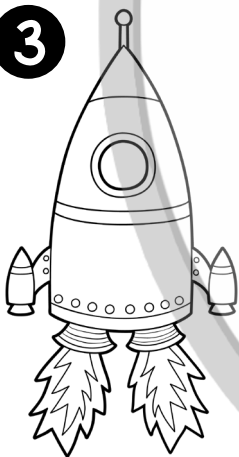
Directions: These rockets run on number patterns. Complete the input/output tables to give the rockets enough boost to travel into outer space. 3... 2... 1... blast off!

1


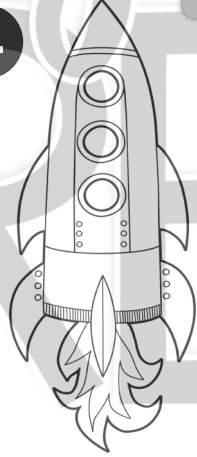
In	Out
4	
6	30
	45
10	50
100	500
Rule:	

2


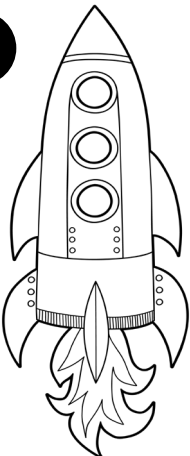
In	Out
5	23
24	
48	66
55	73
	88
Rule:	

3


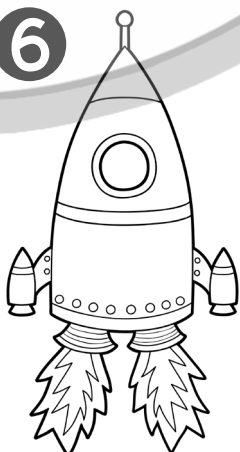
In	Out
89	37
	70
167	
206	154
244	192
Rule:	

4


In	Out
6	1
24	4
36	6
	8
54	
Rule:	

5


In	Out
8	80
56	560
72	
	1,130
789	7,890
Rule:	

6


In	Out
	7
6	13
7	15
9	
12	25
Rule:	

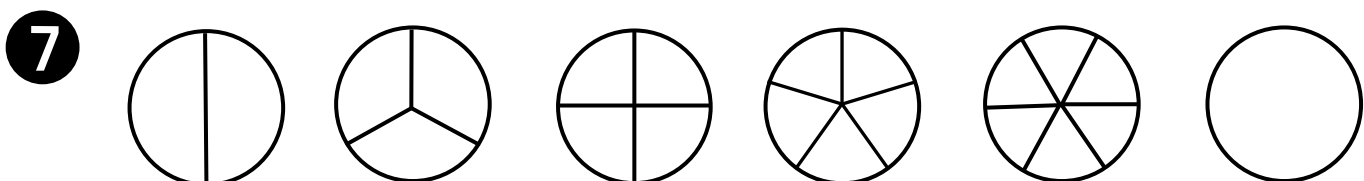
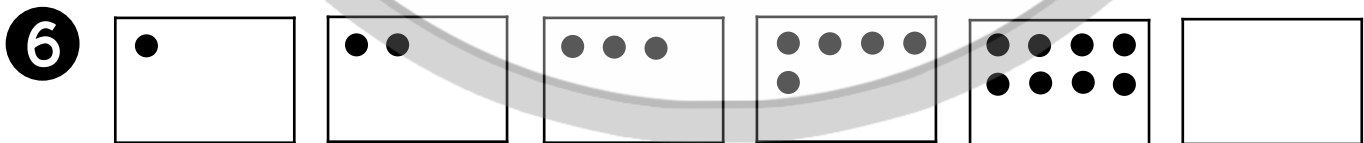
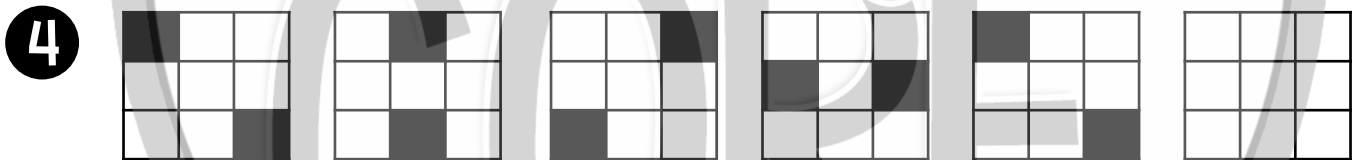
NAME: _____

DATE: _____

NUMBER PATTERNS

complete the shape patterns

Directions: Complete the shape pattern by shading in or drawing the last shape.



NAME: _____ DATE: _____

NUMBER PATTERNS

create a shape pattern

Directions: Create your own shape patterns. Shade in the first 4 shapes with your pattern, leaving the last shape blank. Swap papers with a partner. Can your partner correctly complete all 5 shape patterns? Check each others' work.

1

2

3

4

5

NAME: _____ DATE: _____

NUMBER PATTERNS

word problems

Directions: Use number patterns to solve the following word problems. Explain how you arrived at each of your answers.

- 1** Troop 56 is selling cookies. At 11 am, they had sold 54 boxes. At 12 pm, they had sold 78 boxes. At 1 pm, they had sold 102 boxes. If the pattern continues, at what time will they reach 150 boxes sold?



- 2** February was a snowy month. During the first week of February, it snowed one inch. During the second week, it snowed 3 inches, and during the third week, it snowed 9 inches. If the pattern continued, how much did it snow during the fourth week of February?



NAME: _____ DATE: _____

NUMBER PATTERNS

test review

Directions: Write the next 3 numbers in each pattern. Identify the rule.

① 8, 15, 22, 29, , , Rule: _____

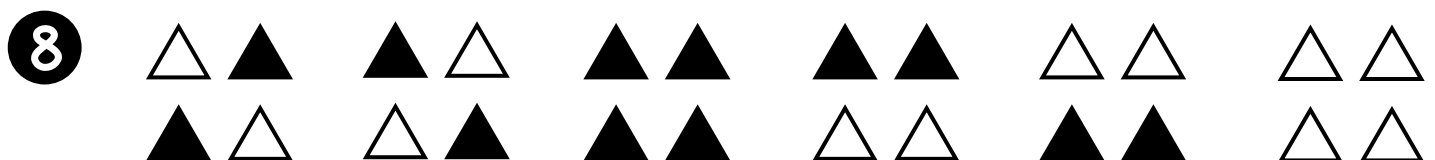
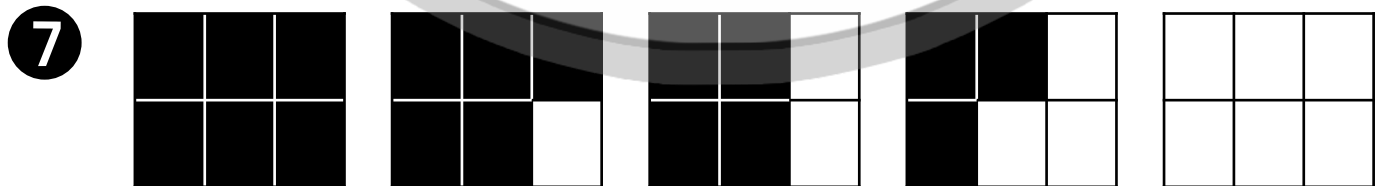
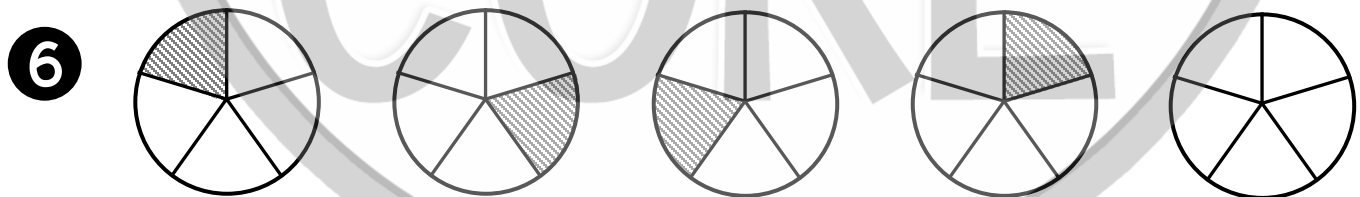
② 80, 69, 58, 47, , , Rule: _____

③ 4,800, 2,400, 1,200, , , Rule: _____

④ 600,000, 60,000, 6,000, , , Rule: _____

⑤ $\frac{1}{100}$, $\frac{2}{100}$, $\frac{4}{100}$, $\frac{8}{100}$, , , Rule: _____

Directions: Shade in the last shape in each pattern.



Terms of Use



How Can I Use This Resource?

Thank you for trusting MagiCore. Our mission is to create resources that support teachers and promote student success. Please note that this resource is licensed for use by a single teacher in a classroom setting. If you need to use this resource with more than one teacher and/or across multiple classrooms, additional licenses are available at a discount. You can purchase additional licenses by visiting your TPT "Purchases" page and then selecting "Download Additional Licenses" or by contacting me at julie@magicorelearning.com.



Good to Go



Not O.K.

- Use this resource personally or with your own children.
 - Use this resource in your own classroom with your students.
 - Provide this resource to your students to use at your instruction.
 - Print and/or copy for use in your own classroom.
 - Provide printed pages to a substitute teacher with the sole purpose of instructing your students.
 - Share with your students via a secure document portal or electronic learning platform that requires individual user verification and limits access to only the students in your own classroom (e.g. Google Classroom).
 - Review this resource with others with the sole purpose of recommending it to others for purchase, provided you share one of the links below:
- Share with others to use personally.
 - Share with others to use in another classroom.
 - Print or copy any page(s) and distribute them to other teachers or other classrooms.
 - Publish or host online in a manner where any of the material is accessible to anyone who is not a student in your own classroom, including but not limited to personal, classroom, or district websites that are accessible to the general public.
 - Use this resource commercially (e.g. Outschool).
 - Publish, sell, or otherwise distribute this product to anyone in manner inconsistent with these terms of use.

<https://magicorelearning.com/>

<https://www.teacherspayteachers.com/Store/Magicore>

Let's Connect!

www.magicorelearning.com



<https://www.teacherspayteachers.com/Store/magicore>



<https://www.facebook.com/MagiCoreLearning>



<https://www.instagram.com/magicorelearning>



https://www.pinterest.com/magicorelearning/_shop/



Julie@magicorelearning.com

Looking for more?



Membership Opportunity!



If you love these resources and want access to more, check out my membership opportunity with the MagiCore Club.

Join my MagiCore Club waitlist!

MagiCore Club opens its membership doors twice a year to offer teachers all the resources you love, with a membership discount. You can also find support through my custom learning plan.

Find out more

<https://magicorelearning.com/membership>



Credits

