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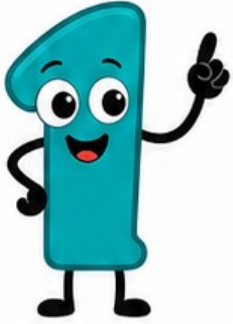


Number Patterns - Year 2

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NUMBER PATTERN RULES



A term is
one number
in a pattern.



The rule
tells how
the numbers
change.



Compare
neighbouring
terms.



Use the
same change
each time.



4, 7, 10, 13, 16

+3 +3 +3 +3



50, 45, 40, 35, 30

-5 -5 -5 -5



PATTERN PATH



HOW TO PLAY

1. Roll and move.
2. Read the space.
3. Continue a pattern aloud using that rule.
4. Take a Challenge Card when shown.

PATTERN PATH CHALLENGE CARDS

1
4, 6, 8, 10
→
NEXT TWO:

2
7, 10, 13, 16
→
NEXT TWO:

3
15, 20, 25, 30
→
NEXT TWO:

4
12, 22, 32, 42
→
NEXT TWO:

5
34, 32, 30, 28
→
NEXT TWO:

6
51, 48, 45, 42
→
NEXT TWO:

7
80, 75, 70, 65
→
NEXT TWO:

8
96, 86, 76, 66
→
NEXT TWO:

9
11, 13, 15, 17
→
NEXT TWO:

10
18, 21, 24, 27
→
NEXT TWO:

11
25, 30, 35, 40
→
NEXT TWO:

12
19, 29, 39, 49
→
NEXT TWO:

13
44, 42, 40, 38
→
NEXT TWO:

14
63, 60, 57, 54
→
NEXT TWO:

15
90, 85, 80, 75
→
NEXT TWO:

16
100, 90, 80, 70
→
NEXT TWO:

ANSWERS

1 12,14 | 2 19,22 | 3 35,40 | 4 52,62 | 5 26,24 | 6 39,36 | 7 60,55 | 8 56,46 |
9 19,21 | 10 30,33 | 11 45,50 | 12 59,69 | 13 36,34 | 14 51,48 | 15 70,65 | 16 60,50

DINOSAUR PATTERN TRAILS



1

14 16 20

Find the missing term

2

23 27 32

Find the missing term

3

35 40 50

Find the missing term

4

18 28 48

Find the missing term

5

42 40 36

Find the missing term

6

51 45 42

Find the missing term

7

70 65 55

Find the missing term

8

96 86 66

Find the missing term

9

13 15 17

Find the missing term

10

30 36 39

Find the missing term

11

25 30 40

Find the missing term

12

90 80 60

Find the missing term





DINOSAUR PATTERN TRAILS



Name: _____

Record each trail after you solve it.

Card	Missing term	Rule	How I know
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

PREVIEW



Name: _____



HONEYCOMB PATTERN BUILDER

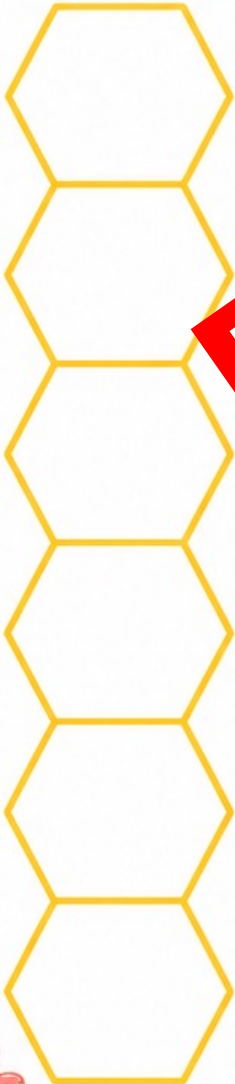


Choose a start number and a rule.
Fill each honeycomb with the next term.

Start number:

Rule:

My pattern



Start number:

Rule:

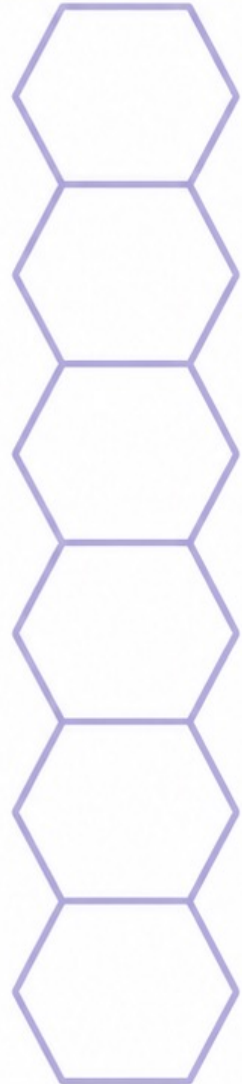
My pattern



Start number:

Rule:

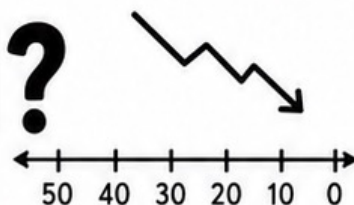
My pattern



Name: _____

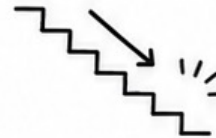
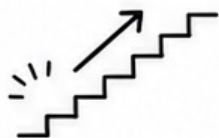


UP OR DOWN?



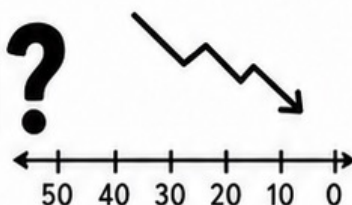
For each pattern, circle increasing or decreasing. Write the rule and the next two terms.

①	4, 7, 10, 13	☐ increasing ☐ decreasing	Rule: _____ Next two: _____, _____
②	38, 33, 28, 23	☐ increasing ☐ decreasing	Rule: _____ Next two: _____, _____
③	11, 13, 15, 17	☐ increasing ☐ decreasing	Rule: _____ Next two: _____, _____
④	72, 62, 52, 42	☐ increasing ☐ decreasing	Rule: _____ Next two: _____, _____
⑤	25, 30, 35, 40	☐ increasing ☐ decreasing	Rule: _____ Next two: _____, _____
⑥	19, 16, 13, 10	☐ increasing ☐ decreasing	Rule: _____ Next two: _____, _____
⑦	6, 9, 12, 15	☐ increasing ☐ decreasing	Rule: _____ Next two: _____, _____
⑧	95, 90, 85, 80	☐ increasing ☐ decreasing	Rule: _____ Next two: _____, _____



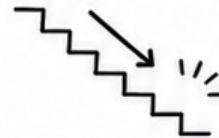
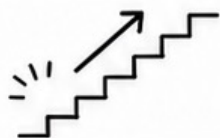
ANSWERS

UP OR DOWN?



For each pattern, circle increasing or decreasing. Write the rule and the next two terms.

①	4, 7, 10, 13	increasing	decreasing	Rule: <u>+3</u>	Next two: <u>16</u> , <u>19</u>
②	38, 33, 28, 23	increasing	decreasing	Rule: <u>-5</u>	Next two: <u>18</u> , <u>13</u>
③	11, 13, 15, 17	increasing	decreasing	Rule: <u>+2</u>	Next two: <u>19</u> , <u>21</u>
④	72, 62, 52, 42	increasing	decreasing	Rule: <u>-10</u>	Next two: <u>32</u> , <u>22</u>
⑤	25, 30, 35, 40	increasing	decreasing	Rule: <u>+5</u>	Next two: <u>45</u> , <u>50</u>
⑥	19, 16, 13, 10	increasing	decreasing	Rule: <u>-3</u>	Next two: <u>7</u> , <u>4</u>
⑦	6, 9, 12, 15	increasing	decreasing	Rule: <u>+3</u>	Next two: <u>18</u> , <u>21</u>
⑧	95, 90, 85, 80	increasing	decreasing	Rule: <u>-5</u>	Next two: <u>75</u> , <u>70</u>



NUMBER GRID GAPS



Name: _____

Write the missing numbers on the 1 to 50 grid.

1		3		5
	7		9	
11		13		15
	17		19	
21		23		25
	27		29	
31		33		35
	37		39	
41		43		45
	47		49	

PREVIEW

NUMBER GRID GAPS



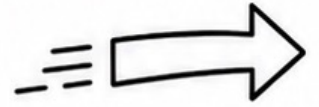
Name: **ANSWERS**

Write the missing numbers on the 1 to 50 grid.

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

CONTINUE THE PATTERN – SUPPORT

Name: _____



Write the next three terms. Then write the rule.

1. 2, 4, 6, 8

Rule: _____

2. 5, 10, 15, 20

Rule: _____

3. 18, 21, 24, 27

Rule: _____

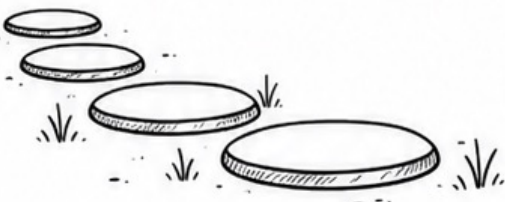
4. 40, 38, 36, 34

Rule: _____

5. 70, 60, 50, 40

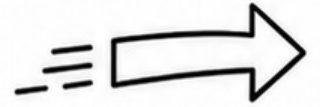
Rule: _____

6. 9, 12, 15, 18



CONTINUE THE PATTERN – SUPPORT

Name: ANSWERS



Write the next three terms. Then write the rule.

1. 2, 4, 6, 8

10

12

14

Rule: +2

2. 5, 10, 15, 20

25

30

35

Rule: +5

3. 18, 21, 24, 27

30

33

36

Rule: +3

4. 40, 38, 36, 34

32

30

28

Rule: -2

5. 70, 60, 50, 40

30

20

10

Rule: -10

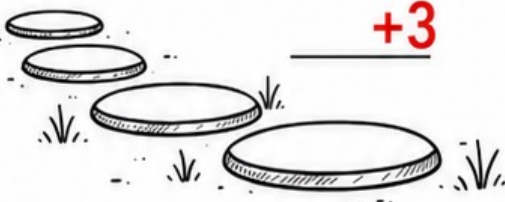
6. 9, 12, 15, 18

21

24

27

+3





CONTINUE THE PATTERN – CHALLENGE



Name: _____

Write the next two terms and the rule.

1 17, 22, 27, 32 Rule: _____

2 84, 81, 78, 75 Rule: _____

3 6, 16, 26, 36 Rule: _____

4 63, 58, 53, 48 Rule: _____

5 29, 31, 33, 35 Rule: _____

6 100, 90, 80, 70 Rule: _____

7 13, 16, 19, 22 Rule: _____

8 56, 54, 52, 50 Rule: _____

Explain how you checked one rule:



CONTINUE THE PATTERN – CHALLENGE



Name: _____ **ANSWERS**

Write the next two terms and the rule.

① 17, 22, 27, 32 **37** **42** Rule: **+5**

② 84, 81, 78, 75 **72** **69** Rule: **-3**

③ 6, 16, 26, 36 **46** **56** Rule: **+10**

④ 63, 58, 53, 48 **43** **38** Rule: **-5**

⑤ 29, 31, 33, 35 **37** **39** Rule: **+2**

⑥ 100, 90, 80, 70 **60** **50** Rule: **-10**

⑦ 13, 16, 19, 22 **25** **28** Rule: **+3**

⑧ 56, 54, 52, 50 **48** **46** Rule: **-2**

Explain how you checked one rule:

I found the same change between each pair of terms.

Name: _____



HUNDREDS CHART PATTERN HUNT

Directions: Shade each pattern on the chart. Write the next three terms and the rule.

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) 6, 10, 14, 18

Next three terms:

--	--	--

Rule: _____

2) 91, 86, 81, 76

Next three terms:

--	--	--

Rule: _____

3) 7, 10, 13, 16

Next three terms:

--	--	--

Rule: _____

4) 20, 30, 40, 50

Next three terms:

--	--	--

Rule: _____

ANSWERS



HUNDREDS CHART PATTERN HUNT

Directions: Shade each pattern on the chart. Write the next three terms and the rule.

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) 6, 10, 14, 18

Next three terms: 22 26 30

Rule: +4

2) 91, 86, 81, 76

Next three terms: 71 66 61

Rule: -5

3) 7, 10, 13, 16

Next three terms: 19 22 25

Rule: +3

4) 20, 30, 40, 50

Next three terms: 60 70 80

Rule: +10

Name: _____

PATTERN RULES IN WORDS



Directions: Write each rule in words. Then write the next two terms.

1) 3, 5, 7, 9 Rule in words: _____	Next two terms:
2) 48, 45, 42, 39 Rule in words: _____	Next two terms:
3) 14, 19, 24, 29 Rule in words: _____	Next two terms:
4) 88, 78, 68, 58 Rule in words: _____	Next two terms:
5) 21, 24, 27, 30 Rule in words: _____	Next two terms:
6) 67, 65, 63, 61 Rule in words: _____	Next two terms:
7) 9, 19, 29, 39 Rule in words: _____	Next two terms:
8) 52, 47, 42, 37 Rule in words: _____	Next two terms:

PREVIEW

Name: ANSWERS

PATTERN RULES IN WORDS



Directions: Write each rule in words. Then write the next two terms.

1) 3, 5, 7, 9 Rule in words: <u>add 2</u>	Next two terms: 11 13
2) 48, 45, 42, 39 Rule in words: <u>subtract 3</u>	Next two terms: 36 33
3) 14, 19, 24, 29 Rule in words: <u>add 5</u>	Next two terms: 34 39
4) 88, 78, 68, 58 Rule in words: <u>subtract 10</u>	Next two terms: 48 38
5) 21, 24, 27, 30 Rule in words: <u>add 3</u>	Next two terms: 33 36
6) 67, 65, 63, 61 Rule in words: <u>subtract 2</u>	Next two terms: 59 57
7) 9, 19, 29, 39 Rule in words: <u>add 10</u>	Next two terms: 49 59
8) 52, 47, 42, 37 Rule in words: <u>subtract 5</u>	Next two terms: 32 27

MISSING TERMS CHALLENGE

Name: _____



Directions: Find the rule, then fill every box.

1) 12 15 18 Rule: _____

2) 40 30 20 Rule: _____

3) 7 12 22 Rule: _____

4) 66 63 60 Rule: _____

5) 10 20 40 Rule: _____

6) 55 45 40 Rule: _____

7) 23 25 29 Rule: _____

8) 47 44 38 Rule: _____

9) 6 16 36 Rule: _____

10) 90 80 60 Rule: _____

MISSING TERMS CHALLENGE

ANSWERS



Directions: Find the rule, then fill every box.

1)	9	12	15	18	21	Rule: +3
2)	40	35	30	25	20	Rule: -5
3)	7	12	17	22	27	Rule: +5
4)	69	66	63	60	57	Rule: -3
5)	10	20	30	40	50	Rule: +10
6)	55	50	45	40	35	Rule: -5
7)	23	25	27	29	31	Rule: +2
8)	50	47	44	41	38	Rule: -3
9)	6	16	26	36	46	Rule: +10
10)	90	80	70	60	50	Rule: -10



CREATE A PATTERN PUZZLE



Name: _____

Directions: Create four number patterns. Show the first three terms, hide two terms under flaps, and write the rule on the back.

1.

--	--	--	--	--

Rule on the back:

--

2.

--	--	--	--	--

Rule on the back:

--

3.

--	--	--	--	--

Rule on the back:

--

4.

--	--	--	--	--

Rule on the back:

--

What makes your pattern fair to solve?

NUMBER PATTERNS DETECTIVE – COMMUNITY GARDEN



PAGE 1



Name: _____

Date: _____

1. The Sunflower Team records watering numbers.
Continue the pattern (rule: +3).

3 marks

8, 11, 14, 17,

,

,

2. The Veggie Patch Team records watering numbers.
Continue the pattern (rule: -5).

2 marks

46, 41, 36, 31,

3. The Herb Garden Team records watering numbers.
What is the rule for this pattern?

1 mark

12, 16, 20, 24

Circle the correct rule.

+2

+4

+6

4. The Orchard Team records watering numbers.
Find the missing numbers and write the rule.

4 marks

25,

,

35,

,

45

Rule: _____

5. The Native Garden Team records watering numbers.
Is this pattern increasing or decreasing?

2 marks

60, 50, 40, 30

Circle your answer.

increasing

decreasing



PAGE 1 TOTAL: /12

NUMBER PATTERNS DETECTIVE – COMMUNITY GARDEN



PAGE 1



ANSWERS

Date: _____

1. The Sunflower Team records watering numbers. 3 marks
Continue the pattern (rule: +3).

8, 11, 14, 17, **20**, **23**, **26**

2. The Veggie Patch Team records watering numbers. 2 marks
Continue the pattern (rule: -5).

46, 41, 36, 31, **26**, **21**

3. The Herb Garden Team records watering numbers. 1 mark
What is the rule for this pattern?

12, 16, 20, 24

Circle the correct rule. **+4**, +6

4. The Orchard Team records watering numbers. 4 marks
Find the missing numbers and write the rule.

25, **30**, 35, **40**, 45

Rule: **+5**

5. The Native Garden Team records watering numbers. 2 marks
Is this pattern increasing or decreasing?

60, 50, 40, 30

Circle your answer. increasing **decreasing**



PAGE 1 TOTAL: /12

NUMBER PATTERNS DETECTIVE — COMMUNITY GARDEN

PAGE 2



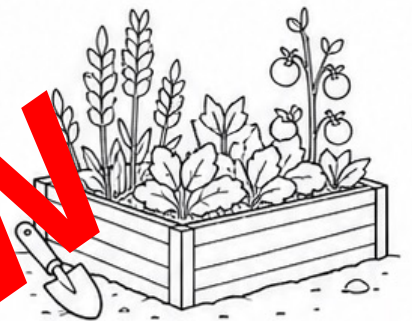
Name: _____

Date: _____

6 Shade a +10 pattern starting at 7. Shade six terms.

(2 marks)

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



7 The pattern below has one incorrect term.
Cross it out and write the correct number.

(2 marks)

14, 18, 22, ~~25~~, 30, 34 _____

8 Explain the rule and words for the pattern below.

(2 marks)

73, 68, 63, 58



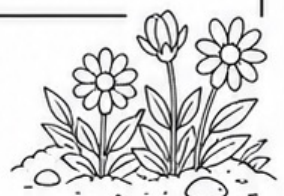
9 Create a six-term pattern starting at 14 with the rule +4.

(2 marks)

14					
----	--	--	--	--	--

PAGE 2 TOTAL: /8

ASSESSMENT TOTAL: /20



NUMBER PATTERNS DETECTIVE — COMMUNITY GARDEN

PAGE 2



ANSWERS: _____

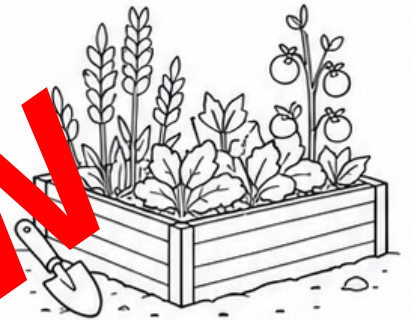
Date: _____

6

Shade a +10 pattern starting at 7. Shade six terms.

(2 marks)

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



7

The pattern below has one incorrect term.
Cross it out and write the correct number.

(2 marks)

14, 18, 22, ~~25~~, 30, 34 26

8

Explain the rule and words for the pattern below.

(2 marks)

73, 68, 63, 58

Subtract 5 each time.



9

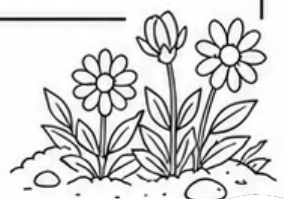
Create a six-term pattern starting at 14 with the rule +4.

(2 marks)

14	18	22	26	30	34
----	----	----	----	----	----

PAGE 2 TOTAL: /8

ASSESSMENT TOTAL: /20



NUMBER PATTERNS RUBRIC

Criterion	BEGINNING	DEVELOPING	ACHIEVING	CONFIDENT	EXCEEDING
Recognises the pattern	With substantial support, identifies parts of a pattern in familiar examples.	With support, identifies the pattern in familiar examples.	Identifies the pattern in familiar and some unfamiliar examples.	Identifies the pattern quickly in familiar and most unfamiliar examples.	Identifies the pattern accurately in a wide range of unfamiliar examples.
Continues and completes patterns	With substantial support, continues or completes a simple pattern.	With support, continues or completes a pattern.	Continues and completes patterns with up to two elements.	Continues and completes more complex patterns accurately.	Continues and completes complex patterns and extends them in new ways.
Explains the rule	With substantial support, gives a partial or unclear explanation.	With support, gives a simple explanation using everyday words.	Explains the rule clearly using everyday words and numbers.	Explains the rule clearly and uses numbers, words or both.	Explains the rule clearly and justifies why it works in different cases.
Creates and checks a pattern	With substantial support, creates a pattern and needs support to check it.	With support, creates a pattern and checks it with help.	Creates a pattern and checks that it follows the rule.	Creates a pattern independently and checks it accurately.	Creates a pattern independently, checks it thoroughly and adapts it thoughtfully.

Teacher comment:

Number Patterns

PREVIEW



Learning Goal

We are learning to recognise, describe, continue and create number patterns.

Success looks like:

- I compare neighbouring terms.
- I find and use one constant difference.



What Is a Number Pattern

A term is one number in a pattern.

A sequence is the ordered list of terms.

The rule tells how each term changes.

Example: 3, 6, 9, 12, 15

Rule: add 3 each time.



Find the Change

Compare each term with the term beside it.

Ask: What was added or subtracted?

Check every pair has the same change.

18, 21, 24, 27

Each jump is +3 so the next is 27



Increasing Patterns

Increasing patterns grow larger.

Add 2: 7, 9, 11, 13, 15

Add 3: 4, 7, 10, 13, 16

Add 5: 12, 17, 22, 27, 32

The starting number does not need to be zero.



Decreasing Patterns

Decreasing patterns become smaller.

Subtract 1: 14, 13, 12, 11

Subtract 2: 40, 38, 36, 34

Subtract 10: 90, 80, 70, 60

Check that every number has the same rule.



Skip-Counting Rules

Skip counting creates number patterns.

By 2 from 5: 5, 7, 9, 11, 13

By 3 from 8: 8, 11, 14, 17, 20

By 5 from 12: 12, 17, 22, 27, 32

By 10 from 7: 7, 17, 27, 37, 47



Use a Hundreds Chart

Move right one square to add 1.

Move left one square to subtract 1.

Move down one row to add 10.

Move up one row to subtract 10.

Repeated jumps trace a visible number pattern.



Find Missing Terms

Work forwards from a known term.

Work backwards using the opposite operation.

25, __, 35, __, 45

The change is +10

Missing terms are 30 and 40



Patterns Can Start Anywhere

A rule works from any suitable starting number

Start at 17 and add 5:

17, 22, 27, 32, 37, 42

Start at 84 and subtract 3:

84, 81, 78, 75, 72,



Pictures and Numbers

A growing picture pattern can match a number pattern.

2 dots, 4 dots, 6 dots, 8 dots

becomes

2, 4, 6, 8

Both use the rule add 2 each time.



Explain the Rule in Words

Use a complete rule sentence.

Start at 48, then subtract 3 each time.

48, 45, 42, 39, 36

Name the start, the operation and the amount.



Spot the Mistake

6, 11, 16, 22

The first jumps are +5, but 16 to 22 is +6

Repair the last term: 21.

Correct pattern: 6, 11, 16, 21



Create a Pattern

1. Choose a starting number.
2. Choose one rule: add or subtract.
3. Write at least six terms.
4. Compare every neighboring pair.
5. Ask a partner to solve it.



Guided Practice

- A. Continue: 29, 31, 33, 35, __, __
- B. Continue: 63, 58, 53, 48, __, __
- C. Fill the gaps: __, 47, 44, __, 38
- D. State the rule for each pattern.

Check: does the same change with every time?

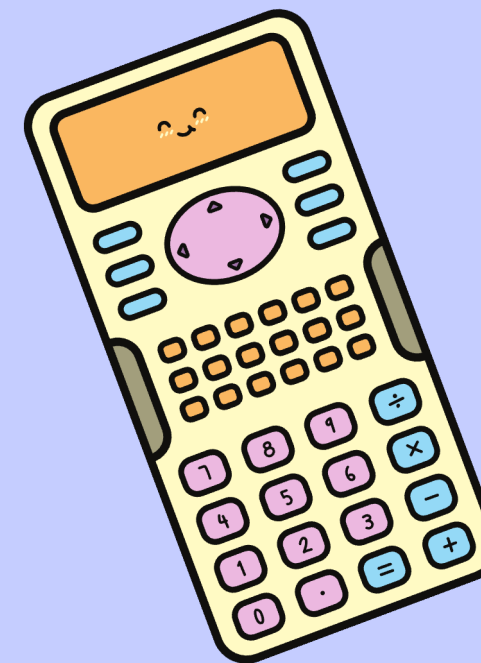
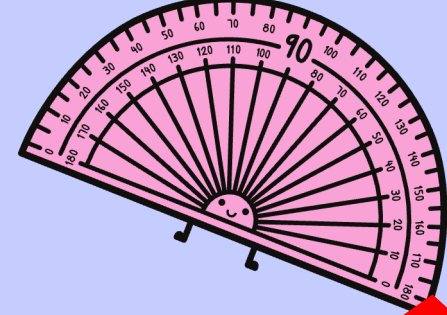
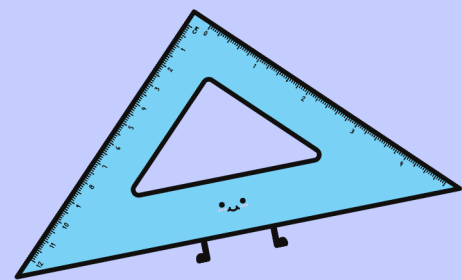
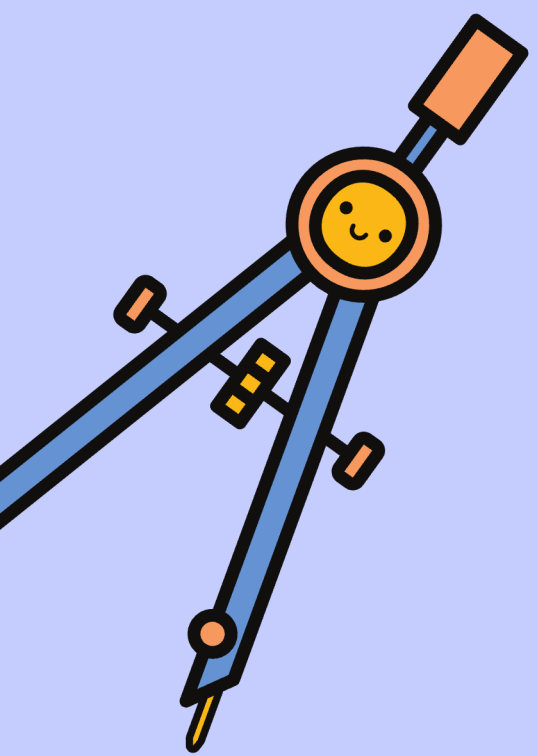


Exit Check

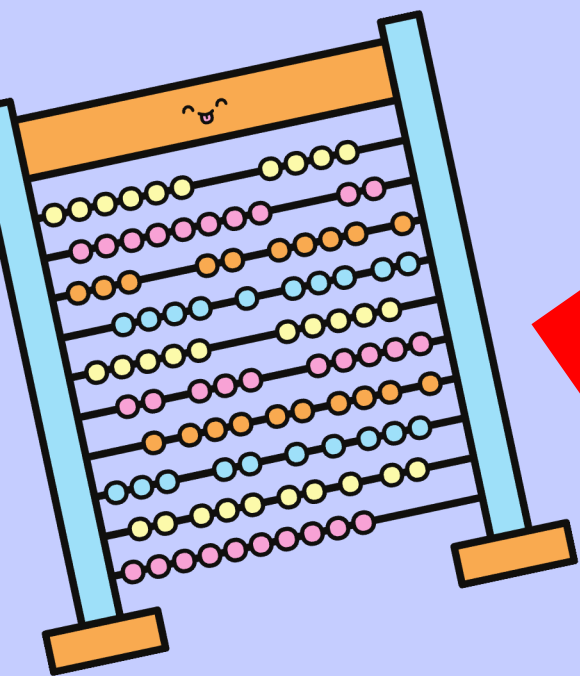
1. Continue: 9, 13, 17, __, __
2. Fill the gap: 40, 35, __, 25, 20
3. Explain the rule for 73, 68, __, 58.

Be ready to show how you checked.

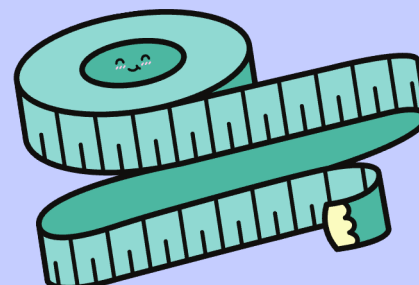
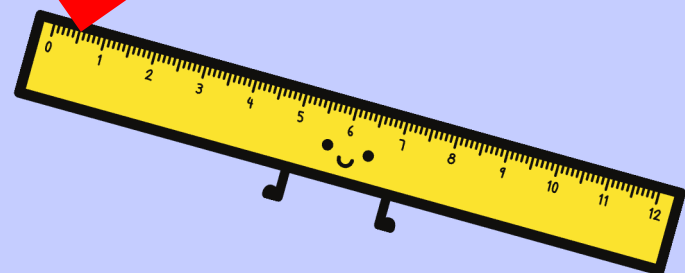




Well Done!



PREVIEW



Number Patterns Quiz



Question 1 - Multiple Choice

What are the next two terms?

4, 7, 10, 13, __, __

A. 14, 15 B. 16, 17

C. 15, 17 D. 17, 18



Answer 1

B. 16, 19

The change is +3 each time

4, 7, 10, 13, 16, 19



Question 2 - True or False?

30, 25, 20, 15 decreases by 5 each time.

True or False?



Answer 2

True.

Each neighbouring term is less than the one before it.



Question 3 - Short Answer

Fill the gap.

12, 14, __, 18, 20



Answer 3

16

The rule is add 2 each time



Question 4 - Multiple Choice

Which rule makes this pattern?

8, 18, 28, 38

A. +2 B. +5

C. +10 D. -10



Answer 4

C. +10

Each term is 10 more than the previous term



Question 5 - Short Answer

Continue the pattern with two terms.

47, 44, 41, __, __



Answer 5

38, 35

The rule is subtract 3 each time.



Question 6 - True or False?

6, 11, 16, 22 follows one constant rule.

True or False?



Answer 6

False.

The first jumps are +5, so the last term should be 21, not 22.



Question 7 - Multiple Choice

Which sequence counts by 2?

A. 3, 5, 7, 9

B. 2, 5, 8, 11

C. 10, 15, 20, 25

D. 20, 18, 15, 12



Answer 7

A. 3, 5, 7, 9

Each term is 2 more than the previous term.



Question 8 - Short Answer

What is the rule?

90, 80, 70, 60



Answer 8

Subtract 10 each time.

PREVIEW



Question 9 - Multiple Choice

Which number completes the pattern?

25, 30, __, 40

A. 32 B. 34

C. 35 D. 36



Answer 9

C. 35

The rule is add 5 each time



Question 10 - Short Answer

Start at 9 and add 4 each time.

Write the first five terms.

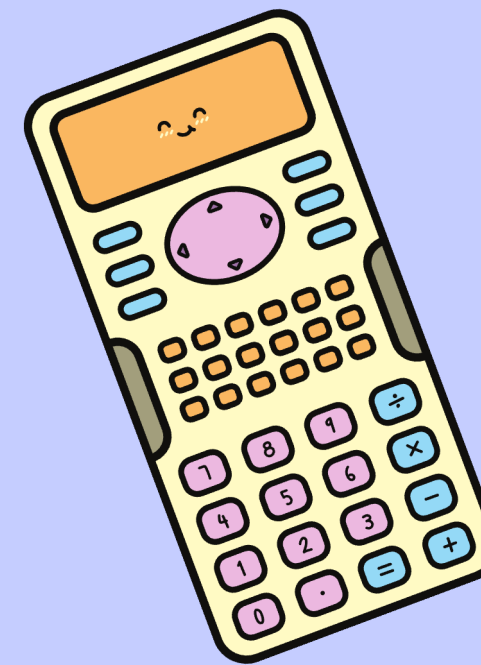
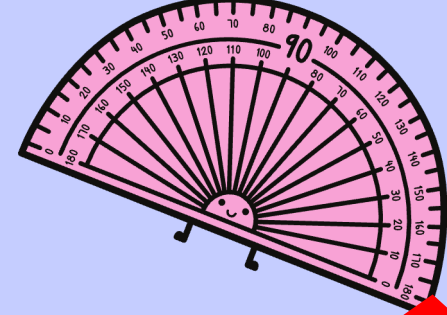
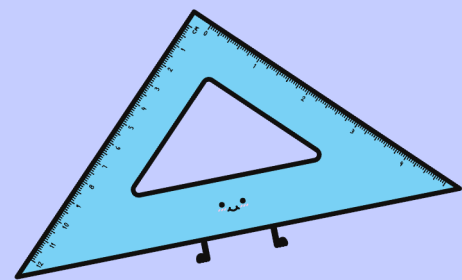
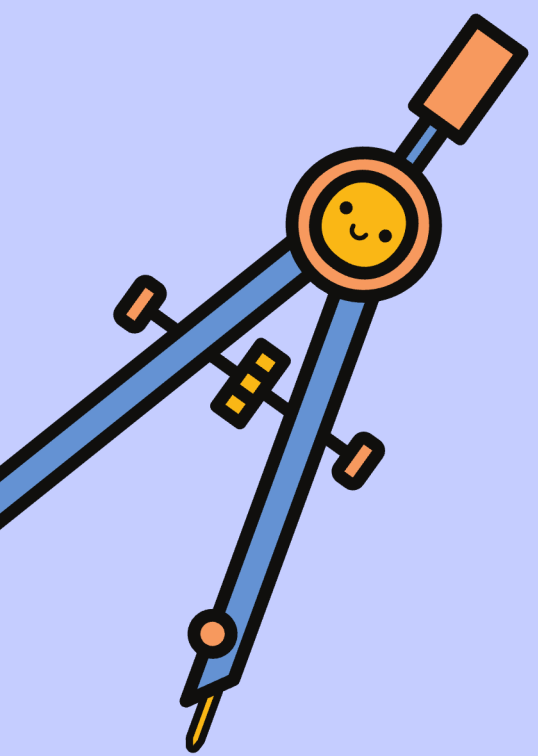


Answer 10

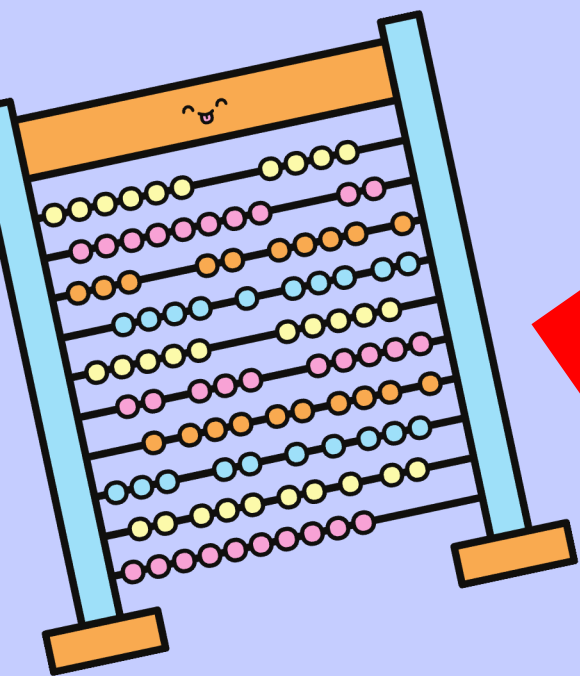
9, 13, 17, 21, 25

PREVIEW





Well Done!



PREVIEW

