Patterns in the Environment - Year 2

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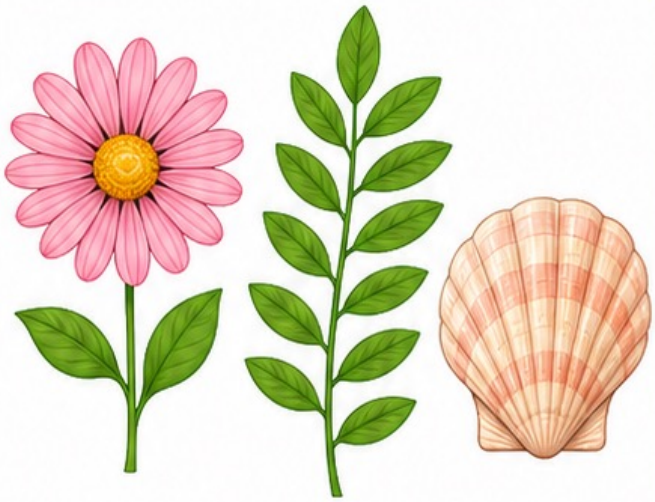
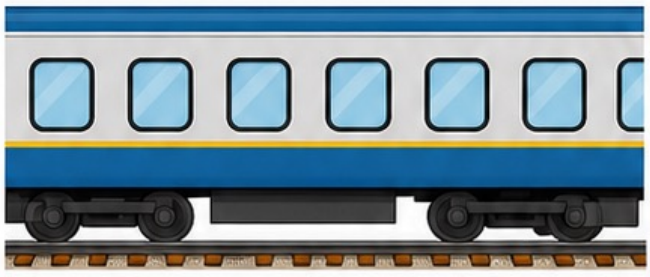
Patterns All Around Us

Nature — petals, leaves and shells



Buildings — windows, tiles and steps

Transport — wheels and carri[illegible] w[illegible]dows



Numbers — counts that grow or shrink

1 2 3 4 5

5 4 3 2 1

A pattern follows a rule.

Additive Pattern Rules

An additive pattern changes by the same amount each time.

GROWING: 2, 5, 8, 11

Start at 2. Add 3.

2 —+3→ 5 —+3→ 8 —+3→ 11

SHRINKING: 24, 20, 16, 12

Start at 24. Subtract 4.

24 —−4→ 20 —−4→ 16 —−4→ 12

THREE STEPS

1. Find the start.
2. Compare neighbouring terms.
3. Say the rule.

Build-a-Pattern Challenge Cards — Set A

1 Start at 2. Add 3.
Build 5 terms.

2 Start at 18. Subtract 2.
Build 5 terms.

3 Start with 1 square.
Add 2 squares each stage.

4 Start with 4 dots.
Add 4 dots each stage.

5 Start at 5. Add 5.
Show it two ways.

6 Create a growing pattern.
Tell a partner the rule.

Build-a-Pattern Challenge Cards — Set B

1. Start at 30.
   Subtract 5.
   Build 5 terms.

2. Start at 7.
   Add 4.
   Build 5 terms.

3. Start with 12 counters.
   Remove 3 each stage.

4. Start with 2 triangles.
   Add 1 triangle
   each stage.

5. Make a pattern
   with a missing term.
   Challenge a partner.

6. Create a shrinking
   pattern. Explain how
   you know.

Pattern Explorer Mat

My starting amount

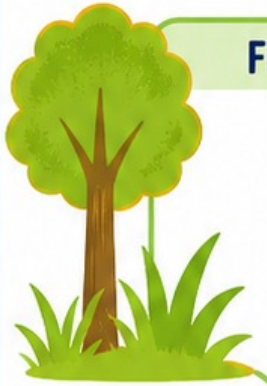
My rule

Build or draw the first 5 terms

Number sentence

Growing or shrinking

Explain: I know the rule is _____ because _____.



Find one pattern in the environment and sketch it here.


Pattern Path
START
1
2
4
5
6
7
8
11
12
13
14
16
18
19
20
21
22
24
FINISH
INSTRUCTION PANEL
Roll. Move.
If you land on a star, answer a Pattern Card.
Correct: stay.
Try again: move back 1.
PREVIEW

Pattern Path Cards

1. 4, 7, 10, __

2. 20, 18, 16, __

3. Start at 5.
Add 4.
Say the next 3 terms.

4. Start at 24.
Subtract 3.
Say the next 3 terms.

5. What is the rule?
6, 12, 18, 24

6. Find the missing term:
9, 12, __, 18

7. Create a growing pattern with 4 terms.

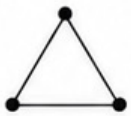
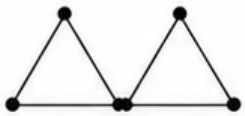
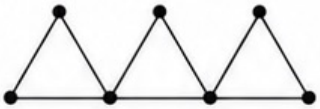
8. Create a shrinking pattern with 4 terms.

Growing and Shrinking Visual Patterns — Page 1

Name: _____ Date: _____

1. Connected triangles

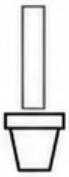
Totals: 3, 5, 7, __

Stage 1	Stage 2	Stage 3	Draw the next stage.
			
3 sticks	5 sticks	7 sticks	

Rule: _____

2. Flower pots

Totals: 2, 4, 6, __

Stage 1	Stage 2	Stage 3	Draw the next stage.
			

Rule: _____

3. Star rows

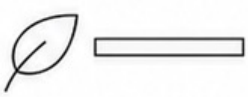
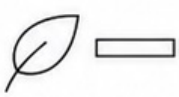
Totals: 4, 7, 10, __

Stage 1	Stage 3	Draw the next stage.
		

Rule: _____

4. Leaf groups

Totals: 12, 10, 8, __

Stage 1	Stage 2	Stage 3	Draw the next stage.
			

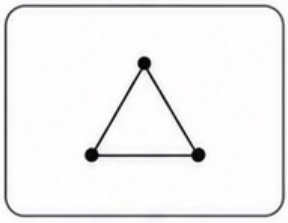
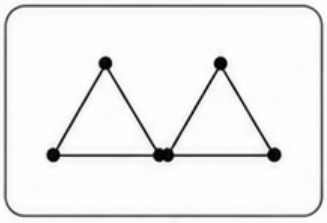
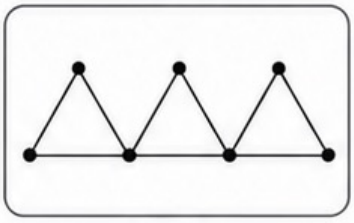
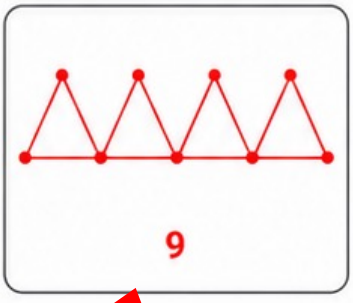
Rule: _____

Growing and Shrinking Visual Patterns — Page 1

Name: ANSWERS Date: _____

1. Connected triangles

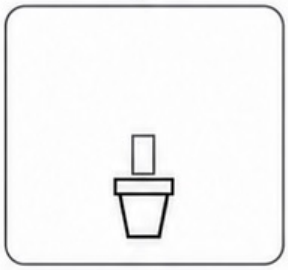
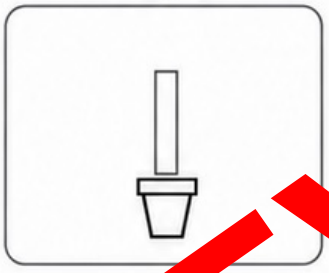
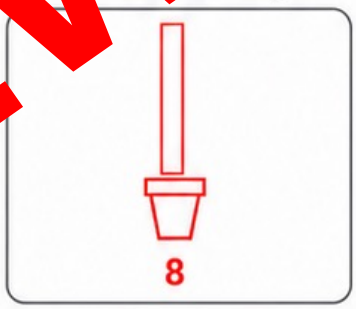
Totals: 3, 5, 7, 9

Stage 1	Stage 2	Stage 3	Draw the next stage.
			
3 sticks	5 sticks	7 sticks	9

Rule: add 2

2. Flower pots

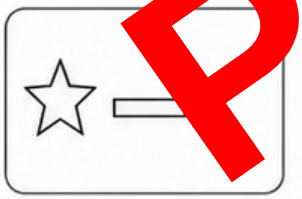
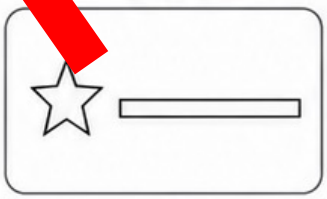
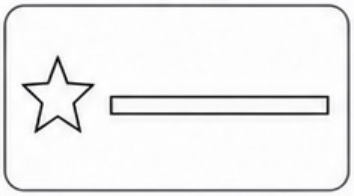
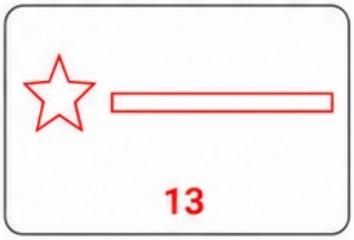
Totals: 2, 4, 6, 8

Stage 1	Stage 2	Stage 3	Draw the next stage.
			
			8

Rule: add 2

3. Star rows

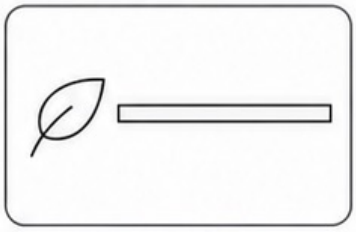
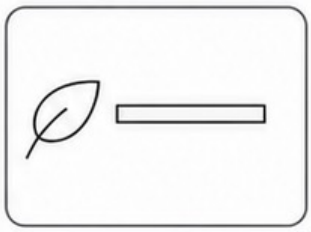
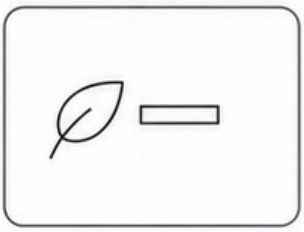
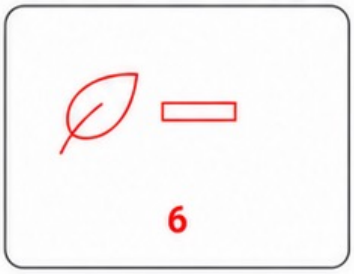
Totals: 4, 7, 10, 13

Stage 1	Stage 2	Stage 3	Draw the next stage.
			
			13

Rule: add 3

4. Leaf groups

Totals: 12, 10, 8, 6

Stage 1	Stage 2	Stage 3	Draw the next stage.
			
			6

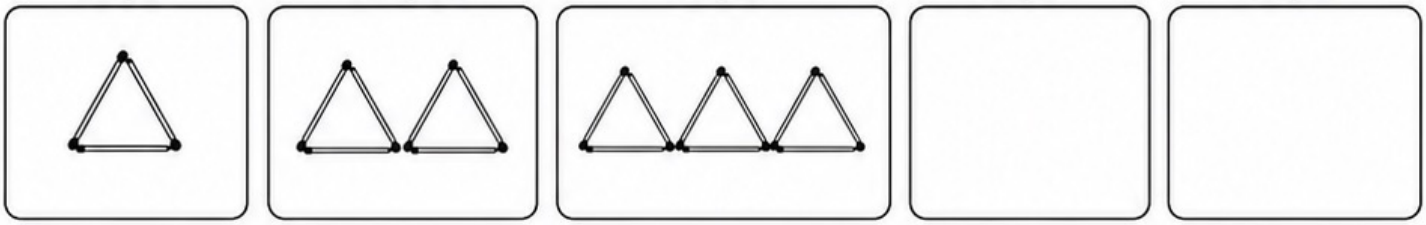
Rule: subtract 2

Growing and Shrinking Visual Patterns — Page 2

Name: _____ Date: _____

1. Matchstick triangles

Stage 1 | Stage 2 | Stage 3 | Stage 4 | Stage 5



Totals: 3, 5, 7, ___ ___

Complete the next two stages.
Write the two missing totals.
Describe the rule: _____

2. Square towers

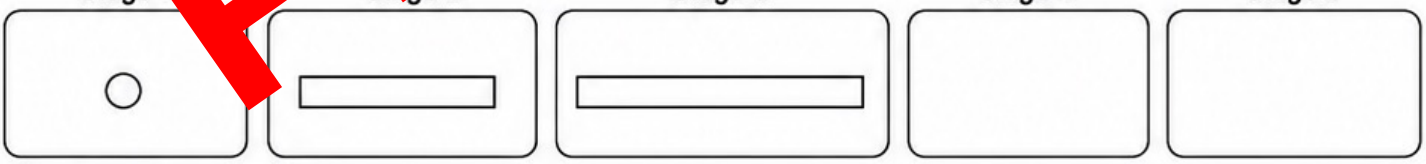
Stage 1 | Stage 2 | Stage 3 | Stage 4 | Stage 5

Totals: 10, 8, 6, ___ ___

Complete the next two stages.
Write the two missing totals.
Describe the rule: _____

3. Dot arrays

Stage 1 | Stage 2 | Stage 3 | Stage 4 | Stage 5



Totals: 2, 5, 8, ___ ___

Complete the next two stages.
Write the two missing totals.
Describe the rule: _____

Extension: Create a 4-stage visual pattern that changes by the same amount.

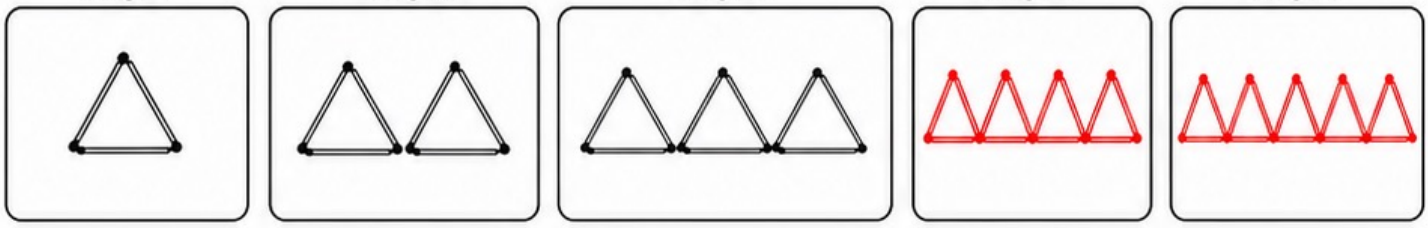
Rule: _____

Growing and Shrinking Visual Patterns – Page 2

Name: ANSWERS Date: _____

1. Matchstick triangles

Stage 1 | Stage 2 | Stage 3 | Stage 4 | Stage 5



Totals: 3, 5, 7, 9, 11

Complete the next two stages.
Write the two missing totals.
Describe the rule: add 2

2. Square towers

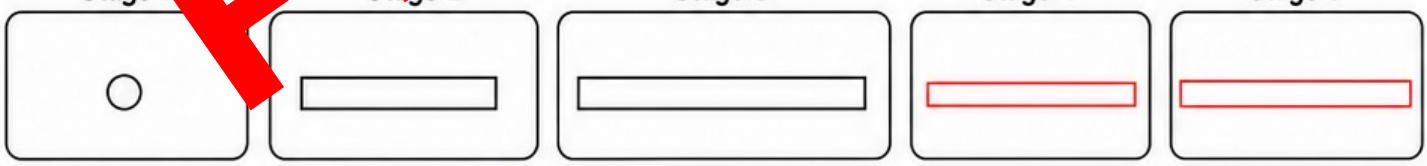
Stage 1 | Stage 2 | Stage 3 | Stage 4 | Stage 5

Totals: 10, 8, 6, 4, 2

Complete the next two stages.
Write the two missing totals.
Describe the rule: subtract 2

3. Dot arrays

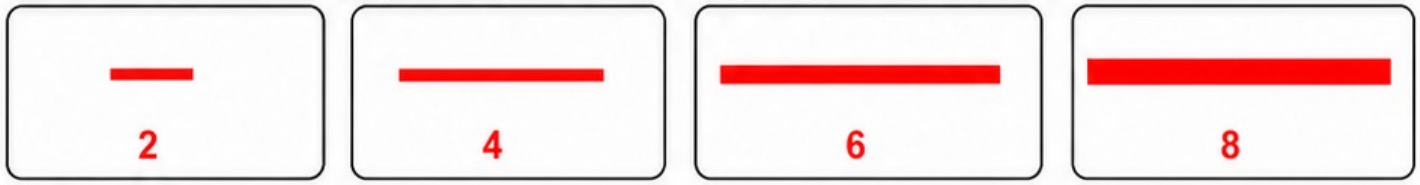
Stage 1 | Stage 2 | Stage 3 | Stage 4 | Stage 5



Totals: 2, 5, 8, 11, 14

Complete the next two stages.
Write the two missing totals.
Describe the rule: add 3

Extension: Create a 4-stage visual pattern that changes by the same amount.



Rule: add 2

Answers will vary. Check that the same amount changes each stage.

Number Pattern Rules — Page 1

Name: _____ Date: _____

1. Complete the pattern

2, 5, 8, __, __

Rule

Rule: _____

2. Complete the pattern

30, 25, 20, __, __

Rule

Rule: _____

3. Complete the pattern

4, 8, 12, __, __

Rule

Rule: _____

4. Complete the pattern

18, [illegible] 12, __, __

Rule

Rule: _____

5. Complete the pattern

7, 9, 11, __, __

Rule

Rule: _____

6. Complete the pattern

50, 40, 30, __, __

Rule

Rule: _____

Number Pattern Rules — Page 1

Name: ANSWERS Date: _____

1. Complete the pattern

2, 5, 8, 11, 14

Rule: add 3

2. Complete the pattern

30, 25, 20, 15, 10

Rule: subtract 5

3. Complete the pattern

4, 8, 12, 16, 20

Rule: add 4

4. Complete the pattern

18, 15, 12, 9, 6

Rule: subtract 3

5. Complete the pattern

7, 9, 11, 13, 15

Rule: add 2

6. Complete the pattern

50, 40, 30, 20, 10

Rule: subtract 10

Number Pattern Rules — Page 2

Name: _____ Date: _____

1. Complete using the same rule:

___, 14, 18, 22, ___

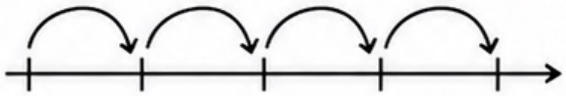
Rule: _____

2. Complete using the same rule:

35, ___, 25, ___, 15

Rule: _____

3. Start at 6. Add 7. Write 5 terms.



___, ___, ___, ___, ___

4. Start at 3. Subtract 6. Write 5 terms.

___, ___, ___, ___, ___

5. Circle every pattern that follows add 4:

A. 3, 7, 11, 15 B. 4, 8, 14, 18 C. 5, 9, 13, 17

How did you check that the rule stayed constant?

_____

_____

_____

Number Pattern Rules — Page 2

Name: ANSWERS Date: _____

1. Complete using the same rule:

10, 14, 18, 22, 26

Rule: add 4

2. Complete using the same rule:

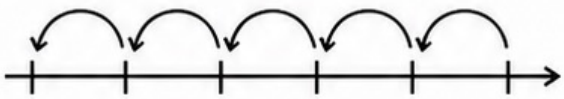
35, 30, 25, 20, 15

Rule: subtract 5

3. Start at 6. Add 7. Write 5 terms.

6, 13, 20, 27, 34

4. Start at 48. Subtract 6. Write 5 terms.



48, 42, 36, 30, 24

5. Circle every pattern that follows add 4:

A. 3, 7, 11, 15 B. 4, 8, 14, 18 C. 5, 9, 13, 17

How did you check that the rule stayed constant?

I compared every neighbouring pair and found the same difference.

Name: _____ Date: _____

Missing Elements

Find each missing number. Then write the constant rule.

1. 3, 6, ☐, 12, 15

   Rule: _____

2. 24, 20, 16, ☐, 8

   Rule: _____

3. ☐, 11, 14, 17, ☐

   Rule: _____

4. 40, ☐, 30, ☐, 20

   Rule: _____

5. 5, 10, ☐, 20, ☐

   Rule: _____

6. 1, 17, ☐, 13, ☐

   Rule: _____

7. 2, ☐, 8, 11, ☐

   Rule: _____

8. 36, 30, ☐, 18, ☐

   Rule: _____

Name: ANSWERS Date: _____

Missing Elements

Find each missing number. Then write the constant rule.

1. 3, 6, **9**, 12, 15

   Rule: add 3

2. 24, 20, 16, **12**, 8

   Rule: subtract 4

3. **8**, 11, 14, 17, **20**

   Rule: add 3

4. 40, **35**, **30**, **25**, 20

   Rule: subtract 5

5. 5, 10, **15**, 20, **25**

   Rule: add 5

6. **19**, 17, **15**, 13, **11**

   Rule: subtract 2

7. 2, **5**, 8, 11, **14**

   Rule: add 3

8. 36, 30, **24**, 18, **12**

   Rule: subtract 6

Name: _____ Date: _____

Patterns in Nature

1. Clover patches

Patches	Leaves
1	3
2	6
3	9
4	___

Rule: _____

2. Starfish groups

Groups	Arms
1	[illegible]
2	10
3	15
4	___

Rule: _____

3. Flower groups

Groups	Petals
1	6
2	12
3	18
4	___

Rule: _____

Write the rule for each table.

Draw the next group for one pattern.

Name: ANSWERS Date: _____

Patterns in Nature

1. Clover patches

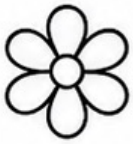
Patches	Leaves
1	3
2	6
3	9
4	12

Rule: add 3

2. Starfish groups

Groups	Arms
1	5
2	10
3	15
4	20

Rule: add 5



3. Flower groups

Groups	Petals
1	6
2	12
3	18
4	24

Rule: add 6

Write the rule for each table.

Draw the next group for one pattern.

4 patches = 12 leaves

Patterns in Transport

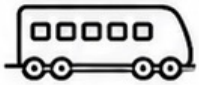
Name: _____ Date: _____

1. Bicycles and wheels

Bicycles	Wheels
1	2
2	4
3	6
4	___
5	___

Rule: _____

How many wheels are on 6 bicycles? _____



2. Train carriages and windows

Carriages	Windows
1	3
2	6
3	9
4	___
5	___

Rule: _____

How many windows are on 6 carriages? _____

Explain how the table shows a constant pattern.

_____

_____

_____

_____

Patterns in Transport

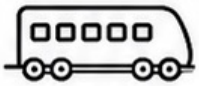
Name: ANSWERS Date: _____

1. Bicycles and wheels

Bicycles	Wheels
1	2
2	4
3	6
4	8
5	10

Rule: add 2

How many wheels are on 6 bicycles? 12 wheels



2. Train carriages and windows

Carriages	Windows
1	3
2	6
3	9
4	12
5	15

Rule: add 3

How many windows are on 6 carriages? 18 windows

Explain how the table shows a constant pattern.

Each new object adds the same number to the total.

Name: _____ Date: _____

Hundred-Chart Pattern Hunt

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. Circle 7.
2. Keep adding 6 and circle each number that is 60 or less.
3. List your circled numbers: _____
4. Write the rule: _____
5. What would the next two numbers be? _____ _____

How can you see the pattern on the chart?

_____

_____

_____

_____

_____

Name: ANSWERS Date: _____

Hundred-Chart Pattern Hunt

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. Circle 7.
2. Keep adding 6 and circle each number that is 60 or less.
3. List your circled numbers: 7, 13, 19, 25, 31, 37, 43, 49, 55
4. Write the rule: Start at 7 and add 6
5. What would the next two numbers be? 61 67

How can you see the pattern on the chart?

The circled numbers make a repeating pathway because each move adds 6.

Name: _____ Date: _____

Create and Explain a Pattern

1. Choose a starting number: _____

2. Choose add or subtract: _____

3. Choose the constant amount: _____

4. Write 6 terms:

_____, _____, _____, _____, _____, _____

5. Draw the first 4 stages using shapes or objects.

Stage 1	Stage 2	Stage 3	Stage 4

6. Hide one term for a partner.

_____, _____, _____, _____, _____

7. Explain:

My pattern starts at ____ and ____ by ____ each time.

SELF-CHECK ☐ Same change ☐ Clear rule ☐ Missing term can be found

Name: ANSWERS Date: _____

Create and Explain a Pattern

1. Choose a starting number: 4

2. Choose add or subtract: add

3. Choose the constant amount: 3

4. Write 6 terms:

4, 7, 10, 13, [illegible], [illegible]

5. Draw the first 4 stages using shapes or objects.

Stage 1	Stage 2	Stage 3	Stage 4
4	7	10	13

6. Hide one term for a partner.

4, 7, 10, 13, 16, 19

7. Explain:

My pattern starts at 4 and increases by 3 each time.

Other correct patterns are possible.

SELF-CHECK ☑ Same change ☑ Clear rule ☑ Missing term can be found

Patterns in the Environment Assessment — Part A

Name: _____ Date: _____

1. Complete: 4, 8, 12, __, __. /2

2. Complete: 30, 27, __, 21, __. /2

3. Write the rule for 6, 11, 16, 21. /2

Rule: _____

4. Find the missing term: 6, 12, __, 18. /1

5. A garden has 5 petals on each flower. Complete the table. /3

Flowers	Petals
1	5
2	__
3	__
4	__

Score: ____ / 10

Patterns in the Environment Assessment — Part A

Name: ANSWERS Date: _____

1. Complete: 4, 8, 12, 16, 20. /2

2. Complete: 30, 27, 24, 21, 18. /2

3. Write the rule for 6, 11, 16, 21. /2

Rule: Start at 6 and add

4. Find the missing term: 9, 12, 15, 18. /1

5. A garden has 5 petals on each flower. Complete the table. /3

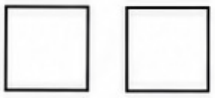
Flowers	Petals
1	5
2	10
3	15
4	20

Score: 10 / 10

Patterns in the Environment Assessment — Part B

Name: _____ **Date:** _____

6. Draw the next two stages of a pattern that starts with 2 squares and adds 2 squares each stage. /2



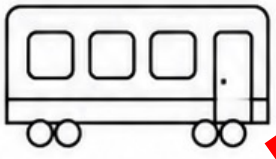
Next stage 1

Next stage 2

7. Create five terms starting at 20 and subtracting 3. /2

_____, _____, _____, _____, _____

8. A train has 3 windows on each carriage. How many windows are on 6 carriages? Show the pattern. /2



Answer: _____

Explain your working

9. Explain how you know 8, 12, 16, 20 has a constant rule. /2

10. Create a four-term additive pattern and describe its rule. /2

Terms: _____, _____, _____, _____

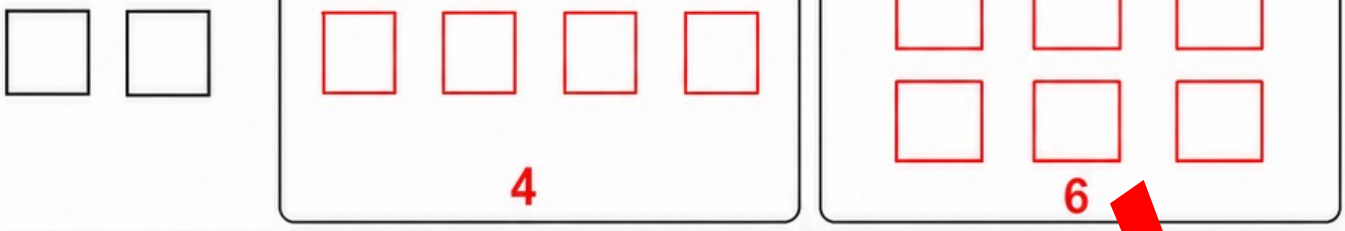
Rule: _____

Score: _____ / 10

Patterns in the Environment Assessment — Part B

Name: ANSWERS Date: _____

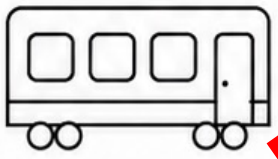
6. Draw the next two stages of a pattern that starts with 2 squares and adds 2 squares each stage. /2



7. Create five terms starting at 20 and subtracting 3. /2

20 , 17 , 14 , 11 , 8

8. A train has 3 windows on each carriage. How many windows are on 6 carriages? Show the pattern. /2



Answer: 18 windows

Working: 3, 6, 9, 12, 15, 18

9. Explain how you know 8, 12, 16, 20 has a constant rule. /2

Every neighbouring pair differs by 4, so the same amount is added each time.

10. Create a four-term additive pattern and describe its rule. /2

Terms: 5 , 8 , 11 , 14

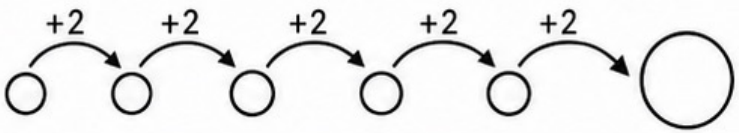
Rule: Start at 5 and add 3

Other correct patterns are possible.

Score: 10 / 10

Patterns in the Environment Rubric

Student: _____ Date: _____



Criteria	BEGINNING	DEVELOPING	ACHIEVING	CONFIDENT	EXCEEDING
1. Recognises additive patterns	Needs support	Recognises some additive patterns	Recognises additive patterns accurately	Recognises a variety of additive patterns	Justifies recognition of additive patterns
2. Finds the constant rule	Needs direct support	Finds a simple rule with support	Finds simple rules accurately	Finds rules for a variety of patterns	Explains and verifies rules using examples
3. Continues growing and shrinking patterns	Continues patterns with help	Continues in one direction with support	Continues patterns in both directions	Extends patterns over several terms	Checks and explains every change
4. Finds missing elements	Needs support	Finds simple missing elements	Finds missing elements accurately	Finds several missing elements	Explains the strategy used
5. Creates patterns with numbers, shapes or objects	Creates patterns with help	Creates a simple pattern	Creates a clear additive pattern	Creates patterns using varied elements	Creates and extends patterns and explains choices
6. Explains mathematical thinking	Gives little detail	Names part of the rule or pattern	States the rule or pattern clearly	Uses mathematical vocabulary and examples	Justifies each step using clear reasoning

Teacher comment:

Patterns in the Environment

Learning Intentio

We are learning to notice, describe, co nue d cre additi atterns.

We will use numbers, shapes, objects a patte from environment.

NOTICE
Spot what changes.

DE BE
Say th

CONTINUE
Find what comes next.

CREATE
Build your own pattern.

Success Criteria

By the end of the lesson, I can use the same co ant ange ve very pair of terms.

I CAN
find the start

I N
e cons unt

CAN
continue or complete a pattern

I CAN
explain the rule clearly

What You Already Kn w

Some patterns repeat a part. Additive patte gr r shi bu same amount.

REPEATING

red, blue, r

ADDITIVE

2, 4, 6, 8

hich pattern changes by a constant amount?

What Is an Additive Pattern?

An additive pattern changes by the same amount each time.

It may grow by adding or shrink by subtracting.

GROWING

Start at 4.

SHRINKING

Start at 20. Subtract 2.

The amount of change stays constant.

Growing Patterns

A growing pattern becomes larger by the same amount each time.

2 → 4 → 6 → 8 → 10

Start at 2. Add 2 each time.

Shrinking Patterns

A shrinking pattern becomes smaller by the same amount each time.

25 → 20 → 15 → 10 → 5

Start at 25. Subtract 5 each time.

Find the Constant Amount

Compare neighbouring terms. Ask: What was added or subtracted each time?

7	→	13	→ 16

ch neighbouring pair differs by 3, so the rule is add 3.

Read and Say a Rule

A clear rule tells the start, the direction and the constant amount.

START
Where does it begin?

DIRECTION
Does it add or subtract?

AMOUNT
How much each time?

Start at ___ and add or subtract ___ each time.

Build a Visual Patte n

Connected triangle stages can gro y tw atch ks en time.

Stage	1	2	3	4
Matchsticks			7	9

Th ture chang s, but the constant amount is still add 2.

Record the Visual Pattern

Link the stage number, the picture and the total in a table to help see the rule visible.

Term number	1	2	3	4
Total			7	9

What total would stage 5 have?

Number Patterns in Natur

Groups in nature can create additive patterns w[illegible] ea[illegible]ew g[illegible]p[illegible]s the same number.

CLOVER PATCHES

3, 6, 9, 12[illegible]

STARFISH GROUPS

5, 10, 15, 20 arms

Name the constant amount in each pattern.

Patterns in Transport

Equal groups create predictable totals as more wheels or carriages are added.

BICYCLES

2, 4, 6, 8 ...

TRAIN CARRIAGES

3, 6, 9, 12 windows

...cycles add 2 wheels. Carriages add 3 windows.

Use a Table

A table helps us match the number of carriages to the total number of windows.

Carriages	1	2		4	5
Windows			9	12	15

Each new carriage adds 3 windows.

Complete the Tabl

Use the constant rule to predict missing totals, then explain how you know.

Carriages	1	2		4	5
Windows		6	9	___	___

What are the fourth and fifth totals?

Find Missing Elements

Use the rule forwards or backwards. Every neighbouring pair must have the same difference.

24	20	?	12	8

Subtract 4 each time. The missing term is 16.

Shapes and Objects Can Change

The objects may look different, but a pattern is additi wher e tot ha es by a constant amount.

SQUARES
2, 4, 6, 8

DOTS
1, 4, 7

LEAVES
12, 10, 8, 6

Find the rule for each pattern.

Pattern Hunt

Look around the classroom or outdoors for a pattern that grows or shrinks.

LOOK
Find a pattern.

RECORD
Draw or list four terms.

EXPLAIN
Name the constant rule.

Be ready to show how the pattern changes.

Create Your Own Pattern

Choose three things before you begin: a st[illegible] a d[illegible]tion [illegible] a [illegible]stant amount.

START
4

[illegible]RECTION
ad[illegible]

AMOUNT
3

Example: 4, 7, 10, 13, 16

Explain So Someone Can Rebuild It

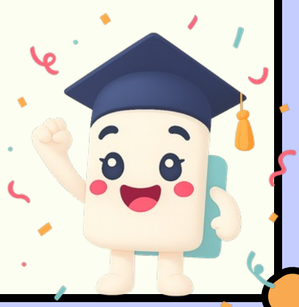
A precise explanation lets another person recreate the same pattern.

CLEAR START
State the first term.

CLEAR RULE
Add or subtract and the amount.

PARTNER TEST
Can someone rebuild it?

My pattern starts at ___ and changes by ___ each time.



Check Your Thinking

Compare every neighbouring pa not j the t tw erms.

8 → ? → 16 → 20

diff is 4 every time, so the constant rule is add 4.

Technology Connection

Use a simple digital table or drawing tool to bu exte and cri an additive pattern.

BUILD

Enter the first four terms

EXTEND

dict two terms.

EXPLAIN

Record the constant rule.

Chec t the digital pattern uses the same change each time.

Review

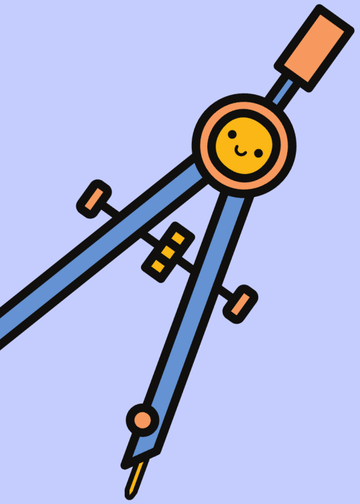
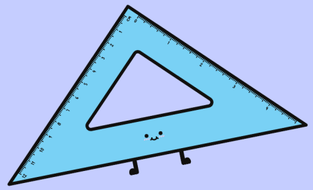
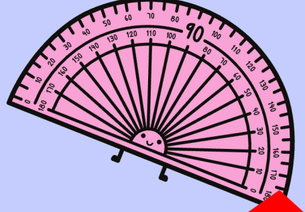
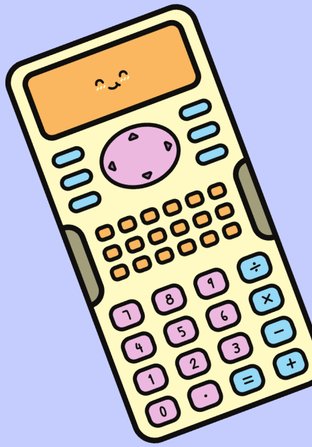
Additive patterns can grow or shrink. The[illegible]e st[illegible]cons[illegible]t fr[illegible] term to term.

GROWING
adds the same amount

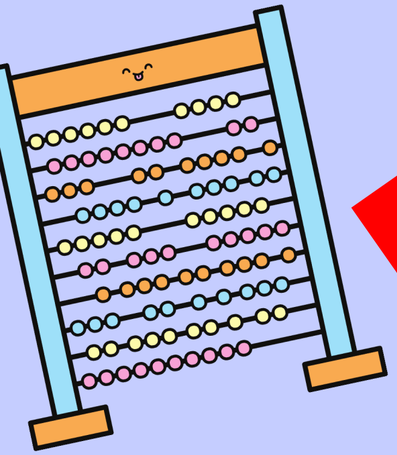
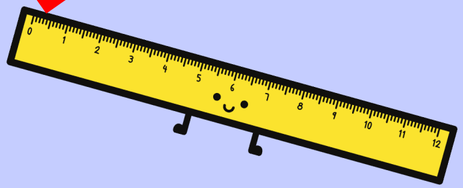
SHR[illegible]ING
[illegible]ts the [illegible]ount

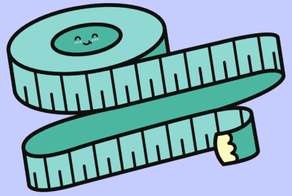
CONSTANT RULE
[illegible]ame difference each time

MISSING TERMS
work forwards or backwards

Well Done!



Patterns in the Environment Quiz

Question 1

What is the next term in this pattern?

3 → 6 → 9 → 12 → ?

Choose: A 14 B 15 C 16

Answer 1

The correct answer is

3 → 6 → 9 → 12 → 15

15

The rule is add 3.

Question 2

A square pattern has 2 squares, then 3 squares, then 4 squares. What comes next?

A
4 squares

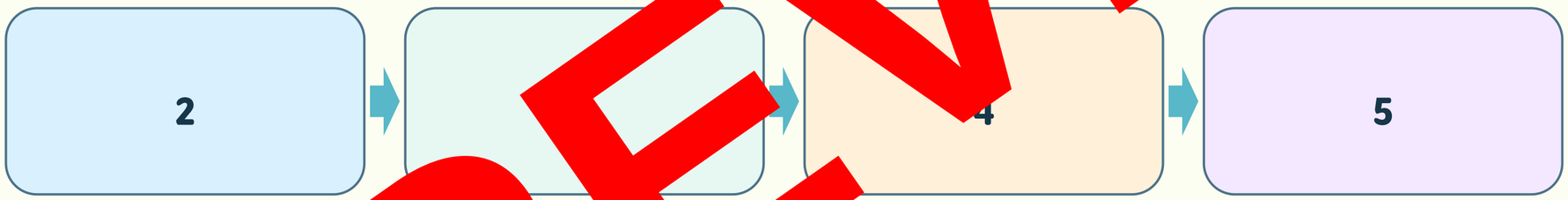
B
5 squares

C
6 squares

Choose the next growing stage.

Answer 2

The next stage h 5 sq es.



5 squares

The pattern grows by one square each stage.

Question 3

Fill both gaps and ...me ...rule.

32	28	?	20	?

...nstant amount is being subtracted?

Answer 3

The missing terms are 24 and 16.

32 → 28 → 24 → 20 → 16

24 and 16

The rule is subtract 4.

Question 4

Describe the rule for this pattern.

5	→	15	→ 20

clu[illegible]arting number and the constant amount.

Answer 4

Start at 5 and add each time.

5 → [illegible] → 15 → 20

Start at 5. Add 5.

Every neighbouring pair differs by 5.

Question 5

A bicycle has 2 wheels. How ma[illegible] wheel[illegible] 4 b[illegible]cle[illegible] have?

ONE BICYCLE

2 wh[illegible]

FOUR BICYCLES

? wheels

Show the additive pattern.

Answer 5

Four bicycles h[illegible] 8 w[illegible]ls.

2 → [illegible] → 6 → 8

8 wheels

The totals are 2, 4, 6, 8.

Question 6

Each train carriage has 3 windows. How many windows do 5 carriages have?

ONE CARRIAGE

3 wind

FIVE CARRIAGES

? windows

Use the constant rule add 3.

Answer 6

Five carriages ha[illegible]5 wi[illegible]ws.

3 → 6 → 9 → 12 → 15

15 windows

Add 3 windows for each carriage.

Question 7

Write the first five terms. [illegible] and [illegible] 3

7	?	?	?	?

[illegible] same change between every pair.

Answer 7

The five terms are 7, [illegible] 13, [illegible] and [illegible]

7 → 10 → 13 → 16 → 19

7, 10, 13, 16, 19

The rule is add 3.

Question 8

Find the missi elem

4	8	?	16	20

number keeps the rule constant?

Answer 8

The missing element is

4 → 8 → 12 → 16 → 20

12

The rule is add 4.

Question 9

True or false: 30, 25, 20, 15 [illegible] 5 [illegible]

TRUE

The difference [illegible] 5.

FALSE

The rule changes.

Compare every neighbouring pair.

Answer 9

True

30 → [illegible] → 20 → 15

TRUE

Each term is 5 less than the term before it.

Question 10

How do you know this pattern follows below?

8		16	20

gin using neighbouring terms.

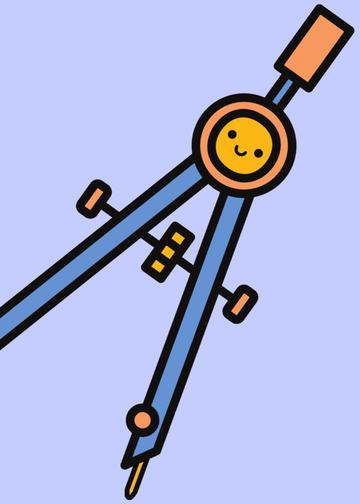
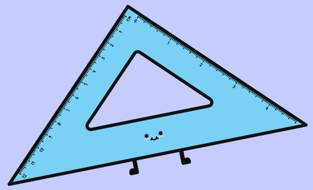
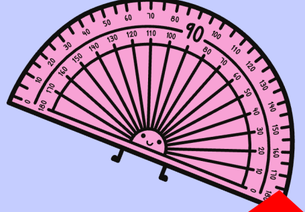
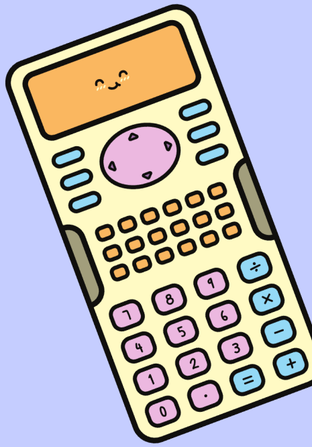
Answer 10

The difference between ever[illegible] eigh[illegible]uring[illegible]ir i[illegible]

8 → [illegible] → 16 → 20

it grows by 4.

12 − 8, 16 − 12 and 20 − 16 are all 4.

Well Done!