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Number Sequences - Year 2

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ADDITIVE PATTERN PATHWAYS



The step stays the same each time.

An additive pattern changes by the same amount each time.

1 INCREASE

Add the step.

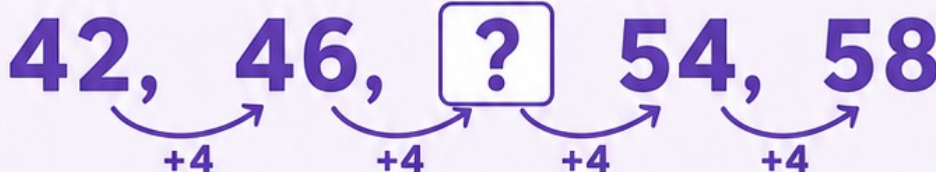


2 DECREASE

Subtract the step.



3 FIND THE MISSING TERM



The rule is +4, so the missing number is 50.

START • STEP • INCREASE • DECREASE • MISSING TERM

NUMBER SEQUENCE QUICK GUIDE

A sequence follows a rule. The step stays the same each time.

1



LOOK

Compare two neighbouring terms.

2



NAME THE STEP

How much is added or subtracted?

3



CHECK

Use the same step all the way through.

INCREASING

17 $\xrightarrow{+5}$ 22 $\xrightarrow{+5}$ 27 $\xrightarrow{+5}$ 32

DECREASING

74 $\xrightarrow{-3}$ 71 $\xrightarrow{-3}$ 68 $\xrightarrow{-3}$ 65

GROWING SHAPES



1, 3, 5, 7
+2 tiles each time

ANY START • SAME STEP



PATTERN PATH RACE



Solve a sequence problem. A correct answer moves your counter.



PATTERN PATH RACE CARDS

HOW TO PLAY

Place counters on START. Take turns drawing a card.
Cover the CHECK box, solve the card, then reveal the answer.
If you are correct, roll a die and move. First to FINISH wins.

1

Continue:
14, 17, 20, __, __

CHECK 23, 26

2

Continue:
95, 90, 85, __, __

CHECK 80, 75

3

Name the rule:
42, 44, 46, 48

CHECK 48

4

Name the rule:
310, 300, 290, 280

CHECK 270

5

Missing term:
45, 68, __, 78

CHECK 73

6

Missing term:
156, 153, __, 147

CHECK 150

7

Start at 27.
Add 5 three times.

CHECK 32, 37, 42

8

Start at 84.
Subtract 4 twice.

CHECK 80, 76

9

True or false?
101, 111, 121
adds 10.

CHECK TRUE

10

What comes next?
6, 9, 12, 15, __

CHECK 18

11

Write 4 terms.
Start at 52.
Add 2.

CHECK 52, 54, 56, 58

12

Write 4 terms.
Start at 200.
Subtract 5.

CHECK 200, 195, 190, 185

SEQUENCE SORT AND SOLVE

For each card. Then name the step.

INCREASING

The numbers go up.

STEP: _____

DECREASING

The numbers go down.

STEP: _____

NOT A CONSTANT STEP

The step changes.

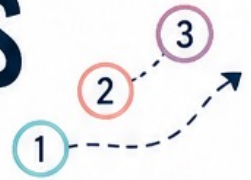
STEP: _____

PREVIEW



SEQUENCE SORT CARDS

Cut out the cards. Sort them on the mat. Name each step.



12, 15, 18, 21

STEP: _____

44, 49, 54, 59

STEP: _____

120, 130, 140, 150

STEP: _____

205, 207, 209, 211

STEP: _____

71, 75, 79, 83

STEP: _____

600, 605, 610, 615

STEP: _____

90, 87, 84, 81

STEP: _____

250, 245, 240, 235

STEP: _____

780, 770, 760, 750

STEP: _____

166, 164, 162, 160

STEP: _____

432, 428, 424, 420

STEP: _____

999, 994, 989, 984

STEP: _____

10, 12, 15, 17

STEP: _____

80, 75, 71, 66

STEP: _____

200, 210, 215, 225

STEP: _____

56, 53, 49, 46

STEP: _____

300, 302, 306, 308

STEP: _____

41, 46, 50, 55

STEP: _____

PREVIEW

SEQUENCE STEPS

Name: _____

Complete each sequence. Then write the step.

1. 18, 19, 20, , , STEP: _____

2. 44, 46, 48, , , STEP: _____

3. 105, 110, 115, , , STEP: _____



4. 20, 40, 60, 80, , , STEP: _____

5. , 62, 64, 66, STEP: _____

6. , 95, 100, 105, STEP: _____

Which sequence has the largest step? _____



SEQUENCE STEPS

Name: ANSWERS

Complete each sequence. Then write the step.

1. 18, 19, 20, 21, 22, 23 STEP: +1

2. 44, 46, 48, 50, 52, 54 STEP: +2

3. 105, 110, 115, 120, 125, 130 STEP: +5



4. 200, 210, 220, 230, 260, 270, 280 STEP: +10

5. 60, 62, 64, 66, 68 STEP: +2

6. 90, 95, 100, 105, 110 STEP: +5

Which sequence has the largest step? Sequence 4



SKIP-COUNT TRACKS

Name: _____

Fill the gaps. Write the rule for each track.

1. 126, 128, , 132, , 136 RULE: _____

2. 235, 240, , 250, , 260 RULE: _____

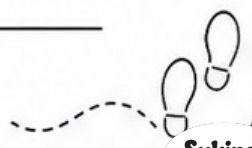
3. 410, 420, , 440, , 460 RULE: _____

4. , 574, 577, , 589, RULE: _____

5. 681, , 685, 687, , 691 RULE: _____

6. 720, , 740, , 760, 770 RULE: _____

How does the rule help you find a missing number?



SKIP-COUNT TRACKS

Name: **ANSWERS**

Fill the gaps. Write the rule for each track.

1. 126, 128, **130**, 132, **134**, 136 RULE: **+2**

2. 235, 240, **245**, 250, **255**, 260 RULE: **+5**

3. 410, 420, **430**, 440, **450**, 460 RULE: **+10**

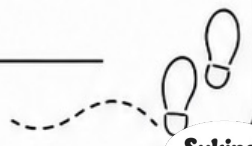
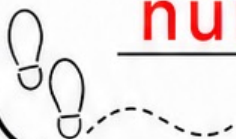
4. **569**, 574, 579, **584**, 589, **594** RULE: **+5**

5. 681, **683**, 685, 687, **689**, 691 RULE: **+2**

6. 720, **730**, 740, **750**, 760, 770 RULE: **+10**

How does the rule help you find a missing number?

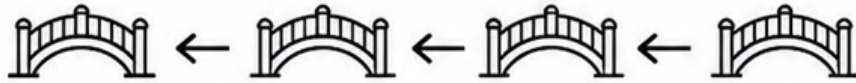
**It tells me what to add to the
number before it.**



BACKWARD BRIDGES

Name: _____

Count backwards. Complete each bridge and write the step.



1. 88, 86, 84, STEP: _____

2. 145, 140, 135, STEP: _____

3. 390, 380, 370, STEP: _____

4. 280, 252, 250, STEP: _____

5. 615, 605, 600, STEP: _____

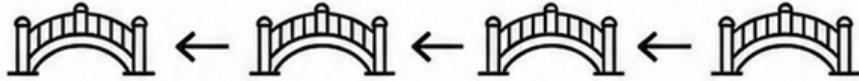
6. 940, 920, 900 STEP: _____

What changes when you count backwards?

BACKWARD BRIDGES

Name: ANSWERS

Count backwards. Complete each bridge and write the step.



1. 88, 86, 84, **82** **80** **78** STEP: -2

2. 145, 140, 135, **130** **125** **120** STEP: -5

3. 390, 380, 370, **360** **350** **340** STEP: -10

4. **252** **250** **248** STEP: -2

5. 615, **610** 605, 600, **595** STEP: -5

6. 940, **930** 920, **910** 900 STEP: -10

What changes when you count backwards?

The numbers get smaller by the same step.

PATTERN INVESTIGATOR



Name: _____

1. Find the missing term and name the rule.

A. 33, 36, , 42, 45 RULE: _____

B. 140, 135, 130, , 120 RULE: _____

C. , 208, 212, 216, 220 RULE: _____

D. 510, 500, , 480, 470 RULE: _____

2. Circle the sequence that does not have a constant step.

A. 12, 14, 16, 18

B. 50, 55, 60, 65

C. 91, 94, 98, 101



3. Explain: How did you know?

PATTERN INVESTIGATOR



Name: ANSWERS

1. Find the missing term and name the rule.

A. 33, 36, 39, 42, 45 RULE: +3

B. 140, 135, 130, 125, 120 RULE: -5

C. 204, 208, 212, 216, 220 RULE: +4

D. 510, 500, 490, 480, 470 RULE: -10

2. Circle the sequence that does not have a constant step.

A. 12, 14, 16, 18

B. 50, 55, 60, 65

C. 91, 94, 98, 101



3. Explain: How did you know?

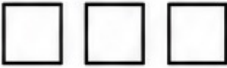
The jumps are +3, +4, +3, so the step changes.

GROWING SHAPE PATTERNS

Name: _____

Look at each pattern. Draw Stage 4. Complete the number sequence.

PATTERN A			
STAGE 1	STAGE 2	STAGE 3	STAGE 4
			DRAW HERE
NUMBER SEQUENCE: 2, 4, 6, RULE: _____			

PATTERN B			
STAGE 1	STAGE 2	STAGE 3	STAGE 4
			DRAW HERE
NUMBER SEQUENCE: 3, 6, RULE: _____			

PATTERN C			
STAGE 1	STAGE 2	STAGE 3	STAGE 4
			DRAW HERE
NUMBER SEQUENCE: 10, 8, 6, RULE: _____			

Create your own growing pattern.

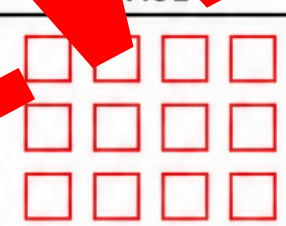
RULE: _____

GROWING SHAPE PATTERNS

Name: ANSWERS

Look at each pattern. Draw Stage 4. Complete the number sequence.

PATTERN A			
STAGE 1	STAGE 2	STAGE 3	STAGE 4
			
NUMBER SEQUENCE: 2, 4, 6, 8 RULE: <u>+2</u>			

PATTERN B			
STAGE 1	STAGE 2	STAGE 3	STAGE 4
			
NUMBER SEQUENCE: 3, 6, 9, 12 RULE: <u>+3</u>			

PATTERN C			
STAGE 1	STAGE 2	STAGE 3	STAGE 4
			
NUMBER SEQUENCE: 10, 8, 6, 4 RULE: <u>-2</u>			

Create your own growing pattern.

Answers will vary.

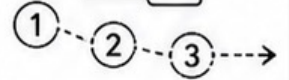
RULE: Answers will vary.

CREATE A SEQUENCE CHALLENGE

Name: _____



Build each sequence. Then explain how a partner can check it.



A. Start at 27. Increase by 4.

27					
----	--	--	--	--	--

B. Start at 86. Decrease by 3.

86					
----	--	--	--	--	--

C. Choose a starting number. Increase by 5.

--	--	--	--	--	--

START: _____

RULE: +5

D. Choose a starting number. Decrease by 10.

--	--	--	--	--	--

START: _____

RULE: -10

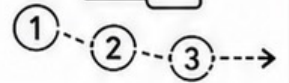
How can a partner check that every step is correct?

CREATE A SEQUENCE CHALLENGE

Name: ANSWERS



Build each sequence. Then explain how a partner can check it.



A. Start at 27. Increase by 4.

27	31	35	39	43	47
----	----	----	----	----	----

B. Start at 86. Decrease by 3.

86	83	80	77	74	71
----	----	----	----	----	----

C. Choose a starting number. Increase by 5.

40	45	50	55	60	65
----	----	----	----	----	----

START: 40

RULE: +5

D. Choose a starting number. Decrease by 10.

95	85	75	65	55	45
----	----	----	----	----	----

START: 95

RULE: -10

How can a partner check that every step is correct?

Check the difference between each pair. It must match the rule.

PATTERN MISSION ASSESSMENT

MISSION 1: REPAIR THE ROBOT CODE

Name: _____ Date: _____

Show what you know about number sequences.

1. Complete each sequence. (4 marks)

A. 214, 218, 222, _____ , _____

B. 560, 550, 540, _____ , _____

2. Find the missing number. (2 marks)

A. 75, _____ , 85, 90

B. _____ , 312, 313, 316

3. Name the rule. (2 marks)

A. 96, 100, 104, 106 RULE: _____

B. 40, 430, 420, 410 RULE: _____

4. Circle True or False. (2 marks)

A. 33, 35, 37, 39 has a step of +2.

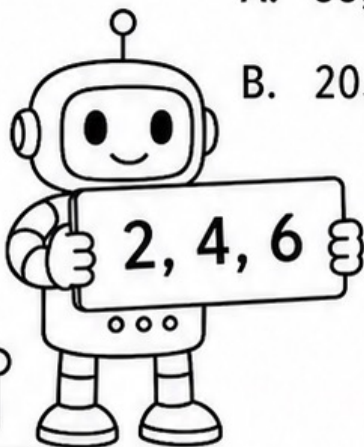
TRUE

FALSE

B. 205, 200, 195, 190 is increasing.

TRUE

FALSE



TOTAL: _____ / 10

PATTERN MISSION ASSESSMENT

MISSION 1: REPAIR THE ROBOT CODE

Name: ANSWERS Date: _____

Show what you know about number sequences.

1. Complete each sequence. (4 marks)

A. 214, 218, 222,

226

,

230

B. 560, 550, 540,

530

,

520

2. Find the missing number. (2 marks)

A. 75,

80

, 85, 90

B.

315

, 312, 309, 306

3. Name the rule. (2 marks)

A. 96, 101, 106

RULE: **+5**

B. 440, 430, 420, 410

RULE: **-10**

4. Circle True or False. (2 marks)

A. 33, 35, 37, 39 has a step of +2.

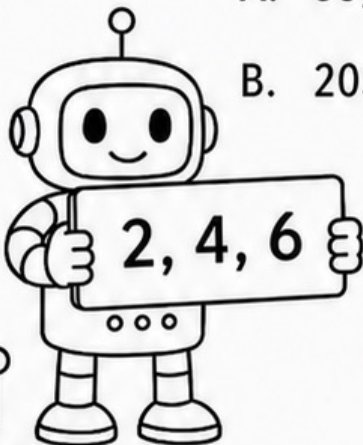
TRUE

FALSE

B. 205, 200, 195, 190 is increasing.

TRUE

FALSE



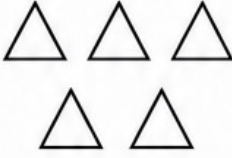
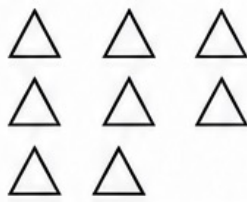
TOTAL: **10** / 10

PATTERN MISSION ASSESSMENT

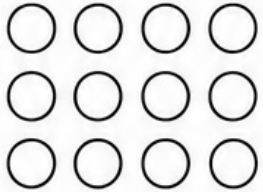
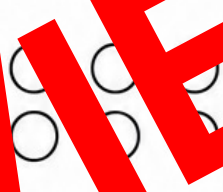
MISSION 2: BUILD AND EXPLAIN

Name: _____ Date: _____

1. Draw Stage 4. Complete the sequence and rule. (4 marks)

A.	STAGE 1	STAGE 2	STAGE 3	STAGE 4
				DRAW HERE

SEQUENCE: 2, 5, 8, RULE: _____

B.	STAGE 1	STAGE 2	STAGE 3	STAGE 4
				DRAW HERE

SEQUENCE: 12, 9, 6, RULE: _____

2. Build each number sequence. (4 marks)

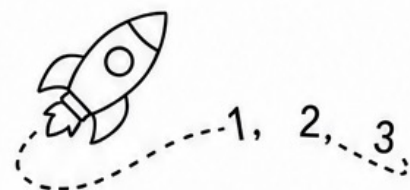
A. Start at 10. Increase by 5.

10				
----	--	--	--	--

B. Start at 150. Decrease by 5.

150				
-----	--	--	--	--

3. Choose one pattern. Explain how the rule works. (2 marks)



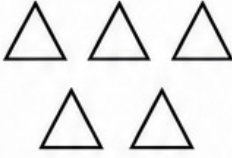
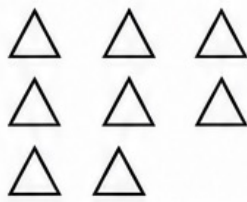
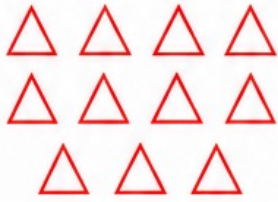
TOTAL: _____ / 10

PATTERN MISSION ASSESSMENT

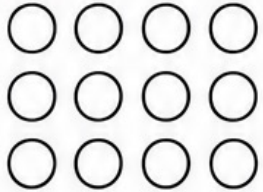
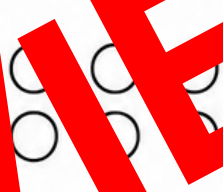
MISSION 2: BUILD AND EXPLAIN

Name: _____ **ANSWERS** _____ Date: _____

1. Draw Stage 4. Complete the sequence and rule. (4 marks)

A.	STAGE 1	STAGE 2	STAGE 3	STAGE 4
				

SEQUENCE: 2, 5, 8, **11** RULE: **+3**

B.	STAGE 1	STAGE 2	STAGE 3	STAGE 4
				

SEQUENCE: 12, 9, 6, **3** RULE: **-3**

2. Build each number sequence. (4 marks)

A. Start at 64. Increase by 4.

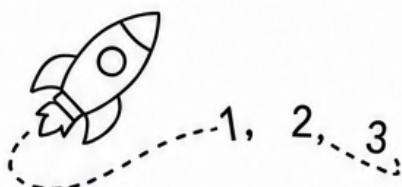
64	68	72	76	80
----	-----------	-----------	-----------	-----------

B. Start at 150. Decrease by 5.

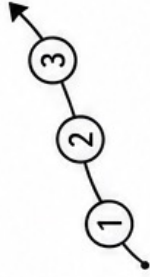
150	145	140	135	130
-----	------------	------------	------------	------------

3. Choose one pattern. Explain how the rule works. (2 marks)

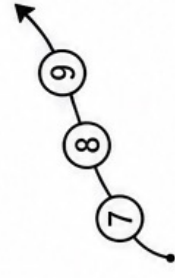
Pattern A adds 3 each time, so I count on by 3.



TOTAL: **10** / 10



NUMBER SEQUENCES YEAR 2 RUBRIC

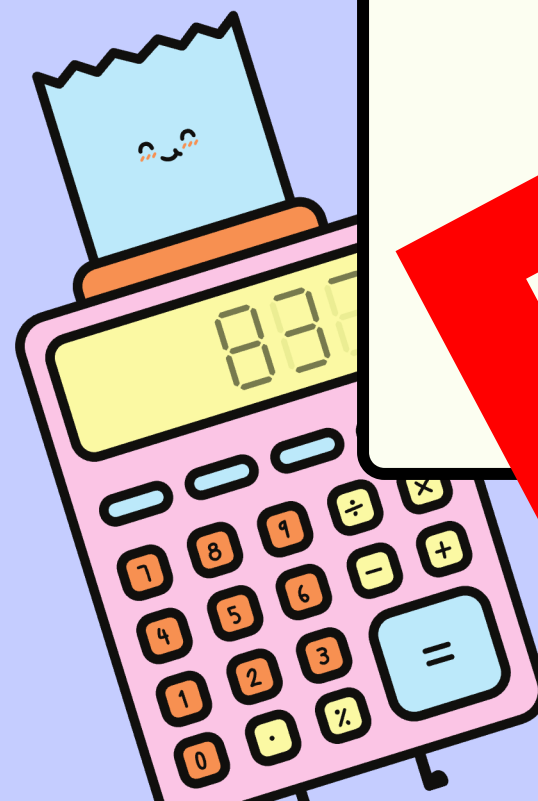
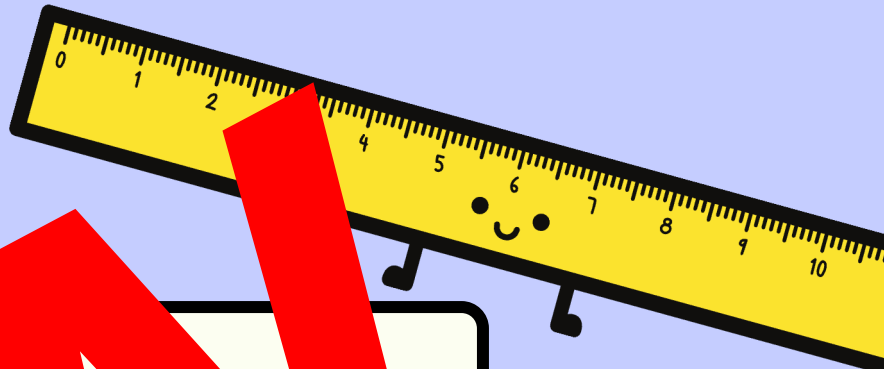
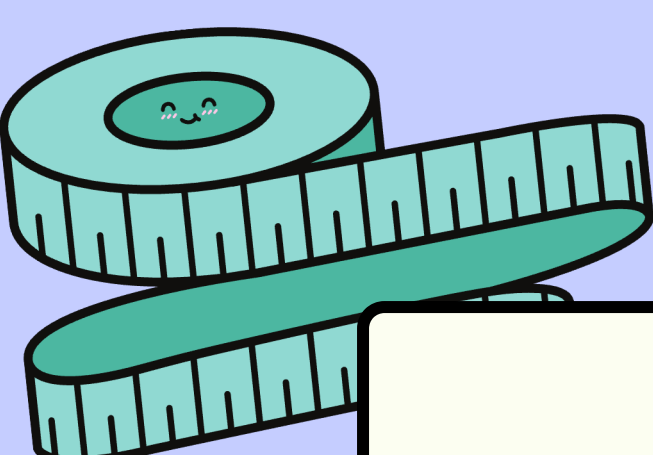


Name: _____

Date: _____

CRITERIA	BEGINNING	DEVELOPING	ACHIEVING	CONFIDENT	EXCEEDING
Recognises the constant step	Needs support to see a repeating step.	Finds a step in simple sequences.	Identifies a constant step in familiar sequences.	Identifies positive and negative steps accurately.	Explains why a step is constant or not constant.
Continues and finds missing terms	Completes one term with guidance.	Continues simple +1 and +2 sequences.	Finds missing terms using a constant step.	Solves increasing and decreasing sequences to 1000.	Justifies and checks every missing term.
Describes the rule	Gives an incomplete rule.	Uses goes up or goes down language.	States the exact rule using + or -.	Links every term to the rule clearly.	Compares rules and notices changing steps.
Creates number, shape and object patterns	Copies a pattern.	Creates a simple number or shape pattern.	Creates a valid constant step pattern.	Chooses a useful start and step.	Creates and explains a challenging valid pattern.
Explains and checks reasoning	Gives little explanation.	Describes one step.	Explains the rule was used.	Checks differences and corrects errors.	Gives clear evidence and another way to check.

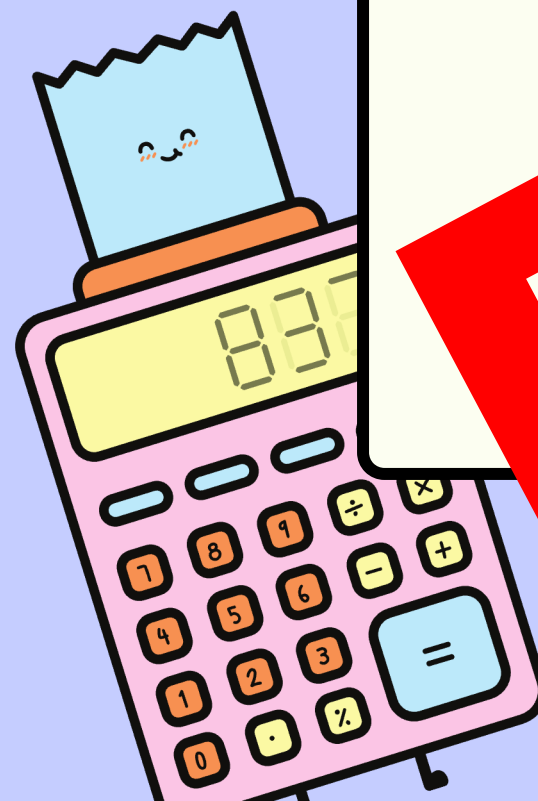
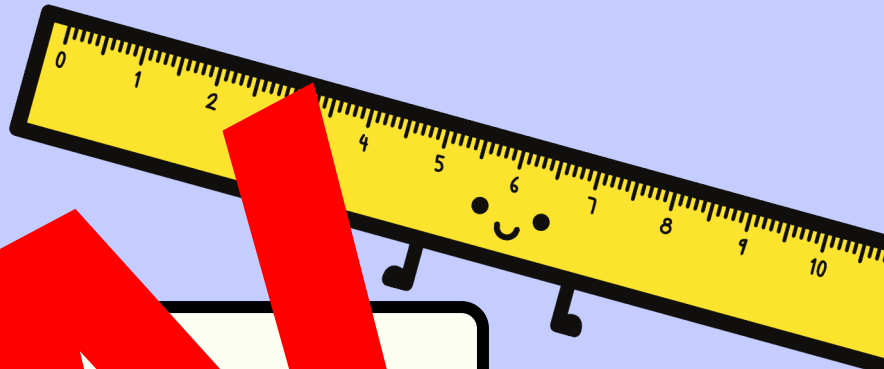
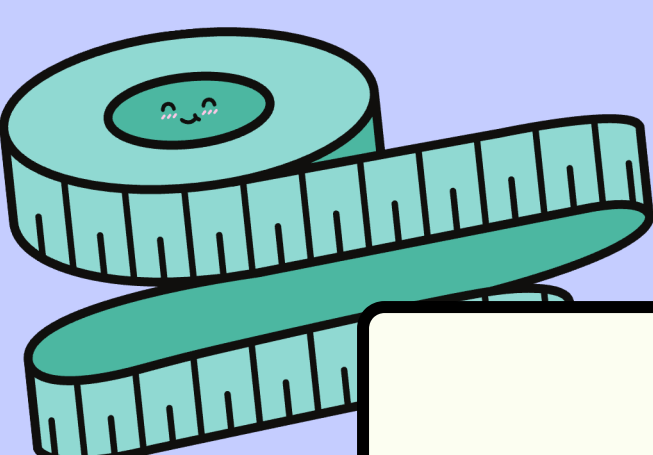
Overall level: _____



Number Sequences



PREVIEW



Number Sequences Quiz



PREVIEW