

GRADE 4

PATTERNS & SEQUENCES

Printable Worksheet Pack

- Number patterns
- Increasing and decreasing sequences
- Missing terms
- Finding the rule
- Multiplication and division patterns
- Shape and visual patterns
- Pattern reasoning
- Real-life problems
- Mixed challenge
- Answer key included

Name: _____

Date: _____ Teacher: _____

Worksheet 1: Number Patterns

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A. Complete each pattern

1. 4, 8, 12, 16, _____, _____

2. 7, 14, 21, 28, _____, _____

3. 50, 45, 40, 35, _____, _____

4. 120, 130, 140, _____, _____

5. 300, 275, 250, _____, _____

6. 6, 12, 24, 48, _____, _____

7. 160, 80, 40, 20, _____, _____

8. 9, 18, 27, 36, _____, _____

B. Find the rule

9. 15, 20, 25, 30 → Rule: _____

10. 90, 80, 70, 60 → Rule: _____

11. 3, 6, 12, 24 → Rule: _____

Worksheet 2: Increasing & Decreasing Sequences

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A. Complete the sequences

1. 25, 30, 35, 40, _____, _____

2. 96, 88, 80, 72, _____, _____

3. 11, 22, 33, 44, _____, _____

4. 500, 450, 400, 350, _____, _____

5. 2, 6, 10, 14, _____, _____

6. 75, 70, 65, 60, _____, _____

7. 18, 24, 30, 36 → _____

8. 100, 90, 80, 70 → _____

9. 45, 50, 55, 60 → _____

10. 72, 64, 56, 48 → _____

B. Increasing or decreasing?

Worksheet 3: Find the Pattern Rule

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A. Write the rule

1. 8, 13, 18, 23 → Rule: _____

2. 60, 55, 50, 45 → Rule: _____

3. 5, 10, 20, 40 → Rule: _____

4. 144, 72, 36, 18 → Rule: _____

5. 21, 28, 35, 42 → Rule: _____

7. Start at 12 and add 7 each time. Write the next four terms:

6. 200, 190, 180, 170 → Rule: _____

8. Start at 96 and subtract 8 each time. Write the next four terms:

B. Use the rule

Worksheet 4: Missing Terms

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A. Find the missing numbers

1. 10, 20, _____, 40, 50
2. 6, _____, 18, 24, 30
3. 100, 90, _____, 70, 60
4. 3, 9, _____, 27, 33
5. 5, 10, 20, _____, 80
6. 160, 80, _____, 20, 10
7. 14, 21, _____, 35, 42
8. 250, _____, 350, 400, 450

B. Explain

9. Choose one sequence above and explain how you found its missing number.

Worksheet 5: Multiplication & Division Patterns

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A. Complete each pattern

1. 2, 4, 8, 16, _____, _____
2. 3, 9, 27, 81, _____, _____
3. 5, 10, 20, 40, _____, _____
4. 256, 128, 64, 32, _____, _____
5. 4, 12, 36, 108, _____, _____
6. 320, 160, 80, 40, _____, _____

B. Identify the operation

7. $7 \rightarrow 14 \rightarrow 28 \rightarrow 56$ Operation: _____
8. $200 \rightarrow 100 \rightarrow 50 \rightarrow 25$ Operation: _____
9. $6 \rightarrow 18 \rightarrow 54 \rightarrow 162$ Operation: _____

Worksheet 6: Visual Patterns

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A. Continue each pattern

1. The number of shaded squares increases by 1 each step.

Step 1



Step 2



Step 3



Draw Step 4 and Step 5 in the spaces below.



2. The pattern alternates circle, triangle, circle, triangle...



Draw the next two shapes: _____

B. Pattern thinking

3. Describe the rule for the square pattern in one sentence.

4. What would Step 6 of the square pattern contain? _____ squares

Worksheet 7: Pattern Reasoning

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A. True or False? Explain.

1. 4, 8, 12, 16 follows the rule $+4$. True / False

Why? _____

2. 100, 90, 80, 70 follows the rule $\times 10$. True / False

Why? _____

3. 3, 6, 12, 24 follows the rule $\times 2$. True / False

Why? _____

4. 50, 45, 40, 35 follows the rule -5 . True / False

5. ~~A student says: 7, 14, 21, 29, 35 follows $+7$.~~
Why? _____

Is the student correct? _____ Correct sequence: _____

6. Explain the mistake: _____

B. Find the mistake

Worksheet 8: Patterns in Real Life

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A. Solve the problems

1. A theatre has 20 seats in Row 1, 25 in Row 2, 30 in Row 3. If the pattern continues, how many seats are in Row 6?

Answer: _____

2. A plant grows 3 cm each week. It is 12 cm tall now. How tall will it be after 4 more weeks?

Answer: _____

3. A savings plan adds \$10 each week: \$10, \$20, \$30... How much is saved after 8 weeks?

Answer: _____

4. A game gives 100 points in Round 1 and 50 more points each round. How many points are earned in Round 5?

Answer: _____

5. Create a real-life pattern of your own. Write the first five terms

and state the rule.

Pattern: _____

Rule: _____

B. Challenge

Worksheet 9: Mixed Pattern Challenge

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Solve carefully

1. 15, 25, 35, 45, _____, _____ Rule: _____
2. 128, 64, 32, 16, _____, _____ Rule: _____
3. 7, 14, 28, 56, _____, _____ Rule: _____
4. 90, 82, 74, 66, _____, _____ Rule: _____
5. Find the missing term: 5, 15, _____, 135. Answer: _____
6. Find the missing term: 200, 100, _____, 25. Answer: _____
7. Which is different? 2, 4, 8, 16, 31, 64. Explain: _____
8. Write a sequence with the rule $\times 3$ starting at 2: _____

9. Final puzzle

I am thinking of a number. I multiply it by 2 three times and get 80.

What was my starting number? _____

Answer Key: Grade 4 Patterns & Sequences

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Worksheet 1

- 20,24
- 35,42
- 30,25
- 150,160
- 225,200
- 96,192
- 10,5
- 45,54
- +5
- 10
- $\times 2$

Worksheet 6

- Step 4 = 4 squares; Step 5 = 5 squares.
- Triangle, circle.
- Add one square each step.
- 6 squares.

Worksheet 2

- 45,50
- 64,56
- 55,66
- 300,250
- 18,22
- 55,50
- Increasing
- Decreasing
- Increasing
- Decreasing

Worksheet 7

- True
- False
- True
- True
- No. Correct sequence: 7,14,21,28,35.
- The fourth term should be 28, not 29.

Worksheet 3

- +5
- 5
- $\times 2$
- $\div 2$
- +7
- 10
- 19,26,33,40
- 88,80,72,64

Worksheet 8

- 45 seats
- 24 cm
- \$80
- 300 points
- Answers vary; must contain five terms and a clear rule.

Worksheet 4

- 30
- 12
- 80
- 21
- 40
- 40
- 28
- 300
- Answers vary; explanation must match rule.

Worksheet 9

- 55,65; +10
- 8,4; $\div 2$
- 112,224; $\times 2$
- 58,50; -8
- 45
- 50
- 31; it breaks $\times 2$ rule.
- 2,6,18,54...
- 10

Worksheet 5

- 32,64
- 243,729
- 80,160
- 16,8
- 324,972
- 20,10
- $\times 2$
- $\div 2$
- $\times 3$