

PARYAN LEARNING

GRADE 4 MATHEMATICS

Math-Magic IV • Chapter 1

Building with Bricks

Name	_____
Class	Grade 4
Date	_____

A complete original learning pack inspired by the concepts of the NCERT Class 4 chapter.

Learn • Observe • Build • Think • Practise

Prepared for Paryan.ca

Original supplementary educational material. This booklet is not an NCERT textbook and does not reproduce textbook pages.

What You Will Learn

1	Learning goals
2	Bricks and 3D buildings
3	Patterns made with bricks
4	Views: front, side and top
5	Counting bricks carefully
6	Activities and hands-on learning
7	Practice worksheet
8	MCQs and competency questions
9	Chapter test (25 marks)
10	Answer key

Learning Goal

By the end of this chapter you should be able to recognise brick patterns, describe simple solid structures, look at a model from different directions, count bricks in arrangements, and solve reasoning problems using observation.

Remember

Mathematics is not only about numbers. We also use shapes, patterns and spatial thinking to understand the world around us.

1. Learning with Bricks

Imagine you are building a small house using toy bricks. Every brick has length, width and height. When many bricks are joined together, they make a solid object.

A brick is a 3D object

A brick has three dimensions. We can hold it, stack it, turn it and build with it. A drawing on paper is usually 2D, but a real brick is 3D.

3D object	What it means
Length	How long the brick is
Width	How wide the brick is
Height	How tall the brick is

Think Around You

Can you find five objects that are shaped like a cuboid? Examples may include a book, a lunch box, a brick, a pencil box or a shoe box.

Write any five objects:

2. Patterns Made with Bricks

Builders do not place every brick in exactly the same way. Different arrangements make walls stronger and also create beautiful patterns.

Look at these two original examples.

Pattern A: Staggered wall

■	■	■	■	■
	■	■	■	■
■	■	■	■	■
	■	■	■	■

Pattern B: Straight stack

■	■	■	■
■	■	■	■
■	■	■	■
■	■	■	■

Observe and Answer

1. Which pattern has shifted rows? _____
2. Which pattern has all bricks directly above each other? _____
3. Draw your own brick pattern in the box below.



3. Looking from Different Sides

A building can look different depending on where you stand. The same model has a front view, side view and top view.

Front view	Side view	Top view
		

Important Idea

The object does not change. Only our viewpoint changes. This is called spatial observation.

Practice

A tower has 4 bricks stacked one above another. How many bricks do you see from the top?

If two bricks are side by side, what might the top view show? _____

Why can the front and side views sometimes look different? _____

4. Counting Bricks Carefully

When bricks are hidden behind other bricks, do not count only what you can see. Think about the complete arrangement.

Example 1

A wall has 3 rows. Each row contains 6 bricks. Total bricks = $3 \times 6 = 18$.

Example 2

A staircase has 1 brick in the first step, 2 in the second and 3 in the third. Total = $1 + 2 + 3 = 6$ bricks.

Brick staircase model

			■
		■	■
	■	■	■
■	■	■	■

Try These

1. 5 rows $\times$ 4 bricks = _____ bricks.
2. 7 rows $\times$ 3 bricks = _____ bricks.
3. A staircase has rows of 1, 2, 3, 4 and 5 bricks. Total = _____ bricks.
4. A rectangular floor has 8 rows with 9 bricks in each row. Total = _____ bricks.

5. Activity Corner

These activities help children learn by doing.

Activity A – Build a Mini Wall

Use building blocks, matchsticks boxes or even erasers. Make a wall with four rows. Draw what you built.

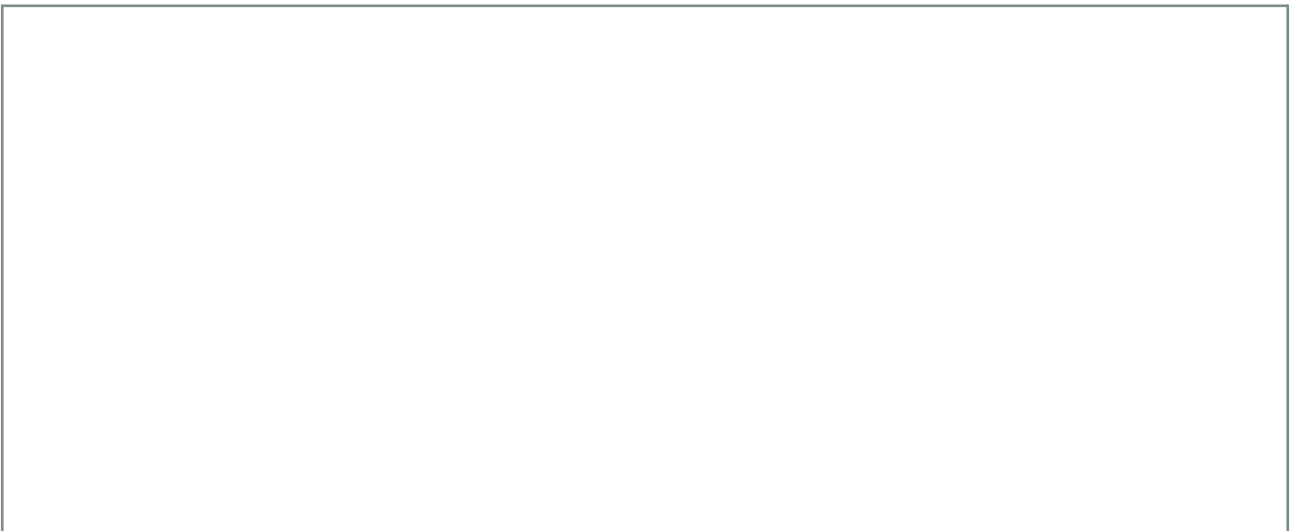


Activity B – Find Patterns at Home

Look for brick or tile patterns around your home, school or park. Describe one repeating pattern.

Activity C – Design Challenge

Draw a building using only rectangles. Add doors, windows and a roof. Then count how many rectangles you used.



6. Practice Worksheet

Complete all questions neatly.

1. What is a 3D object? Write one example.

2. Name the three dimensions of a brick.

3. Draw a top view of three bricks placed in one straight row.

4. Draw a front view of a tower made of four bricks.

5. Count the bricks in a wall of 6 rows and 5 columns.

6. Which view helps you see the arrangement from above?

7. Continue the pattern: Row 1 = 5 bricks, Row 2 = 4 bricks, Row 3 = 5 bricks, Row 4 = ____ bricks.

8. A builder places 24 bricks equally in 3 rows. How many bricks are in each row?

9. Explain why counting hidden bricks is important.

10. Make your own repeating brick pattern using two different row positions.

7. MCQs & Competency Questions

1. Which object is most similar to a brick?
A. Ball B. Book C. Plate D. Coin
2. Which view is seen from above?
A. Front B. Side C. Top D. Bottom
3. 4 rows of 8 bricks contain:
A. 12 B. 24 C. 32 D. 48
4. A staircase with rows 1,2,3,4 contains:
A. 8 B. 9 C. 10 D. 11
5. A repeating shifted wall pattern mainly shows:
A. Sound B. Pattern C. Weight D. Time
6. If a cuboid is turned around, its shape:
A. disappears B. changes into a circle C. remains the same object D. becomes flat

Competency Questions

A child sees only the front of a brick wall. What extra information might the top view give?

Two buildings have the same number of bricks. Can they have different shapes? Explain with your own example.

A toy shop sells 36 building blocks. Rohan arranges them into 6 equal rows. Draw the arrangement and write the multiplication fact.

8. Chapter Test – 25 Marks

Time: 30 minutes

1. Write the meaning of a 3D object and give two examples. (3)

2. Label the length, width and height of a brick. (3)

3. Draw a top view and front view of a row of four bricks. (4)

4. A wall has 7 rows with 6 bricks in each row. Find the total. Show working. (3)

5. A staircase has $1 + 2 + 3 + 4 + 5$ bricks. Find the total. (3)

6. Complete a repeating brick pattern of your own using at least four rows. (4)

7. Explain in two sentences why builders use careful arrangements when constructing walls. (5)

9. Answer Key

Use this section only after attempting all questions.

Learning Check

A brick is a 3D cuboid. Dimensions: length, width and height.

Pattern Section

Pattern A is staggered; Pattern B is straight stack.

Counting Practice

1) 20 2) 21 3) 15 4) 72

Worksheet

5) 30 bricks 6) Top view 7) 4 bricks 8) 8 bricks. Other descriptive answers may vary.

MCQs

1-B 2-C 3-C 4-C 5-B 6-C

Competency

Answers should explain that different viewpoints reveal different arrangements and that equal numbers of bricks can form different shapes.

Chapter Test

Q4 = 42 bricks. Q5 = 15 bricks. Drawing and explanation questions are assessed for correct understanding.

Excellent Work!

Keep building, observing and thinking like a young mathematician.