CHAPTER: Building With Bricks

Grade: **4**
Board: **CBSE**
Book: **NCERT**

1.

Chapter Summary and Placement

<Read through the following to understand how this chapter is connected with the previous and next grades and also the important concepts covered in it.>

1. This chapter helps students with Identifying geometrical patterns based on symmetry in their surroundings

2.

LEARNING OUTCOMES

<On completion of the chapter, students will be able to:>

1. Identifies geometrical patterns based on symmetry in their surroundings

3. TEACHING PLAN

Follow this section for getting ideas on teaching the content covered in the chapter. The subtopic given in the first column with the matching learning outcome can be explained using instructions and resources listed subsequently

Subtopic and Learning Objective #1

Subtopic:
Floor patterns

LO:
Identifies geometrical patterns based on symmetry in their surroundings

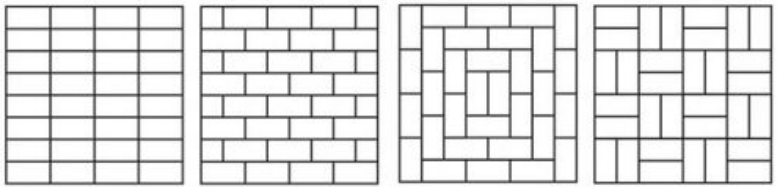
1.To make the student identify geometric floor patterns

Teachers Activity

1. Ask the students to observe the patterns on the floor of their classroom made by the tiles. If none are found then ask them if any of them has observed any floor patterns in their home or at any other place that they have visited.
2. Ask the students if they could do a rough sketch of the pattern they remember.
3. Discuss the floor pattern shown on page 3 of the textbook.

Check for understanding:

Draw the following patterns



In which pattern can you see mirror half? Draw a line to show the same.

Resources Suggested

Blackboard, pen and paper
Resource 1 can be used for explanation

Subtopic and Learning Objective #2

Subtopic: How Many Faces?

LO:
Identifies geometric patterns based on symmetry in their surroundings

1. To make student observe and identify 3d rectangular shapes.

Teacher Activity

Discuss the number of faces visible. Discuss if more than 3 faces can be visible when we draw brick-like shapes.
Ask the students to identify more such shapes around the classroom.



Check for understanding:
Draw the math textbook showing 3 faces.
How many faces in all does your textbook have? ____
Is any face a square? ____
Draw the smallest face of the textbook.
Draw the smallest face of the brick drawn on the board.

Resources Suggested

Blackboard, pen and paper

Subtopic and Learning Objective #3

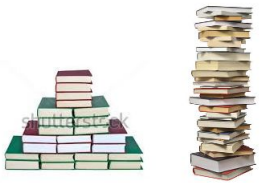
Sub topic: Walls and Arches

LO:
Identifies geometrical patterns based on symmetry in their surroundings

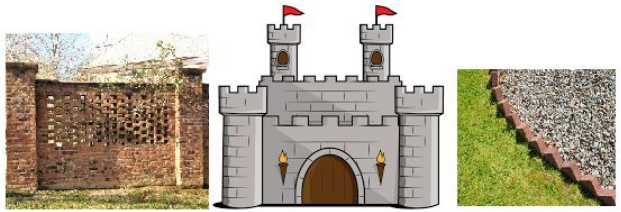
1. To make the student observe and identify patterns in brick walls and arches.

Teacher Activity

1. Stack up some notebooks in two separate piles as shown below.



2. Discuss the strength of each stack. Ask the students if they have noticed how brick walls are designed. Show them the patterns as shown in the textbook on pg5
3. Ask them if they have seen any other patterns in brick walls.
4. Discuss the lattice (jaali) patterns on the brick walls, brick boundaries for flower beds and arches over doorways.
5. If you have any of these structures in your school then take the students to observe and discuss the different patterns visible.



Teacher Activity

5. Ask the students if they have seen any kinds of brick patterns anywhere. Ask them to do rough sketches on the board and describe the patterns.

Check for understanding:
Draw two patterns each of:

a. Brick wall
b. Brick jaali
c. Brick arch

Resources Suggested

Blackboard, pen and paper, brick

Subtopic and Learning Objective #4

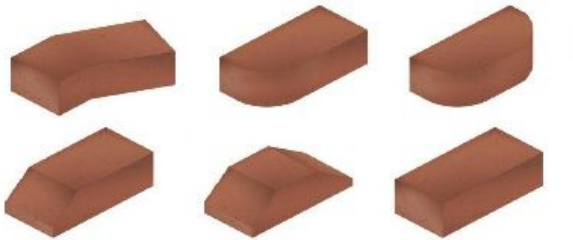
Sub topic: Bricks and Bricks

LO:
Identifies geometrical patterns based on symmetry in their surroundings

1. To make the student understand how bricks are made and transported

Teacher Activity

Stack up some notebooks in two separate piles as shown below.



You can draw these on the blackboard or take a print out and show in the class (http://www.claybrick.org/content/how-many-types-clay-brick-are-there)

1. Bring a standard brick to the classroom. With the help of the students, measure the brick. Discuss the dimensions of a standard brick.
2. Discuss what material the bricks are made of and where they are made.
3. Ask the students if they have seen and tall chimneys as shown in the textbook on page 10. Explain that bricks are made in kilns which are huge ovens used to bake the bricks.
4. Ask the students if they have seen lots of construction happening all around – of office complex, schools, houses, hospitals, shopping complex, etc. Ask them how many bricks would be needed for all that construction around the city.

Teacher Activity

More than 1000 or more than hundred 1000. Explain that 100,000 is called one lakh.

100 thousand = 1 lakh

1 lakh = 100,000

6 Ask the students how such a large number of bricks are transported around the country.

7 Discuss the mental math question on page12 of the textbook.

Check for understanding:

Look at the pictures given on page 11 of the textbook. Write down the steps to make bricks in your own words.

Activity 1 can be performed to make class understand the process of brick making

Resources Suggested

Blackboard, pen and paper, brick

Activity 1

Name of the activity – Let's make bricks
Type of activity – Individual
Use it for – understand the process of brick making
Materials – clay, old containers, paints
Procedure:
Instructions to the teacher:

1. Ask the students to bring some clay which is easily available. (if possible, the school can arrange for it for the activity)
2. Ask the students to bring small empty boxes of any size or type from home to use as moulds.
3. Distribute equal amount of clay to each student.
4. Ask them to knead the clay till it is soft and smooth.
5. Let them put the clay in the mould and press it till the clay fits neatle in the mould.
6. Ask them to clean away the excess and extra clay.
7. Next, tell the students to take out the clay brick gently from the mould and keep it in the sun.
8. Let them decorate it and write their names on the bricks.
9. Once dry, they can paint their bricks and use them to showcase different patterns.

4. WORKSHEETS

Print or copy the worksheet questions on the blackboard and ask the students to attempt them. They can be given as homework or a class test as well.

Worksheet 1

Colour and create new floor patterns



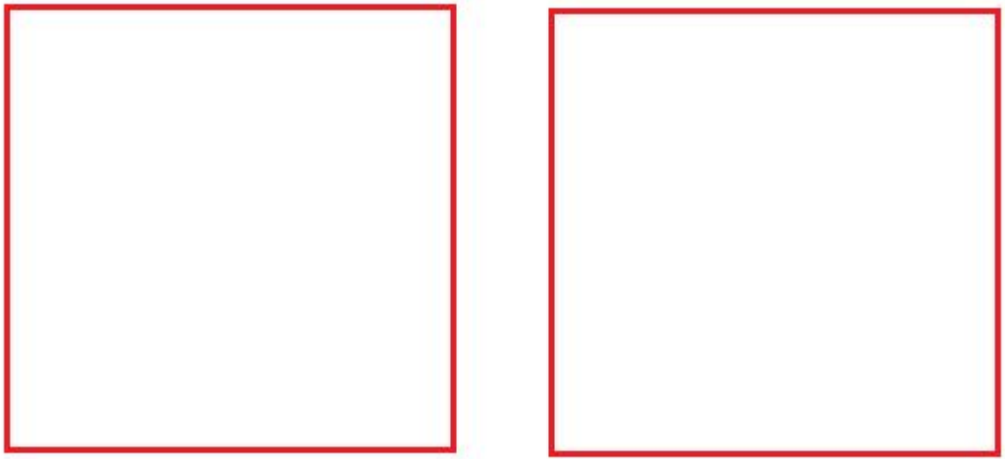
Worksheet 2

Circle the objects that are shaped like the brick



Worksheet 3

Draw one brick jaali pattern and one brick arch pattern



Worksheet 4

Mental Math – solve the following without writing

Ramu sells bricks. His shop has old as well as new bricks for sale.
His is a wholesale shop and he does not sell less than 2000 bricks.
The price list is given below:

Old bricks – Rs 3000 for two thousand bricks
New bricks from Jharsa – Rs 3600 for two thousand bricks
New bricks from Silokra – Rs 4000 for two thousand bricks

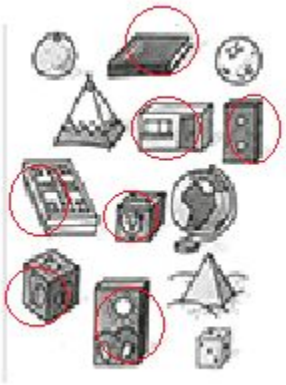
a. Guna wanted to buy four thousand old bricks and six thousand new bricks from Silokra. How much did he pay? _____

b. Sunheri wanted one thousand old bricks and one thousand new bricks from Jharsa. Guess what she will pay. _____

5. SOLUTIONS

This section gives you sample answers for activities and questions listed above.

Worksheet 2



Worksheet 4

a. Rs. 18000
a. Rs.3300

6. EXTRA RESOURCES

Carry out the following suggested activities/ tasks if you have the time and resources to do them

Teacher can use these videos if time and facilities permit:

1. https://www.youtube.com/watch?v=l7z-G0tWd3c making geometric patterns
2. https://www.youtube.com/watch?v=KeyluwmrVd0 floor patterns
3. https://www.youtube.com/watch?v=BPrVAT_x1f4 How Many Faces?
4. https://www.youtube.com/watch?v=-9RPeneyIMI how to make Arches