

Vision Empower & XRCVC

Teacher Instruction KIT

Patterns

Syllabus: Karnataka State Board

Subject: Mathematics

Grade: First

Textbook Name: Mathematics-Text cum Workbook(Revised)-First Standard

Chapter Number & Name: 19. Patterns

1. OVERVIEW

1.1 OBJECTIVE AND PREREQUISITES

Objectives:

- To get familiar with sequences of simple patterns found in shapes in the surroundings.
- Recognizing different patterns and designs.
- To complete a given sequence of simple patterns found in shapes in the surroundings and make patterns independently.

Prerequisite Concepts

- Shapes
- Numbers
- Counting

Content Index

*Kindly Note: Activities marked with * are mandatory*

OVERVIEW

1.1 OBJECTIVE AND PREREQUISITES

LEARN

2.1 KEY POINTS

ENGAGE

3.1 INTEREST GENERATION ACTIVITY

Introduction to Patterns

Activity 1: Introducing patterns*

3.2 CONCEPT INTRODUCTION ACTIVITIES

Create patterns using cut vegetables

Activity 2: Patterns using cut vegetables*

Activity 3: Creating patterns using fingers and hands*

Patterns with shapes

Activity 4: Creating patterns using different shape blocks and tangrams*

3.3 LET'S DISCUSS: RELATE TO DAILY LIFE*

EXERCISES & REINFORCEMENT

4.1 REINFORCEMENT

Create your own patterns using leaves

[Activity 5: Leaf activity to create patterns*](#)

[Activity 6: Tactile patterns worksheet](#)

Activity 7: Make a bracelet/necklace

4.2 IMPORTANT GUIDELINES*

2. LEARN

2.1 KEY POINTS

The ability to recognize and create patterns help us make predictions based on our observations; this is an important skill in Math. Understanding patterns help prepare children for learning complex number concepts and mathematical operations. Patterns allow us to see relations and develop generalizations.

2.2 LEARN MORE

None

3. ENGAGE

3.1 INTEREST GENERATION ACTIVITY

Introduction to Patterns

Activity 1: Introducing patterns*

Materials Required: Branch of a plant with leaves, shape pattern chart made with foam cutouts of shapes

Prerequisites: NA

Activity Flow

The below instructions are for introducing the concept of patterns with a shape pattern chart such as –

Shape Patterns

1. 
2. 
3. 

[Pattern Chart Description:

Foam cutouts of shapes to be stuck on A4 size or smaller firm card paper/ cardboard. Repeat both color as well as shape to avoid confusion for low vision students. Or maintain the same color in a pattern.

1. Introduce the topic to the child – Tell her/ him that there are patterns all around us we can see them in the way leaves and flowers are arranged on trees, or in designs on carpets, cloth, curtains, bedsheets, tiles etc.
2. Hand over to the student a branch which has leaves arranged on it on either side. Let her/ him explore the branch, count the number of leaves etc. Collect the branch from the student.
3. Hand over the pattern chart to the student (in the correct orientation). Guide her/ him to begin exploring the chart from the top left corner. Ask her/ him to read the braille/large font title – ‘Shape Patterns’.
4. Moving from left to right ask her/ him to recognize and tell you what shapes are in the first row below the title. Guide his hand to move correctly in the row if needed.
5. When he tells you that there’s a star, circle, star, circle. Ask if he can see a pattern in this. Ask her/ him which two shapes are always repeated – star & circle. And in what order are they repeated – star first followed by circle. Tell her/ him that this is the pattern that is being followed here – a star and a circle!
6. Ask her/ him to see the shapes in the next row. Guide her/ him to identify the pattern in this row with similar probing questions as discussed above.
7. Once he has recognized the patterns ask her/ him how the pattern would continue for each row; say if there were more space on the paper.
8. Lastly ask the student if he can think of any patterns he may have seen in his surroundings.

3.2 CONCEPT INTRODUCTION ACTIVITIES

Create patterns using cut vegetables

Activity 2: Patterns using cut vegetables*

Materials Required: Cut vegetable pieces of Ladies finger, Cucumber, Radish, Potato

Prerequisites: Shapes, counting

Activity Flow

The concept that 'Patterns are created when one or more Number, Shape or color repeat themselves in the same order' can be explained orally and with sufficient patterning examples.

Keep the cut pieces of vegetables in separate bowls. The teacher can demonstrate to the class; how different patterns can be created using cut vegetables. For example, one piece of lady finger, below it three pieces of cucumber in a row, followed by 5 pieces of radish followed by 7 pieces of potato. Ask students if they can find any number and shape patterns. Ask her/ him to see the shapes in the next row. Guide her/ him to identify the pattern in each row.

Encourage students to make their own patterns using the cut vegetables.

Activity 3: Creating patterns using fingers and hands*

Materials Required: play-dough, sheet of paper

Prerequisites: None

Activity Flow

Let children roll play-dough with their fingers and make shapes and place them over a sheet of paper. They can create shapes using one finger then two fingers and so on. These different shapes can then be used to create their own patterns.

This can be repeated using the entire hand print on play-dough.

Patterns with shapes

Activity 4: Creating patterns using different shape blocks and tangrams*

Materials Required: Different shape blocks (circle, square, rectangle), Tangrams(triangle)

Prerequisites: Shape recognition

Activity Flow

The teacher can make different patterns using shapes and ask students to observe the shapes. Guide her/ him to identify the pattern in a row with probing like what comes next or how many squares or circles do you see in this pattern or find the missing shape in the pattern. Once he has recognized the patterns ask her/ him how would the pattern continue.

For example

Place square, circle, square, circle.

Ask the students to place the next two in the pattern.

Ask children to observe the pattern and then ask questions like how many squares do u see after completing the pattern.

Question: Lastly ask the student's if they can think of any patterns they may have found in their surroundings?

3.3 LET'S DISCUSS: RELATE TO DAILY LIFE*

There are patterns all around us we can see them in the way leaves and flowers are arranged on trees, or in designs on carpets, cloth, curtains, bedsheets, tiles etc.

4. EXERCISES & REINFORCEMENT

4.1 REINFORCEMENT

Create your own patterns using leaves

Activity 5: Leaf activity to create patterns*

Materials Required: Leaves of different shapes

Prerequisites: NA

Activity Flow

Form pairs and ask one student in the pair to create a pattern using leaves of different shapes and then ask his/her pattern to complete the sequence and vice-versa.

Activity 6: Tactile patterns worksheet

Materials Required: Tactile pattern worksheets, foam cut outs of big triangle, small triangle, tall and short candles, heart, triangle and square shaped foam cut outs

Prerequisites: Shape identification

Activity Flow

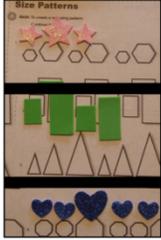
In the following activity either a pattern could be presented to the student where he identifies the pattern and continues the series ("What comes next?") and/or he could be encouraged to create his own pattern.

Tactile Patterns Worksheets

Tactile worksheets with different patterns to be continued can be presented to the student. Some examples

- Big triangle, big triangle, Small triangle; repeat
- Tall candle, short candle, short candle, tall candle, and repeat
- Heart shape foam cut out, triangle foam cut out, square foam cut out; repeat

Patterns Worksheets Example -



Activity 7: Make a bracelet/necklace

Materials Required: Jewellery making kit

Prerequisites: Shape identification

Activity Flow

Give the student a jewellery making kit and teach the student how to make a bracelet or a necklace. Once the student has understood how to make the string of beads, encourage the student to make several strings, each with a different pattern of beads.

Teaching Tips:

If there are any additional teaching tips then utilize this section to mention them.

References

<https://www.youtube.com/watch?v=H-zdUWDCZvQ>

<https://www.youtube.com/watch?v=Bhtfss1Wv7M>

4.2 IMPORTANT GUIDELINES*

Exercise Reading

It is very important that the children practice their learnings as well as their reading. Hence have the children read out the newly learned concepts from their textbooks or other available resources.

Perform Textbook Activity

It is good practice to have the children perform the textbook activities. Your textbook activities might not be accessible hence go through this resource to learn how to make textbook content accessible.

Provide Homework

To evaluate their understanding and to help the student revise and implement the new learnt concept ensure to provide them with homework. Students should perform one or two of the questions mentioned above or from the textbook exercises with the teacher in Class and the remaining may be given for homework. Also, ensure that the student knows their special skills linked to independently using their accessible books as it will be critical to doing homework independently

End of Document