1. DOTS AND LINES

The basic elements of design are dots, lines and shapes. They form the basis of design in fields like textile design, graphic design, product design, jewellery design, interior design, ceramic design, animation, video, and many more. In this first lesson of Unit 1, you will be introduced to these elements of design. In the two subsequent lessons of this unit, you will learn how these basic elements can create free flowing lines, patterns and designs.

1.0 Objectives

After going through this lesson, you will:

- Acquire an understanding of the basic elements of design, namely, dot, line and shape.
- Understand the relationship between dots, lines and shapes and how feelings can be expressed through the medium of dots.
- Know about different types of lines.

1.1 Introduction

In this lesson we will first understand the definitions of the basic elements of design like the “Dot”, “Line” and “Shape”. We will also learn how dots are used to make lines and lines are used to make shapes. Thereafter, we will acquire an understanding of how feelings can be expressed through the medium of dots. Finally we will conclude the lesson by learning about different types of lines.

In your science class you must have studied that the atom is the smallest building unit of matter. Similarly, the dot is the smallest building unit of design.

We will therefore, start our learning with the most basic element of design – the DOT. We will then see how dots can be extended to give lines and how lines can form shapes.

1.2 Definitions

1.2.1 Dot

Dot is the smallest building unit of design. A single point made by a pen, pencil or any other medium is a ‘DOT’. A dot is the smallest of all visual elements in the vocabulary of design (Fig. 1.1).
As children we all have played and enjoyed the game 'JOIN THE DOTS'. When we join the various dots in Fig. 1.2 we make a line.

### 1.2.2 Line

Extending the dot in any direction gives us a line. It can be, therefore, said that a line consists of many dots (Fig. 1.3).

![Fig. 1.3 Extending a line using a dot](image)

### 1.2.3 Shape

Modifying a line, turning and twisting it in different directions, and joining it with other kinds of lines, form a shape. When a line covers an area, it becomes a shape. For example if we place 4 equal lines perpendicular to each other, a square is formed (Fig. 1.4). Square is a shape. Similarly, you can join many lines to create various shapes that occupy some area on paper.

![Fig. 1.4 Square made by joining four equal lines](image)

### Activity

1. Make different shapes with the help of lines and colour them in different colours.

### 1.3 Expression through Dots, Lines and Shapes

Dots join up to make a line, and lines join together to form a shape. Dots, lines and shapes help us to express feelings, depict words, capture nature and people around us and much more.
When lots of dots are placed closely together and one dot is made far away in isolation, this shows that the group does not accept the single dot and therefore it is *lonely* (Fig. 1.5). Pyramid is one of the strongest structures in nature, and when dots are placed on top of each other in such a formation it shows *strength* (Fig. 1.6). Each dot plays an important part in giving strength to the overall structure. If only one dot is removed the entire structure becomes weak.

![Fig. 1.5 Lonely](image1.png) ![Fig. 1.6 Strength](image2.png)

Lots of dots spreading out towards the periphery from the center show an expression of outburst in design form (Fig. 1.7).

![Fig. 1.7 Out-burst](image3.png) ![Fig. 1.8 Bindu](image4.png)

You can see the depiction of dots in nature and our surroundings. A few examples of dots used in painting, decoration of the body or textiles are given below:

- Paintings by the Indian artist Raza Zaidi. His work on 'Bindu' is very famous (Fig. 1.8)
- Rangoli and alpana.
- Bandhini sarees and dupattas - designs are made using the element dot. (Fig. 1.9)

![Fig. 1.9 Bandhini](image5.png)
• The work of the impressionist French artist – Georges Seurat. He used only dots in various colours, and interaction of those tiny dots made up his exotic artworks.

• Polka dot is an important and an age-old motif in textile design. (Fig. 1.10)

![Fig. 1.10 Polka dots](image)

• In print design, while making screens we use small dots to show shading in colour.

• Dotted patterns are also available as grids and templates to form other elements and designs.

**Activity**

2. Draw a ‘rangoli’ design with the help of dots.

3. With the help of dots and lines make a ‘mehendi’ design.

1.4 *Types of lines*

Lines can be of varying lengths, thickness, regular, irregular, curvy, spiral, wavy, dashed, dotted, diagonal, horizontal, vertical and so on.

You have explored the medium of pencil in your course on drawing. Pencils come in various grades depending upon the quality and thickness of the graphite lead inside them, such as 4H, 2H, H, HB, B, 2B, 4B, 6B, 8B and so on (Fig. 1.11). HB grade is normally used for writing purposes. Moving left to the H series, the markings of the pencil become lighter and sharper. These are generally used for guideline work in geometry, to make initial markings and drawings to serve as an idea. On the other hand, moving right towards the B series, the lead becomes thicker, softer and smudgy. The markings become soft on paper, good for quick sketching and also for shadings and pencil renderings.

![Fig. 1.11 Different tones in Pencils](image)
Activity

4. Using different grades of pencils from 2H to 6B fill in 1”x1” squares and show a gradual gradation from light to dark on cartridge sheet.

Lines can be modified and twisted around in different directions. Let us see what all kinds of lines we can make:

- Straight vertical (Fig. 1.12)
- Straight horizontal (Fig. 1.13)
- Diagonal (Fig. 1.14)
- Diagonal crossed (Fig. 1.15)
- Wavy regular (Fig. 1.16)
- Wavy irregular (Fig. 1.17)
- Thick / thin (Figs 1.18 & 1.19)
- Zig zag regular (Fig. 1.20)
- Zig zag irregular (Fig. 1.21)
- Dotted (Fig. 1.22)
- Dashed (Fig. 1.23)
- Dashed and dotted (Fig. 1.24)
- Spiral (Fig. 1.25)
- Short and long Vertical
- Short and long Horizontal

Everything around us can be said to have a line. Our garments have a line. For example, sarees and skirts fall vertically on the body. Our body posture can be shown with the help of a line. In our food chapattis are round and jalebis are spiral. Let us see the lines that naturally occur in our surroundings:

- A row of trees (Fig. 1.26), electric street lights, sky rise buildings are all based on vertical lines.
• Steps on a staircase, clothes line, floor seating, kitchen slabs are all horizontal based lines.

• Movement of rivers, stream and railway track form curved lines.

• Ripples in water, markings on dosa, lachedaar paranthas, some shells are circular or spiral in nature.

1.5 Assignments

1.5.1 Class assignment

i) In 4"x4" square boxes draw the following kinds of lines on full imperial cartridge sheet:
   i) Straight vertical
   ii) Straight horizontal
   iii) Diagonal
   iv) Diagonal crossed
   v) Wavy – regular
   vi) Wavy – irregular
   vii) Thick / thin
   viii) Zig zag – regular
   ix) Zig zag – irregular
   x) Dotted
   xi) Dashed
   xii) Dashed and dotted
   xiii) Spiral
   xiv) Short and long – vertical
   xv) Short and long – horizontal

You should repeat the same exercise as above but now mix thick and thin lines together.

1.5.2 Home assignment

i) Find visuals from magazines showing different lines as we have discussed
above. Collect at least 15 pictures and paste them neatly on a paper and mark each page in bold letters with the type of lines it contain - vertical, spiral, wavy and so on.

1.6 Summing up

In this lesson you learned the following characteristics of lines:

- A dot is the smallest of all visual elements in the vocabulary of design.
- Extending the dot in any direction gives us a line.
- Everything around us can be said to have a line.
- Lines can be of varying lengths, thickness, regular, irregular, curvy, spiral, wavy, dashed, dotted, diagonal, horizontal, vertical and so on.
- Dots join up to make lines and lines join together to form shapes.
- Modifying and playing around with the line, twisting, turning it in various directions, and joining it with other kinds of lines gives us a shape.
- Dots, lines and shapes help us to communicate feelings, depict words, capture nature, and people around us.

1.7 Possible Answers to Self-check Questions

1.8 Terminal Questions

1. What is a dot?
2. How is a line formed?
3. Define ‘Shape’.
4. State some examples of dots used in painting, decoration of body and textiles etc.
5. Moving left to the H series, the markings of the pencil becomes lighter and sharper. True / False
6. Moving right towards the B series, the lead does not become thicker, softer and smudgy. True / False
7. Name 5 kinds of lines that can be made by twisting around in different directions.
8. Figure out some lines and shapes that occur naturally in our surroundings.
1.9 References and Suggested Further Reading


1.10 Glossary

1. Fundamental: Basic
2. Analysis: A detailed examination or study
3. Interpretation: Understanding
4. Representation: Symbol
5. Perpendicular: At right angles
6. Capture: Confine
7. Interpret: Understand
8. Outburst: Explosion
9. Periphery: Margin
10. Smudgy: Make or become blurred or smeared
11. Renderings: Provide help; interpret or perform artistically
12. Gradual: Regular
13. Gradation: Shade/ Degree
14. Cartridge: Thick rough textured drawing paper
15. Imperial: Majestic
16. Animation: vitality
17. Ceramic: Made of clay hardened by heat