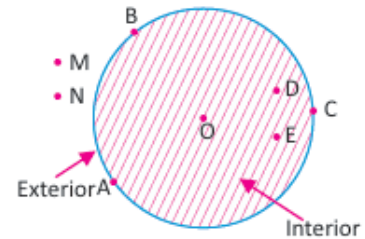## Interior and Exterior of a Closed Curve

Understanding the Topic

- A closed curve is a shape that starts and ends at the same point without any gaps.

- Every closed curve divides the plane (surface) into three parts:

- The interior (inside part).

- The exterior (outside part).

- The boundary (the curve itself).

- The interior of a shape means everything inside the boundary.

- The exterior of a shape means everything outside the boundary.

Examples of Closed Curves

- Circle

- Square

- Triangle

- Rectangle

- Any shape that does not have an opening

Examples with Solutions

1. **In a triangle, where is the interior region?**

   The space inside the triangle

   Answer: Area enclosed between all three sides

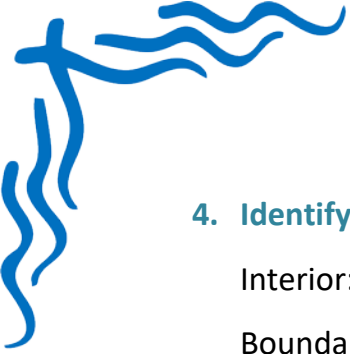2. **What is the exterior of a circle?**

   All the space around the circle but not on or inside it

   Answer: Outside the circular boundary

3. **In a rectangle, where is the boundary?**

   The four sides of the rectangle

   Answer: Boundary is the closed path formed by the four straight lines

4. **Identify interior, boundary, and exterior of a coin**

   Interior: The flat surface of the coin

   Boundary: The edge or rim

   Exterior: The area around the coin

   Answer: Coin has all three parts

5. **Draw a square and shade its interior**

   Draw a square, color the inside

   Answer: Shaded part is the interior

Summary Points

- A closed curve has an interior, an exterior, and a boundary.

- Interior is the space inside the shape.

- Exterior is the space outside the shape.

- Boundary is the line or curve that forms the shape.

- **Example:** In a circle, the curved line is the boundary, inside part is interior, and outside is the exterior.