2D SHAPES

TWO-DIMENSIONAL SHAPES

1. Can you think of any objects in your home or workplace that are **rectangular**? (*Why do you think this shape is practical for those objects?*)

2. Do you find **circular** shapes more aesthetically pleasing than **square** ones? Why or why not?

3. Can you think of any natural structures (e.g. flowers, cells, minerals) with a **pentagonal** or **hexagonal** shape?

4. Why do you think traffic signs often use **octagonal** or **triangular** shapes?

5. Can the shape of a molecule or cell affect its function? Can you give an example?

6. If you had to design a container for storing something fragile, would you choose a **square**, **oval**, or **circular** shape? Why?

7. Have you ever seen a **triangular** building or structure? What was interesting about its design?

8. Which shape do you think is most efficient for packing and storing materials—**rectangular**, **circular**, or **oval**? Why?

9. Do you associate any particular shapes with danger, safety, or importance? (e.g. octagonal = stop sign)

10. Are there any tools or instruments in your field of work that rely on a specific shape for accuracy or function?

Gap-Fill 1

circumference   diameter   centre   radius

A dinner plate is a perfect example of a circle. The _____ is the exact middle of the plate. The _____ is the distance from the middle to the edge, while the _____ is the distance across the whole plate, passing through the middle. The _____ is the total distance around the edge of the plate.

Gap-Fill 2

parallel   perpendicular   side   angle   right

A notebook is usually rectangular. Each page has four straight _____. The opposite sides are _____ to each other. The edges of the pages meet at right _____, which means they are _____ to each other. If you draw lines on the page from top to bottom and from left to right, they will cross at _____ angles.

True or False

1. The radius of a circle goes from the edge to the centre.

2. The diameter of a circle is half the radius.

3. The circumference is the distance around a circle.

4. Two parallel lines never meet.

5. Perpendicular lines form a right angle where they meet.

6. A right angle measures 180 degrees.

Questions

1. Have you ever measured the radius or diameter of something at home? What was it for?

2. Do you prefer furniture and rooms with soft, rounded shapes or with straight lines and right angles? Why?

3. When you fold clothes, do you try to keep the sides parallel and the angles neat? Why or why not?

4. Where in everyday life do you often see perpendicular lines? Do you find these shapes practical or boring?

5. Can you think of a piece of clothing, gadget, or tool where the shape really matters? How does the shape affect how you use it?

6. Do you like modern architecture with sharp angles and straight lines, or older buildings with curves and arches? Why?
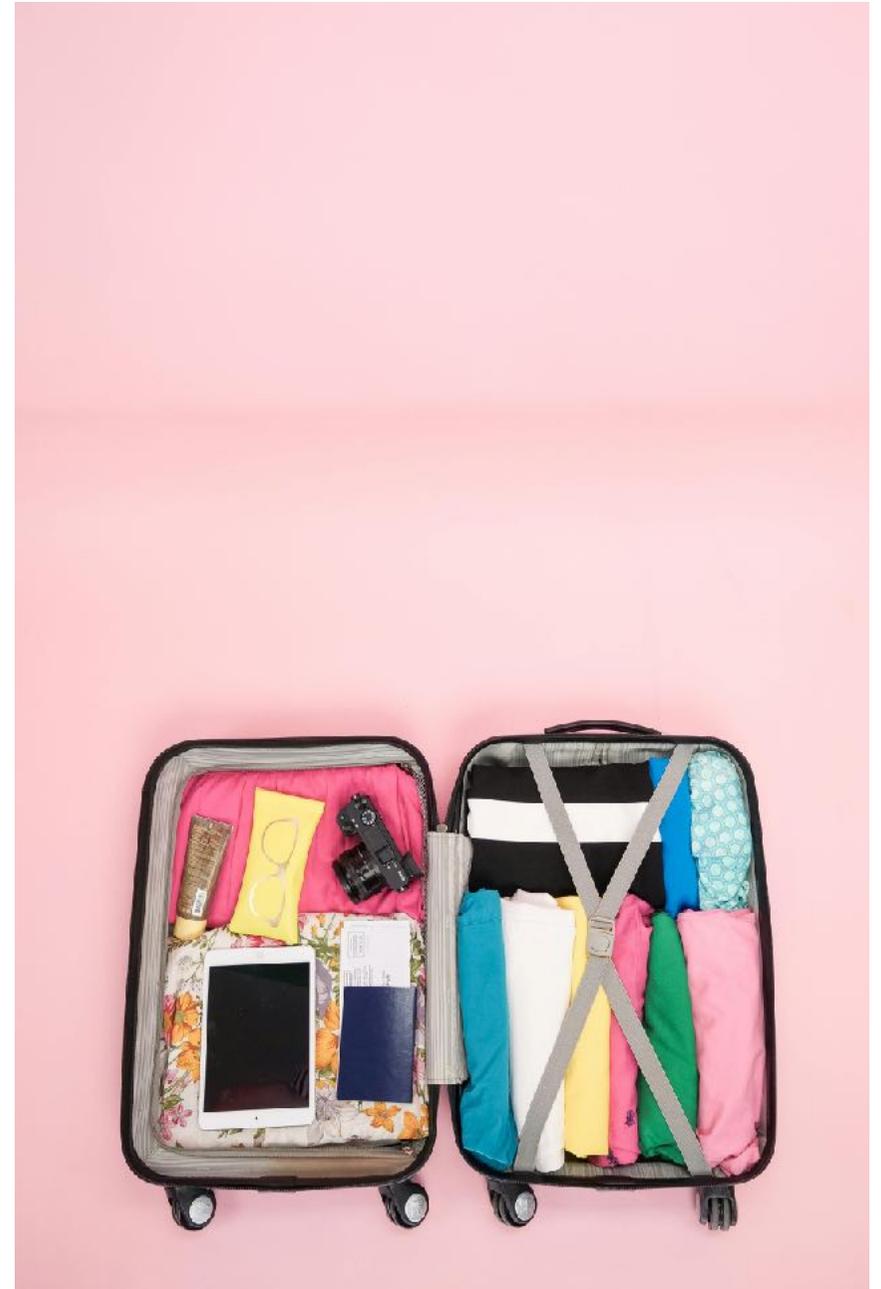
Answer Key

Questions

1. Tables, books, doors, screens. This shape is practical because it is easy to place, stack, and use in rooms.

2. Circles can feel softer and more natural. But squares look clean and organised, so it depends on personal taste.

3. Yes, honeycombs are hexagonal. Some flowers and snowflakes also have hexagonal patterns.

4. They are easy to recognise quickly. For example, a triangle warns of danger and an octagon clearly means "stop."

5. For example, red blood cells are round so they can move easily through blood vessels. Bolts are usually hexagonal because this shape is easy to turn with tools, such as a wrench.

6. Square or rectangular containers are best for fragile items because they prevent movement. Round or oval containers have no shar corners but need extra padding.

7. For example, the Louvre pyramid in Paris. The triangular shape is visually striking and allows light to enter the museum..

8. Rectangular shapes, because they fit together well and don't waste space.

9. Yes. Triangles often mean danger, circles can mean safety, and octagons mean stop or importance.

10. For example, a ruler — straight edge ensures accurate measurement, a bottle opener — the shape of the metal hook fits the bottle cap.

Gap-Fill 1

A dinner plate is a perfect example of a circle. The **centre** is the exact middle of the plate. The **radius** is the distance from the middle to the edge, while the **diameter** is the distance across the whole plate, passing through the middle. The **circumference** is the total distance around the edge of the plate.

Gap-Fill 2

A notebook is usually rectangular. Each page has four straight **sides**. The opposite sides are **parallel** to each other. The edges of the pages meet at right **angle**, which means they are **perpendicular** to each other. If you draw lines on the page from top to bottom and from left to right, they will cross at **right** angles.

True or False

1. True. The radius is the distance from the centre of the circle to any point on the edge.

2. False. The diameter is twice the radius, not half.

3. True. It is the total length along the edge of the circle.

4. True. Parallel lines always stay the same distance apart.

5. True. They meet at an angle of 90 degrees.

6. False. A right angle measures 90 degrees, not 180.

Questions

1. Examples: a round table to fit it in a space, a cup to see how big it was, a round piece of wood for a DIY clock

4. Examples: walls, doors, windows, tiles, bookshelves

5. Examples: scissors (the shape of the handle), smartphone (rectangular shape fits in hand), key (fits lock).