📘 Chapter 9: Boxes and Sketches – Detailed Q&A

🔶 **Q1. Ramya bought sweets. The shopkeeper made a pink box. What did Ramya see when she unfolded the box?**

✅ **Answer:**

- She saw a **net of the box**, which was a **flat paper cut-out** with flaps and squares arranged in a cross shape.
- This shape can be **folded along the dotted lines** to form a cube.

🔶 **Q2. Four shapes are shown. Which ones can be folded into a box (cube)?**

✅ **Answer:**

- To check:
  - A cube has **6 square faces**.
  - The arrangement of squares must allow folding into a **closed cube** without overlaps or gaps.

From the activity:

- **Correct shapes (can form cube):** Shape **a** and Shape **c**
- **Incorrect shapes:** Shape **b** and Shape **d**

📌 **Tip:** A cube needs the squares arranged in a "T" or cross pattern.

🔶 **Q3. How many faces does a cube have?**

✅ **Answer:**

- A cube has **6 faces**, and all are **square-shaped**.

🔶 **Q4. Shapes for an Open Box**

✅ **Task:**

- Some nets (like 5-square shapes) can be folded to make an **open box** (no top face).
- Refer to the shapes from Chapter 3 (12 pentomino shapes made of 5 squares).

✅ **Answer:**

- Try cutting and folding them. About **6 out of 12** can form an open box.

🔶 **Q5. Draw a shape which will fold into a cube.**

✅ **Answer:**

- Draw 6 squares like this:

  □

□ □ □ □

  □

This is a standard cube net. All 6 faces will fold perfectly.

🔶 **Q6. Draw one shape which will NOT fold into a cube.**

✅ **Answer:**

- Example of incorrect net:

□ □ □

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This will not fold correctly because the squares will **overlap** or leave a **gap**.

🔶 **Q7. List things around you that look like a cube**

✅ **Examples:**

- Ice cube
- Rubik's cube
- Dice
- Sugar cube
- Small gift box

🔶 **Q8. Boxes and Boxes – Match nets to box shapes**

✅ **Activity:**

- You are given different 2D nets and have to **match them to the correct box** they can form.

✅ **Answer:** Match based on:

- **Flap location**
- **Top, bottom, and side face positions**

🔶 **Q9. Floor Maps vs Deep Drawing**

(a) What is a floor map?

- A **top-down 2D plan** of a building showing **walls, doors, windows**.

(b) What is a deep drawing?

- A **3D-looking drawing** showing height, width, and depth (like a cube from angle view).

🔶 **Q10. Vibha's House Map – Identify correct deep drawing**

✅ **Answer:**

- Check how many windows are on each side.
- Find the 3D image (deep drawing) where all doors/windows match the floor map.

🔶 **Q11. Practice Activity: Draw views from different angles**

Given a model (e.g., a bridge made of matchboxes):

- **Draw it from:**
  - **Top view**
  - **Front view**
  - **Side view**

✅ **Answer:**

- Top view shows layout (length × width)
- Front shows height and width
- Side shows depth and height