Design thinking is a problem-solving approach that emphasizes empathy, collaboration, and creativity. Here are some core principles that define the design thinking process:

1. Empathy

- **Understanding the user**: Design thinking begins with a deep understanding of the people for whom you are designing. It focuses on gaining empathy for users through research, observations, and interactions to fully grasp their needs, challenges, and desires.

2. Define

- **Framing the problem**: After gathering insights, the next principle is to define the core problem. This stage involves synthesizing research findings into a clear problem statement that highlights the user needs and goals.

3. Ideation

- **Generating ideas**: Ideation encourages thinking broadly and without judgment to generate a variety of ideas. It's a collaborative phase where creativity is key, and multiple solutions are proposed to tackle the defined problem.

4. Prototype

- **Building tangible solutions**: This principle focuses on creating low-cost, simple prototypes or mock-ups that bring ideas to life. Prototypes can be anything from sketches and wireframes to digital mockups or physical models. This helps explore potential solutions and test their viability.

5. Test

- **Iterating through feedback**: Testing involves gathering feedback from users or stakeholders about the prototypes. Insights gained from testing inform further refinement and iterations of the solution, ensuring it best meets user needs.

6. Iterative Process

- **Constant improvement**: Design thinking encourages iteration rather than a linear approach. Solutions are refined based on continuous testing and feedback, which leads to better, more user-centered outcomes.

7. Collaboration

- **Teamwork across disciplines**: Collaboration is central to design thinking. Diverse perspectives from cross-functional teams (e.g., designers, engineers, business professionals) enrich the solution-making process. This collaboration helps to create more innovative and holistic solutions.

8. Human-Centered

- **Focusing on the end-user**: The entire process revolves around the human experience, ensuring that all design decisions are made with the user's needs, behaviors, and emotions in mind.

9. Bias Toward Action

- **Learning through doing**: Design thinking promotes a hands-on approach where teams actively engage in creating prototypes and testing ideas rather than just focusing on theoretical solutions. This bias toward action drives progress and helps avoid analysis paralysis.

By following these principles, design thinking facilitates creative, user-focused problem solving in a structured yet flexible way.

Unit 1: Introduction to Design Thinking

Lab Experiment 1: Understanding Design Elements

Objective: To familiarize students with the fundamental design components such as dot, line, shape, and form.

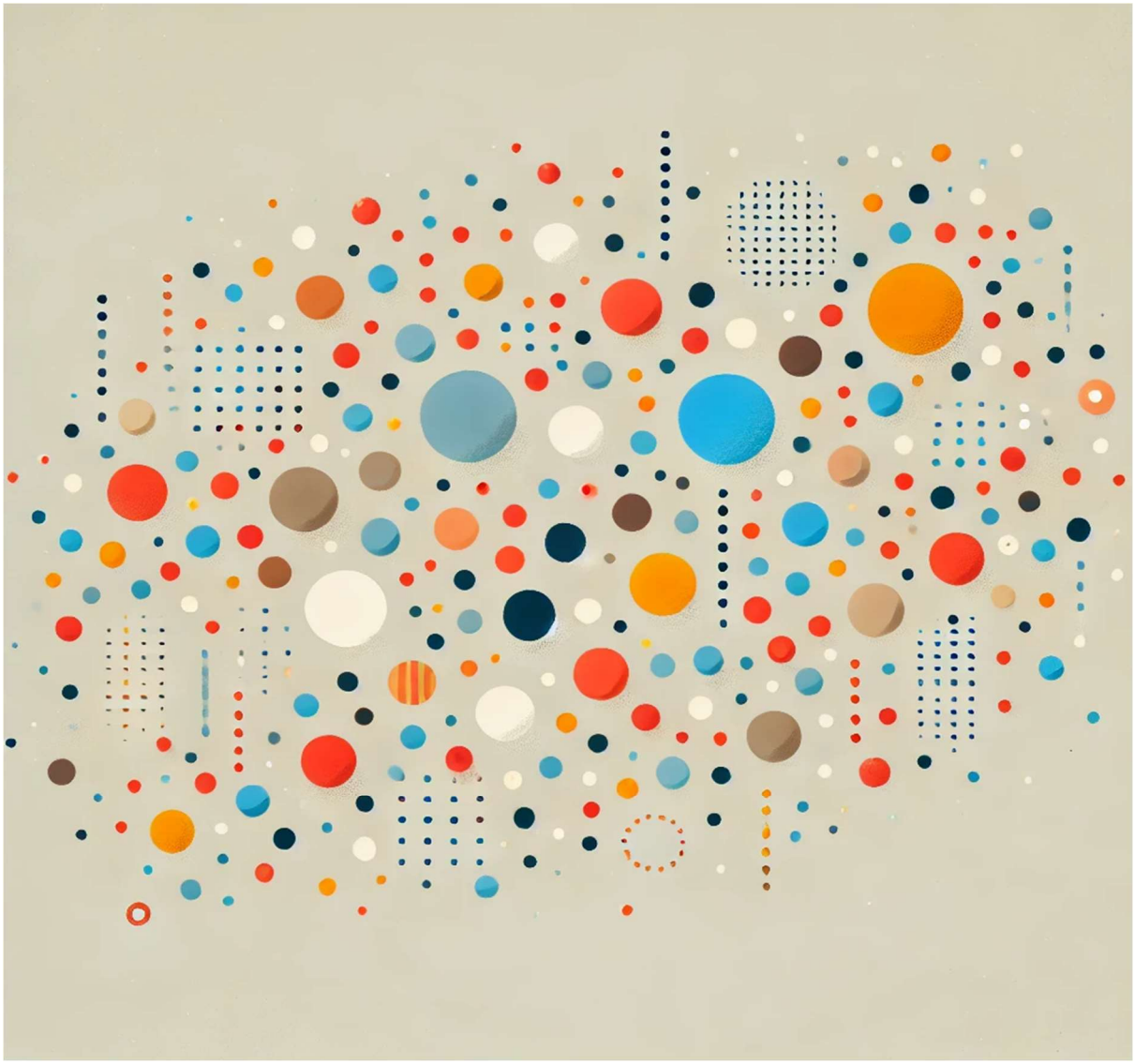
Materials Needed:

- Drawing paper
- Pencils, markers, rulers

Procedure:

1. Draw examples of dots, lines, shapes, and forms.
2. Create a basic design using these components.
3. Identify principles of design used in the created artwork.

Activity: Students present their designs and explain the applied principles of design.



The image depicts a minimalistic design featuring colorful dots scattered across a light neutral background. The dots vary in size and are evenly spaced, creating a playful and visually engaging composition. The arrangement of dots lacks any specific pattern, emphasizing randomness and simplicity. This type of illustration is often used for educational or artistic purposes to demonstrate the concept of "dots" as a fundamental design element.

1.Balance:

- This section shows symmetrical or asymmetrical arrangements of geometric patterns to create visual equilibrium.
- The use of equal distribution of elements gives a sense of stability.

2.**Contrast**:

- Contrast is highlighted with sharp differences in color, shape, and pattern, such as light vs. dark tones or simple vs. complex patterns.
- It emphasizes the importance of variation to make designs stand out.

3.**Emphasis**:

- This section draws attention to a focal point in the design using elements like size, color, or placement.
- The central elements are more prominent to guide the viewer's eye.

4.**Rhythm**:

- Rhythm is demonstrated through repetition and patterns, creating a sense of movement.
- The recurring shapes and lines guide the viewer's gaze rhythmically across the design.

5.**Unity**:

- Unity is achieved by combining all elements harmoniously to create a cohesive composition.
- The design feels complete and consistent through repeated shapes, colors, and alignment.

Expected Outcome: Students will understand and apply fundamental design components and principles.