**Lesson Plan: Mood2Emoji App**

**Target Age:** 12–16
**Duration:** 60 minutes
**Topic:** Build a Mood2Emoji app (Intro to Text Classification)

**Lesson Goals**

- Introduce students to **basic text classification** concepts.

- Demonstrate **how AI can detect mood from text**.

- Build understanding of **end-to-end workflow**: input → analysis → output.

- Engage students with a **hands-on, interactive app**.

**Topics Introduced**

**Introduction to Text Classification**

- What is text classification?

- Examples: spam detection, mood analysis, sentiment analysis.

- Explain **supervised vs rule-based methods** (simple explanation).

**Sentiment & Mood Detection**

- Understanding **positive, neutral, and negative sentiment**.

- Polarity scores and how they relate to mood.

- Examples of short sentences and expected moods.

**Safety and Age-Appropriate Design**

- Filtering inappropriate words.

- Why safety matters in apps for kids.

- Neutral fallback for unknown or unsafe inputs.

**App Workflow Overview**

- Input: user types a sentence.

- Cleaning & preprocessing: normalize text.

- Mood detection: TextBlob polarity + simple rule-based fallback.

- Output: emoji + short explanation.
- Teacher Mode: diagram and examples to visualize process.

**Topics in Detail**

| Topic | Details |
|-------|---------|
| Text Classification | Assigning categories (moods) to text. Simple example: "happy" vs "sad" |
| Polarity & Sentiment | TextBlob gives polarity (-1 to 1). Thresholds decide happy/neutral/sad |
| Safety Filters | Detecting bad words and filtering them for kid-safe results |
| Hybrid Approach | Using TextBlob + keyword rules to improve predictions |
| Teacher Mode | Visual flowchart showing how the app processes sentences |

**Activities (Hands-on)**

**Demo (10–15 min)**

- Launch the **Mood2Emoji app**.
- Show how typing different sentences returns an emoji and explanation.
- Discuss how the app decides the mood.

**Interactive Practice (15–20 min)**

- Students input their own sentences (happy, sad, neutral).
- Observe emoji output and explanation.
- Optional: guess emoji before submitting to compare with app output.

**Teacher Mode Exploration (10–15 min)**

- Show **diagram of app workflow**.
- Discuss each step: input → safety → sentiment → emoji.
- Highlight **limitations** and why AI might misclassify.

**Reflection & Discussion (5–10 min)**

- What sentences were tricky?
- How could the app be improved?

- Why safety and age-appropriateness matter.

**Learning Outcomes**

By the end of the lesson, students will be able to:

1. Explain what **text classification** is and give examples.

2. Understand **how mood/sentiment is detected from text**.

3. Recognize the importance of **safety filters** in kid-focused apps.

4. Use the **Mood2Emoji app** to test different sentences.

5. Reflect critically on **limitations and improvements** of AI.

6. Visualize an **end-to-end AI workflow** using Teacher Mode.