**Course Title**:

**"Creative Coders: Build Mobile Apps with MIT App Inventor"**  
*(Grades 5-7 | 4 Weeks | 12 Sessions)*

**Course Outcomes**

By the end of this course, students will:

1. Master **computational thinking** (decomposition, patterns, algorithms).
2. Build **6 functional apps** with increasing complexity.
3. Understand **event-driven programming** and **UI design**.
4. Apply **problem-solving** skills to real-world scenarios.
5. Showcase a **final project** addressing community needs.

**Weekly Breakdown**

**Week 1: Foundations & Simple Apps**

**Objective**: Introduce MIT App Inventor and basic app logic.

* **Session 1**: "Hello, Me!"
  + *Skills*: Button events, media upload (image/sound).
  + *Project*: Personal intro app with voice recording.
* **Session 2**: "Soundboard Fun"
  + *Skills*: Multiple buttons, procedure abstraction.
  + *Project*: Animal soundboard app.
* **Session 3**: "Mini Quiz Game"
  + *Skills*: Conditional logic, scoring.
  + *Project*: 5-question trivia app.

**Assessment**: Debugging challenge (fix a pre-built app).

**Week 2: Interactive Games & Animation**

**Objective**: Develop games with sprites and sensors.

* **Session 4**: "Ball Maze Challenge"
  + *Skills*: Accelerometer, collision detection.
  + *Project*: Tilt-controlled maze game.
* **Session 5**: "Hungry Dino"
  + *Skills*: Sprite animation, score tracking.
  + *Project*: Dino eats falling food (like "Food Chase").
* **Session 6**: "Design Your Game"
  + *Skills*: Creative iteration.
  + *Project*: Customized game (theme: space/jungle).

**Assessment**: Peer review of game mechanics.

**Week 3: Real-World Apps & Data**

**Objective**: Integrate maps and databases.

* **Session 7**: "School Tour Guide"
  + *Skills*: Maps, lists.
  + *Project*: Interactive map of school landmarks.
* **Session 8**: "Memory Helper"
  + *Skills*: TinyDB (local storage).
  + *Project*: To-do list or vocabulary tracker.
* **Session 9**: "Multiplayer Sketch"
  + *Skills*: CloudDB basics.
  + *Project*: Collaborative drawing app (simplified "Sketch and Guess").

**Assessment**: Data persistence test (save/retrieve entries).

**Week 4: Final Project & Showcase**

**Objective**: Apply skills to solve community problems.

* **Session 10**: Brainstorming
  + *Activity*: "App for Good" ideation (e.g., recycling reminder, homework helper).
* **Session 11**: Prototyping
  + *Skills*: Design thinking, debugging.
* **Session 12**: Demo Day
  + *Delivery*: 3-minute app pitches to parents/teachers.

**Assessment**: Rubric for creativity, functionality, and presentation.

**Key Adaptations from CTCT** (Coolthink Computational Thinking Curriculum) **Model**

1. **Simplified Scope**:
   * Combines "My Piano App" and "Music Maker" into **"Soundboard Fun"**.
   * Replaces complex CloudDB units with **guided multiplayer projects**.
2. **Age-Appropriate Themes**:
   * Uses **animal sounds**, **dinosaurs**, and **school maps** for engagement.
3. **Scaffolded Difficulty**:
   * Week 1: Single-screen apps → Week 4: Multi-component projects.

**Materials & Tools**

* **Devices**: 1 tablet/laptop per student.
* **Accounts**: Free MIT App Inventor logins.
* **Printables**: Design worksheets, debugging checklists.

**Teacher Support**

* **Daily "Bug Jar"**: Students submit troubleshooting questions.
* **Extension Packs**: Optional challenges for advanced learners (e.g., add timers to games).

**Sample Session Plan (Week 1, Session 2)**

**Objective**: Create a soundboard app with 5+ buttons.

1. **Hook (10 mins)**: Play a celebrity soundboard; discuss event triggers.
2. **Direct Instruction (15 mins)**: Demo button duplication and sound uploads.
3. **Guided Practice (20 mins)**: Build animal soundboard (cat/dog/bird).
4. **Independent Practice (10 mins)**: Add custom sounds (e.g., laughter).
5. **Wrap-up (5 mins)**: Share favorite sound; preview next session.