**🎮 Activity 5: Mini-Game – “Water Detective Challenge”**

**🎙️ Activity Introduction *(Mic Icon)***

“🕵️ Put on your lab coat, Water Detective! A mysterious liquid was discovered in the science lab. Is it really pure water, or something else? Run your tests, check the clues, and solve the case using science!”

**👨‍💻 Developer Guide Instructions**

* **Type:** Decision-Based Mini-Game with Scoring
* **Learning Objectives:**
  + Apply knowledge of physical properties to determine water purity
  + Strengthen decision-making through observation and testing clues
* **Build Notes:**
  + Display a cartoon-style beaker with magnifying glass and testing icons
  + Each question appears sequentially with options and visual indicators (thermometer, nose icon, water colour palette)
  + Log answers with pop-up feedback for each choice
  + Display progress bar **📋 Learner Instructions (On-Screen)**

1. Select the test icon shown on screen.
2. Choose the observation that matches your test.
3. Read the feedback, then move to the next test.

**💡 Hint (On-Screen)**

“Run your tests, check the clues, and solve the case using science!”

**🧩 Game Questions with Facilitative Feedbacks**

**1️⃣ Test: Boiling Point**  
🧪 Prompt: "You heat the liquid. What is the temperature when it boils?"  
**Options:**

* 90°C ❌ → “Incorrect. That temperature is too low — the liquid is not pure water.”
* 95°C ❌ → “Watch closely — pure water continues to heat up to 100°C before boiling.”
* 100°C ✅ → “Correct. Pure water boils at exactly 100°C at sea level.”
* 105°C ❌ → “Too hot. Water should boil earlier — impurities may be present.”

**2️⃣ Test: Odour**  
👃 Prompt: "You waft the scent of the liquid. What do you detect?"  
**Options:**

* Floral 🌸 ❌ → “Not quite. Any smell means there is a substance dissolved in the water.”
* Rotten 😷 ❌ → “Definitely not pure — rotten smell indicates serious contamination.”
* Odourless ✅ → “Correct. Pure water should have no smell at all.”

**3️⃣ Test: Colour**  
👁️ Prompt: "You observe the liquid in a glass container. What is its colour?"  
**Options:**

* Blue 🔵 ❌ → “Incorrect. Colour in water is caused by impurities.”
* Green 🟢 ❌ → “Try again. Green means dissolved materials — not pure.”
* Red 🔴 ❌ → “Definitely impure — pure water is never coloured.”
* Colourless ⚪ ✅ → “Correct. Pure water is colourless and completely transparent.”

**🎙️ Activity Conclusion *(Mic Icon)***

“Awesome detective work! You used scientific testing to confirm that the liquid was — or was not — pure water. You are now officially certified to investigate water samples like a real laboratory expert!”

**✅ Key Takeaways:**

* **Water is essential** for life and used in homes, industry, and agriculture.
* **Pure water properties:** Colourless, odourless, tasteless, boils at 100 °C (sea level).
* **Source water** may differ in taste, colour, odour, and boiling point due to impurities.
* **Distilled water** is the purity standard, free from dissolved substances.