**Activity 2: Diagram Labelling – “Set Up the Boil!”**

**🎙️ Activity Introduction**

“Here is a water boiling station — but it is all mixed up! Drag the correct labels onto the matching parts of the lab diagram. Look closely at the shapes and positions.”

**👨‍💻 Developer Guide Instructions**

* **Type:** Drag-and-Drop Labelling Task
* **Learning Focus:** Identify and correctly position lab apparatus used to heat and measure the boiling point of water
* **Icons:** 🔧 🧫 🔲 🌡️ 🔥 🪜 🧷
* **Media Tags:**
  + [🖼️ High-resolution diagram of a boiling water setup including tripod stand, wire gauze, beaker with water, thermometer, clamp, and Bunsen burner]
  + [🎧 SFX: Snap-to-place sound when label is dropped correctly]
* **Build Notes:**
  + Provide a labelled diagram with blank hotspots for each equipment part.
  + Allow drag-and-drop of six icons.
  + **🏷️**Add glow outline and snapping animation for correct drop zones.
  + Log completion on a lab checklist panel when all parts are labelled correctly.
  + Provide hint toggle that briefly highlights the correct tool shape.
  + Show "assembled" version after success for reflection or screenshot.

**📋 Learner Instructions (On-Screen)**

1. Drag each label to the matching part of the diagram.
2. Use the hint toggle if you need a brief highlight of the correct tool shape.
3. Continue until all six parts are labelled correctly.

**💡 Hint (On-Screen)**

“Look closely at the shapes and positions.”

**🎯 Labels to Drag & Drop**

| **#** | **Label & Target** | **Correct Feedback** | **Incorrect Feedback** |
| --- | --- | --- | --- |
| 1 | 🔥 **Bunsen burner → Below the tripod** | “Correct! The Bunsen burner is placed directly under the tripod to heat the water.” | “Not quite. The Bunsen burner must be under the tripod to heat the container evenly.” |
| 2 | 🧫 **Beaker → On top of wire gauze** | “Right! The beaker holds the water and must rest securely on the gauze.” | “Try again. The beaker must sit on the wire gauze above the flame.” |
| 3 | 🪜 **Tripod stand → Supporting the beaker and gauze** | “Yes! The tripod stand holds everything above the flame at a safe height.” | “Careful! The tripod should surround the Bunsen burner and hold up the beaker.” |
| 4 | 🔲 **Wire gauze → On top of tripod** | “Well done. The gauze spreads the heat evenly and supports the beaker.” | “That is not the right spot. Wire gauze always sits between flame and beaker.” |
| 5 | 🌡️ **Thermometer → Inside beaker (water contact)** | “Good job. The thermometer must touch the water — not just float in air.” | “Oops. Thermometer must be dipped in the water to read temperature accurately.” |
| 6 | 🧷 **Clamp → Holding thermometer in place** | “Perfect! The clamp keeps the thermometer steady and safe from tipping.” | “Check again. The clamp should grip the thermometer — not the beaker.” |

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

“Excellent lab setup! You now know how to prepare and label all parts of a water boiling experiment — safely and scientifically. A correct setup ensures accurate results and keeps you safe in the lab.”