**🎯 Activity 3: 🎭 Scenario – “Choose the Right Alloy”**

**🎙️ Activity Introduction 🎙️**

"Different jobs need different materials—and not all metals can do the same task. In this scenario challenge, you will help solve real-world problems by choosing the most suitable alloy for the task. Read carefully, think about the properties needed, and make your choice!"

**👨‍💻 Developer Guide Instructions**

* **Format**: One scenario per screen containing:
  + Scenario text.
  + Three clickable alloy choices.
  + Visuals or icons per scenario (e.g., sink, plane, trumpet, medal, door handle).
  + Immediate feedback per choice (✅ / ❌ icon + text explanation).
* **Assets Needed**:
  + Illustrations of real-world items (kitchen sink, aircraft, trumpet, medal, door handle).
  + Interactive choice buttons with alloy names and hover-tooltips describing properties and components.
* **Feedback Mechanism**:
  + Display both **correct** and **incorrect** facilitative feedback per choice.
* **Tracking**: Record correct answers for end-of-activity summary.

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

1. Read each scenario carefully.
2. Click the alloy you think is best suited for the job.
3. Read the feedback to understand why your choice is right or wrong.
4. Continue until all scenarios are completed.

**💡 Hint (On-Screen)**

* Stainless steel is rust-resistant.
* Duralumin is light but strong.
* Brass is shiny and resists tarnish.
* Bronze is durable and traditional for awards.

**🧪 Activity Content – Scenarios, Choices, and Facilitative Feedback**

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| **Scenario** | **Choices** | **Feedback** |
| **Rust-Free Kitchen Sink** 📝 "You are installing a kitchen sink. It must not rust or corrode easily." | **Iron** ❌ | "Iron rusts quickly when exposed to water, making it unsuitable for sinks." |
|  | **Steel** ❌ | "Steel is strong but can corrode if not treated or coated." |
|  | **Stainless Steel** ✅ | "Stainless steel contains chromium, which forms a protective layer that prevents rusting, making it ideal for kitchen sinks." |
| **Lightweight Aircraft Body** 📝 "An engineer needs a strong but lightweight material for building an airplane." | **Bronze** ❌ | "Bronze is heavy and not practical for aircraft construction." |
|  | **Cast Iron** ❌ | "Cast iron is too brittle and heavy for aircraft use." |
|  | **Duralumin** ✅ | "Duralumin is an aluminium alloy that is both light and strong, making it perfect for aircraft bodies." |
| **Musical Instrument** 📝 "You are making a shiny trumpet that must sound great and resist corrosion." | **Lead** ❌ | "Lead is dull, heavy, and unsuitable for making musical instruments." |
|  | **Copper** ❌ | "Copper is shiny but too soft for shaping into precise musical tubes." |
|  | **Brass** ✅ | "Brass is shiny, corrosion-resistant, and produces excellent sound quality, making it perfect for trumpets." |
| **Medal for Sports Award** 📝 "The sports committee wants a durable and symbolic metal for medals." | **Aluminium** ❌ | "Aluminium is lightweight but lacks the traditional appearance and weight for medals." |
|  | **Zinc** ❌ | "Zinc is not as durable or decorative as traditional medal alloys." |
|  | **Bronze** ✅ | "Bronze is durable, attractive, and historically used for medals, making it an ideal choice." |
| **Elegant Door Handle** 📝 "A hotel designer wants stylish, non-tarnishing handles for guest room doors." | **Tin** ❌ | "Tin is too soft for door handles and lacks an attractive finish." |
|  | **Iron** ❌ | "Iron rusts and tarnishes easily, which is not suitable for decorative handles." |
|  | **Brass** ✅ | "Brass is shiny, strong, and resists tarnishing, making it perfect for stylish door handles." |

**🎙️ Activity Conclusion**

"Outstanding choices! You matched the alloys to their perfect real-world uses. Alloys are carefully designed by mixing elements to give just the right properties. Great job applying your science skills to practical problems!"