**🎓 Activity 3: 🔄 Sequencing – "Painting to Prevent Rust"**

**🎙️ Activity Introduction**

“Painting metal prevents rust only when done properly. Your task is to drag each step into the correct order. Think carefully! Start with preparation, then layering, and end with care. Ready to paint like a professional?”

**👨‍💻 Developer Guide Instructions**

* **Activity Type**: Step-by-Step Sequencing Task
* **UI Setup**:
  + Display six draggable cards/icons, each with visuals and step titles.
  + Sequence slots numbered 1–6 for drop targets.
  + Use subtle animations to snap cards into place.
* **Design Tips**:
  + Include sound effects for dragging/dropping and completion chime.
  + Use icons and clean visuals to enhance clarity.
  + Optional completion popup upon correct order.

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

1. Read all steps carefully.
2. Drag and drop them into the order you think is correct.
3. Follow the process from preparation to inspection.
4. Review feedback after placing all steps.

**💡 Hints (On-Screen)**

* “Start with cleaning before any coatings.”
* “Primer comes before paint.”
* “Finish with checking for damage over time.”

**🪜 Steps to Sequence (Correct Order)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Icon** | **Action** | **Hint** | **Correct Feedback (✅)** | **Incorrect Feedback (❌)** |
| 1 | 🧼 | Clean metal surface | Remove rust, grease, or dirt before anything else | ✅ “Well done! Cleaning ensures coating sticks properly.” | ❌ “Start by cleaning. A dirty surface will cause peeling and rust underneath.” |
| 2 | 🧪 | Apply primer | Primer sticks to bare metal and helps paint adhere | ✅ “Correct! Primer bonds to the surface and helps paint last longer.” | ❌ “Primer must go first to help the paint stick to clean metal.” |
| 3 | 🎨 | Apply paint | The first protective layer against air and moisture | ✅ “Good! This layer blocks oxygen and moisture from the metal.” | ❌ “Paint is applied after primer, not before it.” |
| 4 | 🌬️ | Let dry | Paint must dry fully before more coats | ✅ “Yes! Drying prevents mixing layers and gives a smooth finish.” | ❌ “Drying is key! Paint needs time to harden before the next layer.” |
| 5 | ➕ | Add second coat | Second coat gives stronger and longer-lasting protection | ✅ “Perfect! The extra coat increases durability and rust resistance.” | ❌ “Second coats are only added after the first coat is completely dry.” |
| 6 | 👁️ | Inspect regularly | Watch for chips, scratches, or rust spots after painting | ✅ “Exactly! Regular checks keep rust from starting again.” | ❌ “Inspections happen after painting is complete—not at the start.” |

**🎯 Common Incorrect Sequencing Feedback**

* If ‘Apply Paint’ is placed before ‘Apply Primer’: ❌ “Primer must go first to help paint stick.”
* If learner starts with ‘Apply Paint’ instead of ‘Clean Surface’: ❌ “Start by cleaning. Dirt causes peeling and rust.”
* If ‘Let Dry’ is missing or out of order: ❌ “Drying is key before adding another coat.”
* If ‘Inspect Regularly’ is placed first or too early: ❌ “Inspections happen after painting is complete.”

**✅ Correct Sequence Order**

1. 🧼 Clean metal surface
2. 🧪 Apply primer
3. 🎨 Apply paint
4. 🌬️ Let dry
5. ➕ Add second coat
6. 👁️ Inspect regularly

**🎙️ Activity Conclusion**

“Excellent sequencing! You now know how to stop rust using a proper painting process. Every layer counts—from cleaning to inspection. Keep applying your knowledge in real projects!”

**✅ Key Takeaways:**

* **Rusting** is the corrosion of iron/steel, producing hydrated iron (III) oxide.
* **Conditions:** Requires both oxygen and moisture.
* **Experiments:** Shown using boiled water, oil, calcium chloride, and exposed nails.
* **Effects:** Weakens strength, spoils appearance, reduces magnetism/conductivity.

Leads to **higher maintenance costs**, especially in coastal/industrial areas.