**🎯 Activity 3: 🔍 Hotspot Click – “Decode the Symbol”**

🎙️ **Activity Introduction** 🎤  
“Each atomic symbol contains hints about what makes an atom unique. By clicking on the parts of the symbol, you will uncover the meaning behind every number and letter. Explore carefully, and learn how to read atomic identities.”

💡 **Hint**

* Mass Number = Protons + Neutrons → Top-left.
* Atomic Number = Number of Protons → Bottom-left.
* Chemical Symbol = 1–2 letters representing the element → Centre.

👨‍💻 **Developer Guide**

* Create 3 interactive hotspots per symbol:
  1. Superscript → Mass Number
  2. Subscript → Atomic Number
  3. Centre → Element Symbol
* Each hotspot triggers an explanatory pop-up (no correct/incorrect logic).
* After all hotspots in all symbols are clicked, show conclusion narration.

📜 **Learner Instructions (On Screen)**  
Click on the mass number, atomic number, and chemical symbol in each atomic symbol to reveal their meaning.

📊 **Activity Content 🧪 Symbols to Explore (Each with 3 Clickable Parts)**

**🔍 Symbol 1: ¹⁴N₇**

**🔼 14 — *Mass Number***

🧾 *This is the* ***mass number****, which equals the total number of protons and neutrons in the atom. For Nitrogen, that means 7 protons + 7 neutrons = 14.*

**🔽 7 — *Atomic Number***

🧾 *This is the* ***atomic number****. It tells you the number of protons in the atom. Nitrogen has 7 protons.*

**🔤 N — *Chemical Symbol***

🧾 *This is the* ***chemical symbol*** *for Nitrogen. Every element has a unique one- or two-letter code.*

**🔍 Symbol 2: ²³Na₁₁**

**🔼 23 — *Mass Number***

🧾 *This is the* ***mass number*** *for Sodium. It represents the total number of protons and neutrons. Sodium has 11 protons and 12 neutrons: 11 + 12 = 23.*

**🔽 11 — *Atomic Number***

🧾 *This is the* ***atomic number****. It shows that Sodium has 11 protons. It also defines the element.*

**🔤 Na — *Chemical Symbol***

🧾 *This is the* ***chemical symbol*** *for Sodium. ‘Na’ comes from the Latin name Natrium.*

**🔍 Symbol 3: ⁴⁰Ca₂₀**

**🔼 40 — *Mass Number***

🧾 *This is the* ***mass number****. Calcium has 20 protons and 20 neutrons. The mass number is their sum: 20 + 20 = 40.*

**🔽 20 — *Atomic Number***

🧾 *This is the* ***atomic number****. It shows that Calcium has 20 protons. This number also tells us how the atom behaves chemically.*

**🔤 Ca — *Chemical Symbol***

🧾 *This is the* ***chemical symbol*** *for Calcium. Symbols are used worldwide to represent elements.*

🎙️ **Activity Conclusion** 🎤  
“You have now decoded how atomic symbols work. You can identify how many protons, neutrons, and which element each symbol represents. This knowledge helps you interpret data about any atom on the periodic table.”

**✅ Key Takeaways:**

* **Atomic number (Z):** Number of protons, used to identify elements.
* **Mass number (A):** Protons + neutrons; always ≥ atomic number.
* **Atomic representation:** Written as \prescriptAZX\prescript{A}{Z}\mathrm{X} (e.g., \prescript126C\prescript{12}{6}\mathrm{C}).
* **Isotopes:** Atoms of the same element with same atomic number but different mass numbers (different neutrons).