
PLEASE SUBMIT YOUR WORK THROUGH GOOGLE CLASSROOM

1. What part of atomic structure **defines a chemical element**?
2. What is a **mass number** of an element?
3. What is an **isotope**? Give an **example**. (A sketch would be great!)
4. What makes a **heavy, large nucleus unstable**?
5. Fact #1: A typical **banana** contains about **10^{20} atoms of unstable radioactive potassium isotope K-40** with a half-life of **1.25 billion years** ($\sim 4 \times 10^{16}$ seconds).
Fact #2: Scientists predict that the Sun will expand into a Red Giant and engulf the Earth in about 8 billion years. **How many radioactive K-40 atoms from a single banana will still be there to get swallowed by the Sun?**