**Fusion in Stars**

(adapted from <http://imagine.gsfc.nasa.gov/docs/teachers/lessons/xray_spectra/activity-fusion.html>)

Draw a depiction/model of what is happening in each nuclear reaction below. **Be sure to note the number of neutrons and protons in each nucleus.**

4 Hydrogen-1 ------> Helium-4 + energy

3 Helium-4 ------> Carbon-12 + energy

Carbon-12 + Carbon-12 ------> Magnesium-24 + energy

Carbon-12 + Helium-4 ------> Oxygen-16 + energy

Oxygen-16 + Oxygen-16 ------> Sulfur-32 + energy

Oxygen-16 + Helium-4 -----> Neon-20 +energy

**Fission of Uranium Nuclear Reactors:**

Uranium-236 -----> Krypton-94 + Barium-139

Uranium-236 -----> Rubidium-90 + Cesium-144

Uranium-236 -----> Strontium-90 + Xenon-142

Uranium-238 -----> Thorium-234 + Helium-4

Uranium-236 -----> Krypton-92 + Barium-141

Optional Fusion in Stars:

Silicon-28 + 7 Helium-4 ------> Nickel-56 + energy

Nickel-56 ------> Cobalt-56

Cobalt-56 ------> Iron-56

Iron-56 + n0 ------> Iron-57

Iron-57 + n0 ------> Iron-58

Iron-58 + n0 ------> Iron-59