**The Sun:**

**Unit 4: Astronomy**

**Mini-Unit:** Our Solar System

**Goal 3: The student will demonstrate the ability to explain the role and interaction of revolution, rotation, and gravity on the components of the Sun-Moon-Earth system.**

Objectives – The student will be able to:

* Describe the Sun-Moon-Earth system
* Describe the characteristics of our sun, including structure, thermonuclear reactions, coronal mass ejections, flares, sunspot cycles, solar wind, and auroras and their impact on Earth

**Textbook:** Unit 8, Chapter 29, pg. 754

Structure of the Sun:

Composition of the Sun:

Nuclear Fusion –



Fusion powers the sun by combining hydrogen atoms in order to form Helium, the remaining mass is converted to energy, E = mc2

The Sun’s Interior:

1. Three Layers: C
2. Fusion occurs in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (15,000,000 degrees Celsius)
3. Core is ionized gas (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

The Sun’s Atmosphere:

1. Three Layers:
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is called the Sun’s “surface” because it is what you see
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the outermost layer of the sun’s atmosphere

Solar Activity:

Sunspot:

* Observing sunspots showed that the Sun rotates (about 27 days)
* The increase and decrease of sunspots follows an 11 year cycle

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: An explosive release of energy (electrically charged particles such as protons and electrons) that comes from the sun, and that is associated with magnetic disturbances on the sun’s surface (sunspots)

Coronal Mass Ejections:

Auroras: