**Ch. 17 – Evolution**

**Notes**

Standard: SC.7.L.15.1, SC.7.L.15.2, SC.7.L.15.3

Essential Question: What is the theory of evolution and what evidence exists to support it?

1. Theory of Evolution –
   1. Evolution: the process by which organisms change over time
   2. Theory proposed by Charles Darwin -
      1. Species change over many generations and become better adapted to new conditions.
         1. Species: a group of similar organisms that can mate with each other and produce fertile offspring.
         2. Adaptation: a trait that increases an organism’s ability to survive and reproduce
   3. Evidence
      1. Fossils- similar to living organisms but different
      2. Comparisons with similar organisms that lived elsewhere
      3. Similarities in early development
      4. Body structure similarities - because multiple species have a similar internal organ (backbone) they have a common ancestor
   4. How does evolution happen?
      1. natural selection: the process by which individual organisms that are better adapted to their environment are more likely to survive and reproduce than other members of the same species.
         1. Overproduction – more offspring produced that can survive
         2. Inherited Variation – differences between members of the same species.
            1. Turtles: different size, color, how fast they swim, shell hardness
         3. Competition: members of a species must compete for limited resources
            1. Turtles: slow turtles may bet caught by predator, while faster turtle escapes and survives.
         4. Selection: the individuals who survive the competition, survive and reproduce – they are “selected” by nature.
      2. Environmental change – changes to the environment that would allow an individual organism to live better than others. Monkey flower don’t usually grow in soil high in copper, but some learned to adapt and can live in copper contaminated soil.