

Most **Archaea** are anaerobic (without oxygen) and obtain their energy from inorganic molecules or from light. Others require oxygen (aerobic)

- ✚ Their cell membranes contain unusual lipids (fats) that allow them to survive in these extreme environments.

Some classes of Archaea are:

- ✚ Methanogens - methane producing
 - live in oxygen free environments and produce methane as a waste product.
 - swamps, marshes, intestines, sewage disposal plants.
- ✚ Halophiles - salt loving; inland seas
- ✚ Thermoacidophiles - heat and acid loving
 - hot springs, volcanoes, deep sea vents
- ✚ Acidophile – acid lovers; mine drainage lakes, volcanic craters, caves (snottites)
- ✚ Similar to bacteria in how they reproduce

2.2 Viruses, Viroids, and Prions

A **virus** is a small infectious particle containing genetic material in the form of DNA or RNA within a protein capsule.

Capsid is a protein coat that surrounds the DNA or RNA of a virus.

Viruses are extremely small parasites that contain genetic material but lack all other cell structures necessary for metabolism, reproduction and growth.

Like Living Things	Unlike Living Things
✚ Reproduce ✚ Can mutate	✚ Are acellular (contain no cytoplasm or cellular organs) ✚ Carry out no metabolism on their own ✚ Don't grow or divide. Instead, new viral components are synthesized and assembled within the infected cell

Viruses range from 5 to 300 nm but some may be up to 0.4 μ m.

An **epidemic** is a large-scale outbreak of disease; usually confined to a limited geographic region.

A **pandemic** is an epidemic that occurs over a widespread geographic area, often globally

By causing disease, viruses control the populations of other organisms.

