

Hampden Academy Science Standards REGIONAL SCHOOL UNIT #22

RSU #22 is committed to the optimal learning of all students. As RSU 22 continues to move towards meeting 2018 graduation expectations, we have elected to look at proficiency learning targets K-12. Rather than only the high school being responsible to report student proficiency, we have created some initial targets at each grade level. We know that some children may be able to meet standards beyond the targets listed at the grade level. We also know that some students will need more time to meet the expectations.

Standards to be met before or during High School years

Biodiversity and Evolution Standards

- Understands why some organisms that once lived on Earth have completely disappeared.
- Understands how some extinct organisms are similar to organisms living on Earth today.
- Understands the role of reproductive isolation in the development of new species.
- Understands the theory of biological evolution and the current evidence to support it (e.g. fossil records, molecular evidence, similarities within diversity of living organisms, vestigial structures, embryological development).

Cells and Organism Standards

- Understands the functions of organelles in plant and animal cells (mitochondria, cell membrane, nucleus, etc.)
- Understands how organisms use photosynthesis and cellular respiration to transfer energy.
- Understands the role of osmosis and diffusion in maintaining equilibrium.
- Understands how cells repeatedly divide

Environmental Science Standards

- Understands the importance of biodiversity.
- Understands the effects of invasive species on biodiversity.
- Understands how changes in an organism's habitat (e.g. floods, fires, climate change, human impact, invasive species) and population size can influence the survival of a population.
- Understands ecosystems have limited resources to support population (carrying capacity).
- Understands how the carbon cycle is impacted by natural and human changes that could contribute to global warming.