

Disciplinary Core Ideas:

- Develop robust understanding of key STEM concepts and relationships

Scientific Practices

- Identify a scientific question or hypothesis
 - Analyze background information on the question or hypothesis
- Engage in scientific thinking
 - Identify key variables in a system and develop an understanding of their relationships
 - Collect and analyze data to test hypothesis or answer question
 - Understand and explain uncertainty in data and assumptions in analysis
 - Assess credibility and implications of the data and/or methods
 - Work collaboratively to develop and evaluate evidence-based models of underlying phenomena

Engineering Practices

- Explore a societal need or applied science/mathematics problem
 - Research the problem and its challenges
 - Analyze current context in which the societal need or problem exists
- Engage in engineering thinking
 - Explore the mathematical and scientific tools to address challenges
 - Identify key variables in a system and develop an understanding of their relationships
 - Work collaboratively to generate/explore multiple divergent solutions to a design problem
 - Conduct experiments and/or analysis to systematically evaluate the performance of design alternatives
 - Continuously redesign /iterate solution based on evaluation

Communicate STEM Ideas

- Communicate ideas in oral, written and/or graphical form
- Critically assess the credibility of information from a variety of sources
- Develop facility in communicating STEM ideas to a diverse audience

Societal Applications of STEM

- Recognize and understand relevance of STEM issues to society
- Incorporate STEM understanding and resources into social, economic, personal or political decisions

Attitudes Towards STEM

- Appreciate the creativity and excitement of the STEM enterprise
- Connect the work of STEM professionals to everyday life
- Demonstrate confidence in learning/applying STEM concepts
- Exhibit interest in continued learning of STEM ideas