Wisconsin State Middle School Standards:

The content contained in this webquest addresses the following standards

Science, Standard A: Science Connections
A.8.1 Develop their understanding of the science themes by using the themes to frame questions about science-related issues and problems
A.8.2 Describe limitations of science systems and give reasons why specific science themes are included in or excluded from those systems
A.8.3 Defend explanations and models by collecting and organizing evidence that supports them and critique explanations and models by collecting and organizing evidence that conflicts with them
A.8.4 Collect evidence to show that models developed as explanations for events were (and are) based on the evidence available to scientists at the time
A.8.5 Show how models and explanations, based on systems, were changed as new evidence accumulated (the effects of constancy, evolution, change, and measurement should all be part of these explanations)
A.8.6 Use models and explanations to predict actions and events in the natural world
A.8.7 Design real or thought investigations to test the usefulness and limitations of a model

Science, Standard B: Nature of Science:
B.8.1 Describe how scientific knowledge and concepts have changed over time in the earth and space, life and environmental, and physical sciences
B.8.2 Identify and describe major changes that have occurred over in conceptual models and explanations in the earth and space, life and
environmental, and physical sciences and identify the people, cultures, and conditions that led to these developments.

B.8.3 Explain how the general rules of science apply to the development and use of evidence in science investigations, model-making, and applications.

B.8.4 Describe types of reasoning and evidence used outside of science to draw conclusions about the natural world.

B.8.6 Explain the ways in which scientific knowledge is useful and also limited when applied to social issues.

Science, Standard C: Science inquiry

C.8.1 Identify questions they can investigate using resources and equipment they have available.

C.8.2 Identify data and locate sources of information including their own records to answer the questions being investigated.

C.8.4 Use inferences to help decide possible results of their investigations, use observations to check their inferences.

C.8.5 Use accepted scientific knowledge, models, and theories to explain their results and to raise further questions about their investigations.

C.8.6 State what they have learned from investigations, relating their inferences to scientific knowledge and to data they have collected.

C.8.7 Explain their data and conclusions in ways that allow an audience to understand the questions they selected for investigation and the answers they have developed.

C.8.8 Use computer software and other technologies to organize, process, and present their data.

C.8.9 Evaluate, explain, and defend the validity of questions, hypotheses, and conclusions to their investigations.

C.8.10 Discuss the importance of their results and implications of their work with peers, teachers, and other adults.

C.8.11 Raise further questions which still need to be answered.
Science, Standard D: Physical science

PROPERTIES AND CHANGES OF PROPERTIES IN MATTER

D.8.2 Use the major ideas of atomic theory and molecular theory to describe physical and chemical interactions among substances, including solids, liquids, and gases

D.8.3 Understand how chemical interactions and behaviors lead to new substances with different properties

D.8.4 While conducting investigations, use the science themes to develop explanations of physical and chemical interactions and energy exchanges

MOTIONS AND FORCES

D.8.5 While conducting investigations, explain the motion of objects by describing the forces acting on them

D.8.6 While conducting investigations, explain the motion of objects using concepts of speed, velocity, acceleration, friction, momentum, and changes over time, among others, and apply these concepts and explanations to real-life situations outside the classroom

D.8.7 While conducting investigations of common physical and chemical interactions occurring in the laboratory and the outside world, use commonly accepted definitions of energy and the idea of energy conservation

TRANSFER OF ENERGY

D.8.8 Describe and investigate the properties of light, heat, gravity, radio waves, magnetic fields, electrical fields, and sound waves as they interact with material objects in common situations

D.8.9 Explain the behaviors of various forms of energy by using the models of energy transmission, both in the laboratory and in real-life situations in the outside world

D.8.10 Explain how models of the atomic structure of matter have changed over time, including historical models and modern atomic theory
Science, Standard E: Earth and Space

STRUCTURE OF EARTH SYSTEM

E.8.4 Using the science themes, analyze the influence living organisms have had on the earth's systems, including their impact on the composition of the atmosphere and the weathering of rocks

EARTH'S HISTORY

E.8.6 Describe through investigations the use of the earth's resources by humans in both past and current cultures, particularly how changes in the resources used for the past 100 years are the basis for efforts to conserve and recycle renewable and non-renewable resources

Science, Standard F: Life and environmental Sciences

STRUCTURE AND FUNCTION IN LIVING THINGS

F.8.1 Understand the structure and function of cells, organs, tissues, organ systems, and whole organisms

F.8.2 Show how organisms have adapted structures to match their functions, providing means of encouraging individual and group survival within specific environments

REPRODUCTION AND HEREDITY

F.8.5 Show how different structures both reproduce and pass on characteristics of their group

REGULATION AND BEHAVIOR

F.8.7 Understand that an organism's behavior evolves through adaptation to its environment

Science, Standard G: Science Applications

G.8.2 Explain how current scientific and technological discoveries have an influence on the work people do and how some of these discoveries also lead to new careers
G.8.3 Illustrate the impact that science and technology have had, both good and bad, on careers, systems, society, environment, and quality of life

G.8.4 Propose a design (or re-design) of an applied science model or a machine that will have an impact in the community or elsewhere in the world and show how the design (or re-design) might work, including potential side-effects

G.8.6 Use current texts, encyclopedias, source books, computers, experts, the popular press, or other relevant sources to identify examples of how scientific discoveries have resulted in new technology

G.8.7 Show evidence of how science and technology are interdependent, using some examples drawn from personally conducted investigations

**Science, Standard H: Science in Personal And Social Perspective**

H.8.2 Present a scientific solution to a problem involving the earth and space, life and environmental, or physical sciences and participate in a consensus-building discussion to arrive at a group decision