

## WV 21<sup>st</sup> Century Content Standards and Objectives for Kinetic Potential

The following CSOs may be met with participation in this workshop:

### Kindergarten

SC.O.K.1.1 ask questions about themselves and their world.
SC.O.K.1.4 explore and describe objects and events using the five senses to develop observational skills and make predictions based on personal observation.
SC.O.K.1.6 use safe and proper techniques for handling, manipulating and caring for science materials (e.g., follow safety rules, maintain a clean work area...)
SC.S.K.2 apply knowledge, understanding and skills of science subject matter/concepts to daily life experiences.
SC.O.K.2.7 explore and describe changes in energy (e.g., hot/cold or light/dark).
SC.O.K.3.4 work in groups, listen to and be tolerant of different viewpoints.

### First Grade

SC.S.1.1 ...demonstrate the ability to think and act as scientists by engaging in active inquiries and investigations, while incorporating hands-on activities.
SC.O.1.1.1 ask questions about themselves and their world.
SC.O.1.1.5 use safe and proper techniques for handling, manipulating and caring for science materials (e.g., follow safety rules, maintain a clean work area...)
SC.S.1.2 ...apply knowledge, understanding and skills of science subject matter/concepts to daily life experiences.
SC.O.1.2.13 demonstrate that sounds are produced by vibrations.
SC.O.1.3.4 listen to and be tolerant of different viewpoints while working in collaborative groups.

## Second Grade

SC.O.2.1.1 interpret science as the human's search for an understanding of the world by asking questions about themselves and their world.
SC.O.2.1.7 use safe and proper techniques for handling, manipulating, and caring for science materials (e.g., follow safety rules, maintain a clean work area, or treat living organisms humanely).
SC.O.2.2.6 identify materials as a solid, a liquid or a gas and recognize that matter takes up space, and can change from one state to another.
SC.O.2.2.10 compare the effects of force on the motion of an object.
SC.O.2.3.5 listen to and be tolerant of different viewpoints while working in collaborative groups.

## Third Grade

SC.S.3.1 ...demonstrate the ability to think and act as scientists by engaging in active inquiries and investigations, while incorporating hands-on activities.
SC.O.3.1.4 demonstrate curiosity, initiative and creativity by planning and conducting simple investigations.
SC.O.3.1.8 use safe and proper techniques for handling, manipulating and caring for science materials (e.g., follow safety rules, maintain a clean work area, or treat living organisms humanely).
SC.S.3.2 ...apply knowledge, understanding and skills of science subject matter/concepts to daily life experiences.
SC.O.3.2.11 recognize that it takes work to move objects over a distance.
SC.O.3.2.13 recognize that the greater a force is exerted on an object, the greater the change of its motion.
SC.O.3.2.14 identify examples of potential and kinetic energy.

## Fourth Grade

SC.S.4.1 <ul style="list-style-type: none"><li>- demonstrate the abilities and understanding necessary to do scientific inquiry.</li><li>- demonstrate the ability to think and act as scientists by engaging in active inquiries and investigations, while incorporating hands-on activities.</li></ul>
SC.O.4.1.4 demonstrate curiosity, initiative and creativity by developing questions that lead to investigations;

designing simple experiments; and trusting observations of discoveries when trying new tasks and skills.

#### Fourth Grade, continued

SC.O.4.1.8 demonstrate safe and proper techniques for handling, manipulating and caring for science materials.
SC.S.4.2 apply knowledge, understanding and skills of science subject matter/concepts to daily life experiences.
SC.O.4.2.12 explain that materials including air take up space...
SC.O.4.2.13 differentiate changes in states of matter due to heat loss or gain.
SC.O.4.2.16 identify different forms of energy...
SC.O.4.2.22 predict and investigate the motion of an object if the applied force is changed.
SC.O.4.2.23 explore that sounds are produced by vibrating objects and columns of air and form conclusions about the relationship between frequency and pitch of sound.

#### Fifth Grade

SC.S.5.1 demonstrate skills of scientific inquiry.
SC.O.5.1.6 formulate conclusions through close observations, logical reasoning, objectivity, perseverance and integrity in data collection.
SC.O.5.1.9 demonstrate safe techniques for handling, manipulating and caring for science materials, equipment...
SC.O.5.1.10 utilize experimentation to demonstrate scientific processes and thinking skills (e.g., formulating questions, predicting, forming hypotheses...)
SC.S.5.2 apply knowledge, understanding and skills of science subject matter/concepts to daily life experiences.
SC.O.5.2.16 describe how the variables of gravity and friction affect the motion of objects.

#### Sixth Grade

SC.S.6.1 demonstrate skills of scientific inquiry.
SC.O.6.1.5 cooperate and collaborate to ask questions, design and conduct investigations to find answers and solve problems.
SC.O.6.1.6

formulate conclusions through close observations, logical reasoning, objectivity, perseverance and integrity in data collection.

### Sixth Grade, continued

SC.O.6.1.9  
demonstrate safe techniques for handling, manipulating and caring for science materials, equipment...

SC.O.6.1.10  
utilize experimentation to demonstrate scientific processes and thinking skills (e.g., formulating questions, predicting, forming hypotheses...)

SC.S.6.2  
apply knowledge, understanding and skills of science subject matter/concepts to daily life experiences.

### Seventh Grade

SC.S.7.1  
demonstrate skills of scientific inquiry.

SC.O.7.1.5  
cooperate and collaborate to ask questions, design and conduct investigations to find answers and solve problems.

SC.O.7.1.9  
demonstrate safe techniques for handling, manipulating and caring for science materials, equipment...

SC.O.7.1.10  
utilize experimentation to demonstrate scientific processes and thinking skills (e.g., formulating questions, predicting, forming hypotheses...)

SC.S.7.2  
apply knowledge, understanding and skills of the science subject matter/concepts to daily life experiences.

SC.O.7.2.23  
explain conservation of matter and energy and investigate the different forms of energy (e.g., mechanical, potential, kinetic, or gravitational).

### Eighth Grade

SC.O.8.1.4  
conduct and/or design investigations that incorporate the skills and attitudes and/or values of scientific inquiry...

SC.O.8.1.5  
implement safe procedures and practices when manipulating equipment, materials, organisms, and models.

SC.S.8.2  
apply knowledge, understanding and skills of science subject matter/concepts to daily life experiences.

SC.O.8.2.24  
describe Newton's Laws of Motion; identify examples...