

**A Perfect Match:**  
**The Environmental Literacy**  
**Curriculum Standards**  
**and the**  
**Next Generation Science**  
**Standards**



# Discussion Question:

How can EE advance the goals of NGSS?

# Framework for K–12 Science Education

Goal 1:  
Educating all students in  
science and engineering

# Vision from the Framework:

The NGSS will prescribe “what all students should know in preparation for their individual lives and for their *roles as citizens* in this technology-rich and scientifically complex world.”

# Vision for a Grade 12 Senior

Students should have gained sufficient knowledge...

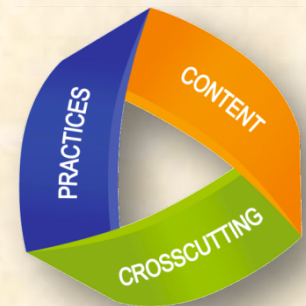
- to engage in public discussions on science related issues

- to be critical consumers of scientific information related to their everyday lives

- to continue to learn about science throughout their lives.

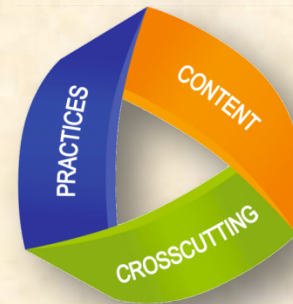
# NGSS: What's different?

- Standards are written as Performance Expectations; they integrate Science and Engineering Practices with Disciplinary Core Ideas and Crosscutting Concepts.
- Greater focus on understanding and application of content as opposed to memorization of scientific facts



# NGSS: What's different?

- Integrates science and engineering
- Builds on the idea of learning as a developmental process
- Coordinates with Common Core State Standards



# New Standards

NGSS

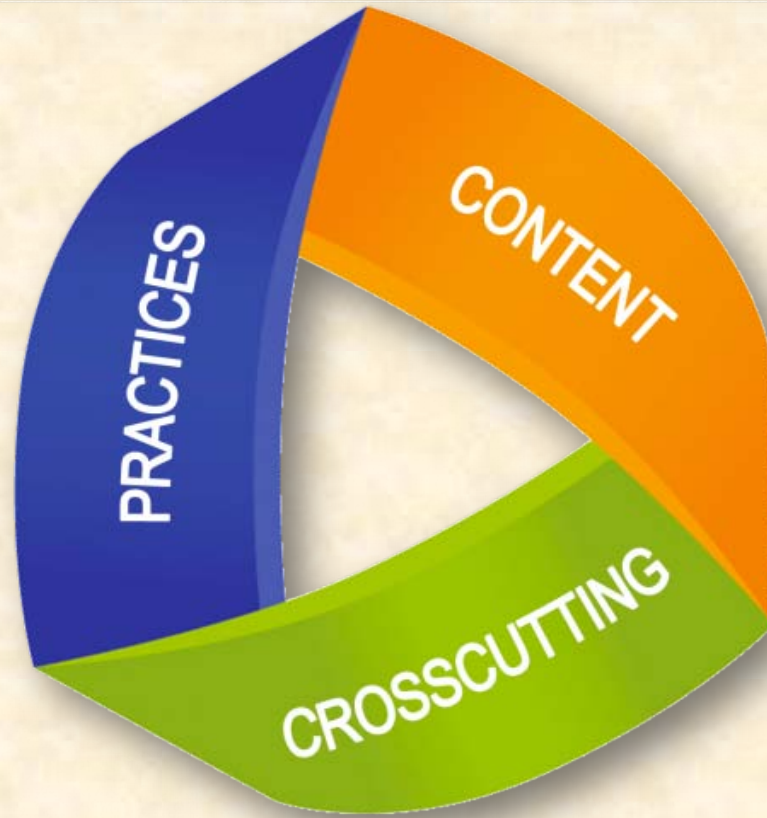
CCSS

STEM

ELIT

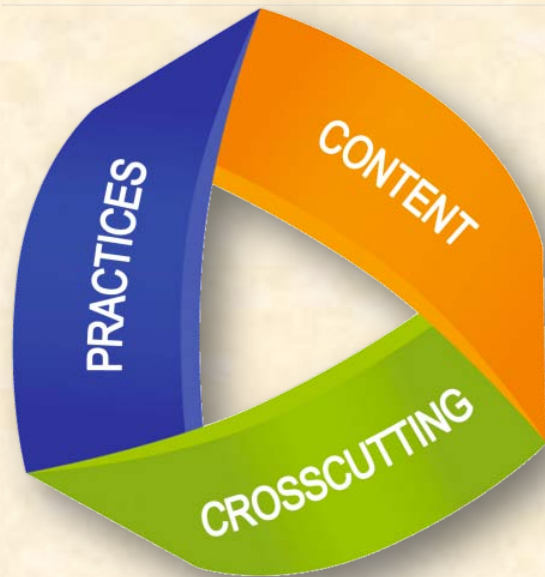
among the four

# New Generation Science Standards: Three Dimensions



# New Generation Science Standards:

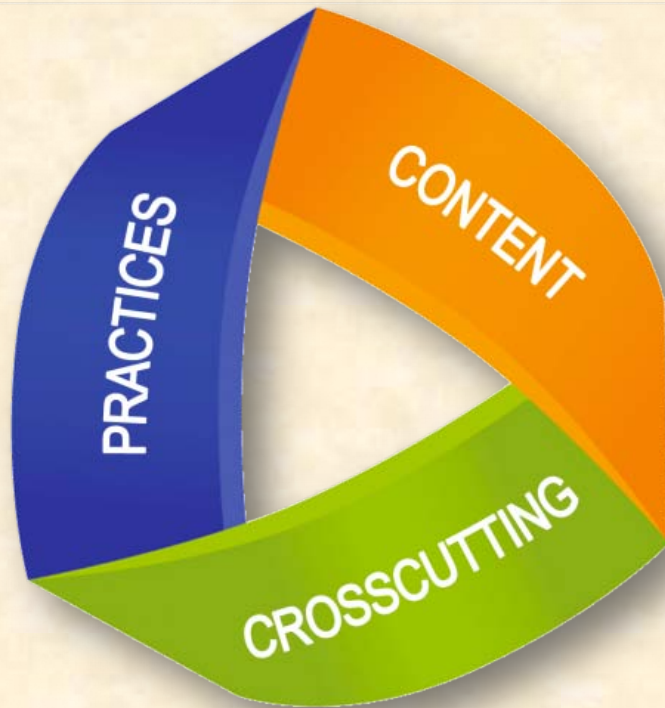
## The Practices...



describe behaviors that scientists engage in as they investigate and build models and theories about the natural world and the key set of engineering practices that engineers use as they design and build models and systems

# New Generation Science Standards

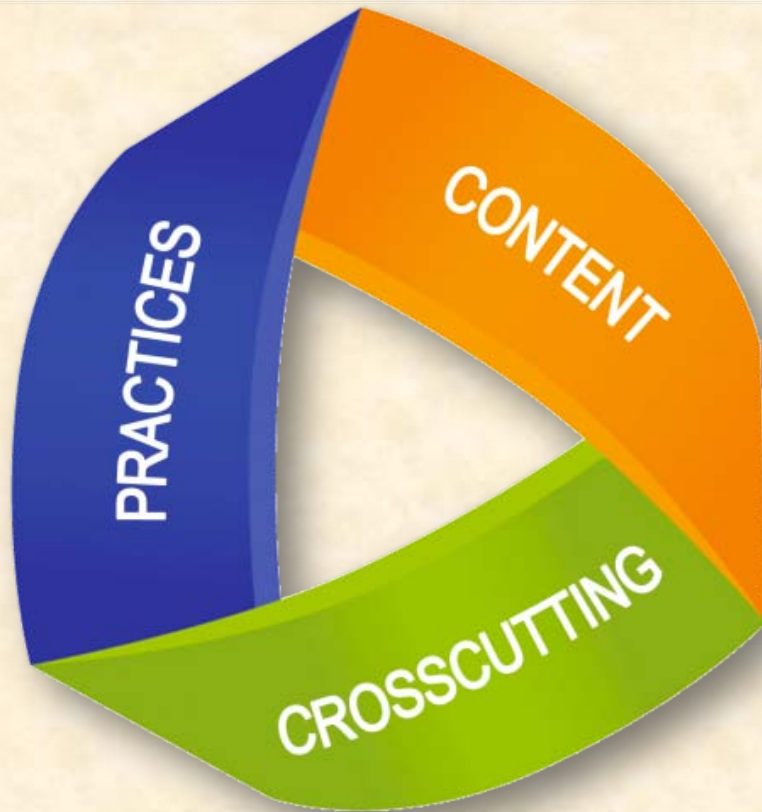
Crosscutting concepts...



have application across all domains of science. As such, they are a way of linking the different domains of science.

# New Generation Science Standards

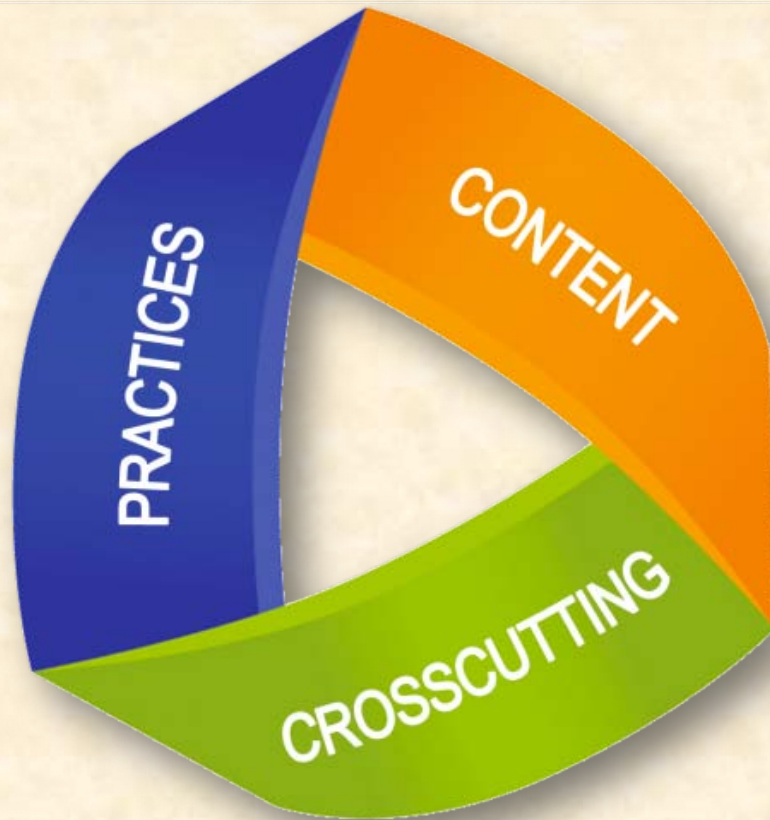
## Disciplinary Core Ideas



**Disciplinary core ideas – “Content” – “have the power to focus K–12 science curriculum, instruction and assessments on the most important aspects of science.”**

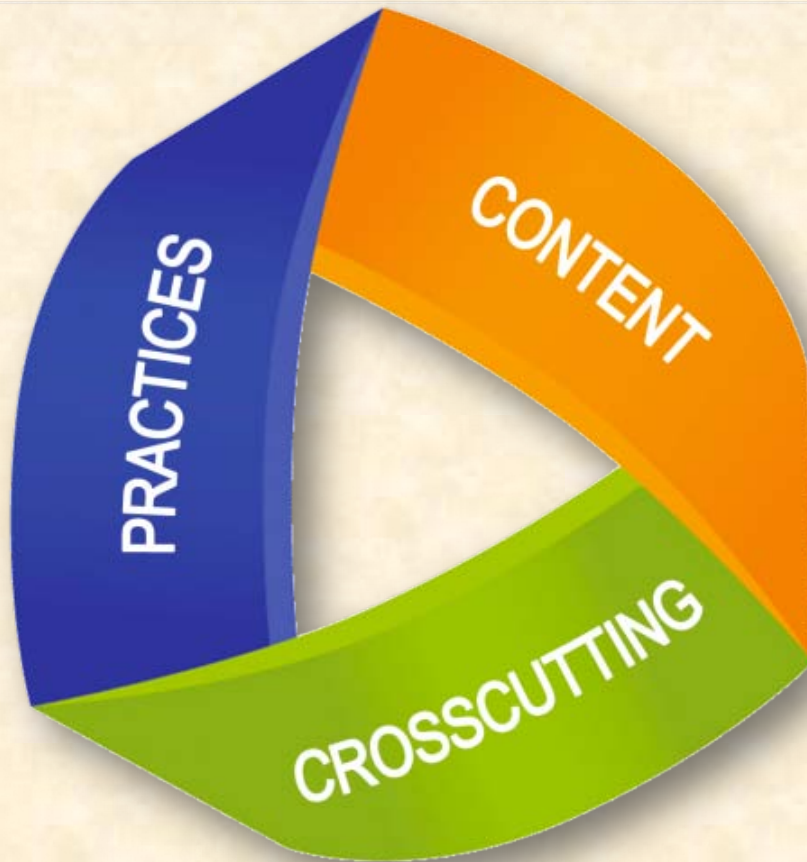
# New Generation Science Standards

## Disciplinary Core Ideas...



are grouped in four domains: the physical sciences; the life sciences; the earth and space sciences; and engineering, technology and applications of science.

# NGSS and ELIT



Where are the connections between NGSS and ELIT?

# Science and Engineering Practices and ELIT

# Science and Engineering Practices and ELIT

## Directions:

1. Please, move! 😊
2. Find colleagues from other LEA's and discuss evidence of these Practices being taught while students were engaged in ELIT.
3. Record a thumbnail summary of the conversation.

# Science and Engineering Practices and ELIT Standards

## Table Discussion:

- How does the teaching of ELIT address the NGSS Science and Engineering Practices?
- Can all of the ELIT standards be used to teach NGSS Practices?

# The NGSS Box

MS.PS-SPM Structure and Properties of Matter		
<p>Students who demonstrate understanding can:</p> <ol style="list-style-type: none"> <li>Construct and use models to explain that atoms combine to form new substances of varying complexity in terms of the number of atoms and repeating subunits. <i>(Clarification Statement: Examples of atoms combining can include Hydrogen (<math>H_2</math>) and Oxygen (<math>O_2</math>) combining to form hydrogen peroxide (<math>H_2O_2</math>) or water (<math>H_2O</math>). [Assessment Boundary: Valence electrons and bonding energy are not addressed.]</i></li> <li>Plan investigations to generate evidence supporting the claim that one pure substance can be distinguished from another based on characteristic properties. <i>(Clarification Statement: Properties of substances can include melting and boiling points, density, solubility, reactivity, flammability, and phase.)</i></li> <li>Use a simulation or mechanical model to determine the effect on the temperature and motion of atoms and molecules of different substances when thermal energy is added to or removed from the substance. <i>(Assessment Boundary: Quantification of the model or use of mathematical formulas are not intended.)</i></li> <li>Construct an argument that explains the effect of adding or removing thermal energy to a pure substance in different phases and during a phase change in terms of atomic and molecular motion. <i>(Assessment Boundary: The use of mathematical formulas is not intended.)</i></li> </ol>		
<p>The performance expectations above were developed using the following elements from the NRC document <i>A Framework for K-12 Science Education</i>.</p>		
Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p><b>Developing and Using Models</b> Modeling in K-5 builds on K-5 and progresses to developing, using and refining models to explain, explore, and predict more abstract phenomena and design systems.</p> <ul style="list-style-type: none"> <li>Use and/or construct models to predict, explain, and/or collect data to test ideas about phenomena in natural or designed systems, including those representing inputs and outputs. (LS1C)</li> </ul> <p><b>Planning and Carrying Out Investigations</b> Planning and carrying out investigations to answer questions or test solutions to problems in K-5 builds on K-5 experiences and progresses to include investigations that use multiple variables and provide evidence to support explanations or design solutions.</p> <ul style="list-style-type: none"> <li>Plan and carry out investigations individually and collaboratively, identifying independent and dependent variables, and controls. (3)</li> <li>Collect data and generate evidence to answer scientific questions or test design solutions under a range of conditions. (3)</li> </ul> <p><b>Engaging in Argument from Evidence</b> Engaging in argument from evidence in K-5 builds from K-5 experiences and progresses to constructing a convincing argument that supports a claim or design for either modifications or solutions about the natural and designed world.</p> <ul style="list-style-type: none"> <li>Use oral and written arguments supported by empirical evidence and reasoning to support or refute an explanation for a phenomenon or a solution to a problem. (3)</li> </ul>	<p><b>PS.1.A: Structure and Properties of Matter</b></p> <ul style="list-style-type: none"> <li>All substances are made from some 100 different types of atoms, which combine with one another in various ways. Atoms form molecules that range in size from two to thousands of atoms. (2)</li> <li>Pure substances are made from a single type of atom or molecule, each pure substance has characteristic physical and chemical properties (like any bulk quantity under given conditions) that can be used to identify it. (2)</li> <li>Gases and liquids are made of molecules or inert atoms that are jiggling about relative to each other. (2)</li> <li>In a liquid, the molecules are constantly in contact with others; in a gas, they are widely spaced except when they happen to collide. In a solid, atoms are closely packed and may vibrate in position but do not change relative positions. (2)(3)</li> <li>Solids have well-defined lines (crystallites) by they may be amorphous structures with repeating subunits (e.g., crystals). (2)</li> <li>The changes of state that occur with variations in temperature or pressure can be described and predicted using these models of matter. (LS1A)</li> </ul> <p><b>PS.1.B: Definitions of Energy</b></p> <ul style="list-style-type: none"> <li>The term “heat” is used in everyday language refers both to thermal motion (the motion of atoms or molecules within a substance) and radiation (particularly infrared and light). (LS1B)</li> <li>Temperature is not a measure of energy; the relationship between the temperature and the total energy of a system depends on the types, states, and amounts of matter present. (LS1B)</li> </ul>	<p><b>Patterns</b> Macroscopic patterns are related to the nature of microscopic and atomic-level structures. Patterns in rates of change and other numerical relationships can provide information about natural and human designed systems. Patterns can be used to identify cause and effect relationships. Graphs and charts can be used to identify patterns in data. (2)</p> <p><b>Cause and Effect</b> Relationships can be classified as causal or correlational, and correlation does not necessarily imply causation. Cause and effect relationships may be used to predict phenomena in natural or designed systems. Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability. (LS1B)</p> <p><b>Structure and Function</b> Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the shapes, compositions, and relationships among its parts. Therefore complex natural and designed structures/systems can be analyzed to determine how they function. Structures can be designed to serve particular functions by taking into account properties of different materials, and how materials can be shaped and used. (3)</p>
<p>Connections to other DCIs in the grade-level: PS.1.B-1, PS.1.B-2, PS.1.B-3, PS.1.B-4, PS.1.B-5, PS.1.B-6, PS.1.B-7, PS.1.B-8, PS.1.B-9, PS.1.B-10, PS.1.B-11, PS.1.B-12, PS.1.B-13, PS.1.B-14, PS.1.B-15, PS.1.B-16, PS.1.B-17, PS.1.B-18, PS.1.B-19, PS.1.B-20, PS.1.B-21, PS.1.B-22, PS.1.B-23, PS.1.B-24, PS.1.B-25, PS.1.B-26, PS.1.B-27, PS.1.B-28, PS.1.B-29, PS.1.B-30, PS.1.B-31, PS.1.B-32, PS.1.B-33, PS.1.B-34, PS.1.B-35, PS.1.B-36, PS.1.B-37, PS.1.B-38, PS.1.B-39, PS.1.B-40, PS.1.B-41, PS.1.B-42, PS.1.B-43, PS.1.B-44, PS.1.B-45, PS.1.B-46, PS.1.B-47, PS.1.B-48, PS.1.B-49, PS.1.B-50, PS.1.B-51, PS.1.B-52, PS.1.B-53, PS.1.B-54, PS.1.B-55, PS.1.B-56, PS.1.B-57, PS.1.B-58, PS.1.B-59, PS.1.B-60, PS.1.B-61, PS.1.B-62, PS.1.B-63, PS.1.B-64, PS.1.B-65, PS.1.B-66, PS.1.B-67, PS.1.B-68, PS.1.B-69, PS.1.B-70, PS.1.B-71, PS.1.B-72, PS.1.B-73, PS.1.B-74, PS.1.B-75, PS.1.B-76, PS.1.B-77, PS.1.B-78, PS.1.B-79, PS.1.B-80, PS.1.B-81, PS.1.B-82, PS.1.B-83, PS.1.B-84, PS.1.B-85, PS.1.B-86, PS.1.B-87, PS.1.B-88, PS.1.B-89, PS.1.B-90, PS.1.B-91, PS.1.B-92, PS.1.B-93, PS.1.B-94, PS.1.B-95, PS.1.B-96, PS.1.B-97, PS.1.B-98, PS.1.B-99, PS.1.B-100.</p>		
<p>Connections to other DCIs across grade levels: 3.1P, 5.5P, PS.1.B-1, PS.1.B-2, PS.1.B-3, PS.1.B-4, PS.1.B-5, PS.1.B-6, PS.1.B-7, PS.1.B-8, PS.1.B-9, PS.1.B-10, PS.1.B-11, PS.1.B-12, PS.1.B-13, PS.1.B-14, PS.1.B-15, PS.1.B-16, PS.1.B-17, PS.1.B-18, PS.1.B-19, PS.1.B-20, PS.1.B-21, PS.1.B-22, PS.1.B-23, PS.1.B-24, PS.1.B-25, PS.1.B-26, PS.1.B-27, PS.1.B-28, PS.1.B-29, PS.1.B-30, PS.1.B-31, PS.1.B-32, PS.1.B-33, PS.1.B-34, PS.1.B-35, PS.1.B-36, PS.1.B-37, PS.1.B-38, PS.1.B-39, PS.1.B-40, PS.1.B-41, PS.1.B-42, PS.1.B-43, PS.1.B-44, PS.1.B-45, PS.1.B-46, PS.1.B-47, PS.1.B-48, PS.1.B-49, PS.1.B-50, PS.1.B-51, PS.1.B-52, PS.1.B-53, PS.1.B-54, PS.1.B-55, PS.1.B-56, PS.1.B-57, PS.1.B-58, PS.1.B-59, PS.1.B-60, PS.1.B-61, PS.1.B-62, PS.1.B-63, PS.1.B-64, PS.1.B-65, PS.1.B-66, PS.1.B-67, PS.1.B-68, PS.1.B-69, PS.1.B-70, PS.1.B-71, PS.1.B-72, PS.1.B-73, PS.1.B-74, PS.1.B-75, PS.1.B-76, PS.1.B-77, PS.1.B-78, PS.1.B-79, PS.1.B-80, PS.1.B-81, PS.1.B-82, PS.1.B-83, PS.1.B-84, PS.1.B-85, PS.1.B-86, PS.1.B-87, PS.1.B-88, PS.1.B-89, PS.1.B-90, PS.1.B-91, PS.1.B-92, PS.1.B-93, PS.1.B-94, PS.1.B-95, PS.1.B-96, PS.1.B-97, PS.1.B-98, PS.1.B-99, PS.1.B-100.</p>		
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<p>Connections to other DCIs</p>		

# Inside the NGSS Box

## Standard

A collection of several performance expectations describing what students should be able to do to master this standard

MS-PS-SPM Structure and Properties of Matter		
<p>Students who demonstrate understanding can:</p> <ol style="list-style-type: none"> <li><b>Construct and use models to explain that atoms combine to form new substances of varying complexity in terms of the number of atoms and repeating subunits.</b> [Clarification Statement: Examples of atoms combining can include Hydrogen (<math>H_2</math>) and Oxygen (<math>O_2</math>) combining to form hydrogen peroxide (<math>H_2O_2</math>) or water (<math>H_2O</math>).] [Assessment Boundary: Valence electrons and bonding energy are not addressed.]</li> <li><b>Plan investigations to generate evidence supporting the claim that one pure substance can be distinguished from another based on characteristic properties.</b> [Clarification Statement: Properties of substances can include melting and boiling points, density, solubility, reactivity, flammability, and phase.]</li> <li><b>Use a simulation or mechanical model to determine the effect on the temperature and motion of atoms and molecules of different substances when thermal energy is added to or removed from the substance.</b> [Assessment Boundary: Quantification of the model or use of mathematical formulas are not intended.]</li> <li><b>Construct an argument that explains the effect of adding or removing thermal energy to a pure substance in different phases and during a phase change in terms of atomic and molecular motion.</b> [Assessment Boundary: The use of mathematical formulas is not intended.]</li> </ol> <p>The performance expectations above were developed using the following elements from the NRC document <i>A Framework for K-12 Science Education</i>.</p>		
<p><b>Science and Engineering Practices</b></p> <p><b>Developing and Using Models</b> Models in 6-8 build on 5-5 and progress to developing, using and revising models to explain, explore, and predict more abstract phenomena and design systems.</p> <ul style="list-style-type: none"> <li>Use and/or construct models to predict, explain, and/or collect data to test ideas about phenomena in natural or designed systems, including those representing inputs and outputs. (1)(C)</li> </ul> <p><b>Planning and Carrying Out Investigations</b> Planning and carrying out investigations to answer questions or test solutions to problems in 6-8 builds on 5-5 experiences and progress to include investigations that use multiple variables and provide evidence to support explanations or design solutions.</p> <ul style="list-style-type: none"> <li>Plan and carry out investigations individually and collaboratively, identifying independent and dependent variables, and controls. (3)</li> <li>Collect data and generate evidence to answer scientific questions or test design solutions under a range of conditions. (3)</li> </ul> <p><b>Engaging in Argument from Evidence</b> Engaging in argument from evidence in 6-8 builds from 5-5 experiences and progress to constructing a convincing argument that supports or refutes claims for either explanations or solutions about the natural and designed world.</p> <ul style="list-style-type: none"> <li>Use oral and written arguments supported by empirical evidence and reasoning to support or refute an explanation for a phenomenon or a solution to a problem. (4)</li> </ul>	<p><b>Disciplinary Core Ideas</b></p> <p><b>PS.1.A: Structure and Properties of Matter</b></p> <ul style="list-style-type: none"> <li>All substances are made from some 100 different types of atoms, which combine with one another in various ways. Atoms form molecules that range in size from two to thousands of atoms. (2)</li> <li>Pure substances are made from a single type of atom or molecule; each pure substance has characteristic physical and chemical properties (e.g., melting point) that can be used to identify it. (3)</li> <li>Compounds are made of molecules or ions that are moving about relative to each other. (3)</li> <li>In a liquid, the molecules are constantly in contact with others in a disordered way, they are widely spaced except when they happen to collide. In a solid, atoms are closely spaced and may vibrate in position but do not change relative positions. (3)(D)</li> <li>Solids may be formed from molecules, or they may be extended structures with repeating subunits (e.g., crystals). (3)</li> <li>The changes of state that occur with variations in temperature or pressure can be described and predicted using these models of matter. (3)(E)</li> </ul> <p><b>PS.3.A: Definitions of Energy</b></p> <ul style="list-style-type: none"> <li>The term “heat” as used in everyday language refers both to thermal motion (the motion of atoms or molecules within a substance) and radiation (particularly infrared and light). (3)(D)</li> <li>Temperature is not a measure of energy; the relationship between the temperature and the total energy of a system depends on the types, states, and amounts of matter present. (3)(E)</li> </ul>	<p><b>Crosscutting Concepts</b></p> <p><b>Patterns</b> Macroscopic patterns are related to the nature of microscopic and atomic-level structures. Patterns in rates of change and other numerical relationships can provide information about natural and human designed systems. Patterns can be used to identify cause and effect relationships. Graphs and charts can be used to identify patterns in data. (3)</p> <p><b>Cause and Effect</b> Relationships can be classified as causal or correlational, and correlation does not necessarily imply causation. Cause and effect relationships may be used to predict phenomena in natural or designed systems. Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability. (3)(E)</p> <p><b>Structure and Function</b> Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the shapes, composition, and relationships among its parts. Therefore complex natural and designed structures/systems can be analyzed to determine how they function. Structures can be designed to serve particular functions by taking into account properties of different materials, and how materials can be shaped and used. (3)</p>
<p>Connective to other DCIs in this grade-level: <b>HS-ESS-1-SP, HS-ESS-5-SS, HS-LS-1-HEUR</b>          Attribution of <i>NGSS</i> across grade-levels: <b>3-IP, 5-SPM, HS-PS-SPM, HS-PS-1P, HS-PS-2E</b>          Connective Core State Standards Connections: <i>Note: these connectives will be made more explicit and complete in future draft releases.</i></p>		
<p><b>ELA—</b></p> <p><b>W.5.2</b> Write informative/explanatory texts to examine a topic and convey ideas and information clearly.</p> <p><b>W.6.1</b> Write arguments to support claims with clear reasons and relevant evidence.</p> <p><b>W.7.1</b> Write arguments to support claims with clear reasons and relevant evidence.</p> <p><b>SL.5.4</b> Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.</p> <p><b>SL.6.4</b> Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.</p> <p><b>SL.7.4</b> Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.</p> <p><b>WHST.6-8.1</b> Write arguments focused on discipline-specific content.</p> <p><b>RST.6-8.3</b> Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p><b>Mathematics—</b></p> <p><b>MP.4</b> Model with mathematics.</p> <p><b>MP.8</b> Look for and express regularity in repeated reasoning.</p> <p><b>6.SP</b> Develop understanding of statistical variability</p> <p>Summarize and describe distributions</p>		

# Inside the NGSS Box

MS-PS-5PM Structure and Properties of Matter		
<p>Students who demonstrate understanding can:</p> <ol style="list-style-type: none"> <li>Construct and use models to explain that atoms combine to form new substances of varying complexity in terms of the number of atoms and repeating subunits. [Clarification Statement: Examples of atoms combining can include Hydrogen (H<sub>2</sub>) and Oxygen (O<sub>2</sub>) combining to form hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) or water (H<sub>2</sub>O).] [Assessment Boundary: Valence electrons and bonding energy are not addressed.]</li> <li>Plan investigations to generate evidence supporting the claim that one pure substance can be distinguished from another based on characteristic properties. [Clarification Statement: Properties of substances can include melting and boiling points, density, solubility, reactivity, flammability, and phase.]</li> <li>Use a simulation or mechanical model to determine the effect on the temperature and motion of atoms and molecules of different substances when thermal energy is added to or removed from the substance. [Assessment Boundary: Quantification of the model or use of mathematical formulas are not intended.]</li> <li>Construct an argument that explains the effect of adding or removing thermal energy to a pure substance in different phases and during a phase change in terms of atomic and molecular motion. [Assessment Boundary: The use of mathematical formulas is not intended.]</li> </ol> <p>The performance expectations above were developed using the following elements from the NRC document <i>A Framework for K-12 Science Education</i>.</p>		
<p><b>Science and Engineering Practices</b></p> <p><b>Developing and Using Models</b> Modeling in 4-6 builds on 3-5 and progresses to developing, using and revising models to explain, explore, and predict more abstract phenomena and design systems.</p> <ul style="list-style-type: none"> <li>Use and/or construct models to predict, explain, and/or collect data to test ideas about phenomena in natural or designed systems, including those representing inputs and outputs. [1][2]</li> </ul> <p><b>Planning and Carrying Out Investigations</b> Planning and carrying out investigations to answer questions or test solutions to problems in 4-6 builds on 3-5 experiences and progresses to include investigations that use multiple variables and generate evidence to support explanations or design solutions.</p> <ul style="list-style-type: none"> <li>Plan and carry out investigations individually and collaboratively, identifying independent and dependent variables, and controls. [3]</li> <li>Collect data and generate evidence to answer scientific questions or test design solutions under a range of conditions. [3]</li> </ul> <p><b>Engaging in Argument from Evidence</b> Engaging in argument from evidence in 4-6 builds on 3-5 experiences and progresses to constructing a convincing argument that supports or refutes claims for their explanations or solutions about the natural and designed world.</p> <ul style="list-style-type: none"> <li>Use oral and written arguments supported by empirical evidence and reasoning to support or refute an explanation for a phenomenon or a solution to a problem. [3]</li> </ul>	<p><b>Disciplinary Core Ideas</b></p> <p><b>PS1.A: Structure and Properties of Matter</b></p> <ul style="list-style-type: none"> <li>All substances are made from some 100 different types of atoms, which combine with one another in various ways to form both molecules that range in size from two to thousands of atoms. [1]</li> <li>Pure substances are made from a single type of atom or molecule; each pure substance has characteristic physical and chemical properties [3], and each property value given consistently that can be used to identify it. [3]</li> <li>Commonly held are made of molecules or small atoms that are joining about relative to each other. [2]</li> <li>In a liquid, the molecules are constantly in contact with others in a sea. They are widely intermolecular when they happen to collide. In a solid, atoms are closely spaced and may vibrate in position but do not change relative positions. [3][4]</li> <li>Atoms may be bonded together, molecules, or they may be extended structures with repeating subunits (e.g., crystals). [4]</li> <li>The changes of state that occur with variations in temperature or pressure can be described and predicted using these models of matter. [1][4]</li> </ul> <p><b>PS1.B: Definitions of Energy</b></p> <ul style="list-style-type: none"> <li>The term "heat" as used in everyday language refers both to thermal motion (the motion of atoms or molecules within a substance) and radiation (particles infrared and light). [1][2]</li> <li>Temperature is not a measure of energy; the relationship between the temperature and the total energy of a system depends on the types, states, and amounts of matter present. [1][2]</li> </ul>	<p><b>Crosscutting Concepts</b></p> <p><b>Patterns</b> Macroscopic patterns are related to the nature of microscopic and atomic-level structures. Patterns in rates of change and other numerical relationships can provide information about natural and human designed systems. Patterns can be used to identify cause and effect relationships. Graphs and charts can be used to identify patterns in data. [4]</p> <p><b>Cause and Effect</b> Relationships can be classified as causal or correlational, and correlation does not necessarily imply causation. Cause and effect relationships may be used to predict phenomena in natural or designed systems. Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability. [1][2]</p> <p><b>Structure and Function</b> Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the shapes, composition, and relationships among its parts, therefore complex natural and designed structures/systems can be analyzed to determine how they function. Structures can be designed to serve particular functions by taking into account properties of different materials, and how materials can be shaped and used. [3]</p>
<p>Connections to other DCIs in this grade-level: PS1.ESS-ESS, PS1.ESS-SS, PS1.S-HEOE</p> <p>Anticipation of 2020 science grade levels: 3.EP, 5.SPPH, HS.PS.SPH, HS.PS.RP, HS.PS.E</p> <p>Common Core State Standards Connections (Note: Some connections will be made more explicit and complete in future draft releases)</p> <p>ELA—</p> <p>W.5.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.</p> <p>W.8.1 Write arguments to support claims with clear reasons and relevant evidence.</p> <p>W.7.1 Write arguments to support claims with clear reasons and relevant evidence.</p> <p>SL.5.4 Report on a topic or text or present an opinion, summarizing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.</p> <p>SL.6.4 Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.</p> <p>SL.7.4 Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.</p> <p>WHST.6-8.1 Write arguments focused on discipline-specific content.</p> <p>RST.6-8.3 Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>Mathematics—</p> <p>MP.4 Model with mathematics.</p> <p>MP.8 Look for and express regularity in repeated reasoning.</p> <p>6.SP Develop understanding of statistical variability</p> <p>Summarize and describe distributions</p>		

## Foundation Box

The practices, core disciplinary ideas, and crosscutting concepts from the *Framework for K-12 Science Education* that were used to form the performance expectations



# Exploring the NGSS Box

In level-alike groups:

Look for and review:

- Standard – Performance Expectations
- Science and Engineering Practices
- Disciplinary Core Ideas
- Crosscutting Concepts
- Core Curriculum Connections

# Exploring NGSS and ELIT

Based on this one NGSS:

What example lesson could you use with teachers that would demonstrate the teaching of a NGSS based lesson that also integrates an ELIT standard?

What example lesson could you use with teachers that would demonstrate the teaching of an ELIT standard based lesson that also integrates a NGSS standard?

# Exploring the Perfect Match: NGSS and ELIT Standards

3 Things to Remember

2 Things to Do

1 Important Insight