

CRAWFORDSVILLE COMMUNITY SCHOOL CORPORATION

GRADE LEVEL: 8

SUBJECT: SCIENCE

DATE: 2018 - 2019

GRADING PERIOD: QUARTER 1

MASTER COPY 5/15/19

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY/ KEY TERMS	PRIORITY
NATURE OF SCIENCE					
<ul style="list-style-type: none"> • Criteria • Constraints • Solutions • Scientific principles • Potential impacts 	<p>6-8.E.1: Identify the criteria and constraints of a design to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.</p>	<ul style="list-style-type: none"> • Identify the criteria of a design to ensure a successful solution. • Make predictions and develop testable questions based on research and prior knowledge. • Identify ways scientists solve problems. • Identify roadblocks/ constraints that may be encountered during the process. • 	<ul style="list-style-type: none"> • CSA.Q1.A-Week 3 	<ul style="list-style-type: none"> • Hypothesis • Observations • Inferences • Critical thinking • Independent variable • Dependent variable • Experimental group • Control group • Qualitative data • Quantitative data 	<p>CRITICAL</p>
<ul style="list-style-type: none"> • Investigations • Similarities and differences • Designed solutions • Best characteristics • Criteria for success 	<p>6-8.E.3: Analyze data from investigations to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.</p>	<ul style="list-style-type: none"> • Analyze and identify similarities and difference in several design solutions. • Analyze data from investigations and apply those to potential experiment solutions. • Identify the best characteristics of scientific investigations that can be combined into a new solution. 	<ul style="list-style-type: none"> • CSA.Q1.A-Week 3 	<ul style="list-style-type: none"> • Hypothesis • Observations • Inferences • Critical thinking • Independent variable • Dependent variable • Experimental group • Control group • Qualitative data • Quantitative data 	<p>CRITICAL</p>

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY/ KEY TERMS	PRIORITY
<ul style="list-style-type: none"> • Prototype • Generated data • Investigations • Proposed object, tool, process • Optimal design 	<p>6-8.E.4: Develop a prototype to generate data for repeated investigations and modify a proposed object, tool, or process such that an optimal design can be achieved.</p>	<ul style="list-style-type: none"> • Develop a prototype for a scientific experiment. • Collect data from scientific experiments. • Collect and graph qualitative and quantitative data. • Modify a designed experiment and adapt objects, tools, and processes. 	<ul style="list-style-type: none"> • CSA.Q1.A-Week 3 	<ul style="list-style-type: none"> • Hypothesis • Observations • Inferences • Critical thinking • Independent variable • Dependent variable • Experimental group • Control group • Qualitative data • Quantitative data 	CRITICAL
PHYSICAL SCIENCE					
<ul style="list-style-type: none"> • Subatomic particles • Elements and matter 	<p>8.PS.1: Create models to represent the arrangement and charges of subatomic particles in an atom (protons, neutrons and electrons). Understand the significance that the currently 118 known chemical elements combine to form all the matter in the universe.</p>	<ul style="list-style-type: none"> • Build models of different atoms to show the arrangement of subatomic particles. • Draw diagrams of different atoms to show charges of subatomic particles • Categorize elements based on their number of valence electrons and ability to bond with other elements. 		<ul style="list-style-type: none"> • Atom • Nucleus • Proton • Neutron • Electron • Elements • Subatomic particle • Atomic theory 	CRITICAL
<ul style="list-style-type: none"> • Molecular structure and bonding 	<p>8.PS.2: Illustrate with diagrams (drawings) how atoms are arranged in simple molecules. Distinguish between atoms, elements, molecules, and compounds.</p>	<ul style="list-style-type: none"> • Compare and contrast atoms, elements, molecules, and compounds. • Draw diagrams of atoms, compounds, and molecules. • Build models of molecules and compounds. 	<ul style="list-style-type: none"> • CSA.Q2.A-Week 14 	<ul style="list-style-type: none"> • Molecules • Compounds 	IMPORTANT

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY/ KEY TERMS	PRIORITY
<ul style="list-style-type: none"> • Elements and the periodic table • Atomic structure 	<p>8.PS.3: Use basic information provided for an element (atomic mass, atomic number, symbol, and name) to determine its place on the Periodic Table. Use this information to find the number of protons, neutrons, and electrons in an atom.</p>	<ul style="list-style-type: none"> • Classify elements based on the number of protons, neutrons and electrons in their atoms. 	<ul style="list-style-type: none"> • CFA.Q1.B – Week 9 	<ul style="list-style-type: none"> • Atomic mass • Atomic number • Atomic symbol • Periodic table • Element name 	IMPORTANT
<ul style="list-style-type: none"> • Patterns in the periodic table 	<p>8.PS.4: Identify organizational patterns (radius, atomic number, atomic mass, properties and radioactivity) on the Periodic Table.</p>	<ul style="list-style-type: none"> • Identify the following organizational patterns on the Periodic Table: <ul style="list-style-type: none"> -Radius -Atomic numbers -Atomic mass -Properties -Radioactivity 		<ul style="list-style-type: none"> • Groups • Periods • Metal • Nonmetals • Metalloids • Radioactivity • Valence electrons • Electron shell/energy levels 	ADDITIONAL
<ul style="list-style-type: none"> • Density • Boiling points • Melting points 	<p>8.PS.5: Investigate the property of density and provide evidence that properties, such as density, do not change for a pure substance.</p>	<ul style="list-style-type: none"> • Measure and compare the density of different amounts of the same material. • Measure and compare the boiling points of different amounts of the same material. • Measure and compare the melting points of different amounts of the same material • Explain how density affects a pure substance. 	<ul style="list-style-type: none"> • CSA-Q1.B – Week 7 	<ul style="list-style-type: none"> • Density • Boiling point • Melting point • Physical properties 	IMPORTANT

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY/ KEY TERMS	PRIORITY
<ul style="list-style-type: none"> • Physical and chemical properties of materials • Chemical reactions 	<p>8.PS.6: Compare and contrast physical change vs. chemical change. Analyze the properties of substances before and after substances interact to determine if a chemical reaction has occurred.</p>	<ul style="list-style-type: none"> • Describe the reactants and products in a chemical reaction. • Compare and contrast the masses of the reactants and the products in a chemical reaction. • Compare and contrast the states of matter of the elements on the periodic table. • Describe the difference between a physical reaction vs. chemical reaction 	<ul style="list-style-type: none"> • CSA-Q1.B – Week 7 	<ul style="list-style-type: none"> • Reactant • Product • Physical change • Chemical change • Physical properties • Chemical properties • Chemical reaction • Chemical formula • Chemical equation • Ionic bonds • Covalent bonds • Metallic bonds 	<p>IMPORTANT</p>

STANDARD INDICATORS	SCIENCE AND ENGINEERING	LITERACY IN SCIENCE
<p>8.PS.1: Create models to represent the arrangement and charges of subatomic particles in an atom (protons, neutrons and electrons). Understand the significance that the currently 118 known chemical elements combine to form all the matter in the universe.</p> <p>8.PS.2: Illustrate with diagrams (drawings) how atoms are arranged in simple molecules. Distinguish between atoms, elements, molecules, and compounds.</p>	<p>SEPS.1: Posing questions and defining problems</p> <p>SEPS.2: Developing and using models and tools</p> <p>SEPS.4: Analyze and interpret data</p>	<p>6-8.LST.1.1: Read and comprehend science and technical texts</p> <p>6-8.LST.2.1: Cite specific textual evidence to support analysis of science and technical texts.</p> <p>6-8.LST.2.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>6-8.LST.4.1: Integrate quantitative or technical information with a version expressed visually (e.g., <i>in a flowchart, diagram, model, graph, or table</i>).</p> <p>6-8.LST.4.3: Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.</p> <p>6-8.LST.5.1: Write arguments focused on discipline-specific content.</p> <p>6-8.LST.5.2: Write informative texts that include precise descriptions and conclusions drawn from data and research.</p> <p>6-8.LST.6.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults.</p> <p>6-8.LST.6.2: Use technology to produce and publish writing and present the relationships between information and ideas clearly and efficiently.</p> <p>6-8.LST.7.1: Conduct short research assignments and tasks to answer a question or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</p> <p>6-8.LST.7.2: Gather relevant information from multiple sources, using search terms effectively; annotate sources; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation (e.g., <i>APA or CSE</i>).</p> <p>6-8.LST.7.3: Draw evidence from informational texts to support analysis, reflection, and research.</p>

STANDARD INDICATORS	SCIENCE AND ENGINEERING	LITERACY IN SCIENCE
<p>8.PS.3: Use basic information provided for an element (atomic mass, atomic number, symbol, and name) to determine its place on the Periodic Table. Use this information to find the number of protons, neutrons, and electrons in an atom.</p> <p>8.PS.4: Identify organizational patterns (radius, atomic number, atomic mass, properties and radioactivity) on the Periodic Table.</p> <p>8.PS.5: Investigate the property of density and provide evidence that properties, such as density, do not change for a pure substance.</p>	<p>SEPS.1: Posing questions and defining problems</p> <p>SEPS.2: Developing and using models and tools</p> <p>SEPS.3: Construct and perform investigation</p> <p>SEPS.4: Analyze and interpret data</p>	<p>6-8.LST.1.1: Read and comprehend science and technical texts</p> <p>6-8.LST.2.1: Cite specific textual evidence to support analysis of science and technical texts.</p> <p>6-8.LST.2.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>6-8.LST.4.1: Integrate quantitative or technical information with a version expressed visually (e.g., <i>in a flowchart, diagram, model, graph, or table</i>).</p> <p>6-8.LST.4.3: Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.</p> <p>6-8.LST.5.1: Write arguments focused on discipline-specific content.</p> <p>6-8.LST.5.2: Write informative texts that include precise descriptions and conclusions drawn from data and research.</p> <p>6-8.LST.6.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults.</p> <p>6-8.LST.6.2: Use technology to produce and publish writing and present the relationships between information and ideas clearly and efficiently.</p> <p>6-8.LST.7.1: Conduct short research assignments and tasks to answer a question or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</p> <p>6-8.LST.7.2: Gather relevant information from multiple sources, using search terms effectively; annotate sources; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation (e.g., <i>APA or CSE</i>).</p> <p>6-8.LST.7.3: Draw evidence from informational texts to support analysis, reflection, and research.</p>

STANDARD INDICATORS	SCIENCE AND ENGINEERING	LITERACY IN SCIENCE
<p>8.PS.6: Compare and contrast physical change vs. chemical change. Analyze the properties of substances before and after substances interact to determine if a chemical reaction has occurred.</p> <p>8.PS.7: Balance chemical equations to show how the total number of atoms for each element does not change in chemical reactions and as a result, mass is always conserved in a closed system. (Law of Conservation of Mass.)</p>	<p>SEPS.1: Posing questions and defining problems</p> <p>SEPS.2: Developing and using models and tools</p> <p>SEPS.3: Construct and perform investigations</p> <p>SEPS.4: Analyze and interpret data</p> <p>SEPS.5: Use mathematics and computational thinking</p> <p>SEPS.6: Construct explanations and design solutions</p> <p>SEPS.7: Engage in argument from evidence</p> <p>SEPS.8: Obtain, evaluate, and communicate information</p>	<p>6-8.LST.1.1: Read and comprehend science and technical texts</p> <p>6-8.LST.2.1: Cite specific textual evidence to support analysis of science and technical texts.</p> <p>6-8.LST.2.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>6-8.LST.4.1: Integrate quantitative or technical information with a version expressed visually (e.g., <i>in a flowchart, diagram, model, graph, or table</i>).</p> <p>6-8.LST.4.3: Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.</p> <p>6-8.LST.5.1: Write arguments focused on discipline-specific content.</p> <p>6-8.LST.5.2: Write informative texts that include precise descriptions and conclusions drawn from data and research.</p> <p>6-8.LST.6.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults.</p> <p>6-8.LST.6.2: Use technology to produce and publish writing and present the relationships between information and ideas clearly and efficiently.</p> <p>6-8.LST.7.1: Conduct short research assignments and tasks to answer a question or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</p> <p>6-8.LST.7.2: Gather relevant information from multiple sources, using search terms effectively; annotate sources; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation (e.g., <i>APA or CSE</i>).</p> <p>6-8.LST.7.3: Draw evidence from informational texts to support analysis, reflection, and research.</p>

CRAWFORDSVILLE COMMUNITY SCHOOL CORPORATION

GRADE LEVEL: 8

SUBJECT: SCIENCE

DATE: 2018 - 2019

GRADING PERIOD: QUARTER 2

MASTER COPY 5/15/19

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY/ KEY TERMS	PRIORITY
PHYSICAL SCIENCE					
<ul style="list-style-type: none"> Sub-atomic particles Elements and matter 	<p>8.PS.1: Create models to represent the arrangement and charges of subatomic particles in an atom (protons, neutrons and electrons). Understand the significance that the currently 118 known chemical elements combine to form all the matter in the universe.</p>	<ul style="list-style-type: none"> List subatomic particles Build models of different atoms to show the arrangement of subatomic particles Draw diagrams of different atoms to show charges of subatomic particles Categorize elements based on their number of valence electrons and ability to bond with other elements. 	<ul style="list-style-type: none"> CSA.Q2.A-Week 14 	<ul style="list-style-type: none"> Atom Nucleus Proton Neutron Electron Elements 	CRITICAL
<ul style="list-style-type: none"> Molecular structure and bonding 	<p>8.PS.2: Illustrate with diagrams (drawings) how atoms are arranged in simple molecules. Distinguish between atoms, elements, molecules, and compounds.</p>	<ul style="list-style-type: none"> Compare and contrast atoms, elements, molecules, and compounds. Draw diagrams of atoms, compounds, and molecules. Build models of molecules and compounds. 	<ul style="list-style-type: none"> CSA.Q2.A-Week 14 	<ul style="list-style-type: none"> Molecules Compounds 	IMPORTANT

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY/ KEY TERMS	PRIORITY
<ul style="list-style-type: none"> • Elements and the periodic table • Atomic structure 	<p>8.PS.3: Use basic information provided for an element (atomic mass, atomic number, symbol, and name) to determine its place on the Periodic Table. Use this information to find the number of protons, neutrons, and electrons in an atom.</p>	<ul style="list-style-type: none"> • Classify elements based on the number of protons, neutrons and electrons in their atoms. 	<ul style="list-style-type: none"> • CSA.Q2.A-Week 14 	<ul style="list-style-type: none"> • Atomic mass • Atomic number • Atomic symbol • Periodic table 	IMPORTANT
<ul style="list-style-type: none"> • Chemical equations • Law of Conservation of Mass 	<p>8.PS.7: Balance chemical equations to show how the total number of atoms for each element does not change in chemical reactions and as a result, mass is always conserved in a closed system. (Law of Conservation of Mass.)</p>	<ul style="list-style-type: none"> • Balance chemical equations. • Conduct investigations and explain the results in terms of the Law of Conservation of Mass. 	<ul style="list-style-type: none"> • CSA.Q2.A-Week 14 	<ul style="list-style-type: none"> • Law of Conservation of Mass • Coefficient • Subscript • Reactants • Products • Chemical equation 	CRITICAL
EARTH SCIENCE					
<ul style="list-style-type: none"> • Global temperatures over time • Climate change 	<p>8.ESS.1: Research global temperatures over the past century. Compare and contrast data in relation to the theory of climate change.</p>	<ul style="list-style-type: none"> • Use a computer to research global temperatures over the past 100 years • Use a computer to research current ideas about climate change • Compare and contrast this data to current ideas about climate change 		<ul style="list-style-type: none"> • Climate change (global warming) • Greenhouse effect 	IMPORTANT

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY/ KEY TERMS	PRIORITY
<ul style="list-style-type: none"> • Water cycle • Energy from the sun • Force of Gravity 	<p>8.ESS.2: Create a diagram or carry out a simulation to describe how water is cycled through the earth's crust, atmosphere and oceans. Explain how the water cycle is driven by energy from the sun and the force of gravity.</p>	<ul style="list-style-type: none"> • Draw and label a diagram using the appropriate labels showing the water cycle • Explain how the sun starts the water cycle • Explain how gravity impacts the water cycle 		<ul style="list-style-type: none"> • Water cycle • Transpiration • Evaporation • Precipitation • Condensation • Sublimation • Gravity 	<p>IMPORTANT</p>

STANDARD INDICATORS	SCIENCE AND ENGINEERING	LITERACY IN SCIENCE
<p>8.PS.1: Create models to represent the arrangement and charges of subatomic particles in an atom (protons, neutrons and electrons). Understand the significance that the currently 118 known chemical elements combine to form all the matter in the universe.</p> <p>8.PS.2: Illustrate with diagrams (drawings) how atoms are arranged in simple molecules. Distinguish between atoms, elements, molecules, and compounds.</p>	<p>SEPS.1: Posing questions and defining problems</p> <p>SEPS.2: Developing and using models and tools</p> <p>SEPS.4: Analyze and interpret data</p>	<p>6-8.LST.1.1: Read and comprehend science and technical texts</p> <p>6-8.LST.2.1: Cite specific textual evidence to support analysis of science and technical texts.</p> <p>6-8.LST.2.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>6-8.LST.4.1: Integrate quantitative or technical information with a version expressed visually (e.g., <i>in a flowchart, diagram, model, graph, or table</i>).</p> <p>6-8.LST.4.3: Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.</p> <p>6-8.LST.5.1: Write arguments focused on discipline-specific content.</p> <p>6-8.LST.5.2: Write informative texts that include precise descriptions and conclusions drawn from data and research.</p> <p>6-8.LST.6.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults.</p> <p>6-8.LST.6.2: Use technology to produce and publish writing and present the relationships between information and ideas clearly and efficiently.</p> <p>6-8.LST.7.1: Conduct short research assignments and tasks to answer a question or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</p> <p>6-8.LST.7.2: Gather relevant information from multiple sources, using search terms effectively; annotate sources; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation (e.g., <i>APA or CSE</i>).</p> <p>6-8.LST.7.3: Draw evidence from informational texts to support analysis, reflection, and research.</p>

STANDARD INDICATORS	SCIENCE AND ENGINEERING	LITERACY IN SCIENCE
<p>8.PS.3: Use basic information provided for an element (atomic mass, atomic number, symbol, and name) to determine its place on the Periodic Table. Use this information to find the number of protons, neutrons, and electrons in an atom.</p> <p>8.PS.4: Identify organizational patterns (radius, atomic number, atomic mass, properties and radioactivity) on the Periodic Table.</p> <p>8.PS.5: Investigate the property of density and provide evidence that properties, such as density, do not change for a pure substance.</p>	<p>SEPS.1: Posing questions and defining problems</p> <p>SEPS.2: Developing and using models and tools</p> <p>SEPS.3: Construct and perform investigation</p> <p>SEPS.4: Analyze and interpret data</p>	<p>6-8.LST.1.1: Read and comprehend science and technical texts</p> <p>6-8.LST.2.1: Cite specific textual evidence to support analysis of science and technical texts.</p> <p>6-8.LST.2.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>6-8.LST.4.1: Integrate quantitative or technical information with a version expressed visually (e.g., <i>in a flowchart, diagram, model, graph, or table</i>).</p> <p>6-8.LST.4.3: Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.</p> <p>6-8.LST.5.1: Write arguments focused on discipline-specific content.</p> <p>6-8.LST.5.2: Write informative texts that include precise descriptions and conclusions drawn from data and research.</p> <p>6-8.LST.6.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults.</p> <p>6-8.LST.6.2: Use technology to produce and publish writing and present the relationships between information and ideas clearly and efficiently.</p> <p>6-8.LST.7.1: Conduct short research assignments and tasks to answer a question or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</p> <p>6-8.LST.7.2: Gather relevant information from multiple sources, using search terms effectively; annotate sources; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation (e.g., <i>APA or CSE</i>).</p> <p>6-8.LST.7.3: Draw evidence from informational texts to support analysis, reflection, and research.</p>

STANDARD INDICATORS	SCIENCE AND ENGINEERING	LITERACY IN SCIENCE
<p>8.PS.6: Compare and contrast physical change vs. chemical change. Analyze the properties of substances before and after substances interact to determine if a chemical reaction has occurred.</p> <p>8.PS.7: Balance chemical equations to show how the total number of atoms for each element does not change in chemical reactions and as a result, mass is always conserved in a closed system. (Law of Conservation of Mass.)</p>	<p>SEPS.1: Posing questions and defining problems</p> <p>SEPS.2: Developing and using models and tools</p> <p>SEPS.3: Construct and perform investigations</p> <p>SEPS.4: Analyze and interpret data</p> <p>SEPS.5: Use mathematics and computational thinking</p> <p>SEPS.6: Construct explanations and design solutions</p> <p>SEPS.7: Engage in argument from evidence</p> <p>SEPS.8: Obtain, evaluate, and communicate information</p>	<p>6-8.LST.1.1: Read and comprehend science and technical texts</p> <p>6-8.LST.2.1: Cite specific textual evidence to support analysis of science and technical texts.</p> <p>6-8.LST.2.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>6-8.LST.4.1: Integrate quantitative or technical information with a version expressed visually (e.g., <i>in a flowchart, diagram, model, graph, or table</i>).</p> <p>6-8.LST.4.3: Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.</p> <p>6-8.LST.5.1: Write arguments focused on discipline-specific content.</p> <p>6-8.LST.5.2: Write informative texts that include precise descriptions and conclusions drawn from data and research.</p> <p>6-8.LST.6.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults.</p> <p>6-8.LST.6.2: Use technology to produce and publish writing and present the relationships between information and ideas clearly and efficiently.</p> <p>6-8.LST.7.1: Conduct short research assignments and tasks to answer a question or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</p> <p>6-8.LST.7.2: Gather relevant information from multiple sources, using search terms effectively; annotate sources; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation (e.g., <i>APA or CSE</i>).</p> <p>6-8.LST.7.3: Draw evidence from informational texts to support analysis, reflection, and research.</p>

Engineering (E)

6-8.E.1 Identify the criteria and constraints of a design to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

6-8.E.2 Evaluate competing design solutions using a systematic process to identify how well they meet the criteria and constraints of the problem.

6-8.E.3 Analyze data from investigations to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

6-8.E.4 Develop a prototype to generate data for repeated investigations and modify a proposed object, tool, or process such that an optimal design can be achieved.

CRAWFORDSVILLE COMMUNITY SCHOOL CORPORATION

GRADE LEVEL: 8

SUBJECT: SCIENCE

DATE: 2018 - 2019

GRADING PERIOD: QUARTER 3

MASTER COPY 5/15/19

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY/ KEY TERMS	PRIORITY
EARTH SCIENCE					
<ul style="list-style-type: none"> • Natural resources • Human impact • Environment 	<p>8.ESS.3: Research how human consumption of finite natural resources (i.e. coal, oil, natural gas, and clean water) and human activities have had an impact on the environment (i.e. causes of air, water, soil, light, and noise pollution).</p>	<ul style="list-style-type: none"> •Research human impact on natural resources •Discuss the causes of different kinds of pollution 		<ul style="list-style-type: none"> • Urban sprawl • Suburbanization • Land degradation • Native species • Invasive species • Desertification • Deforestation • Air pollution • Water pollution • Eutrophication • Acid rain • Sustainability • Conservation • Recycle • Natural resource • Renewable resource • Nonrenewable 	IMPORTANT
LIFE SCIENCE					
<ul style="list-style-type: none"> • Genetic transmission • Asexual reproduction • Sexual reproduction 	<p>8.LS.1: Compare and contrast the transmission of genetic information in sexual and asexual reproduction. Research organisms that undergo these two types of reproduction.</p>	<ul style="list-style-type: none"> •Compare and contrast sexual and asexual reproduction. •Explore and describe which organisms use which type of reproduction. 	CSA.Q3.A—Week 28	<ul style="list-style-type: none"> • Asexual reproduction • Sexual reproduction • Genetic variation • Diversity 	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY/ KEY TERMS	PRIORITY
<ul style="list-style-type: none"> • Meiosis • Chromosomes • Growth and development of living things 	<p>8.LS.2: Demonstrate how genetic information is transmitted from parent to offspring through chromosomes via the process of meiosis. Explain how living things grow and develop.</p>	<ul style="list-style-type: none"> • Describe meiosis. • Explain how living things grow and develop. 	<p>CSA.Q3.A—Week 28</p>	<ul style="list-style-type: none"> • Meiosis • Gametes • Genetic variation • Chromosome number halved 	<p>CRITICAL</p>
<ul style="list-style-type: none"> • Taxonomic levels • Scientific naming 	<p>8.LS.7: Recognize organisms are classified into taxonomic levels according to shared characteristics. Explain how an organism’s scientific name correlates to these shared characteristics.</p>	<ul style="list-style-type: none"> • Recognize and describe the classification system for organisms in regard to shared characteristics. • Explain how the name of the organism mirrors the shared characteristic. 		<ul style="list-style-type: none"> • Carolus Linnaeus • Taxonomy • Binomial nomenclature • Scientific names • Kingdom, Phylum, Class, Order, Family, Genus, Species 	<p>ADDITIONAL</p>
<ul style="list-style-type: none"> • Genetic alteration 	<p>8.LS.10 Gather and synthesize information about how humans alter organisms genetically through a variety of methods.</p>	<ul style="list-style-type: none"> • Research how humans alter the genetics of organisms 		<ul style="list-style-type: none"> • Artificial selection • Selective breeding • Cloning • Hybridization 	<p>ADDITIONAL</p>

STANDARD INDICATORS	SCIENCE AND ENGINEERING	LITERACY IN SCIENCE
<p>8.LS.1: Compare and contrast the transmission of genetic information in sexual and asexual reproduction. Research organisms that undergo these two types of reproduction.</p> <p>8.LS.2: Demonstrate how genetic information is transmitted from parent to offspring through chromosomes via the process of meiosis. Explain how living things grow and develop.</p> <p>8.LS.3: Create and analyze Punnett squares to calculate the probability of specific traits being passed from parents to offspring using different patterns of inheritance.</p>	<p>SEPS.1: Posing questions and defining problems</p> <p>SEPS.2: Developing and using models and tools</p> <p>SEPS.4: Analyze and interpret data</p>	<p>6-8.LST.1.1: Read and comprehend science and technical texts</p> <p>6-8.LST.2.1: Cite specific textual evidence to support analysis of science and technical texts.</p> <p>6-8.LST.2.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>6-8.LST.4.1: Integrate quantitative or technical information with a version expressed visually (e.g., <i>in a flowchart, diagram, model, graph, or table</i>).</p> <p>6-8.LST.4.3: Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.</p> <p>6-8.LST.5.1: Write arguments focused on discipline-specific content.</p> <p>6-8.LST.5.2: Write informative texts that include precise descriptions and conclusions drawn from data and research.</p> <p>6-8.LST.6.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults.</p> <p>6-8.LST.6.2: Use technology to produce and publish writing and present the relationships between information and ideas clearly and efficiently.</p> <p>6-8.LST.7.1: Conduct short research assignments and tasks to answer a question or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</p> <p>6-8.LST.7.2: Gather relevant information from multiple sources, using search terms effectively; annotate sources; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation (e.g., <i>APA or CSE</i>).</p> <p>6-8.LST.7.3: Draw evidence from informational texts to support analysis, reflection, and research.</p>

<p>8.LS.4: Differentiate between and provide examples of acquired and genetically inherited traits.</p>	<p>SEPS.1: Posing questions and defining problems</p> <p>SEPS.2: Developing and using models and tools</p> <p>SEPS.3: Construct and perform investigation</p> <p>SEPS.4: Analyze and interpret data</p>	<p>6-8.LST.1.1: Read and comprehend science and technical texts</p> <p>6-8.LST.2.1: Cite specific textual evidence to support analysis of science and technical texts.</p> <p>6-8.LST.2.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>6-8.LST.4.1: Integrate quantitative or technical information with a version expressed visually (e.g., <i>in a flowchart, diagram, model, graph, or table</i>).</p> <p>6-8.LST.4.3: Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.</p> <p>6-8.LST.5.1: Write arguments focused on discipline-specific content.</p> <p>6-8.LST.5.2: Write informative texts that include precise descriptions and conclusions drawn from data and research.</p> <p>6-8.LST.6.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults.</p> <p>6-8.LST.6.2: Use technology to produce and publish writing and present the relationships between information and ideas clearly and efficiently.</p> <p>6-8.LST.7.1: Conduct short research assignments and tasks to answer a question or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</p> <p>6-8.LST.7.2: Gather relevant information from multiple sources, using search terms effectively; annotate sources; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation (e.g., <i>APA or CSE</i>).</p> <p>6-8.LST.7.3: Draw evidence from informational texts to support analysis, reflection, and research.</p>
--	---	--

<p>8.LS.6: Create models to show how the structures of chromatin, chromosomes, chromatids, genes, alleles and deoxyribonucleic acid (DNA) molecules are related and differ.</p>	<p>SEPS.1: Posing questions and defining problems</p> <p>SEPS.2: Developing and using models and tools</p> <p>SEPS.3: Construct and perform investigations</p> <p>SEPS.4: Analyze and interpret data</p> <p>SEPS.5: Use mathematics and computational thinking</p> <p>SEPS.6: Construct explanations and design solutions</p> <p>SEPS.7: Engage in argument from evidence</p> <p>SEPS.8: Obtain, evaluate, and communicate information</p>	<p>6-8.LST.1.1: Read and comprehend science and technical texts</p> <p>6-8.LST.2.1: Cite specific textual evidence to support analysis of science and technical texts.</p> <p>6-8.LST.2.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>6-8.LST.4.1: Integrate quantitative or technical information with a version expressed visually (e.g., <i>in a flowchart, diagram, model, graph, or table</i>).</p> <p>6-8.LST.4.3: Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.</p> <p>6-8.LST.5.1: Write arguments focused on discipline-specific content.</p> <p>6-8.LST.5.2: Write informative texts that include precise descriptions and conclusions drawn from data and research.</p> <p>6-8.LST.6.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults.</p> <p>6-8.LST.6.2: Use technology to produce and publish writing and present the relationships between information and ideas clearly and efficiently.</p> <p>6-8.LST.7.1: Conduct short research assignments and tasks to answer a question or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</p> <p>6-8.LST.7.2: Gather relevant information from multiple sources, using search terms effectively; annotate sources; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation (e.g., <i>APA or CSE</i>).</p> <p>6-8.LST.7.3: Draw evidence from informational texts to support analysis, reflection, and research.</p>
--	--	--

Engineering (E)

6-8.E.1 Identify the criteria and constraints of a design to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

6-8.E.2 Evaluate competing design solutions using a systematic process to identify how well they meet the criteria and constraints of the problem.

6-8.E.3 Analyze data from investigations to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

6-8.E.4 Develop a prototype to generate data for repeated investigations and modify a proposed object, tool, or process such that an optimal design can be achieved.

CRAWFORDSVILLE COMMUNITY SCHOOL CORPORATION

GRADE LEVEL: EIGHTH

SUBJECT: SCIENCE

DATE: 2018 - 2019

GRADING PERIOD: QUARTER 4

MASTER COPY 5/15/19

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY/ KEY TERMS	PRIORITY
LIFE SCIENCE					
<ul style="list-style-type: none"> • Punnett squares • Probability • Ratios 	<p>8.LS.3: Create and analyze Punnett squares to calculate the probability of specific traits being passed from parents to offspring using different patterns of inheritance.</p>	<ul style="list-style-type: none"> • Construct Punnett squares with parents that have different genetic traits. • Use Punnett squares to determine the probability of passing on certain characteristics to their offspring. 	CSA.Q4.A – Week 32	<ul style="list-style-type: none"> • Allele • Gene • Trait • Punnett squares • Dominant • Recessive • Homozygous • Heterozygous • Genotype • Phenotype • Gregor Mendel 	CRITICAL
<ul style="list-style-type: none"> • Acquired genetic traits • Inherited genetic traits 	<p>8.LS.4: Differentiate between and provide examples of acquired and genetically inherited traits.</p>	<ul style="list-style-type: none"> • Distinguish between acquired traits and inherited traits. • Discuss examples of each. 		<ul style="list-style-type: none"> • Inherited traits • Behavioral traits • Learned traits 	ADDITIONAL
<ul style="list-style-type: none"> • Structures in the nucleus of a cell • DNA molecules 	<p>8.LS.6: Create models to show how the structures of chromatin, chromosomes, chromatids, genes, alleles and deoxyribonucleic acid (DNA) molecules are related and differ.</p>	<ul style="list-style-type: none"> • Create a model to show the structures in the nucleus of a cell. • Compare and contrast the structures in the nucleus of a cell. 	CSA.Q4.A – Week 32	<ul style="list-style-type: none"> • Chromatin • Chromosomes • Chromatids • Genes • Alleles • Deoxyribonucleic acid 	CRITICAL

LIFE SCIENCE					
<ul style="list-style-type: none"> • Natural selection • Competition • Genetic variations • Environmental changes • Overproduction 	<p>8.LS.5 Explain how factors affecting natural selection (competition, genetic variations, environmental changes, and overproduction) increase or decrease a species' ability to survive and reproduce.</p>	<ul style="list-style-type: none"> • Explain and demonstrate how factors affecting natural selection increase a species' ability to survive and reproduce • Explain and demonstrate how factors affecting natural selection decrease a species' ability to survive and reproduce 	<p>CSA.Q4.B – Week 36</p>	<ul style="list-style-type: none"> • Natural selection • Competition • Genetic variations • Environmental changes • Overproduction • Evolution • Extinction • Mutations 	<p>CRITICAL</p>
<ul style="list-style-type: none"> • Evolutionary relationships • Anatomical differences • Fossils 	<p>8.LS.8: Explore and predict the evolutionary relationships between species looking at the anatomical differences among modern organisms and fossil organisms.</p>	<ul style="list-style-type: none"> • Compare anatomical differences between modern and fossil organisms. • Predict and explore the relationships between species based on those anatomical differences. 	<p>CSA.Q4.B – Week 36</p>	<ul style="list-style-type: none"> • Binomial nomenclature • Anatomical • Adaptation • Dichotomous Key 	<p>IMPORTANT</p>
<ul style="list-style-type: none"> • Traits of species • Survival of the fittest • Stable and unstable environments 	<p>8.LS.9: Examine traits of individuals within a species that may give them an advantage or disadvantage to survive and reproduce in stable or changing environments.</p>	<ul style="list-style-type: none"> • Examine and describe the traits within a species that may give them an advantage or a disadvantage in surviving and reproducing. • Explain what is meant by a stable or changing environment. 	<p>CSA.Q4.B – Week 36</p>	<ul style="list-style-type: none"> • Adaptations • Trait 	<p>CRITICAL</p>
<ul style="list-style-type: none"> • Viruses • Bacteria 	<p>8.LS.11 Investigate how viruses and bacteria affect the human body.</p>	<ul style="list-style-type: none"> • Investigate the effect of viruses and bacteria 	<p>CSA.Q3.A – Week 28</p>	<ul style="list-style-type: none"> • Viruses • Bacteria 	<p>IMPORTANT</p>

STANDARD INDICATORS	SCIENCE AND ENGINEERING	LITERACY IN SCIENCE
<p>8.LS.5 Explain how factors affecting natural selection (competition, genetic variations, environmental changes, and overproduction) increase or decrease a species' ability to survive and reproduce.</p> <p>8.LS.7: Recognize organisms are classified into taxonomic levels according to shared characteristics. Explain how an organism's scientific name correlates to these shared characteristics.</p> <p>8.LS.8: Explore and predict the evolutionary relationships between species looking at the anatomical differences among modern organisms and fossil organisms.</p>	<p>SEPS.1: Posing questions and defining problems</p> <p>SEPS.2: Developing and using models and tools</p> <p>SEPS.4: Analyze and interpret data</p>	<p>6-8.LST.1.1: Read and comprehend science and technical texts</p> <p>6-8.LST.2.1: Cite specific textual evidence to support analysis of science and technical texts.</p> <p>6-8.LST.2.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>6-8.LST.4.1: Integrate quantitative or technical information with a version expressed visually (e.g., <i>in a flowchart, diagram, model, graph, or table</i>).</p> <p>6-8.LST.4.3: Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.</p> <p>6-8.LST.5.1: Write arguments focused on discipline-specific content.</p> <p>6-8.LST.5.2: Write informative texts that include precise descriptions and conclusions drawn from data and research.</p> <p>6-8.LST.6.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults.</p> <p>6-8.LST.6.2: Use technology to produce and publish writing and present the relationships between information and ideas clearly and efficiently.</p> <p>6-8.LST.7.1: Conduct short research assignments and tasks to answer a question or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</p> <p>6-8.LST.7.2: Gather relevant information from multiple sources, using search terms effectively; annotate sources; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation (e.g., <i>APA or CSE</i>).</p> <p>6-8.LST.7.3: Draw evidence from informational texts to support analysis, reflection, and research.</p>

<p>8.LS.9: Examine traits of individuals within a species that may give them an advantage or disadvantage to survive and reproduce in stable or changing environments.</p>	<p>SEPS.1: Posing questions and defining problems</p> <p>SEPS.2: Developing and using models and tools</p> <p>SEPS.3: Construct and perform investigation</p> <p>SEPS.4: Analyze and interpret data</p>	<p>6-8.LST.1.1: Read and comprehend science and technical texts</p> <p>6-8.LST.2.1: Cite specific textual evidence to support analysis of science and technical texts.</p> <p>6-8.LST.2.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>6-8.LST.4.1: Integrate quantitative or technical information with a version expressed visually (e.g., <i>in a flowchart, diagram, model, graph, or table</i>).</p> <p>6-8.LST.4.3: Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.</p> <p>6-8.LST.5.1: Write arguments focused on discipline-specific content.</p> <p>6-8.LST.5.2: Write informative texts that include precise descriptions and conclusions drawn from data and research.</p> <p>6-8.LST.6.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults.</p> <p>6-8.LST.6.2: Use technology to produce and publish writing and present the relationships between information and ideas clearly and efficiently.</p> <p>6-8.LST.7.1: Conduct short research assignments and tasks to answer a question or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</p> <p>6-8.LST.7.2: Gather relevant information from multiple sources, using search terms effectively; annotate sources; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation (e.g., <i>APA or CSE</i>).</p> <p>6-8.LST.7.3: Draw evidence from informational texts to support analysis, reflection, and research.</p>
---	---	--

<p>8.LS.10: Gather and synthesize information about how humans alter organisms genetically through a variety of methods.</p> <p>8.LS.11: Investigate how viruses and bacteria affect the human body.</p>	<p>SEPS.1: Posing questions and defining problems</p> <p>SEPS.2: Developing and using models and tools</p> <p>SEPS.3: Construct and perform investigations</p> <p>SEPS.4: Analyze and interpret data</p> <p>SEPS.5: Use mathematics and computational thinking</p> <p>SEPS.6: Construct explanations and design solutions</p> <p>SEPS.7: Engage in argument from evidence</p> <p>SEPS.8: Obtain, evaluate, and communicate information</p>	<p>6-8.LST.1.1: Read and comprehend science and technical texts</p> <p>6-8.LST.2.1: Cite specific textual evidence to support analysis of science and technical texts.</p> <p>6-8.LST.2.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>6-8.LST.4.1: Integrate quantitative or technical information with a version expressed visually (e.g., <i>in a flowchart, diagram, model, graph, or table</i>).</p> <p>6-8.LST.4.3: Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.</p> <p>6-8.LST.5.1: Write arguments focused on discipline-specific content.</p> <p>6-8.LST.5.2: Write informative texts that include precise descriptions and conclusions drawn from data and research.</p> <p>6-8.LST.6.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults.</p> <p>6-8.LST.6.2: Use technology to produce and publish writing and present the relationships between information and ideas clearly and efficiently.</p> <p>6-8.LST.7.1: Conduct short research assignments and tasks to answer a question or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</p> <p>6-8.LST.7.2: Gather relevant information from multiple sources, using search terms effectively; annotate sources; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation (e.g., <i>APA or CSE</i>).</p> <p>6-8.LST.7.3: Draw evidence from informational texts to support analysis, reflection, and research.</p>
--	--	--

Engineering (E)

6-8.E.1 Identify the criteria and constraints of a design to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

6-8.E.2 Evaluate competing design solutions using a systematic process to identify how well they meet the criteria and constraints of the problem.

6-8.E.3 Analyze data from investigations to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

6-8.E.4 Develop a prototype to generate data for repeated investigations and modify a proposed object, tool, or process such that an optimal design can be achieved.