

ENERGY

2010 IDOE Content Standards

NOTE: Literacy standards have not been included in this list because they are too numerous and vary in session versions. Please inquire if this is a standard you want to cover in the session.

KINDERGARTEN Core Standards

Standard 1: Physical Science

Observe, manipulate, sort and generate questions about objects and their physical properties.

- K.1.1. Use all senses as appropriate to observe, sort and describe objects according to their composition and physical properties, such as size, color and shape. Explain these choices to others and generate questions about the objects.
 - K.1.2. Identify and explain possible uses for an object based on its properties and compare these uses with other students' ideas.
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Standard 2: Civics and Government

Students learn that they are citizens of their school, community and the U.S.; identify symbols of the nation; and understand the importance of being a responsible citizen who knows why rules are needed and follows them.

- K.2.1 Give examples of people who are community helpers and leaders and describe how they help us. (Individuals, Society and Culture)
 - K.2.4 Give examples of how to be a responsible family member and member of a group. (Individual, Society and Culture)
 - K.3.6 Identify and compare similarities and differences in families, classmates, neighbors and neighborhoods, and ethnic and cultural groups. (Individuals, Society and Culture)
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Geography Standard 3

- K.3.3 Locate and describe places in the school and community
 - K.3.5 Describe and give examples of seasonal weather changes and illustrate how weather affects people and the environment.
 - K.3.6 Identify and compare similarities and differences in families, classmates, neighbors and neighborhoods, and ethnic and cultural groups. (Individual, Society and Culture)
 - K.3.7 Recommend ways that people can improve their environment at home, in school and in the neighborhood.
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Economics Standard 4

Students explain that people do different jobs and work to meet basic economic wants.

- K.4.4 Give examples of work activities that people do at home.
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KINDERGARTEN Core Standards

Standard 1: Health & Wellness

Students will comprehend concepts related to health promotion and disease prevention to enhance health.

- K.1.1 Name healthy behaviors.
- K.1.2 Identify that physical health is one dimension of health and wellness.

Standard 2

Students will analyze the influence of family, peers, culture, media, technology and other factors on health behaviors.

- K.2.1 Identify how the family influences personal health practices.
- K.2.3 State how the media influences behaviors.

Standard 3

Students will demonstrate the ability to access valid information and products and services to enhance health.

K.3.1 Name a person who can help promote health and wellness.

Standard 5

Students will demonstrate the ability to use decision making skills to enhance health.

K.5.1 Identify health-related situations.

Standard 6

Students will demonstrate the ability to use goal setting skills to enhance health.

K.6.1 Name personal health and wellness goals.

K.6.2 Name who can help to achieve a personal health goal.

Standard 7

Students will demonstrate the ability to practice health enhancing behaviors and avoid or reduce health risks.

K.7.1 Identify healthy behaviors to improve personal health and wellness.

K.7.2 Name behaviors that prevent injuries.

Standard 8

Students will demonstrate the ability to advocate for personal, family and community health.

K.8.1 Repeat rules that promote personal health.

K.8.2 Tell how peers can make positive choices.

GRADE 1 Core Standards

Standard 2: Civics and Government

Students will explain the meaning of government; explain why rules and laws are needed in the school and community. They identify individual rights and responsibilities, and use variety of sources to learn about the functions of government and roles of citizens.

1.2.2 Define and give examples of rules and laws in the school and the community.

1.2.3 Explain why rules and laws exist and describe the benefits of having rules and laws.

1.2.4 Describe ways that individual actions can contribute to the common good of the community.(Individuals, Society and Culture)

1.2.4 Describe what a citizen is and describe the characteristics of good citizenship. (Individuals, Society and Culture)

1.2.6 Know the Pledge of Allegiance and understand that it is a promise to be loyal to the U.S.

Standard 3: Geography

Students will identify the basic elements of maps and globes and explain basic facts concerning the relationship of the sun to daily and seasonal weather. They will identify selected geographic characteristics of their home, school and neighborhood.

1.3.9 Give examples of natural resources found locally and describe how people in the school and community use these resources.

Standard 4: Economics

Students will explain how people in the school and community use goods and services and make choices as both producers and consumers.

1.4.1 Identify goods that people use.

1.4.2 Identify services that people do for each other

1.4.5 Explain that people have to make choices about goods and services because of scarcity.

1.4.6 Explain that people exchange goods and services to get the things they want.

GRADE 1 Core Standards

Standard 1: Health & Wellness

Students will comprehend concepts related to health promotion and disease prevention to enhance health.

1.1.1 Tell how healthy behaviors impact personal health and wellness.

Standard 2

Students will analyze the influence of family, peers, culture, media, technology and other factors on health behaviors.

1.2.1 Describe how the family influences personal health behaviors.

1.2.2 Recognize what the school can do to support health behaviors.

1.2.1 Identify how television commercials and magazine advertisements entice someone to purchase food products.

Standard 3

Students will demonstrate the ability to access valid information and products and services to enhance health.

1.3.1 Choose a professional who can help promote health and wellness.

1.3.2 List ways to locate a community helper for a health-related situation.

Standard 5

Students will demonstrate the ability to use decision making skills to enhance health.

1.5.1 Describe a health-related decision.

1.5.2 Describe situations when assistance is needed for a health-related decision.

Standard 6

Students will demonstrate the ability to use goal setting skills to enhance health.

1.6.1 Name actions to take toward achieving a short-term health goal.

1.6.2 Identify who can help to achieve a personal health goal.

Standard 7

Students will demonstrate the ability to practice health enhancing behaviors and avoid or reduce health risks.

1.7.1 Describe healthy practices to maintain personal health and wellness

1.7.2 Describe behaviors that reduce health risks.

Standard 8

Students will demonstrate the ability to advocate for personal, family and community health.

1.8.1 Identify ways to promote health and wellness.

1.8.2 Assist peers to make positive choices.

GRADE 2 Core Standards

Standard 4: Science, Engineering and Technology

Describe how technologies have been developed to meet human needs.

2.4.2 Identify technologies developed by humans to meet human needs. Investigate the limitations of technologies and how they have improved quality of life.

Standard 2: Civics and Government

Students will explain why communities have government and laws, demonstrate that people in the U.S. have both rights and responsibilities, and identify individual actions that contribute to the good of the community and nation.

2.2.5 Identify people who are good citizens and describe the character traits that make them admirable.

2.2.7 Explain the consequences of violating laws, including punishment of those who do wrong, and the importance of resolving conflicts appropriately.

Standard 3: Geography

2.3.7 Identify ways that recreational opportunities influence human activity in the community.

Standard 4: Economics

Students will describe how people in a community use productive resources, create a variety of businesses and industries, specialize in different types of jobs, and depend on each other to supply goods and services.

- 2.4.1 Define the three types of productive resources (human resources, natural resources and capital resources) and identify productive resources used to produce goods and services in the community.
- 2.4.5 Identify community workers who provide goods and services for the rest of the community and explain how their jobs benefit people in the community.
Explain that because of scarcity, people must make choices and incur opportunity costs.
- 2.4.6 Define specialization and identify specialized jobs in the school and community.
- 2.4.8 Explain that income that people do not spend on goods and services is called savings.

GRADE 2 Core Standards

Standard 1: Health & Wellness

Students will comprehend concepts related to health promotion and disease prevention to enhance health.

- 2.1.1 Identify that healthy behaviors affect personal health.
- 2.1.2 Recognize that there are multiple dimensions of health.

Standard 2

Students will analyze the influence of family, peers, culture, media, technology and other factors on health behaviors.

- 2.2.1 Identify how the family influences personal health practices and behaviors.
- 2.2.2 Identify what the school can do to support personal health practices and behaviors.
- 2.2.3 Describe how the media can influence health behaviors.

Standard 3

Students will demonstrate the ability to access valid information and products and services to enhance health.

- 2.3.1 Identify trusted adults and professionals who can help promote health.
- 2.3.2 Identify ways to locate school and community health helpers.

Standard 5

Students will demonstrate the ability to use decision making skills to enhance health.

- 2.5.1 Identify situations when a health-related decision is needed.
- 2.5.2 Differentiate between situations when a health-related decision can be made individually or when assistance is needed.

Standard 6

Students will demonstrate the ability to use goal setting skills to enhance health.

- 2.6.1 Identify a short-term personal health goal and take action toward achieving the goal.
- 2.6.2 Identify who can help when assistance is needed to achieve a personal health goal.

Standard 7

Students will demonstrate the ability to practice health enhancing behaviors and avoid or reduce health risks.

- 2.7.1 Demonstrate healthy practices and behaviors to maintain or improve personal health.
- 2.7.2 Demonstrate behaviors that avoid or reduce health risks.

Standard 8

Students will demonstrate the ability to advocate for personal, family and community health.

- 2.8.1 Make requests to promote personal health.
- 2.8.2 Encourage peers to make positive health choices.

GRADE 3 Core Standards

Standard 1: Physical Science

Observe and describe how sound is produced by vibrations.

Observe and describe how light travels from point to point.

- 3.1.3 Investigate and recognize that sound moves through solids, liquids, and gases (e.g.,

air).

- 3.1.4 Investigate how light travels through the air and tends to maintain its direction until it interacts with some other object or material.
- 3.1.6 Describe evidence to support the idea that light and sound are forms of energy.

Standard 2: Earth Science

Observe and describe how natural materials meet the needs of plants and animals (including humans).

- 3.2.4 Identify fossils and describe how they provide evidence about the plants and animals that lived long ago and the nature of their environment at that time.
- 3.2.6 Describe how the properties of earth materials make them useful to humans in different ways. Describe ways that humans have altered these resources to meet their needs for survival.

Standard 2: Earth Science

Observe and describe how natural materials meet the needs of plants and animals (including humans).

Standard 4: Science, Engineering and Technology

Core Standard

Define a real world problem and list criteria for a successful solution.

- 3.4.2 Define the uses and types of simple machines and utilize simple machines in the solution to a “real world” problem.

Standard 2: Civics and Government

Students will explain what it means to be citizens of their community, state and nation; be able to identify the functions and major services provided by local governments; use a variety of resources to gather information about their local, state and national governments; and demonstrate understanding of democratic principles and practices.

- 3.2.2 Identify fundamental democratic principles and ideals.
- 3.2.5 Explain the importance of being a good citizen of the state and the nation. Identify people in the state who exhibit the characteristics of good citizenship.
- 1.2.6 Explain the role citizens have in making decisions and rules within the community, state and nation.
- 1.2.7 Use a variety of information resources to gather information about local, state, and regional leaders and civic issues.

Standard 3: Geography

Students will explain that simple grid systems (latitude and longitude) are used to locate places on maps and globes, and will begin to understand the Earth/Sun relationship, identify the distinctive physical and cultural features of their community, and explain the geographic relationships within their own community with the state and other states within the region.

- 3.3.7 Describe how climate and the physical characteristics of a region affect the vegetation and animal life living there
- 3.3.9 Identify factors that make the region unique, including cultural diversity, industry, the arts and architecture. (Individuals, Society and Culture)
- 3.3.10 Identify and describe the relationship between human systems and physical systems and the impact they have on each other.

Standard 4: Economics

Students will explain how people in the local community make choices about using goods, services and productive resources; how they engage in trade to satisfy their economic wants; how they use a variety of sources to gather and apply information about economic changes in the community; and how they compare costs and benefits in economic decision making.

- 3.4.1 Give examples from the local community that illustrate the scarcity of productive resources. Explain how this scarcity requires people to make choices and incur opportunity costs.
- 3.4.2 Give examples of goods and services provided by local business and industry.
- 3.4.4 Define interdependence and give examples of how people in the local community depend on each other for goods and services.
- 3.4.6 Identify different ways people save their income and explain advantages and disadvantages.
- 3.4.8 Illustrate how people compare benefits and costs when making choices and decisions as consumers and producers.
- 3.4.9 Gather data from a variety of information resources about a change that will have an economic impact on the community.

GRADE 3 Core Standards

Standard 1: Health & Wellness

Students will comprehend concepts related to health promotion and disease prevention to enhance health.

- 3.1.1 Identify the link between healthy choices and being healthy.
- 3.1.2 Give examples of physical and emotional health.
- 3.1.3 Identify how a safe and healthy school environment promotes personal health.

Standard 2

Students will analyze the influence of family, peers, culture, media, technology and other factors on health behaviors.

- 3.2.1 Recall how the family influences personal health and wellness practices.
- 3.2.3 State how peers can influence healthy behaviors.
- 3.2.4 Discuss how the school can support personal health behaviors.
- 3.2.5 Identify how media and technology influence health behaviors.

Standard 3

Students will demonstrate the ability to access valid information and products and services to enhance health.

- 3.3.1 State characteristics of valid health products and services.
- 3.3.2 Name resources from home and school that provide valid health information.

Standard 5

Students will demonstrate the ability to use decision making skills to enhance health.

- 3.5.1 Indicate routine health-related situations.
- 3.5.2 Identify when support is needed when making a health-related decision.
- 3.5.3 Tell options to health-related issues or problems.
- 3.5.4 Indicate the possible consequences of each choice when making a health-related decision.
- 3.5.5 Identify a healthy choice when making a decision.

Standard 6

Students will demonstrate the ability to use goal setting skills to enhance health.

- 3.6.2 Recognize resources to achieve a personal health goal.

Standard 7

Students will demonstrate the ability to practice health enhancing behaviors and avoid or reduce health risks.

- 3.7.1 Name healthy behaviors.
- 3.7.2 Identify a healthy practice to maintain personal health and wellness.
- 3.7.3 Recognize actions to avoid health risks.

Standard 8

- 3.8.2 Share correct information about a health issue.
- 3.8.2 Tell how to help others to make positive choices.

GRADE 4 Core Standards

Standard 1: Physical Science

Provide evidence that heat and electricity are forms of energy

- 4.1.1 Describe and investigate the different ways in which heat can be generated.
 - 4.1.2 Investigate the variety of ways in which heat can be generated and moved from one place to another. Explain the direction the heat moved.
 - 4.1.5 Demonstrate that electrical energy can be transformed into heat, light, and sound.
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Standard 2: Earth Science

Describe how the supply of natural resources is limited and investigate ways that humans protect and harm the environment.

- 4.2.4 Investigate earth materials that serve as natural resources and gather data to determine which ones are limited by supply.
 - 4.2.5 Describe methods that humans currently use to extend the use of natural resources.
 - 4.2.6 Describe ways in which humans have changed the natural environment. Explain if these changes have been detrimental or beneficial.
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Standard 2: Civics and Government

Students will describe the components and characteristics of Indiana's constitutional form of government; explain the levels and three branches of Indiana's government; understand citizenship rights and responsibilities; investigate civic and political issues and problems; use inquiry and communication skills to report findings in charts, graphs, written and verbal forms; and demonstrate responsible citizenship by exercising civic virtues and participation skills.

- 4.2.2 Describe individual rights, such as freedom of speech, freedom of religion and the right to public education, that people have under Indiana's Bill of Rights (Article I of the Constitution).
 - 4.2.6 Define and provide examples of civic virtues in a democracy.
 - 4.2.7 Use a variety of information resources to take a position or recommend a course of action on a public issue relating to Indiana's past or present.
 - 4.3.4 Map and describe the physical regions of Indiana and identify major natural resources and crop regions.
 - 4.3.6 Describe Indiana's landforms (lithosphere), water features (hydrosphere), and plants and animals (biosphere).
 - 4.3.8 Identify the challenges in the physical landscape of Indiana to early settlers and modern day economic development. (Individuals, Society and Culture).
 - 4.3.11 Create maps of Indiana at different times in history showing regions and major physical and cultural features; give examples of how people in Indiana have modified their environment over time.
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Standard 4: Economics

Students will study and compare the characteristics of Indiana's changing economy in the past and present.

- 4.4.5 Describe Indiana's emerging global connections
 - 4.4.8 Define profit and describe how profit is an incentive for entrepreneurs.
 - 4.4.9 Identify important goods and services provided by state and local governments by giving examples of how state and local tax revenues are used.
 - 4.4.10 Explain how people save, and develop a savings plan in order to make a future purchase.
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GRADE 4 Core Standards**Standard 1: Health & Wellness**

Students will comprehend concepts related to health promotion and disease prevention to enhance health.

- 4.1.1 Explain the connection between behaviors and personal health.

- 4.1.2 Recognize examples of intellectual and social health.
- 4.1.3 Summarize ways in which a safe and healthy community environment can promote health.
- 4.1.4 Explain ways to prevent common health problems.

Standard 2

Students will analyze the influence of family, peers, culture, media, technology and other factors on health behaviors.

- 4.2.1 Describe how the family influences personal health and behaviors.
- 4.2.3 Determine how peers can influence unhealthy behaviors and promote wellness.
- 4.2.4 Identify how the community can support personal health practices.
- 4.2.5 Describe how media and technology can influence health behaviors.

Standard 3

Students will demonstrate the ability to access valid information and products and services to enhance health.

- 4.3.1 Recognize characteristics of valid health information and services.
- 4.3.2 Identify resources from the community that provide valid health and wellness information.

Standard 5

Students will demonstrate the ability to use decision making skills to enhance health.

- 4.5.1 Explain situations that may require a thoughtful health-related decision.
- 4.5.2 Determine when help is needed to make a health-related decision.
- 4.5.3 Indicate healthy alternatives to health-related issues or problems.
- 4.5.4 Describe the possible consequences of each option when making a health related decision.

Standard 6

Students will demonstrate the ability to use decision making skills to enhance health.

- 4.6.1 Plan a personal health goal and how to monitor its progress.
- 4.6.2 Discuss resources to help achieve a personal health goal.

Standard 7

Students will demonstrate the ability to practice health enhancing behaviors and avoid or reduce health risks.

- 4.7.1 Describe positive health behaviors.
- 4.7.2 Describe a healthy behavior to improve personal health and wellness.
- 4.7.3 Describe behaviors to reduce health risk.

Standard 8

Students will demonstrate the ability to advocate for personal, family and community health.

- 4.8.1 Give accurate information about a health issue.
- 4.8.2 Illustrate how to assist others to make positive health choices.

GRADE 5 Core Standards

Standard 2: Civics and Government

Students will identify main components and characteristics of the U.S. government. They will identify and explain key ideas in government from the colonial and founding periods that continue to shape civic and political life.

- 5.2.8 Describe group and individual actions that illustrate civic virtues, such as civility, cooperation, respect and responsible participation. (Individuals, Society and Culture).
- 5.2.9 Examine ways by which citizens may effectively voice opinions, monitor government and bring about change in government including voting and participation in the election process.
- 5.2.10 Use a variety of information resources to identify and evaluate contemporary issues that involve civic responsibility, individual rights and the common good.

Standard 3: Geography

Students will describe the Earth/Sun relationship and use global grid systems. They will identify regions; describe physical and cultural characteristics; and locate states, capitals and major physical features of the U.S. They will also explain the changing interaction of people with their environment in regions of the U.S. and show how the U.S. is related geographically to the rest of the world.

- 5.3.5 Map and describe the characteristics of climate regions of the U.S.
- 5.3.7 Identify major sources of accessible fresh water and describe the impact of access on the local and regional communities.
- 5.3.11 Describe adaptation and how Native American Indians and colonists adapted to variations in physical environment.

Standard 4: Economics

Students will describe the productive resources and market relationships that influence the way people produce goods and services and earn a living in the U.S. in different historical periods.

- 5.4.1 Describe the economic activities within and among Native American Indiana cultures prior to contact with Europeans. Examine the economic incentives that helped motivate European exploration and colonization.
- 5.4.2 Summarize a market economy and give examples of how the colonial and early American economy exhibited these characteristics.
- 5.4.4 Trace the development of technology and the impact of major inventions on business productivity during the early development of the U.S.
- 5.4.7 Predict the effect of changes in supply and demand on price.
- 5.4.8 Analyze how the causes and effects of changes in price of certain goods and services had significant influence on events in U.S. history.

GRADE 5 Core Standards

Standard 1: Health & Wellness

Describe the relationship between healthy behaviors and personal health.

- 5.1.1 Describe the relationship between healthy behaviors and personal health.
- 5.1.2 Identify examples of emotional, intellectual, physical, and social health.
- 5.1.3 Describe ways in which a safe and healthy school and community environment can promote personal health.
- 5.1.4 Describe ways to prevent common childhood injuries and health problems.

Standard 2: Health & Wellness

Students will analyze the influence of how family, peers, culture, media, technology and other factors on health behaviors.

- 5.2.1 Describe how the family influences personal health practices and behaviors.
- 5.2.2 Identify the influence of culture on health practices and behaviors.
- 5.2.3 Identify how peers can influence healthy and unhealthy behaviors.
- 5.2.4 Describe how the school and community can support personal health practices and behaviors.
- 5.2.5 Explain how the media influences thoughts, feelings, and health behaviors.
- 5.2.6 Describe ways technology can influence personal health.

Standard 3: Health & Wellness

Students will demonstrate the ability to access valid information and products and services to enhance health.

- 5.3.1 Identify characteristics of valid health information, products and services.
- 5.3.2 Locate resources from home, school and community that provide valid health information.

Standard 5: Health & Wellness

Students will demonstrate the ability to use decision making skills to enhance health.

- 5.5.1 Identify health related situations that may require a thoughtful decision.
- 5.5.2 Analyze when assistance is needed in making a health related decision.

- 5.5.3 List healthy options to health related issues or problems.
- 5.5.4 Predict the potential outcomes of each option when making a health related decision.
- 5.5.5 Choose a healthy option when making a decision.
- 5.5.6 Describe the outcomes of a health related decision.

Standard 6: Health & Wellness

Students will demonstrate the ability to use goal setting skills to enhance health.

- 5.6.1 Set a personal health goal and track progress toward its achievement.
- 5.6.2 Identify resources to assist in achieving a personal health goal.

Standard 7: Health & Wellness

Students will demonstrate the ability to practice health enhancing behaviors and avoid or reduce health risks.

- 5.7.1 Identify responsible personal health behaviors.
- 5.7.2 Demonstrate a variety of healthy practices and behaviors to maintain or improve personal health.
- 5.7.3 Demonstrate a variety of behaviors to avoid or reduce health risks.

Standard 8: Health & Wellness

Students will demonstrate the ability to advocate for personal, family and community health.

- 5.8.1 Express opinions and give accurate information about health issues.
- 5.8.2 Encourage others to make positive health choices.

GRADE 6 Core Standards

Standard 1: Physical Science

Explain that all objects and substances in the natural world are composed of matter in different states with different properties.

Understand that there are different forms of energy with unique characteristics.

- 6.1.1 Understand that the properties and behavior of matter can be explained by a model that depicts particles representing atoms or molecules in motion.
- 6.1.2 Explain the properties of solids, liquids and gases using drawings and models that represent matter as particles in motion whose state can be represented by the relative positions and movement of the particles.
- 6.1.3 Using a model in which matter is composed of particles in motion, investigate that when substances undergo a change in state, mass is conserved.
- 6.1.4 Recognize that objects in motion have kinetic energy and objects at rest have potential energy.
- 6.1.5 Describe with examples that potential energy exists in several different forms (e.g., gravitational potential energy, elastic potential energy and chemical potential energy).
- 6.1.6 Compare and contrast potential and kinetic energy and how they can be transformed from one form to another.
- 6.1.7 Explain that energy may be manifested as heat, light, electricity, mechanical motion, and sound and is often associated with chemical reactions.

Standard 2: Earth and Space Science

- 6.2.3 Understand that the, an average star where nuclear reactions occur, is the central and largest body in the solar system.

Standard 3: Life Science

Understand that the major source of energy for ecosystems is light produced by major nuclear reactions in the sun.

- 6.3.5 Describe how all animals, including humans, meet their energy needs by consuming other organisms, breaking down their structures, and using the materials to grow and function.
- 6.3.6 Recognize that food provides the energy for the work that cells do and is a source

of molecular building blocks that can be incorporated into a cell's structure or stored for later use.

Standard 4: Science, Engineering and Technology

Apply a form of energy to design and construct a simple mechanical device

- 6.4.1 Understand how to apply potential or kinetic energy to power a simple device.
- 6.4.3 Describe the transfer of energy amongst energy interactions.

Standard 1: History

Students will explore the key historic movements, events and figures that contributed to the development of modern Europe and America from early civilizations through modern times by examining religious institutions, trade and cultural interactions, political institutions and technological developments.

- 6.1.17 Compare the opportunities and dangers related to the development of a highly technological society.
- 6.3.10 Explain that cultures change in three ways: cultural diffusion, invention and innovation. (Individuals, Society and Culture).
- 6.3.11 Define the terms anthropology and archeology and explain how these fields contribute to our understanding of societies in the present and the past. (Individuals, Society and Culture)
- 6.3.13 Explain the impact of humans on the physical environment in Europe and the Americas.
- 6.3.14 Explain and give examples of how nature has impacted the physical environment and human populations in specific areas of Europe and the Americas.

Standard 4: Economics

- 6.4.9 Identify situations in which the actions of consumers and producers in Europe or the Americas create helpful spillovers or harmful spillovers to people inside a country who are not directly involved in the consumption or production of a product.
- 6.4.10 Explain how saving and investing help increase productivity and economic growth and compare and contrast individual saving and investing options.

GRADE 6 Standard 1: Health & Wellness

Students will comprehend concepts related to health promotion and disease prevention to enhance health.

- 6.1.1 Compare how healthy behaviors and personal health are linked.
- 6.1.3 Examine how one's surroundings impact health and wellness.
- 6.1.4 Identify how family culture or beliefs can impact personal health.
- 6.1.5 List ways to reduce or prevent injuries.
- 6.1.7 Identify the benefits of practicing healthy behaviors.
- 6.1.8 Describe the likelihood of injuries or illnesses if engaging in unhealthy behaviors.

Standard 2

Students will analyze the influence of family, peers, culture, media, technology and other factors on health behaviors.

- 6.2.1 Identify how family practices influence the health of adolescents.
- 6.2.3 Explain how peers influence healthy behaviors.
- 6.2.4 Identify how the community can affect personal health practices and behaviors.
- 6.2.5 Illustrate how media messages influence health behaviors.
- 6.2.6 Explain the influence of technology on family health.
- 6.2.7 Identify norms that influence health behaviors.
- 6.2.8 List the influence of personal values on health practices.
- 6.2.9 Identify how some health choices influence unhealthy behaviors.
- 6.2.10 Describe how school policies can influence health promotion.

Standard 4

Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

6.4.3 Choose effective conflict management strategies.

6.4.4 Choose how to ask for assistance to enhance the health of self.

Standard 5

Students will demonstrate the ability to use decision-making skills to enhance health.

6.5.2 Explain when health-related situations require a thoughtful decision-making process.

6.5.4 Identify healthy and unhealthy options to health-related issues or problems.

6.5.5 Describe the potential short-term impact of each choice on self and others.

6.5.6 Distinguish healthy options over unhealthy options when making a decision.

6.5.7 Predict the results of a health-related decision.

Standard 6

Students will demonstrate the ability to use goal-setting skills to enhance health.

6.6.1 Examine personal health behaviors.

6.6.2 Identify a goal to adopt a personal health practice.

6.6.3 Develop strategies to achieve a personal health goal.

Standard 7

Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

6.7.1 Identify the importance of being responsible for health behaviors.

6.7.2 Indicate healthy behaviors that will maintain or improve the health of self and others.

6.7.3 Identify practices to avoid or reduce health risks to self and others.

Standard 8

Students will demonstrate the ability to advocate for personal, family and community health.

6.8.1 State a health position and support it with accurate information.

6.8.2 Show how to support others to make positive health choices.

6.8.3 Plan with others to advocate for healthy individuals.

6.8.4 State ways that health messages can be altered for different age groups.

GRADE 7 Core Standards**Standard 1: Physical Science**

Explain that energy cannot be created or destroyed but instead can only be changed from one form into another or transferred from place to place.

Describe and investigate how forces between objects can act at a distance or by means of direct contact between objects.

7.1.1 Explain that when energy is transferred from one system to another, the total quantity of energy does not change.

7.1.2 Describe and give examples of how energy can be transferred from place to place and transformed from one form to another through radiation, convection and conduction.

7.1.3 Recognize and explain how different ways of obtaining, transforming and distributing energy have different environmental consequences.

7.1.4 Recognize and provide evidence of how light, sound and other waves have energy and how they interact with different materials.

GRADE 7 Core Standards**Standard 1: History**

Students will examine the major movements, events and figures that contributed to the development of nations in modern Africa, Asia and the Southwest Pacific from ancient civilizations to modern times by examining religious institutions, trade and cultural interactions, political institutions, and technological developments.

- 7.1.17 Describe the impact of industrialization, urbanization and globalization in post-colonial South Africa, India, China and Kenya. (Individuals, Society and Culture).
- 7.1.18 Identify and describe recent conflicts and political issues between nations or cultural groups. (Individuals, Society and Culture).
- 7.1.19 Create and compare timelines that identify major people and events and developments in the history of civilization and/or countries of Africa, Asia and the Southwest Pacific.
- 7.1.21 Analyze and effect relationship, bearing in mind multiple causation in the role of individuals, beliefs and chance in history.
- 7.1.22 Distinguish between unsupported expressions of opinion and informed hypotheses grounded in historical evidence.

Standard 2: Civics and Government

Students will trace the development of different forms of government in different historical eras and compare various contemporary political structures in Africa, Asia and the Southwest Pacific in terms of power, approach to human rights and the roles of citizens.

- 7.2.5 Define and compare citizenship and the citizen's role in selected countries of Africa, Asia and the Southwest Pacific.

Standard 3: Geography

Students will explain how atmospheric and oceanic systems affect the seasons and climate. They will understand and use technology and grid systems to identify and locate places geographically. They will identify and categorize the major geographic characteristics and regions of Africa, Asia and the Southwest Pacific. They will also name and locate major physical features, countries and major cities, and use geographic skills and technology to examine geographic relationships within and between these regions and the rest of the world.

- 7.3.4 Identify and describe major physical characteristics of regions in Africa, Asia and the Southwest Pacific.
- 7.3.5 Explain how ocean currents and winds influence climate differences in Africa, Asia and the Southwest Pacific and explain how they are adapted through industry, agriculture and housing.
- 7.3.8 Describe ecosystems of Africa's deserts, Asia's mountain regions, and the coral reefs of Australia.
- 7.3.9 Compare and contrast the distribution of natural resources in Africa, Asia and the Southwest Pacific.
- 7.3.10 Describe the limitations that climate and land forms place on land or people in regions of Africa, Asia and the Southwest Pacific.
- 7.3.14 Use a variety of information resources to identify current issues and developments related to the environment in selected countries in Africa, Asia and the Southwest Pacific.

Standard 4:

Economics

Students will examine the influence of physical and cultural factors upon the economic systems found in countries of Africa, Asia and the Southwest Pacific.

- 7.4.2 Identify economic connections between the local community and the countries of Africa, Asia or the Southwest Pacific.
- 7.4.6 Compare and contrast the standard of living of various countries in Africa, Asia and the Southwest Pacific using Gross Domestic Product (GDP) per capita as an indicator.
- 7.4.7 Describe ways that people can increase individual human capital.
- 7.4.8 Identify ways that societies deal with helpful spillovers (e.g. education) or harmful spillovers (e.g. pollution).
- 7.4.9 Explain how saving and investing help increase productivity and economic growth and examine how individual savings can grow through regular saving and the power of compound interest.

GRADE 7 Standard

1: Health & Wellness

Students will comprehend concepts related to health promotion and disease prevention to enhance health.

- 7.1.1 Examine how healthy behaviors influence personal health.
- 7.1.3 Discover how the environment can impact personal health.
- 7.1.7 Determine the barriers to practicing healthy behaviors.
- 7.1.8 Predict the risk of injury or illness if engaging in unhealthy behaviors.

Standard 2

Students will analyze the influence of family, peers, culture, media, technology and other factors on health behaviors.

- 7.2.1 Describe how family values and behaviors influence the health of adolescents.
- 7.2.2 Discuss the influence of culture on health behaviors.
- 7.2.3 Describe how peers influence unhealthy behaviors.
- 7.2.4 Identify how the school can affect personal health practices and behaviors.
- 7.2.5 Examine how information from the media influences health behaviors.
- 7.2.6 Interpret the influence of technology on personal health.
- 7.2.7 Indicate how the perceptions of norms influence healthy and unhealthy behaviors.
- 7.2.8 Describe the influence of personal beliefs on health practices and behaviors.
- 7.2.9 Discuss how some risky choices can influence the likelihood of unhealthy behaviors.
- 7.2.10 Identify how public health policies can influence disease prevention.

Standard 3

Students will demonstrate the ability to access valid information and products and services to enhance health.

- 7.3.1 Explain the validity of health information.
- 7.3.2 Locate valid health information from school and community.
- 7.3.3 Identify how to access products that enhance health.
- 7.3.4 Determine situations that require health services.
- 7.3.5 Select valid and reliable health products.

Standard 4

Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

- 7.4.1 Demonstrate effective communication skills to enhance health.
- 7.4.4 Model how to ask for assistance to enhance the health of others.

Standard 5

Students will demonstrate the ability to use decision-making skills to enhance health.

- 7.5.1 Describe situations that can help or hinder healthy decision-making.
- 7.5.2 Recognize when health-related situations require a thoughtful decision-making process.
- 7.5.4 Differentiate between healthy and unhealthy choices to health-related issues or problems.
- 7.5.5 Examine the potential short-term impact of each option on self and others.
- 7.5.6 Choose healthy choices over unhealthy choices when making a decision.
- 7.5.7 Examine the consequences of a health-related decision.

Standard 6

Students will demonstrate the ability to use goal-setting skills to enhance health.

- 7.6.1 Analyze the effectiveness of personal health practices.
- 7.6.2 Select a goal to improve a personal health practice.

Standard 7

Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

- 7.7.1 Show the importance of being accountable for personal health behaviors.
- 7.7.2 Describe healthy practices and behaviors that will maintain or improve the health of self and others.
- 7.7.3 Describe behaviors to avoid or reduce health risks to self and others.

Standard 8

Students will demonstrate the ability to advocate for personal, family and community health.

- 7.8.1 Select a health enhancing position and support it with accurate information.
- 7.8.2 Demonstrate how to influence and support others to make positive health choices.
- 7.8.4 Explain ways that health messages can be altered for different audiences.

-----**GRADE 8 Core**

Standards

Standard 1: Physical Science

Describe how atomic structures determine chemical properties and how atoms and molecules interact.

- 8.1.1 Explain that all matter is composed of particular arrangements of atoms and that there are approximately 100 types of atoms (i.e., elements).
- 8.1.3 Explain how the arrangement of atoms and molecules determines chemical properties of substances.
- 8.1.4 Describe the structure of atoms and relate the arrangement of electrons to how atoms interact with other atoms.
- 8.1.5 Explain that atoms join together to form molecules and compounds and illustrate with diagrams the relationship between atoms and compounds and between atoms and molecules.
- 8.1.7 Explain that chemical changes occur when substances react and form one or more different products, whose physical and chemical properties are different from those of the reactants.

Standard 2: Earth and Space Systems

Explain how the sun's energy heats the air, land and water and drives the processes that result in wind, ocean currents and the water cycle.

Describe how human activities have changed the land, water, and atmosphere.

- 8.2.2 Describe and model how water moves through the earth's crust, atmosphere and oceans in a cyclic way as a liquid vapor and solid.
- 8.2.5 Describe the conditions that cause Indiana weather and weather-related events such as tornadoes, lake effect snow, blizzards, thunderstorms and flooding.
- 8.2.6 Identify, explain and discuss some effects human activities (e.g. air, soil, light, noise and water pollution) have on the biosphere.
- 8.2.7 Recognize that some of Earth's resources are finite and describe how recycling, reducing consumption and the development of alternatives can reduce the rate of their depletion.

GRADE 8 Standard 1: Health & Wellness

Standard 1: History

Students will examine the relationship and significance of themes, concepts and movements in the development of U.S. history, including review of key ideas related to the colonization of America and the revolution and Founding Era. This will be followed by emphasis on social reform, national development and westward expansion, and the Civil War and Reconstruction period.

- 8.2.2 Identify and explain the relationship between rights and responsibilities of citizenship in the U.S.
- 8.2.4 Examine functions of the national government in the lives of people.
- 8.2.7 Explain the importance in a democratic republic of responsible participation by citizens in voluntary civic associations/non-governmental organizations that comprise civil society.
- 8.2.9 Explain how citizens can monitor and influence the development and implementation of public policies at local, state and national levels of government.
- 8.2.10 Research and defend positions on issues in which fundamental values and principles related to the United States Constitution are in conflict, using a variety

of information resources.

Standard 3: Geography

Students will identify the major geographic characteristics of the U.S. and its regions. They will name and locate the major physical features of the U.S., as well as each of the states, capitals and major cities, and will use geographic skills and technology to examine the influence of geographic factors on national development.

- 8.3.11 Identify ways people modified the physical environment as the United States developed and describe the impacts that resulted. (urbanization, (increase of people living/working in urban places as compared to rural places, deforestation, (clearing of trees or forests) extinction or near extinction, (habitat, geographic area or the entire world dvmp of roads, canals)
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Students will comprehend concepts related to health promotion and disease prevention to enhance health.

- 8.1.1 Analyze the relationship between healthy behaviors and personal health.
 8.1.3 Analyze how the environment impacts personal health.
 8.1.4 Describe how family history can impact personal health.
 8.1.7 Describe the benefits of and barriers to practicing healthy behaviors.
 8.1.8 Examine the likelihood of injury or illness if engaging in unhealthy behaviors.
 8.1.9 Examine the potential seriousness of injury or illness if engaging in unhealthy behaviors.

Standard 2

Students will analyze the influence of family, peers, culture, media, technology and other factors on health behaviors.

- 8.2.1 Examine how the family influences the health of adolescents.
 8.2.3 Describe how peers influence healthy and unhealthy behaviors.
 8.2.4 Analyze how the school and community can affect personal health practices and behaviors.
 8.2.5 Analyze how messages from the media influence health behaviors.
 8.2.6 Analyze the influence of technology on personal and family health.
 8.2.7 Explain how the perceptions of norms influence healthy and unhealthy behaviors.
 8.2.8 Explain the influence of personal values and beliefs on individual health practice and behaviors.
 8.2.10 Explain how school and public health policies can influence health promotion and disease prevention.

Standard 3

Students will demonstrate the ability to access valid information and products and services to enhance health.

- 8.3.1 Analyze the validity of health information, products and services.
 8.3.2 Access valid health information from home, school and community.
 8.3.3 Determine the accessibility of products that enhance health.
 8.3.5 Locate valid and reliable health products and services.

Standard 4

Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

- 8.4.1 Apply effective verbal and non-verbal communication skills to enhance health.
 8.4.2 Demonstrate refusal and negotiation skills to avoid or reduce health risks.
 8.4.3 Demonstrate effective conflict management or resolution strategies.
 8.4.4 Demonstrate how to ask for assistance to enhance the health of self and others.

Standard 5

Students will demonstrate the ability to use decision-making skills to enhance health.

- 8.5.1 Identify circumstances that can help or hinder healthy decision making.
 8.5.2 Determine when health-related situations require the application of a thoughtful

decision-making process.

- 8.5.3 Distinguish when individual or collaborative decision making is appropriate.
- 8.5.4 Distinguish between healthy and unhealthy alternatives to health-related issues or problems.
- 8.5.5 Predict the potential short-term impact of each alternative on self and others.
- 8.5.6 Choose healthy alternatives over unhealthy alternatives when making a decision.
- 8.5.7 Analyze the outcomes of a health-related decision.

Standard 6

Students will demonstrate the ability to use goal setting skills to enhance health.

- 8.6.1 Assess personal health practices
- 8.6.2 Develop a goal to adopt, maintain or improve a personal health practice.
- 8.6.3 Apply strategies and skills needed to attain a personal health goal.

Standard 7

Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

- 8.7.1 Explain the importance of assuming responsibility for personal health behaviors.
- 8.7.2 Demonstrate healthy practices and behaviors that will maintain or improve the health of self and others.
- 8.7.3 Demonstrate behaviors to avoid or reduce health risks to self and others.

Standard 8

Students will demonstrate the ability to advocate for personal, family and community health.

- 8.8.1 State a health-enhancing position on a topic and support it with accurate information.
- 8.8.2 Demonstrate how to influence and support others to make positive health choices.
- 8.8.3 Work cooperatively to advocate for health individuals, families and schools.
- 8.8.4 Identify ways that health messages and communication techniques can be altered for different audiences.

GRADES 9-12

Standard 1: Health and Wellness

Students will comprehend concepts related to health promotion and disease prevention to enhance health.

- HW.1.1 Document how personal behaviors can impact health.
- HW.1.2 Explain the interrelationships of emotional, social and physical health.
- HW.1.3 Examine how the environment and health are connected
- HW.1.5 Formulate ways to prevent or reduce the risk of health problems.
- HW.1.6 Investigate the connection between access to health care and health status.
- HW.1.7 Summarize the benefits and barriers to practicing healthy behaviors.
- HW.1.8 Predict susceptibility to injury or illness if engaging in unhealthy behaviors.
- HW.1.9 Discover the severity of illness if engaging in unhealthy behaviors.

Standard 2

Students will analyze the influence of family, peers, culture, media, technology and other factors on health behaviors.

- HW.2.1 Examine how the family impacts the health of individuals.
- HW.2.2 Examine how society supports and challenges health beliefs, practices and behaviors.
- HW.2.3 Examine how adolescents influence healthy and unhealthy behaviors.
- HW.2.3 Assess how the school and community can influence health practices and behaviors.
- HW.2.5 Analyze the effect of media on personal health.
- HW.2.6 Analyze the impact of technology on personal and family health.
- HW.2.7 Examine how norms influence health-related behaviors.
- HW.2.8 Determine the influence of personal values on health practices and behaviors.
- HW.2.10 Examine how public health policies and government regulations can influence health promotion and disease prevention.

Standard 3

Students will demonstrate the ability to access valid information and products and services to enhance health.

HW.3.1 Assess how to determine the validity of health information, products and services.

HW.3.2 Utilize resources from school and community that provide valid health information.

HW.3.3 Investigate the accessibility of products and services that enhance health.

HW.3.4 Examine when professional health services may be required.

HW.3.5 Select valid and reliable health products and services.

Standard 4

Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

HW.4.1 Model skills for communicating effectively with others to enhance health.

HW.4.2 Apply refusal, negotiation and collaboration skills to enhance health and avoid or reduce health risks.

HW.4.3 Apply strategies to manage or resolve interpersonal conflicts without harming self or others.

HW.4.4 Illustrate how to offer assistance to enhance the health of self and others.

Standard 5

Students will demonstrate the ability to use decision making skills to enhance health.

HW.5.1 Determine barriers to healthy decision making.

HW.5.2 Outline the value of applying a thoughtful decision-making process to a health-related situation.

HW.5.3 Assess when independent or collaborative decision making is appropriate.

HW.5.4 Propose alternative choices to health-related issues or problems.

HW.5.5 Analyze the potential short and long-term outcome of each alternative on self and others.

HW.5.6 Determine the health-enhancing choice when making decisions.

HW.5.7 Assess the potential success or consequence of health-related decisions.

Standard 6

Students will demonstrate the ability to use goal-setting skills to enhance health.

HW.6.1 Evaluate personal health practices and overall health.

HW.6.2 Formulate a plan to achieve a health goal that addresses strengths, needs and risks.

HW.6.3 Determine an effective long-term personal health plan.

Standard 7

Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

HW.7.1 Examine individual responsibility for improving health.

HW.7.2 Illustrate a variety of healthy practices that will maintain or improve health.

HW.7.3 Model behaviors to reduce health risks.

Standard 8

Students will demonstrate the ability to advocate for personal, family and community health.

HW.8.1 Apply accurate peer and societal norms to formulate a health-enhancing message

HW.8.2 Model how to influence and support others to make positive health choices.

HW.8.3 Work with others to advocate for improving personal, family and community health.

HW.8.4 Modify health messages and communication techniques to a specific target audience.

ALSO APPLIES TO ADVANCED HEALTH AND WELLNESS (AH) STANDARDS

FAMILY & CONSUMER SCIENCE (FACS)

Adult Roles And Responsibilities (2008)

Standard 1

Students will integrate processes of thinking, communication, leadership, and management in order to apply interpersonal relationships knowledge and skills.

ARR-1.1 Demonstrate components of critical thinking, creative thinking, and reasoning.

ARR-1.2 Evaluate effective communication processes in school, family, career, and community settings.

ARR-1.3 Demonstrate leadership that encourages participation and respect for the ideas, perspectives, and contributions of group members.

ARR-1.4 Apply management, decision-making, and problem solving processes to accomplish tasks and fulfill responsibilities.

ARR-1.1.5 Examine the interrelationships among thinking, communication, leadership, and management processes to address family, community, and workplace issues.

Standard 2

Students will analyze personal standards, needs, aptitudes, and goals and their impact on family, career, and community interactions.

ARR-2.2 Determine personal standards and their effects on life choices.

ARR-2.3 Examine impacts of needs and aptitudes on family and community interactions, choices, and personal fulfillment.

Standard 3

Students will integrate multiple life roles and responsibilities in family, career, and community settings.

ARR-3.2 Analyze impacts of multiple life roles and responsibilities on various types of relationships.

ARR-3.3 Evaluate responsible ways of behaving and relating to others in family, career, and community settings.

ARR-3.4 Analyze interrelationships among family, career, and community roles and responsibilities.

Standard 4

Students will demonstrate management of individual and family resources, including food, clothing, shelter, and transportation.

ARR-4.1 Demonstrate processes used to set standards, make choices, and satisfy needs and wants for nutrition and wellness, clothing, housing, and transportation.

ARR-4.2 Apply management and planning skills and processes to organize tasks and fulfill responsibilities.

ARR-4.3 Demonstrate skills in seeking consumer information, taking consumer responsibility, and exercising consumer rights.

ARR-4.4 Evaluate features, prices, and performance of consumer goods in light of personal standards, goals, and resources.

ARR-4.5 Determine individual and family responsibilities in conserving, reusing, and recycling resources to maintain the environment.

ARR-4.6 Assess the use of technology and its impact on quality of life and family resources.

Standard 5

Students will demonstrate management of financial resources to meet goals of individuals and families across the life span. (See also: Financial Literacy Education high school standards)

ARR-5.1 Financial Responsibility & Decision Making

5.1.1 Demonstrate financial planning strategies that reflect needs, wants, standards, goals, and economic resources.

5.1.2 Determine financial practices that foster economic self-sufficiency for individuals

and families.

MIDDLE SCHOOL FACS

Standard 1 Life & Careers

Integrate multiple life roles and responsibilities in school, family, career, and community settings.

Standard 4: Interdependence

Describe the relationship between living and nonliving components of ecosystems and describe how that relationship is in flux due to natural changes and human actions.

- B.4.1 Explain that the amount of life environments can support is limited by the available energy, water, oxygen and minerals and by the ability of ecosystems to recycle the remains of dead organisms.
- B.4.2 Describe how human activities and natural phenomena can change the flow and of matter and energy in an ecosystem and how those changes impact other species.
- B.4.4 Describe how climate, the pattern of matter and energy flow, the birth and death of new organisms, and the interaction between those organisms contribute to the long-term stability of an ecosystem.

Standard 8: Evolution

Describe how modern evolutionary theory provides an explanation of the history of life on earth and the similarities among organism that exist today.

- B.8.5 Describe how organisms with beneficial traits are more likely to survive, reproduce, and pass on their genetic information due to genetic variations, environmental forces and reproductive pressures.

GRADE 9-12 Core Standards

Standard 1: Economics

Students will understand that productive resources are limited; therefore, people, institutions and governments cannot have all the goods and services they want. As a result, people, institutions and governments must choose some things and give up others.

- E.1.1 Define each of the productive resources (natural, human, capital) and explain why they are necessary for the production of goods and services. (Geography)
- E.1.2 Explain how consumers and producers confront the condition of scarcity by making choices which involve opportunity costs and tradeoffs.
- E.1.3 Explain the important role of the entrepreneur in taking the risk to combine productive resources to produce goods and services.
- E.1.4 Describe how people respond predictably to positive and negative incentives.
- E.1.5 Explain that voluntary exchange occurs when all participating parties expect to gain.
- E.1.6 Compare and contrast how the various economic systems (traditional, market, command, mixed) answer the questions: What to produce? How to produce it? For whom to produce?
- E.1.9 Diagram and explain a Circular Flow Model of a market economy, showing households and businesses as decision makers, resource and money flows, and the three basic markets—product, productive resources and financial markets.

Standard 2: Supply and Demand

Students will understand the role that supply and demand, prices, and profits play in determining production and distribution in a market economy.

- E.2.1 Define supply and demand.
- E.2.2 Identify factors that cause changes in market supply and demand.
- E.2.3 Describe the role of buyers and sellers in determining the equilibrium price.
- E.2.4 Describe how prices send signals to buyers and sellers.
- E.2.5 Recognize that consumers ultimately determine what is produced in a market

economy (consumer sovereignty).

E.2.6 Demonstrate how supply and demand determine equilibrium price and quantity in the product, resource, and financial markets.

E.2.11 Illustrate how investment in factories; machinery; new technology; and the health, education and training of people increases productivity and raises future standards of living. (Individuals, Society and Culture).

Standard 3: Market Structures

Students will understand the organization and role of business firms and analyze the various types of market structures in the United States economy.

E.3.3 Recognize that economic institutions, such as labor unions, nonprofit organizations and cooperatives, evolve in market economies to help members and clients accomplish their goals. (Government; Individuals, Society and Culture).

E.3.5 Explain how competition among many sellers lowers costs and prices.

Standard 4: Role of Government

Students will understand that typical microeconomic roles of government in a market or mixed economy are the provision of public goods and services, redistribution of income, protection of property rights, and resolution of market failures.

E.4.1 Explain the basic functions of government in a market economy. (Government).

E.4.3 Describe how the government taxing harmful spillovers and subsidizing helpful spillovers helps to resolve the inefficiency they cause.

E.4.5 Explain the way that tax revenue is used in the community. (Government).

E.4.10 Use an economic decision making model to analyze a public policy issue. (Government).

Standard 5: National Economic Performance

Students will understand the means by which economic performance is measured.

E.5.1 Define aggregate supply and demand, Gross Domestic Product (GDP), economic growth, unemployment, and inflation.

E. 5.5 Analyze the impact of events in United States history, such as wars and technological developments, on business cycles. (History).

E.5.9 Recognize that a country's overall level of income, employment and prices are determined by the individual spending and production decisions of households, firms and government. (Government; Individuals, Society and Culture).

E.5.10 Illustrate and explain how the relationship between aggregate supply and aggregate demand is an important determinant of the levels of unemployment and inflation in an economy.

E.5.11 Compare and contrast solutions for reducing unemployment. (Government).

Standard 8: Trade

Students will understand why individuals, businesses and governments trade goods and services and how trade affects the economies of the world.

E.8.7 Explain how most trade occurs because of a comparative advantage in the production of a particular good or service.

E.8.10 Identify skills that individuals need to be successful in the global economy.

Biology Standard 1: Cellular Chemistry

Describe how work done in cells is performed by a variety of organic molecules—especially proteins, whose functions depend on the sequence of their monomers and the consequent shape of the molecule.

B.1.3 Explain and give examples of how the function and differentiation of cells is influenced by their external environment (e.g. temperature, acidity and the concentration of certain molecules) and changes in these conditions may affect

how a cell functions.

Standard 2: Cellular Structure

Describe features that are common to all cells and contrast those with distinctive features that allow cells to carry out specific functions.

- B.2.1 Describe features common to all cells that are essential for growth and survival.
Explain their functions.
- B.2.2 Describe the structure of a cell membrane and explain how it regulates the transport of materials into and out of the cell and prevents harmful materials from entering the cell.
- B.2.3 Explain that most cells contain mitochondria (the key sites of cellular respiration), where stored chemical energy is converted into useable energy for the cell.
Explain that some cells, including many plant cells, contain chloroplasts (the key sites of photosynthesis) where the energy of light is captured for use in chemical work.
- B.2.5 Explain that cells use proteins to form structures (e.g., cilia, flagella), which allow them to carry out specific functions (e.g. movement, adhesion and absorption).
- B.2.6 Investigate a variety of different cell types and relate the proportion of different organelles within these cells to their functions.

Standard 3: Matter Cycles and Energy Transfer

Describe how the sun's energy is captured and used to construct sugar molecules that can be used as a form of energy or serve as building blocks of organic molecules.

Diagram how matter and energy cycle through an ecosystem.

- B.3.1 Describe how some organisms capture the sun's energy through the process of photosynthesis by converting carbon dioxide and water into high-energy compounds and releasing oxygen.
- B.3.2 Describe how most organisms can combine and recombine the elements contained in sugar molecules into a variety of biologically essential compounds by utilizing the energy from cellular respiration.
- B.3.3 Recognize and describe that metabolism consists of all of the biochemical reactions that occur inside cells, which include the production, modification, transport, and exchange of materials that are required for the maintenance of life.
- B.3.4 Describe how matter cycles through an ecosystem by way of food chains and food webs and how organisms convert that matter into a variety of organic molecules to be used in part in their own cellular structures.
- B.3.5 Describe how energy from the sun flows through an ecosystem by way of food chains and food webs and how only a small portion of that energy is used by individual organisms while the majority is lost as heat.

Integrated Chemistry and Physics Standard 8: Society (Energy production, environment, economics)

Understand the impact of energy production and use on society and the environment.

- ICP.8.1 Describe how energy needs have changed throughout history and how energy needs are met in modern society.
- ICP.8.2 Describe the benefits and risks of the development of non-renewable forms of energy such as coal, oil, natural gas and uranium fission sources.
- ICP.8.3 Describe the benefits and risks of the development of renewable forms of energy such as solar energy, wind energy, geothermal energy, fusion energy and biofuels.
- ICP8.4 Describe how efficient use of renewable and non-renewable energy sources is essential to maintaining an acceptable environment.
- ICP8.5 Describe how the availability of energy resources is essential to the development

of an economically viable society.

ICP 8.6 Contrast the dependence on and use of energy and other natural resources in the economies of industrial nations, of developing nations and of undeveloped nations.

ICP 8.7 Describe the energy needs of a modern urban city. Compare and contrast these needs with those of a modern rural community.

Physics I: Standard 2: Energy and Momentum

Collaboratively describe, test, explain and defend mathematical models of the motion of macroscopic objects in terms of energy, momentum and their conservation laws as developed using Newton's three laws of motion.

P.2.1 Describe qualitatively and quantitatively the concepts of momentum, work, kinetic energy, potential energy and power.

P.2.3 Analyze evidence that illustrates the Law of Conservation of Energy and the Law of Conservation of Momentum. Apply these laws to analyze elastic and completely inelastic collisions.

P.2.4 Describe and quantify energy in its different mechanical forms (e.g., kinetic, gravitational potential, elastic potential) and recognize that these forms of energy can be transformed one into another and into non-mechanical forms of energy (e.g., thermal, chemical, nuclear and electromagnetic).

Standard 3: Temperature and Thermal Energy Transfer

Core Standard

Describe and distinguish the concepts of temperature and thermal energy. Use the kinetic molecular theory to explain some thermal properties of gases and phase changes of solids, liquids and gases.

P.3.1 Describe temperature, thermal energy and thermal energy transfer in terms of the kinetic molecular model. Expand the concept of conservation of mechanical energy to include thermal energy.

P.3.3 Use the kinetic theory to explain that the transfer of heat occurs during a change of state.

Standard 4: Electricity and Magnetism

Understand the interplay of electricity and magnetism. Apply this understanding to electrostatic problems and basic electrical circuits.

P.4.2 Define electric field and describe the motion of a charged particle in a simple electric field.

P.4.3 Describe electric potential energy and electric potential (i.e, voltage). Use voltage to explain the motion of electrical charges and the resulting electric currents in conductors.

P.4.4 Explain and analyze simple arrangements of electrical components in series and parallel circuits in terms of current, resistance, voltage and power. Use Ohm's and Kirchoff's laws to analyze circuits.

P.4.5 Describe the magnetic forces and fields produced by and acting on moving charges and magnetic materials.

Standard 5: Vibrations, Waves

Core Standard

Apply Newton's laws and the concepts of kinetic and potential energy to describe and explain the motion of vibrating objects.

P.5.1 Identify properties of objects that vibrate by using Newton's laws to describe and

- explain the vibrational motion resulting from restoring forces, such as Hooke's Law in the case of spring or gravity in the case of a small amplitude pendulum.
- P.5.2 Describe how vibrating objects can generate transverse and/or longitudinal waves so that energy is transmitted without the transfer of energy. Distinguish longitudinal waves from transverse waves.
- P.5.3 Describe and analyze propagating waves in terms of their fundamental characteristics such as wave speed, wavelength, frequency or period, and amplitude.
- P.5.4 Describe and explain the behavior of waves such as transmission, reflection, interference and polarizations. Qualitatively describe and explain the production and properties of standing waves.
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Standard 6: Light and Optics

Understand the geometric nature of light propagation and its wave nature as observed in propagation of light through space and its interactions with and in matter.

- P.6.1 Understand the geometric nature of light in reflection and refraction and in image formation by lenses and mirrors. Use that geometric nature to graphically predict the formation of images by lens and mirrors.
- P.6.2 Describe the electromagnetic spectrum (i.e., radio waves, microwaves, infrared, visible light, ultraviolet, X-rays and gamma rays) in terms of frequency, wavelength and energy. Recognize that all these waves travel in a vacuum at the same speed.
- P.6.3 Understand that electromagnetic waves are produced by the acceleration of charged particles. Describe how electromagnetic waves interact with matter both as packets (i.e., photons) and as waves. Show qualitatively how wave theory helps explain polarization and diffraction.
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Standard 7: Modern Physics

Understand how our knowledge of physics has changed during the last hundred years, particularly in the areas of atomic and nuclear physics, quantum theory and relativity. Describe the structure of the atom and the reactions that occur in its nucleus.

- P.7.1 Explain that electrons, protons and neutrons are parts of the atom and that the nuclei of atoms are composed of protons and neutrons, which experience forces of attraction and repulsion consistent with their charges and masses. Distinguish elements from isotopes.
- P.7.2 Explain that the stability of the nucleus, containing only positive or neutral particles, indicates the existence of a new force that is only evident within the nucleus, as it holds the particles together despite the strong repulsive electrical force.
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