Unit 4 - Earth's Environmental Systems, Evolution and Community Ecology, and Biodiversity Copied from: Environmental Science w/Lab (Life Science), Copied on: 02/21/22

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Department of Curriculum and Instruction

Belleville Public Schools

Curriculum Guide

Environmental Science

Unit 4

Belleville Board of Education

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Unit Overview

- The chemical elements that make up the molecules of living things pass through food webs and are combined and recombined in different ways (photosynthesis, respiration, nitrogen fixation, or decomposition).
- At each link in a food web, some energy is stored in newly made structures but much is dissipated into the environment. Continual input of energy from sunlight keeps the process going
- The use and transfer of energy from one trophic level to another can be calculated and the 'rule of Ten
- The chemical elements that make up the molecules of living things pass through food webs and are combined and recombined in different ways. At each link in a food web, some energy is stored in newly made structures but much is dissipated into the environment. Continual input of energy from sunlight keeps the process going
- Living systems require a continuous input of energy to maintain their chemical and physical organizations and also understanding that with the cessation of energy input, living systems rapidly disintegrate.
- The abundance and distribution of living organisms are limited by the available energy and certain forms of matter such as water, oxygen and minerals.
- Although Earth has a great capacity to absorb and recycle materials naturally, ecosystems have only a finite capacity to withstand change without experiencing major ecological alterations that may also have adverse effects on human activities.
- All Earth processes are the result of energy flowing and mass cycling within and between Earth's systems. This energy is derived from the sun and Earth's interior. The flowing energy and cycling matter cause chemical and physical changes in Earth's materials and living organisms. For example, large amounts of carbon continually cycle among systems of rock, water, air, organisms, and fossil

fuels such as coal and oil.

- The transport and transformation of substances through the Earth system are known collectively as biogeochemical cycles. These include the hydrologic (water), nitrogen, carbon, and oxygen cycles. Human activities can, deliberating or inadvertently, alter the equilibrium of these cycles.
- Much of the complex behavior of the Earth system can be thought of as cycles involving physical, chemical and biological processes that transfer components among various storage locations over time.
- The inputs and outputs connecting such reservoirs, the changes in the physical state or chemical characteristics of the components, and the time scale of these processes can all be recognized and quantified.
- Biogeochemical cycles, such as the water cycle and carbon cycle, are driven and sustained by solar and/or geothermal energy, which is transferred, utilized and lost as an integral aspect of the cycles.
- Differences in climate, based mostly on long-term differences in average temperature and precipitation, largely determine the types and locations of the earth's deserts, grasslands, and forests.
- Freshwater lakes, rivers, and wetlands provide important ecological and economic services that are being disrupted by human activities.
- Saltwater ecosystems provide major ecological and economic services that are being threatened by human activities.
- Saltwater and freshwater aquatic life zones cover almost three-fourths of the earth's surface, and oceans dominate the planet.
- In many areas, human activities are impairing ecological and economic services provided by the earth's deserts, grasslands, forests, and mountains.
- Differences in long-term average annual precipitation and temperature lead to the formation of tropical, temperate, and cold deserts, grasslands, and forests, and largely determine their locations.
- Key factors determining an area's climate are incoming solar energy, the earth's rotation, global patterns of air and water movement, gases in the atmosphere, and the earth's surface features.
- The misuse of soil reduces soil fertility pollutes streams, and requires expensive remedial measures
- As energy flows through ecosystems in food chains and webs, the amount of chemical energy available to organisms at each succeeding feeding level decreases. Matter, in the form of nutrients, cycles within and among ecosystems and in the biosphere. Human activities are altering these chemical cycles.
- Scientists use field research, laboratory research, and mathematical and models to learn about ecosystems. species plays a specific ecological role called its niche.
- All Earth processes are the result of energy flowing and mass cycling within and between Earth's systems. This energy is derived from the sun and Earth's interior. The flowing energy and cycling matter cause chemical and physical changes in Earth's materials and living organisms. For example, large amounts of carbon continually cycle among systems of rock, water, air, organisms, and fossil fuels such as coal and oil.
- Earth exchanges mass and energy with the rest of the Solar System. Earth gains and loses energy through incoming solar radiation, heat loss to space, and gravitational forces from the sun, moon, and planets. Earth gains mass from the impacts of meteoroids and comets and loses mass by the escape of gases into space.
- The transport and transformation of substances through the Earth system are known collectively as biogeochemical cycles. These include the hydrologic (water), nitrogen, carbon, and oxygen cycles. Human activities can, deliberating or inadvertently, alter the equilibrium of these cycles
- While urbanization may involve or provide a number of economic, social and environmental benefits, the global population demographic trend of increased urbanization that has been seen as more countries prepare to further industrialize may be associated with negative environmental and human health consequences

Enduring Understanding

1. The environment consists of many interacting systems in which there are dynamic consequences to upsetting the balanced equilibrium.
2. Environmental Science is a problem-based, multidisciplinary science, which integrates the physical sciences, life sciences, and social sciences.
3. Environmental Science is designed to provide students with the scientific principles, concepts and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems, both natural and human-made, and to evaluate the relative risks associated with these problems.
4. Ecosystems are the result of the interactions among Earth's biosphere, geosphere, atmosphere, and hydrosphere.
5. We can live more sustainable lives by relying more on solar energy, preserving biodiversity, and not disrupting the earth's natural chemical recycling processes.
6. Major causes of environmental problems are population growth, wasteful and unsustainable resource use, and exclusion of harmful environmental costs from the market prices of goods and services.
7. Our lives and economies depend on energy from the sun and natural resources and natural services (natural capital) provided by the earth.
8. Scientific evidence is used for building, refining, and/or critiquing scientific explanations.
9. Climate is influenced by interactions of multiple physical, chemical and biological factors, including human actions.

Essential Questions

1. What methods are used to study environmental science?
2. Why is it important to think in terms of systems of systems when considering environmental issues?
3. To what extent can human behaviors impact our planet's environment?
4. What is biodiversity and why is it important?
5. What factors contribute to our ecological footprint?
6. How have humans contributed to our Environmental Problems?
7. What Is Pollution and what can we do about It?
8. How are our ecological footprints affecting the Earth?
9. What are the biotic and Abiotic factors that define an ecosystem?
10. Why is it important to think in terms of systems of systems when considering environmental issues?
11. What is sustainability?

Exit Skills

1. Analyze a problem, developing hypothesis, and design a scientific experiment to test those hypothesis
2. Use statistical analysis of data collected to make an argument based on purely scientific evidence
3. Develop a vernacular of scientific terms and current environmental problems
4. Data mine from scientific journals and articles evaluating their scientific methodology for validity

New Jersey Student Learning Standards (NJSLS-S)

SCI.9-12.HS-ETS1-3	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.
SCI.9-12.HS-ETS1-2	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
SCI.9-12.HS-ETS1-1	Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
SCI.9-12.HS-ETS1-4	Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.
SCI.9-12.HS-LS2-4	Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.
SCI.9-12.HS-LS2-5	Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.
SCI.9-12.HS-LS2-6	Evaluate claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.
SCI.9-12.HS-LS2-7	Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.
SCI.9-12.HS-LS3-1	Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.
SCI.9-12.HS-LS3-2	Make and defend a claim based on evidence that inheritable genetic variations may result from (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.
SCI.9-12.HS-LS3-3	Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.
SCI.9-12.HS-LS2-3	Construct and revise an explanation based on evidence for the cycling of matter and flow

	of energy in aerobic and anaerobic conditions.
SCI.9-12.HS-LS2-2	Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.
SCI.9-12.HS-LS2-1	Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.
SCI.9-12.HS-LS1-1	Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins, which carry out the essential functions of life through systems of specialized cells.
SCI.9-12.HS-LS1-5	Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.
SCI.9-12.HS-PS1-3	Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
SCI.9-12.HS-PS1-7	Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Interdisciplinary Connections

LA.RH.11-12.1	Accurately cite strong and thorough textual evidence, (e.g., via discussion, written response, etc.), to support analysis of primary and secondary sources, connecting insights gained from specific details to develop an understanding of the text as a whole.
LA.RH.11-12.2	Determine the theme, central ideas, information and/or perspective(s) presented in a primary or secondary source; provide an accurate summary of how key events, ideas and/or author's perspective(s) develop over the course of the text.
LA.RH.11-12.3	Evaluate various perspectives for actions or events; determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain.
MA.A-SSE.B	Write expressions in equivalent forms to solve problems
LA.RH.11-12.7	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, qualitatively, as well as in words) in order to address a question or solve a problem.
LA.RH.11-12.8	Evaluate an author's claims, reasoning, and evidence by corroborating or challenging them with other sources.
LA.RH.11-12.9	Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.
LA.RST.11-12.7	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
LA.RST.11-12.10	By the end of grade 12, read and comprehend science/technical texts in the grades 11-CCR text complexity band independently and proficiently.
MA.A-CED.A	Create equations that describe numbers or relationships

Learning Objectives

1. Relate the role economics plays on the environment.
2. Graph the average ecological footprints of several countries, select two countries with different sized footprints and research the lifestyles of the citizens of the several countries of varying GDP.
3. Evaluate what aspects of lifestyles of the citizens of other countries, evaluating what aspects of lifestyle are most important in calculating an ecological footprint, and decide whether any lifestyle

changes should or could be make to alter the value of the ecological footprint.
4. Identify actions that can be taken to deal with the problem of consumption patterns and identify the five categories within the life cycle of consumer goods.
5. Define abiotic and biotic factors and how specific levels of matter interact with each other.
6. Describe the hydrogen cycle, carbon cycle, nitrogen cycle, phosphorous cycle, and sulfur cycle.
7. Define the field of environmental science and discuss its importance.
8. Identify ways in which humans have altered and continue to alter our environment.
9. Describe key environmental indicators that help us evaluate the health of the planet
10. Define sustainability and explain how it can be measured using the ecological footprint.
11. List the basic components of an ecosystem
12. Describe how energy flows through ecosystems
13. Describe how carbon, nitrogen, and phosphorus cycle within ecosystems
14. Explain how ecosystems respond to natural and anthropogenic disturbances
15. Discuss the values of ecosystems and how humans depend on them
16. Explain the forces that drive global circulation patterns and how those patterns determine weather and climate
17. Describe the major terrestrial biomes
18. Describe the major aquatic biomes
19. Explain the concept of biodiversity and how it is measured
20. Describe the ways in which evolution can occur
21. Explain how environmental change affects specification and extinction
22. Explain the concept of an ecological niche
23. Describe the formation of earth and the distribution of critical elements on earth
24. Define the theory of plate tectonics and discuss its importance
25. Compare the short and long term consequences of a hypothetical environmental issue, explaining the impact the movement of tectonic plates can have on the environment, how and why biodiversity is important to humans, and several ways that species are being threatened with extinction

Suggested Activities & Best Practices

Plan-

- Chapter Lesson Plans Chapter 3, Chapter 4, Chapter 5, Chapter 6, Chapter 7
- Chapter Presentation Chapter 3, Chapter 4, Chapter 5, Chapter 6, Chapter 7
- Bell Ringer Walmart's Green Revelolution (Chapter 2) Volcanos and the Earth (Chapter 3), Weekend Window (Chapter 4), The Great Migration of the Alaskan Caribou (Chapter 6), Belizes Safe Haven for Animals

Central Case Activities

- 3D GeoTour - The Cause and Effect of the Dead Zones (Chapter 3), Geography and Cliate of Monteverde (Chapter 4), The Spread of the Zebra Mussel (Chapter 5), Controlling African Elephant Populations (Chapter 6), Habitate Fragmentation in the Sikhote-Alin Mountains Chapter 7),
- Extension of Reading - Beach Trip Troubles (chapter 2), New Report Says American Oceans are in trouble (Chapter 3), Invasive Species in Ship Ballast (Chapter 5), Koalas Are Outgrowing Natural Habitat (Chapter 6), Tigers in Peril (Chapter 7)
- Local Case Study -Endangered Species (Chapter 4), Invasive Species (Chapter 5), Wildlife Management (Chapter 6), Zoos and Conservation (Chapter 7)

Labs and Activities

- Modeling Activity - Simulating Adaptations (Chapter 5), Overharvesting (Chapter 7),
- Scientific Method Laboratory - Catch and Release (Chapter 4), Life in a Pond (Chapter 5), Collecting Climate Data and Biomes (Chapter 6),
- Local Case Study - In your Neighborhood (Pending Legislation Chapter 2), Migrating Populations (Chapter 4), Invasive Organisms Near You (Chapter 5),

Activities

- Guided Reading - Exploring Plant Diversity (Chapter 7),
- Graphing Activity - Choosing Approach (Chapter 2), Working Trees (Chapter 2),
- Mapping - Anaylzing Data (Chapter 2), Age the Islands (Chapter 3), Pangaea (Chapter 3), Turkey Vultures (Chapter 4), Energy Flow in Communities (Chapter 5)
- Writing Activity - The Cloudless Forest (Chapter 4), A Broken Mutualism (Chapter 5), The Golden Lion (Chapter 7),
- 21st Century Skills - Nutrients (Chapter 3),

Assessment

- Self Assessment
- Tests A and B
- Quizzes and Practice

Assessment Evidence - Checking for Understanding (CFU)

Chapter Quizzes and Tests (Summative)

Socratic Questioning (Formative)

Lab Journal (Alternative)

Common Department Benchmark (Benchmark)

Oncourse Assessment Tools (Formative)

Do Now and Exit Tickets (Formative)

- Admit Tickets
- Anticipation Guide
- Common Benchmarks
- Compare & Contrast
- Create a Multimedia Poster
- DBQ's
- Define
- Describe
- Evaluate
- Evaluation rubrics
- Exit Tickets

- Explaining
- Fist- to-Five or Thumb-Ometer
- Illustration
- Journals
- KWL Chart
- Learning Center Activities
- Multimedia Reports
- Newspaper Headline
- Outline
- Question Stems
- Quickwrite
- Quizzes
- Red Light, Green Light
- Self- assessments
- Socratic Seminar
- Study Guide
- Surveys
- Teacher Observation Checklist
- Think, Pair, Share
- Think, Write, Pair, Share
- Top 10 List
- Unit review/Test prep
- Unit tests
- Web-Based Assessments
- Written Reports

Primary Resources & Materials

Environmental Science: Your World your turn - Jay Withgott

Ancillary Resources

Teacher and Publisher supplied power points, notes, guides, labs, and worksheets

Resource manuals

Internet Resources

Computer Activities

Technology Infusion

Gizmos

Near POD

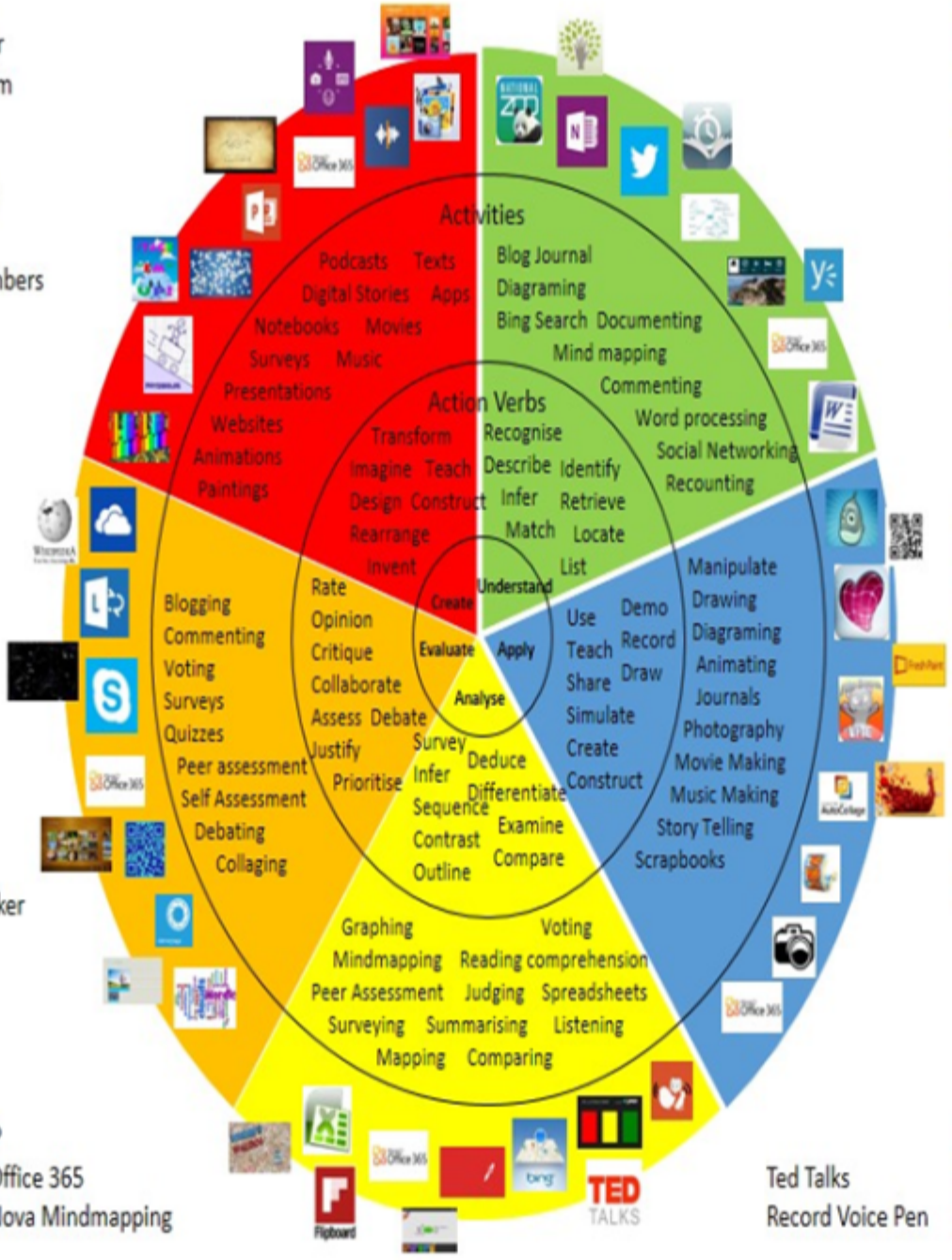
Google Classroom

JamBoards

Win 8.1 Apps/Tools Pedagogy Wheel

Podcasts
Photostory 3
Kid Story Builder
Music Maker Jam
Paint A Story
Office 365
MS PowerPoint
Stack 'Em Up
NqSquared Numbers
Physamajig
Xylophone 8

Wikipedia
Skydrive
Lync
SkyMap
Skype
Office 365
Puzzle Touch
Easy QR
Memorylage
Life Moments
Word Cloud Maker



Where's Waldo?
MS Excel
Flipboard
Office 365
Nova Mindmapping

Ted Talks
Record Voice Pen

Originally taken from http://www.coetail.com/vzimmer/files/2013/02/iPadagogy-Wheel.001.jpg
And adapted for Windows 8.1 devices by Charlotte Beckhurst @CharBeckhurst

Alignment to 21st Century Skills & Technology

- English Language Arts;
- Mathematics;
- Science and Scientific Inquiry (Next Generation);
- Social Studies, including American History, World History, Geography, Government and Civics, and Economics;
- World languages;
- Technology;
- Visual and Performing Arts.

CRP.K-12.CRP1.1	Career-ready individuals understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.
CRP.K-12.CRP2.1	Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation.
CRP.K-12.CRP4.1	Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.
CRP.K-12.CRP5.1	Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organization, and the environment. They are aware of and utilize new technologies, understandings, procedures, materials, and regulations affecting the nature of their work as it relates to the impact on the social condition, the environment and the profitability of the organization.
CRP.K-12.CRP6.1	Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.
CRP.K-12.CRP7.1	Career-ready individuals are discerning in accepting and using new information to make

	decisions, change practices or inform strategies. They use reliable research process to search for new information. They evaluate the validity of sources when considering the use and adoption of external information or practices in their workplace situation.
CRP.K-12.CRP8.1	Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.
CAEP.9.2.12.C.1	Review career goals and determine steps necessary for attainment.
CAEP.9.2.12.C.2	Modify Personalized Student Learning Plans to support declared career goals.
CAEP.9.2.12.C.3	Identify transferable career skills and design alternate career plans.
CAEP.9.2.12.C.5	Research career opportunities in the United States and abroad that require knowledge of world languages and diverse cultures.
CAEP.9.2.12.C.8	Assess the impact of litigation and court decisions on employment laws and practices.
CAEP.9.2.12.C.9	Analyze the correlation between personal and financial behavior and employability.
TECH.8.1.12.A.1	Create a personal digital portfolio which reflects personal and academic interests, achievements, and career aspirations by using a variety of digital tools and resources.
TECH.8.1.12.A.2	Produce and edit a multi-page digital document for a commercial or professional audience and present it to peers and/or professionals in that related area for review.
TECH.8.1.12.A.3	Collaborate in online courses, learning communities, social networks or virtual worlds to discuss a resolution to a problem or issue.
TECH.8.1.12.A.4	Construct a spreadsheet workbook with multiple worksheets, rename tabs to reflect the data on the worksheet, and use mathematical or logical functions, charts and data from all worksheets to convey the results.
TECH.8.1.12.A.CS1	Understand and use technology systems.
TECH.8.1.12.A.CS2	Select and use applications effectively and productively.

21st Century Skills/Interdisciplinary Themes

- Communication and Collaboration
- Creativity and Innovation
- Critical thinking and Problem Solving
- ICT (Information, Communications and Technology) Literacy
- Information Literacy
- Life and Career Skills
- Media Literacy

21st Century Skills

- Civic Literacy

- Environmental Literacy
- Financial, Economic, Business and Entrepreneurial Literacy
- Global Awareness
- Health Literacy

Differentiation

Small Group Instruction

Study Guides

Project Based Learning

Differentiations:

- Small group instruction
- Small group assignments
- Extra time to complete assignments
- Pairing oral instruction with visuals
- Repeat directions
- Use manipulatives
- Center-based instruction
- Token economy
- Study guides
- Teacher reads assessments allowed
- Scheduled breaks
- Rephrase written directions
- Multisensory approaches
- Additional time
- Preview vocabulary
- Preview content & concepts
- Story guides
- Behavior management plan
- Highlight text
- Student(s) work with assigned partner
- Visual presentation

- Assistive technology
- Auditory presentations
- Large print edition
- Dictation to scribe
- Small group setting

Hi-Prep Differentiations:

- Alternative formative and summative assessments
- Choice boards
- Games and tournaments
- Group investigations
- Guided Reading
- Independent research and projects
- Interest groups
- Learning contracts
- Leveled rubrics
- Literature circles
- Multiple intelligence options
- Multiple texts
- Personal agendas
- Project-based learning
- Problem-based learning
- Stations/centers
- Think-Tac-Toes
- Tiered activities/assignments
- Tiered products
- Varying organizers for instructions

Lo-Prep Differentiations

- Choice of books or activities
- Cubing activities
- Exploration by interest
- Flexible grouping
- Goal setting with students
- Jigsaw
- Mini workshops to re-teach or extend skills
- Open-ended activities
- Think-Pair-Share
- Reading buddies
- Varied journal prompts
- Varied supplemental materials

Special Education Learning (IEP's & 504's)

Quiz and Test Study Guides

Graphic Organizers

Powerpoints posted on google classroom

- printed copy of board work/notes provided
- additional time for skill mastery
- assistive technology
- behavior management plan
- Center-Based Instruction
- check work frequently for understanding
- computer or electronic device utilizes
- extended time on tests/ quizzes
- have student repeat directions to check for understanding
- highlighted text visual presentation
- modified assignment format
- modified test content
- modified test format
- modified test length
- multiple test sessions
- multi-sensory presentation
- preferential seating
- preview of content, concepts, and vocabulary
- Provide modifications as dictated in the student's IEP/504 plan
- reduced/shortened reading assignments
- Reduced/shortened written assignments
- secure attention before giving instruction/directions
- shortened assignments
- student working with an assigned partner
- teacher initiated weekly assignment sheet

- Use open book, study guides, test prototypes

English Language Learning (ELL)

Peer to assist students

Allow tests and quizzes to be taken in ESL room with extra time

Students allowed to use electronic devices for translation

Word Lists provided

- teaching key aspects of a topic. Eliminate nonessential information
- using videos, illustrations, pictures, and drawings to explain or clarif
- allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slide shows, videos, etc.) to demonstrate student's learning;
- allowing students to correct errors (looking for understanding)
- allowing the use of note cards or open-book during testing
- decreasing the amount of workpresented or required
- having peers take notes or providing a copy of the teacher's notes
- modifying tests to reflect selected objectives
- providing study guides
- reducing or omitting lengthy outside reading assignments
- reducing the number of answer choices on a multiple choice test
- tutoring by peers
- using computer word processing spell check and grammar check features
- using true/false, matching, or fill in the blank tests in lieu of essay tests

At Risk

Provide modified test

Tutoring times offered

Allow students to correct test for partial credit

Extended time for assignments

- allowing students to correct errors (looking for understanding)
- teaching key aspects of a topic. Eliminate nonessential information
- allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slide shows, videos, etc.) to demonstrate student's learning
- allowing students to select from given choices
- allowing the use of note cards or open-book during testing
- collaborating (general education teacher and specialist) to modify vocabulary, omit or modify items to reflect objectives for the student, eliminate sections of the test, and determine how the grade will be determined prior to giving the test.
- decreasing the amount of workpresented or required
- having peers take notes or providing a copy of the teacher's notes
- marking students' correct and acceptable work, not the mistakes
- modifying tests to reflect selected objectives
- providing study guides
- reducing or omitting lengthy outside reading assignments
- reducing the number of answer choices on a multiple choice test
- tutoring by peers
- using authentic assessments with real-life problem-solving
- using true/false, matching, or fill in the blank tests in lieu of essay tests
- using videos, illustrations, pictures, and drawings to explain or clarify

Talented and Gifted Learning (T&G)

Provide enrichment articles and assignments

Allow students to complete independent study assignments

- Above grade level placement option for qualified students
- Advanced problem-solving
- Allow students to work at a faster pace
- Cluster grouping

- Complete activities aligned with above grade level text using Benchmark results
- Create a blog or social media page about their unit
- Create a plan to solve an issue presented in the class or in a text
- Debate issues with research to support arguments
- Flexible skill grouping within a class or across grade level for rigor
- Higher order, critical & creative thinking skills, and discovery
- Multi-disciplinary unit and/or project
- Teacher-selected instructional strategies that are focused to provide challenge, engagement, and growth opportunities
- Utilize exploratory connections to higher-grade concepts
- Utilize project-based learning for greater depth of knowledge