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**Coal City Unit District #1**  
**Environmental Science - DRAFT**  
**Science Curriculum**

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- SC.ES:1**      **Students will relate the role of human activity on the physical and chemical aspects of the geosphere, biosphere, atmosphere and hydrosphere. (ESS 3-5, ESS 3-6, LS 2-2)**
- SC.ES:1-1      Define and relate the three levels of biodiversity (species diversity, ecosystem diversity and genetic diversity)
- SC.ES:1-2      Describe the major causes of biodiversity loss
- SC.ES:1-3      Provide examples of current solutions to biodiversity loss, and evaluate the relative effectiveness.
- SC.ES:1-4      Forecast possible changes to human population growth rate using past and current data.
- SC.ES:1-5      Describe the factors that influence the impact a population has on its environment.
- SC.ES:1-6      Identify the conditions and organisms that characterize the world's aquatic ecosystems, and defend the need to protect these ecosystems.
- SC.ES:1-7      Describe the causes and effects of air pollution.
- SC.ES:1-8      Provide examples of measures that can limit and prevent pollution of the atmosphere?
- SC.ES:1-9      Support the position that the climate of the earth is changing using a variety of evidence sources.
- SC.ES:1-10     Describe the negative effects of climate change and provide examples of how humanity can respond to correct such effects.

**SC.ES:2 Students will construct evidence-based explanations of cause and effect relationships between environmental factors (climate change, population growth) and the quality of life for humans and all of the living world. (ESS 3-1)**

- SC.ES:2-1 Explain the ecological and economical value of forest resources.
- SC.ES:2-2 Describe the cause and effect of deforestation.
- SC.ES:2-3 Summarize the 100 year history of actions taken toward sustainable forestry.
- SC.ES:2-4 Describe the causes and effects of desertification, soil pollution and erosion.
- SC.ES:2-5 Summarize the evolution of agriculture throughout human history and the role agriculture has played in our changing environment.
- SC.ES:2-6 Describe the major causes and effects of water pollution.
- SC.ES:2-7 Compare and contrast the types of water depletion.
- SC.ES:2-8 Identify the different forms of energy, and relate them to their applied use by humans.
- SC.ES:2-9 Compare and contrast fossil fuel generated power with nuclear power in terms of the role each plays in our changing environment.
- SC.ES:2-10 Describe the relationship between biological and social factors of our environment and human health.
- SC.ES:2-11 Using a real world example, explain the process of biomagnification.
- SC.ES:2-12 Describe solutions science given to protecting human life from each of the following natural disasters: volcanoes, violent weather and earthquakes.

**SC.ES:3**      **Students will make informed evaluations of current and future solutions to a some of the most pressing environmental issues, based on associated economic, environmental, and geopolitical costs, risks and benefits. (ESS 3-2, ESS 3-4, LS 2-7)**

- SC.ES:3-1      Contrast the three categories of solid waste, including the conventional methods used to dispose of each.
- SC.ES:3-2      Provide elaborate explanations of at least two approaches to waste reduction, including source reduction, financial incentives, composting and recycling.
- SC.ES:3-3      Select the method of hazardous disposal that you believe is the safest and defend your choice.
- SC.ES:3-4      Define what a mineral is, and identify the different types of mineral resources that are commonly mined.
- SC.ES:3-5      Describe the negative impacts of mining on the environment and society.
- SC.ES:3-6      Summarize the different measures taken to regulate mining throughout history, and evaluate our current methods of regulation.
- SC.ES:3-7      Describe the transformation of energy involved in the different types of renewable energy sources and the current status of each.
- SC.ES:3-8      Explain the costs and benefits of each renewable energy source.
- SC.ES:3-9      Explain the relationship between economics and the environment.
- SC.ES:3-10     Summarize the history, struggles and current direction of US environmental policy.
- SC.ES:3-11     Describe the different approaches to environmental policy including “command-and-control”, tax breaks and local incentives.
- SC.ES:3-12     Research an example of a small scale (local) solution to an environmental problem, one that applies technology or simply uses great imagination.