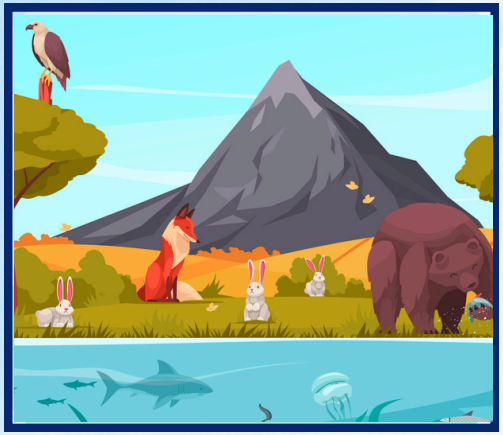
Course Title	IAA Environmental Science

INNOVATIVE ARTS ACADEMY

Course Overview	This Environmental Science course helps students understand how humans and the environment are connected. It covers topics like ecosystems, natural resources, land use, and human impacts, with a focus on sustainability. Students will practice research, problem-solving, and data analysis to find solutions for environmental problems. The course prepares students to use science and technology responsibly to protect the environment and support a healthy future for all.

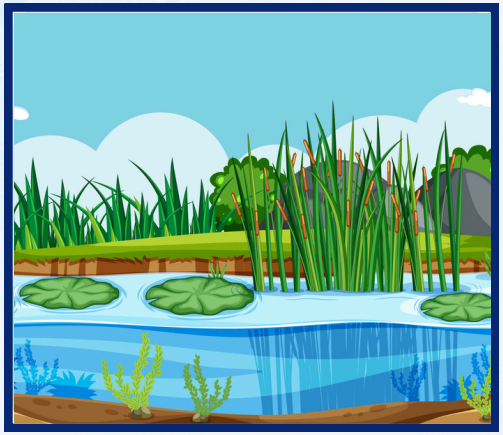
Unit Title	Ecosystems and Biodiversity
Time Frame	4-5 Weeks



Focus of the Unit

Students will explore the structure and function of ecosystems, including the flow of energy and cycling of matter. The unit highlights the importance of biodiversity in maintaining ecosystem resilience. Students will analyze human impacts on ecosystems and the consequences of biodiversity loss.

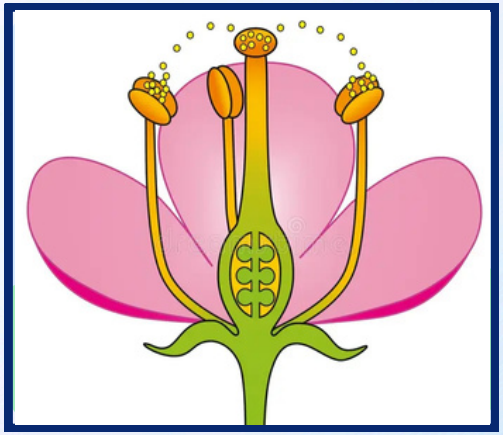
Unit Title	Wetlands and Aquatic Systems
Time Frame	4-5 Weeks



Focus of the Unit

This unit investigates freshwater and marine ecosystems, with a focus on wetlands, estuaries, and coral reefs. Students will study the ecological services these systems provide and the species they support. Human activity and conservation efforts will be examined to understand current environmental challenges.

Unit Title	Plant Physiology
Time Frame	4-5 Weeks



Focus of the Unit

Students will learn about the structure and function of plants and how they contribute to the health of ecosystems. Topics include photosynthesis, nutrient uptake, and plant responses to environmental conditions. The unit also covers the role of plants in agriculture, carbon cycling, and habitat sustainability.

Unit Title	Human Population and Urbanization
Time Frame	4-5 Weeks

Focus of the Unit

This unit explores global population trends and how human settlement patterns affect the environment. Students will study urban growth, resource demand, and the environmental costs of expanding cities. Concepts like sustainable development and smart growth will be introduced as potential solutions.

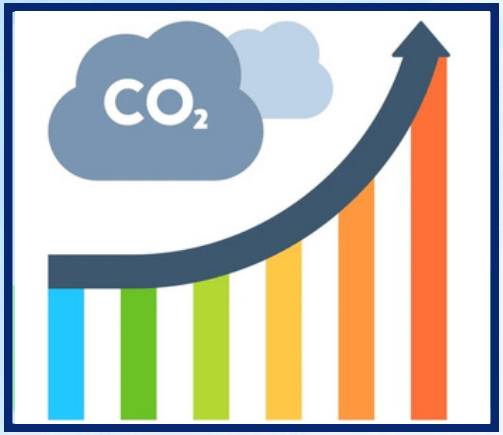
Board Approved 8/2025

Course Title	IAA Environmental Science

INNOVATIVE ARTS ACADEMY

Course Overview	This Environmental Science course helps students understand how humans and the environment are connected. It covers topics like ecosystems, natural resources, land use, and human impacts, with a focus on sustainability. Students will practice research, problem-solving, and data analysis to find solutions for environmental problems. The course prepares students to use science and technology responsibly to protect the environment and support a healthy future for all.

Unit Title	Climate Change and Global Systems	
Time Frame	4-5 Weeks	



Focus of the Unit
Students will examine the scientific evidence for climate change and the natural and human-driven processes that influence Earth's climate systems. The unit includes the greenhouse effect, feedback loops, and climate modeling. Weather patterns, ecosystems, and human societies will be analyzed.

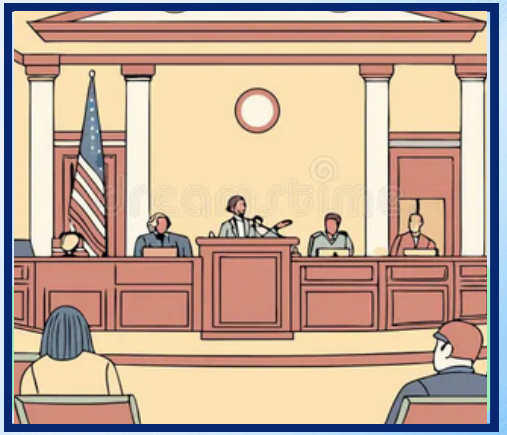
Unit Title	Energy Resources and Sustainability	
Time Frame	4-5 Weeks	

Focus of the Unit
This unit covers renewable and nonrenewable energy sources, their environmental impacts, and their role in modern society. Students will evaluate the pros and cons of different energy systems and explore strategies for creating a more sustainable energy future. Energy conservation and efficiency will also be emphasized.

Unit Title	Pollution and Waste Management	
Time Frame	4-5 Weeks	

Focus of the Unit
Students will investigate different types of pollution, including air, water, and soil contamination, as well as solid and hazardous waste. The unit focuses on sources, impacts, and control measures for pollution. Students will explore strategies for reducing waste and improving waste management systems.

Unit Title	Environmental Policy	
Time Frame	4-5 Weeks	



Focus of the Unit
This unit introduces students to environmental laws, regulations, and international agreements that shape how societies manage natural resources. Students will analyze the role of government, advocacy groups, and citizens in environmental decision-making. Case studies will highlight the complexity of balancing economic, social, and environmental priorities.

Unit Title	Ecosystems and Biodiversity
Time Frame	4-5 Weeks

INNOVATIVE ARTS ACADEMY

Essential Question(s)

What is the overall structure of an ecosystem?

What are the different types of interactions between organisms?

How do matter and energy affect the ecosystem?

Focus of the Unit

Students will explore the structure and function of ecosystems, including the flow of energy and cycling of matter. The unit highlights the importance of biodiversity in maintaining ecosystem resilience. Students will analyze human impacts on ecosystems and the consequences of biodiversity loss.

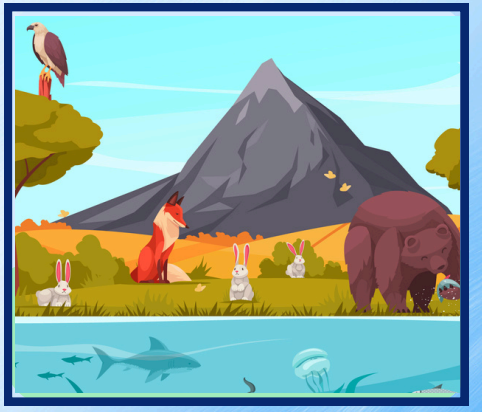
Standards	3.1.9-12.H Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem. 3.1.9-12.O Evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce.

Learning Targets

I can describe the structure of an ecosystem, including its biotic and abiotic components.

Learning Targets

I can identify different interactions among organisms within an ecosystem, such as predation and symbiosis.



Learning Targets

I can use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.

Learning Targets

I can evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce.

Resources	McGraw Hill: Earth and Space Science Inspire Textbook

Unit Title	Wetlands and Aquatic Systems
Time Frame	4-5 Weeks

INNOVATIVE ARTS ACADEMY

Essential Question(s)

What are the components of marine ecosystems?

How do wetlands function as systems, and what roles do they serve?

How does the ocean provide nutrients for the rest of life on Earth?

Focus of the Unit

This unit investigates freshwater and marine ecosystems, with a focus on wetlands, estuaries, and coral reefs. Students will study the ecological services these systems provide and the species they support. Human activity and conservation efforts will be examined to understand current environmental challenges.

Standards	3.3.9-12.K Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes. 3.4.9-12.C Analyze and interpret how issues, trends, technologies, and policies impact watersheds and water resources.

Learning Targets

I can compare and contrast marine and land ecosystems.

Learning Targets

I can identify human impacts on oceans and other waterways.

Learning Targets

I can describe the components of the water cycle, including evaporation and transpiration.

Learning Targets

I can analyze and interpret how issues, trends, technologies, and policies impact watersheds and water resources.

Resources	McGraw Hill: Earth and Space Science Inspire Textbook

Unit Title	Plant Physiology
Time Frame	4-5 Weeks

INNOVATIVE ARTS ACADEMY

Essential Question(s)

How does photosynthesis transform light energy into stored chemical energy?

What are the reactants and products for photosynthesis?

How do plants contribute to the cycling of carbon among Earth's systems?

Focus of the Unit

Students will learn about the structure and function of plants and how they contribute to the health of ecosystems. Topics include photosynthesis, nutrient uptake, and plant responses to environmental conditions. The unit also covers the role of plants in agriculture, carbon cycling, and habitat sustainability.

Standards

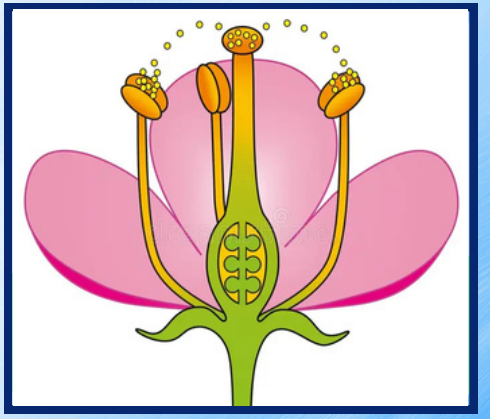
3.1.9-12.E Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.
3.1.9-12.F Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

Learning Targets

I can use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.

Learning Targets

I can identify the inputs (carbon dioxide, water) and outputs (oxygen, glucose) of photosynthesis.



Learning Targets

I can construct an explanation for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form complex carbon-based molecules.

Learning Targets

I can describe how stomata help plants maintain homeostasis by regulating water release in response to temperature changes.

Resources

McGraw Hill: Earth and Space Science Inspire Textbook

Unit Title	Human Population and Urbanization
Time Frame	4-5 Weeks

INNOVATIVE ARTS ACADEMY

Essential Question(s)

How do humans shape the land?

What are the impacts of urban growth?

How do increases in human population and per capita consumption impact Earth's systems?

Focus of the Unit

This unit explores global population trends and how human settlement patterns affect the environment. Students will study urban growth, resource demand, and the environmental costs of expanding cities. Concepts like sustainable development and smart growth will be introduced as potential solutions.

Standards

3.3.9-12.Q Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.
3.4.9-12.A Analyze and interpret how issues, trends, technologies, and policies impact agricultural, food, and environmental systems and resources.

Learning Targets

I can describe the human impact on the shaping of the land.

Learning Targets

I can identify how humans use the land and how land can be managed.

Learning Targets

I can create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.

Learning Targets

I can analyze and interpret how issues, trends, technologies, and policies impact agricultural, food, and environmental systems and resources.

Resources

McGraw Hill: Earth and Space Science Inspire Textbook

Unit Title	Climate Change and Global Systems
Time Frame	4-5 Weeks

INNOVATIVE ARTS ACADEMY

Essential Question(s)

How does the greenhouse effect maintain biosphere temperature range?

What are the causes of climate change?

How do modern atmospheric changes affect global systems?

Focus of the Unit

Students will examine the scientific evidence for climate change and the natural and human-driven processes that influence Earth's climate systems. The unit includes the greenhouse effect, feedback loops, and climate modeling. Weather patterns, ecosystems, and human societies will be analyzed.

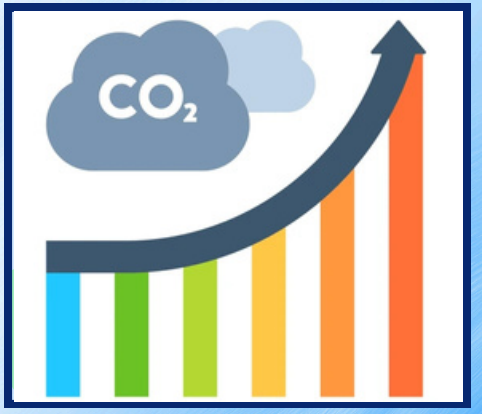
Standards	3.3.9-12.E Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate. 3.3.9-12.L Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.

Learning Targets

I can identify the causes and effects of climate change.

Learning Targets

I can use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.



Learning Targets

I can develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.

Learning Targets

I can analyze geoscience data and results from global climate models to forecast climate change and its impacts on Earth systems.

Resources	McGraw Hill: Earth and Space Science Inspire Textbook

Unit Title	**Energy Resources and Sustainability**
Time Frame	4-5 Weeks

INNOVATIVE ARTS ACADEMY

Essential Question(s)

How does energy transfer explain change?

What are ways in which we use natural resources?

What are the differences between renewable and nonrenewable resources?

Focus of the Unit

This unit covers renewable and nonrenewable energy sources, their environmental impacts, and their role in modern society. Students will evaluate the pros and cons of different energy systems and explore strategies for creating a more sustainable energy future. Energy conservation and efficiency will also be emphasized.

Standards	3.2.9-12.Q Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy. 3.5.9-12.D Critique whether existing or proposed technologies use resources sustainably.

Learning Targets

I can define energy transfer and describe energy conservation.

Learning Targets

I can identify the uses of natural resources and debate their pros and cons.

Learning Targets

I can construct an explanation for how the availability of natural resources and changes in climate have influenced human activity.

Learning Targets

I can evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.

Resources	**McGraw Hill: Earth and Space Science Inspire Textbook**

Unit Title	**Pollution and Waste Management**
Time Frame	4-5 Weeks

INNOVATIVE ARTS ACADEMY

Essential Question(s)

What are the causes of pollution?

How does pollution impact the environment and biodiversity?

How can human activities be managed to reduce waste and environmental impact?

Focus of the Unit

Students will investigate different types of pollution, including air, water, and soil contamination, as well as solid and hazardous waste. The unit focuses on sources, impacts, and control measures for pollution. Students will explore strategies for reducing waste and improving waste management systems.

Standards	3.1.9-12.N Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity. 3.5.9-12.B Critically assess and evaluate a technology that minimizes resource use and resulting waste to achieve a goal.

Learning Targets

I can describe the relationship between the atmosphere and pollution.

Learning Targets

I can design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

Learning Targets

I can analyze how the creation and use of technologies consumes resources, creates waste, and may contribute to environmental challenges.

Learning Targets

I can develop a solution to a technological problem that has the least negative environmental and social impact.

Resources	**McGraw Hill: Earth and Space Science Inspire Textbook**

Unit Title	Environmental Policy
Time Frame	4-5 Weeks

INNOVATIVE ARTS ACADEMY

Essential Question(s)

What policies impact conservation?

How do societies impact ecosystems around the world?

How do humans impact the creation of policies?

Focus of the Unit

This unit introduces students to environmental laws, regulations, and international agreements that shape how societies manage natural resources. Students will analyze the role of government, advocacy groups, and citizens in environmental decision-making. Case studies will highlight the complexity of balancing economic, social, and environmental priorities.

Standards	3.4.9-12.G Analyze and evaluate how best resource management practices and environmental laws achieve sustainability of natural resources. 3.4.9-12.H Design and evaluate solutions in which individuals and societies can promote stewardship in environmental quality and community well-being.

Learning Targets

I can identify and research current policies of sustainability.

Learning Targets

I can evaluate solutions in which individuals and societies can promote stewardship in environmental quality and community well-being.

Learning Targets

I can analyze and evaluate how resource management practices and environmental laws achieve sustainability.

Learning Targets

I can analyze and interpret data on regional environmental conditions and their implications on environmental justice and social equity.

Resources	McGraw Hill: Earth and Space Science Inspire Textbook