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Environmental Science includes eight labs:

- ! Climate Change & Keeping Cool
- ! Model Climate Change with Melting Ice
- ! How Nature Records Changes in Climate
- ! Ocean Currents
- ! Calcium Carbonate & Shell Production
- ! Carbon Dioxide Levels in Seawater
- ! Forest Fires
- ! Albedo & Composition of Earth’s Surface

The labs are aligned to the NGSS and other state science standards and can be used with any textbook curriculum. Labs can be accessed on any internet-capable device and can be completed in 30-45 minutes.!

FLINN SCIENTIFIC

Climate Change and Keeping Cool

Performance Expectations

HS-ESS3-1: Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.

Science and Engineering Practices

Planning and carrying out investigations
Analyzing and Interpreting Data
Constructing Explanations

Crosscutting Concepts

Cause and effect
Stability and change

Model Climate Change with Melting Ice

Performance Expectations

HS-ESS3-5: Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.

Science and Engineering Practices

Analyzing and interpreting data
Engaging in Argument from Evidence
Constructing Explanations

Crosscutting Concepts

Cause and Effects

How Nature Records Changes in Climate

Performance Expectations

HS-ESS2-4: Use a model to describe how variations in the flow of energy into and out of Earth' systems result in changes in climate.

Science and Engineering Practices

Analyzing and Interpreting Data
Constructing Explanations
Obtaining, Evaluating and Communicating Information

Crosscutting Concepts

Patterns
Cause and effect

Ocean Currents

Performance Expectations

HS-ESS2-5: Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.

Science and Engineering Practices

Developing and using models
Planning and carrying out investigations
Constructing explanations and designing solutions

Crosscutting Concepts

Systems and system models
Energy and matter
Stability and change

Calcium Carbonate and Shell Production

Performance Expectations

HS-PS1-5: Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.

Science and Engineering Practices

Constructing explanations and designing solutions
Asking questions and defining problems
Planning and carrying out investigations
Analyzing and interpreting data

Crosscutting Concepts

Energy and matter
Stability and change

Carbon Dioxide Levels in Seawater

Performance Expectations

HS-ESS2-6: Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.

Science and Engineering Practices

Analyzing and interpreting data
Constructing explanations
Engaging in argument from evidence

Crosscutting concepts

Scale, proportion, and quantity
Systems and system models

Forest Fires

Performance Expectations

HS-PS1-7: Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Science and Engineering Practices

Analyzing and interpreting data
Obtaining, evaluating, and communicating information
Engaging in argument from evidence

Crosscutting Concepts

Cause and Effect
Energy and matter

Albedo and Composition of Earth's Surface

Performance Expectations

HS-ESS2-2: Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.

Science and Engineering Practices

Analyzing and interpreting data
Obtaining, evaluating, and communicating information
Engaging in argument from evidence

Crosscutting Concepts

Cause and effect
Energy and matter

Alternative Energy

Performance Expectations

HS-PS3-3: Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.

Science and Engineering Practices

Asking questions and defining problems
Analyzing and interpreting data
Constructing Explanations
Engaging in argument from evidence

Crosscutting Concepts

Scale, Proportion, and Quantity
Systems and system models
Energy and matter

Wind

Performance Expectations

HS-PS3-2: Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative position of particles (objects).

Science and Engineering Practices

Constructing explanations and designing solutions
Asking questions
Engaging in argument from evidence
Analyzing and interpreting data

Crosscutting Concepts

Energy and Matter in Systems