

Congruence with the NGSS

Unit Title: **Carbon, Climate and Energy Resources**

Science and Engineering Practices (SEPs)

SEPS	Activities
Asking Questions and Defining Problems	<ul style="list-style-type: none"> • The Stabilization Wedges Game • Climate and the Carbon Cycle: Labs 8A-8B • Global Warming Webquest
Developing and Using Models	<ul style="list-style-type: none"> • Climate and the Carbon Cycle: Labs 2B-2C • The Stabilization Wedges Game • Switch Energy Project - Natural Gas and Hydraulic Fracturing
Planning and Carrying Out Investigations	<ul style="list-style-type: none"> • Global Warming Webquest
Analyzing and Interpreting Data	<ul style="list-style-type: none"> • ESA21: Carbon Dioxide Calculator • Switch Energy Project - Natural Gas and Hydraulic Fracturing
Using Mathematics and Computational Thinking	<ul style="list-style-type: none"> • ESA21: Carbon Dioxide Calculator
Constructing Explanations and Designing Solutions	<ul style="list-style-type: none"> • ESA21: Carbon Dioxide Calculator • The Stabilization Wedges Game
Engaging in Argument from Evidence	<ul style="list-style-type: none"> • Global Warming Webquest
Obtaining, Evaluating and Communicating Information	<ul style="list-style-type: none"> • ESA21: Carbon Dioxide Calculator • Climate and the Carbon Cycle: Labs 8A-8B • Global Warming Webquest
Scientific Knowledge is based on Empirical Evidence	<ul style="list-style-type: none"> • ESA21: Carbon Dioxide Calculator

Disciplinary Core Ideas (DCIs)

DCIs	Activities
ESS2A: Earth Materials and Systems	<ul style="list-style-type: none"> • Climate and the Carbon Cycle: Labs 2B-2C • ESA21: Carbon Dioxide Calculator • The Stabilization Wedges Game

ESS2E: Biogeology	<ul style="list-style-type: none"> • Climate and the Carbon Cycle: Labs 2B-2C • ESA21: Carbon Dioxide Calculator
ESS3A: Natural Resources	<ul style="list-style-type: none"> • Climate and the Carbon Cycle: Labs 8A-8B
ESS3C: Human Impacts on Earth's Systems	<ul style="list-style-type: none"> • ESA21: Carbon Dioxide Calculator • The Stabilization Wedges Game • Switch Energy Project - Natural Gas and Hydraulic Fracturing • Climate and the Carbon Cycle: Labs 8A-8B • Global Warming Webquest
ESS3D: Global Climate Change	<ul style="list-style-type: none"> • Climate and the Carbon Cycle: Labs 8A-8B • Global Warming Webquest

Cross Cutting Concepts (CCCs)

CCCs	Activities
Patterns	<ul style="list-style-type: none"> • ESA21: Carbon Dioxide Calculator • The Stabilization Wedges Game • Global Warming Webquest
Cause and Effect	<ul style="list-style-type: none"> • Climate and the Carbon Cycle: Labs 2B-2C • ESA21: Carbon Dioxide Calculator • The Stabilization Wedges Game • Switch Energy Project - Natural Gas and Hydraulic Fracturing • Global Warming Webquest
Scale, Proportion, and Quantity	<ul style="list-style-type: none"> • Climate and the Carbon Cycle: Labs 2B-2C • ESA21: Carbon Dioxide Calculator
Systems and System Models	<ul style="list-style-type: none"> • Climate and the Carbon Cycle: Labs 2B-2C • The Stabilization Wedges Game • Switch Energy Project - Natural Gas and Hydraulic Fracturing
Energy and Matter	<ul style="list-style-type: none"> • Climate and the Carbon Cycle: Labs 2B-2C
Structure and Function	<ul style="list-style-type: none"> • Climate and the Carbon Cycle: Labs 8A-8B
Stability and Change	<ul style="list-style-type: none"> • Climate and the Carbon Cycle: Labs 2B-2C • ESA21: Carbon Dioxide Calculator • The Stabilization Wedges Game • Switch Energy Project - Natural Gas and Hydraulic Fracturing

Influence of Engineering, Technology and Science on Society and the Natural World	<ul style="list-style-type: none">• The Stabilization Wedges Game• Switch Energy Project - Natural Gas and Hydraulic Fracturing• Global Warming Webquest
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