2021-2022 SCIENCE UNITS

GRADE 5

BAKERSFIELD CITY SCHOOL DISTRICT

ACHIEVING EXCELLENCE FOR ALL STUDENTS

Through Equity and Innovation

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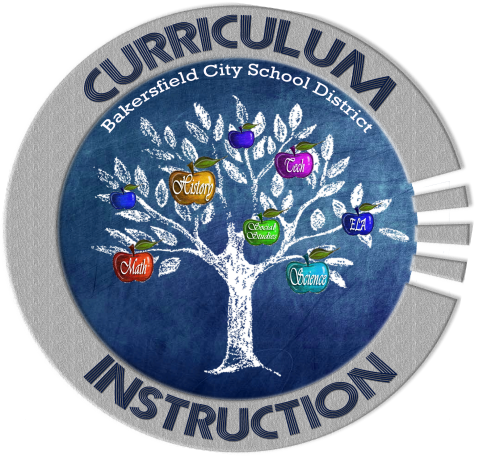
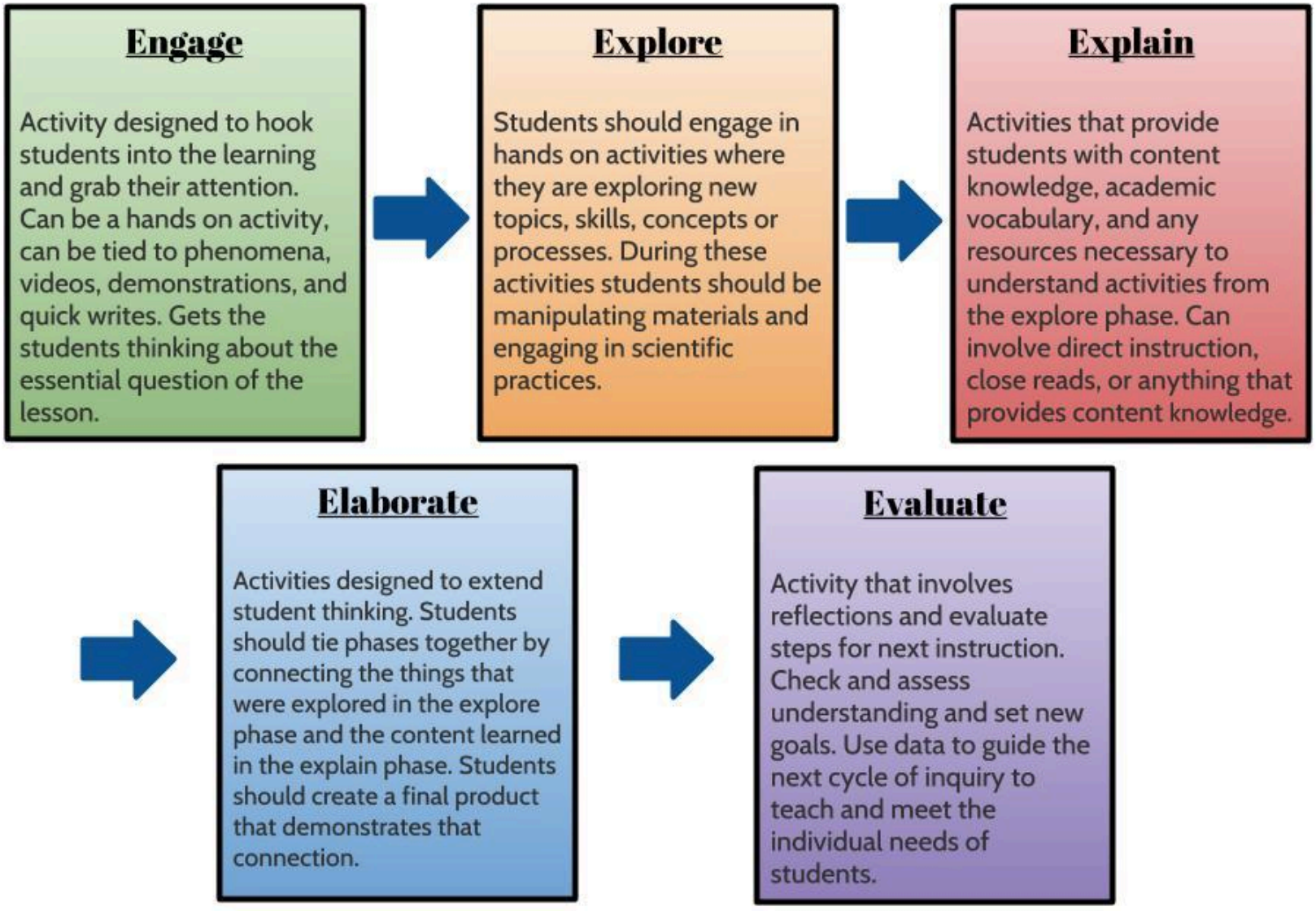


5th Grade Unit 2

Earth's Systems

Writing a 5E Lesson



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Resources: *National Science Teaching Association, nsta.org*

Unit at a Glance

Link to Unit Standards

Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. 5-ESS2-1

Clarification Statement: Examples could include the influence of the ocean on ecosystems, landform shape, and climate; the influence of the atmosphere on landforms and ecosystems through weather and climate; and the influence of mountain ranges on winds and clouds in the atmosphere. The geosphere, hydrosphere, atmosphere, and biosphere are each a system.

Assessment Boundary: Assessment is limited to the interactions of two systems at a time.

Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth. 5-ESS2-2

Clarification Statement: none

Assessment Boundary: Assessment is limited to oceans, lakes, rivers, glaciers, ground water, and polar ice caps, and does not include the atmosphere.

Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment. 5-ESS3-1

Clarification Statement: none

Assessment Boundary: none

5-ESS2-1: Interactions of Earth Systems

Standard Clarification

Standard Focuses on:

- Earth's major systems are the geosphere (solid and molten rock, soil, and sediments), the hydrosphere (water and ice), the atmosphere (air), and the biosphere (living things, including humans).
- The geosphere, hydrosphere, atmosphere, and biosphere are each individual systems.
- These systems interact in multiple ways to affect Earth's surface materials and processes.

5-ESS2-1: Interactions of Earth Systems

Academic Vocabulary	Phenomena*	5E Lessons	Manipulatives	Essential Questions
• Atmosphere • Biosphere • Climate • Geosphere • Hydrosphere • Weather • Terrarium • Sphere	• Earth Systems Picture • Complete Earth Systems Picture	Lesson 1: Interactions of Earth Systems* (*Modifications for Virtual Learning are included in the 5E lessons)	• 2 liter bottles (Have Students Bring From Home)* • Soil * • Radish Seeds • ¼ cup of water per bottle • Measuring cups • Packing tape * • Markers * • Graphic Organizer for Notes • Earth Systems Picture Sort • Earth Systems Picture Sort Worksheet • Earth System Identification Sheet	• How do the four earth systems interact? • What are the four different types of Earth systems?
Functions		**Link to Standard**		
• The earth system is _____ is made up of _____.		5-ESS2-1		

Zingy Learning Sign-up/Login link *Suggested lesson(s):* *5th grade, Unit 9, Lessons 1-2*	**Mystery Science** ***Suggested lesson(s):*** *Watery Planet* *Lesson 1* *4 Mysteries - Use as an alternative unit or individual mysteries can be used as a supplement within the district unit.*	**Paired Text** *Earth Systems* *Spaceship Earth* *The Right Environment*	**TCM Science Readers** Understanding Earth's Systems - Earth's Biosphere **If you attended Science Saturday, these physical titles are included in your box. Digital copies are not available.*	**Benchmark Advance** *Unit 8: Weather on Earth* **must be logged into Benchmark to view.*
BrainPOP *Login with Clever* *Suggested lesson(s):* *Earth's Atmosphere*				
				Achieve 3000
				Volcano Puts on a Show

**Phenomena supports Academic Language Development through picture prompts*

5-ESS2-2: Distribution of Water on Earth

Standard Clarification
Standard Focuses on: • Nearly all of Earth's available water is in the ocean. • Most freshwater is in glaciers or underground; only a tiny fraction is in streams, lakes, wetlands, and the atmosphere. • Assessment is limited to oceans, lakes, rivers, glaciers, groundwater, and polar ice caps, and does not include the atmosphere

5-ESS2-2: Distribution of Water on Earth

Academic Vocabulary	Phenomena*	5E Lessons	Manipulatives	Essential Questions
• Water Cycle • Hydrosphere • Distribution • Atmosphere • Desalination • H2O • Saline • Freshwater • Saltwater	• Students can chart all of the ways in which they use water and will determine that water is important. • NASA: Show Me the Water Video • Crash Course For Kids: The Basics of Freshwater	Lesson 2- Distribution of Water* *(*Modifications for Virtual Learning are included in the 5E lessons)*	• Circle Graph • Google Slides version of Circle Graph • Student Directions Handout • *Blue Food Dye* • *Plastic Droppers* • *Small clear plastic cups* • *Graduated Cylinder* • *1 liter bottles ** • *Tape ** • *Scissors ** **These materials will not be in your science kit*	• *How are different types of water distributed on Earth?*
Functions • The majority of Earth's water is found in _____ and _____.		**Link to Standard** 5-ESS2-2 **Achieve 3000 & Additional Paired text** "Water Worries"* *5-step lesson* **must be logged into Achieve3000 to view.* Distribution of Water		

Zingy Learning Sign-up/Login link Suggested lesson(s): 5th grade, Unit 8, Lessons 1-3 **BrainPOP** Login with Clever Suggested lesson(s): Water Supply	**Mystery Science** Watery Planet Lessons 1 & 2 *4 Mysteries - Use as an alternative unit or individual mysteries can be used as a supplement within the district unit.*		**TCM Science Readers** Earth's Cycles (p. 9-10) **If you attended Science Saturday, these titles are included in your box. Digital copies are available at the link above.*	**Benchmark Advance** Unit 8 - Water: Fact & Fiction **must be logged into Benchmark to view.*
				Achieve 3000
				Water Worries

**Phenomena supports Academic Language Development through picture prompt*

5-ESS3-1: Using Science to Protect Earth's Resources

Standard Clarification
Standard Focuses on: • *Human activities in agriculture, industry, and everyday life have had major effects on the Earth* • *Individuals and local communities are doing things to help protect Earth's resources and environments.*

5-ESS3-1: Using Science to Protect Earth's Resources

Academic Vocabulary

- Natural Resources
- Pollution
- Deforestation
- Overfishing
- Global Warming
- Climate Change

Functions

- Individuals can protect Earth's resources by _____.
- An important resource on earth is _____.
- Communities can work together to protect Earth's resources by _____.

Phenomena*

- Crash Course Science Video- Welcome to the Neighborhood

Mystery Science

Watery Planet
Lesson 3

4 Mysteries - Use as an alternative unit or individual mysteries can be used as a supplement within the district unit.

5E Lessons

Lesson 3- Protect Earth's Resources and Environment*

(*Modifications for Virtual Learning are included in the 5E lessons)

Link to Standard

5-ESS3-1

Additional Paired text

Protecting Earth's Resources

Readworks: Protecting water and Watery Habitats

Readworks: Helping the Environment

Manipulatives

- Chromebook
- Google Slides

TCM Science Readers

Saving Migratory Birds

*If you attended Science

Essential Questions

- How do humans affect Earth's systems?
- How does the consumption of resources by humans impact local and global environments?
- How can the consumption of resources be changed to increase sustainability of those resources?

Achieve 3000

The Time to Act is Now

A Warmer World

Zingy Learning *Sign-up/Login link* *Suggested lesson(s):* *Unit 10, Lesson 1 - Earth's Resources: Water*	***BrainPOP*** *Login with Clever* *Suggested lesson(s)* *Natural Resources* *Humans & the Environment* *Climate Change*	Readworks: Reduce Waste Readworks: Environmental Justice	*Saturday, these titles are included in your box. Digital copies are available at the above link.*	***Clearing the Air*** ***Google Goes to the Amazon***

**Phenomena supports Academic Language Development through picture prompts*

Additional Unit Resources

Reading/ Navigating the Standards	Standard Codes
Writing a 5E Lesson	Unit and Lesson Planning

Online Resources

Resource	Description
Teach Engineering	Great hands on activities/ science and engineering lessons
Try Engineering	Engineering lesson plans and resources
Phet	Wonderful demonstrations, visual models and simulations
Better Lesson	Additional lessons and lesson planning strategies