

MS Social Studies 8 I&E

Huntingdon Area School District

UNITS (3/3 SELECTED)

- Unit 1: What is Big History?
- Unit 2: The Big Bang
- Unit 3: Life

SUGGESTED DURATION

9 lessons

11 lessons

10 lessons

Unit 1: What is Big History?

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UNIT OVERVIEW

Big History explores different scales of time and space to view human history from new angles. What do we know about our past? What don't we know? And how can all of this help shape our ideas of what the future may hold?

STANDARDS/EXPECTATIONS

Pennsylvania - Grade 8 - Science and Technology and Engineering

3.3.A

3.3.B

3.4.A

3.4.B

Pennsylvania - Grade 8 - History

8

8.4.8.A

8.4.8.B

8.4.8.C

8.4.8.D

BIG IDEAS

Big Ideas

- 1. Define thresholds of increasing complexity, origin stories, and scale.
- 2. Understand that Big History is a modern, science-based origin story that draws on many different types of knowledge.
- 3. Understand how you fit into the Big History narrative, using the concept of “thresholds” to frame your past, present, and future and the history of the Universe.
- 4. Understand what disciplines are and consider how the viewpoints of many different scholars can be integrated for a better understanding of a topic

ESSENTIAL QUESTIONS

Essential Questions

- What do we know about our past?
- What don't we know?
- How can all of this help shape our ideas of what the future may hold?

Unit 1: What is Big History?

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LEARNING TARGETS: KNOWLEDGE & SKILLS

Knowledge	Skills
Students will understand the historical/archeological process.	Students will be able to create and test a hypothesis using the historical process.
Students will understand the logical beginnings of space and time (spacetime).	Students will be able to place the history of the universe on a timeline.
Students will understand how early civilizations made sense of a world without science.	Students will be able to read and decipher origin stories used by ancient civilizations.
Students will understand how and why to make a claim.	Students will use claim testers in order to judge information presented.

EVIDENCE OF LEARNING & ASSESSMENT

Name of Assessment	Type (formative, summative, project-based, diagnostic)	Description
Big History on a Football Field	Project Based	Students will work in groups of two to recreate major "Threshold Moments" on a scale timeline of the universe.

Unit 2: The Big Bang

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UNIT OVERVIEW

The appearance of the Universe in the Big Bang is the first threshold of increasing complexity. Before this moment, nothing existed; after it, something new existed: the Universe! The Big Bang provided the raw materials for everything around us today. Following the Big Bang, there was space, which rapidly expanded. There was also time, matter, and energy. Energy took different forms and matter appeared in the form of electrons and quarks, which soon linked together to form protons and neutrons. Nothing had turned into something, and that something contained everything needed to build an interesting Universe.

STANDARDS/EXPECTATIONS

Pennsylvania - Grade 8 - History

8 8.4.8.A 8.4.8.B 8.4.8.C 8.4.8.D

Pennsylvania - Grade 8 - Science and Technology and Engineering

3.1.8.A9 3.3 3.3.8.A7 3.3.B 3.3.8.B1 3.3.8.B2 3.3.8.B3

BIG IDEAS

Big Ideas

- 1. Explain the basics of the Big Bang theory and the primary evidence that supports this theory.
- 2. Using evidence from texts and claim testing, explain why views of the Universe have changed over time and the roles that scientists have played in shaping our understanding of the origin of the Universe.
- 3. Understand how to use claim testing to evaluate a claim or resource.

ESSENTIAL QUESTIONS

Essential Questions

- How and why do individuals change their minds?
- How and why did human understanding of the Universe change?
- What is the expanding universe?

Unit 2: The Big Bang

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LEARNING TARGETS: KNOWLEDGE & SKILLS

Knowledge	Skills
Students will understand how humans have approached knowledge throughout the past.	Students will be able to test claims made by early scientists to test validity.
Students will understand the Big Bang theory.	Students will recreate the Big Bang and measure a scale model of the expansion of the universe.
Students will understand how Earth and the Solar System formed.	Students will analyze, using models, the vast size of the solar system and the universe as a whole.

EVIDENCE OF LEARNING & ASSESSMENT

Name of Assessment	Type (formative, summative, project-based, diagnostic)	Description
Big Bang Balloon	Project Based	Students will be working in small groups to recreate a scale model of the Big Bang and measure the expansion of the universe.

Unit 3: Life

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UNIT OVERVIEW

In this unit, students learn what the Goldilocks Conditions were on Earth that allowed for the appearance of life, how life introduces a new dynamism and diversity to the Universe, and how to distinguish living versus nonliving organisms. Students consider seven of the most important turning points in the history of life on Earth. They learn how increasingly complex organisms appeared over almost 4 billion years, evolving into species more and more like us. Finally, they learn how the history of our Solar System, the Earth, and life are closely intertwined, and how astronomical, geological, and biological factors formed our biosphere.

STANDARDS/EXPECTATIONS

Pennsylvania - Grade 8 - History

8.4.8.A

8.4.8.C

Pennsylvania - Grade 8 - Science and Technology and Engineering

3.1.C

3.1.8.C1

3.1.8.C4

3.3.A

3.3.8.A4

3.3.B

3.4.8.A3

3.4.8.E1

3.4.8.E2

BIG IDEAS

Big Ideas

- 1. Describe the conditions that made it possible for life to emerge on Earth.
- 2. Explain the differences between life and nonlife.
- 3. Describe the major events in the development of life on Earth and explain what is meant by the term biosphere.
- 4. Use evidence to explain adaptation and evolution, including Darwin's theory of natural selection and DNA.

ESSENTIAL QUESTIONS

Essential Questions

- What is life?
- How did life begin and change?
- How do Earth and life interact?

Unit 3: Life

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LEARNING TARGETS: KNOWLEDGE & SKILLS

Knowledge	Skills
Students will understand what the definition of life is.	Students will create their own definitions of the meaning of life and test their definitions.
Students will understand cosmic simulation theory.	Students will make and test hypotheses regarding the nature of reality.
Students will understand how Earth's processes have resulted in a functioning planet.	Students will study species' annual life cycles to map out migration and reproductive practices.
Students will understand the concept of genetic modification and how the CRISPR model works.	Students will create hypotheses about how the future of human evolution will look.

EVIDENCE OF LEARNING & ASSESSMENT

Name of Assessment	Type (formative, summative, project-based, diagnostic)	Description
A Year in the Life	Project Based	Students will be working in small groups to study the annual life cycle of a given species and the impact that environments and processes play in the survival of animals.