



SSHEAN

*Social Studies & History Education
in the Anthropocene Network*

The “Golden Spike”: Thinking Critically about the Anthropocene

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Lesson Challenge

In this lesson, students will learn about the Anthropocene and consider different arguments for when this epoch began.

Students will apply a set of criteria (drawn from those used by geologists and historians), and examine evidence, to craft an argument for when the Anthropocene began. In groups, students will select which of the five time periods identified by experts marked the beginning of the

Anthropocene and present their argument to the class.

The accompanying materials for this lesson include: a Lesson Plan (this document) for teachers, a Slideshow, an Activity Sheets package for students, an Evidence Sheets package for each group of students/time period, and a Lesson Extension package.



Inquiry Question

When did the Anthropocene begin?

Lesson Details

Grade Level

- Grades 7-12 and postsecondary (ages 12+)

Subject Areas

- Social studies (history, geography)
- Geology, environmental science

Duration

- 60-75 minutes

Learning Objectives

- Students will learn:
 - to examine evidence from different sources to construct an argument.
 - to apply a set of criteria to form an argument.

Background Knowledge

- Consider what your students have previously learned about:
 - Human impacts on the environment in the Anthropocene.
 - The Industrial Revolution and the Great Acceleration.
 - The Colonization of the Americas.

Please note: It may be necessary for teachers to create or adapt the information in this lesson for different grades/age levels or backgrounds/contexts. The accompanying Evidence Sheets were designed in a way that students *should* have the required information to understand their “Golden Spike” and build an argument using the provided evidence, but this may differ from group to group.

Vocabulary

Anthropocene

A human-dominated geological epoch.

Global Stratotype Section and Point (GSSP)

A term used by geologists to refer to a global marker of an event in stratigraphic materials, such as rock, sediment, or glacier ice, known as a “golden spike.”

Global Standard Stratigraphic Age (GSSA)

In the absence of a GSSP, a date agreed upon by a committee of geologists after a survey of stratigraphic evidence.

Turning Points

Moments in time when the process of change shifts in direction or pace.



Summary of Activities

1. Consider a list of possible dates for when the Anthropocene began.
2. Examine different types of evidence to develop an argument for when the Anthropocene began.
3. Apply a set of criteria to support an argument for when the Anthropocene began.
4. Consider why it matters that we choose a date for the Anthropocene's "Golden Spike."

Considerations for Creating a Positive Learning Environment

Teachers are encouraged to consider the following while implementing this lesson:

- Provide a warning to students that part of this lesson discusses the genocide of Indigenous peoples, particularly the group that examines the time period "Colonization (Circa 1610)."
- Consider allowing students to form their own groups and select which "Golden Spike" they would like to build a case for, based on their interests and prior knowledge.
- Encourage students to delegate tasks within their groups to keep them on track and ensure each group member participates (i.e., recorder, presenter).

Accommodations

- Provide verbal image descriptions for visually impaired students.
- Allow students to verbally complete the charts on the Activity Sheet.

Criteria & Concepts

Possible Criteria

- GSSP/GSSA
- Depth of change
- Pace of change
- Longevity of change
- Variety of change
- Number of people or beings affected

Historical Thinking Concept(s)*

- Continuity & Change
- Historical Significance
- Evidence

* Seixas, P. & T. Morton. (2013). *The big six historical thinking concepts*. Nelson. www.historicalthinking.ca



The “Golden Spike” Lesson Activity

In this activity students will learn about 5 different possible dates for when the Anthropocene began. They will examine evidence and apply a set of criteria to construct an argument for their group’s “Golden Spike.”

Setting Up the Activity

Begin by moving through slide 2 (introduce the inquiry question), slide 3 (defining the Anthropocene), and slide 4 (dating the Anthropocene). When defining the Anthropocene, you may need to provide additional details to describe human impacts on the environment, including increases in atmospheric CO₂, increased ocean acidification, massive appropriation of land for food production, mass extinctions and decline in biodiversity, micro-plastics in marine ecosystems, higher air temperatures impacting evolution, and nuclear technology and weapon detonation (Lewis & Maslin, 2015).

Introduce the concepts “Global Stratotype Section and Point” (GSSP) and “Global Standard Stratigraphic Age” (GSSA), referring to slides 5 & 6 of the Slideshow. These are criteria used by geologists to define geologic time. Then explain the historical thinking concepts “continuity and change” and “historical significance,” referring to slides 8-12 of the Slideshow. These are criteria used by historians to mark periods of history. Explain how the “Possible Criteria” for defining the Anthropocene, found on slide 13, combines criteria used by geologists and historians.

The Activity

1. Divide students into 5 groups and assign each group one of five “Golden Spikes,” dates for the beginning of the Anthropocene (slide 14).
2. Pass out an Activity Sheet and the corresponding Evidence Sheets to all groups.
3. Instruct students to examine the provided materials for their selected time period (e.g., timeline, text and quotations, images and graphs). You may wish to review the timeline as a class, or provide each student group with a device to review their section of the timeline: <https://tinyurl.com/54387b9f>
4. Students will work together to examine the evidence and develop an argument for their time period based on the possible criteria (found on slide 13 and their Evidence Sheets). Students can record their answers on the Activity Sheet, and prepare to present their findings to the class persuasively.
5. Ask each group to present their “Golden Spike” argument to the class in a brief 2-minute summary.
6. Provide students time to reflect on the Thinking Questions (slide 17) and discuss as a class.

Extension

Bring students outside and have them look for evidence of “Golden Spikes” in the natural environment where you live. For more details, see the accompanying Extension Lesson.

Estimated Time

- 60 minutes

Required Materials

- Slideshow
- Activity Sheet
- Evidence Sheets
- Timeline (see link)
- Devices with internet access



The “Golden Spike”

References & Further Reading

Crutzen, P.J. (2002). Geology of mankind. *Nature*, 415, 23.

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Lewis, S.L. & Maslin, M.A. (2015). Defining the Anthropocene. *Nature*, 519, 171-180.

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