

DISCIPLINES – WHAT DO YOU KNOW? WHAT DO YOU ASK?

Preparation

- Download the Disciplines Chart

Purpose

In most fields, individuals are asked to work in teams. From childhood we're taught that "two heads are better than one." We see this idea carried over into multiple disciplines, including history. This activity will help students continue to develop their interdisciplinary thinking and reasoning skills as they work to create questions about and investigate some of the greatest puzzles of the last 13.8 billion years.

Process

Select an event or object for your students to think about. The Great Oxidation Event, Snowball Earth, Pangaea, or the greenhouse effect might be good options for this activity since students may have learned about these topics in recent lessons. Another interesting event is the 1883 eruption of Krakatoa, the most destructive volcanic eruption in history!

Once you've presented the event, get students into groups. Tell them to pay close attention – the next time they do this activity they will have to do it alone. Also, instead of limiting which disciplines they can use, give them the entire Disciplines Chart to choose from this time. If your students could use more scaffolding, you could hand out a subset of the disciplines cards instead.

Once they've completed the worksheet, ask students what teams they came up with, why their teams are the best, and what their teams would know and ask. Encourage them to talk through their process for coming up with questions so that you can better understand where they need support.



An 1888 lithograph of the 1883 eruption of Krakatoa, by Lithograph: Parker & Coward, Britain, public domain.

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Purpose

In most fields, individuals are asked to work in teams. We are often taught that, “two heads are better than one.” We see this idea carried over into multiple disciplines, including history. This activity asks you to investigate a historical event or object from the lens of multiple disciplines. Students develop their interdisciplinary thinking and reasoning skills as they work to create questions and investigate some of the greatest puzzles in the last 13.8 billion years.

Process

Your teacher will assign the event or object that you’ll think about when filling out the What Do You Know? What Do You Ask? Worksheet. This time, you can pick from any of the disciplines on the Disciplines Chart. Try to include some that you haven’t used for past teams as part of this activity.

Your job is to think about how you would assemble a research team to most deeply understand the event. This worksheet will help walk you through that process. You will also have to explain why your team is the best team for this job. Make sure you pay close attention while your group works through this process – next time, you’ll be constructing a team on your own!

Once you’ve completed the worksheet, be prepared to share your answers with the class. Then, think about why understanding this event as an interdisciplinary team is better than doing it from an individual perspective.



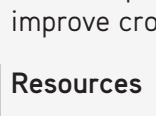
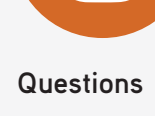
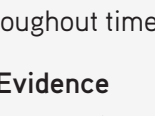
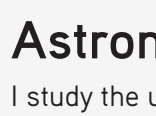

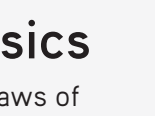
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Object or Event: _____

What would someone from this discipline know or want to know about this object or event?

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BHP DISCIPLINE CARDS



Biology

I study living organisms; their structure, behavior and distribution.

Questions

How do human brains work?
How does language impact us?
How can we remember what we hear?
How do we learn?

Resources

Samples of living things
Microscope
Slides, test tubes, petri dishes
Bunsen burner
Beakers
Scientific method

Evidence

Samples of organisms
Environmental impact reports
Soil samples

BIG HISTORY PROJECT



Chemistry

I study what everything is made of (matter) and how it changes.

Questions

How do the properties of an element determine its use?
What affects the behavior of matter?
How, why and where were chemical elements formed?

Resources

X-rays
Models
Microscopes
Spectroscopy/Mass spectrometer
Computer modeling
Scientific method

Evidence

Matter samples
Diagrams/models
Water/soil samples
Observations about chemical reactions

BIG HISTORY PROJECT



Conservation Science

I study the integration of natural resources in both the physical and biological sciences.

Questions

How do we survive through the Anthropocene?
What are ways that we can lessen the human impact on the environment?
How do we not exhaust nature?
What trade-offs to support both human and environmental needs?

Resources

Environmental impact reports
Water quality testing supplies
Maps (physical, topographical, political, etc.)
Weather patterns

Evidence

Endangered species numbers/reports
Population density maps
Statistics about refuse production and distribution
Water/ozone quality

BIG HISTORY PROJECT



Cosmology

I study the origin and evolution of the universe from the earliest possible time to today.

Questions

What was there before the Big Bang?
Are we alone in the universe?
Why did the Big Bang happen? What is dark matter/dark energy?

Resources

Telescope
Satellites
Spectrographs
Scientific method

Evidence

Speed of light
CMBR data
Radio/infrared rays
Satellite images

BIG HISTORY PROJECT



Economics

I study how society produces and consume goods and the impact of those decisions.

Questions

What should be produced?
How should it be produced?
For whom should it be produced?
Who owns and controls the factors of production?

Resources

Law of supply and demand
Mathematic models and projections
Statistics
Stock market data

Evidence

Statistics about particular companies, nations, individuals
GDP/GNP
Stock Market reports

BIG HISTORY PROJECT



Engineering

I study science and math to create solutions to real-world problems.

Questions

How can people be protected from natural hazards and climate change?
How can humans work in concert with natural Earth systems?
What will the world look like in the future?
How can computers solve everyday problems?

Resources

Hand tools
Computers
Programming software
Maps
Simple machines
Mathematics

Evidence

Models
Simulations
Computer-based testing
Environmental and safety reports
technical data
Design analysis

BIG HISTORY PROJECT



