

BHP DISCIPLINE CARDS



Agriculture

I study farming and work to increase productivity and improve crop quality.

Questions

When and where did agriculture farming begin?
How did agriculture change human development?
How does the availability or lack of crops contribute to the growth or fall of a civilization?
How did agriculture increase collective learning?

Resources

Domesticated animals
Fertilizers/
Pesticides
Tractors/
Mechanical
Reapers, etc.
Historical climate data
Irrigation systems

Evidence

Soil types/samples
Weather forecasts/
history
Ecosystem health
Crop development
Plant germination

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Anthropology

I study human language, culture, and societies all around the world and throughout time.

Questions

When, where, and how did humans evolve?
How do people adapt to different environments?
How have societies developed and changed from the past to the present?

Resources

Observations
Primary and secondary sources
Artifacts; i.e. tools, foods, clothing, etc.

Evidence

Bones, fossils
Human remains and artifacts
First observations of living individuals and groups
Written accounts of events and interpretations.

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Archaeology

I study ancient people and the world they lived in.

Questions

What is driving human evolution? Why did it happen?
What role does technology play in evolution?
How much does hunting have to do with it? Or larger social groups?
How can artifacts help us understand the past and our future?

Resources

Excavation tools; i.e. hammers, chisels, brushes
Maps (physical, political, topographic, etc.)
Primary sources

Evidence

Artifacts from ancient settlements
Bones and burial remains
Soil deposits from previous settlement sites

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Astronomy

I study the universe, including stars, solar systems, galaxies.

Questions

How long will it take for our sun to "die"?
What is inside a black hole?
How quickly is the universe expanding?
Is our galaxy unique?

Resources

Telescope
Camera
Spectrogram
Computer imaging

Evidence

Space debris
Doppler Effect
Observational data from telescopes
Computer monitoring and images from space craft

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Astrophysics

I study how the laws of physics can be applied to the natural world and space itself.

Questions

How did the universe begin? Is it evolving?
Is there more than one dimension to the universe?
What's the universe made of?

Resources

Mathematical models
Telescopes
Experiments
Observational data
Computer modeling
Scientific method

Evidence

Observations
Proven mathematical equations
Computer models

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Biochemistry

I study the molecules that make up all living things.

Questions

What are the causes and cures of diseases?
How do genes mutate over time?
How can we develop medications to cure diseases?

Resources

Electron microscopes
Lasers
Laboratory instruments
Computer-generated modeling programs
Scientific method

Evidence

DNA, enzymes, and protein samples
Examples of gene mutations

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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

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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

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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

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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

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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

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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

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Genealogy

I study families, tracing their lineages throughout history

Questions

Who are the members in the family?
What impact has this family had on history?
How does this family fit into the larger story of a group of people?

Resources

DNA testing
Computer modeling
Internet databases
Primary sources (birth, marriage, and death records)

Evidence

Oral interviews
Historical records
Genetic analysis
Family trees
Diaries
Letters
Emigration/immigration/naturalization records
Photographs

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Geology

I study the makeup of the Earth and its processes.

Questions

How does the Earth work?
How did the Earth get here?
What drives plate movement?
What is inside the Earth?
What will happen on the Earth in the distant future?

Resources

Pick and axe
Brushes
Ice/rock core samples
Electron microscope
Spectrometers

Evidence

Chemical analyses of rocks and minerals
Soil/rock samples
Maps
Satellite images

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History

I study the past as it relates to individuals and societies.

Questions

How do things change over time and what factors contribute to those changes?
What elements of an institution or a society persist despite change?
What is the narrative of people who lived in the past?

Resources

Primary and secondary sources
Artifacts; i.e. weaponry, clothing, pottery, etc.
Interviews
Journals

Evidence

Artifacts
First-hand accounts (journals, letters, etc.)
Public/private records
Visual materials

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Nutrition

I study how food can be used to increase the health and well-being of patients.

Questions

How does food impact human development?
How has the relationship between humans and food changed over time?
How does food and food production play a role in culture?

Resources

Body mass index
Weight/height measurements
Food models
Recipes

Evidence

Experiments (controlled and trial)
Observational studies
Peer-reviewed journals
Evidence-based systematic reviews
Weight loss measurements
Food journals

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Oceanography

I study marine life and ecosystems, health of the sea, and geologic processes.

Questions

How do processes in the ocean impact the rest of the Earth?
How do species adapt to changes in the ocean? How do waves, storms, tides, and currents affect human movement around the globe?

Resources

Nets
Water sampling supplies
Satellites
Boats
Moors/buoys
Sonar
Computer tracking programs
Seafloor sampling

Evidence

Salinity measures
Animal sensors/"tags"
Computer generated current measures
Seafloor mapping

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Paleontology

I study fossils to find links between extinct animals and plants and living relatives.

Questions

How have animals and plants evolved?
Are we experiencing normal levels of extinction, or are we experiencing a mass extinction?
How have mass extinction events helped push evolution forward?

Resources

GPS
Chisel
Rock Hammer
Brushes
Tape measure
Plastic/paper bags
Walkie-talkie
Markers

Evidence

Fossils
DNA
Biological remains
Amber

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BHP DISCIPLINE CARDS



Physics

I study matter and energy and the interaction between them.

Questions

Can we ever travel back in time?
What is dark matter/dark energy?
How do stars produce elements?
How does gravity affect the Earth?

Resources

Balances and mass sets
Glassware
Calculators
Computer models
Mathematics
Scientific method

Evidence

Particle colliders
Observational data
Mathematical models
Satellite imagery
Research reports

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Political Science

I study how political systems are created and change over time.

Questions

How do power imbalances create world tensions?
Is war a permanent part of political life?
What is justice and how is it carried out in a society?
What is the link between power and justice?
How does resource distribution impact power?

Resources

Public opinion survey
Economics data
Data analysis essays
Election results

Evidence

Historical documents
Polling
Academic research
Expert opinions
Social media
Newspapers
Laws/government documents

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Psychology

I study the human brain and experience; how people behave, think and feel.

Questions

What do people think or feel about a situation or event?
How do our feelings impact our behavior?
What do our reactions tell us about our feelings?

Resources

Research on mental illnesses
Personality/behavioral testing
Observational data
Holistic/prescription medicine

Evidence

Observations
Medical history
Letters/journals
Lab experiments
Interviews
Personality Tests
Behavioral Tests

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Theology

I study religions, religious history, and the current role of religion in today's world.

Questions

Why do humans exist? What is a human being? What is the meaning of life?
What happens to a person at death?
How do we know what is right and wrong?

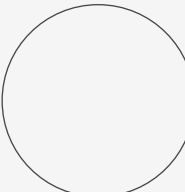
Resources

Religious texts
Artifacts; i.e. relics, scriptures, symbols, etc.
Primary sources
Interviews

Evidence

Sacred books, (i.e. the Bible)
Artifacts
Sacred sites
Observations of religious ceremonies

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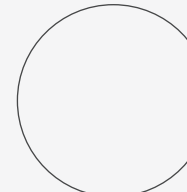
I study ...

Questions

Resources

Evidence

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I study ...

Questions

Resources

Evidence

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