

# LOCALLY DEVELOPED COURSE OUTLINE

Big History15-3

Big History15-5

Submitted By:

**Red Deer Catholic Regional Division No. 39**

Submitted On:

**Jun. 1, 2018**

## Course Basic Information

<u>Outline Number</u>	<u>Hours</u>	<u>Start Date</u>	<u>End Date</u>	<u>Development Type</u>	<u>Proposal Type</u>	<u>Grades</u>
15-3	62.50	09/01/2018	08/31/2019	Acquired	Authorization	G10
15-5	62.50	09/01/2018	08/31/2019	Acquired	Authorization	G10

### Course Description

Big History requires students to examine big questions:

- How has the Universe and life within it grown more complex over the past 13.8 billion years?
- How do we know what we know about the past?
- How can we judge claims about the past?
- Why does what we "know" change over time?
- How does what happened during the early days of the Universe, the Solar System, and the Earth shape what we are experiencing today? Big History is an interdisciplinary study of change over time from the Big Bang to the future. It is designed as a ninth to tenth grade course. The Big History course focuses on three essential skills and three key concepts. The essential skills are: thinking across scales, integrating multiple disciplines, and making and testing claims. The core concepts are: thresholds of history, collective learning, and origin stories.

## Course Prerequisites

# Sequence Introduction (formerly: Philosophy)

## Philosophy

*Where did we come from? What causes change? Where are we heading?*

Big History takes on these questions that originate with the dawn of time, and gives students a framework to tell the story of humanity's place in the Universe. It's more than a history course. Big History helps students see the overall picture and make sense of the pieces: it looks at the past from the Big Bang to modernity, seeking out common themes and patterns that can help us better understand people, civilizations, and the world we live in. <https://www.youtube.com/watch?v=yPe6zjeccjs>

## Inspiring Education

As there are infinite opportunities for students to delve deeply into complex topics across a range of subjects, the interdisciplinary approach of Big History serves as a great foundation for students entering the high school streams of social studies, science, mathematics and language arts. If you consider the concepts in each high school course as part of a mosaic, this course teaches students to take a step back and see how it is all connected instead of compartmentalizing what they learn. Big History encourages students to think critically and to develop a thoughtful, consistent, and rigorous approach to testing new ideas and information in a world in which they are bombarded with information. Big History can be delivered and assessed collaboratively by science, social studies and language arts teachers.

# Student Need (formerly: Rationale)

## Rationale

Big History arose from a desire to transcend traditional self-contained fields of study and grasp history as a whole, looking for linked ideas and connections across history's entire spectrum. By teaching students to explore these connections, and to effectively question, analyze and postulate, it provides a foundation for thinking not only about the past, but also the future and the changes that are reshaping our world. Throughout, students encounter challenging ideas and questions and learn to connect ideas across 13.8 billion years of time and an array of disciplines. The course asks students to thoughtfully and rigorously engage with the claims they encounter along the way.

<https://www.youtube.com/watch?v=4VICS9cIugo&index=1&list=PL4e9AQVlcJTTkPjL2OWad8R2MdKsVaYww>

# Scope and Sequence (formerly: Learner Outcomes)

## **Introduction**

### *Essential Skills:*

#### **Thinking Across Scales**

Big History encourages students to think across scales, from the massive expanse of the Universe to the smallest of atoms.

Students need to think across scale in terms of both time and distance. This helps us to frame our experience at the level of the personal, family, community, national human and geologic experience.

#### **Integrating Multiple Disciplines**

Big History encourages the use of interdisciplinary thinking and methodologies. Students should integrate the insights of multiple disciplines when analyzing and drawing conclusions about historical information, including social, physical, and natural sciences.

Students should become aware of a range of scholarly disciplines and understand the types of questions they ask, the types of conclusions that they draw, and the types of evidence they use to support their findings.

## **Making and Testing Claims**

Big History encourages students to develop a thoughtful, consistent, and rigorous approach to testing new ideas and information.

Students should apply these techniques in their writing and other academic discourse.

### ***Core Concepts:***

#### **Thresholds**

Big History looks at the Universe as a series of moments called thresholds. These moments are characterized by a set of ingredients and just-right "Goldilocks Conditions" that result in new forms of complexity. Big History tells the story of the Universe by using these moments to describe Universal change.

The use of thresholds is unique to Big History, but it provides a helpful means of analysis that can be applied to more traditional historical contexts and other disciplines.

#### **Collective Learning**

Collective learning is the human ability to share, preserve, and build knowledge over time. In Big History, this is the defining characteristic that separates humans from other species.

## **Origin Stories**

There are numerous explanations of the origins of our planet as well as the Universe as a whole. Since the time of the earliest humans, we have struggled to make sense of our world. Big History represents one point of view, and is considered a modern, scientific origin story.

The Big History origin story is incomplete and will continue to evolve as science and scholarly inquiry continue to advance.

## **Guiding Questions (formerly: General Outcomes)**

- 1 Explain how thresholds of increasing complexity, differing scales of time and space, claim testing, and collective learning help us understand historical, current, and future events as part of a larger narrative.**
- 2 Integrate perspectives from multiple disciplines to create, defend, and evaluate the history of the Universe and Universal change.**
- 3 Deepen an understanding of key historical and scientific concepts and facts; use these in constructing explanations.**
- 4 Engage in meaningful scientific inquiry and historical investigations by being able to hypothesize, form researchable questions, conduct research, revise one's thinking, and present findings that are well-supported by scientific and historical evidence.**
- 5 Critically evaluate, analyze, and synthesize primary and secondary historical, scientific, and technical texts to form well crafted and carefully supported written and oral arguments.**
- 6 Communicate arguments to a variety of audiences to support claims through analysis of substantive texts and topics; use valid reasoning and relevant and sufficient evidence through individual or shared writing, speaking, and other formats.**
- 7 Locate and understand how our own place, our community's place, and humanity as a whole fit into and impact Big History's narrative.**
- 8 Engage in historical analysis using the theories and practices from multiple disciplines, toward an integrated, interdisciplinary understanding of the history of the Universe.**

## Learning Outcomes (formerly: Specific Outcomes)

<p><b>1 Explain how thresholds of increasing complexity, differing scales of time and space, claim testing, and collective learning help us understand historical, current, and future events as part of a larger narrative.</b></p>	<p>15-3 15-5</p>
<p>1.1 Part 1: Formations and Early Life Unit 1: What is Big History? Driving Question: Why do we look at things from far away and close up? 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, as well as 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. Unit 2: The Big Bang Driving Question: How and why do individuals change their minds? 1. Explain the basics of the Big Bang theory and the primary evidence that supports this theory. 2. Using evidence from texts, explain why views of the Universe have changed over time and the roles that scientists played in shaping our understanding of the origin of the Universe. Understand how to use claim testing to evaluate a claim or resource.</p>	<p>X X</p>
<p><b>2 Integrate perspectives from multiple disciplines to create, defend, and evaluate the history of the Universe and Universal change.</b></p>	<p>15-3 15-5</p>

<p>2.1 Unit 3: Stars and Elements Driving Question: How can looking at the same information from different perspectives pave the way for progress? 1. Describe how stars form. 2. Explain what happens in the life of a star and explain what happens when a star dies. 3. Explain how the death of stars results in the creation heavier elements. 4. Explain why the formation of stars and the emergence of elements are so important in our world. 5. Understand what scholars from multiple disciplines know about a topic and the questions they can ask to understand the topic from an integrated perspective.</p>	<p>X X</p>
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<p><b>3 Deepen an understanding of key historical and scientific concepts and facts; use these in constructing explanations.</b></p>	<p>15-3 15-5</p>
<p>3.1 Unit 4: Our Solar System and Earth Driving Question: How and why do theories become generally accepted? 1. Explain why planets are more complex than stars. 2. Use evidence to explain how the Earth and its atmosphere developed and changed over time. 3. Explain the basic mechanisms and key pieces of evidence for plate tectonics, and how plate tectonics impacts life on Earth. 4. Explain why geology is important to understanding the history of the Earth. 5. Understand how geologists can work with scientists and historians from other disciplines to form a deeper understanding of the history of the Earth.</p>	<p>X X</p>

<p><b>4 Engage in meaningful scientific inquiry and historical investigations by being able to hypothesize, form researchable questions, conduct research, revise one's thinking, and present findings that are well-supported by scientific and historical evidence.</b></p>	<p>15-3 15-5</p>
<p>4.1 Unit 5: Life Driving Question: How are we still evolving? 1. Describe the conditions that made it possible for life to emerge on Earth. 2. Explain the differences between life and non-life. 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.</p>	<p>X X</p>

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<p><b>5 Critically evaluate, analyze, and synthesize primary and secondary historical, scientific, and technical texts to form well crafted and carefully supported written and oral arguments.</b></p>	<p>15-3 15-5</p>
<p>5.1 Part 2: Humans Unit 6: Early Humans Driving Question: What makes humans different from other species? 1. Describe human evolution, using evidence and connection to other species of mammals. 2. Explain whether or not symbolic language makes humans different. 3. Describe how early humans lived. 4. Explain collective learning. 5. Understand what scholars from multiple disciplines know about a topic and the questions they can ask to gain an understanding of the topic from an integrated perspective.</p>	<p>X X</p>

<p><b>6 Communicate arguments to a variety of audiences to support claims through analysis of substantive texts and topics; use valid reasoning and relevant and sufficient evidence through individual or shared writing, speaking, and other formats.</b></p>	<p>15-3 15-5</p>
<p>6.1 Unit 7: Agriculture and Civilization Driving Question: Was farming an improvement over foraging? 1. Define agriculture and describe where it emerged. 2. Identify the features of agrarian civilizations. 3. Understand the similarities and differences between the lifestyles of hunter-gatherers and farmers. 4. Describe how early civilizations formed and their key features. 5. Understand what scholars from multiple disciplines know about agriculture and civilization and the information each field offers to your overall understanding.</p>	<p>X X</p>

<p><b>7 Locate and understand how our own place, our community's place, and humanity as a whole fit into and impact Big History's narrative.</b></p>	<p>15-3 15-5</p>
<p>7.1 Unit 8: Expansion and Interconnection Driving Question: What are the positive and negative impacts of interconnection? 1. Analyze what propelled the expansion and interconnection of agrarian civilizations. 2. Investigate the implications of interconnected societies and regions by looking at how commerce has spread. 3. Explain how new networks of exchange accelerated collective learning and innovation.</p>	<p>X X</p>

<p><b>8 Engage in historical analysis using the theories and practices from multiple disciplines, toward an integrated, interdisciplinary understanding of the history of the Universe.</b></p>	<p>15-3 15-5</p>
<p>8.1 Unit 9: Acceleration Driving Question: To what extent has the Modern Revolution been a positive or a negative force?  1. Describe accelerating global change and the factors that describe it. 2. Understand the key features that define the Anthropocene. 3. Describe how economics have developed and changed since the Industrial Revolution. Unit 10: The Future Driving Question: What's the next threshold?  1. Explain the Big History story and its defining features and patterns. 2. Identify important human and environmental issues that affect the future of our species and the biosphere. 3. Propose a vision of the future based on a new understanding of the past.</p>	<p>X X</p>

## Facilities or Equipment

### Facility

There are no special facilities or spaces required to teach this course. A standard classroom in suitable for this course.

Facilities:

### Equipment

Computers or other personal electronic devices with internet access.

# **Learning and Teaching Resources**

**Maps of Time: An Introduction to Big History** by David Christian, University of Ca Press (2011).

<https://www.bighistoryproject.com/home>

**Big History on Khan Academy**

<https://www.khanacademy.org/partner-content/big-history-project>

**Crash Course Big History**

<https://www.youtube.com/user/crashcourse>

**Big History on YouTube**

<https://www.youtube.com/user/bighistoryproject>

**Video series:**

Big History (2014)

Cosmos: A Spacetime Odyssey (2014)

## **Sensitive or Controversial Content**

Sensitive or controversial issues that may arise from course content will be dealt with in accordance with the Controversial Issues section of the Guide to Education and RDCRD #39 Administrative Procedure 103 - Safe and Caring Learning Environments for Students

## **Issue Management Strategy**

### **Health and Safety**

All Red Deer Catholic Regional School's procedures will be followed if students are taken off campus (re: planning, parental permission, risk assessment, etc.).

Red Deer Catholic Regional Schools Administrative Procedure 342 - *Field Trips and Other Curricular Activities*

### **Risk Management Strategy**

### **Statement of Overlap with Existing Programs**

Big History has some overlap with the topic of evolution in Biology 20 & 30, however, it provides a great foundation for further study in these courses and enables students to see how humans fit into the evolutionary epic of life on our planet.

# Student Assessment

## Assessment

Student learning will be evaluated based on both formative and summative assessments throughout the course. Assessment tools will include rubrics, writing assessments, project-based learning and lesson quizzes.

Each lesson in the Big History curriculum closes with an assessment activity. These come in many forms and may include quick activities such as a class vote or an exit card, a small group or whole class discussion, or a peer review. They may also be more formal assessments, often in the form of a final paper or investigation writing. For the most part, the assessment activities are intended to serve as formative assessment, so that both the teacher and students can regularly monitor their understanding of the concepts in the course. Depending upon how the students respond and perform in these various activities, the teacher may choose to reinforce certain concepts as needed.

Throughout the course there will be formal writing assessments. There are formal research papers as well as investigation-related writing. Writing assignments are one of the most important activities in Big History. Not only do students improve their general writing, a skill that is of paramount importance, but they also learn how to write historical and scientific papers. As part of these papers, students learn to ask important questions, hypothesize, conduct research, synthesize information, and justify their claims. In assessing student writing, the teacher will not only get a sense of how the students are developing these vital skills, but will also be able to gauge their understanding of the course material at a deeper level. In addition, when students peer review others' writing in the course, they will gain an even deeper understanding of their own strengths and weaknesses.

Suggested Evaluation:

Assignments / Lesson Quizzes - 30%

Projects - 20%

Unit Assessments - 30%

Final Exam - 20%

### **Course Approval Implementation and Evaluation**

This course will be monitored and evaluated by:

The respective administration this of the school, the teacher of the course and the Associate Superintendent of Inclusion.

The course will be regularly monitored and evaluated to determine alignment with the course, intended outcomes, learning needs and student success.

