

# Ultimate QuizBowl Guide

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Any errors found in this guide can be reported at:  
<https://github.com/kb5vei/Ultimate-QuizBowl-Guide/issues>.

# Contents

<b>1</b>	<b>Introduction</b>	<b>7</b>
<b>2</b>	<b>Current Events</b>	<b>9</b>
2.1	Introduction to Current Events . . . . .	9
2.2	Business and Economics . . . . .	9
2.2.1	US-China Trade War . . . . .	9
2.2.2	Fed Policy . . . . .	10
2.2.3	Cryptocurrency and Blockchain . . . . .	10
2.2.4	Gig Economy . . . . .	10
2.2.5	Retail Apocalypse . . . . .	11
2.3	Politics . . . . .	11
2.3.1	Scandals . . . . .	11
2.3.2	Foreign relations . . . . .	11
2.4	Science . . . . .	12
2.4.1	Astronomy . . . . .	12
2.4.2	Biology . . . . .	12
2.4.3	Chemistry . . . . .	13
2.4.4	Physics . . . . .	13
2.4.5	Geology . . . . .	13
<b>3</b>	<b>The Arts</b>	<b>15</b>
3.1	Visual . . . . .	15
3.1.1	Architecture . . . . .	15
3.1.2	Sculpture . . . . .	16
3.1.3	Painting . . . . .	17
3.1.4	Other . . . . .	18
3.2	Performing . . . . .	18
3.2.1	Plays . . . . .	18
3.2.2	Operas . . . . .	18
3.2.3	Musicals . . . . .	20
3.2.4	Music . . . . .	20
3.2.5	Religious . . . . .	20

<b>4</b>	<b>Geography</b>	<b>25</b>
4.1	General World Geography . . . . .	25
4.2	Continents . . . . .	25
4.2.1	Africa . . . . .	25
4.2.2	Antarctica . . . . .	26
4.2.3	Asia . . . . .	26
4.2.4	Australia and Oceania . . . . .	26
4.2.5	Europe . . . . .	26
4.2.6	North America . . . . .	26
4.2.7	South America . . . . .	35
4.3	Oceans . . . . .	35
<b>5</b>	<b>History</b>	<b>37</b>
5.1	Ancient History . . . . .	37
5.2	American History . . . . .	37
5.2.1	American Prehistory . . . . .	37
5.2.2	Early Humans in North America . . . . .	38
5.2.3	Colonial America . . . . .	38
5.2.4	American Revolution . . . . .	38
5.2.5	America under the Articles of Confederation . . . . .	38
5.2.6	From the Constitution to the War of 1812 . . . . .	38
5.2.7	War of 1812 . . . . .	38
5.2.8	From 1812 to the Civil War . . . . .	38
5.2.9	Civil War . . . . .	38
5.2.10	Reconstruction . . . . .	39
5.2.11	From Reconstruction to Spanish American War . . . . .	39
5.2.12	Spanish American War . . . . .	39
5.2.13	From The Spanish American War to World War I . . . . .	39
5.2.14	World War I . . . . .	39
5.2.15	From World War 1 to the The Great Depression . . . . .	39
5.2.16	The Great Depression . . . . .	39
5.2.17	World War II . . . . .	39
5.2.18	1990's to Present . . . . .	39
5.2.19	Presidents . . . . .	39
5.2.20	Supreme Court Cases . . . . .	40
5.2.21	Congress . . . . .	40
5.3	European History . . . . .	40
5.4	Religious History . . . . .	40
5.4.1	Judaism . . . . .	40
5.4.2	Christianity . . . . .	40
5.4.3	Islam . . . . .	42
5.4.4	Buddhism . . . . .	42
5.4.5	Hinduism . . . . .	42
5.4.6	. . . . .	42
5.5	World History . . . . .	42

<b>6</b>	<b>Literature</b>	<b>43</b>
6.1	General Literature Trivia . . . . .	44
6.1.1	Opening Lines . . . . .	44
6.2	American Literature . . . . .	45
6.2.1	Fiction . . . . .	45
6.2.2	Nonfiction . . . . .	46
6.2.3	Poetry . . . . .	46
6.3	European Literature . . . . .	46
6.3.1	Fiction . . . . .	46
6.3.2	1984 . . . . .	46
6.3.3	Nonfiction . . . . .	46
6.3.4	Poetry . . . . .	47
6.4	Religious Literature . . . . .	48
6.4.1	Abrahamic Religions . . . . .	48
6.4.2	Eastern Religions . . . . .	49
6.4.3	Talmud . . . . .	49
6.5	World Literature . . . . .	49
<b>7</b>	<b>Mythology</b>	<b>51</b>
7.1	Greek/Roman . . . . .	51
7.2	Egyptian . . . . .	51
7.3	Hawaiian/Polynesian . . . . .	51
7.4	Norse . . . . .	51
7.5	Mezoamerican . . . . .	51
7.6	Indian/South Asian . . . . .	51
7.7	Chinese/Japanese/East Asian . . . . .	51
7.8	Arthurian . . . . .	51
<b>8</b>	<b>Pop Culture</b>	<b>53</b>
8.1	Pop Music . . . . .	53
8.2	Entertainment . . . . .	53
8.2.1	Video Games . . . . .	53
8.2.2	Wrestling . . . . .	53
<b>9</b>	<b>Science</b>	<b>55</b>
9.1	Astronomy . . . . .	55
9.1.1	Astronomers . . . . .	55
9.1.2	Constellations . . . . .	55
9.1.3	Cosmology . . . . .	55
9.1.4	Solar System . . . . .	55
9.1.5	Stars . . . . .	59
9.1.6	Galaxies . . . . .	59
9.1.7	Telescopes . . . . .	59
9.2	Biology . . . . .	59
9.2.1	Microbiology . . . . .	59

9.2.2	Macrobiology . . . . .	59
9.3	Chemistry . . . . .	59
9.4	Computer Science . . . . .	59
9.5	Earth Science . . . . .	60
9.5.1	Geology . . . . .	60
9.5.2	Forensic Science . . . . .	65
9.5.3	Meteorology . . . . .	65
9.5.4	Oceanography . . . . .	65
9.6	Physics . . . . .	65
9.6.1	Classical Physics . . . . .	65
9.6.2	Thermodynamics . . . . .	65
9.6.3	Modern Physics . . . . .	65
<b>10</b>	<b>Social Science</b>	<b>67</b>
10.1	Economics . . . . .	67
10.1.1	Historical Economics . . . . .	67
10.1.2	Economists . . . . .	67
10.2	Psychology . . . . .	67
10.3	Sociology . . . . .	67
<b>11</b>	<b>Sports</b>	<b>69</b>
11.1	Professional . . . . .	69
11.1.1	Baseball . . . . .	70
11.1.2	Teams . . . . .	70
11.1.3	Basketball . . . . .	72
11.1.4	Boxing . . . . .	73
11.1.5	Car Racing . . . . .	73
11.1.6	Curling . . . . .	73
11.1.7	Cycling . . . . .	73
11.1.8	Golf . . . . .	73
11.1.9	Gymnastics . . . . .	74
11.1.10	Hockey . . . . .	74
11.1.11	Figure Skating . . . . .	74
11.1.12	Football . . . . .	74
11.1.13	Skateboarding . . . . .	74
11.1.14	Soccer . . . . .	74
11.1.15	Softball . . . . .	74
11.1.16	Swimming . . . . .	74
11.1.17	Tennis . . . . .	74
11.1.18	Track and Field . . . . .	74
11.1.19	Volleyball . . . . .	74
11.1.20	Weight Lifting . . . . .	74
11.2	College . . . . .	75
11.2.1	Baseball . . . . .	75
11.2.2	Basketball . . . . .	75

11.2.3	Golf . . . . .	75
11.2.4	Hockey . . . . .	75
11.2.5	Football . . . . .	75
11.2.6	Soccer . . . . .	75
11.2.7	Tennis . . . . .	75
11.3	Olympic Sports . . . . .	76
11.3.1	Summer Olympics . . . . .	76
11.3.2	Winter Olympics . . . . .	78
<b>12</b>	<b>Theology and Philosophy</b>	<b>79</b>
12.1	Philosophy . . . . .	79
12.1.1	Western Philosophy . . . . .	79
12.2	Theology . . . . .	80
12.2.1	Abrahamic Religions . . . . .	80
12.2.2	Other Religions . . . . .	80
<b>13</b>	<b>Miscellaneous</b>	<b>81</b>





# Chapter 1

## Introduction

So you've discovered the world of trivia. QuizBowl, High-Q, or whatever name it is called in your area can be great fun to play, and sometimes even casual teams can win if they employ the right strategies and have a little bit of luck. However, a team that wants to win consistently needs to take its preparation a little more seriously.

There are 12 broad categories in quizbowl:

- Current Events
- The Arts
- Geography
- History
- Literature
- Mythology
- Pop Culture
- Science
- Social Science
- Sports
- Theology and Philosophy
- Miscellaneous

A general rule of thumb is that a team should consist of 4 players. Rather than trying to be a generalist at first, each player should pick 3 topics to become an expert in. While progress can be made by looking over lists and old questions, you can become a better player if you create your own lists. Memorizing lists will generally allow you to answer questions at the "giveaway" point in the question, but building detailed lists will allow you to answer questions during the "power" phase of the question. You can practice writing your own questions as well.

When building a team, keep in mind that there are 4 players, and thus the players on your team should pick complementary areas. For instance, if one player is interested in developing their ability to answer science questions, another player should work on history, while another learns about sports, and the final player studies literature. Don't build teams out of groups of your school's "best" players. Instead, build teams where the players' strengths work together synergistically.



# Chapter 2

## Current Events

### 2.1 Introduction to Current Events

The very nature of current events makes it extremely hard to write a section of a book on this. Studying for the current events means keeping up with the news. Whether it be online news sites like CNN's website, watching the news on TV or even reading the newspaper, you must do this every day to be well informed about current events.

This section will change quite frequently, and some of the current events section will undoubtedly be moved into the "history" section as time passes. For reference, this version of Ultimate QuizBowl Guidewas released on January 19, 2021.

### 2.2 Business and Economics

#### 2.2.1 US-China Trade War

The US-China Trade war is an ongoing conflict between the two largest economies in the world: US and China. In 2018, United States President Donald Trump announced that tariffs and other trade barriers would be placed on certain Chinese goods in response to what he called "Unfair Trade Practices." In response, China, under the leadership of Xi Jinping retaliated with tariffs and other trade barriers would be placed on certain products imported from the United States.

- Many farmers have struggled due to inability to export their crops to China.
- Manufacturers have had to pass on higher prices to consumers.
- The trade war has strained relations between the United States and China.
- Stock Market volatility has followed announcements of tariffs and trade-talks.
- Chinese telecommunication manufacturer Huawei received special attention in the trade war. The United States warned its NATO allies that Huawei's equipment is believed to contain exploits that the Chinese Government may control.

### 2.2.2 Fed Policy

Beginning after the Great Recession of 2008, the Federal Reserve instituted a policy of *quantitative easing* which consisted of the buying of government securities such as bonds in order to increase the money supply, and thus encourage lending and investment. This led to sustained growth during the Obama presidency years.

Starting in approximately 2016, the Fed began to increase interest rates, going from about 0.1% in 2015 to 2.4% in march of 2019. Signs of global weakness caused the Fed to issue a rate-cut in September to help stimulate the economy. In October 2019, the fed issued another rate-cut of 0.25% due to slow global growth and low inflation.

Fears of Coronavirus (see Coronavirus, 2.4.2 on page 12), along with a fed decision to not issue a rate cut caused a late-January 2020 slump in the Stock Market.

### 2.2.3 Cryptocurrency and Blockchain

The first cryptocurrency, and with a market dominance of approximately 66% is bitcoin. Bitcoin was introduced in *Bitcoin: A Peer-to-Peer Electronic Cash System*, nicknamed “The White Paper” by its creator, Satoshi Nakamoto in 2008. Its symbol is ₿. Satoshi Nakamoto is likely a pseudonym for a person or group of persons that created blockchain technology, which solves the “double-spend” problem for peer-to-peer networks.

- The first purchase made with cryptocurrency was two pizzas, sold for ₿10000
- In late 2017, Bitcoin hit its all-time high exchange rate of nearly \$20000 for ₿1.
- A deluge of “Altcoins” followed the creation of Bitcoin. Some of the most successful are Ethereum, Ripple, Litecoin, and Tether. Monero is specifically designed to be untraceable.
- Due to competing ideals, bitcoin itself was hard-forked several times, with the alternatives calling themselves Bitcoin Cash, Bitcoin ABC, Bitcoin SV, and Bitcoin Gold.
- In July of 2017, John David McAfee, the founder of McAfee antivirus software, made a famous prediction that bitcoin would reach ₿1 = \$500,000 in three years, or he would initiate his own creative punishment.
- Facebook is currently working on launching the Libra stablecoin. Regulators aren’t looking too favorably on it, and Paypal, Visa, Mastercard, and other companies recently backed out of it.

### 2.2.4 Gig Economy

The *Gig Economy* is a collective term for a new sector that has recently become popular. Workers for companies like Uber, Lyft, Grubhub, etc. classify employees as contractors. Thus, employees are able to set their own hours and work schedule, while employers need not deal with regulations concerning full-time or part-time employees.

## 2.2.5 Retail Apocalypse

## 2.3 Politics

### 2.3.1 Scandals

Scandals involving Donald Trump

Stormy Daniels

Russian Interference into Elections and the Muller Report

Ukrainian Aid, Whistleblower, and First Impeachment

Election of 2020, Invasion of the US Capitol, and Second Impeachment

Scandals involving other US Politicians

Joe and Hunter Biden

Jeffery Epstein

Hillary Clinton

### 2.3.2 Foreign relations

North Korea

Iran

**The Killing of Qassim Soleimani** On January 3, 2020, President Donald Trump authorized the United States military to launch a drone-strike to kill General Qassim Soleimani of Iran, who had been designated a terrorist by the US. On January 7, 2020, Iran launched a missile attack on US forces in Iraq. There were no casualties. Though many memes of World War III beginning circulated online, President Trump stated that after this attack, Iran appeared to be standing down. Iran called the attack a "slap in the face" to America.

**Libya and Turkey**

**China and Hong Kong**

**Latin America**

## **2.4 Science**

### **2.4.1 Astronomy**

#### **Imaging of a Black Hole**

In April of 2019, a team of over 200 scientists collaborated to release the first picture of a black hole. The black hole, which is invisible to the naked eye, measures 40 billion km across, or three million times the size of the Earth. It was scanned over a period of 10 days in the M87 galaxy.

#### **Mauna Kea Protests and TMT**

#### **Oumuamua and C/2019 Q4 Borisov**

#### **Saturn's Moons**

In October of 2019, a team of scientists under Scott S. Sheppard who works at the Carnegie Institution for Science announced they had found 20 new moons in orbit around Saturn, for a grand total of 82. As Jupiter only has 79 known moons, Saturn now has the most known moons in the solar system. All but 2 of the newly discovered moons are in retrograde orbits, and likely were part of a larger moon that broke up or collided with another one.

#### **Frame-Dragging of a Pulsar**

Proves another facet of General Relativity correct.

### **2.4.2 Biology**

#### **Coronavirus**

In late 2019, a new version of the Coronavirus began spreading from person-to-person in the Chinese province of Wuhan. The virus infects the respiratory system, and sometimes pneumonia in both lungs. On January 21, 2020, the first person-to-person transmission in the United States was confirmed. This became a large pandemic, causing lockdowns and schools to be closed worldwide.

**CRISPR****2.4.3 Chemistry****2.4.4 Physics****2.4.5 Geology****Whakaari/White Island**

White island is the top of an Andesite volcano in New Zealand. On 9 December 2019, it erupted explosively, which resulted in nineteen fatalities, including two people who are missing and presumed dead. Twenty-five survivors were seriously injured, many critically and suffering severe burns. Three survivors suffered minor injuries. Forty-seven people were reportedly on the island when it erupted. A second eruption closely followed the first, which hampered search-rescue-and-recovery efforts.

**Kīlauea**

On December 20, 2020, the Kīlauea volcano on the big island of Hawaii erupted for the first time since 2018. The eruption has been contained entirely in the summit crater. The lake that had formed at the bottom of the crater was quickly boiled off, and a lava lake has taken its place. (See Kilauea - 9.5.1 on page 62)





# Chapter 3

## The Arts

### 3.1 Visual

#### 3.1.1 Architecture

Antoni Gaudí

Frank Lloyd Wright

Mies Van der Rohe

Philip Johnson

Eero Saarinen

Richard Rogers

Frank Gehry

Norman Foster

Renzo Piano

Santiago Calatrava

Zaha Hadid

Oscar Niemeyer

Rem Koolhaas

Jeanne Gang

Shigeru Ban

### 3.1.2 Sculpture

<b>Sculptor</b>	<b>Major Works</b>	<b>Summary</b>
Praxiteles (4th Century BCE)	First life-size nude female form	This Ancient Greek was the most renowned of the Attic sculptors of the 4th century BC. He was the first to sculpt the nude female form in a life-size statue. While no indubitably attributable sculpture by Praxiteles is extant, numerous copies of his works have survived; several authors, including Pliny the Elder, wrote of his works; and coins engraved with silhouettes of his various famous statuary types from the period still exist.
Donatello (1386-1466)	David (Bronze), St. George, Equestrian monument of Gattameleta	Donatello was an Italian sculptor of the Renaissance. Born in Florence, he studied classical sculpture and used this to develop a complete Renaissance style in sculpture, whose periods in Rome, Padua and Siena introduced to other parts of Italy a long and productive career. He worked with stone, bronze, wood, clay, stucco and wax, and had several assistants, with four perhaps being a typical number. He developed a new, very shallow, type of bas-relief for small works, and a good deal of his output was larger architectural reliefs.
Michelangelo	David, Pietà, Moses, Sistine Chapel (Painting) (Includes <i>The Last Judgment</i> and <i>The Creation of Adam</i> )	Michaelangelo was an Italian sculptor, painter, architect and poet. He is considered by some to be the greatest artist of all time.

**Michelangelo**

:

**Gianlorenzo Bernini**

**Sandro Botticelli**

**The Birth of Venus** or *La Nascita di Venere*

**Auguste Rodin**

**The Thinker**

**The Gates of Hell**

Marciel Duchamp

Constantin Brancusi

Alberto Giacometti

Henry Moore

Sol LeWitt

Louise Bourgeois

### 3.1.3 Painting

William Blake

This Section is about William Blake's Artwork. To see his writings, see 6.3.4 on page 47

Caravaggio

Salvador Dali

Eugene Delacroix

The Persistence of Memory

Marciel Duchamp

El Greco

Francisco Goya

Hokusai

Thirty-Six Views of Mount Fuji

The Great Wave off Kanagawa

Edward Hopper

Nighthawks

Monet

Impression: Sunrise

Edvard Munch

**The Scream** - The red sky was likely inspired by the eruption of Krakatoa. (See Krakatoa - 9.5.1 on page 60)

**Pablo Picasso**

**Guernica** is an oil-on canvas painting that depicts the firebombing of the city of *Guernica* during the Spanish Civil war in April of 1937. Finished in July of 1937, the painting depicts horses, bodies, and people on fire. It is generally considered one of the most anti-war paintings in history.

**Rembrandt****The Night Watch****Georges Seurat**

**A Sunday on La Grande Jatte** is the architypical example of Pointillism.

**Vincent VanGogh****The Starry Night****Andy Warhol****Campbell's Soup Cans****Grant Wood****American Gothic****3.1.4 Other****3.2 Performing****3.2.1 Plays****Greek****Shakespeare**

For Shakespere's poetry, see 6.3.4 on page page 47

**Modern Plays****Arthur Miller****3.2.2 Operas****Gilbert and Sullivan****HMS Pinafore**

**The Pirates of Penzance**

**The Mikado**

### 3.2.3 Musicals

**Leonard Bernstein** is the composer of West Side Story.

**Frederick Loewe** composed my fair lady.  
My Fair Lady

**Cole Porter** Best known for Kiss Me Kate

Kiss Me, Kate	1948	People are making a production of the Taming of the Shrew.
---------------	------	------------------------------------------------------------

**Rogers and Hammerstein** test

The Sound of Music	Year	Insert synopsis here. Does this word-wrap if it is too long?
Oklahoma!	Year	Insert synopsis here. Does this word-wrap if it is too long?
South Pacific	Year	Insert synopsis here. Does this word-wrap if it is too long?
The King and I	Year	Insert synopsis here. Does this word-wrap if it is too long?
Carousel	Year	Insert synopsis here. Does this word-wrap if it is too long?

**Andrew LLOYD Webber** Andrew Lloyd Webber composed 20 musicals, as well as a Requiem mass in Latin, and many other Stand-Alone Songs. His best known musicals are listed below, along with a short synopsis:

Joseph and the Amazing Technicolor Dreamcoat	1968	Insert synopsis here. Does this word-wrap if it is too long?
Jesus Christ, Superstar	1970	Insert synopsis here. Does this word-wrap if it is too long?
Evita	1976	Insert synopsis here. Does this word-wrap if it is too long?
Cats	1981	Insert synopsis here. Does this word-wrap if it is too long?
Phantom of the Opera	1986	Insert synopsis here. Does this word-wrap if it is too long?

### 3.2.4 Music

### 3.2.5 Religious

Chant

Te Deum

Let All Mortal Flesh Keep Silence

Phos Hilaron (Lumen Hilare)

Pange, lingua - St. Thomas Aquinas

Dies Irae

### Religious Hymns

A Mighty Fortress is our God - Composed by Martin Luther<sup>1</sup>

Amazing Grace

How Great Thou Art

### Classical

#### Composers

Beethoven

Mozart

Bach

Brahms

Holst

Hayden

Chopin

Dvorak

Handel

Tchaikovsky

---

<sup>1</sup>see section 5.4.2 page 42

Aaron Copland

Themes Contained in Songs

Beethoven's 9th - Ode to Joy

Aaron Copeland's Appalacian Spring - Simple Gifts



**Songs of the Civil War**

**When Johnny Comes Marching Home**

**John Brown's Body**

**Follow the Drinking Gourd**

**Lincoln and Liberty Too**

**Bonny Blue Flag**

**Battle Cry of Freedom**

**Goober Peas**

**Marching Through Georgia**

**Battle Hymn of the Republic** was written by Julia Ward Howe. She fell asleep with the lyrics for John Brown's Body in her head. She Awoke the next morning and wrote the new version in the morning twilight.<sup>2</sup>

**Ragtime**

**The Entertainer** - Scott Joplin

**Maple Leaf Rag** - Scott Joplin

**Jazz**

**Rhapsody in Blue** - George Gershwin

**Rock**

**Techno**

---

<sup>2</sup>See Howe, Julia Ward. *Reminiscences: 1819-1899*. Houghton, Mifflin: New York, 1899. p. 275.; Quote available on Wikipedia



# Chapter 4

## Geography

### 4.1 General World Geography

Highest Peak	Mt. Everest	On the Border between Nepal and China;
Furthest from Center of Earth	Chimborazo	Ecuador
Greatest Vertical Drop	Mt. Thor	Barrin Island, CA, 4,101 feet
Lowest point on land	Dead Sea	Israel
Lowest point in the Ocean	Challenger Deep	In the Mariana Trench
Tallest Waterfall	Angel Falls	Venezuela
Longest River	Nile	Africa
Largest River by Volume	Amazon	South America
Deepest River	Congo	Africa
Largest Lake	Caspian Sea	Europe
Deepest Lake	Lake Baikal	Russia
Largest Continent	Asia	
Smallest Continent	Australia	
Largest Ocean	Pacific	
Smallest Ocean	Arctic	

### 4.2 Continents

#### 4.2.1 Africa

##### Random Trivia

- Africa is the only continent in all four Hemispheres (Northern, Southern, Eastern, Western)

### 4.2.2 Antarctica

### 4.2.3 Asia

### 4.2.4 Australia and Oceania

### 4.2.5 Europe

### 4.2.6 North America

#### Canada

#### By Provinces and Territories

#### Rivers, Lakes, and Bodies of Water

#### Mexico

#### By States and Territories

#### Rivers, Lakes, and Bodies of Water

**United States**

**By States and Territories** You should know the following states and territories.

<b>State</b>	<b>Capital</b>	<b>Nickname</b>	<b>Highest Point</b>
Alabama	Montgomery	The Yellowhammer State	Cheaha Mountain
Alaska			
Alaska			
Arizona			
Arkansas			
California			
Colorado			
Connecticut			
D.C.			
Delaware			
Florida			
Georgia			
Hawaii			
Idaho			
Illinois			
Indiana			
Iowa			
Kansas			
Kentucky			
Louisiana			
Maine			
Maryland			
Massachusetts			
Michigan			
Minnesota			
Mississippi			
Missouri			
Montana			
Nebraska			
Nevada			
New Hampshire			
New Jersey			
New Mexico			
New York			
North Carolina			
North Dakota			
Ohio			
Oklahoma			

Oregon			
Pennsylvania			
Rhode Island			
South Carolina			
South Dakota			
Tennessee			
Texas	Austin	The Lone Star State	Guadalupe Peak
Utah			
Vermont			
Virginia			
Washington			
West Virginia			
Wisconsin			
Wyoming			
Puerto Rico			
US Virgin Islands			
Northern Mariana Islands			
Guam			
American Samoa			
District of Columbia			
Baker Island			
Howland Island			
Jarvis Island			
Johnston Atoll			
Kingman Reef			
Midway Atoll			
Navassa Island			
Palmyra Atoll			
Wake Island			

**UNESCO World Heritage Sites:** UNESCO world heritage sites are landmarks or areas, selected by the United Nations Educational, Scientific and Cultural Organization (UNESCO) for having cultural, historical, scientific or other form of significance, which is legally protected by international treaties. The sites are judged to be important for the collective and preservative interests of humanity. In the United States, there are 11 cultural, 12 natural, and 1 mixed sites.

Type	Name and Date Designated	Description <sup>1</sup>
Cultural	Cahokia Mounds State Historic Site (1982) (Illinois)	The largest pre-Columbian settlement north of Mexico. Primary features at the site include Monks Mound, the largest prehistoric earthwork in the Americas, covering over 5 ha and standing 30 m high.
Cultural	Chaco Culture (1987) (New Mexico)	Chaco Canyon, a major center of ancestral Pueblo culture between 850 and 1250, was a focus for ceremonials, trade and political activity for the prehistoric Four Corners area. Chaco is remarkable for its monumental public and ceremonial buildings and its distinctive architecture
Cultural	Independence Hall (1979) (Philadelphia, PA)	The Declaration of Independence (1776) and the Constitution of the United States (1787) were both signed in this building in Philadelphia. The universal principles of freedom and democracy set forth in these documents are of fundamental importance to American history and have also had a profound impact on law-makers around the world.
Cultural	La Fortaleza and San Juan National Historic Site in Puerto Rico (1983)	Between the 16th and 20th centuries, a series of defensive structures was built at this strategic point in the Caribbean Sea to protect the city and the Bay of San Juan. They represent a fine display of European military architecture adapted to harbour sites on the American continent.
Cultural	Mesa Verde National Park (1978) (Colorado)	A great concentration of ancestral Pueblo Indian dwellings, built from the 6th to the 12th century, can be found on the Mesa Verde plateau in south-west Colorado at an altitude of more than 2,600 m. Some 4,400 sites have been recorded, including villages built on the Mesa top. There are also imposing cliff dwellings, built of stone and comprising more than 100 rooms.

<sup>1</sup>Descriptions are summarized from UNESCO website, <https://whc.unesco.org/en/statesparties/us>

Cultural	Monticello and the University of Virginia in Charlottesville (1987)	Thomas Jefferson (1743–1826), author of the American Declaration of Independence and third president of the United States, was also a talented architect of neoclassical buildings. He designed Monticello (1769–1809), his plantation home, and his ideal 'academical village' (1817–26), which is still the heart of the University of Virginia. Jefferson's use of an architectural vocabulary based upon classical antiquity symbolizes both the aspirations of the new American republic as the inheritor of European tradition and the cultural experimentation that could be expected as the country matured.
Cultural	Monumental Earthworks of Poverty Point (2014) (Mississippi)	Monumental Earthworks of Poverty Point owes its name to a 19th-century plantation close to the site, which is in the Lower Mississippi Valley on a slightly elevated and narrow landform. The complex comprises five mounds, six concentric semi-elliptical ridges separated by shallow depressions and a central plaza. It was created and used for residential and ceremonial purposes by a society of hunter fisher-gatherers between 3700 and 3100 BP. It is a remarkable achievement in earthen construction in North America that was unsurpassed for at least 2,000 years.
Cultural	San Antonio Missions (2015)	The site encompasses a group of five frontier mission complexes situated along a stretch of the San Antonio River basin in southern Texas, as well as a ranch located 37 kilometres to the south. It includes architectural and archaeological structures, farmlands, residencies, churches and granaries, as well as water distribution systems. The complexes were built by Franciscan missionaries in the 18th century and illustrate the Spanish Crown's efforts to colonize, evangelize and defend the northern frontier of New Spain. The San Antonio Missions are also an example of the interweaving of Spanish and Coahuiltecan cultures, illustrated by a variety of features, including the decorative elements of churches, which combine Catholic symbols with indigenous designs inspired by nature.
Cultural	Statue of Liberty (1984) (New York)	Made in Paris by the French sculptor Bartholdi, in collaboration with Gustave Eiffel (who was responsible for the steel framework), this towering monument to liberty was a gift from France on the centenary of American independence. Inaugurated in 1886, the sculpture stands at the entrance to New York Harbour and has welcomed millions of immigrants to the United States ever since.



Cultural	Taos Pueblo (1992) (New Mexico)	Situated in the valley of a small tributary of the Rio Grande, this adobe settlement – consisting of dwellings and ceremonial buildings – represents the culture of the Pueblo Indians of Arizona and New Mexico.
Cultural	The 20th-Century Architecture of Frank Lloyd Wright (2019) (Multiple Sites)	The property consists of eight buildings in the United States designed by the architect during the first half of the 20th century. These include well known designs such as Fallingwater (Mill Run, Pennsylvania) and the Guggenheim Museum (New York). All the buildings reflect the ‘organic architecture’ developed by Wright, which includes an open plan, a blurring of the boundaries between exterior and interior and the unprecedented use of materials such as steel and concrete. Each of these buildings offers innovative solutions to the needs for housing, worship, work or leisure. Wright’s work from this period had a strong impact on the development of modern architecture in Europe.
Natural	Carlsbad Caverns National Park (1995) (New Mexico)	This karst landscape in the state of New Mexico comprises over 80 recognized caves. They are outstanding not only for their size but also for the profusion, diversity and beauty of their mineral formations. Lechuguilla Cave stands out from the others, providing an underground laboratory where geological and biological processes can be studied in a pristine setting.
Natural	Everglades National Park (1979)	This site at the southern tip of Florida has been called ‘a river of grass flowing imperceptibly from the hinterland into the sea’. The exceptional variety of its water habitats has made it a sanctuary for a large number of birds and reptiles, as well as for threatened species such as the manatee.
Natural	Grand Canyon National Park (1979)	Carved out by the Colorado River, the Grand Canyon (nearly 1,500 m deep) is the most spectacular gorge in the world. Located in the state of Arizona, it cuts across the Grand Canyon National Park. Its horizontal strata retrace the geological history of the past 2 billion years. There are also prehistoric traces of human adaptation to a particularly harsh environment.

Natural	Great Smoky Mountains National Park (1983)	Stretching over more than 200,000 ha, this exceptionally beautiful park is home to more than 3,500 plant species, including almost as many trees (130 natural species) as in all of Europe. Many endangered animal species are also found there, including what is probably the greatest variety of salamanders in the world. Since the park is relatively untouched, it gives an idea of temperate flora before the influence of humankind.
Natural	Hawaii Volcanoes National Park (1987)	This site contains two of the most active volcanoes in the world, Mauna Loa (4,170 m high) and Kilauea (1,250 m high), both of which tower over the Pacific Ocean. Volcanic eruptions have created a constantly changing landscape, and the lava flows reveal surprising geological formations. Rare birds and endemic species can be found there, as well as forests of giant ferns.
Natural	Kluane / Wrangell-St. Elias / Glacier Bay / Tatshenshini-Alsek (1979,1992, 1994)	These parks comprise an impressive complex of glaciers and high peaks on both sides of the border between Canada (Yukon Territory and British Columbia) and the United States (Alaska). The spectacular natural landscapes are home to many grizzly bears, caribou and Dall's sheep. The site contains the largest non-polar icefield in the world.
Natural	Mammoth Cave National Park (1981)	Mammoth Cave National Park, located in the state of Kentucky, has the world's largest network of natural caves and underground passageways, which are characteristic examples of limestone formations. The park and its underground network of more than 560 surveyed km of passageways are home to a varied flora and fauna, including a number of endangered species.
Natural	Olympic National Park (1981)	Located in the north-west of Washington State, Olympic National Park is renowned for the diversity of its ecosystems. Glacier-clad peaks interspersed with extensive alpine meadows are surrounded by an extensive old growth forest, among which is the best example of intact and protected temperate rainforest in the Pacific Northwest. Eleven major river systems drain the Olympic mountains, offering some of the best habitat for anadromous fish species in the country. The park also includes 100 km of wilderness coastline, the longest undeveloped coast in the contiguous United States, and is rich in native and endemic animal and plant species, including critical populations of the endangered northern spotted owl, marbled murrelet and bull trout.

Natural	Redwood National and State Parks (1980)	Redwood National Park comprises a region of coastal mountains bordering the Pacific Ocean north of San Francisco. It is covered with a magnificent forest of coastal redwood trees, the tallest and most impressive trees in the world. The marine and land life are equally remarkable, in particular the sea lions, the bald eagle and the endangered California brown pelican.
Natural	Waterton Glacier International Peace Park (1995)	In 1932 Waterton Lakes National Park (Alberta, Canada) was combined with the Glacier National Park (Montana, United States) to form the world's first International Peace Park. Situated on the border between the two countries and offering outstanding scenery, the park is exceptionally rich in plant and mammal species as well as prairie, forest, and alpine and glacial features.
Natural	Yellowstone National Park (1978)	The vast natural forest of Yellowstone National Park covers nearly 9,000 km <sup>2</sup> ; 96% of the park lies in Wyoming, 3% in Montana and 1% in Idaho. Yellowstone contains half of all the world's known geothermal features, with more than 10,000 examples. It also has the world's largest concentration of geysers (more than 300 geysers, or two thirds of all those on the planet). Established in 1872, Yellowstone is equally known for its wildlife, such as grizzly bears, wolves, bison and wapitis.
Natural	Yosemite National Park (1984)	Yosemite National Park lies in the heart of California. With its 'hanging' valleys, many waterfalls, cirque lakes, polished domes, moraines and U-shaped valleys, it provides an excellent overview of all kinds of granite relief fashioned by glaciation. At 600–4,000 m, a great variety of flora and fauna can also be found here.

Mixed	Papahānaumokuākea (2010)	a vast and isolated linear cluster of small, low lying islands and atolls, with their surrounding ocean, roughly 250 km to the northwest of the main Hawaiian Archipelago and extending over some 1931 km. The area has deep cosmological and traditional significance for living Native Hawaiian culture, as an ancestral environment, as an embodiment of the Hawaiian concept of kinship between people and the natural world, and as the place where it is believed that life originates and to where the spirits return after death. On two of the islands, Nihoa and Makumanamana, there are archaeological remains relating to pre-European settlement and use. Much of the monument is made up of pelagic and deep-water habitats, with notable features such as seamounts and submerged banks, extensive coral reefs and lagoons. It is one of the largest marine protected areas (MPAs) in the world.
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## Rivers, Lakes, and Bodies of Water

**The Great Lakes** - There are 5 great lakes located along or near the US-Canada border. At the end of the last Ice Age, there was a glacial lake, called Lake Agassiz that was larger than all of the lakes combined.

- **Lake Superior** - Is the largest and deepest of all the great lakes. It is mentioned in the Gordon Lightfoot song *The Wreck of the Edmund Fitzgerald*. The Chippewa called the lake *Gitchigumi*. Cities on Lake Superior include Duluth, MN, Thunder Bay, Ontario, and Sault Ste. Marie is located between lakes Superior and Huron.
- **Lake Michigan** - Chicago, IL, Green Bay, WI, and Gary, IN are located on lake Michigan. It separates Michigan's upper peninsula from the rest of Michigan.
- **Lake Huron**
- **Lake Erie** Detroit, MI, Toledo OH, Cleveland OH, Erie PA, and Buffalo, NY are all located on the shores of lake Erie. Niagara falls is on the Niagara River that connects Lake Erie to Lake Ontario.
- **Lake Ontario**

### Other Lakes

- The Great Salt Lake
- Crater Lake
- Lake of the Woods
- Lake Okeechobee
- Lake Meade
- Lake Tahoe

### Rivers

## 4.2.7 South America

## 4.3 Oceans

Though globally all oceans are connected and currents circulate water through all of the ocean, historically, there have been four named oceans: Atlantic, Arctic, Indian and Pacific. Recently, many countries, including the United States have begun recognizing a fifth ocean: the Southern Ocean, which is the large ocean area that encircles Antarctica.

Atlantic

Arctic

Indian

Pacific

Southern

# Chapter 5

## History

### 5.1 Ancient History

### 5.2 American History

#### 5.2.1 American Prehistory

Geology of North America

Glaciers

Lake Agassiz

Megafauna

Wooly Mammoth

Mastodon

Smilodon

Gylptodon

Giant Sloths

Dire Wolf

## 5.2.2 Early Humans in North America

Bering Land Bridge

Clovis culture

Native American Tribes

## 5.2.3 Colonial America

## 5.2.4 American Revolution

## 5.2.5 America under the Articles of Confederation

## 5.2.6 From the Constitution to the War of 1812

## 5.2.7 War of 1812

## 5.2.8 From 1812 to the Civil War

Texas Revolution

## 5.2.9 Civil War

John Brown's Raid

The raid inspired John Brown's Body, and later Battle Hymn of the Republic<sup>1</sup>.

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<sup>1</sup>See section 3.2.5 on page 23.



Secession and Ft. Sumter

Battles

5.2.10 Reconstruction

5.2.11 From Reconstruction to Spanish American War

5.2.12 Spanish American War

5.2.13 From The Spanish American War to World War I

5.2.14 World War I

5.2.15 From World War 1 to the The Great Depression

5.2.16 The Great Depression

5.2.17 World War II

The Cold War

5.2.18 1990's to Present

5.2.19 Presidents

### 5.2.20 Supreme Court Cases

Marbury v Madison

McCulloch v Maryland

Gibbons v Ogden

Dred Scott v Sanford

Plessy v Ferguson

Schenck v United States

Brown v Board of Education

Miranda v Arizona

Roe v Wade

Texas v Johnson

Obergefell v Hodges

### 5.2.21 Congress

## 5.3 European History

## 5.4 Religious History

### 5.4.1 Judaism

### 5.4.2 Christianity

Foundations

**Eccumenical Councils of the [Catholic] Church**

<b>Council</b>	<b>Year (AD)</b>	<b>Notes</b>
Council of Jerusalem	about 50	Mentioned in Acts 15
Council of Nicea	325	Against Arianism; Date of Easter; Nicene Creed
Council of Constantinople	381	Against Arianism and Pneumatomachi.
First Council of Ephesus	431	Against Nestorianism; Mary as Mother of God
Council of Chalcedon	451	Jesus was both true God and true man
Second Council of Constantinople	553	Against Nestorianism
Third Council of Constantinople	680-681	Against Monothelitism and monoenergism
Second Council of Nicaea	787	Against Iconoclasm; altars must contain relics.
Fourth Council of Constantinople	869-870	Condemned Photius and Iconoclasm
First Council of the Lateran	1123	Investiture; Clerical Celibacy
Second Council of the Lateran	1139	Upheld first crusade declarations
Third Council of the Lateran	1179	Against Waldensian, Cathars.
Fourth Council of the Lateran	1215	Transubstantiation; Papal Primacy; confession; 5th crusade.
First Council of Lyon	1245	Frederick II excommunicated; 7th crusade
Second Council of Lyon	1274	Dominican and Franciscan orders approved.
Council of Vienne	1311-1312	Knights Templar disbanded
Council of Constance	1414-1418	Ended Three-Popes Controversy; Conciliarism
Council of Basel, Ferrara and Florence	1431-1445	superiority of the Pope over the Councils
Fifth Council of the Lateran	1512-1517	purgatory; Mount of piety
Council of Trent	1545-1563	response to Protestantism; condemns <i>sola fide</i> indulgences; 7 sacraments; biblical canon; this one is huge and really important
First Council of the Vatican	1870	never officially ended; Papal infallibility
Second Vatican Council	1962-1965	Mass in vernacular; lots of updates; This one is huge and really important too.

### **The Great Scism of 1054**

### **The Protestant Reformation**

**Martin Luther** Fun Fact: Martin Luther composed the hymn *A Mighty Fortress is Our God*. It is often sang on Reformation Sunday (The Last Sunday of October, or sometimes October 31).

**John Wesley**

**John Calvin**

**Henry VIII**

**5.4.3 Islam**

**5.4.4 Buddhism**

**5.4.5 Hinduism**

**5.4.6**

**5.5 World History**

# Chapter 6

## Literature

## 6.1 General Literature Trivia

### 6.1.1 Opening Lines

These are some of the most famous opening lines, and their sources.

Opening Line	Work	Author
Many years later, as he faced the firing squad, Colonel Aureliano Buendía was to remember that distant afternoon when his father took him to discover ice.	100 Years of Solitude	Gabriel Garcia Marquez
It was a bright cold day in April, and the clocks were striking thirteen.	1984	George Orwell
All happy families are alike; each unhappy family is unhappy in its own way.	Anna Karenina	Leo Tolstoy
IF you really want to hear about it, the first thing you probably want to know is where I was born, and what my childhood was like...	The Catcher in the Rye	J. D. Salinger
“Where’s Papa going with that ax?” asked Fern to her mother as they were setting the table for breakfast.	Charlotte’s Web	E. B White
In my younger years my father gave me some advice that I’ve been turning over in my mind ever since.	The Great Gatsby	F. Scott Fitzgerald
It was a pleasure to burn.	Fahrenheit 451	Ray Bradbury
We slept in what had once been the gymnasium.	The Handmaid’s Tale	Margaret Atwood
In a hole in the ground there lived a hobbit.	The Hobbit	J. R. R. Tolkien
Jewel and I come up from the field, following the path in single file.	As I Lay Dying	William Faulkner
There was no possibility of taking a walk that day.	Jane Eyre	Charlotte Brontë
When he was nearly thirteen, my brother Jem got his arm badly broken at the elbow.	To Kill a Mockingbird	Harper Lee
My suffering left me sad a gloomy.	Life of Pi	Yann Martel
Lolita, light of my life, fire of my loins. My sin, my soul.	Lolita	Vladimir Nabokov
The week before I left my family and Florida and the rest of my minor life to go to boarding school in Alabama, my mother insisted on throwing me a going-away party.	Looking for Alaska	John Green

As Gregor Samsa awoke one morning from uneasy dreams he found himself transformed in his bed into a monstrous vermin	The Metamorphosis	Franz Kafka
Call me Ishmael	Moby Dick	Herman Melville
They're out there. Black boys in white suits up before me to commit sex acts in the hall and get it mopped up before I can catch them.	One flew over the Cuckoo's Nest	Ken Kesey
All children, except one, grow up.	Peter Pan	J.M. Barrie
It is a truth universally acknowledged, that a single man in possession of a good fortune, must be in want of a wife.	Pride and Prejudice	Jane Austin
In our family, there was no clear line between religion and fly-fishing.	A River runs through it	Norman Maclean
All this happened, more or less.	Slaughterhouse-Five	Kurt Vonnegut
Mother died today.	The Stranger	Albert Camus
It was the best of times, it was the worst of times...	A Tale of Two Cities	Charles Dickens
Stately, plump Buck Mulligan came from the stairhead, bearing a bowl of lather on which a mirror and a razor lay crossed.	Ulysses	James Joyce

## 6.2 American Literature

### 6.2.1 Fiction

William Faulkner

A Rose for Emily

As I Lay Dying

Barn Burning

Light in August

The Hamlet

F. Scott Fitzgerald

The Great Gatsby

**Tender is the Night** - The title is taken from the poem "Ode to a Nightingale" by John Keats.

**This Side of Paradise**

**John Greene**

**Looking For Alaska**

**Herman Melville**

**Moby Dick**

**J. D. Salinger**

**The Catcher in the Rye**

**Kurt Vonnegut**

**Slaughterhouse-Five**

### 6.2.2 Nonfiction

**Silent Spring**

### 6.2.3 Poetry

## 6.3 European Literature

### 6.3.1 Fiction

### 6.3.2 1984

**Animal Farm**

**Ulysses**

### 6.3.3 Nonfiction

**Mutiny on the Bounty**



### **6.3.4 Poetry**

#### **William Blake**

This section is about William Blake's Literature. To learn about Artwork by William Blake, see 3.1.3 on page 17

#### **The Tyger**

#### **London**

#### **The Lamb**

#### **Shakespeare**

For Shakespeare's Plays, see 3.2.1 on page 18

## 6.4 Religious Literature

### 6.4.1 Abrahamic Religions

#### Jewish

**Bible - Old Testament)** The Jewish bible (and the Old Testament for Christians, also recognized by Muslims) is divided into three main sections:

1. The Five Books of Moses (Torah or Chumash)
  - (a) Genesis - Creation, Adam and Eve, Cain and Abel, Seth, Noah, Abraham, Isaac, Jacob.
  - (b) Exodus - The departure of Israelites from Egypt. Moses, Aaron. Water from the rock, quail, and manna.
  - (c) Leviticus - Many priestly and ritual laws.
  - (d) Numbers - a detailed census of the Israelite in the desert;
  - (e) Deuteronomy - the Israelites wander in the desert, and finally come to the promised land.
2. The Eight Books of the Prophets (Neviim)
  - (a) Joshua - The battle of Jericho and the Conquest of Canaan.
  - (b) Judges - The first rulers of Israel.
  - (c) Samuel - The rise of King David.
  - (d) Kings David dies, solomon builds a temple. Israel splits into a Northern and Southern Kingdom.
  - (e) Isaiah - Tells of the coming of a prophet; Cyrus of Persia is mentioned as the Annointed one of God.
  - (f) Jeremiah - Written in the final years before the Babylonian exile.
  - (g) Ezekial (Spelled Ezekiel by most English-speaking Christians). Apocalyptic Literature.
  - (h) The Twelve (minor prophets) Trei-Assar
3. The Eleven Books of the Writings (Kesuvim)
  - (a) Psalms - Tehilim
  - (b) Proverbs - Mishlei
  - (c) Job - Iyov
  - (d) Song of Songs - Shir HaShirim
  - (e) Ruth - Rus
  - (f) Lamentations - Eicha

- (g) Ecclesiastes - Koheles
- (h) Esther
- (i) Daniel - Doniel
- (j) Ezra/Nehemia
- (k) Chronicles - Divrei Hayamim

### **Talmud**

### **Christian**

The Christian Bible is divided into two parts:

1. The Old Testament is shared with the Jewish and Muslim religions. See 6.4.1 on page 48
2. The New Testamant

### **Muslim**

### **Koran**

## **6.4.2 Eastern Religions**

### **Hindu**

### **Buddhist**

## **6.4.3 Talmud**

title

## **6.5 World Literature**



# Chapter 7

## Mythology

7.1 Greek/Roman

7.2 Egyptian

7.3 Hawaiian/Polynesian

7.4 Norse

7.5 Mezoamerican

7.6 Indian/South Asian

7.7 Chinese/Japanese/East Asian

7.8 Arthurian



# Chapter 8

## Pop Culture

### 8.1 Pop Music

### 8.2 Entertainment

#### 8.2.1 Video Games

#### 8.2.2 Wrestling





# Chapter 9

## Science

### 9.1 Astronomy

#### 9.1.1 Astronomers

Galileo

Copernicus

Kepler

Cassini

Edmund Halley

Huyguens

Clyde Tombaugh

Kuiper

#### 9.1.2 Constellations

Zodiac

Other Constellations

#### 9.1.3 Cosmology

#### 9.1.4 Solar System

Planets

Mercury

Venus

Earth

Mars

Jupiter

Saturn

Uranus

Neptune

Dwarf Planets

Pluto

Eris

MakeMake

Haumea

Ceres

Sol

**Age, Compostion and Size** Our Sun is a middle-aged G-Class yellow dwarf<sup>1</sup>, and is approximately 4.6 billion years old. It is composed of mostly Hydrogen (approximately 75%) and Helium (approximately 25%). Other elements make up less that 0.1% of the sun's mass.

It makes up 99.9% of the solar system's mass (with the majority of the remaining mass in Jupiter<sup>2</sup>

Sunspots

Prominences, Solar Flares, and Coronal Mass Ejections

Solar Wind and Solar Flux

Other Objects

Comets

Halley's Comet

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<sup>1</sup>See **Spectral Class** on page 59.

<sup>2</sup>See **Jupiter** on page page 56.

**Comet McNaught**

**Hale-Bopp**

**Shoemaker-Levi 9**

**Asteroids and Meteors**

**Dwarf Planet Candidates**

**Sedna**

**Interstellar Objects**

**Space Firsts**

You should learn the following important firsts in space:

<b>Description</b>	<b>Object</b>	<b>Country</b>	<b>Date</b>
First Human-Made Object in Space	Sputnik 1 (Satellite)	USSR	?
First Animal in Space	Laika (Dog)	USSR	?
First Human in Space	Yuri Gagarin	USSR	?
First American in Space	Alan Shepard	USA	?
First Woman in Space	Valentina Tershakova	USSR	?
First American Woman in Space	Sally Ride	USA	?
First Taikonaut	Yang Liwei	China	2003-10-15

**NASA**

**Manned Missions**

**Mercury**

**Gemini**

**Apollo**

**Skylab**

**STS**

**ISS**

## SLS

### Unmanned Missions

**Explorer** **Explorer 1** was the name of the first satellite launched by the USA. It was the response to Sputnik (see page 59), but was significantly more advanced, with sensors that discovered the Van Allen Radiation Belts around the Earth.

Over 80 missions have been launched with the name Explorer. Most have a satellite and are science based.

**Pioneer**

**Echo**

**Ranger**

**Mariner**

**Viking**

**Voyager**

**Galileo**

**Ulyssees**

**Discovery**

**Cassini-Huygens**

**Messenger**

**New Horizons**

**Juno**

**Dawn**

### Russian Space Programs

#### Manned

Unmanned

Sputnik

Chinese Space Programs

### 9.1.5 Stars

Types

Hertzprung-Russel Diagrams

Spectral Class

### 9.1.6 Galaxies

### 9.1.7 Telescopes

## 9.2 Biology

### 9.2.1 Microbiology

Cells

Organelles

### 9.2.2 Macrobiology

Anatomy

Taxonomy

## 9.3 Chemistry

## 9.4 Computer Science

## 9.5 Earth Science

### 9.5.1 Geology

Geologic Time

Extinction Level Events

Vulcanology

Introduction to Vulcanology

Supervolcanoes

World Volcanoes

**Krakatoa** See The Scream by 3.1.3 on page 17

**Mt. Pinatubo**

**Mt. Etna**

**Kilimanjaro**

**Mt. Erebus**

## Hawaiian Volcanoes

### Introduction to the Hawaiian Volcanoes -

The Hawaiian Volcanoes are due to a hot-spot underneath the pacific ocean which has formed the Emperor-Hawaiian Seamount Chain that stretches across the pacific to Japan and Siberia. The volcanoes are on two parallel lines (the Loa Line and the Kea line - the Loa line is south (lower)).

The major islands of Hawaii are:

- Hawaii
- Maui
- Kaho'olawe
- Lanai
- Molokai
- Oahu
- Kauai
- Ni'ihau

All of the Hawaiian islands were formed by volcanoes. Only Maui and the Big Island have volcanoes that could still erupt.

### Volcanoes on the Big Island:

- **Kilauea** - The youngest volcano. Most active on earth. Last erupted in 2018, devastating the lailani estates subdivision. Traditional home the the Goddess Pele in Hawaiian mythology.
- **Mauna Loa** - Largest volcano by mass in the world. Second Most active volcano in Hawaii. Last erupted in 1984, nearly destroying the city of Hilo (the largest city on the Big Island).
- **Mauna Kea** - Tallest volcano in the pacific. (Remember, Mauna Loa is Lower in elevation). Site involved in protests due to telescope contruction. Jason Momoa (aquaman actor) Staged his arrest during the protest.
- **Hualalai** - Smallest of the five volcanoes on the big island. Known for xenoliths (rock from the mantle brought up in lava flows). Last erupted in 1801. Kona Airport is built on the 1801 lava flow.
- **Kohala** - Oldest on the big island. Experienced a Magnetic Field Reversal. Experienced a huge landslide, fossils were deposited by a huge tsunami.

### Other Hawaiian Volcanoes

- Haleakalā - On the island of Maui. Still considered dormant. Last erupted in 1790.
- Lo'ihi Is the newest of the Hawaiian volcanoes and is still underwater. Will probably break the surface in 100,000 years or so.

**Kilauea** - Things to know about Kilauea:

- One of the most active Volcanoes on earth - often classified as the most active.
- Last Erupted 2018; New eruption began on December 20, 2020.
- Semi-persistent Lava Lake at summit, disappeared in 2018, reappeared on December 20, 2020.
- Erupted 1983-2018 at Pu‘u ‘O‘o.
- Newest of the Hawaiian Volcanoes on the Big Island. (Lo‘ihī is newer, but is still underwater.)
- Summit in Volcanoes National Park, near the town of Volcano.
- Traditional home of the goddess Pele.
- Located on the southeastern part of the Big Island on the Kea Line.

**2018 Eruption Facts:**

- Erupted in 2018 from fissures in the lower East Rift Zone.
- Fissure 8 became dominant, decimating the Lelani Estates subdivision.
- Lava from the eruption created a new black sand beach.

**Recent News:**

- A pool of water has formed where there used to be a lava lake.

**Random facts:**

- Mark Twain once got lost while hiking into Kilauea’s Caldera.
- A man fell more than 70 feet into the caldera in May 2019. He was rescued by helicopter.
- Reading Rainbow filmed an episode on Kilauea.
- An eruption in 1790 killed at least 80 native Hawaiians.
- Franklin D Roosevelt was the first president to visit Kilauea.



**Mauna Loa** Things to know about Mauna Loa:

- Mauna Loa is the largest volcano by mass in the world.
- Mauna Loa is a very active volcano, second to Kilauea.
- There are atmospheric and Solar Observatories at the top of Mauna Loa. The Atmospheric Observatory was responsible for the discovery of the Keeling curve for Carbon Dioxide.
- Mauna Loa is 13 679 ft tall, only 300 feet less than Mauna Kea.
- Mauna Loa last erupted in 1984. The eruption nearly destroyed the town of Hilo.
- The summit and eastern flank of Mauna Loa are part of Hawaii Volcanoes National Park.

**Recent News:**

- Mauna Loa is currently (as of January 19, 2021) on Yellow alert for volcanic eruption.
- 

**Random Facts**

- Mauna Loa is one of the 16 Decade volcanoes in the world chosen for monitoring because of their destructive history and proximity to population.
- Coffee and Macadamian Nuts are grown on the slopes of Mauna Loa.

**Mauna Kea** Things to know about Mauna Kea:

- Mauna Kea means "White Mountain" for the snow that often falls on its summit.
- It is the tallest volcano on Earth, and the highest peak in the Pacific, and the highest Island Mountain in the world.
- Mauna Kea is known for its numerous cinder cones.
- Also known as "Mauna a Waikea" meaning "The mountain of Waikea"
- The summit is sacred to Hawaiians, as it is where the Heavens and the Earth meet.
- Mauna Kea last erupted about 4600 years ago.

**Recent News:**

- There are numerous telescopes near the summit of Mauna Kea, including Keck-1 and Keck-2. Gerard Kuiper began the telescope program.
- There have been ongoing protests to the building of the 30-meter telescope at the summit.
- Actor Jason Momoa (Aquaman Actor) staged his arrest as part of the ongoing protests.

**Random Facts:**

- There is a glacial lake near the summit of Mauna Kea called Lake Waiau.
- Glacier-quenched Basalt can be found at the top of the mountain, indicating that in the last ice age, there was a glacier that covered the summit. There is evidence of Early Hawaiians quarrying this harder, stronger, heavier rock.
- Measured from its base on the ocean floor, it is the tallest mountain in the world. Adding the sinking into the mantle of the Pacific plate, it is nearly 70,000 feet tall, making Mauna Kea comparable to the Olympus Mons volcano on Mars (the largest volcano in the solar system).
- The Mauna Kea Silversword is a plant that is only found on Mauna Kea (Another species of silversword is found on Haleakalā.) In 2003 there were only 41 plants in the wild. Conservation efforts have increased that number to nearly 8000, but the plant is still critically endangered.
- Mauna Kea was the home of Poli'ahu, deity of snow in Hawaiian mythology.
- The botanist David Douglas (for whom the Douglas Fir tree is named) died on Mauna Kea when he fell into a pit trap. He may have been murdered.

**Hualālai** Things to know about Hualālai:

- Hualālai is the third youngest (and third oldest), and third most active of the five volcanoes on the Big Island.
- Hualālai last erupted in 1801. Despite low levels of activity recently, it is still active and expected to erupt in the next century.
- Hualālai is the westernmost of the Big Island volcanoes.
- A major subfeature of Hualālai is Pu'u Wa'awa'a, Hawaiian for "many-furrowed hill", a volcanic cone standing 372 m (1,220 ft) tall and measuring over 1.6 km (1 mi) in diameter. The cone is made of Trachyte, a type of lava rock that exists nowhere else on the islands.
- The Kona Airport is built on a lava flow from Hualālai's 1801 eruption.
- Many resorts along the coast near Kona are built on historic Lava flows from Hualālai.

**Kohala** Things to know about Kohala:

- Kohala is the oldest of the 5 volcanoes on the Big Island.
- Waipi'o Valley is a large eroded area in Kohala.
- It is old enough to have experienced a Magnetic field reversal that is recorded in its rocks about 780000 years ago.
- King Kamehameha I, the first King of the Kingdom of Hawaii, was born in North Kohala, near Hawi.

**Hale'akala**

**Lo'ihi**

## 9.5.2 Forensic Science

## 9.5.3 Meteorology

## 9.5.4 Oceanography

# 9.6 Physics

## 9.6.1 Classical Physics

## 9.6.2 Thermodynamics

## 9.6.3 Modern Physics

### Modern Physics Principles

Atomic and Nuclear Physics

Famous Modern Physics Experiments

# Chapter 10

## Social Science

### 10.1 Economics

#### 10.1.1 Historical Economics

#### 10.1.2 Economists

### 10.2 Psychology

### 10.3 Sociology



# Chapter 11

## Sports

### 11.1 Professional

### 11.1.1 Baseball

#### 11.1.2 Teams

Team	Location	Mascot	Venue
Arizona Diamondbacks	Phoenix	D. Baxter the Bobcat	Chase Field
Atlanta Braves	Cumberland	Blooper	SunTrust Park
Baltimore Orioles			
Boston Red Sox			
Chicago White Sox			
Chicago Cubs			
Cincinnati Reds			
Cleveland Indians			
Colorado Rockies			
Detroit Tigers			
Houston Astros			
Kansas City Royals			
Los Angeles Angels			
Los Angeles Dodgers			
Miami Marlins			
Milwaukee Brewers			
Minnesota Twins			
New York Yankees			
New York Mets			
Oakland Athletics			
Philadelphia Phillies			
Pittsburgh Pirates			
San Diego Padres			
San Francisco Giants			
Seattle Mariners			
St. Louis Cardinals			
Tampa Bay Rays			
Texas Rangers			
Toronto Blue Jays			
Washington Nationals			



**All Time Records as of January 19, 2021**

Highest batting average	Ty Cobb	.3664
Most home runs	Barry Bonds	762
Most walks	Barry Bonds	2,558
Most grand slams	Alex Rodriguez	25
Most runs batted in	Hank Aaron	2,297
Most hits	Pete Rose	4,256
Most singles	Pete Rose	3,215
Most at-bats	Pete Rose	14,555
Most games played	Pete Rose	3,562
Most runs scored	Rickey Henderson	2,295
Most stolen bases	Rickey Henderson	1,406
Highest slugging percentage	Babe Ruth	.690
Most strikeouts	Reggie Jackson	2,597
Most wins	Cy Young	511
Most losses	Cy Young	316
Most innings pitched	Cy Young	7,354 $\frac{2}{3}$
Most complete games	Cy Young	749
Lowest E.R.A.	Ed Walsh	1.82
Most no-hitters	Nolan Ryan	7
Most strikeouts	Nolan Ryan	5714
Most shutouts	Walter Johnson	110
Most pickoffs	Steve Carlton	144
Most hit batsmen	Gus Weyhing	278
Most home runs allowed	Jamie Moyer	522
Lowest walks plus hits per inning pitched	Addie Joss	0.968
Most saves	Mariano Rivera	652
Highest win-loss percentage	Spud Chandler	71.7%
Most games	Jesse Orosco	1252
Most consecutive scoreless innings pitched	Orel Hershisier	59
Most consecutive games played	Cal Ripken, Jr.	2632
Longest streak of games with a hit	Joe DiMaggio	56
Most hits in one season	Ichiro Suzuki	262
Most All-Star games played	Hank Aaron	25
Most World Series appearances (as a team)	New York Yankees	40

### 11.1.3 Basketball

#### Teams

##### NBA

Team	Location	Mascot	Venue
Hawks	Atlanta	Harry the Hawk	State Farm Arena

##### WNBA

Team	Location	Mascot	Venue
Dream	Atlanta	Star (A Weird Bird-like thing)	State Farm Arena

#### All Time Records as of January 19, 2021

Most Career Points Scored	Kareem Abdul-Jabbar	38387
Most Career wins	Kareem Abdul-Jabbar	1,074
Most Points Scored in a Single Season	Wilt Chamberlain	4,029
Most Points Scored in a Single Game	Wilt Chamberlain	100
Most Career Rebounds	Wilt Chamberlain	23974
Most Career assists	John Stockton	15806
Most Career Steals	John Stockton	3,265
Most Career Blocks	Hakeem Olajuwon	3830
Highest points per game average	Michael Jordan	30.12
Most points in a game without any fouls	Michael Jordan	61
Most free throws made	Karl Malone	9,787
Most starts	Karl Malone	1,471
Most games played	Robert Parish	1,611
Highest win percentage by a head coach	Steve Kerr	78.5%
Highest free throw percentage	Steve Nash	90.43%
Most consecutive starts	Karl Malone	1,395
Most dunks	Dwight Howard (Active)	2,697
Most consecutive games played	A.C. Green	1,192
Youngest player to be drafted	Andrew Bynum	17 yrs and 249 days
Youngest NBA debut as a starter	LeBron James	18 yrs and 303 days
Youngest player to start a game	Kobe Bryant	18 yrs and 158 days

The Longest NBA game occurred on January 6, 1951 between the Olympians and Royals. Indianapolis beat Rochester 75-73 after 6 overtimes.

### 11.1.4 Boxing

Name	Notes
Muhammed Ali	
George Foreman	
Mike Tyson	
Floyd Mayweather	
Manny Pacquiao	
Oscar De La Hoya	
Sugar Ray Robinson	
Rocky Marciano	
Joe Louis	

### 11.1.5 Car Racing

### 11.1.6 Curling

### 11.1.7 Cycling

Lance Armstrong

### 11.1.8 Golf

Name	Majors	Wins
Phil Mickelson		
Arnold Palmer		
Jack Nicklaus		
Tiger Woods		
Lee Trevino		

- 11.1.9 Gymnastics
- 11.1.10 Hockey
- 11.1.11 Figure Skating
- 11.1.12 Football
- 11.1.13 Skateboarding
- 11.1.14 Soccer
- 11.1.15 Softball
- 11.1.16 Swimming
- 11.1.17 Tennis
- 11.1.18 Track and Field
- 11.1.19 Volleyball
- 11.1.20 Weight Lifting

## 11.2 College

11.2.1 Baseball

11.2.2 Basketball

11.2.3 Golf

11.2.4 Hockey

11.2.5 Football

11.2.6 Soccer

11.2.7 Tennis

## 11.3 Olympic Sports

### 11.3.1 Summer Olympics

Archery

Badminton

Baseball and Softball

Basketball

Beach Volleyball

Boxing

Canoe/Kayak

Climbing

Cycling

BMX

Mountain

Road

Track

Diving

Equestrian

Dressage

Jumping

Eventing

Fencing

Field Hockey

Golf

Gymnastics

Handball

Judo

Karate

Modern Pentathlon

Roller Sport

Rowing

Rugby 7's

Sailing

Shooting

Soccer

Swimming

Surfing

Synchronized Swimming

Table Tennis

Taekwondo

Tennis

Track and Field

Triathlon

Volleyball (Indoor)

Water Polo

Weightlifting

Wrestling

### 11.3.2 Winter Olympics

Alpine Skiing

Biathlon

Bobsleigh

Cross Country Skiing

Curling

Figure Skating

Freestyle Skiing

Ice Hockey

Luge

Nordic Combined

Short Track Skating

Skeleton

Ski Jumping

Snowboarding

Speed Skating



# Chapter 12

## Theology and Philosophy

### 12.1 Philosophy

#### 12.1.1 Western Philosophy

Ancient Philosophy

Atomists

Sophists

Socrates

Plato

Aristotle

Medieval Philosophy

Thomas Aquinas

William of Ockham

Bonaventure

Scotus

Roger Bacon

Modern Philosophy

Des Cartes

Contemporary Philosophy

Postmodernism

Post-Postmodernism

## 12.2 Theology

### 12.2.1 Abrahamic Religions

Judaism

Christianity

Islam

### 12.2.2 Other Religions

Buddhist

Hindu

# Chapter 13

## Miscellaneous