



Excellent Montessori Education since 1970

Upper School Timeline Studies  
A Five Year Cycle  
of Integrated History, Science, and Cultural Studies

YEAR ONE:  
The Timeline of Life on Earth

**Astronomy: The Beginning of the Universe**

The Big Bang and the first four minutes of the universe

Discovery of the expanding universe

The Life Cycle of Stars

How elements are made in stars

Light Spectra

Galaxies, Stars and Planets

The planets of our Solar System

What causes the seasons?

What causes day and night?

*Field Trip to the Hayden Planetarium*

**Earth Science: The Formation of Our Planet**

The formation of the Earth and Moon

The Azoic Era - the first billion years

The Clock of Eras

Plate Tectonics - Earthquakes and Volcanoes

Forces of Wind and Rain - Erosion

The Rock Cycle

Igneous Rocks

Sedimentary Rocks

Metamorphic Rocks

Structure of Mineral Crystals

*Field Trip to the Sterling Mines in Franklin, NJ.*

**Weather: The Forces that Shape Our Planet**

Clouds

Cold and Warm Fronts

Weather Maps

The Water Cycle

Making it rain

Wind and Ocean Currents

Coriolis Force  
Topographic Maps

## **First Life - the Archeozoic Era**

What is life?

Five characteristics

Understanding Viruses - some of the characteristics of life

Immunization - Pasteur

DNA

The structure of DNA - Watson and Crick

Isolating and spooling DNA

Models

Replication of DNA and RNA

Decoding the Human Genome

## **Genetics**

Mendel's Law

Darwin and the Principle of Natural Selection

Dominant and Recessive Genes

## **The Proterozoic Era - One- Celled Life**

Prokaryote Cells - Bacteria

Growing bacteria cultures

Disproving Spontaneous Generation - Pasteur's experiment

Eukaryote Cells

The cell nucleus

Plant and Animal Cells

Pond life - amoebas, euglena, hydra, paramecia, protozoa

## **YEAR TWO:**

Multicellular Life, Humans, and Ancient Civilizations

## **Classifying Life: The Six Kingdoms**

Genera and Species

## **Paleozoic Era -The Cambrian Period**

Invertebrate life in the early seas

Trilobites

## **Paleozoic Era - The Ordovician Period**

Echinoderms

Mollusks

## **Paleozoic Era - The Devonian Period**

Anatomy of Fish

Animals emerge from the sea and learn to walk

Life Cycle of Amphibians

## **Paleozoic Era - The Carboniferous Period**

Insect Life Cycles - Metamorphosis

Early land plants - mosses, ferns, lichens

Formation of fossil fuels

## **The Mesozoic Era - The Age of Reptiles**

Dinosaurs

Triassic Period

Jurassic Period

Cretaceous Period

Flowering Plants

Botany studies; leaf classification

Tree growth

Photosynthesis

## **Cenozoic Era - The Age of Mammals and Birds**

### **Primates and Early Humans**

Monkeys, Apes, and other Primates

Australopithecus

Homo Erectus

Homo Habilis

Cro-Magnons and Homo Sapiens

### **Neolithic Culture (the "New Stone Age")**

How humans satisfied their fundamental needs:

Shelter

Clothing - sewing and the invention of the needle

Food - Nomads, Gathering, Hunting Techniques

Defense - Stone tools

Spiritual - Lascaux Cave Paintings

Australian Aborigine Culture

*Geography of Australia*

### **The Ancient Near East**

Agriculture begins in the Fertile Crescent

Sumer - the first cities

The Phoenicians

Babylon

Cuneiform writing

Code of Hammurabi  
Assyrian Empire  
Persian Empire  
Riches of Arabia  
*Geography - the modern Middle East*

## **Ancient Egypt**

Irrigation and the Nile River Delta  
Construction of the Pyramids  
Book of the Dead - Egyptian Mythology  
Hieroglyphic writing  
Pharaohs  
Sculpture  
Papyrus  
*Geography: Modern Africa*



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Upper School

TIMELINE STUDIES:

Year Three: The Classical World

2016-2017

## ANCIENT GREECE

### **Minoans and Myceneans**

Legend of the Minotaur

### **The Legend of Odysseus – *The Iliad* and *The Odyssey***

Archaeology of Troy

*Geography: The Route of Ulysses*

### **Greek Myths and Legends**

And the evidence for them

### **Early Greeks – Achaeans and Dorians**

*Geography: Map of the Hellenic World*

Ionia

### **Greek City States**

The Polis and forms of government

Democracy, Oligarchy, Monarchy

Solon – Law-giver of Athens

### **Life in Ancient Greece**

Homes

Food and Dining

The Roles of Men and Women

Pottery

Ships and Trade

Coins

Navigation

Clothing

Music

Oracles

How Work Was Done – Social classes and slaves

Athletics – Olympics

### **The Greek Language**

Word Roots in English

The Greek Alphabet

## **The Persian Wars**

- Cyrus, Xerxes, and Darius
- Persian Empire and Bureaucracy
- Hoplite Warfare
- Battle of Marathon
- Thermopylae
- Salamis

## **Pericles and the Golden Age of Athens**

### ***Pythagoras***

- Mathematics and Mysticism
- Geometric theorem
- Music – harmony and dissonance; ratios

***Herodotus*** – Mapping his travels and tales

### ***Drama***

- The Greek Theater
- Aristophanes
- Euripedes
- Aeschylus

### ***Philosophy***

- Socrates
- Plato
- Aristotle

### ***Architecture***

- The Acropolis
- The Parthenon
- Pheidias the Sculptor

### ***Atomic Theory***

## **The Peloponnesian Wars**

- Government and Life in Sparta
- Soldiers and Battles
- Conquest of Athens

## **Alexander the Great**

- Battles and Conquests
- Death
- Division of Alexander's Empire

## **Hellenistic Culture**

### ***Archimedes***

- Screw
- Lever
- King Hiero's Crown; Density and Buoyancy
- Astronomy
- Mathematics
- Center of Gravity

***Eratosthenes measures the Earth***

***Hero's Hydraulics***

***Euclid***

**Field trip:**

*Metropolitan Museum of Art: Greek and Roman Galleries; Parthenon Frieze Model*

**Readings:**

*Oxford Children's Ancient History* by Roy Burrell

*Greek Legends: The Stories, The Evidence* by Peter Connolly

*Archimedes and the Door of Science* by Jeanne Bendick

*The Story of Science: Aristotle Leads the Way* by Joy Hakim

*The Legend of Odysseus* by Peter Connolly

*Tools of the Ancient Greeks: A Kid's Guide to the History and Science of Life in Ancient Greece* by Kris Bordessa

*Herodotus* by Jeanne Bendick

## THE ROMAN EMPIRE

**The Founding of Rome**

Legend of Romulus and Remus

Legend of Aeneas and Queen Dido

Early Kings

Sabines and Etruscans

Horatius and the bridge

**The Punic Wars**

Carthage

Hannibal

Fighting on Land and Sea

*Geography*: Rome and her Neighbors

**The City of Rome**

Aqueducts

Baths

Temples

Private homes and apartment blocks

Shops

Nero's Golden House

**The Roman Republic and its Fall**

Republican system of government

Rich and poor

"Bread and circuses"

Sulla

Cicero

The Catiline Conspiracy

The Triumvirate: Crassus, Pompey and Caesar

Murder of Julius Caesar

Octavian vs. Mark Antony

## **The Roman Empire**

Early Emperors: Augustus, Tiberius, Caligula, Claudius, Nero

Expansion of the Empire

How the provinces were ruled

“I am a Roman citizen” – Caracalla creates universal citizenship

*Geography*: The Roman Empire

## **The Army – Life in the Roman Legions**

Weapons and Tactics

Siege Engines

Marching Camps

## **Daily Life in the Empire**

Pompeii

Food and Drink

Clothing

Education

Earning a living

Time and the Calendar

Roman Numerals

Arts in the Empire

Games and Gambling

Slavery and Freedom

Gladiators

## **Architecture:**

The Amphitheatre

The Colosseum

The Circus Maximus

Engineering and Building Roman Roads

## **Roman Law**

## **Roman Religion**

The honour of a Roman

Christianity

## **The Fall of Rome**

Barbarians

Alaric and the Sack of Rome

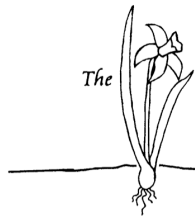
Constantine and the Byzantine Empire

## ***Readings:***

*Oxford Children's Ancient History* by Roy Burrell

*Tools of the Ancient Romans: A Kid's Guide to the History and Science of Life in Ancient Rome* by Rachel Dickinson





# Spring School

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YEAR FOUR:

From the Dark Ages to the Renaissance

2017-2018

The Dark Ages

## **Barbarians and the Fall of the Roman Empire**

Religious beliefs

Everyday life and warfare of Goths, Vandals, Huns, etc.

## **Vikings**

Norse Mythology

Ships, technology, and life in a Viking settlement

Erik the Red, Leif Ericsson: Greenland and Newfoundland

## **Tales of King Arthur**

Was there a real King Arthur?

## **The Norman Conquest**

Linguistic impact – history of the English language

Bayeux Tapestry

The Middle Ages

## **The Christian Religion**

Roots in Judaism, Zoroastrianism, Mystery Religions

Life of Jesus as told in the Gospels

Development of the Catholic Church

Important symbols in Medieval art

## **The Byzantine Empire**

Constantine and Christianity

## **Churches and Cathedrals**

Romanesque and Gothic architecture

Building a cathedral: Gothic arches and flying buttresses

## **The Islamic Golden Age**

The Beginnings of Islam – Life of Mohammed

Caliphs and Sultans

Arab Science and Mathematics

Translating Greek and Roman books into Arabic

Averroes and Aristotle

Islamic Spain – Granada and Cordoba

## **Medieval Warfare**

Knights and Armor

Castles

A castle under siege

The Hundred Years' War

*Visit to Medieval Times*

*Visit to the Metropolitan Museum – Medieval Armor collection*

## **The Crusades**

Saladin

## **The Feudal System**

A medieval manor

Lords

Serfs

Feudal obligations

## **Monasteries**

The Life of a Monk

*Visit to the Cloisters, a medieval monastery*

## **Pilgrimages**

Relics and Reliquaries

Canterbury Tales

## **Medieval Art**

Stained Glass

Illuminated manuscripts

*Visit to the Cathedral of St John the Divine - workshops*

## **Medieval Medicine**

Body humours

Bloodletting

Plague

## **Medieval People**

Eleanor of Aquitaine

King Alfred

Charlemagne

Joan of Arc

Ivan the Terrible

William the Conqueror

## The Renaissance

### **Renaissance means Rebirth**

The discovery of antiquity

Humanists - Erasmus

### **Economic Changes**

Towns and Market Fairs

The development of the bourgeoisie – merchants and craftsmen

Bankers

### **The Renaissance Prince**

Machiavelli

The Medicis

### **The Renaissance Church**

Popes and Politics

The Borgias

### **Leonardo da Vinci: Renaissance Man**

Inventions

Art

### **Michelangelo**

Architect, Sculptor, Painter

### **Renaissance Art**

Development of Perspective Techniques

New subjects for painting and sculpture

### **Renaissance Science: Galileo**

Optics

The telescope

Ptolemy vs. Copernicus: Does the Sun go around the Earth or vice versa?

The Law of Falling Bodies

## **Gutenberg and the Printing Press**

### **The Elizabethan Age**

Queen Elizabeth

Shakespeare and Elizabethan Theatre



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Upper School Timeline Studies: Great Civilizations

A Five Year Cycle

of integrated History, Science, Technology, Art, Music, and Ideas

YEAR FIVE:

Exploration, Enlightenment, and the Industrial Revolution

2018-2019

## The Age of Exploration

### Explorers

Silks and Spices and the Silk Road

Marco Polo visits China

Portuguese Explorers find their way around Africa

Prince Henry the Navigator; Vasco da Gama; Bartolomeu Diaz

Columbus searches for a route to Asia across the Atlantic

The Spanish Conquistadors meet the Incas and Mayans

Balboa discovers the Pacific Ocean

Magellan circumnavigates the globe

### Navigation and Map Concepts

By compass and quadrant

Life on a full-rigged sailing ship

Latitude and longitude

Map projections

## The Reformation

### Martin Luther and Protestantism

Martin Luther

The Catholic and Protestant Religions

### Protestant Rebellions

Mary, Queen of Scots and Elizabeth I

King James I of England and Guy Fawkes

The Thirty Years' War - 1618-1648



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