

# Timeline

## B.C.

– 500–480  
 The **direct lost-wax method** for **casting bronze** sculpture is developed. (Greece)

– 323  
 The mathematician Euclid writes *Elements*, a text on geometry and number theory. (Greece)

– 300–100  
*Victorious Youth* (p. 17) is cast. (Greece)

– 250  
 Parchment is produced from the dried skins of animals such as calves, goats, and sheep. (Pergamum [present-day Turkey])

## A.D.

– 105  
 Ts'ai Lun, an imperial court official, invents the paper-making process, which later spreads east and west along the Silk Road. (China)

– About 150  
 Ptolemy, the scientist, astronomer, mathematician, and geographer, writes the *Almagest*, the earliest surviving astronomical treatise. (Greece)

– About 400  
 The *Vergilius Vaticanus* (*Vatican Virgil*), an illuminated manuscript containing the writings of the poet Virgil (died 19 B.C.), is created. (Rome)

– 600  
 The printing of books begins with engraved woodblocks. (China)

– Between 600 and 850  
 The Mayans build El Caracol observatory at Chichen Itza. (Mexico)

– 782  
 The scientist Jābir ibn Hayyān introduces experimental investigation into **alchemy** and creates the basis of modern **chemistry** and the scientific method. (Kufa [present-day Iraq])

– Early 1200s  
*Astronomical Miscellany* (p. 10) is produced and illustrated. (England)

– 1275  
 The physician William of Saliceto writes *Chirurgia* (*Surgery*), which documents his work with human dissection. (Italy)

– 1364  
 The Aztecs build Tenochtitlan. (Mexico)

– 1412  
 The architect Filippo Brunelleschi writes *Rules of Perspective*, a text describing the mathematical laws related to linear perspective. (Italy)

– 1450  
 Florence becomes the center of Renaissance culture. (Italy)

– 1460–70  
*The French King at Court* (p. 15) from *The Story of Two Lovers* (*Historia de duobus amantibus*), an illuminated manuscript of the novel by Eneas Silvius Piccolomini (Pope Pius II), is created. (France)

– 1490  
 The artist and inventor Leonardo da Vinci draws *The Vitruvian Man*. (Italy)

– 1500  
**Faience** and **majolica** are first produced industrially. (Italy)

– 1519  
 The explorer Ferdinand Magellan leaves on his voyage to find a route from Europe to Asia by sailing across the Atlantic Ocean. (Spain)

– 1537  
 The physician and alchemist Paracelsus writes *Grosse Astronomie* (*Whole Astronomy*), a manual of astrology. (Switzerland)

– 1542  
 Andreas Vesalius, a physician and the founder of the modern study of anatomy, writes *De fabrica corporis humani* (*On the Structure of the Human Body*). (The Netherlands)

– 1547  
 The astrologer Nostradamus makes his first predictions. (France)

– About 1550  
 Oval Basin (p. 8) is made by Bernard Palissy. (France)

– 1575  
 Craftsmen in Venice and Florence make the first attempts at imitating Chinese **porcelain**. (Italy)

– 1580  
 The French Renaissance Cabinet (p. 19) is carved in Burgundy. (France)

– 1590  
 Galileo Galilei, the mathematician and astronomer, writes *De motu* (*On Motion*), a description of experiments he conducted to determine the rate of speed of falling objects. (Italy)

– 1592  
 The ancient Roman city of Pompeii, buried by the volcanic eruption of Mount Vesuvius in A.D. 79, is rediscovered. (Italy)

- 1602  
The astronomer Tycho Brahe's *Astronomiae instaratae progymnas-mata (Introductory Exercises toward a Restored Astronomy)*, which details the location of 777 fixed stars, is published (edited by Brahe's assistant, the astronomer Johannes Kepler). (Prague)
- Galileo investigates the properties of pendulums. (Italy)
- 1608  
The lensmaker Johann Lippershey invents the telescope. (The Netherlands)
- Galileo constructs an astronomical telescope. (Italy)
- 1610  
The alchemist Jean Beguin writes *Tyrocinium chymicum (Beginner's Chemistry)*, the first chemistry textbook. (France)
- 1610–15  
*Juggling Man* (p. 13) is created by Adriaen de Vries. (Prague)
- 1614  
*Flower Still Life* (p. 9) is painted by Ambrosius Bosschaert the Elder. (The Netherlands)
- 1616  
The astronomer and mathematician Willebrord Snell discovers Snell's law of **refraction**. (The Netherlands)
- 1620  
Plymouth colony is established. (America)
- 1624  
The chemist Johannes Baptista van Helmont identifies gases as a substance. (Belgium)
- 1637  
The philosopher and mathematician Rene Descartes writes *La Géométrie (Geometry)*. (France)
- 1650–55  
*Butterfly, Caterpillar, Moth, Insects, and Currants* (p. 7) is drawn by Jan van Kessel. (The Netherlands)
- 1651  
The astronomer Giovanni Riccioli names many lunar features in his map of the moon. (Italy)
- 1657  
The scientist Christiann Huygens, following the research of Galileo, creates the design for the first clock pendulum. (The Netherlands)
- 1665  
The scientist **Robert Hooke** coins the term **cell**, to describe the **biological** structures in cork, in his *Micrographia* (also titled *Some Physiological Descriptions of Minute Bodies Made by Magnifying Glasses*). (England)
- 1683  
**Isaac Newton**, the physicist and mathematician, explains his theory of the gravitational attraction on the tides by the sun, moon, and earth. (England)
- 1749  
*Mercury and Argus* and *Perseus and Medusa* (p. 16) are produced by the Ginori Porcelain Factory. (Italy)
- About 1751  
Compound Microscope and Case (p. 12) is made by Jacques Caffieri. (France)
- 1775  
The American Revolution begins (ending in 1783 with British recognition of U.S. independence). (America)
- 1794  
The inventor Eli Whitney patents the cotton gin. (America)
- 1807  
The scientist **William Hyde Wollaston** invents the **camera lucida**. (England)
- 1816  
Sir David Brewster, the mathematician and astronomer, invents the kaleidoscope. (Scotland)
- 1830  
The botanist Robert Brown discovers the cell nucleus in plants. (Scotland)
- 1839  
The artist and physicist **Louis-Jacques-Mandé Daguerre** announces the invention of the **daguerreotype** method of **photography**. (France)
- 1848  
Gold is discovered in California. (America)
- 1857  
The chemist and microbiologist Louis Pasteur proves that fermentation is caused by biological organisms. (France)
- 1857–60  
*The Emperor's Private Mosque in the Marble Palace, Agra Fort, India* (p. 11) is photographed by Dr. John Murray. (India)
- 1859  
The naturalist Charles Darwin publishes his theory of evolution in *On the Origin of Species by Means of Natural Selection*. (England)

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To learn more about the broader historical context surrounding the works of art featured in this curriculum, see *The Timetables of History: A Horizontal Linkage of People and Events* by Bernard Grun, 4th revised edition (New York: Simon & Schuster, 2005).