

***Remember: Refer to *The Social Studies Helper Introduction* for how these lessons work, and how to make follow-up slide shows and questions.***

## Particulars

Particular Unit Lessons are, for me, **Pillar Number Three** of a general Social Studies class. First Historical Themes (How to Think About History), then Historical Periods (The Big Picture of History), and now, Particular Unit Lessons (content that generally correlates with the old CA 10<sup>th</sup> Grade World History and 11<sup>th</sup> Grade U.S. History Content Standards). Notice that I said “old”. Now, with Common Core Standards, we teachers are allowed to pick and choose what content we want to focus on; now, the emphasis is more on process—close-reading, critical thinking, formulating and structuring ideas, determining validity etc.—and assessments have been adapted accordingly. Teach less, better. This is an important and positive evolution. But history is still chalk full of knowledge; history holds lessons for the present and for the future, and these new standards don’t mean that we teachers can’t still teach content. So enjoy this new Common Core freedom, and pick and choose your content. If you’re a history nerd like me, this is fun stuff. These lessons provide context and structure. They allow you to get into the nitty gritty of historical events in a manageable and easy-to-follow way; they allow you to cover a lot of content and information quickly. So enjoy! Your students will appreciate the engagement, the detail, the context, and the pictures. They’ll appreciate that you have your act so darn together!

## Answer Key

**Enlightenment and Revolution 1** Renaissance, 1300-1600, rebirth, art, learning, Protestant Reformation, beliefs, Catholic Church, explorers, discovering, lands, peoples, printing press, more, read, Scientific Revolution, believed, earth, center, sun, stars, planets, geocentric, Aristotle, Ptolemy, power, sun, center, universe, Copernicus, true, planets, stars, revolved, sun, earth, heliocentric, sun-centered, Copernicus, study, planets, data, observations, Kepler, mathematical laws, motions, elliptical, circles, laws, true, Italian, heavens, telescope, Jupiter, Moons, dark, moon, rough, uneven, contradicted, against, perfect, trouble, Church, agreed, Catholic Church, Galileo, quiet, published, Pope, summoned, Rome, Inquisition, torture, recanted, back, arrest, Scientific Revolution, approach, Method, reasoning (thinking), (unclear), around, question, facts, sure, hypothesis, conclusion, facts, Method, revolution, thinking, change, science, world, astronomy, physics, Copernicus, Kepler, Galileo, method, explain, universe, Newton, clock, parts, together, gravity, motion, planets, matter, attracts, (the amount), mass, distance.

# Enlightenment and Revolution 1

## A. The Scientific Revolution

1. The Renai\_\_\_\_\_ (1460-16\_\_\_\_) inspired a rebi\_\_\_\_ of interest in a\_\_ and lea\_\_\_\_, and the Prot\_\_\_\_\_ Ref\_\_\_\_\_ (1517) led more and more people to question the long-held beli\_\_\_\_ and power of the Ca\_\_\_\_\_ Ch\_\_\_\_. Furthermore, European ex\_\_\_\_\_ were “dis\_\_\_\_\_” new l\_\_\_\_\_ and pe\_\_\_\_. These things, along with Gutenberg’s invention of the pr\_\_\_\_\_ pr\_\_\_\_, which would eventually lead to the availability of more and more books, led to the Scie\_\_\_\_\_ Rev\_\_\_\_\_.
2. For over 1500 years, it was beli\_\_\_\_ that the ea\_\_\_\_ was the ce\_\_\_\_ of the un\_\_\_\_\_, and that the su\_, the st\_\_\_\_, and the pl\_\_\_\_\_ revolved around it. This geo\_\_\_\_\_ theory had come from the Greek philosopher, Ar\_\_\_\_\_, and later from the Greek astronomer Pto\_\_\_\_\_. Christianity also taught this, and given that the Church was the main po\_\_\_\_ in Europe, most people believed it. There was, however, another old Greek idea that the su\_\_ was the cen\_\_\_\_ of the un\_\_\_\_\_, and one man, a Polish cleric named Nicolaus Coper\_\_\_\_\_, kept this in mind as he studied the hea\_\_\_\_ above. After 25 years, Cop\_\_\_\_\_ decided that this was indeed tr\_\_\_\_, that the pla\_\_\_\_\_ and st\_\_\_\_ revo\_\_\_\_\_ around the s\_\_\_\_, not the ea\_\_\_\_. This is the helioc\_\_\_\_\_ or sun-cent\_\_\_\_\_ theory. Fearing persecution, however, Cope\_\_\_\_\_ didn’t publish his book, *On the Revolutions of the Heavenly Bodies*, until the year of his death in 1543.
3. Over the next 100+ years, several men continued to stu\_\_\_\_ the pl\_\_\_\_\_. Tycho Brahe, a Danish astronomer, produced mountains of accurate da\_\_\_\_ (numbers based on actual obser\_\_\_\_\_), and after his death, his assistant, Johannes Ke\_\_\_\_, used this data to conclude that there were mathem\_\_\_\_\_ la\_\_\_\_ that governed planetary mot\_\_\_\_; it showed that the planets revolved around the sun in elli\_\_\_\_\_ orbits instead of cir\_\_\_\_. Kepler’s mathematical la\_\_\_\_ basically proved that the heliocentric theory was t\_\_\_\_\_.
4. Galileo Galilei, an It\_\_\_\_\_ scientist, was also studying the hea\_\_\_\_ at this time. In 1609, Galileo built his own te\_\_\_\_\_, and soon announced in his book, *Starry Messenger*, that Jup\_\_\_\_\_ had four mo\_\_\_\_, that the sun had da\_\_\_\_ spots, and that the earth’s mo\_\_\_\_ had a rou\_\_\_\_, une\_\_\_\_ surface. This contra\_\_\_\_\_ (went aga\_\_\_\_) Aristotle’s theory that the moon and stars were made of pure, per\_\_\_\_\_ substance, and Galileo soon found himself in

tr\_\_\_\_\_ with the Ch\_\_\_\_, for it was clear that he ag\_\_\_\_\_ with Copernicus. In 1616, the Cat\_\_\_\_\_ Ch\_\_\_\_ warned Gali\_\_\_\_\_ to be qu\_\_\_\_, so when Galileo publ\_\_\_\_\_ his *Dialogue Concerning the Two Chief World Systems* in 1632, the P\_\_\_\_ angrily summo\_\_\_\_\_ Galileo to Ro\_\_\_\_\_ to stand trial before the Inqui\_\_\_\_\_, where, under the threat of to\_\_\_\_\_, he reca\_\_\_\_\_ (took it b\_\_\_\_\_). Galileo would live under house a\_\_\_\_\_ until his death in 1642.

5. During the Sc\_\_\_\_\_ Re\_\_\_\_\_, thinkers created a new appr\_\_\_\_\_ to science called the Scientific M\_\_\_\_\_. Rather than reas\_\_\_\_\_ (thi\_\_\_\_) from abstract (unc\_\_\_\_) theories and attempting to prove them (from trying to fit the facts arou\_\_ the theory), scientists began to:
1. Ask a que\_\_\_\_\_.
  2. Observe/Gather the f\_\_\_\_\_ and evidence (everything we can know for s\_\_\_\_\_).
  3. Experiment, and experiment some more.
  4. Create a hyp\_\_\_\_\_ (guess/theory...).
  5. Come to a co\_\_\_\_\_ based on those f\_\_\_\_\_ and well-tested experiments. Continue to test and experiment, and adapt as new knowledge is discovered.

This Scientific M\_\_\_\_\_ was a rev\_\_\_\_\_ in thi\_\_\_\_\_ and would ch\_\_\_\_\_ sci\_\_\_\_\_ and the wo\_\_\_\_\_ forever.

6. With old views of ast\_\_\_\_\_ and phy\_\_\_\_\_ shattered by Cope\_\_\_\_\_, Kep\_\_\_\_, and Gali\_\_\_\_\_, and with the new scientific m\_\_\_\_\_ now in place, the 1600's was ripe for a brilliant scientist to emerge, one who could better ex\_\_\_\_\_ the laws of the un\_\_\_\_\_. This scientist was Sir Isaac N\_\_\_\_\_. Newton's 1687 book, *The Mathematical Principles of Natural Philosophy* was one of the most important scientific books ever written. The universe, according to Newton, was like a giant c\_\_\_\_\_, with par\_\_\_\_ that all worked tog\_\_\_\_\_, parts that could be explained mathematically. His great discovery was that gr\_\_\_\_\_ was the force that ruled all mot\_\_\_\_\_ of the pl\_\_\_\_\_ and all ma\_\_\_\_\_ on earth and in space. According to the law of universal gravitation, every object in the universe att\_\_\_\_\_ every other object. The degree (the amo\_\_\_\_\_) of attraction depends on the m\_\_\_\_\_ of the objects and the di\_\_\_\_\_ between them.