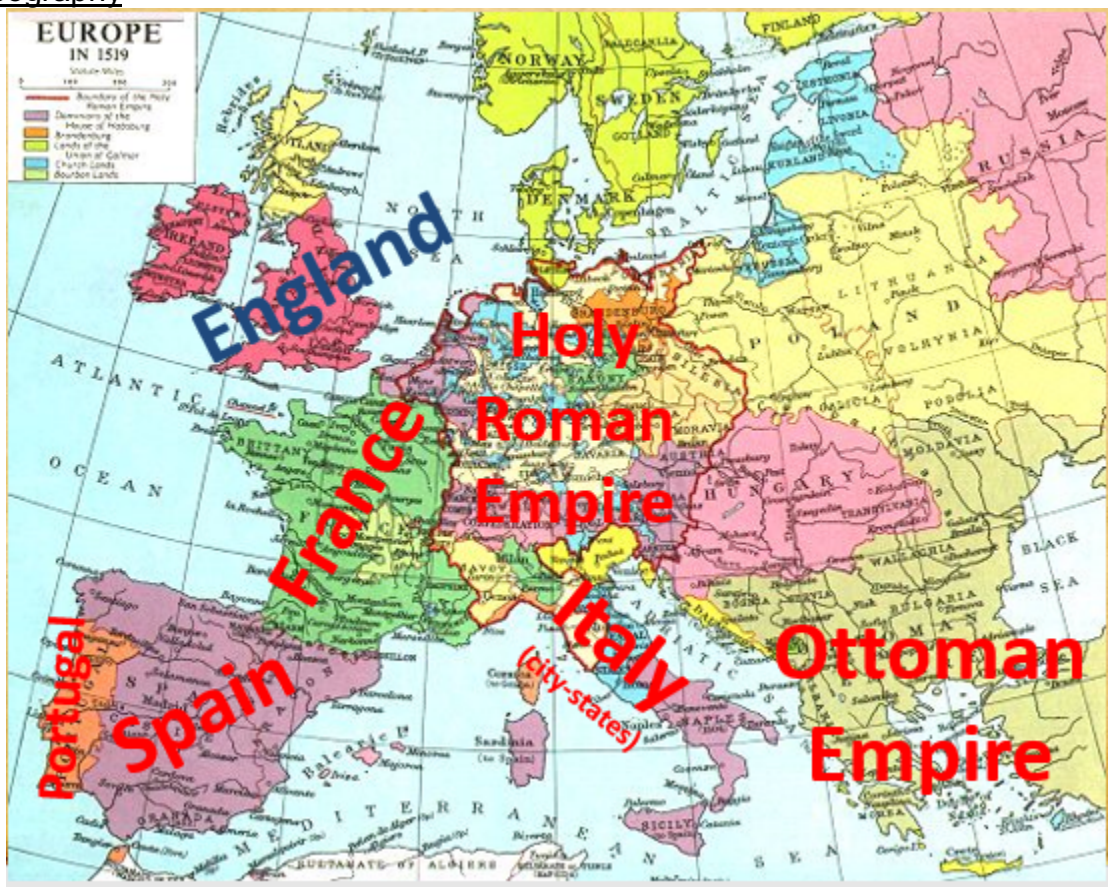
7. The Early Modern Period
YEARS – YEARS

7.1 Geography



- Most important countries of this time:
  - France (most important monarchy in EU, most culturally influential, most populated)
  - Italy (Renaissance began in Northern Italy)
- 1453: Fall of Constantinople → end of Middle Ages
  - Some say 1492 is the end of the previous era? Most agree on 1453
- 1789: French Revolution → end of Early of Modern Period, beginning of Modern Period

7.2 Philosophy, culture, art and architecture

- The Italian Renaissance (approx.. 1350-1550)
  - Artistic current that spread to all parts of Europe
  - Why does it start in Italy?
    - Italy = wealthy (origins of banking and capitalism, all the richest families were from Italy, closer contact to Antiquity)
    - More urban than the rest of Europe (things happen in cities)
    - Wealthy families in search for prestige
      - Patronage of the arts (hire artists to decorate their houses to show off their prestige → funding of the arts)

- Renaissance philosophy (humanism)
  - Rediscovery of Greek and Roman philosophy
  - Francesco Petrarch (1304-1374)
    - Fascinated by Italy's classical past
    - Belief in imminence of a brand-new era
    - A new kind of education?
      - Studia humanitates: What is this? "Sciences humaines" Not only study God, but also the accomplishments of humans on earth → new-found interest in human beings
      - Become well-read about philosophy, to study rhetoric! Learn to persuade.
    - True birth of humanism! Petrarch is the father.
  - Marsilio Ficino and Pico della Mirandolla
    - Master and apprentice – both leave marks as eminent philosophers in this period
    - They go beyond medieval theology and discuss worldly philosophy like the Greeks and the Romans
    - Plato → reintroduced to Western society
      - They describe Plato as a divinely inspired precursor to Christ, a kind of prophet in his own right
    - Pico wrote a collection that encompassed all topics covered in universities at that time
    - Orchestrated a colloquium of all the great philosophers and thinkers of the time. Not a humble man, challenged everyone to debate
    - Mankind, the crucial link between God and the material world
  - The "New Era" The Renascimento
    - Term coined by an Italian sculptor, architect, and art historian Giorgio Vasari
    - The birth of political science (social scientific study of political institutions) → Many Italian philosophers of the Renaissance period debate what should be the ideal form of government.
      - Remember the context of Italian politics at that time…
      - Most debate around the Roman Republic vs Plato's Republic
  - Niccolò Machiavelli (1469-1527)
    - 1st political scientist to not rely on Antique philosophy
    - Rejects Plato's republic?
    - Wrote "The Prince" (1513)
      - 3 things rulers must assure: Peace, security, prosperity
      - To achieve those things, any means are acceptable. The ends justify the means.
      - If the objectives are noble, anything goes.
      - Extremely influential (a lot of people agreed, but a lot disagreed as well)
      - "Machiavellian" pejorative connotation, Frank Underwood is Machiavellian
  - Christian humanism

        - All the wealthy influential ppl go through this school program, the best possible education in Italy… so ppl from Europe flooded there
        - Progressive diffusion of Renaissance ideas
            - Effort to reconcile Renaissance ideas with Christian medieval theology
            - Appeal of strengthening and modernizing Christin culture through Classical thought → opportunity for many
        - Erasmus of Rotterdam (Poland)
            - Erasmus program (academic world): student exchange programs
            - The translation of the Bible? He fought for this bc it shouldn't be the church officials' job to interpret the bible but every believer's job, and he succeeded. The Bible was then translated into vulgar languages (not just Latin anymore) → French, Spanish, German, etc. DEMOCRATIZE RELIGION
            - Western Classics + early Christianity: he wanted to go back to the origins of Christian teachings, not medieval debates (e.g. about Jesus' coin purse).
            - Philosophy of Christ: what is Jesus trying to tell us in his message?
            - A precursor of the Reformation: the ideals of the Italian renaissance were transformed once they reached diff parts of Europe
- Culture and art
    - Art serves a cultural and economic purpose (art serves as a mean of social distinction)
    - As in the M-A, art also serves a religious purpose
    - Still, Renaissance art marks the birth of our perception of the "Great artist" → we finally know individual artists, notion of valuing the individual who makes the art (Michaelangelo, Leonardo da Vinci, Sandro Botticelli, Raphael Sanzio)
        - They want to bring back the glory of the past, they weren't trying to innovate (e.g. Michaelangelo → Hellenistic sculpture)
- Architecture
    - Like in other realms, Renaissance architecture attempts to break away completely from medieval influences, hark back to glorious Antiquity
    - Very Roman in style (pillars, domes)
    - Forms are slightly different
    - Private residences designed by great architects (reminiscent of great Roman villas)
    - Most famous of all is the dome of Florence (recall: birthplace of banking)

<u>7.3 Religion</u>

- The Reformation
    - 1519 Martin Luther posted his 95 theses

- What is it? Religious, political and intellectual movement in the 16th century that culminated in an irreversible split within Christianity between Catholics, led by the pope in Rome, and Protestants, who reject papal authority
- Central elements of this reform?
  - Holy scripture vs. tradition and interpretation (it's not only priests and monks who should be able to interpret the Bible)
  - People of the Reformation argue that salvation is achieved through God's grace alone (begging God for his love and forgiveness gets you to heaven)
    - ISSUE: ppl would buy their way into heaven by giving money to the Church
- What is a denomination? Different branches within a religion
  - Huguenots, Lutherans, Anglicans, Presbyterians, the United Church
- In what context did reform emerge?
  - Wide range of grievances (lots of issues that angered the EU ppl)
    - towards indulgences (pay money to the church) – opposes the idea of "the meek shall inherit the earth")
    - towards clergy (immortality, ignorance of Latin, absenteeism, pluralism, simony…) – forbidden sexual relations, priests would buy positions to be priests in many parishes bc being a priest is a way to get wealthy thx to indulgences
    - towards papacy (especially the Borgias and Medici) – a lot of ppl would send their family members to become popes to get rich, this was seen as highly immoral
  - Anger for highly centralized clergy, disconnected from the actual Christian people (humans!)
  - Educated humanists, such as Erasmus, call for theological reforms
  - Enormous impact of the printing press (?)
- Martin Luther (1483-1546)
  - German priest and theologian from Wittenberg (intellectual who taught theology)
  - 95 theses (*Sola Fide, Sola Scriptura, Only faith, Only Scripture* – the "Priesthood of all believers")
  - Poster put on church door – call to action
  - Martin Luther was excommunicated/kicked out of the church bc there was a rise of support
  - Since he was excommunicated, he kept pushing his agenda and gathered a significant following… Full-fledged reformation movement, people broke away from the system in place
- Henry VIII (1491-1547)
  - King of England, wants annulment of marriage to Catherine of Aragon, but Rome refuses (for political reasons, the Crown of Spain didn't want this and they had more power). In normal circumstances he would've gotten the annulment.
  - 1534: Act of Supremacy (he declares himself as pope"

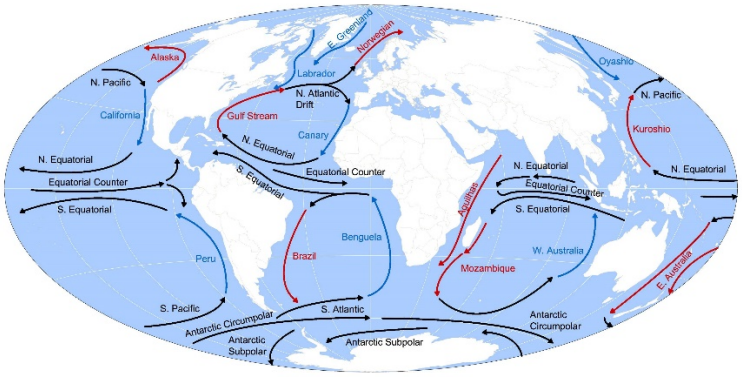
        - Birth of Anglicanism
        - Becomes a political weapon (eventually, Catholics would be considered traitors → persecution of Catholics)
    - Huldrych Zwingli (Switzerland)
    - Jean Calvin (France)
    - Anabaptists (Amish, Hutterites, Mennonites, etc.)
- The Counter-Reformation (or Catholic Reformation)
    - Pope Paul III hopes that the Vatican can become the heart of the Reformation, rather than the chief opponent
    - Council of Trent (1545-1563) calls for spiritual renewal (priests, monks, bishops would debate over the problems of clerical immorality, simony, ignorance, etc.) → didn't stop the Reformation, but did bring about changes
    - Solutions: new focus put on education (a seminary for each diocese), foundation of new religious orders (Ursulines, Jesuits, Sulpiciens, etc.) who are in charge of healthcare, education, and missions

<u>7.4 Political and Military History</u>

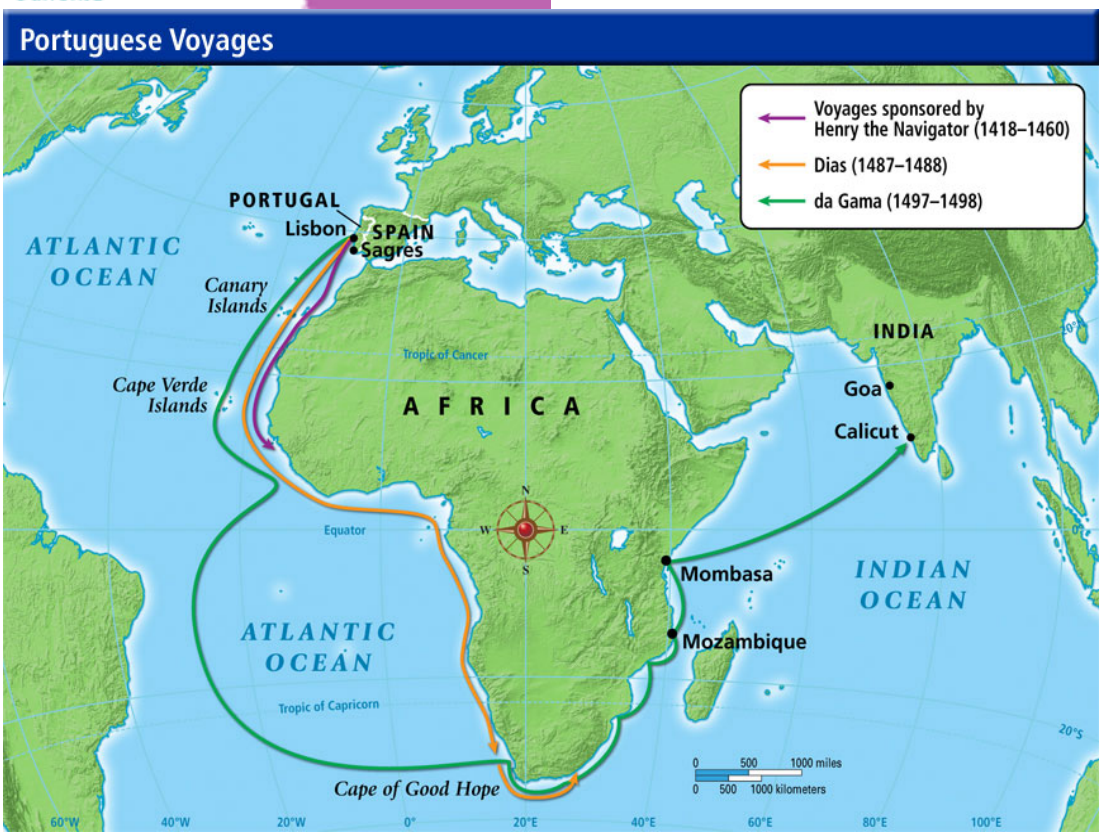
- Early European exploration
- Afro Eurasian trade network

Europe	Africa	Arabia/Persia	India/Bengal/ Sri Lanka	China/Japan	Indonesia
Gold	Slaves	Coffee	Fabrics	Porcelain	Pepper
Silver	Ivory tusks	Spices	Dyes	Tea	Nutmeg
	Gold		Spices	Sugar	Cloves
			Precious woods	Silk	Mace
			Nuts	Lacquer	Dyes

        - Marco Polo
            - The Silk Road
            - Italian merchant of the Polo family
            - Wrote a lot about the Asian world
        - Chinese exploration in the early 15th century
            - Zheng He, admiral of the Chinese navy
            - First true naval explorer
            - Explored Indonesia and Indian empire, all the way to Madagascar
            - They had compasses, enormous ships, etc. All the tech necessary to explore the world
        - 1453: Fall of Constantinople at the hands of the Ottomans
            - Major transformation of European politics
            - The trade route was interrupted (Constantinople used to be the hub for Afro Eurasian trade)
    - 4 KEY MOTIVATIONS FOR SEA TRAVEL AND EXPLORATION
        - Economic: Desire for eastern luxury products, and search for precious metals to engage in this trade (Europe didn't have much to trade so they had to find these metals in order to participate in trade)
        - Religious: Missionary fervor. Crusades (reclaim the holy land) and Reconquista (chase Muslims out of the Iberian peninsula) were over → new outlets for glory of God needed
        - Cultural: The "zeitgeist" of the Renaissance period. A spirit of curiosity, of discovery. Popularity of printed travel journals, their influence was great and convinced Europeans of crazy stuff (sheep growing from plants, faces on chests)
        - Political: Rivalry between European monarchies, in their search for riches and glory, favor of God, etc.
    - Only 4 countries facing the Atlantic explored
        - It's only natural, they're near the ocean!
        - The former Holy Roman empire was not unified, there was no strong monarchy in any nation so they couldn't focus on exploration
    - Advances in shipbuilding
        - Ships were not suited for long distance travel (no room, easy to tip over, not suitable for high sea travel and strong winds)…
        - The Portuguese invented the first ship that is well-adapted to ocean-travel.
    - Cartography and navigation
        - Ptolemy's Geographia: the World's best Atlas
        - The compass (invented in China)
        - The Astrolabe (calculation of latitude)
        - Sternpost Rudder (amazing for ships)
        - These were mostly foreign inventions!!
    - Portuguese exploration



Base map courtesy of http://www.freeworldmaps.net



- Why Portugal? (3+1) → A remote nation within Europe, a remote continent!
  - An ocean-based economy, age-old contact with the sea, knowledge and expertise in seafaring.
  - Portuguese monarchy is wealthy and in contact with antique knowledge thanks to Reconquista
  - Isolated from Europe because of Spain. They already need to sail to get to Europe without crossing Spain → great devel. Of sailing technologies!

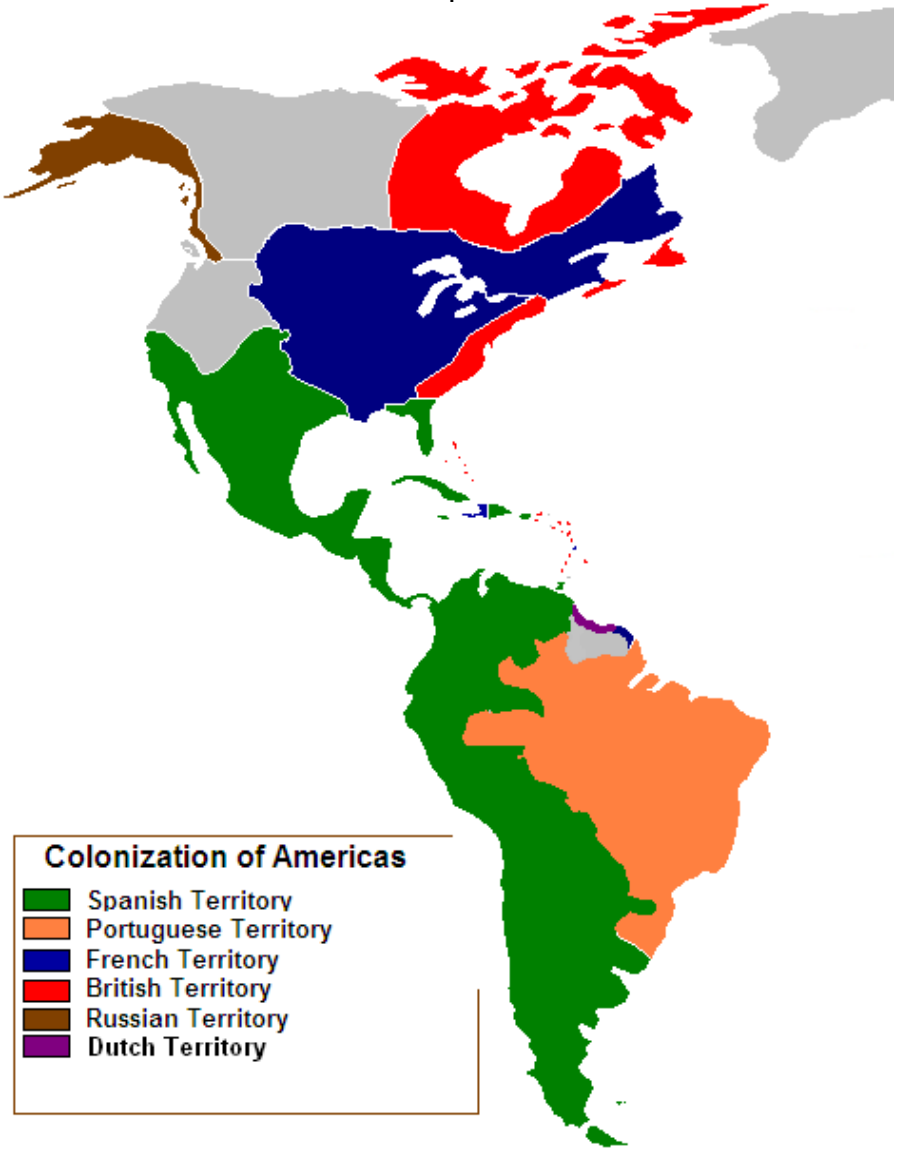
        - Geographic advantage! Dominant ocean current that pushes ships to Africa, then Central America
    - Henry the Navigator (1394-1460)
        - Provided support for the study of geography and for voyages of exploration
        - 1415: conquest of Ceuta (Moroccan city)
          → marks the year of the first European expansion in the Early Modern period (by Portugal)
        - Settlements in the Azores, the Madeiras, and the Canary Islands

        - Commercial settlement in Arguin, North Africa
        - Efforts that pay off! People didn't believe in him at first, but now they do!
    - Exploration after Henry the Navigator
        - Bartholomew Diaz, the Cape of Good Hope (1487) Southern tip of Africa
        - Vasco Da Gama, Calicut (nowadays Calcutta) Portugal became the single most well-known provider of Asian goods
        - Lisbon (Portuguese city) became a European port of entry for Eastern luxury goods → Golden Age of Portugal!
- Spanish exploration
    - Christopher Columbus
        - Hero? Controversial figure
        - Embodiment of Genoese ambition

        - Genoa always tried to compete against the Venetians – Genoa is a small city and didn't have much money to fund big trips so he went to all other nations to ask for funding (the crown of Spain agreed and gave him 2 old ships)
    - His plan
        - Based on the idea that the earth is round (the debate at the time was is the earth small enough to sail around it?) → the idea that the earth is flat was only shared by less educated members of society…
        - SAIL WEST TO REACH THE EAST
    - A deeply religious man
        - He believes that God wants him to sail to China
    - Oct. 12, 1942: On the verge of mutiny and starvation, land in the Bahamas
        - Ran into natives but was disappointed (expected to run into the great Chinese and Japanese people that Marco Polo once described)
        - "Indians" with golden jewelry… He even brought back an Indian to EU to prove that they found land!
        - Subsequent subjugation of natives on Hispaniola and creation of a Spanish colony, the birth of the Spanish Empire
- Treaty of Tordesillas (1494)
    - Proclamation by the Pope
    - Declares that everything at the West of the Line of Pope Alexander VI is Spain's to colonize, everything East of the Line is Portugal's
    - No one knew that South America would be split by the line. Once the Portuguese realized this they colonized the area
- Continued search for a westward passage to Asia
    - Magellan (Ferdinand) found a way!
    - He left Spain, went south across the Atlantic and reached the Straight of Magellan at the south of the South American continent.
    - He then crossed the Pacific Ocean → "wow so big! I didn't realise!!"
    - Magellan killed by Philipino natives
- Subjugation of the powerful Mexica Empire (Aztec people)
    - Hernan Cortes left the island of Cuba with a small army of conquistadors and headed towards the Aztec Empire
    - Aztecs (kinds like Romans) → small centralized group that conquered and spread…
    - Hernan Cortes first met small groups that have been conquered by the Aztecs. Formation of alliances → victory

against Mexicans (they had gunpowder and horses and disease)
        - Tenochtitlan: amazing, beautiful city!!!!
        - Advanced medical and astronomical knowledge
    - Inca Civilization
        - Brain surgery and amazing technology
        - Still, no gunpowder or horses
        - Spanish kidnapped the king and asked for a ransom, but still killed the king after receiving the ransom money
- English exploration
    - Initially, English prey on Portuguese and Spain through pirates (privateers)!
    - After the English broke away from the church (Anglicanism), they would explore more bc they didn't have to respect the Pope
    - The Lost Colony (Roanoke) 1585 → founded an English colony, went back to England to get more settlers, came back but the colony was gone. The only thing left was a carving of the word "Croatan" (small Native American group)
    - Private colonization
        - Colonies founded by private companies → want to turn a profit
        - People would invest!! If the colony is successful, investors would earn money
        - Colony of Virginia (Jamestown, 1607) → tobacco
        - Reliance on slave labour
        - Base of the model of plantation colony
    - Religious colonization
        - Colony of Plymouth (1620), New England
            - A lot of people didn't like the Reformation (they were being persecuted) so they left for America
            - Small communities of Protestants
            - Tried to get along with Natives
            - Thanksgiving tradition
            - Goal: converting the locals
        - Colony of Massachusetts
    - Thirteen Colonies
        - NY, Pennsylvania, New Hampshire, Massachusetts. Rhode Island, Connecticut, New Jersey, Delaware, Maryland, Virginia, South and North Carolina, Georgia
- French exploration
    - Jacques Cartier's voyages (1534-1542)
    - Not colonization, just exploration at first
    - He went much further north than the Spanish colonies that already existed
    - He planted a cross in the region's land

- He thought the St Lawrence River could lead straight through the continent and to the Pacific Ocean BUT… there were rapids that prevented this
- Established some relations with natives in the region
- France lost interest in its colony:
    - Realized that there's no way to sail to the Pacific
    - No gold
- Samuel de Champlain (1608) L'Abitation -- tiny EU outpost for trade
- Ville-Marie (1642) religious mission
- Slow development, Caribbean more important (little plantations were more profitable than the farms of the St Lawrence)



- The Columbian Exchange
    - A widespread, irreversible, and ultimately global transfer of plants, animals, diseases, populations, ideas, etc. between the "Old World" and the "New World" from the colonial era to the modern world

- Positive: the Old World gained a lot of new species (e.g. Italy and tomatoes)
- Negative: biological consequences (invasive species), disease for New World natives (why wasn't it the other way around? Disease from animals jumped onto human hosts, only Eu had cattle)

- The Atlantic Slave Trade
  - Slavery, a pillar of Western history (Hammurabi: how to treat your slave → slavery has been around since forever)
  - African slaves and the sugar industry
    - Hard to come by in the medieval period
    - Major economic institution
    - Very labour intensive plants → need for unpaid labour
  - Far more save immigrants than colonists!
    - Between 1518 and 1800 → 10 million African slaves (8.5 million surviving after sailing) and 2.5 million colonists
    - Legacy: a lot of ppl of African ancestry in Southern America (especially brazil)
  - The development of "racial theory"
    - A regrettable intellectual legacy of the slave trade

- Grades of intelligence, negroes as half human half chimpanzee creatures

7.5 Science and Technology

- The printing press (with movable-type) *** the teacher loves this EXAM TIME
  - Perhaps the most impactful, significant invention in the history of mankind!
  - Credited to Johannes Gutenberg (1398-1468), a brilliant blacksmith from Mainz, Germany
  - Actually less of an "invention" and more of a brilliant combination of existing technologies
    - Wine press tech
    - Blacksmiths would use these metal "stamps"
    - Jewellers would use punches like the ones blacksmith use and make pendants
  - The idea of printing has been around since the Minoans (linear A stamping block) + the Chinese (printing blocks)
  - Why now? Why in the Early Modern Period?
    - A HUGE market for cheap standardized books! (libraries were not accessible to the public bc monks took months and years to recopy books)
    - Development of primary schools
    - Devel. Of universities
    - Desire for widely available uniform information in various fields (e.g. law, medicine, business… recopying by hand can lead to mistakes and whatnot, translations were not consistent)
  - Hundreds of printing workshops opened up everywhere in EU within decades
    → hundreds of books printed
  - Books became far more uniform
  - Ideas and opinions can now spread very quickly
    - 95 theses of Martin Luther mass printed
  - Transnational identities based on ideas
    - People can now exchange ideals and construct their identities based on these ideologies on a transnational lvl
  - A strong incentive to learn how to read
    - Before, only monks needed to know how to read to translate texts and stuff, people had no incentive to learn unless they wanted to become monks
  - A bridge between oral and written cultures
    - Put down oral culture
    - Oral culture is often forgotten bc no written account has been taken
  - A democratization of knowledge
  - Made available to the masses
  - One step closer to a global human hivemind?
- The Scientific Rev
  - "A concept used by historians to describe the emergence of modern science in EU during the Early Modern period, when devel mostly in the

fields of mathematics, physics, astronomy, biology, chemistry profoundly changed the way society viewed the natural world and human's place in it."

- In a way, with all due respect, we can view it as the gradual rejection of the Aristotelian worldview for a new one based on better scientific observation and techniques
- 5 major causes
  - Increased contact with Muslim knowledge (they were more advanced in terms of science in the middle ages) → Reconquista, for example
  - Progress of universities. Universities basically everywhere in Western Eu. Science was then known as natural philosophy
  - The Renaissance (spirit of curiosity and discovery left over by)
  - The printing press → more printing of scientific articles and writings, results could be shared more quickly and lead to even further progress
  - Voyages of exploration and ocean travel (devel of optics! Tools needed to be precise in order to measure distance, latitude, longitude… telescopes → microscopes)
- Focus on astronomy as a case study for the Sc Rev period… why?
  - ➔ Very efficiently portrays the challenge of Aristotelian certainties of the past
  - ➔ Very interesting!
- Since MA, all scholarly study of the workings of the physical world (cosmos, plants, animals, biology, geology, …) is bunched together in the vast and formless discipline known as "Natural philosophy"
- Within this discipline, the antique works of Aristotle, as modified and improved upon since classical times, are held as elementary truth, beyond question, absolute.
  - In terms of astronomy, Aristotle believed that the Earth was a perfect sphere lying in the middle of the Cosmos, with all other celestial bodies, including the firmament, rotating around it in perfect concentric circles.
    - ➔ Astronomy allowed the rise of empiricism, rejection of Aristotelian world view that saw Aristotle's words as abs truth
    - ➔ Started with Copernican hypo
    - ➔ Newton's theory of univ gravitation
  - In the Hellenistic era, Ptolemy had improved this model to account for the apparent "backwards motion" of the planets
  - The Aristotelian (Ptolemaic) cosmos was widely accepted as true for two main reasons:
    - It made good intellectual sense! Very logical.
    - Very reassuring from a spiritual POV – Earth is at the center of the universe, God put us in the middle, we are the center of creation
  - Copernicus and the Copernican hypothesis

        - Copernicus (devout Christian) was dissatisfied with Ptolemy's model → cumbersome, complicated to use, often inaccurate, does not reflect the glory of God's presumable perfect creation of the universe!
        - Used mathematics to disprove Aristotle's theory
        - Maths point to the heliocentric model of the universe
        - Implication that the universe is enormous
    - However, this ground-breaking theory has dramatic and deeply unsettling implications!
        - Is the Earth just a planet among many?
        - If so, are there humans elsewhere? What is the extent of God's creation? Can the Bible be wrong?
        - If the stars don't revolve around the Earth, it would stand to reason that they are immeasurably far away… the universe would be huge!!
        - Can mathematics, an impure science, be used to contradict natural philosophy, technology?
    - The Copernican hypothesis was widely rejected, but casts serious and reasonable doubt
    - For decades, Copernican hypothesis remains in the academic shadows, an intellectual oddity
    - However, 2 astronomical phenomena occur in the late 16th century that rock the foundations of Aristotelian cosmology
        - 1572, appearance of Tycho's star, a brand new star that appeared appears in the night sky (Aristotle claimed that the sky is perfect and unchanging… WRONG)
        - 1577, the Great Comet of 1577 flies through Aristotle's "crystal spheres"
        - There astronomic events offer indisputable evidence that Aristotle's ideas cannot continue to be followed unquestioningly
    - Tycho Brahe (1546-1601) first EU astronomer to spot and scientifically describe there two phenomena
        - Becomes a bit of a superstar scientist
        - Named "official imperial astronomer" by the Holy Roman Emperor Rudolph II, who funds EU's best observatory in Prague for Brahe's research
        - Brahe collects astounding collection of sketches, data on planetary motion, and other observations
        - Tychonic system where the sun revolves around Earth, other planets revolve around the sun… Theory is wrong, but people consider it → meaning that ppl were willing to move on from Aristotelian philosophy
    - Johannes Kepler
        - Tycho's lab assistant
        - Would eventually surpas his master

- Kepler is an avid believer of the Copernican hypothesis, and has a turbulent relationship with his master, with whom he profoundly disagrees on this matter
- Kepler is partially blind → no use of telescope
- Gifted mathematician! Used math for his theories
- Devised 3 laws of planetary motion → foundations of modern astronomy, physics and mathematics
    - The orbit of a planet is an ellipse with the Sun at one of the two foci
    - A line segment joining a planet and the Sun sweeps out equal areas during equal intervals of time. → planets accelerate when closest to the sun
    - The square of the orbital period of a planet is proportional to the cube of the semi-major axis of its orbit

- Galileo Galilei
    - The patron saint of scientists
    - While Kepler was revolutionizing astronomy in Prague, Galileo was working on motion physics in his Italian lab
    - In his own way, also disproving the erroneous physics of Aristotle
    - His science is valuable, but his greatest contribution to western science is the experiment method (formulating a hypothesis, identify limitations, etc.)
        → Controlled, repeatable experiments to reveal what actually happens as opposed to simply arguing on theological and logical grounds what should happen
    - Galileo becomes deeply interested in astronomy through a correspondence with Johannes Kepler, who convinces him that the Copernican hypothesis was correct
    - Begins to argue on behalf of the Copernican hypothesis
    - “Dialogue Concerning the Two Chief World Systems” 1632 written in defense of Copernicus
    - Charged as a heretic, forced to recant
    - “E pur si muove!” – and yes, it moves!
        - I recanted, yet it still moves
        - You can believe what you want, the facts are still there
    - He was v cocky! And often roasted the pope… thus he got recanted
- Slowly but surely, the entire scientific community comes to accept the Copernican hypothesis
- Still, many questions remain
    - How can we reconcile the motion of the Planets and the laws of physics as seen here on earth?

- One of the greatest minds of all time → Isaac Newton (inventor of the field of modern optics) proved it
- Isaac Newton
    - Wrote Newton's Principia, described as the most important book in the history of modern science!
    - Newton's law of universal gravitation: "Every body in the universe exerts attraction on every other body in the universe according to a precise mathematic relationship, according to which the force of attraction is proportional to the square of the distance between them"
    - The Principia lays the foundation for classical mechanics, all while explaining the motion of planets, of projectiles, the trajectory of comets, the movement of tides, and many other phenomena with one simple equation.
    - To expose the precision of his theory, Newton flat out invents a new branch of mathematics: CALCULUS
    - There is no more room, scientifically speaking, for the Ptolemaic cosmos or for Aristotelian laws of motion!
    - Dominant model of physics until discovery of General Relativity nearly 300 years later.

<u>7.6 Legacy in Western Society</u>

- In terms of…
    - Philosophy, intellectualism
    - Art and culture
    - Colonial legacy
    - Tech and science
    - Religion