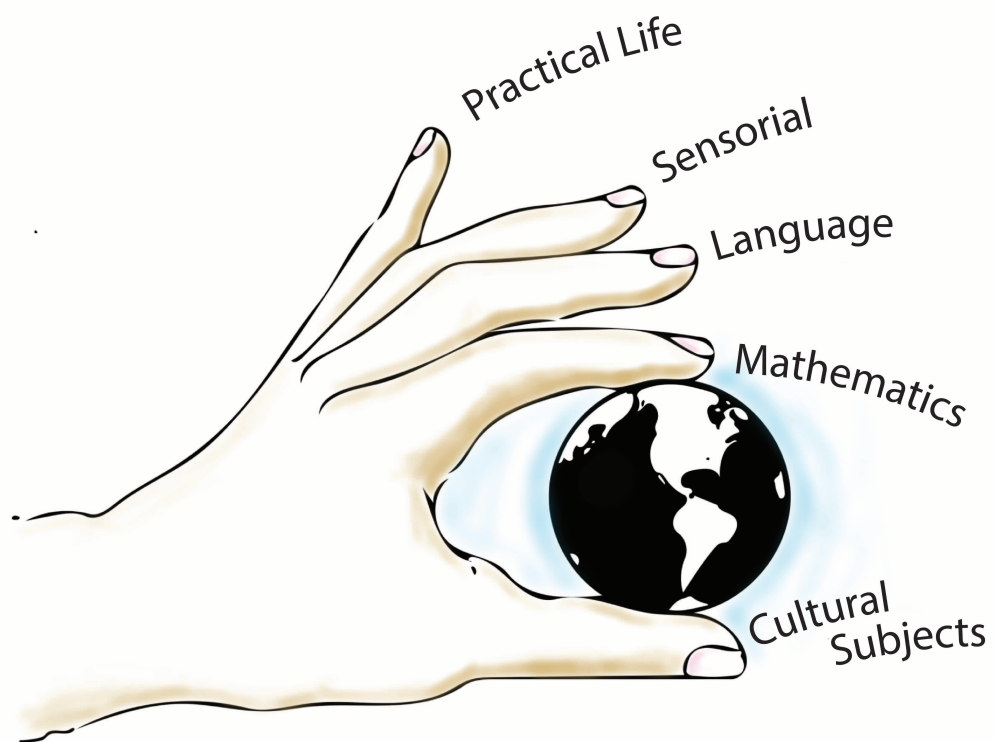


Montessori Educators International, Inc.



History

Elementary

Teacher Manual

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History

Purposes

- To heighten awareness of the Cosmic Plan
- To arouse interest in the many aspects of history
- To relate history to geography, nature study, art, mathematics, music, literature and all other aspects of the cultures of many people in diverse places
- To continue the development of appreciation of all past events which aids the establishment of one's roots and place in time
- To provide opportunities for the development of critical thinking, original ideas and future projections

Preliminary Exercises

- Use of references including maps, atlases, encyclopedias, computer sources
- Practice with previous history materials

Materials

- General time lines on topics of interest with pictures having dates on the reverse to act as the control; information cards
- Reference materials
- Materials for preparation of time lines
- Note: In addition to expanding the general time lines, other suggestions for time lines are topics related to geography, art, music, mathematics and the history of any country. See Level 1 for instructions on preparation of time lines and related materials.

Procedures

1. The child has had experience in the use of time lines, so no additional lessons are needed.
2. Invite the development of time lines by the child according to individual interests, using research materials to outline, plan and execute the topic. Two or more may cooperate on the preparation of a time line and its accompanying information cards or booklet. Once student-made time lines are completed, they may be shared with others.

Control of Error

- Dates on reverse of pictures used on time line

Topics for the Development of Time Lines

Transportation

Trains

- steam
- electric
- diesel

Planes

- military civilian
- propeller driven
- jet powered
- helicopters

Ships

- sailing vessels
- steamships
- submarines
- military civilian

Automobiles

- steam
- electric
- gasoline
- diesel
- solar

Dwellings

- general development
- one country

Heating systems

Cooking methods and facilities

Food preservation

Clothing

- general development
- one country

Making a garment

Building a bridge

Building a house

Building a skyscraper

Civilization

- general development
- one country

Planting and harvesting a crop

Telephone

Camera

Weapons
 general
guns
Paper making from tree to finished product
World exploration
Exploration in the U.S.A.
Life of a president
Entrance of U.S. states into union
American flag
History of a state
History of a country

Art

 general
 specific period
 one country
 one artist

Music

 general
 specific period
 one country
 one composer

Authors

 world famous books
 one country

Scientific discoveries

 general
 one country
 chemistry
 physics
 biology
 botany
 anthropology
 psychology
 engineering
 medicine

Computers

Sports persons

 baseball
 basketball
 tennis golf

Volcanic eruptions

Earthquakes

Religion

 general
 one religion

Directions for Preparation of Cosmology Time Line

Linear scale: 1 inch equals 5 years. Time scale: 1500 AD to 2000 AD

1. Cut white or neutral vinyl 8 1/2 inches wide and 100 inches long.
2. Obtain a permanent black marker to use for drawing lines. On both long edges, make 1/2 inch lines at right angles to the edge and space these 1/2 inch lines 1 inch apart. When the 5 inch mark is to be made, continue it all the way across the vinyl. Continue
3. On the lines which extend across the entire width of the vinyl strip, label the years with the permanent marker. The first line is 1525, the next is 1550, etc. since each line across the strip represents 25 years.
4. Copy directly onto cover stock the same color as the vinyl time line the labels containing the names of the prominent discoverers and theorists in the field of cosmology which appear in the white pages. Cut these name cards to 1 by 4 1/4 inches after laminating or laminate after cutting apart. Place in a small box or packet made from the same vinyl as the time line.
5. Place the rolled time line, the container of labels and the information booklet into a suitable container labeled **Cosmology Time Line**.

Directions for Preparation of Space Exploration Time Line

Linear scale: 2 inches equal 1 year Time scale: 1950 to 2000

1. Cut white or neutral vinyl 12 inches wide and 100 inches long.
2. Obtain a permanent black marker to use for drawing lines. Orient the strip of vinyl so that the scale will be marked at the bottom from left to right. On the long bottom edge, make 1/2 inch lines at right angles to the edge and space these 1/2 inch lines 1 inch apart. When the 10 inch mark is to be made, continue it all the way across the vinyl from top to bottom. Repeat markings 1 inch apart with a long line every 10 inches.
3. On the lines which extend across the entire width of the vinyl strip, label the years with the permanent marker. The left edge is 1950, the first line is 1960, the next line is 1970, etc. since each line across the strip represents 10 years.
4. Obtain pictures or drawings of space craft with the same scale for each, cut on the outline, write the date on the reverse and laminate. Place in a shallow box or packet made from the same vinyl as the time line.
5. Copy directly onto cover stock the same color as the vinyl time line the names of the astronauts which appear in the white pages. Cut these name cards to 1 by 4 1/4 inches, write the appropriate date on the reverse and laminate. Place in a small box or packet made from the same vinyl as the time line.
6. Place the rolled time line, the container of labels and the container of space craft pictures in a suitable container labeled **Space Exploration Time Line**.

Note: Either space craft belonging to the U.S.A. or international ones may be used.

Directions for Preparation of History of Communication Time Line

BC linear scale: 1 inch equals 200 years Time scale: 20,000 to 1 BC

1. Cut white or neutral vinyl 8 inches wide and 110 inches long for BC time line.
2. Obtain a permanent black marker to use for drawing lines. Orient the strip of vinyl so that the scale will be marked at the bottom from left to right. On the long bottom edge starting 5 inches from the left, make the first line extending from bottom to top. Mark every inch with 1/2 inch lines at right angles to the bottom edge. When the 10 inch mark is to be made, continue it all the way across the vinyl from top to bottom. Repeat markings 1 inch apart with a long line every 10 inches.
3. On the lines which extend across the entire width of the vinyl strip, label the years with the permanent marker. For BC, the first long line from the left edge is 20,000, the next long line is 18,000, the next long line is 16,000, etc. since each long line across the strip represents 2000 years.
4. Obtain pictures or drawings with the same scale for each, cut on the outline, write the date on the reverse and laminate. Place in a shallow box or packet made from the same vinyl as the time line.
5. Copy directly onto cover stock the same color as the vinyl time line the names of the items which appear in the white pages. Cut these name cards to 1 by 4 1/4 inches, write the appropriate date on the reverse and laminate. Place in a small box or packet made from the same vinyl as the time line.
6. Place the rolled time line, the container of labels and the container of space craft pictures in a suitable container labeled **BC Communications Time Line.**

AD linear scale: 1 inch equals 20 years Time scale: 1 AD to 2000 AD

1. Cut white or neutral vinyl 10 inches wide and 110 inches long for BC time line.
2. Obtain a permanent black marker to use for drawing lines. Orient the strip of vinyl so that the scale will be marked at the bottom from left to right. On the long bottom edge starting 5 inches from the left, make the first line extending from bottom to top. Mark every inch with 1/2 inch lines at right angles to the bottom edge. When the 10 inch mark is to be made, continue it all the way across the vinyl from top to bottom. Repeat markings 1 inch apart with a long line every 10 inches.
3. On the lines which extend across the entire width of the vinyl strip, label the years with the permanent marker. For AD, the first long line from the left edge is 200, the next long line is 400, the next long line is 600, etc. since each long line across the strip represents 200 years.
4. Obtain pictures or drawings with the same scale for each, cut on the outline, write the date on the reverse and laminate. Place in a shallow box or packet made from the same vinyl as the time line.
5. Copy directly onto cover stock the same color as the vinyl time line the names of the items which appear in the white pages. Cut these name cards to 1 by 4 1/4 inches, write the appropriate date on the reverse and laminate. Place in a small box or packet made from the same vinyl as the time line.
6. Place the rolled time line, the container of labels and the container of space craft pictures in a suitable container labeled **AD Communications Time Line.**

Directions for Preparation of History of Agriculture Time Line

BC time line

- BC linear scale: 1 inch equals 100 years Time scale 10,000 to 1 BC
1. Cut white or neutral vinyl 8 inches wide and 110 inches long for BC time line. Obtain
 2. a permanent black marker to use for drawing lines. Orient the strip of vinyl so that the scale will be marked at the bottom from left to right. On the long bottom edge starting 5 inches from the left, make the first line extending from bottom to top. Mark every inch with 1/2 inch lines at right angles to the bottom edge. When the 10 inch mark is to be made, continue it all the way across the vinyl from top to bottom. Repeat markings 1 inch apart with a long line every 10 inches.
 3. On the lines which extend across the entire width of the vinyl strip, label the years with the permanent marker. For BC, the first long line from the left edge is 10,000, the next long line is 9,000, the next long line is 8,000, etc. since each long line across the strip represents 1000 years.
 4. Obtain pictures or drawings with the same scale for each, cut on the outline, write the date on the reverse and laminate. Place in a shallow box or packet made from the same vinyl as the time line.
 5. Copy directly onto cover stock the same color as the vinyl time line the names of the items which appear in the white pages. Cut these name cards to 1 by 4 1/4 inches, write the appropriate date on the reverse and laminate. Place in a small box or packet made from the same vinyl as the time line.
 6. Place the rolled time line, the container of labels and the container of space craft pictures in a suitable container labeled **BC Agriculture Time Line.**

AD time line

AD linear scale: 1 inch equals 20 years Time scale 1 to 2000 AD

1. Cut white or neutral vinyl 10 inches wide and 110 inches long for AD time line.
2. Obtain a permanent black marker to use for drawing lines. Orient the strip of vinyl so that the scale will be marked at the bottom from left to right. On the long bottom edge starting 5 inches from the left, make the first line extending from bottom to top. Mark every inch with 1/2 inch lines at right angles to the bottom edge. When the 10 inch mark is to be made, continue it all the way across the vinyl from top to bottom. Repeat markings 1 inch apart with a long line every 10 inches.
3. On the lines which extend across the entire width of the vinyl strip, label the years with the permanent marker. For AD, the first long line from the left edge is 200, the next long line is 400, the next long line is 600, etc. since each long line across the strip represents 200 years.
4. Obtain pictures or drawings with the same scale for each, cut on the outline, write the date on the reverse and laminate. Place in a shallow box or packet made from the same vinyl as the time line.
5. Copy directly onto cover stock the same color as the vinyl time line the names of the items which appear in the white pages. Cut these name cards to 1 by 4 1/4 inches, write the appropriate date on the reverse and laminate. Place in a small box or packet made from the same vinyl as the time line.
6. Place the rolled time line, the container of labels and the container of space craft pictures in a suitable container labeled **AD Agriculture Time Line.**

Directions for Transportation Time Line

BC time line

BC linear scale: 1 inch equals 100 years Time scale 7,000 to 1 BC

1. Cut white or neutral vinyl 8 inches wide and 110 inches long for BC time line. Obtain
2. a permanent black marker to use for drawing lines. Orient the strip of vinyl so that the scale will be marked at the bottom from left to right. On the long bottom edge starting 5 inches from the left, make the first line extending from bottom to top. Mark every inch with 1/2 inch lines at right angles to the bottom edge. When the 10 inch mark is to be made, continue it all the way across the vinyl from top to bottom. Repeat markings 1 inch apart with a long line every 10 inches.
3. On the lines which extend across the entire width of the vinyl strip, label the years with the permanent marker. For BC, the first long line from the left edge is 10,000, the next long line is 9,000, the next long line is 8,000, etc. since each long line across the strip represents 1000 years.
4. Obtain pictures or drawings with the same scale for each, cut on the outline, write the date on the reverse and laminate. Place in a shallow box or packet made from the same vinyl as the time line.
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6. Place the rolled time line, the container of labels and the container of space craft pictures in a suitable container labeled **BC Transportation Time Line**.

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1. Cut white or neutral vinyl 10 inches wide and 110 inches long for AD time line.
2. Obtain a permanent black marker to use for drawing lines. Orient the strip of vinyl so that the scale will be marked at the bottom from left to right. On the long bottom edge starting 5 inches from the left, make the first line extending from bottom to top. Mark every inch with 1/2 inch lines at right angles to the bottom edge. When the 10 inch mark is to be made, continue it all the way across the vinyl from top to bottom. Repeat markings 1 inch apart with a long line every 10 inches.
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6. Place the rolled time line, the container of labels and the container of space craft pictures in a suitable container labeled **AD Transportation Time Line**.

Direction for Preparation of Speed of Communication Time Line

Linear scale: 1 inch equals 5 years Time scale 1800 to 2000 AD

1. Cut white or neutral vinyl 8 inches wide and 50 inches long.
2. Obtain a permanent black marker to use for drawing lines. Orient the strip of vinyl so that the scale will be marked at the bottom from left to right. On the long bottom edge starting 5 inches from the left, make the first line extending from bottom to top. Mark every inch with 1/2 inch lines at right angles to the bottom edge. When the 10 inch mark is to be made, continue it all the way across the vinyl from top to bottom. Repeat markings 1 inch apart with a long line every 10 inches.
3. On the lines which extend across the entire width of the vinyl strip, label the years with the permanent marker. The first long line from the left edge is 1800, the next long line is 1850, the next long line is 1900, etc. since each long line across the strip represents 50 years.
4. Obtain pictures or drawings with the same scale for each, cut on the outline, write the date on the reverse and laminate. Place in a shallow box or packet made from the same vinyl as the time line.
5. Copy directly onto cover stock the same color as the vinyl time line the names of the items which appear in the white pages. Cut these name cards to 1 by 4 1/4 inches, write the appropriate date on the reverse and laminate. Place in a small box or packet made from the same vinyl as the time line.
6. Place the rolled time line, the container of labels and the container of space craft pictures in a suitable container labeled Speed of Communication Time Line.

General History of Agriculture

10,000 BC

Plant foods were gathered from the wild, but gradually people developed ways to cultivate cereal and root crops. Dogs were domesticated.

9000 BC

The cultivation of wheat and barley developed in southwest Asia. Goats and sheep were domesticated.

7000 BC

The cultivation of grain developed in Egypt. This was recorded in the bas relief murals in the tombs of the pharaohs.

The cultivation of corn, beans, cassavas, squash, potatoes and peppers developed in the Americas.

6500 BC

The cultivation of millet and other grains developed in the Yellow River area of northern China.

5500 BC

The cultivation of rice became widespread after having originated in India.

3500 BC

Llamas were domesticated in South America as a source of wool and meat. They were used to transport goods also.

3000 BC

Water buffalo were domesticated in India. They were used to pull carts for transporting goods and to pull plows for cultivating the fields. These oxen-pulled plows were invented in Egypt and Mesopotamia.

2500 BC

The cultivation of grain in the Indus River Valley was the basis of the Harappan civilization in what is now India and Pakistan.

100 BC

Advanced farming techniques were introduced by the Romans to the European areas they occupied. Romans used crop rotation, irrigation and terracing to increase production. Grain storage structures were built. Selective breeding of plants and animals was practiced by the Romans.

800 AD

Farmers rotated crops so that one field was left unplanted each year. This helped to keep the soil from being depleted of essential nutrients. Better crops could be produced by rotation.

900 AD

Harness was invented that made it possible to hitch a horse to a plow. This allowed a speed four times faster than oxen.

1000 AD

During the Middle Ages, small farms became part of large estates or manors owned by rich lords. Peasants worked the land for the lords.

1400 AD

Coffee, tea and indigo from Asia were introduced in Europe by explorers. Potatoes, tomatoes, corn and beans were brought to Europe from the Americas. This introduced variety into the European diet.

1600 AD

Plantations were established in Asian and American colonies of England, France and Spain. Specialized crops such as cotton, coffee or sugar were raised by slaves on plantations. Tenant farming was introduced in Asia to the disadvantage of the farmers.

1700 AD

The four field system of crop rotation was developed in Norfolk, England, by Charles Townshend. By rotating turnips with wheat, clover, barley and rye, the soil gained fertility and the yield was increased.

The seed drill was invented by Jethro Tull. It cut a furrow in the soil and dropped in the seeds. Before this invention, seeds were planted by hand which was a very slow process.

1775 AD

Selective breeding of cattle and sheep was introduced by Robert Bakewell in England. This produced healthier, meatier animals.

1793 AD

The cotton gin was invented by Eli Whitney in the United States. This machine separated the seeds from cotton fibers faster than it could be done by hand.

1834 AD

The first grain harvesting machine or reaper was invented by Cyrus McCormick in the United States. Grain could be harvested more quickly and efficiently than by hand.

1837 AD

The steel plow was invented by John Deere in the United States. It was more efficient than a wooden or iron plow because it was sharper and stronger.

1842 AD

The first chemical fertilizer factory was established by Sir John Lawes in England. Crop yields increased through the use of fertilizer.

1850 AD

Agricultural markets expanded through improved transportation by rail and steamship. Better canning methods and refrigeration allowed perishable foods to be transported long distances.

1862 AD

The Homestead Act granted ownership to people who farmed 160 acres of land for five years in the Great Plains. The dry climate required land to lay fallow every other year. Wheat was the crop best suited to the dry climate.

1866 AD

Improvement of crops through genetic selection was made possible by the heredity studies of Gregor Mendel in Austria.

1890 AD

The first gasoline-powered tractors were manufactured. Steam power and draft animals such as horses were replaced by these machines.

1895 AD

The combine harvester was invented. This cut and threshed grain in 1/6 the time. It was possible to harvest two and one half acres of wheat in six and one fourth hours instead of thirty-six.

1920 AD

Livestock production increased due to disease control, better nutrition and selective breeding of animals.

1925 AD

The best qualities of several strains of a seed were combined to produce a better seed through scientific methods. Improved fertilizers increased crop yield.

1935 AD

Electricity was made available to farms in some areas through a government agency, the Rural Electrification Administration.

1939 AD

Chemical pesticides such as DDT were introduced to prevent insect destruction of crops. By 1972, many pesticides were banned because of environmental harm.

1945 AD

Fewer farmers were able to produce more crops due to improved machinery, better management and scientific advances.

1950 AD

High-yield grains were introduced in developing countries such as India so that more food was produced. This was called the "green revolution".

1970 AD

Gene splicing through the science of genetic engineering was developed. This produces plants and animals which are stronger, more productive and resistant to disease.

1980 AD

The use of computers in agriculture was introduced. Computers allow automation of irrigation, fertilizer, herbicide and pesticide application as well as the monitoring of weather, crop prices and the best conditions for planting.

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Irrigation developed in Mesopotamia. This increased agricultural production which contributed to the development of cities.

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Speed of Communication Time Line

1844 telegraph

speed equivalent of 5 bits per second

Samuel Morse's telegraph system of dots (dits) and dashes (dahs) roughly corresponds to the 0s and 1s of the computer.

1876 telephone

speed equivalent of 2,000 bits per second

Alexander Graham Bell's invention of the telephone increased the speed of communication. Its use needed no special training as the telegraph had required.

1915 transcontinental telephone calls

speed equivalent of 30,000 bits per second

Calls were transmitted on copper wires with the possibility of three conversations carried on a single pair of wires. Forty miles was the limit for audible calls.

1940 coaxial circuits

speed equivalent of 7,680,000 bits per second

Four hundred eighty voice calls were possible on a single coaxial cable.

1956 transatlantic cable

speed equivalent of 1,152,000 bits per second

Thirty-six voice calls were carried on the cable. The first call was from Newfoundland to Scotland.

1962 telestar

speed equivalent of 768,000 bits per second

Twelve voice circuits were carried on the first communications satellite.

1983 fiber optics

speed equivalent of 45,000,000 bits per second

The first glass fiber transmission trunk went from New York to Washington, DC.

1996 improved fiber optics

speed equivalent of 40,000,000,000 bits per second

Telephone companies began installation of 2.5 gigabit fiber-optic equipment.

1997 more Improvement in fiber optics

speed equivalent of 100,000,000,000 bits per second

Fiber-optic equipment with 100-giga bit capacity has been developed by Ciena. Lucent Technologies has demonstrated terabit speeds in their laboratory.

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General History of Transportation

7000 BC

Dugout canoes were used for water transportation.

Sledges pulled by people were used for land transportation.

4000 BC

Domesticated animals were used to pull sledges and to carry cargo or people on their backs.

3500 BC

The wheel was developed in Mesopotamia so that transportation was improved by the use of wheeled carts.

3000 BC

The first sailing ships were developed in Egypt.

300 BC to 400 AD

A network of paved roads was constructed throughout the vast Roman Empire. These were used to move troops and transport goods in the occupied lands.

480 AD

Faster and more extensive travel by horse became possible with the invention of the nailed-on iron horseshoe in Europe.

1769 AD

In France, Cugnot invented a steam-powered engine which propelled a vehicle.

1783 AD

The Montgolfier brothers invented a manned hot-air balloon in France.

1807 AD

The first steamboat was invented by Robert Fulton in New York. It began commercial operation on the Hudson River, carrying cargo and passengers.

1825 AD

In Great Britain, the first steam engine railroad began public service.

1860 AD

Land transportation was dominated by railroads until the middle of the 20th century.

1885 AD

The first practical gasoline-powered automobile was built in Germany by Daimier and Benz.

1903 AD

Two Americans, Wilber and Orville Wright, invented and flew the first airplane.

1908 AD

Henry Ford developed the assembly line to mass-produce his Model-T automobile. Its low price made it affordable to more people.

1939 AD

The first jet aircraft was built and flown in Germany.

1957 AD

The space age began with the launching of Sputnik by the Russians. It was the first artificial satellite to orbit Earth.

1969 AD

American astronauts became the first humans to land on the moon. Apollo 11 was the spacecraft which transported them.

1976 AD

The first supersonic passenger aircraft began service across the Atlantic Ocean. Flight time is less than three hours, but the cost of a ticket is very high.

1981 AD

The United States launched the first reusable space shuttle. It opened the way for future civilian space travel.

1985 AD

High-speed trains with speeds up to 300 miles per hour were developed.

General History of Transportation

7000 BC

Dugout canoes were used for water transportation.

Sledges pulled by people were used for land transportation.

4000 BC

Domesticated animals were used to pull sledges and to carry cargo or people on their backs.

3500 BC

The wheel was developed in Mesopotamia so that transportation was improved by the use of wheeled carts.

3000 BC

The first sailing ships were developed in Egypt.

300 BC to 400 AD

A network of paved roads was constructed throughout the vast Roman Empire. These were used to move troops and transport goods in the occupied lands.

480 AD

Faster and more extensive travel by horse became possible with the invention of the nailed-on iron horseshoe in Europe.

1769 AD

In France, Cugnot invented a steam-powered engine which propelled a vehicle.

1783 AD

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