

THE PLOW

Performance Standard 16EUS.F

Make a timeline showing how major events and advancements in the development of the plow accordingly:

- *Knowledge*: Describe and date at least ten major events and advancements in the development of the plow from prehistoric to present day.
- *Reasoning*: Analyze the impacts of the advancements of the plow on our lives.
- *Communication*: Create a timeline and captions that are well-organized and well-detailed; express all ideas in a way that provides evidence of knowledge and reasoning processes.

Procedures

1. *In order to understand Illinois, United States, and world environmental history (16E)*, students should experience sufficient learning opportunities to develop the following skills:
 - Describe the advances of the plow and their influence on agriculture and the economy.
 - Assess the effects of a significant invention or technological innovation on the physical and cultural environment on a place or region.
2. Have students review and discuss the assessment task and how the rubric will be used to evaluate their work.
3. Have students do research on at least ten major events and advancements of the plow. Students should include (but not be limited to) the checkpoints listed on the teacher resources.
4. Using notes taken on the development of the plow, create a timeline and cut out or draw pictures that visually represent at least ten events/advancements in the evolution of the plow.
5. Write captions under each picture, explaining the plow's evolution and impact. It is important that students include details about the plow's evolution, who was impacted (e.g., region's population, farmers, homesteaders), and where these changes occurred. For example, a new plow allowed the surge of homesteaders who moved to the Great Plains after 1870 to prepare the soil for planting.
6. (Optional) Have each student do a 3 - 5 minute presentation using the poster as a visual aid.
7. Evaluate each student's work using the Social Science Rubric as follows and add the scores to determine the performance level:
 - *Knowledge*: The description and dates of ten or more major events and advancements in the development of the plow were complete and correct.
 - *Reasoning*: The explanations of the impacts of the advancements in the plow were thorough and accurate.
 - *Communication*: The timeline and captions were well-organized, and well-detailed; the knowledge and reasoning were completely and effectively communicated.

Examples of Student Work not available

Time Requirements

- Two to three class periods

Resources

- Primary and secondary sources that include information about America's use of the plow
- On-line resources (where available)
- Note cards
- Poster paper
- Teacher resource list
- Social Science Rubric

Evolution of the Plow (Teacher Resource List)

The plow was the most important agricultural implement since the beginning of history. It was used to turn and break up soil, to bury crop residues, and to help control weeds.

1. **Prehistoric** – Stick hoed the ground.
2. **4000 B.C.** – Invention of the plow (p.16) wooden limbs with a point that cut through the ground being pulled by 2 oxen. It helped break up the soil and prepare it for planting.
3. **2800 B.C.** – Egyptians used wood plows pulled by oxen or horses. It was necessary for you to rest your animals. If the farmer worked the animals for half an hour, they must rest the animals for half an hour before working them again. (p.73)
4. **500 A.D.** – Breast plow pushed from the top of the thighs, similar to a spade. It took one man 2 ½ weeks to skim 2.5 acres.
5. **1797** – Horses pulled the 12 – inch moldboard. They could plow 1 acre per day. This was extremely hard to pull because all of the soil came across it. This wood and cast-iron plow worked well in the eastern United States. It broke often and was not suitable for the sticky soil of the prairies.
6. **1837** – John Deere started with a broken steel sawmill blade that was highly polished by thousands of cuts. He cut off the teeth, formed and fit it to a wrought iron and wooden handle. The steel plow sliced through the soil. It was lighter; and it polished and sharpened itself as it dug into the ground. This plow also cut and turned the soil over without dragging it over the whole piece. The price of this plow was what a farmer would make in a year.
7. **1800 – 1830's** – The stump-puller plow was used to help clear the land.
8. **1860** – Sulky plow was nice because now the farmer could ride instead of walk. This was during the Civil War.
9. **1889** – Deere showed a six-gang plow pulled by a steam traction engine. The plow was pulled back and forth to cut the ground. The farmers worked a 10 to 12 hour day. This plow could do the work in one hour that it took a horse to do in one day.
10. **1908** – Winnipeg Agricultural Motor competitions began showing both steam traction and gasoline engine tractors.
11. **????** Tractors had steel wheels so they could cut into the ground easier.
12. **1926** – Industrial Model D had hard rubber tires and front and rear high-speed gears. It could move at 5mph and plow 1 acre per hour.
13. **1931** – Enlarging cylinders increased horsepower.
14. **1945** – Farmers were changing from horses to tractors. The cost of the tractor kept the farmers from buying a tractor sooner. World War II needed crops for overseas. This provided the money to the farmers.
15. **1947** – Model B electric starter, tractor frame was pressed steel, increasing strength and decreasing weight.

16. **1960** – John Deere introduced the four and six cylinder engines. It was called the “New Generation of Power.” In the next decade 400,000 tractors were sold. These tractors could till 5 acres per hour.
17. **2000** – The newest tractor made by Caterpillar can be found in Kansas with 500-horse power. It can plant 27 acres per hour.
18. **2001** – A brand new tractor today will cost \$80,000.
19. In the U.S. the plow is becoming less used. The no-till planters are being used to stop erosion.

Information:

- 1930** – One farmer supplied food for 9.8 people in the U.S. and abroad.
- 1940** – One farmer supplied food for 10.7 people in the U.S. and abroad.
- 1950** – One farmer supplied food for 15.5 people in the U.S. and abroad.
- 1960** – One farmer supplied food for 25.8 people in the U.S. and abroad.
- 1970** – One farmer supplied food for 75.8 people in the U.S. and abroad.
- 2001** – One farmer supplied food for 140 people in the U.S. and abroad.

Labor (working) hours decreased and the amount of crops produced increased.

Resources:

- Classic Farm Tractors* – by Randy Leffingwell
World Book Encyclopedia – Volume F for farming
Eyewitness Book – FARM – by Ned Talley
The World Past and Present East and West – Macmillan/McGraw-Hill 1995