

# The Agricultural Revolution – Outline

## I. The Agricultural Revolution

- a. Agricultural methods had not changed much since the Middle Ages
- b. Tools—hoe, sickle, wooden plow
- c. Three-field system—farmers left 1/3 of the land fallow each year to restore fertility to the soil
- d. Open-field system—unfenced farms with few improvements made to the land
- e. No significant surplus—only enough food was made to feed the population

## II. Agriculture and industry

- a. The Industrial Revolution brought machinery to farms
- b. The use of farming machinery meant that fewer farm workers were needed
- c. Displaced farm workers moved to the cities to find work in factories
  - i. This is called *rural-to-urban migration*
- d. Growing populations in urban cities required farmers to grow more crops
  - i. Food to eat
  - ii. Raw materials (like cotton) for textile factories

## III. Agricultural innovations

- a. Jethro Tull (English)
  - i. Seed drill: Planted seeds in straight rows as opposed to scattering them over a field
  - ii. Horse-drawn cultivation: Loosened the soil and eliminated weeds
- b. Lord Townshend (English)
  - i. Crop rotation: Ended the three-field system by illustrating how planting different crops in the same field each year kept the soil from becoming exhausted
- c. Robert Bakewell (English)
  - i. Stock breeding: First to scientifically breed farm animals for increased production, and better quality, of beef, milk, wool, etc.
- d. Arthur Young (English)

- i. Agricultural writer: Popularized new farming methods and machinery
- e. Justus von Liebig (German)
  - i. Fertilizers: Invented fertilizers to enrich exhausted soil, which increased the amount of available farmland

#### IV. Agricultural machinery

- a. Eli Whitney
  - i. Cotton gin (1793) – increased cotton production
- b. Cyrus McCormick
  - i. Mechanical reaper (1834) – increased wheat production
- c. Other important inventions – horse-drawn hay rake, threshing machine, steel plow
- d. Steam engines, gasoline diesel engines, and electric motors were added to farm machinery as these types of engines were invented
- e. The Industrial Revolution and Agricultural Revolution complemented one another
  - i. Developments and needs in one created developments and needs in the other

#### V. Agricultural science

- a. Agriculture became a science during the Agricultural Revolution
- b. Farmers and governments invested in agricultural research
  - i. Established agricultural schools, societies, and experimental stations
- c. Progress in agriculture
  - i. Pesticides, stock breeding, new foods, food preservation, new farming techniques and irrigation methods, frozen foods
- d. Result
  - i. Today, in the industrialized world, much more food is grown by far fewer farmers than was grown 200 years ago (or is grown today in the non-industrialized world)

#### VI. Review questions

- a. Describe three features of agriculture before the Agricultural Revolution.
- b. How did agricultural machinery change farm labor?
- c. Describe the inventions or methods of at least three agricultural innovators.
- d. Weigh the pros and cons of modern agriculture's use of pesticides, preservation, and stock breeding.