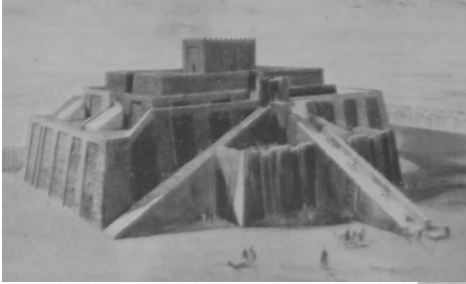


# Civilization



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## Civilization Requires Organization

- ◆ In pre-agricultural societies, as soon as there was enough food for all, work stopped.
- ◆ With agriculture, a field must be sown, tended, and later harvested all at once.
- ◆ The harvest must be stored.
- ◆ Domestic animals must be maintained as a herd.

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## The Surplus

- ◆ When all goes well, there will be a surplus of food that is not immediately distributed.
- ◆ It is valuable, and must be managed and guarded.

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## Bureaucracy

- ◆ With the Agricultural Revolution comes:
  - Government bureaucracy
  - Standing armies
  - A controlling social elite

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## Trades

- ◆ Not all people had to farm. Some could become specialists in particular tasks:
  - Potters
  - Tool makers
  - Metal workers (smiths)
  - Bakers, butchers, etc.
  - Bureaucrats and priests (often the same people)

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## Agricultural Improvements

- ◆ Saving and scattering seed produces a crop, but the crop could be greatly improved by breaking up the soil and getting the seeds just below the surface.
- ◆ Two inventions in different parts of the world solved that problem differently.

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## The Plough



- ◆ In the Middle East, north Africa, and the Mediterranean, the simple plough—or scratch plough—was invented.
- ◆ It cut a furrow in the ground into which seeds were thrown, and then covered over.
- ◆ This is often called the most important invention of all time.

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## The Seed Drill

- ◆ In the Orient, a different solution to the same problem was a machine that pushed a few seeds directly into the ground in evenly spaced rows.



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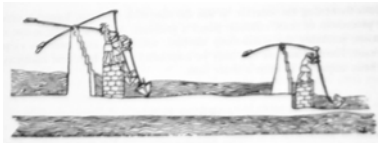
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## Irrigation



Shadoofs, water-raising devices.

- ◆ An innovation of greater significance even than the plough and the seed drill was the concept of irrigation: Bringing water to the crops, not just waiting for rain or floods.

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## Irrigation Leads to Government

- ◆ Even if a farming society had begun to flourish with relatively independent farmers, once irrigation is introduced, infrastructure follows.
- ◆ An irrigation ditch and water-raising devices are large, expensive projects, requiring government, taxation, etc.

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## The Fertile Crescent

- ◆ The first area of the world to move to an agricultural way of life was near where Africa, Europe, and Asia meet.



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## Why There?

- ◆ The "Fertile Crescent" is fertile, because rivers from all three continents drain into it, bringing rich nutrients to the soil as well as water.
- ◆ It was also in an area of moderate climate, perfect for growing crops.
- ◆ For those reasons it was also more heavily populated.

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## Mesopotamia

- ◆ The world's first great civilization arose in the Fertile Crescent.
  - This happened in particular in an area that is now part of Iraq.
  - This area is bounded by the Tigris and the Euphrates rivers.
  - The Greeks called it Mesopotamia, meaning "between the rivers."

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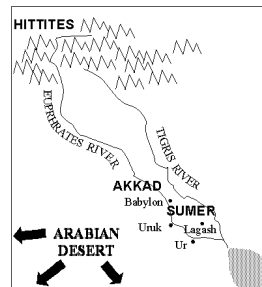
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## Sumer

- ◆ The first notable civilization in Mesopotamia was *Sumer*.
- ◆ It was located in southern Mesopotamia, near where the rivers join.



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## Early Settlements

- ◆ The earliest known settlement in the Euphrates floodplain dates from before 5000 BCE. It is characterized by large villages and temples.
- ◆ Relatively rapid development is attributed to the use of irrigation.

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## Historical Sumer

- ◆ The known history of Sumer begins in 2900 BCE, with the invention of writing.

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## Cuneiform

- ◆ The Mesopotamian area was rich in clay and in reeds that grew on the river banks.
- ◆ They were combined to make a medium for writing.

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## Cuneiform, contd.

- ◆ Clay was formed into a slab, about the size of a human hand.
- ◆ The reed stalks were cut to make a stylus.
- ◆ The stylus was pushed into the wet clay in a variety of different ways to make recognizable marks, carrying meaning.

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## Cuneiform, contd.

- ◆ The clay tablets were left to dry in the sun, and became very durable.
- ◆ There are thousands of cuneiform tablets still in existence.
- ◆ Hence, much is known about the history of these settlements.



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## Sumerian Culture

- ◆ The Sumerians were very well organized and had a complex bureaucracy, ruled by the priests in the temples.
- ◆ All the major trades of pre-industrial times developed there.

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## The Downside of Sumerian Culture

- ◆ The trend to rapid urbanization and blight of the environment that followed was characteristic.
- ◆ Fertile soils were quickly depleted by over use.
- ◆ Over-irrigation led to salinization.
- ◆ The accumulation of wealth attracted raiders. The area has been a battleground ever since.

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