Agricultural Techniques

The people of Mesopotamia, especially the Sumerians, are remembered for their many innovations, or new ways of doing things. For example, early farmers developed new agricultural techniques, such as irrigation, leading to economic surpluses.

At first, the Mesopotamians used only simple technology for farming. Early tools, such as sickles and hoes, were made of clay and copper. In time, metalworkers started mixing copper with tin to produce bronze, which is much stronger than copper alone. By 2500 B.C.E., many farmers were using bronze tools such as bronze-tipped plows. With stronger plows, farmers could turn soil more easily, which led to larger fields that produced larger crops.

Next, farmers found a way to plow and plant at the same time by attaching a funnel filled with seeds to the plow. As the plow moved along each row, the seeds were released from the funnel. This agricultural technique allowed fewer farmers to plant more crops.

The Sumerians even wrote advice for farmers. In Mesopotamia, archaeologists have found almanacs written on clay tablets. These writings included information that described the best way to plant, to irrigate land, and to care for crops. One ancient Sumerian almanac contained these instructions:

“When you are about to cultivate your field, take care to open the irrigation works [so that] their water does not rise too high [in it].”

Measurements

Growing city-states needed larger farms to feed all the people. Because of this, land became more important than ever to the early Sumerians. City officials wanted to know how much land each farmer used so that they could keep accurate records. Farmers, too, wanted to know how much land they had so that they could clearly mark the boundaries of their farms. These needs led the Sumerians to develop standard measurements of land.

One measure of land area was an iku, also known as the ikum, meaning “the field.” An iku equaled about 37,600 square feet. The idea of the present-day acre, which equals 43,560 square feet, comes from the iku.

Sumerians also developed standard units of measurements for weight and volume, including the quart. They used these units to measure crop harvests and to conduct trade. Farmers no longer had to guess how much wheat or barley they were exchanging for a plow or other product.

Measurements required a carefully planned number system. The Sumerians based their number system on the number 60. Our division of time into hours, minutes, and seconds came from this system.

The Sumerians even found a way to measure time. By about 2100 B.C., the Sumerians counted off days in a year, using a 360-day calendar.

Reading Check
Summarize: What advances in measurements did the Sumerians develop?
Because southern Mesopotamia had few trees, people used the resource they had plenty of for building—mud. The Sumerians formed bricks out of mud, let them dry, and then used them to build everything from houses to large temples.

Most Sumerians lived in simple flat-roofed, mud-brick houses. Groups of houses were built close together, all facing an open court. Their thick walls kept them cool in summer and warm in winter.

Kings and other people of high rank lived in larger houses of two or more stories. Artists made beautiful clay-tile designs to decorate the walls of the houses.

The largest and tallest building in every city-state was the **ziggurat**. This temple developed from the simple, one-room temples of the Ubaid culture.

In describing the city of Ur, archaeologist Leonard Woolley wrote, "The outstanding feature of the city [Ur] was the Ziggurat...an artificial mountain."

Ziggurats grew as the wealth and power of cities grew. Builders constructed the mud-brick ziggurat in layers. Some temples stood as high as seven-story buildings. At the top of each ziggurat stood a shrine for the city's special god. Palaces for kings and houses for priests often stood inside a wall that surrounded the ziggurat.

Over time, the Sumerians began building smaller buildings along the outside wall of the ziggurat. Some were shops, others were workshops, and still others were homes. Many city-states also placed parks near their ziggurat. Soon the ziggurat and the area around it became the busy center of the city. Today, wind-eroded ruins are all that is left of these ancient buildings.

Some historians believe that ziggurats were built to represent mountains. Others think that ziggurats were built as bridges between the heavens and Earth. These mud-brick structures towered over Sumerian cities. To build such a structure required teamwork and skills. (1. Builders constructed a ziggurat in layers, each one smaller than the one below it. 2. At the top of a ziggurat stood a shrine to a god. 3. Trees and bushes may have covered the ziggurat. 4. Smaller buildings stood alone the outside wall of the ziggurat.)

Transportation
Archaeologists found the world's oldest wheels in Mesopotamia, dating to about 3500 B.C. The Sumerians were the first to attach wheels to carts. They built two-wheeled and four-wheeled carts and chariots pulled by oxen or donkeys.

For long journeys over land, traders in Mesopotamia led caravans of donkeys. Following the same paths over and over again, they established trade routes.

For water travel, the Mesopotamians built various kinds of boats. Their earliest boat was shaped like a basket and built from reeds and covered by animal skins. A mast and sail were in the center of the boat, making it perhaps the world's first sailboat. People also built canoe-shaped boats that they guided with poles.

Writing and Literature
The Sumerians made the first known written records. The earliest known writing was found on a clay tablet in Kish that dates to about 3500 B.C. On the tablet are picture symbols that recorded trade.

Hundreds of clay tablets found at the city of Uruk provide evidence that by 3100 B.C., the Sumerians had developed a writing system. This system was based on cuneiform, or wedge-shaped symbols. Each of the 700 symbols stood for a different syllable and was based on a spoken sound.

At that time, few people knew how to write. Because of this, scribes, or people who recorded things for others, became important. Scribes used sharpened reeds to write in cuneiform on soft clay.

Writing made developments of the Sumerian government, economy, and society possible. With writing, scribes recorded boundary lines, wars, lists of kings, and gifts to temples. They also kept records of trade and food supplies.

Later, scribes recorded literature, writing down songs and stories. The most famous tale is the Epic of Gilgamesh, a story about legendary King Gilgamesh.

Reading Check
Draw Conclusions: How did new forms of transportation change people’s lives? Summarize: How did writing help make the development of civilization possible?