

## Reading

### Passage 2

## **What was the first scientific discovery? It might have been Babylonian astronomy**

Throughout history, people have learned about nature through their lived experiences. But this understanding of the natural world would not exactly be science.

Science is knowledge that is more organised and formal. Scientists use observations and experiments to build theories. Those theories are recorded and passed on to others who may test the ideas and build on them.

### **Babylonian astronomy**

It is believed that one of the first scientific discoveries was Babylonian astronomy. The Babylonians lived about 2,500 to 4,000 years ago in the region that is now Iraq. Their astronomy was especially scientific. Babylonian scribe, their keepers of knowledge, were organised and careful.

They observed, recorded and used mathematics to predict how the sun, moon, stars, and planets would move in the skies. The foundation of this astronomy was kept in a book called MUL.APIN. This title means “The Plough Star”, which is the name of a constellation.

Babylonian astronomers recorded the positions of the stars and when in the year they would first be visible. They also tracked the paths of the sun and moon, as well as when the planets would be visible in the night sky.

### **Astronomical diaries**

Babylonian scribes began to keep astronomical diaries. These contained detailed records of the positions of the moon and planets. They also noted events on Earth, such as the weather and the price of grain.

This type of careful observation and record-keeping is a major part of science. The astronomical diaries were kept for over 700 years. This makes them one of the longest-running scientific projects.

By around the fourth century BC, the scribes made tables called ephemerides that showed when certain astronomical events, like eclipses, would happen. They would predict the motions of the sun, moon and planets.

### **The universe today**

Greek astronomers used Babylonian observations to make geometric models that showed how planets move. This was an important step in our understanding of astronomy today.

Something we use today that comes from Babylonian astronomy is how we tell time. Babylonians used a system with units of 60. Their observations were so important that later people kept these Babylonian units. So if you have ever wondered why an hour has 60 minutes and a minute has 60 seconds, it is because we have kept the methods of Babylonian astronomy.

Whenever you tell the time, you are using some of the oldest scientific discoveries in the world.

**Questions:**

1. What is the primary difference between general, lived experience knowledge of nature and formal science, according to the passage?

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2. Name two celestial bodies, other than the stars, that Babylonian astronomers observed and recorded the movement of.

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3. Why does the passage consider Babylonian astronomy to be "especially scientific"?

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4. What is the name of the book that contained the foundation of Babylonian astronomy?

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5. How did the Greeks contribute to the development of astronomy, using the work of the Babylonians?

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6. What non-astronomical information did Babylonian scribes include in their astronomical diaries?

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7. Why does an hour have 60 minutes and a minute have 60 seconds?

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**Advanced Vocabulary from the Passage:**

Astronomy 天文學

Astronomical 天文學的

Natural world 自然界

Theories 理論

Babylonian 巴比倫的

Iraq 伊拉克

Constellation 星座

Grain 穀物

Scribes (印刷術發明之前的) 抄寫員

Ephemerides 星曆表

Eclipses 日食月食

Celestial 天的, 天空的, 天外的