

## Unit 4

### Writing:

Page 29,

### Exercise 10

**10** Research and write notes. Then, write a summary paragraph of 80 words about someone from the past who made an important achievement. Write what it is that made them famous.

Suggested answer(Wikipedia)

Ḥasan Ibn al-Haytham, Latinized as Alhazen full name *Abū 'Alī al-Ḥasan ibn al-Ḥasan ibn al-Haytham* (965 – c. 1040), was an Arab mathematician, astronomer, and physicist of the Islamic Golden age. Referred to as "the father of modern optics", he made significant contributions to the principles of optics and visual perception in particular. He was the person who wrote "Book of Optics", written during 1011–1021, which survived in a Latin edition. As a polymath , he was the person who wrote about philosophy, theology, and medicine.

Ibn al-Haytham was the person who explained that vision occurs when light reflects from an object and then passes to one's eyes. He was also the first to demonstrate that vision occurs in the brain, rather than in the eyes. Ibn al-Haytham was an early proponent of the concept that a hypothesis must be supported by experiments based on confirmable procedures or mathematical evidence—An early pioneer in the scientific methods five centuries before Renaissance scientists. On account of this, he is sometimes described as the world's "first true scientist". Born in Basra, he spent most of his productive period in the Fatimid capital of Cairo and earned his living authoring various treatises and tutoring members of the nobilities. Ibn al-Haytham is sometimes given the by name *al-Baṣrī* after his birthplace, or *al-Miṣrī* ("the

Egyptian"). Ibn al-Haytham paved the way for the modern science of physical optics.

Writing:

Page 31,

### Exercise 9

**9** Research and write notes. Then, write two paragraphs about an invention, discovery, or development.

Suggested answer(Wikipedia)

The Elephant Clock was a model of water clock invented by the medieval Islamic engineer al -Jazari (1136–1206). Its design was detailed in his book, *The Book of Knowledge of Ingenious Mechanical Devices*. "The elephant represents the Indian and African cultures, the two dragons represent Chinese culture, the phoenix represents Persian culture, the waterwork represents Greek culture, and the turban represents Islamic culture," expressing his multicultural mentality

The timing mechanism is based on a water-filled basin hidden inside the elephant. In the bucket is a deep bowl floating in the water, but with a small hole in the center. The bowl takes half an hour to fill through this hole. In the process of sinking, the bowl pulls a string attached to a see- saw mechanism in the tower on top of the elephant. This releases a ball that drops into the mouth of a serpent, causing the serpent to tip forward, which pulls the sunken bowl out of the water via strings. At the same time, a system of strings causes a figure in the tower to raise either the left or right hand and the mahout (elephant driver at the front) to hit a drum. This indicates a half or full hour

Several modern reproductions of the Elephant Clock have been created by the 1001 Inventions organization. These reproductions are featured as part of the 1001 Inventions

educational science shows that have been touring around the world since 2006.

**Quotation** Read the quotation. Do you agree with it? Why/Why not? Translate the quotation into Arabic.

**From India to Spain, the brilliant civilisation of Islam flourished.**

**Bertrand Russell (1872 CE–1970 CE)**

**Suggested answer**

Yes, I strongly agree with this quotation, because it shows that Islam was leading the way in the world, showing how a great civilisation it was at that time.

ازدهرت الحضارة الإسلامية المشرقة في المنطقة الممتدة من الهند لإسبانيا

**Writing:**

**Student's Book Page 33,**

**Exercise 8**

**8** Write a summary of the article about Masdar City on page 32. Remember to be concise and write between 100 and 150 words.

**Useful language:**

It is understood that...; It is often suggested that...; Many people believe that...; It is evident that...;

For this reason...; It could be argued that...; Thus it can be seen that...

**Suggested answer (AB page 74)**

**The Masdar City megaproject**

The article discusses Masdar City, which is an example of a 'megaproject'. A megaproject is a large-scale investment project designed to stimulate the economy and benefit the population. The author states that this project is currently being undertaken in Abu Dhabi and has attracted a lot of both positive and negative attention.

The author goes on to say that, whilst it has been praised for its environmentally-friendly status, some people argue that we should prioritise sustainability in already existing cities, rather than creating new ones.

Whatever the opinion, it is clear that the project is a landmark of urban planning and a precursor of megaprojects to come.

Activity Book, page 23, exercises 11 and 12

**11** Read the text on page 22 again. Underline the parts that give you basic information about Ibn Bassal and write them below.

Name	
Date	
Location	
Occupation and interests	
Achievements	
Legacy	

Answer (AB page 23)

**Name:** Ibn Bassal

**Date:** lived in the eleventh century CE

**Location:** Al-Andalus

**Occupation and Interests:** writer, scientist and engineer / interested in botany and agriculture

**Achievements:** writing A Book of Agriculture; designing water pumps and irrigation systems

**Legacy:** agricultural instructions and advice

**12** Now write three short paragraphs (40–60 words each) summarising the text about Ibn Bassal. Use the prompts in exercise 11 as a guide.

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[illegible]

## Answer

## Students' own answers