

1001 INVENTIONS

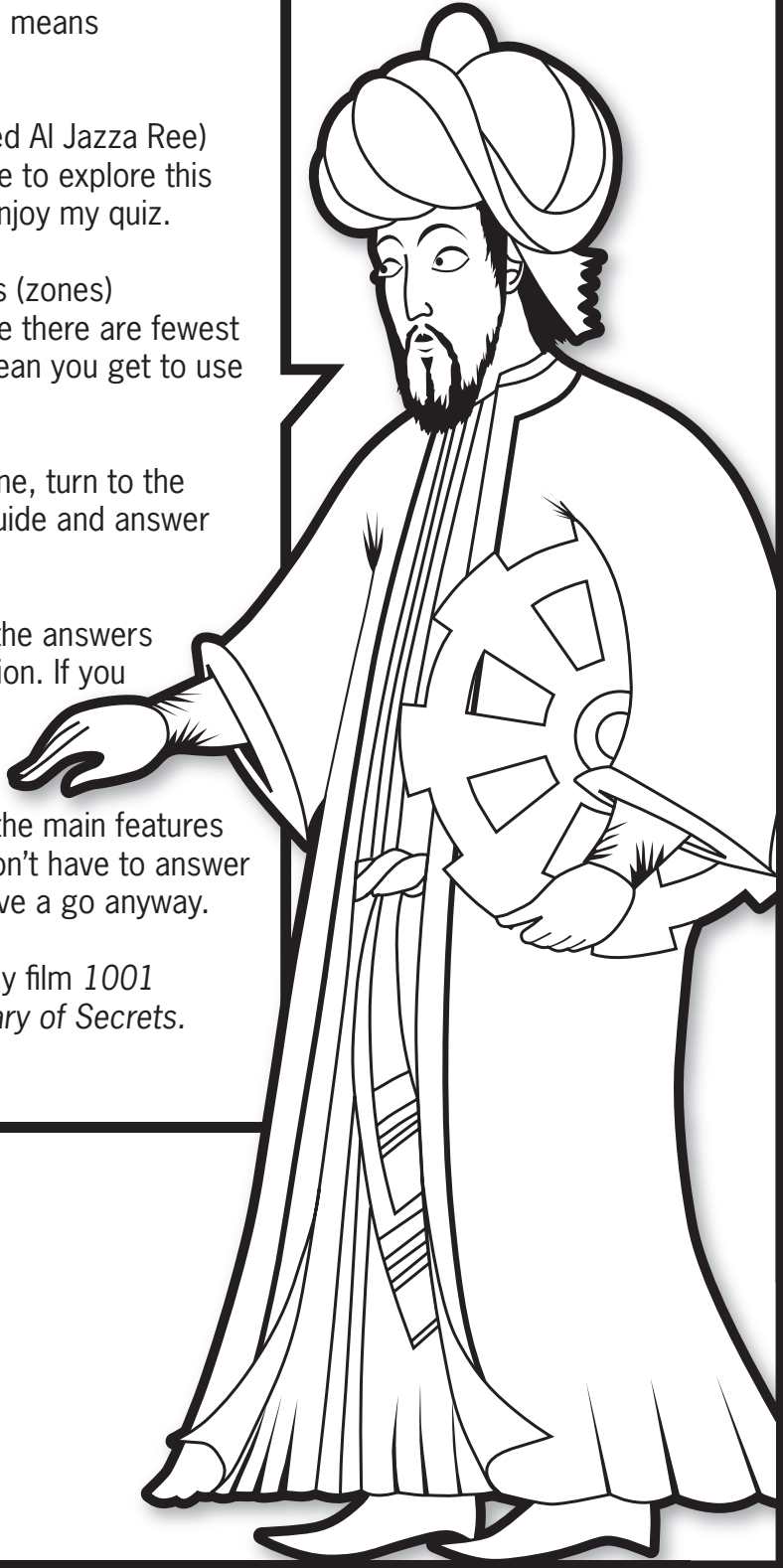
DISCOVER THE MUSLIM HERITAGE IN OUR WORLD

SECONDARY SCHOOL ACTIVITY SHEET

Hello, or as we say in the Muslim world, 'Assalaam Alaikum' which means 'Peace Be with you'.

I am **Al-Jazari** (pronounced Al Jazza Ree) the inventor. Come with me to explore this wonderful exhibition and enjoy my quiz.

- Look at the seven areas (zones) and go to the one where there are fewest people first. This will mean you get to use things easily.
- When you get to the zone, turn to the matching page in my guide and answer the questions.
- Don't cheat! I have put the answers at the end of each section. If you wish you can keep your own score. If not, use the quiz as a way of remembering some of the main features of the exhibition. You don't have to answer all the questions but have a go anyway.
- Don't forget to watch my film *1001 Inventions and the Library of Secrets*.



HOME ZONE

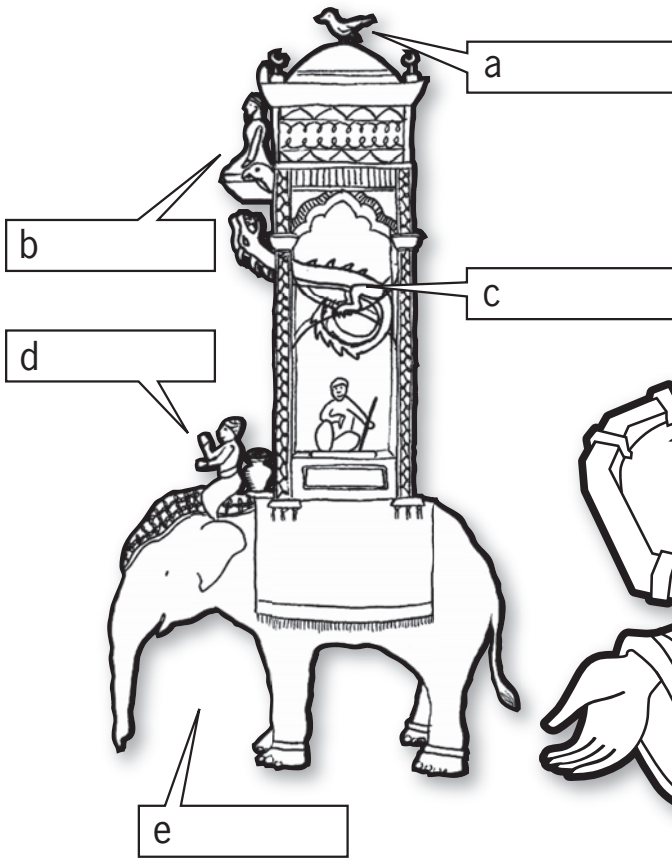
The Home Zone shows how everyday life is influenced by people from a thousand years ago - like **Ibn al-Haytham**.

1 What did he do that helped lead to the invention of the camera?

Have you got a watch? How is it powered?

2 Look at Al-Jazari's Elephant Clock. How was it powered?

3 Look at this image of Al-Jazari's Elephant Clock. Label the image to show which culture each part of the clock represents. To help you I have indicated the different cultural aspects with arrows.



In the Home Game interactive, find all the things that were influenced by Muslim civilisation.

There are 20 to discover.
How many did you find in the time?

Answers
1. He discovered how we see. 2. Water 3. (a) The phoenix - Egyptian. (b) The Sultan - Arabian. (c) Chinese dragon. (d) Elephant driver. (e) Indian elephant.

SCHOOL ZONE

Welcome to the School Zone. Do you like school? I did but I suppose I was very clever. This is **Fatima al-Fihri**. She is one of the most famous women from the Muslim world. Try to find out:

- 1 What did she pay for?
- 2 When was it built?
- 3 Where was it built?
- 4 Was it for girls only?
- 5 Name 3 of the subjects taught here:

In Baghdad, they kept over 400,000 books in a special library. It was one of the greatest libraries in the world in 1250

Go to the machine with buttons that light up different languages. This lights up some words in English, and shows you some of the everyday words that have come from Arabic or other languages to English. It may help to say them aloud to see how similar they are. Did this connection surprise you? Why?

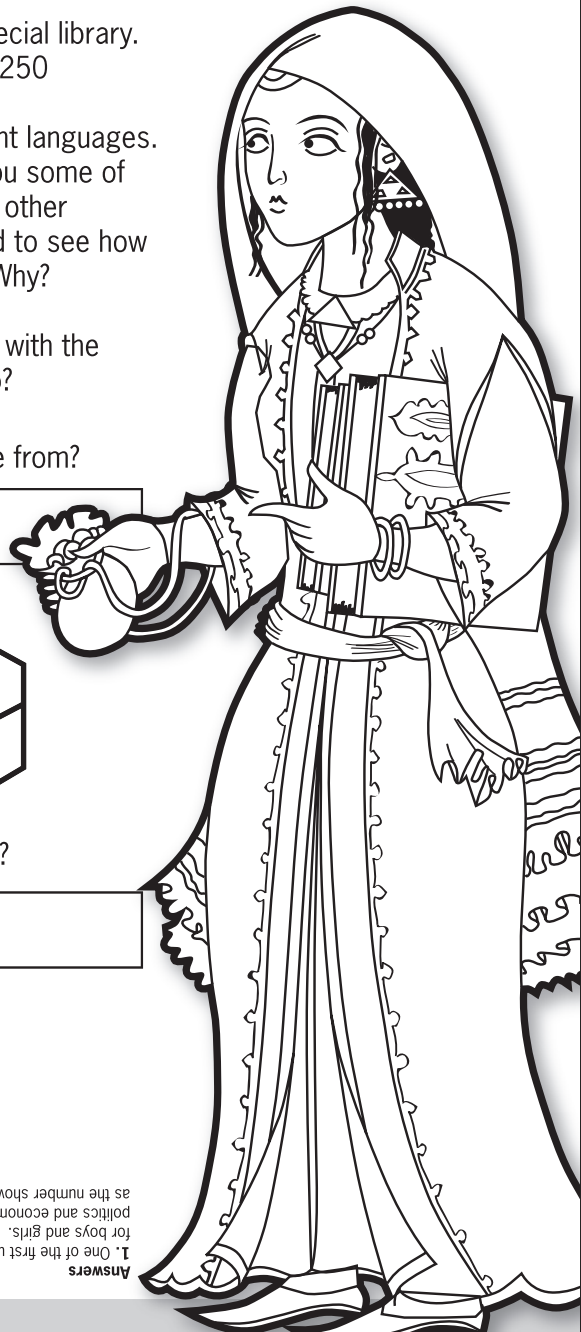
Now, one of my own favourites. Look for the wheel with the handle – spin the wheel fast! What 4 words light up?

- 6 Where does the English word chemistry come from?

- 7 Draw the angles on these numbers:



- 8 Count how many angles there are on each number – how are they related to the number?



Answers
 1. One of the first universities in the world 2. It was built in the ninth century 3. In Fez, Morocco 4. No, it was for boys and girls 5. Any from: medicine, geography, physics, mathematics and engineering, history, languages, politics and economics 6. The Arabic word al-kimia 7. 3. The number of angles is the same as the number shown
 8. The number of angles is the same as the number shown

MARKET ZONE

Welcome to the Market Zone - where you will find me again. People living under Muslim rule did so much to make markets what they are today.

Can you answer these questions?

- 1 What did Taqi al-Din invent?
- 2 How did this help Muslims to grow new crops?
- 3 What were they?
- 4 What did Muslim chemists do that allowed them to make kerosene for their lamps?

How did you get to the museum today? How long did it take you? I bet you did not come by camel or travel for 29 years. Well, a famous traveller called **Ibn Battuta** (Ib in bat too tah) did. He travelled 75,000 miles and visited 44 countries.

Try playing the Silk Route game, if you have time, and see how many coins you can collect.

- 5 Name 2 items traded by Muslim merchants:
- 6 What was called white gold?
- 7 Why do you think it was called white gold?

Now look at the money section

- 8 Why do you think we have the Queen's picture on our coins?
- 9 What was written on King Offa's coins?



- 10 A bag of coins can be quite heavy. Arab merchants travelled huge distances for trading. Which one of the following cunning inventions allowed them to transfer large amounts of money over great distances?

- Credit card.
- Cheque.
- They trained huge eagles to fly between banks with bags of gold tied to their feet.



Answers
 1. A six-cylinder water pump 2. It helped pump water to fields and towns. 3. Rice, peaches, apricots and aubergines. 4. They distilled oil to make kerosene. 5. Silk, cotton, fruit, spices, salt, sugar, flour, ceramics, textiles, glass and carpets 6. Salt. 7. Because it was as valuable as gold. 8. The Queen is the Head of State and all government is conducted in her name. 9. 'There is no god but Allah' in Arabic. 10. Cheque

1001 INVENTIONS AND THE LIBRARY OF SECRETS

I am the star of this film. What do you think of my performance? Here are five questions based on the film. Some answers you can simply get from the film and these are right and wrong. Others demand some thought and there is no right answer, just speculation.

- 1 What did **Abbas ibn Firnas** forget when he tried to fly?
Any ideas as to why this was so important for successful flying?

- 2 What material do we use in hospital that was developed by **Al-Zahrawi** when we need stitches?

- 3 What was my greatest invention?
Why do you think I was so proud of it?

- 4 Why do you think the boy said it was a United Nations clock?



Answer
1. A tail fin - useful for landing 2. Catgut 3. The combination of the crank wheel, connecting rod and piston system which converts rotational motion to linear - crucial to pumps and engines. 4. Because it contained representations of so many different cultures.

HOSPITAL ZONE

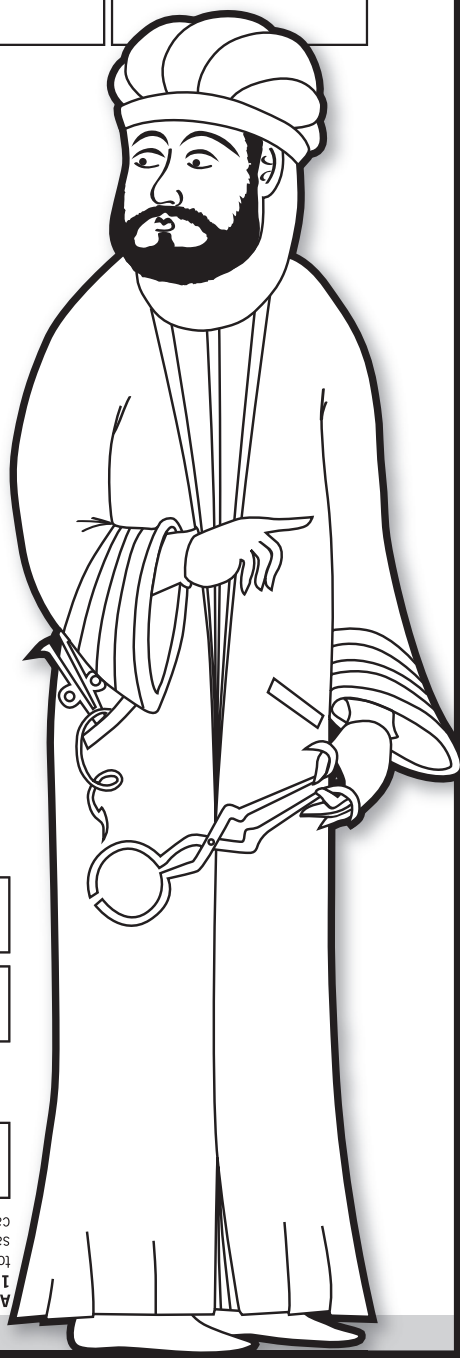
Have you been to hospital? I hope not. **Abbas ibn Firnas** the flier (remember him?!) had to go to hospital because he broke some bones in his back. Luckily though, hospitals were free at the time he lived as they are today.

In the Hospital Zone, you can find out how people like **Al-Zahrawi** (Al za ra wee) were improving health care centuries ago.

Can you answer the following questions?

- 1 Have you ever broken a bone or know someone who has broken a bone? How did the doctor fix it? How would broken bones have been fixed in in the 11th-century Muslim world?

- 2 Label 4 similarities between the doctors below.



- 3 Can you think of any diseases you might need to be immunised against?

- 4 What year was immunisation introduced to England?

- 5 Where did the idea come from?

1. We use a splint and plaster cast. Ibn Sina used the same approach, also recommending that you should wait said tuberculosis, polio, measles, mumps, rubella or a whole range of other diseases. 4. 1724. 5. The idea came from Istanbul, Turkey, and also via an enslaved African in America.

TOWN ZONE

In the Town Zone, Sinan the architect from Turkey will explain the things Muslims did to make towns better for us all to live in. Try to answer these questions:

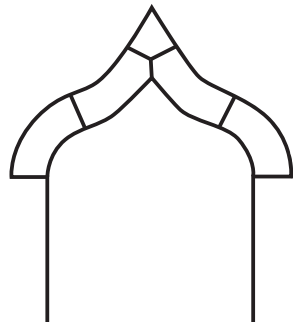
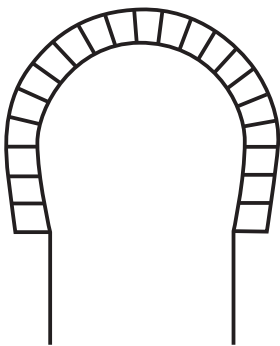
1 Where did Sinan come from?

2 How many buildings did Sinan design?

3 What was the name of one of Britain's most famous architects who built a famous cathedral in London? He was known to admire Muslim domes and buildings.

4 Water features were important in designing Islamic gardens. Why was water so cherished in the Muslim world?

5 Label each type of arch.



Answers
1. Turkey. 2. Over 470. 3. Christopher Wren who built St. Paul's Cathedral.
4. Because it was scarce and because people liked to go to public baths and to see the cooling fountains. 5. The Horseshoe Arch and the Ogee Arch.

WORLD ZONE

Hi again, let us move on to the World Zone. Muslims travelled much of the world and needed to develop instruments of navigation and draw accurate maps. Here is **Abbas ibn Firnas** - my favourite because he was so crazy. He just did not care if he got injured or not.

1 Who was the first man known to have flown?

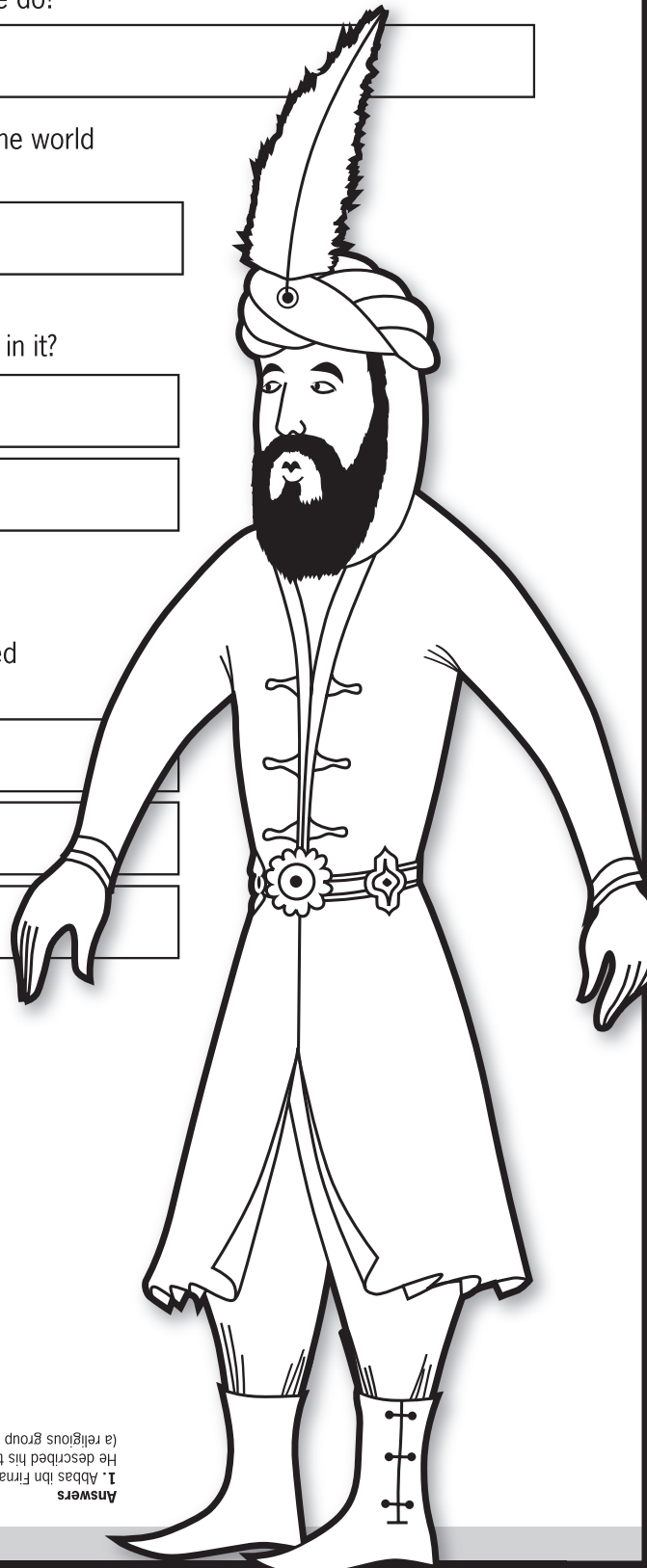
2 What did the Chinese Muslim Zheng He do?

3 Who drew an early important map of the world almost 850 years ago?

4 Whose book was this?
What did he write about in it?



5 Name three faiths/religions that worked together in the Muslim world.



Answers
1. Abbas ibn Firnas. 2. Sailed the world in an enormous wooden ship. 3. Ahhhsi. 4. Ibn Battuta. He described his travels in the Muslim world, Africa and China. 5. Jewish, Christian, Muslim, Sabean (a religious group that no longer exists).

UNIVERSE ZONE

Let's have a look at one of the most amazing zones. In the Universe Zone, find out how Muslims have helped us to understand our universe. You can meet **Merriam al-ljiya** who made astronomical instruments.

1 Where did Merriam work?

2 What did she build?

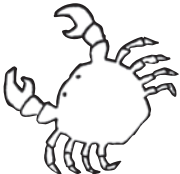
3 Name 2 things an astrolabe is used for.

Play the Star game –
How many groups of stars can you find?

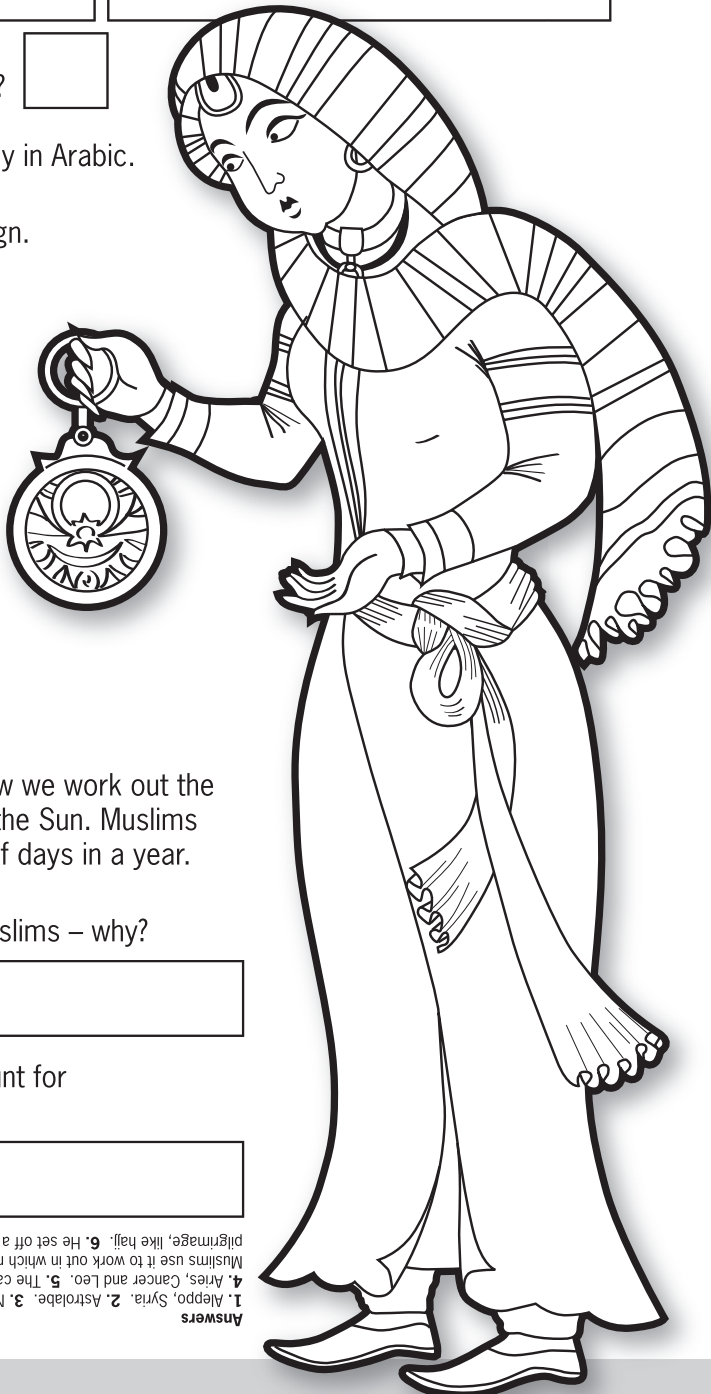
Many constellation names were originally in Arabic.

4 Find the English name for each sign.









When is your birthday? Do you know how we work out the date? Now our calendar is based upon the Sun. Muslims use the Moon to work out the number of days in a year.

5 The Moon is very important to Muslims – why?

6 What was Celebi's spectacular stunt for Sultan Murad's birthday?

Answers
1. Aleppo, Syria. 2. Astrolabe. 3. Navigation and telling the time in the day and the night. 4. Aries, Cancer and Leo. 5. The calendar is based around the lunar (Moon) cycle and Muslims use it to work out in which months they need to fast and when they should go on a pilgrimage, like hajj. 6. He set off a gunpowder-fuelled rocket which took him into the sky.



Al-Jazari



Ibn al-Haytham



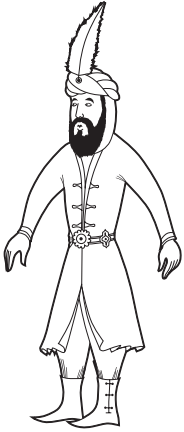
Fatima al-Fihri



Al-Zahrawi



Sinan



Abbas ibn Firnas



Merriam al-Ijliya



Ibn Battuta

AND FINALLY, LIST AT LEAST FIVE THINGS THAT YOU HAVE LEARNT TODAY ABOUT THE MUSLIM CONTRIBUTION TO OUR MODERN WORLD.

It has been wonderful taking you round the exhibition. If you want to, you can add up your total score. Take this home as a souvenir. It was lovely to meet you.

And if you want to see me again, just visit www.1001inventions.com.

