



Cambridgeshire
County Council



The Mathematical Museum

Click on the picture to enter the
museum and begin your
adventure.

The Entrance

Welcome to the Mathematical Museum. There are 8 mathematical challenges to have a go at. All you have to do to reach them is to click on the exhibits on this page. The challenges can be completed in any order.

Good luck and have fun!



When you have finished all the challenges just click on the doors to leave.



The Dinosaurs

Can you match the dinosaur to its correct length and mass by using the clues below?



- a) Edmontosaurus is $\frac{1}{2}$ the length of diplodocus and has a mass of less than 5,000kg.
- b) Afrovenator is not the shortest dinosaur.
- c) Carnotaurus is twice as heavy as afrovenator and lighter than edmontosaurus.
- d) Diplodocus is the longest and heaviest dinosaur.
- e) Barosaurus' length and mass are both multiples of 6.

[Go back to the entrance and choose your next exhibit.](#)

9m	20,000kg
24m	12,000kg
7.6m	1,000kg
26m	3,400kg
13m	2,000kg

Ancient Egypt



Hand = distance from the top of your thumb to the top of your little finger across your palm and fingers apart.

Cubit = Distance from your elbow to the tip of your middle finger.

Foot = the length of your foot.

[Go back to the entrance and choose your next exhibit.](#)



Be careful when using scissors!



Measurement

1. Using string cut three pieces which are the same length as your hand, cubit and foot.
2. You will now use these pieces of string to measure 5 different objects around your home. E.g. Coffee table = 2 cubits, 1 foot and $\frac{1}{2}$ hand.
3. Now measure the hand, cubit and foot pieces of string using cm. Using that information and the answers to question 2 can you estimate the length of each of the objects you measured?

Ancient Greece

The Number System

Using the chart on the right which shows the ancient Greek Herodianic number symbols can you complete the following?

- 1) Convert the following numbers into Ancient Greek – a) 28 b) 136 c) 56 d) 5600
- 2) Convert the following into modern day numbers

- a) X ΔΙ

b) ΔΙ Δ Δ Δ
- c) χΙ Η Η Η Δ

d) Μ ΔΙ Δ

You might want to investigate the Ionic Greek numerals and see what the numbers in question 1 would look like.

[Go back to the entrance and choose your next exhibit.](#)



Greek letter	Value
Ι	1
Π	5
Δ	10
ΔΙ	50
Η	100
ΗΙ	500
Χ	1000
χι	5000
Μ	10,000

World War 2

Day	Adults	Children	Total
Monday	400	250	?
Tuesday	256	354	?
Wednesday	279	?	433
Thursday	?	158	367
Friday	499	?	901



The table above shows the number of adults and children attending the World War 2 exhibit. Can you work out the missing number in each row?
Decide whether you will use a mental method, jottings or formal column methods to work out each of the missing numbers and explain why you chose the method you did.

[Go back to the entrance and choose your next exhibit.](#)

Birds of Prey

Bird of Prey	Wing span
Buzzard	1.4m
Falcon	120cm
Red-tailed hawk	1 metre & 45cm
Vulture	155cm
Booted eagle	1 metre and 18cm
Sharp shinned hawk	0.63m



a) Which bird of prey has the shortest wing span?

c) Which two birds would have a total wingspan of 2.95m?

b) Order the birds in ascending order of wing span.

d) Which two birds have a difference of 0.35m in their wing span?

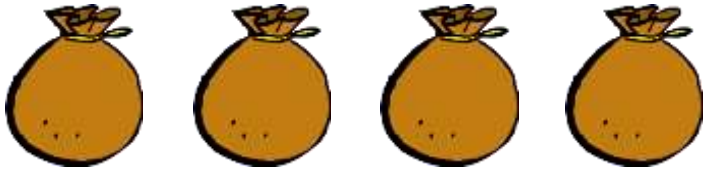
e) Can you turn the information in the table above into a bar chart?

[Go back to the entrance and choose your next exhibit.](#)

Money

The Mathematical Museum wants to make the Money exhibit more hands on and have created two problems for visitors to have a go at...

1. Robert and Abi divided fifteen 1p coins among four small bags.



They could then pay any sum of money from 1p to 15p, without opening any bag.

How many 1p coins did they put in each bag?

[Go back to the entrance and choose your next exhibit.](#)



2. Edward had twenty 50p coins. He put them in four piles.

- The first pile had four more coins than the second.
- The second pile had one less coin than the third.
- The fourth pile had twice as many coins as the second.

How many coins did Edward put in each pile?

Can you write a similar problem for someone else to answer?

Music

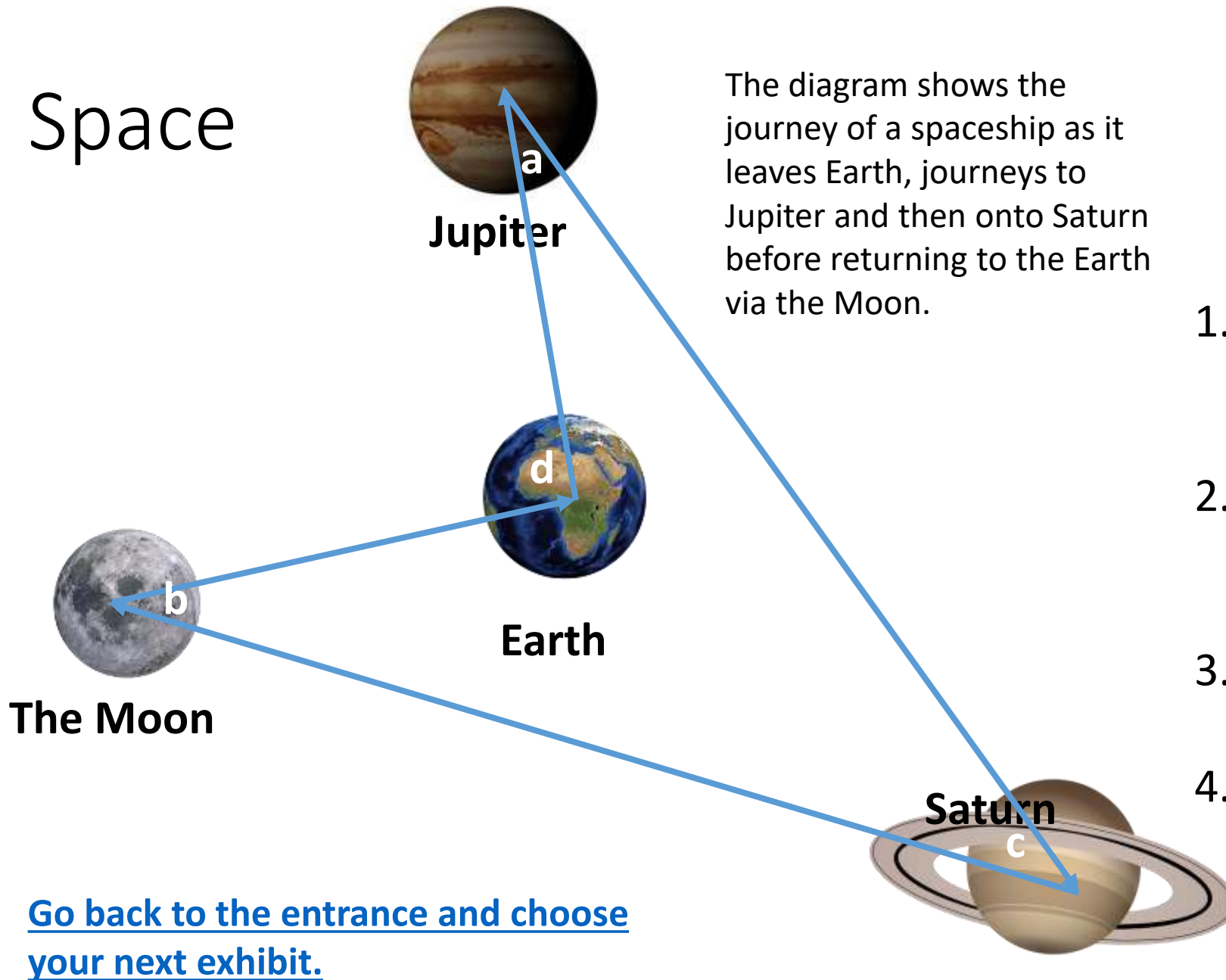
There are 96 visitors listening to a concert in the music exhibit.

- a) $\frac{2}{4}$ of the visitors are adults and $\frac{1}{4}$ of the adults are male. How many women are listening to the concert?
- b) There are 48 children listening to the concert. $\frac{2}{3}$ of them are boys. How many girls are listening to the concert?
- c) Having worked out the answers to a and b can you now work out how many boys and men are listening to the concert in total?



[Go back to the entrance and choose your next exhibit.](#)

Space



1. The blue route makes a quadrilateral – what is the name of the quadrilateral?
2. Classify the 4 angles a, b, c & d as either acute, obtuse or right angles.
3. Estimate the number of degrees in the internal angles a, b & c
4. John says... “I can see two parallel lines in the diagram.” Is he correct? Explain how you know.

Goodbye

Congratulations on answering all of the questions in the Mathematical Museum.

If, when someone checks your answers, you got some of them wrong you are more than welcome to come back and try again. The doors are always open.

Click on the picture to go back into the museum and correct any errors.

