

# Thursday 23rd April

Home Learning

# 9-9.30 Brain wake and shake with Joe Wicks



LO: I can find pairs of numbers which balance an equation with two unknowns.

**Formula (=) common  
difference**

**linear**

**pronumeral**

**sequence**

**Review**

**unknown**

**nth term**

**algebraic**

**expression**

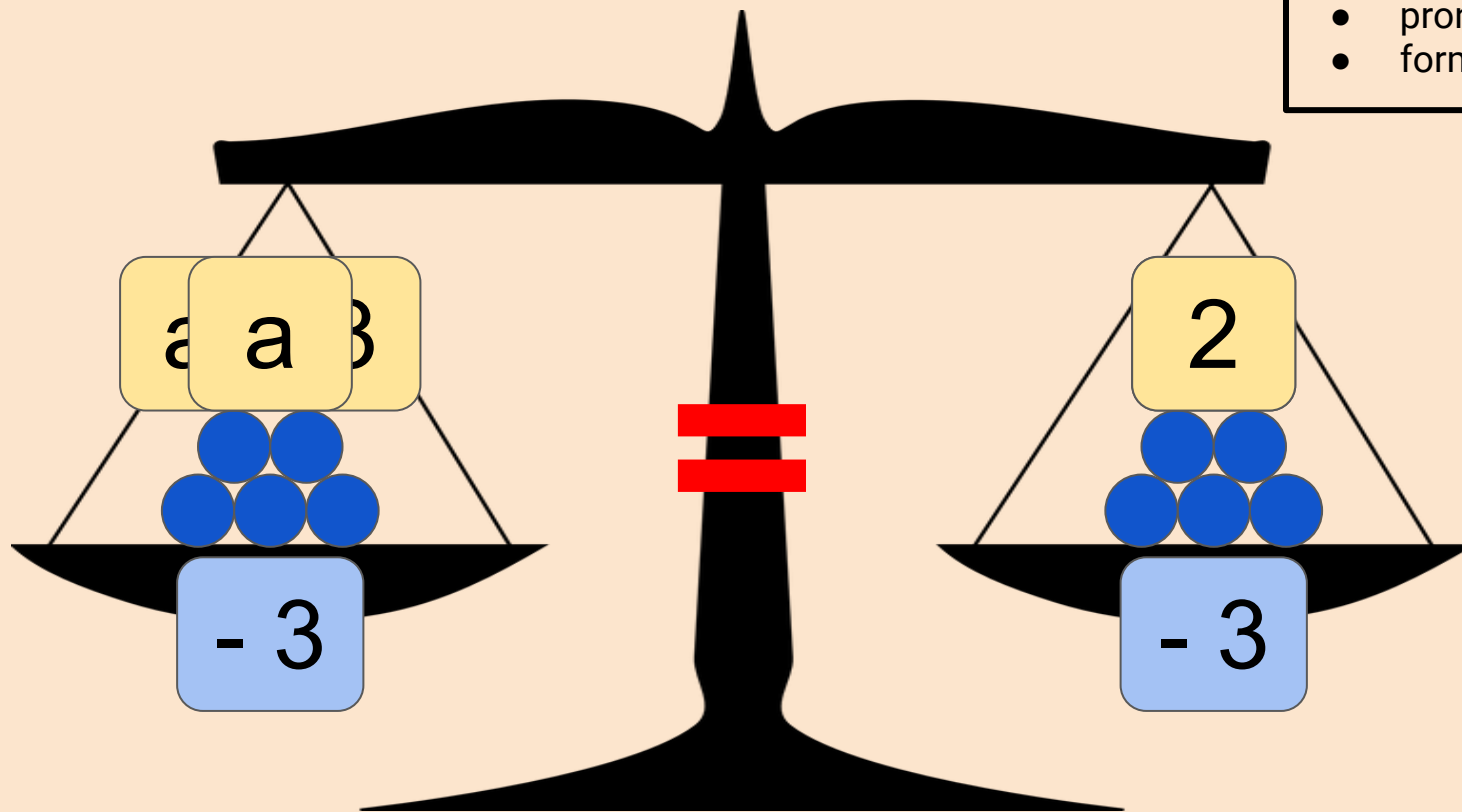
**identity**

How many unknowns are there?

$$a + 3 = 5$$

Vocabulary:

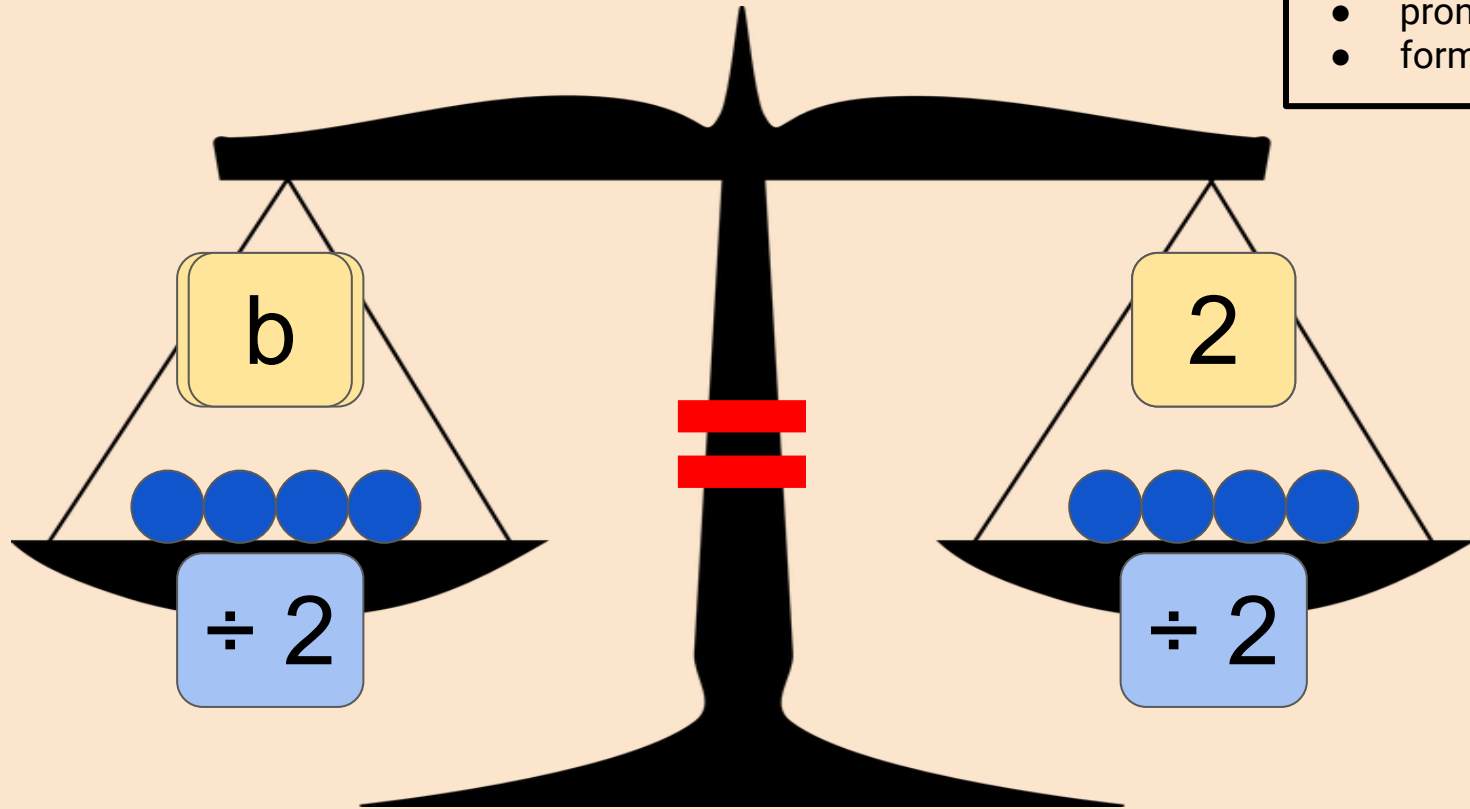
- balance
- unknown
- isolate
- pronumeral
- formula (=)



$$2b = 4$$

Vocabulary:

- balance
- unknown
- isolate
- pronumeral
- formula (=)



How is this **the same**?

How is this **different**?

*How many unknowns are there?*

$$a + b = 18$$

Vocabulary:

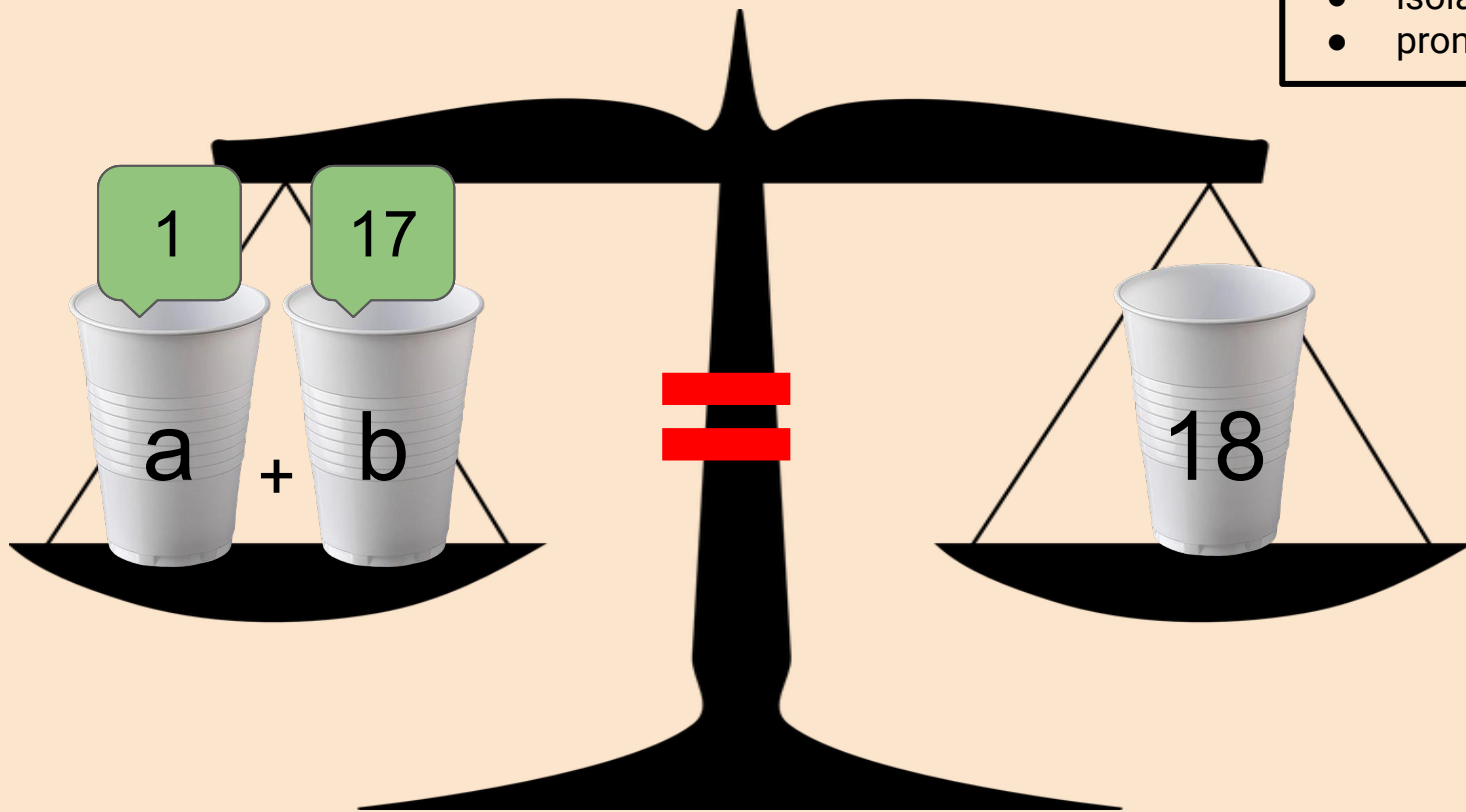
- balance
- unknown
- isolate
- pronumeral
- formula (=)

What might having two unknowns on the same side of the balance mean for their identities?

Strategy?

Vocabulary:

- balance
- unknown
- isolate
- pronumeral





Use your counters and cups to find all the possible **whole number** identities for  $m$  and  $k$ .

$$m + k = 5$$

$$m = 0 \quad \text{and} \quad k = 5$$

$$m = 1 \quad \text{and} \quad k = 4$$

$$m = 2 \quad \text{and} \quad k = 3$$

$$m = 3 \quad \text{and} \quad k = 2$$

$$m = 4 \quad \text{and} \quad k = 1$$

$$m = 5 \quad \text{and} \quad k = 0$$

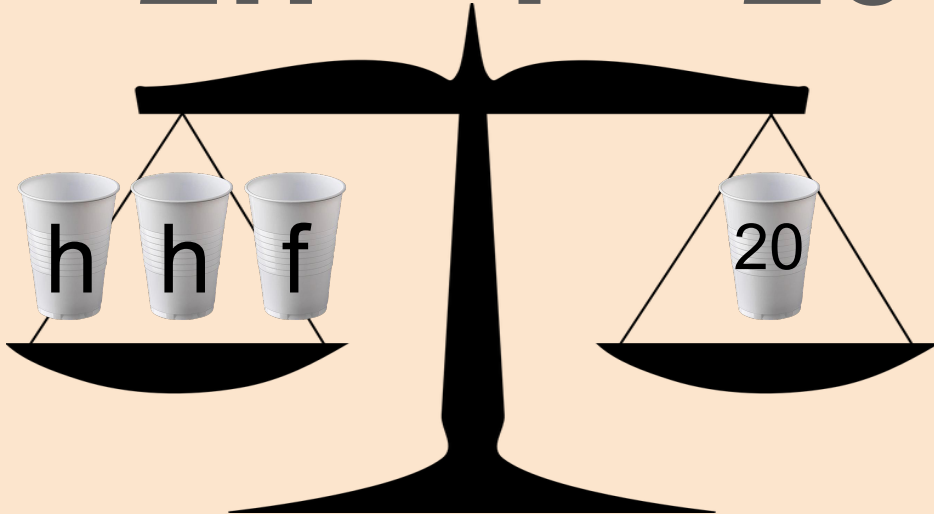
How might you represent this on a balance?

Is this the same?

How many *unknowns* do we need to find the *identities* of?

How might you represent this as a bar model?

$$2h + f = 20$$



h	h	f
20		

h	h	f
20		

Can you strategically find the identities of h and f?

$$2h + f = 20$$

- Vocabulary:
- balance
  - unknown
  - isolate
  - pronumeral
  - formula (=)

If <b>h</b> is equal to...	then <b>f</b> must be...
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>


If h is equal to \_\_, I multiply \_\_ by 2, then add \_\_ to equal 20.

# Generalisation

Pronumerals in equations with two unknowns can have more than one identity.

The two unknowns must work together to balance the equation.

# Know

Do the work on these slides and then hand in.

1. Draw a bar model to represent the equation below.

$$X + Y = 25$$

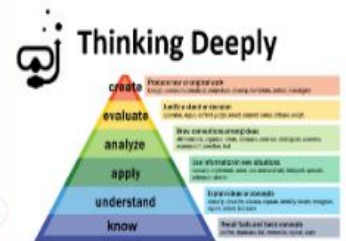
X and Y are whole numbers. Strategically list all the possible identities for X and Y.

2. Using the equation  $a + 3b = 18$ , fill in the missing information below.

a	b
	6
6	
	2
15	

1) Will we have the same value for both pronumerals x and y? Is this possible?

2) Create a maths story using  $a + 3b = 18$ . Why does the word 'equal' need to be in your story?



# Understand

Do the work on these slides and then hand in.

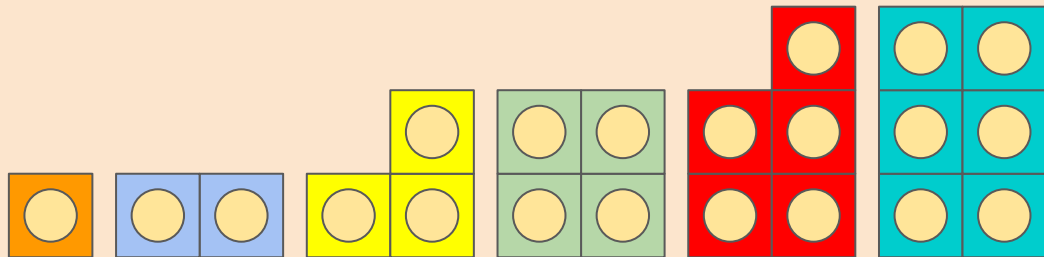
Toby is finding a pair of numbers to fit the equation below:

$$2a + b = 15$$

Both pronumerals represent whole numbers.

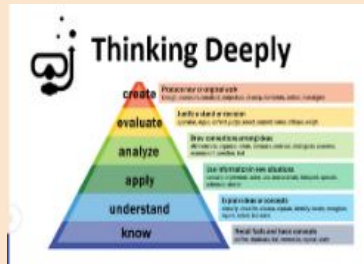
Toby says, "One of the numbers must be odd and one must be even."

Do you agree with Toby? Show your reasoning.



1) Tell a maths story for the formula. Does the pronumeral need to match the first letter of the word in your story?

2) Draw bar models to show the different possible values of the pronumerals and prove that the equation is balanced.



# Apply

Do the work on these slides and then hand in.

Mendhi has three bags of fruit. Two contain equal amounts of oranges and the other contains apples. In total, he has 40 pieces of fruit.

Write a formula to express the number of apples and oranges.

What are the possible amounts of oranges and apples?

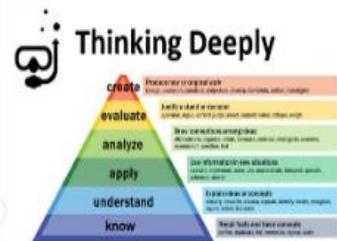


## Vocabulary:

- balance
- unknown
- isolate
- pronumeral
- formula (=)
- commutative

*Explain using accurate vocabulary:*

Does swapping the order of parts the formula change the calculation?



# Reflection

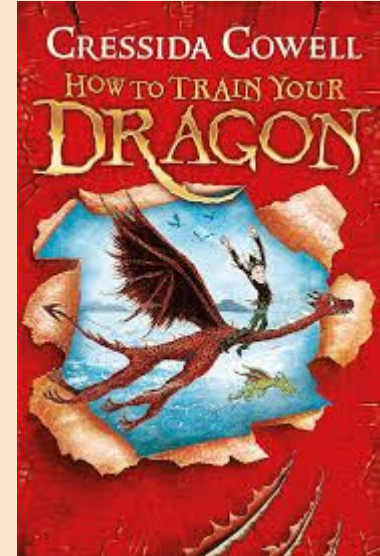
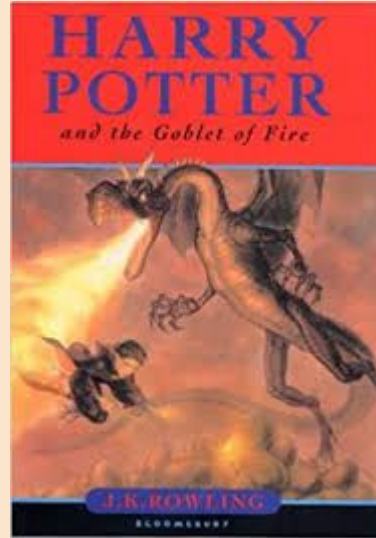
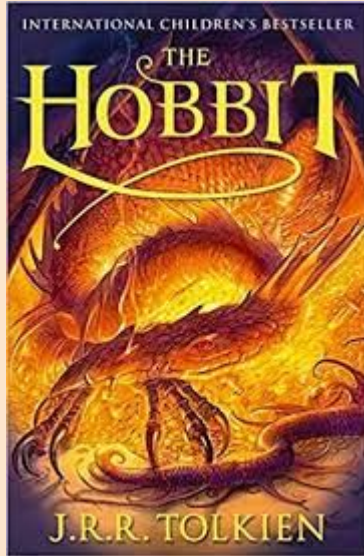
How are equations with one unknown different from those with two unknowns?



# English

Thursday 23rd April

Can you think of any stories which feature dragons?



# Task: Read the extract, watch the clip or both!

A famous story which features a dragon is *The Hobbit* by J.R.R. Tolkien. Watch/read Bilbo's famous encounter with the dragon (Smaug).

You can watch the whole clip or from 4 minutes in.



"Old Smaug is weary and asleep," he thought. "He can't, see me and he won't hear me. Cheer up Bilbo!" He had forgotten or had never heard about dragons' sense of smell.

It is also an awkward fact that they keep half an eye open watching while they sleep, if they are suspicious. Smaug certainly looked fast asleep, almost dead and dark, with scarcely a snore more than a whiff of unseen steam, when Bilbo peeped once more from the entrance. He was just about to step out on to the floor when he caught a sudden thin and piercing ray of red from under the drooping lid. of Smaug's left eye. He was only pretending to sleep! He was watching the tunnel entrance! Hurriedly Bilbo stepped back and blessed the luck of his ring. Then Smaug spoke.

"Well, thief! I smell you and I feel your air. I hear your breath. Come along! Help yourself again, there is plenty and to spare!"

But Bilbo was not quite so unlearned in dragon-lore as all that, and if Smaug hoped to get him to come nearer so easily he was disappointed. "No thank you, O Smaug the Tremendous!" he replied. "I did not come for presents. I only wished to have a look at you and see if you were truly as great as tales say. I did not believe them."

"Do you now?" said the dragon somewhat flattered, even though he did not believe a word of it.

"Truly songs and tales fall utterly short of the reality, O Smaug the Chiefest and Greatest of Calamities," replied Bilbo. "You have nice manners for a thief and a liar," said the dragon. "You seem familiar with my name, but I don't seem to remember smelling you before. Who are you and where do you come from, may I ask?"

"You may indeed! I come from under the hill, and under hills and over the hills my paths led. And through the air, I am he that walks unseen."

"So I can well believe," said Smaug, "but that is hardly our usual name."

"I am the clue-finder, the web-cutter, the stinging fly. I was chosen for the lucky number."

"Lovely titles!" sneered the dragon. "But lucky numbers don't always come off."

"I am he that buries his friends alive and drowns them and draws them alive again from the water. I came from the end of a bag, but no bag went over me."

"These don't sound so creditable," scoffed Smaug.

"I am the friend of bears and the guest of eagles. I am Ringwinner and Luckwearer; and I am Barrel-rider," went on Bilbo beginning to be pleased with his riddling.

"That's better!" said Smaug. "But don't let your imagination run away with you!"

This of course is the way to talk to dragons, if you don't want to reveal your proper name (which is wise), and don't want to infuriate them by a flat refusal (which is also very wise). No dragon can resist the fascination of riddling talk and of wasting time trying to understand it. There was a lot here which Smaug did not understand at all (though I expect you do, since you know all about Bilbo's adventures to which he was referring), but he thought he understood enough, and he chuckled in his wicked inside.

"I thought so last night," he smiled to himself. "Lake-men, some nasty scheme of those miserable tub-trading Lake-men, or I'm a lizard. I haven't been down that way for an age and an age; but I will soon alter that!"

"Very well, O Barrel-rider!" he said aloud. "Maybe Barrel was your pony's name; and maybe not, though it was fat enough. You may walk unseen, but you did not walk all the way. Let me tell you I ate six ponies last night and I shall catch and eat all the others before long. In return for the excellent meal I will give you one piece of advice for your good: don't have more to do with dwarves than you can help!"

"Dwarves!" said Bilbo in pretended surprise.

"Don't talk to me!" said Smaug. "I know the smell (and taste) of dwarf-no one better. Don't tell me that I can eat a dwarf-ridden pony and not know it! You'll come to a bad end, if you go with such friends. Thief Barrel-rider. I don't mind if you go back and tell them so from me." But he did not tell Bilbo that there was one smell he could not make out at all, hobbit-smell; it was quite outside his experience and puzzled him mightily. "I suppose you got a fair price for that cup last night?" he went on.

"Come now, did you? Nothing at all! Well, that's just like them. And I suppose they are skulking outside, and your job is to do all the dangerous work and get what you can when I'm not looking-for them? And you will get a fair share? Don't you believe it! If you get off alive, you will be lucky."

Bilbo was now beginning to feel really uncomfortable. Whenever Smaug's roving eye, seeking for him in the shadows, flashed across him, he trembled, and an unaccountable desire seized hold of him to rush out and reveal himself and tell all the truth to Smaug. In fact he was in grievous danger of coming under the dragon-spell. But plucking up courage he spoke again.

"You don't know everything, O Smaug the Mighty," said he. "Not gold alone brought us hither."

"Ha! Ha! You admit the 'us'," laughed Smaug. "Why not say 'us fourteen' and be done with it, Mr. Lucky Number? I am pleased to hear that you had other business in these parts besides my gold. In that case you may, perhaps, not altogether waste your time.

"I don't know if it has occurred to you that, even if you could steal the gold bit by bit—a matter of a hundred years or so — you could not get it very far? Not much use on the mountain-side? Not much use in the forest? Bless me! Had you never thought of the catch? A fourteenth share, I suppose, Or something like it, those were the terms, eh? But what about delivery? What about cartage? What about armed guards and tolls?" And Smaug laughed aloud. He had a wicked and a wily heart, and he knew his guesses were not far out, though he suspected that the Lake-men were at the back of the plans, and that most of the plunder was meant to stop there in the town by the shore that in his young days had been called Esgaroth.

You will hardly believe it, but poor Bilbo was really very taken aback. So far all his thoughts and energies had been concentrated on getting to the Mountain and finding the entrance. He had never bothered to wonder how the treasure was to be removed, certainly never how any part of it that might fall to his share was to be brought back all the way to Bag-End Under-Hill.

**Story events****Smaug's point of view**

Smaug is intrigued and flattered by Bilbo's 'riddling talk'	He thinks Bilbo has an over-inflated opinion of himself when he talks about being a 'Barrel-rider', 'Ringwinner' and 'Luckwearer'
Smaug boasts to gain power over Bilbo	He laughs at Bilbo's boasting, bragging that he had eaten six ponies
Smaug tries to gain the upper hand over Bilbo by giving him advice	He questions whether Bilbo will receive a fair share of the treasure
Smaug worries Bilbo by talking about how difficult transporting the treasure will be	He reminds Bilbo about armed guards and dangerous trolls
Smaug mocks Bilbo when Bilbo mentions his enemies	He laughs at the suggestion
Smaug demonstrates his power when Bilbo talks of 'Revenge'	He boasts of his strength and tells of his feats of valour to terrify Bilbo



The original story is very much written with Bilbo being the main protagonist (character).

Imagine is the perspective in the story changed. What would it be like to hear that part of the story again from Smaug's (the dragon's) perspective?



# Example

That rude creature thinks that I don't know what he's doing! But I do. He's trying to steal my gold; he won't get far. He doesn't even know I can smell him! This is the SECOND time he has come to take my loot! Outrageous! Absurd! Who does he think he is?

What a fool! He's trying to engage me in a conversation. Now he's trying to flatter me. He's clearly underestimated my intelligence! He should've thought twice before he interrupted my slumber!

How foolish, trying to impress me with his riddles shall not help him. Once he's heard of my pleasure of eating six ponies last night, he's bound to go running! And if he thinks he can sneak in here while my back's turned and steal from me, then he's got another thing coming!

# LO: To change perspective in a scene from a book.

- Based on what you have read/watched this morning, rewrite the scene from Smaug's perspective.
- Imagine what is going through Smaug's head. What is he thinking? Is he suspicious? Is he entertained by Bilbo?



# Geography

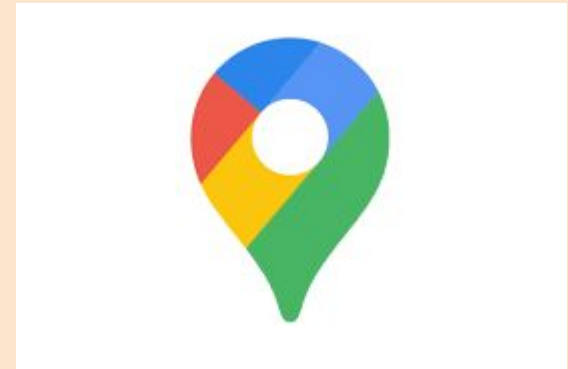
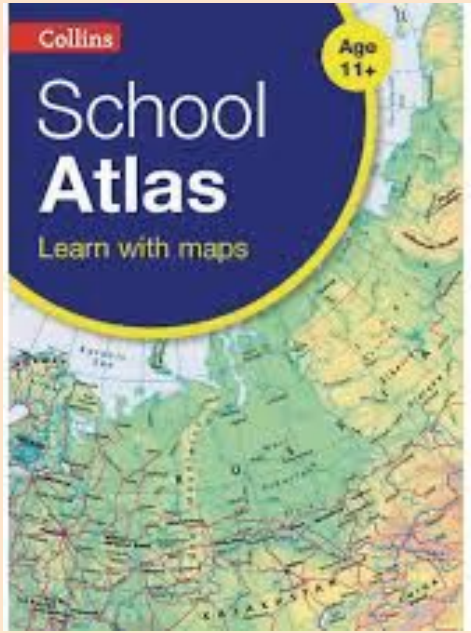
LO: To identify lines of longitude and latitude.

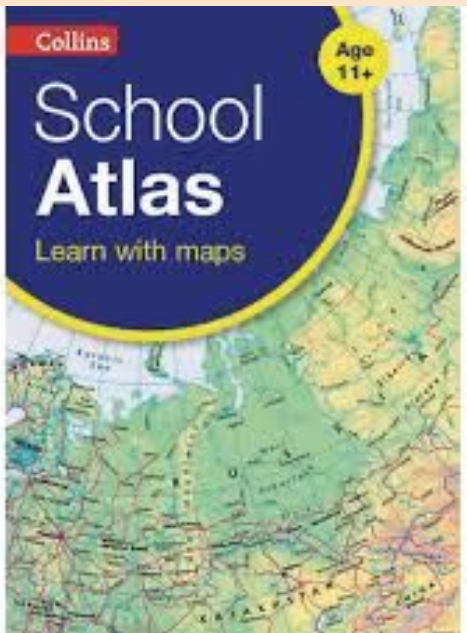
# What shape is Earth?

A sphere!



Can you name a resource I would use to identify a location?



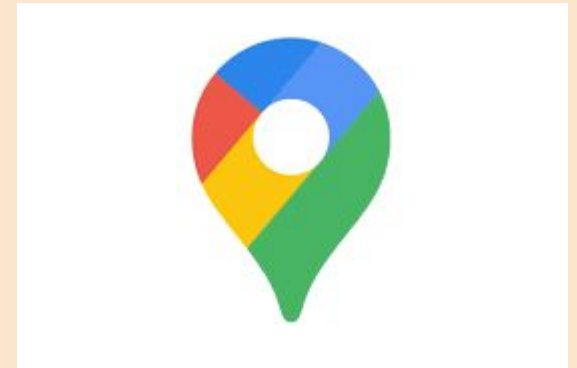


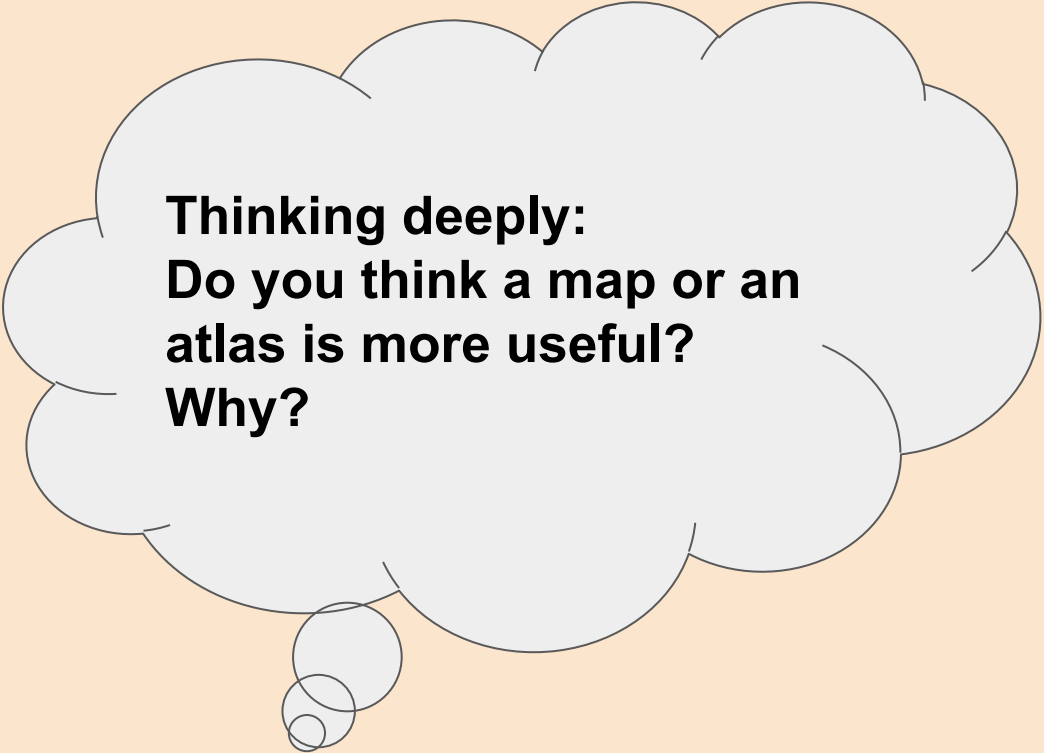
An **atlas** is a book of maps, these include maps about physical features (e.g. land height) and human features (e.g. cities, population). I would use this to find the location of a country.



A **map** represents an area of land in more detail. It is a more 'zoomed in' perspective of somewhere. E.g. London

Google maps is an example of a digital mapping service.





**Thinking deeply:  
Do you think a map or an  
atlas is more useful?  
Why?**



# Have you heard of lines of longitude/latitude?

Do you know what they are?

Do you know what their purpose is?



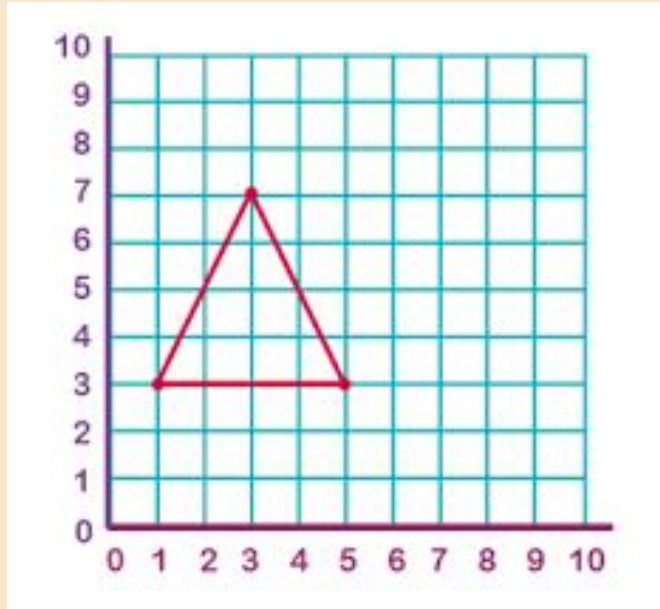
If I want to talk about a very specific location, I cannot use just a map or atlas alone.

I need to use other resources to help 'pinpoint' a location.

This is where longitude and latitude helps.

They help to locate places very specifically.

In maths, you use coordinates on a grid to help to plot points.

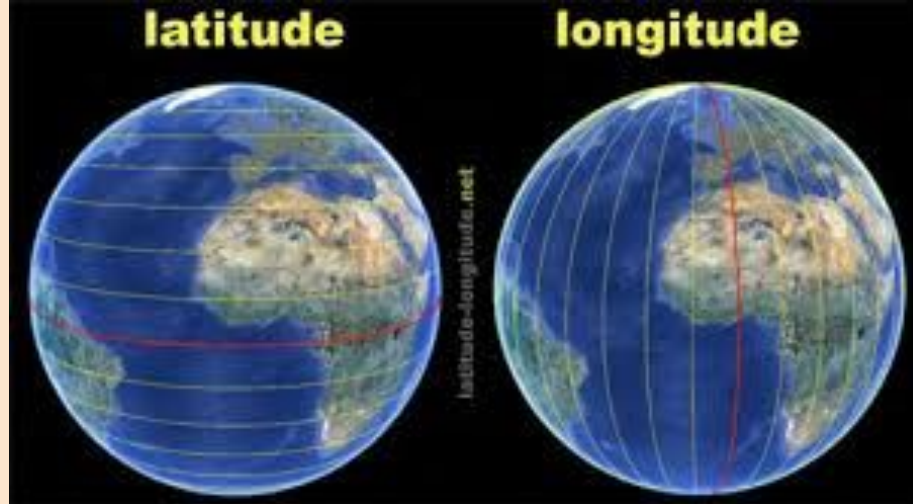


# In Geography we use a similar idea.

Invisible 'grid' lines go from North to South and East to West across the globe.

The North-South lines are lines of **LATITUDE**.

The East-West lines are lines of **LONGITUDE**.



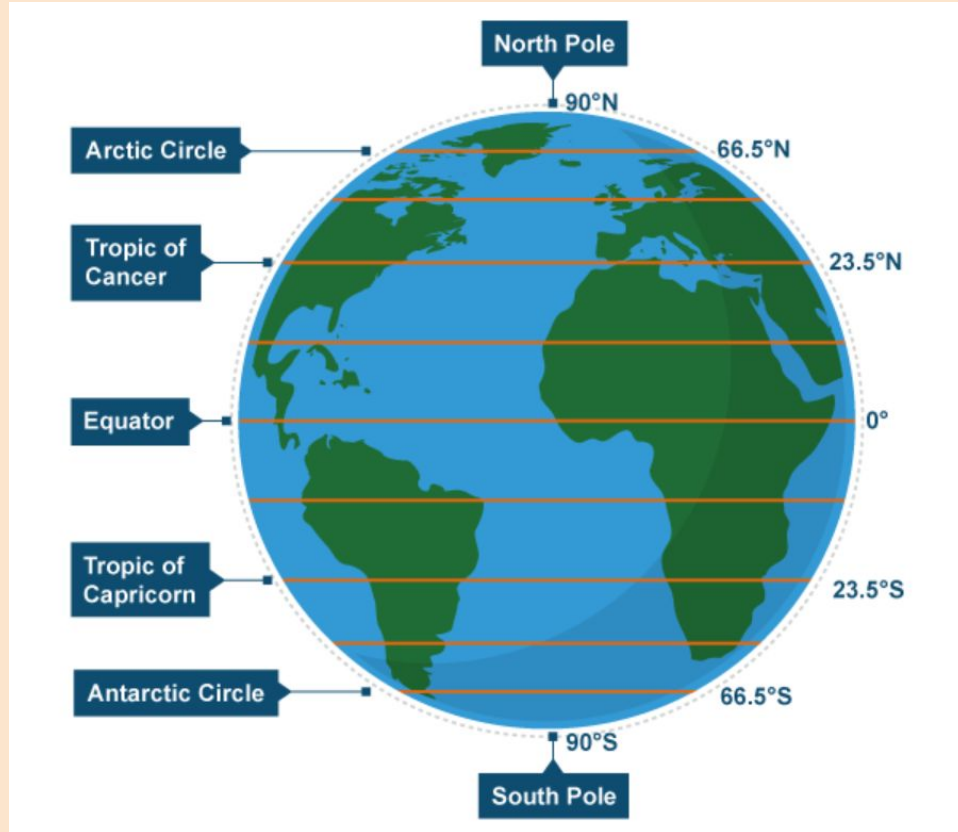
Watch this clip to find out more.

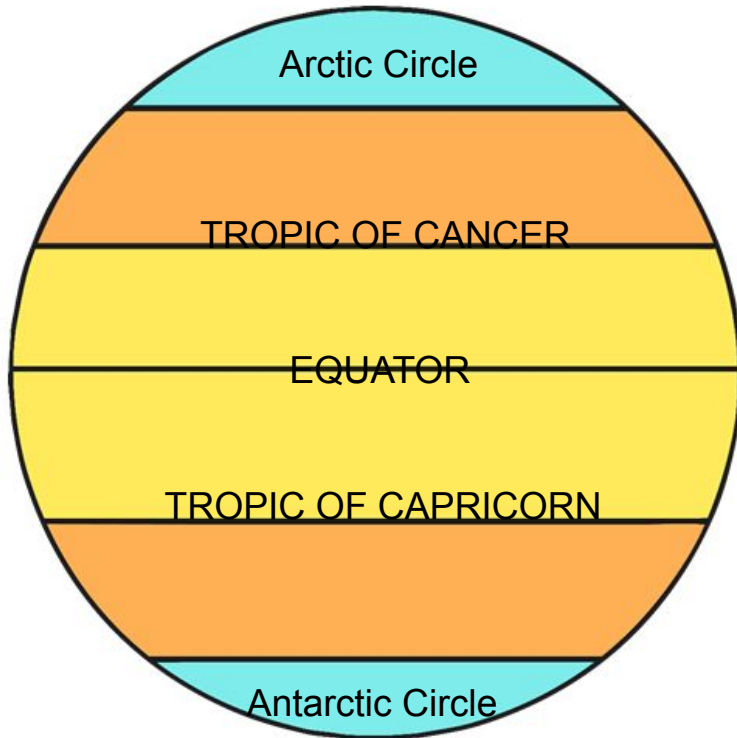


CLICK HERE:

<https://www.bbc.co.uk/bitesize/topics/zvsfr82/articles/zd4rmfr>

# Key lines of latitude, have you heard of these?

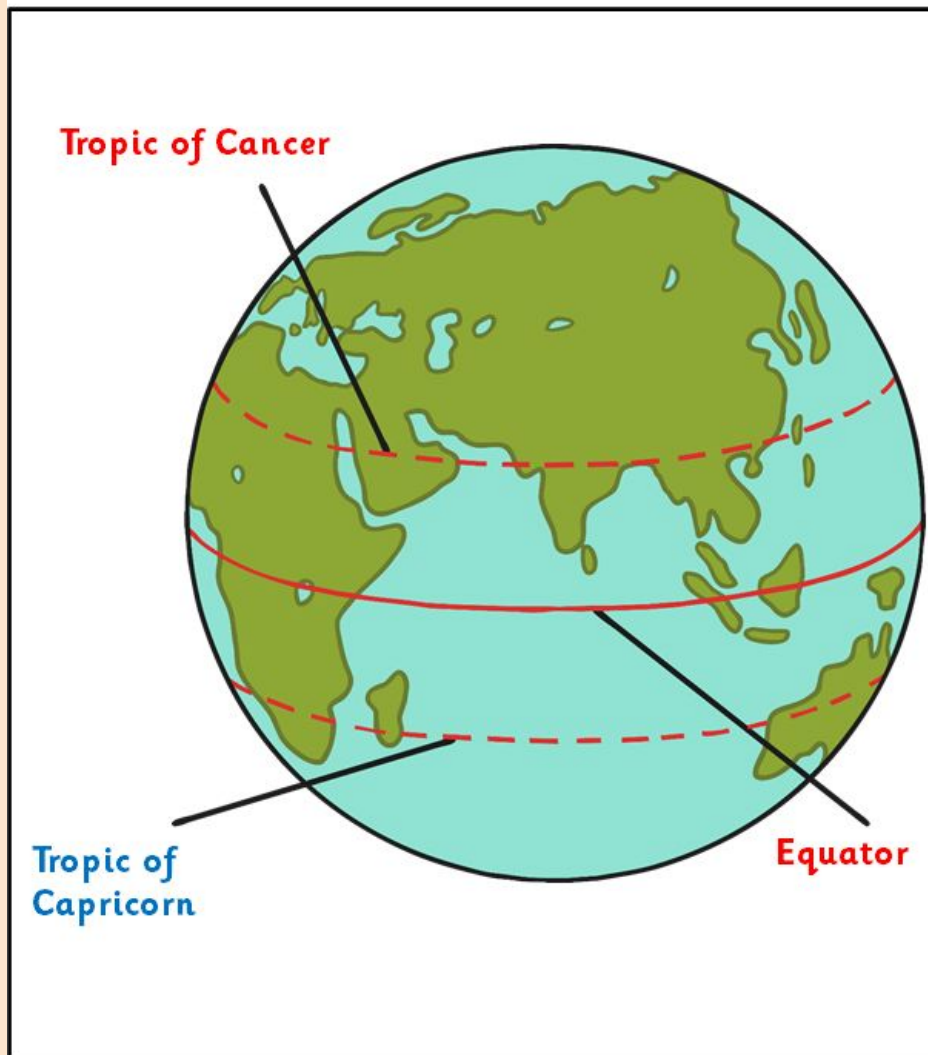




## Other Important Lines of Latitude

The **Arctic Circle** lies at **66.5 degrees north** whilst the **Antarctic Circle** lies at **66.5 degrees south**.

The areas in blue and orange are those which have 4 distinct seasons.



## Other Important Lines of Latitude

The **Tropic of Cancer** lies at **23.5 degrees north** and the **Tropic of Capricorn** lies at **23.5 degrees south** of the **Equator**.

The area of the Earth which lies between both of these lines is called **the tropics**.



# All lines of longitude are calculated from Greenwich Meridian in London.

You can visit the 'line' at the Greenwich Observatory.



If you want to read a bit more:

<https://www.rmg.co.uk/discover/explore/prime-meridian-greenwich>

# Why is it in Greenwich?

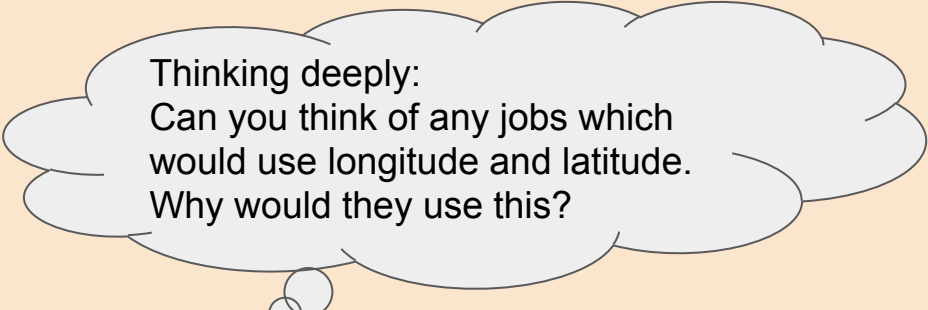
There were two main reasons for the choice. The first was the fact that the USA had already chosen Greenwich as the basis for its own national time zone system. The second was that in the late 19th century, 72% of the world's commerce depended on sea-charts which used Greenwich as the Prime Meridian.

The decision was based on the argument that by naming Greenwich as Longitude  $0^{\circ}$ , it would be advantageous to the largest number of people. Therefore the Prime Meridian at Greenwich became the centre of world time.

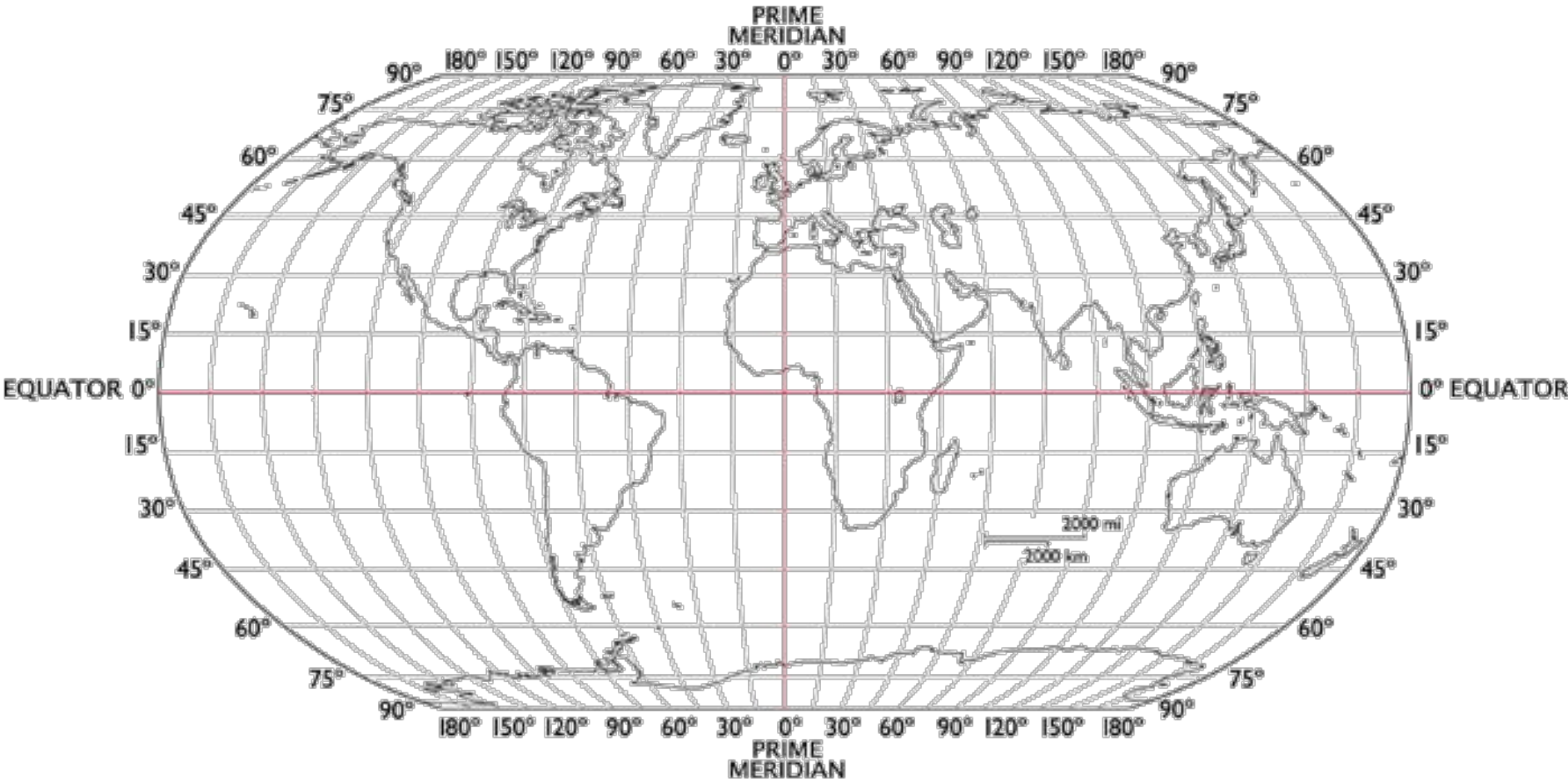
# LO: To locate lines of longitude and latitude.

**IMPORTANT: Use the next slide to help you. If you are really stuck with drawing the world then you can label the next slide with the following.**

1. Draw a world map to the best of your ability.
2. Label the following: 7 continents, 5 world oceans.
3. USING A RULER. Draw the key lines of latitude: Equator, Tropic of Cancer, Tropic of Capricorn, Arctic Circle, Antarctic Circle.
4. Draw lines of longitude, starting with the Prime Meridian.



Thinking deeply:  
Can you think of any jobs which  
would use longitude and latitude.  
Why would they use this?



# Reflection

What have you learnt today?

How will this help you in the future?

Do you think lines of longitude and latitude are an efficient method?