

Home Learning Pack

Year 6

Tuesday 9.11.21

Maths – Fractions

Compare and order (numerator)

Here is a link with videos to support you with this topic.

[Autumn Week 9 - Number: Fractions | White Rose Maths](#)

Start where you feel comfortable in the math's activities and choose your level of challenge.

1) What is the lowest common multiple of 3 and 12?

2) What is the lowest common multiple of 4 and 9?

3) Write $>$, $<$ or $=$ to compare the fractions

$$\frac{5}{6} \bigcirc \frac{2}{3}$$

4) Is $\frac{7}{12}$ greater than a half?

1) What is the lowest common multiple of 3 and 12? 12

Multiples of 3: 3, 6, 9, 12

2) What is the lowest common multiple of 4 and 9?

Multiples of 9: 9, 18, 27, 36 36

3) Write $>$, $<$ or $=$ to compare the fractions

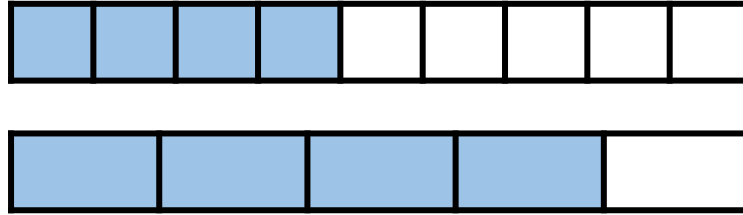
$$\frac{5}{6} > \frac{2}{3} \xrightarrow{\times 2} \frac{4}{6}$$

4) Is $\frac{7}{12}$ greater than a half? Yes

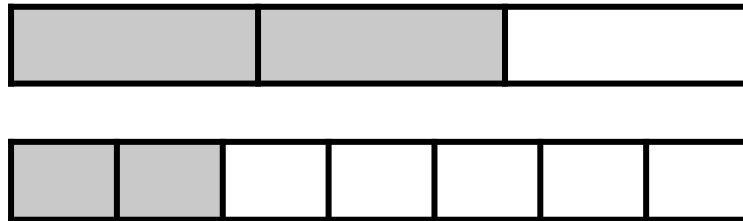
$$12 \div 2 = 6$$

Write $>$, $<$ or $=$ to compare the fractions

$$\frac{4}{9} < \frac{4}{5}$$



$$\frac{2}{3} > \frac{2}{7}$$



What's the same and what's different?

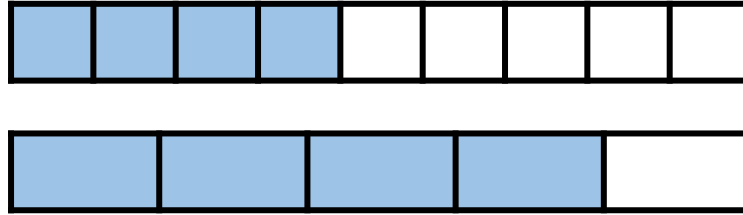
What do you notice?

Have a think

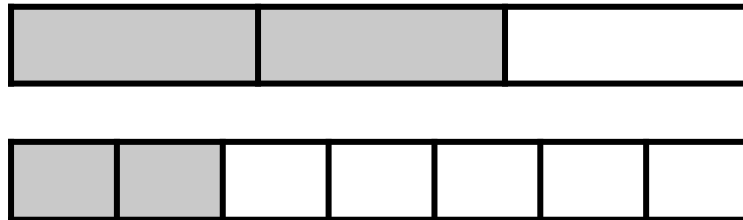


Write $>$, $<$ or $=$ to compare the fractions

$$\frac{4}{9} < \frac{4}{5}$$



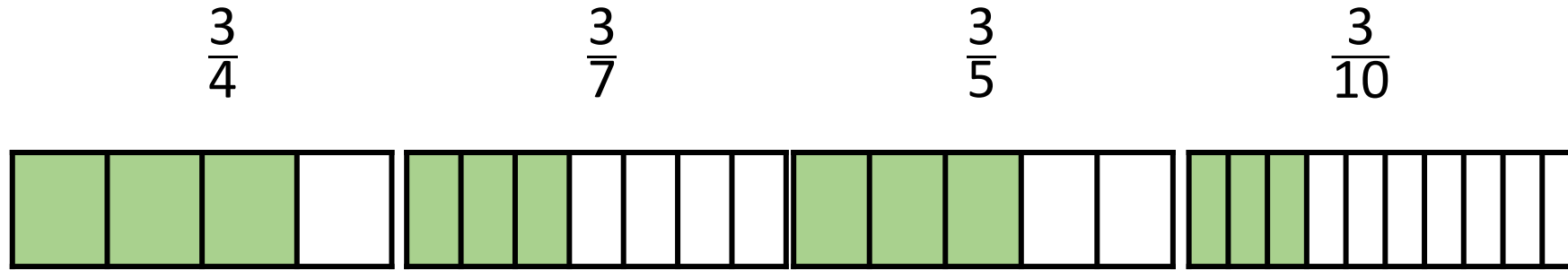
$$\frac{2}{3} > \frac{2}{7}$$



What's the same and what's different?


What do you notice?

When the numerators are the same, the _____ the denominator, the _____ the fraction.



Put the following fractions in order from greatest to smallest.

When the numerators are the same, the smaller the denominator, the greater the fraction.

Have a think 

Have a go at questions 1 – 4 on
the worksheet

Write $>$, $<$ or $=$ to compare the fractions

$$\frac{3}{7} \text{ } \circlearrowleft \text{ } \frac{6}{11}$$

Multiples of 7: 7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84

Multiples of 11: 11, 22, 33, 44, 55, 66, 77, 88, 99, 110

$$\begin{array}{ccc} \frac{3}{7} & \circlearrowleft & \frac{6}{11} \\ \times 11 \curvearrowright & & \curvearrowleft \times 7 \\ \frac{33}{77} & & \frac{42}{77} \end{array}$$

Write $>$, $<$ or $=$ to compare the fractions

$$\frac{3}{7} \circ \frac{6}{11}$$

When the numerators are the same, the greater the denominator, the smaller the fraction.


$$\begin{array}{ccc} \frac{3}{7} \circ \frac{6}{11} & & \frac{3}{7} \circ \frac{6}{11} \\ \times 11 \quad \curvearrowright & \times 7 & \times 2 \quad \curvearrowright \\ \frac{33}{77} & \frac{42}{77} & \frac{6}{14} \end{array}$$

Write $>$, $<$ or $=$ to compare the fractions

$$\begin{array}{l} \times 4 \quad \frac{3}{10} \quad \circled{<} \quad \frac{12}{37} \\ \quad \quad \frac{12}{40} \end{array}$$

$$\begin{array}{l} \times 3 \quad \frac{4}{9} \quad \circled{>} \quad \frac{10}{27} \\ \quad \quad \frac{12}{27} \end{array}$$

$$2\frac{3}{8} \quad \circ \quad 2\frac{1}{5}$$

Have a think 

Write $>$, $<$ or $=$ to compare the fractions

$$2\frac{3}{8} \bigcirc 2\frac{1}{5}$$

$$\frac{3}{8} \bigcirc \frac{1}{5}$$

$\frac{3}{15}$ $\times 3$

Have a go at the rest of the
questions on the worksheet

Compare and order (numerator)

1 Use strips of paper to represent the fractions and complete the sentences.

a) $\frac{1}{3}$, $\frac{1}{5}$ and $\frac{1}{6}$

The smallest fraction is The greatest fraction is

b) $\frac{2}{3}$, $\frac{2}{5}$ and $\frac{2}{6}$

The smallest fraction is The greatest fraction is

c) $\frac{3}{3}$, $\frac{3}{5}$ and $\frac{3}{6}$

The smallest fraction is The greatest fraction is

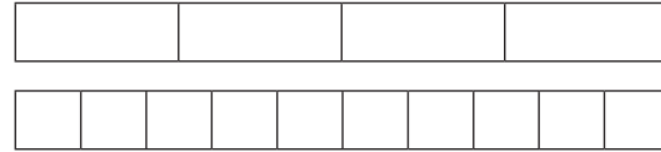
d) What do you notice about your answers?

e) Complete the sentence.

When the _____ are the same, the _____
the denominator, the _____ the fraction.



2 a) Colour the bar models to compare $\frac{3}{4}$ and $\frac{6}{10}$



b) Write <, > or = to complete the statement.



3 Which is the greatest fraction? Circle your answer.

$\frac{3}{100}$ $\frac{3}{1000}$ $\frac{3}{500}$

How do you know?

4 Write < or > to compare the fractions.

a) $\frac{1}{7}$ ○ $\frac{1}{9}$

d) $\frac{11}{12}$ ○ $\frac{11}{11}$

b) $\frac{4}{5}$ ○ $\frac{4}{7}$

e) $\frac{19}{5}$ ○ $\frac{19}{6}$

c) $\frac{3}{13}$ ○ $\frac{3}{8}$

f) $\frac{107}{53}$ ○ $\frac{107}{40}$



- 5 Explain how can you compare $\frac{2}{3}$ and $\frac{4}{5}$ using the same numerator rule.

Complete the sentence to compare $\frac{2}{3}$ and $\frac{4}{5}$

is greater than

- 6 Scott scored 20 out of 24 in a game.

Dani scored 5 out of 7

Compare their scores.

Explain who you think did best and why.



- 7 Write $<$, $>$ or $=$ to complete each statement.

a) $\frac{2}{5} \bigcirc 1\frac{1}{3}$ b) $\frac{2}{5} \bigcirc \frac{6}{11}$ c) $3\frac{2}{3} \bigcirc \frac{11}{4}$

$1\frac{2}{5} \bigcirc \frac{1}{3}$ $1\frac{2}{5} \bigcirc 3\frac{6}{11}$ $11\frac{2}{9} \bigcirc \frac{101}{3}$

$1\frac{2}{5} \bigcirc 1\frac{1}{3}$ $3\frac{2}{5} \bigcirc 3\frac{6}{11}$ $11\frac{1}{9} \bigcirc \frac{100}{8}$

$\frac{12}{5} \bigcirc \frac{12}{3}$ $\frac{12}{5} \bigcirc \frac{36}{11}$ $27\frac{3}{4} \bigcirc \frac{111}{3}$

- 8 Explain how you know when it is best to compare the numerators or denominators of two fractions.



Name: _____

Week 9 Session 2
2020-21
Full Programme
4 a week

Times Tables
Rock Stars

6,7
Times Tables

Licensed to East Ayton Primary School

1	$84 \div 7 =$ _____	21	$7 \div 7 =$ _____	41	$7 \div 7 =$ _____
2	$21 \div 7 =$ _____	22	$60 \div 6 =$ _____	42	$12 \div 6 =$ _____
3	$77 \div 7 =$ _____	23	$18 \div 6 =$ _____	43	$77 \div 7 =$ _____
4	$28 \div 7 =$ _____	24	$21 \div 7 =$ _____	44	$35 \div 7 =$ _____
5	$48 \div 6 =$ _____	25	$60 \div 6 =$ _____	45	$21 \div 7 =$ _____
6	$63 \div 7 =$ _____	26	$36 \div 6 =$ _____	46	$30 \div 6 =$ _____
7	$12 \div 6 =$ _____	27	$72 \div 6 =$ _____	47	$30 \div 6 =$ _____
8	$12 \div 6 =$ _____	28	$66 \div 6 =$ _____	48	$24 \div 6 =$ _____
9	$28 \div 7 =$ _____	29	$7 \div 7 =$ _____	49	$24 \div 6 =$ _____
10	$84 \div 7 =$ _____	30	$28 \div 7 =$ _____	50	$70 \div 7 =$ _____
11	$35 \div 7 =$ _____	31	$14 \div 7 =$ _____	51	$42 \div 7 =$ _____
12	$42 \div 6 =$ _____	32	$70 \div 7 =$ _____	52	$49 \div 7 =$ _____
13	$66 \div 6 =$ _____	33	$49 \div 7 =$ _____	53	$42 \div 6 =$ _____
14	$12 \div 6 =$ _____	34	$42 \div 7 =$ _____	54	$84 \div 7 =$ _____
15	$84 \div 7 =$ _____	35	$60 \div 6 =$ _____	55	$21 \div 7 =$ _____
16	$56 \div 7 =$ _____	36	$28 \div 7 =$ _____	56	$70 \div 7 =$ _____
17	$49 \div 7 =$ _____	37	$18 \div 6 =$ _____	57	$12 \div 6 =$ _____
18	$66 \div 6 =$ _____	38	$56 \div 7 =$ _____	58	$18 \div 6 =$ _____
19	$35 \div 7 =$ _____	39	$49 \div 7 =$ _____	59	$54 \div 6 =$ _____
20	$18 \div 6 =$ _____	40	$21 \div 7 =$ _____	60	$28 \div 7 =$ _____

Time taken

_____ : _____

⌚ 3 minute time limit ⌚

Score

60

What's your rock status?

WANNABE

< 18 correct in 3 mins

GARAGE BAND

18-19 correct in 3 mins

BUSKER

20-21 correct in 3 mins

GIGGER

22-24 correct in 3 mins

UNSIGNED ACT

25-29 correct in 3 mins

BREAKTHROUGH ARTIST

30-35 correct in 3 mins

SUPPORT ACT

36-44 correct in 3 mins

HEADLINER

45-59 correct in 3 mins

ROCK STAR

All correct in \leq 3mins

ROCK LEGEND

All correct in \leq 2min

ROCK HERO

All correct in \leq 1 min

TIMES TABLES
ROCK STARS

Guided Reading

Read the extract of chapter one, 'Boy'.

4) Clarify what the phrase, 'Perfect had been alive with the news...' means.

_____ (1 mark)

5) What do you think the Doctor will help with?

_____ (1 mark)

6) Find a word in the text which is similar in meaning to a risky manoeuvre.

_____ (1 mark)

7) Why do you think the girl could be frightened?

_____ (1 mark)

Grammar focus

8) Find an example of an adverbial phrase in the text. _____ (1 mark)

9) Find an adverb in the text. _____ (1 mark)

10) Find an example of parenthesis in the text.
_____ (1 mark)

BOY

He waited. Hidden by dusk and the garden bushes against the bark of an oak tree. Watching. The spot gave him full view of the house and gravel driveway.

Worrying about being seen felt weird.

Perfect had been alive with the news of Doctor Eugene Brown's arrival for weeks. The doctor would help. Boy knew it, more than he'd ever known anything. He just had to get to the man before he changed.

As night closed in, George and Edward Archer strode by and mounted the stone steps to the house. The place lit up and Boy watched them move around inside.

Suddenly light darted across the grass by his feet and Boy pulled back further into the shadows. A silver car crunched along the driveway towards him and stopped. His heartbeat quickened. The engine purred to silence.

The large door of the house opened and the Archer twins stood silhouetted in the light from the hallway. As Boy watched, statue still, a shiver danced down his spine.

A man got out of the driver's seat; a woman from the passenger's side.

He hadn't imagined the doctor would have company. The woman looked nervous, staring across the roof of the car at the man. He smiled awkwardly at her then walked towards the twins, greeting them with a handshake. The woman followed and the four of them disappeared inside.

Boy ventured a little out of the shadows, stopping short as the doctor called, "Violet. Come in from the car, pet, it's chilly out there."

The back door of the car opened a little, then quickly slammed shut as a breeze rustled the leaves above him.

Boy held his breath and pulled back into hiding. The car door swung open again, and this time a small, frightened girl dashed out across the gravel towards the house.

Boy couldn't help laughing. She sped up, jumped the steps and rushed in through the front door, banging it shut behind her and plunging the yard back into darkness.

The car door hung open and Boy pushed it shut as he edged closer to the kitchen window. He just caught sight of the girl sliding into the room.

He sat down by the steps to wait.

English

Diary entry Part 2 - A new threat has appeared (example below).

Describe the devastation Grendel's mother wrought during the night. Describe Beowulf's feelings as he sets off to fight her.

460AD

Terrible misfortune has befallen Heorot. Hrothgar's most trusted friend – Ashhere, has been snatched from his bed by Grendel's mother. I had heard rumours of another evil, but nobody thought her a threat.

I am worried that this latest attack will prove too much for Hrothgar, he feels Ashhere's loss more keenly than any other. All hope, relief and joy have now been twisted to grief and fear. I feel like I have provided the people of Denmark a false hope – I must travel to find this sea-hag wherever she resides and find vengeance. I will not stop searching for her and I will not rest until she is vanquished and broken before me.

I set out in the morrow to find her loathsome lair. I have heard that deep in the moors there is an underground channel that passes through vaulting caverns. Here it is said, the ogres live.

Geography

Exploring Scandinavia

Learning Objective:
To explore the weather and climate of Scandinavia.



Can you remember where in the world Scandinavia is?

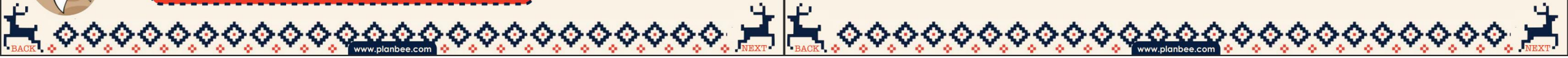
Which three
countries
form
Scandinavia?
What are
their capital
cities called?





Did you remember correctly?

What would you expect the climate in Scandinavia to be like, based on where in the world is it?



BACK

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NEXT

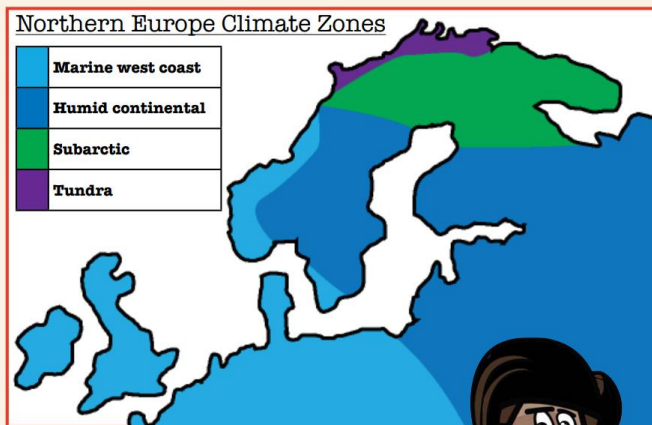
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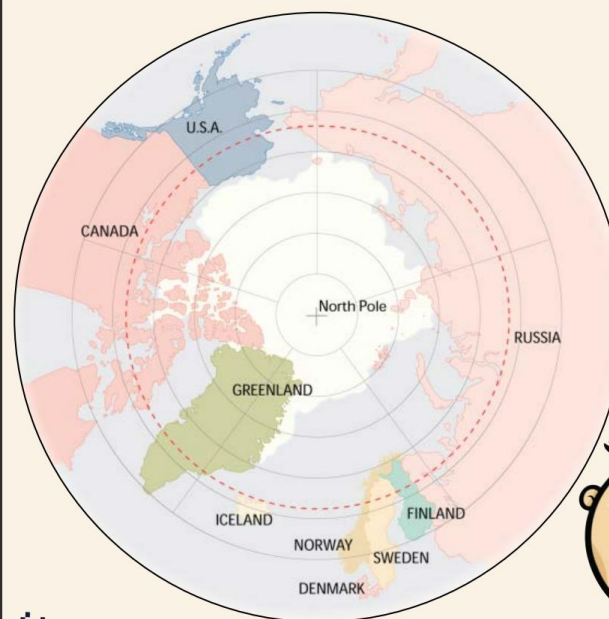
NEXT



This map shows some of the main climate zones of northern Europe.



Do you know how to describe any of these climates?



The red dotted line on this diagram shows where the Arctic Circle is. The Arctic Circle is an imaginary line of latitude that goes around the whole Earth. In the centre of the Arctic Circle is the North Pole.

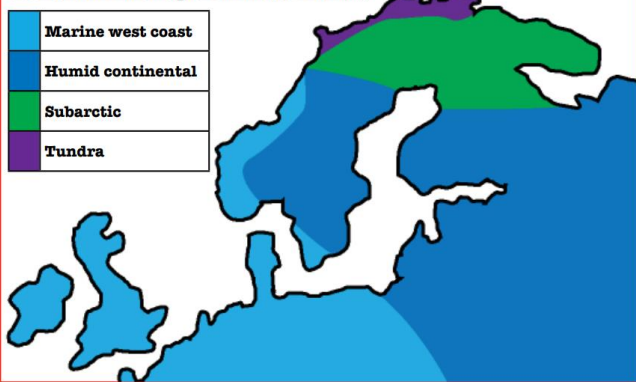
Anything above the Arctic Circle is very cold and much of the land is constantly covered in ice.



Which parts of Scandinavia are within the Arctic Circle?



Northern Europe Climate Zones



The most northerly parts of Sweden and Norway have a **tundra** climate. The tundra climate is one of the harshest in the world. These regions are very cold and dry and there is a permanent layer of frozen subsoil called **permafrost**. The tundra is also treeless as there is not enough sunlight during much of the year for trees to grow.

Northern parts of Sweden and Norway have a **subarctic** climate. This means that they have very long, cold winters and short, cool summers. The rest of Scandinavia has less harsh conditions and a climate similar to other European countries although winters are often colder.

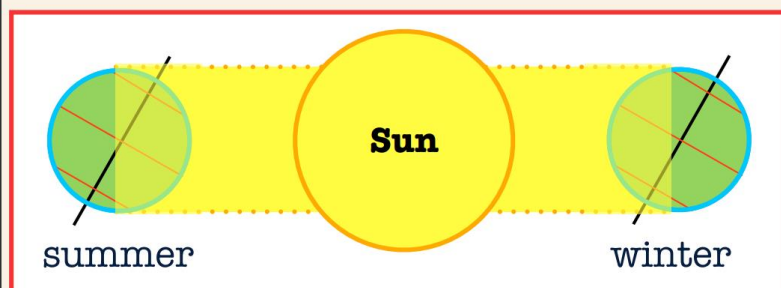


This photo shows a tundra area in northern Norway. What can you see?



As well as having very cold winters, they also have very short days during the winter and very long days during the summer. In the parts of Scandinavia that extend into the Arctic Circle, during some parts of winter the sun will never rise, giving total darkness twenty-four hours a day. In parts of summer, the sun never sets which means it is constantly daylight.

Why do you think this is?



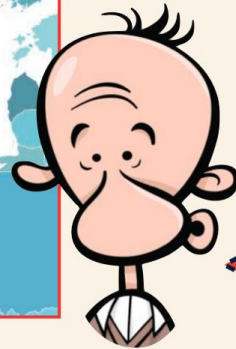
Hours of daylight change during the year because of the tilt of the Earth's axis and because the position of the Earth changes as it rotates around the sun during the year.



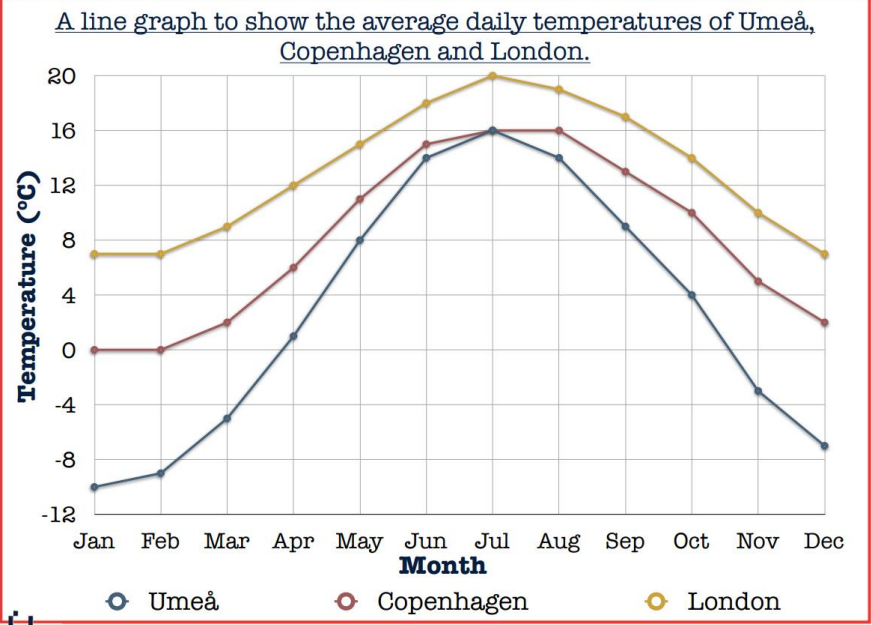
Can you use this diagram to help you explain why some parts of Scandinavia have no light during winter and no darkness during summer?



The graph on the next slides shows the average daily temperatures for London (UK), Copenhagen (Denmark) and Umeå (Sweden).



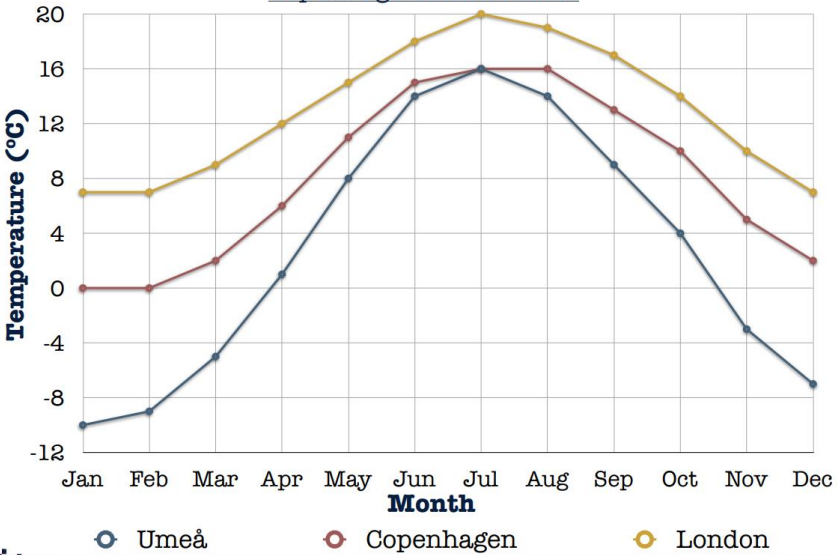
Which of these cities would you expect to have the lowest average temperatures?



Which city has the lowest average temperatures? Was your guess correct?



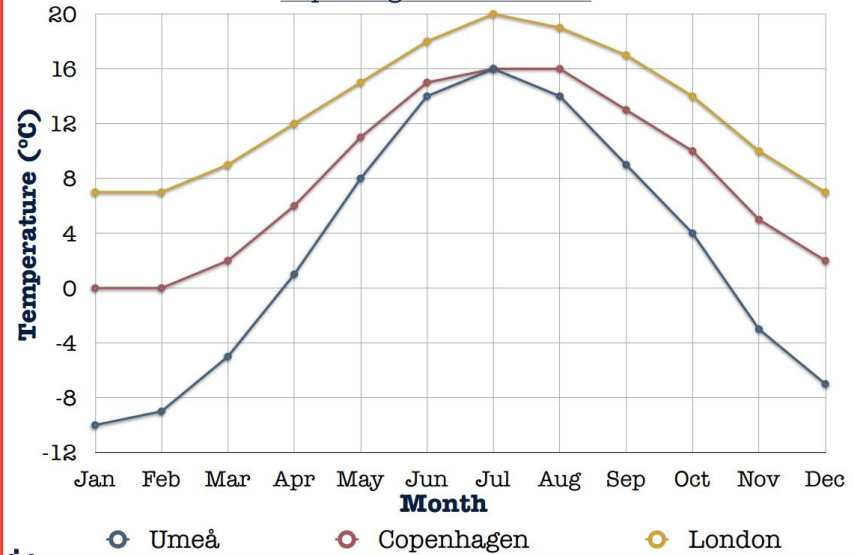
A line graph to show the average daily temperatures of Umeå, Copenhagen and London.



How much warmer is London than Umeå in January?



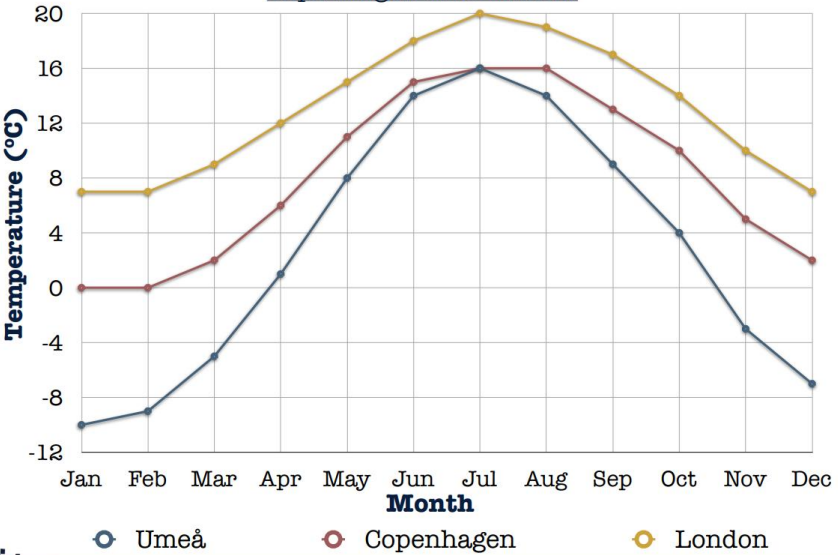
A line graph to show the average daily temperatures of Umeå, Copenhagen and London.



London is 17°C warmer than Umeå in January!



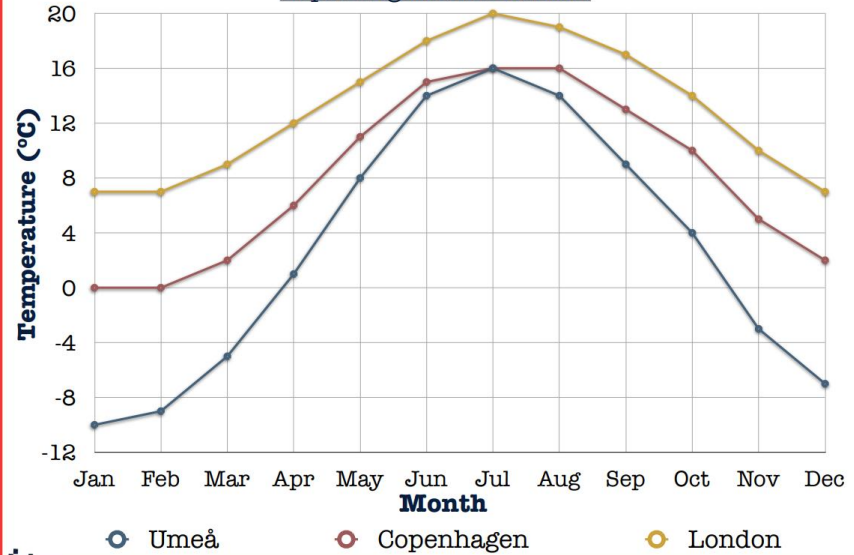
A line graph to show the average daily temperatures of Umeå, Copenhagen and London.



The average July temperature in Umeå is 16°C. During which months in London is the temperature approximately this warm?



A line graph to show the average daily temperatures of Umeå, Copenhagen and London.



The temperature in London in May and September is approximately the same as the temperature in Umeå in July.



There are other factors besides the average temperature we can look at when we are exploring what the weather and climate of a place is like, such as the amount of precipitation (rain, snow or sleet) a place gets or how windy a place is.

Today you are going to be using some graphs and charts to help you find out more about the weather and climate in Scandinavia. Who's ready?!



Plenary:



How might the climate in Scandinavia affect people's everyday lives? What might they do differently to people in the UK?

Activity

Use the Average Climate Sheet (next slide) which has charts showing the average temperatures and precipitation in various Scandinavian cities. Use the data to create the line graphs on activity sheet 2A. Use a different colour for each city, marking in the key on the graph.

When finished, use this information to answer the questions on activity sheet 2B.



These tables show the average monthly temperatures and precipitation for four Scandinavian cities. Use the data to complete the line graphs on worksheet 2A, then use your graphs to answer the questions on worksheet 2B.

Oslo, Norway

Average temperature (°C)											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
-4	-4	0	5	11	15	16	15	11	6	1	-3

Average precipitation (mm)											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
49	36	47	41	53	65	81	89	90	84	73	55

Kiruna, Sweden

Average temperature (°C)											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
-17	-17	-13	-5	3	10	12	10	5	-6	-8	-16

Average precipitation (mm)											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
95	87	72	64	48	59	77	82	102	131	108	106

Copenhagen, Denmark

Average temperature (°C)											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	2	6	11	15	16	16	13	10	5	2

Average precipitation (mm)											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
46	30	39	42	52	68	64	60	56	61	56	55

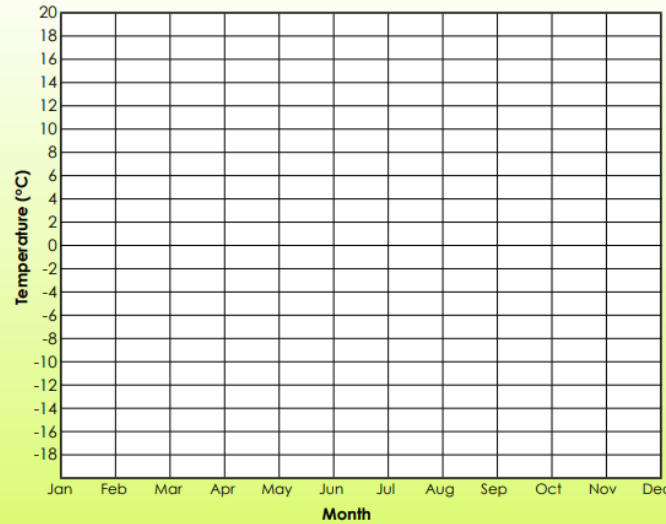
Vadsø, Norway

Average temperature (°C)											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
-6	-6	-4	-1	4	7	10	10	7	2	-2	-5

Average precipitation (mm)											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
38	29	30	24	28	44	60	59	55	40	40	37

Name: _____ Date: _____

A line graph to show the average temperatures of four Scandinavian cities.

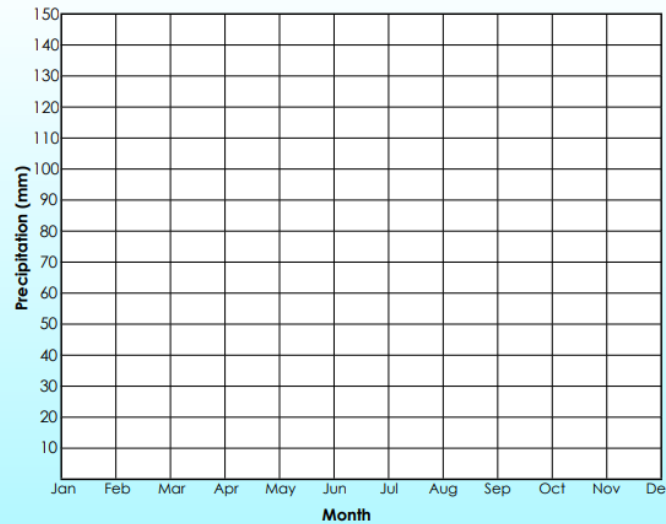


Line key	
_____	Oslo, Norway
_____	Kiruna, Sweden
_____	Copenhagen, Denmark
_____	Vadsø, Norway

Use the data to complete this line graph. Use a different coloured line for each city.



A line graph to show the average precipitation of four Scandinavian cities.



Line key	
_____	Oslo, Norway
_____	Kiruna, Sweden
_____	Copenhagen, Denmark
_____	Vadsø, Norway

Now do the same for this graph about precipitation!



Look carefully at your graphs and use them to answer these questions...



Which of these cities has the coldest climate?

Which of these cities has the warmest climate?

Which of these cities has the wettest climate?

Which of these cities has the driest climate?

Which of these cities has the coolest and wettest summers?

Which of these cities would you expect to have snow for more than 6 months of the year?

What is the difference in temperature between Oslo and Vadsø in June?

What is the difference in temperature between Copenhagen and Kiruna in October?

How much more precipitation does Kiruna get than Copenhagen in March?

How much more precipitation does Oslo get than Vadsø in November?

How would you describe the climate in Oslo?

How would you describe the climate in Kiruna?

How would you describe the difference in climate between Copenhagen and Vadsø?

Which two of these four climates would you say are most similar? Why?

Which two of these four climates would you say are most different? Why?

Computing

Let's learn

In this session, you will classify objects before creating, training and refining a decision tree classifier.

Let's discuss

1. What does it mean to be intelligent?
2. Can computers be intelligent?

Let's learn

Artificial intelligence (AI) is when computers do things that need intelligence when humans do them, for example learning.

Computer scientists have found a way of programming computers so that they can learn.

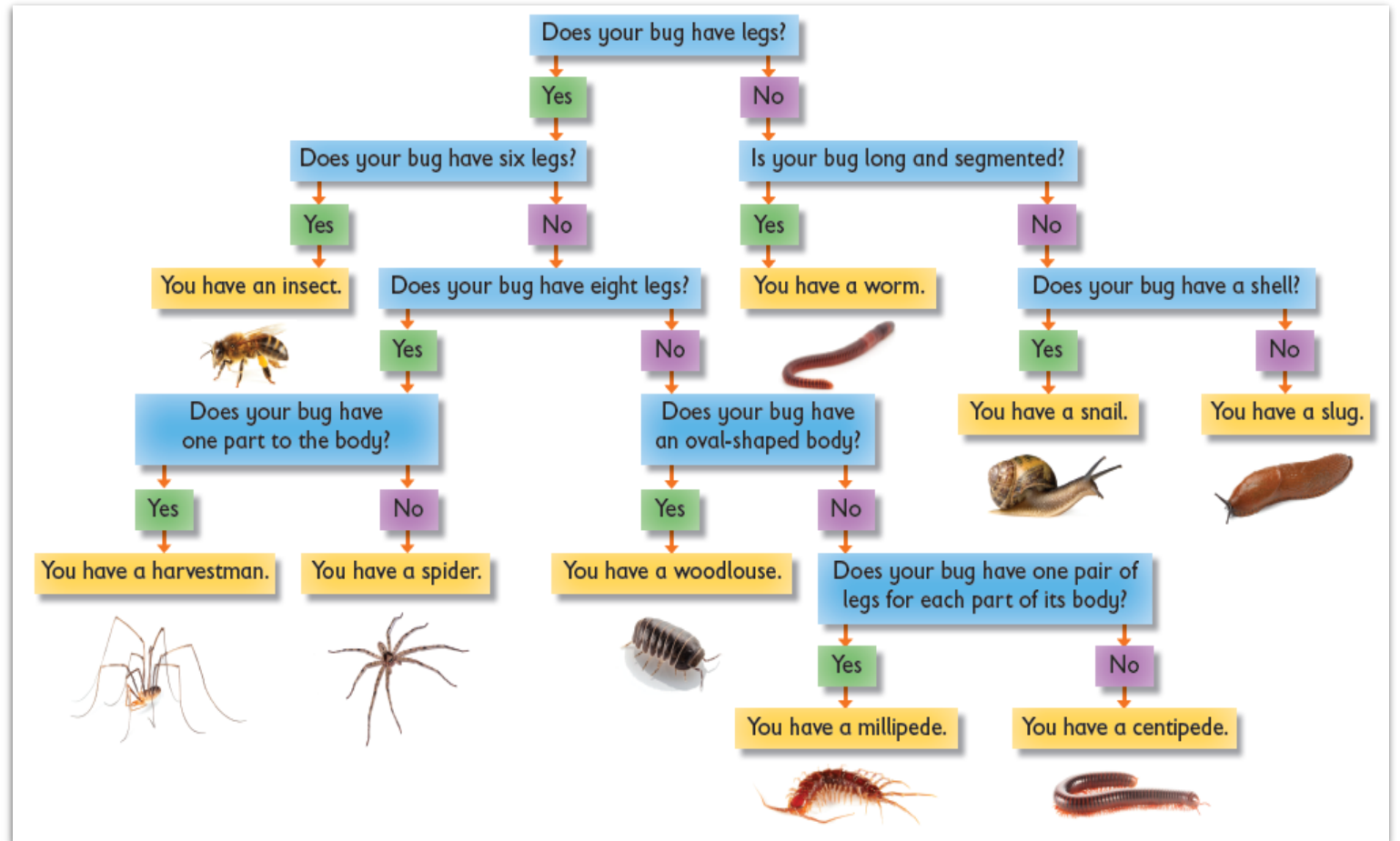
A self-driving car is an example of a use of AI



Classifier: machine learning model which assigns an input to one of a number of distinct classes

Let's discuss

1. Have you learned about classification before?
 2. What does it mean?
- You may have used a series of questions to identify minibeasts. This was an example of a classification key or **decision tree**.



Decision tree: branching sequence of questions used to determine to which class an item belongs

Let's learn

Take *five* things out of your pencil case. You are going to create a series of questions which could be used to work out what something is from the set.

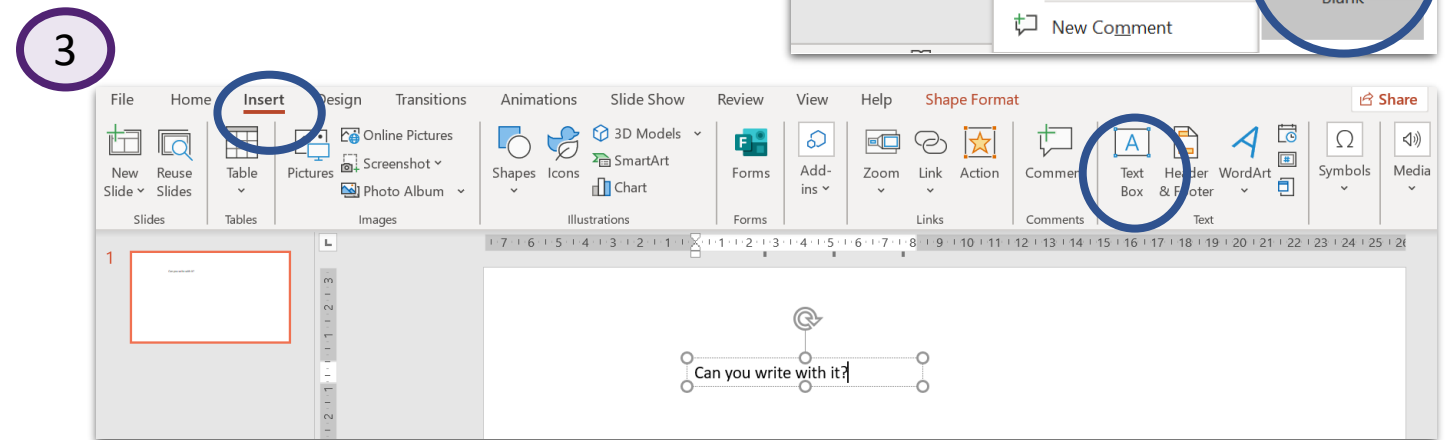
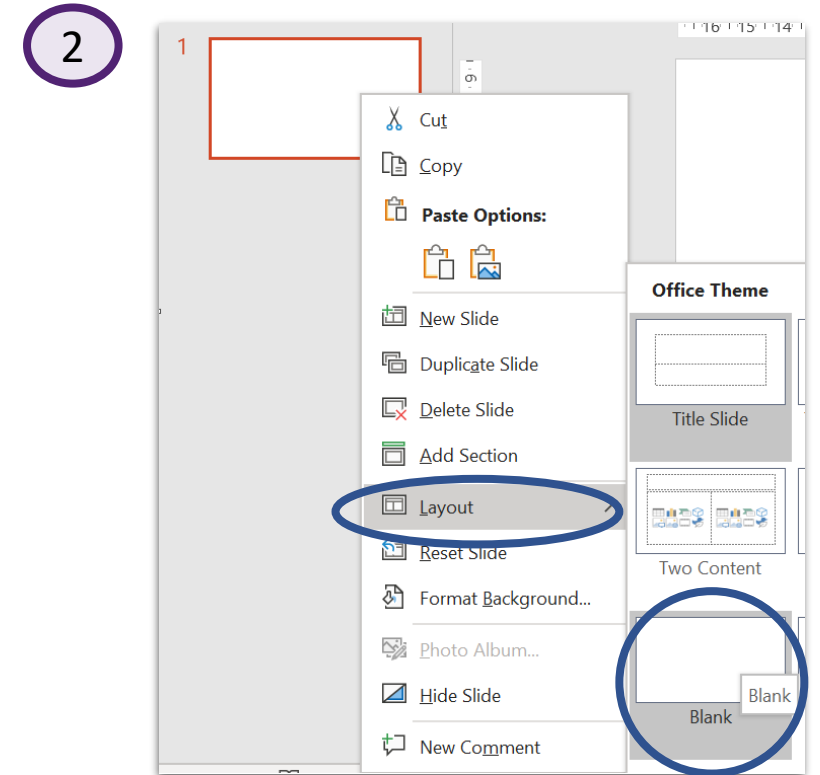
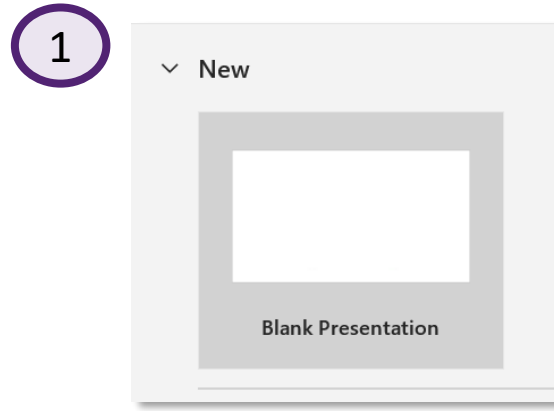
Your questions should be based on the appearance of the object, so that a robot could use the questions and vision sensors to work out the name of the object.



- ✓ Can you write with it?
- ✓ Does it contain ink?
- ✓ Does it contain metal?
- ✓ Is it long and flat?

Step 1: Open PowerPoint and create the questions

1. Open PowerPoint and choose 'Blank Presentation' to open a new slide.
2. Choose a blank layout by right clicking on the slide and selecting 'Layout' then 'Blank'.
3. Create a text box by tapping 'Insert' and 'Text Box'. Type the first question into the text box.



Write the rest of your questions in text boxes. Add text boxes for the five items of stationery you have chosen.

Can you write with it?

Does it contain ink?

Does it contain metal?

Is it long and flat?

Pen

Pencil

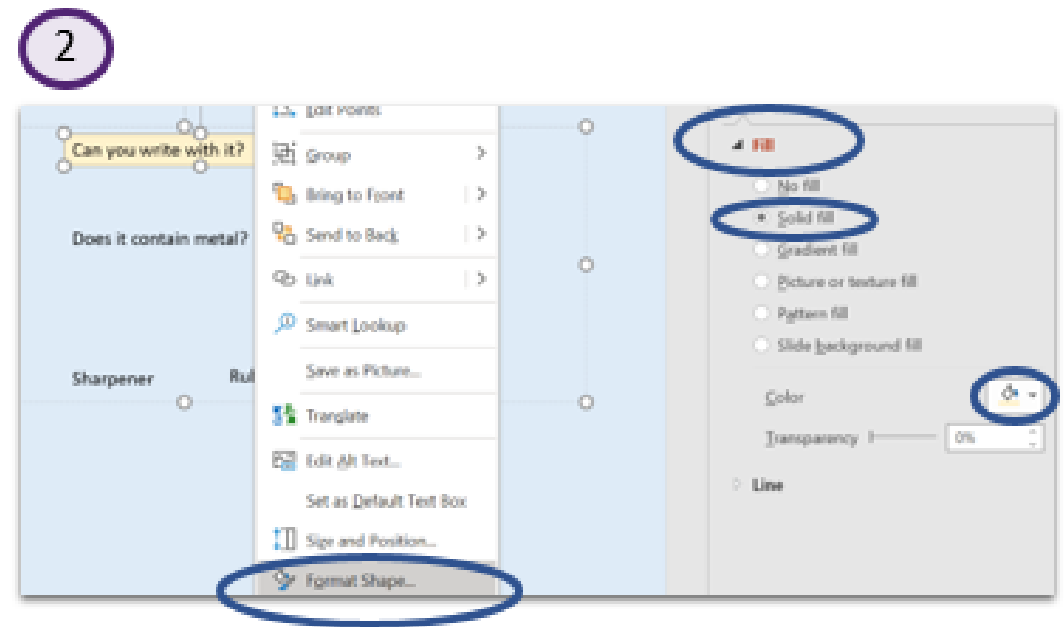
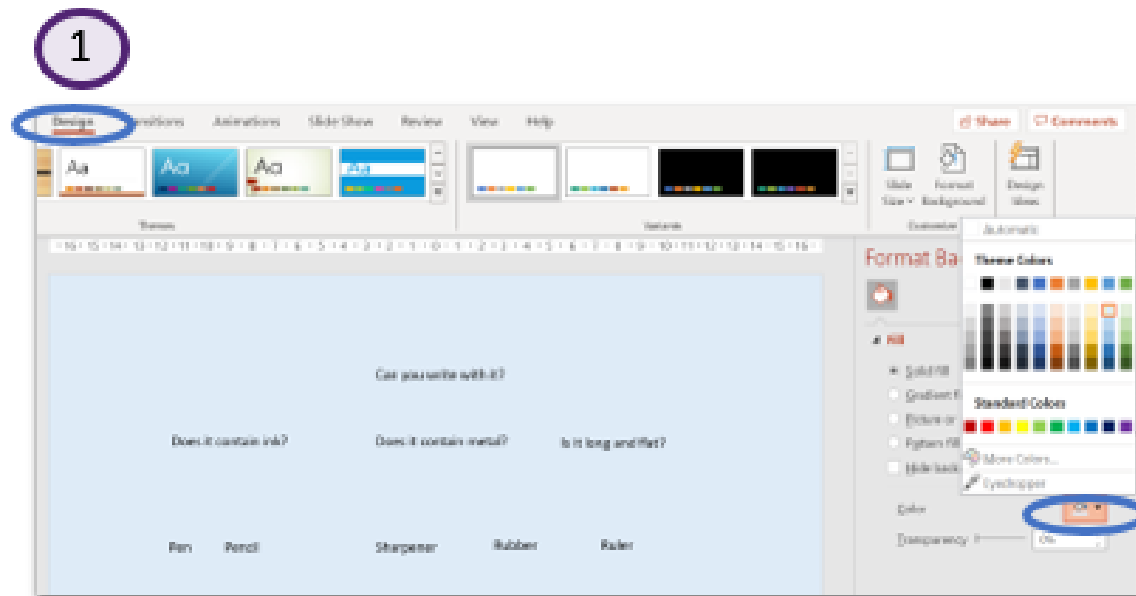
Sharpener

Rubber

Ruler

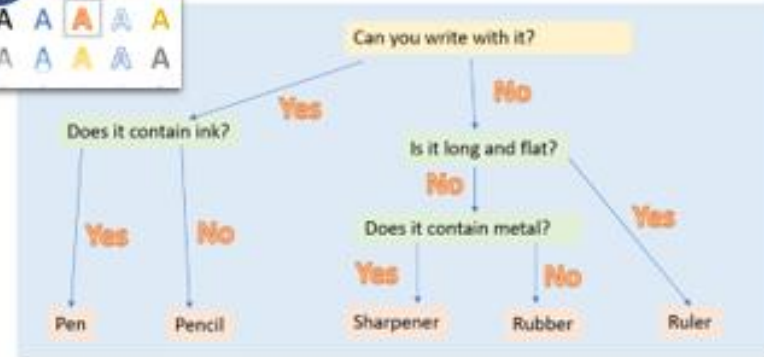
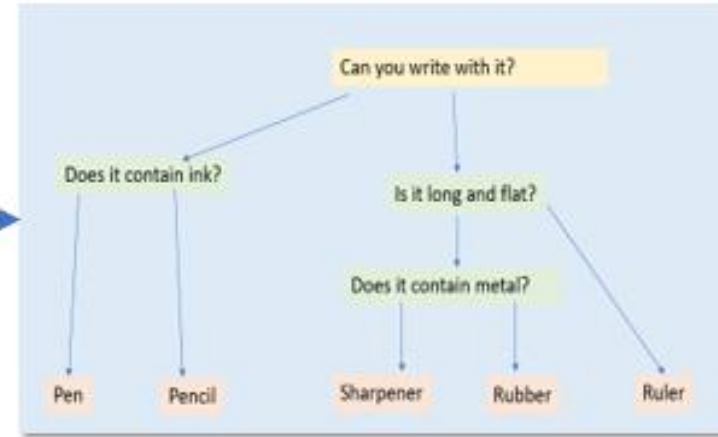
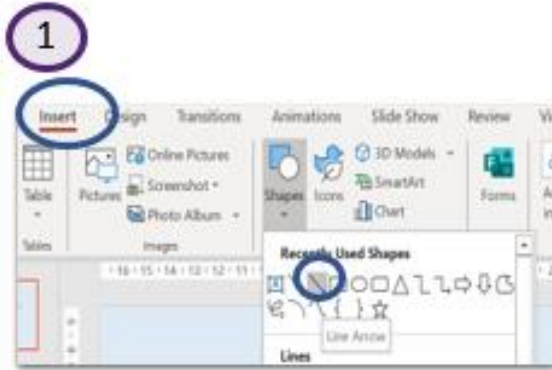
Step 2: Add colour to the decision tree classifier

1. Create a background colour by selecting 'Design', then 'Format Background', then choose the colour.
2. Add a colour to the boxes by right-clicking on the box, selecting 'Format Shape', then 'Fill', 'Solid fill' and choosing the colour.



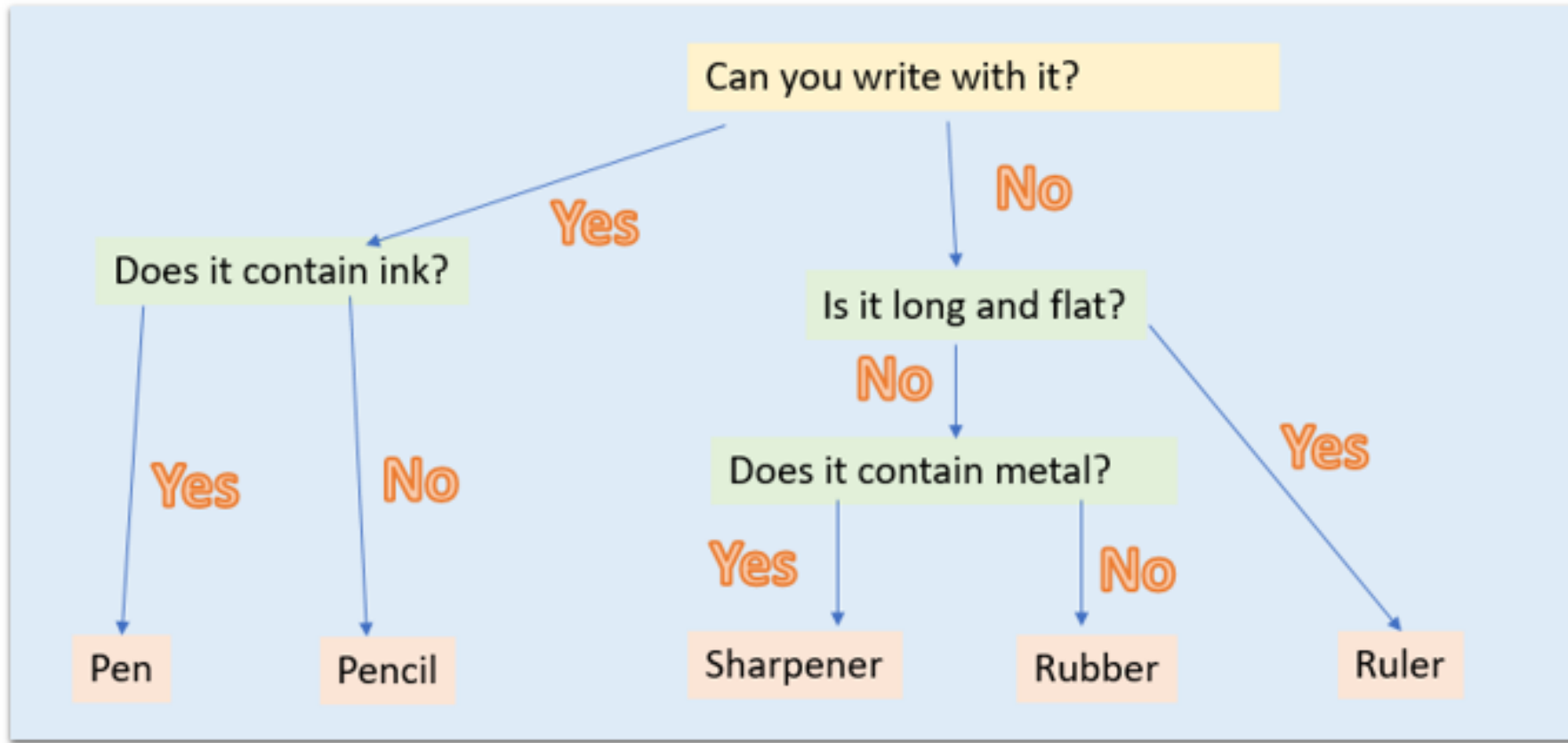
Step 3: Add arrows and WordArt

1. Click 'Insert' then 'Shapes' and add arrows to link the text box questions.
2. Click 'Insert' then 'WordArt'. Add 'Yes' and 'No' next to the arrows using the WordArt. You may want to reduce the font size.



Let's learn

You have made a simple decision tree classifier. It asks a series of questions and uses the answers to work out what the object is.



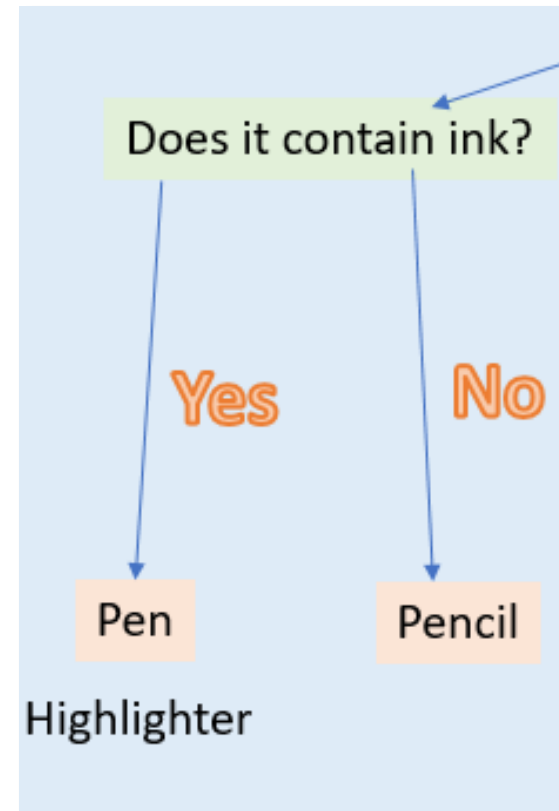
Let's do

Test your tree using objects from someone else's pencil case. In machine learning this is called **test data**:

1. Replace some or all the pencil case items.
2. Use the same questions and see what difference it makes.
3. Move the item text boxes so that they answer the questions.

Let's learn

It is a common problem that machine learning systems often work well with original **training data** but less well with test data. Until recently, creating decision trees 'by hand' was how computers were programmed to make decisions. Now, we can train computers to find the best questions to ask.



For example, introducing a highlighter into our model shows us we would need another or different question to reach the final object.