

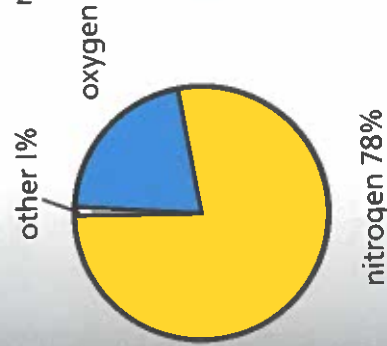
Percentages and pie charts

Discover

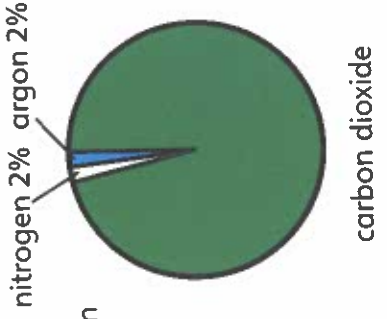
I estimate one fifth of Earth's atmosphere is oxygen. I thought it would be more than that.



Atmosphere of Earth



Atmosphere of Mars



- What fraction of the atmosphere of Mars is nitrogen, argon and carbon dioxide?
- How accurate is Aki's estimate for Earth's atmosphere?

Share

- 2% of the atmosphere of Mars is nitrogen and 2% is argon.

$$2\% = \frac{2}{100} = \frac{1}{50}$$

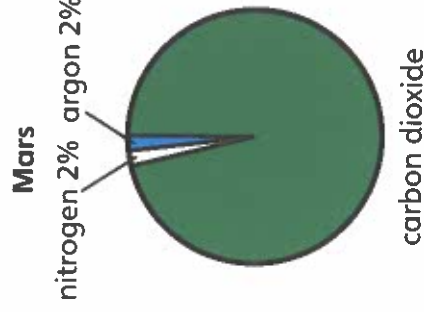
So $\frac{1}{50}$ of the atmosphere is argon and $\frac{1}{50}$ is nitrogen.

That means $\frac{48}{50}$ must be carbon dioxide.

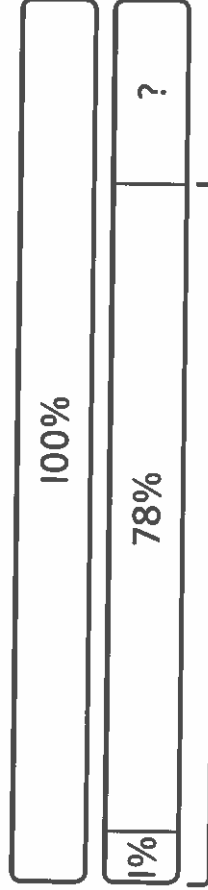
$$100\% - 2\% - 2\% = 96\%$$

$$96\% = \frac{96}{100} = \frac{48}{50} = \frac{24}{25}$$

I checked using the percentages.



- The whole pie chart represents 100%.

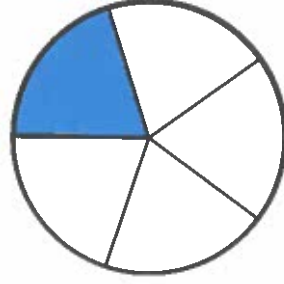


$$78\% + 1\% = 79\%$$

$$100 - 79 = 21$$

The section for oxygen must represent 21%.

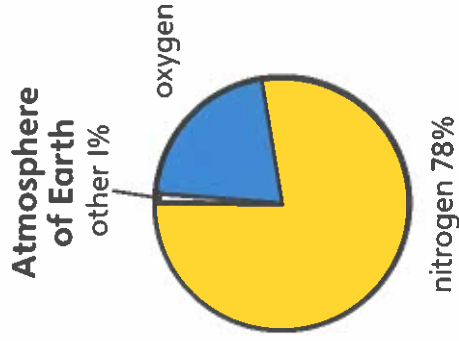
Aki estimates $\frac{1}{5}$.



$$\frac{1}{5} = \frac{20}{100} = 20\%$$

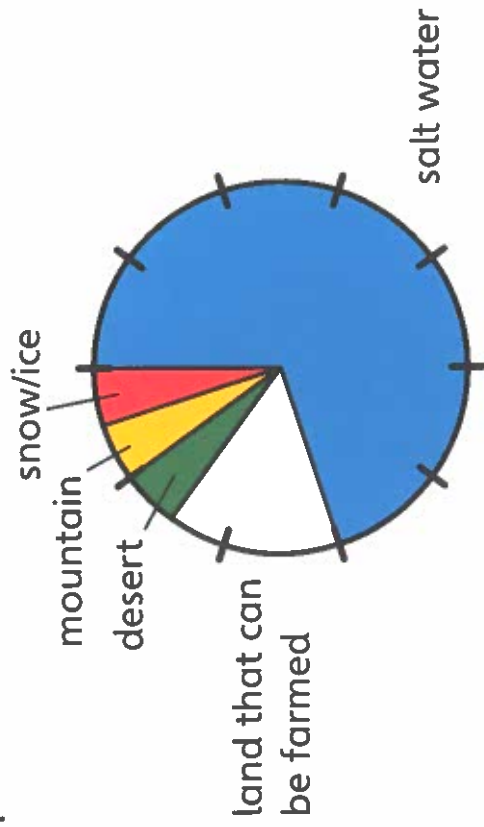
Aki's estimate is just 1% too small.

An estimate within 1% of the real value is very accurate.

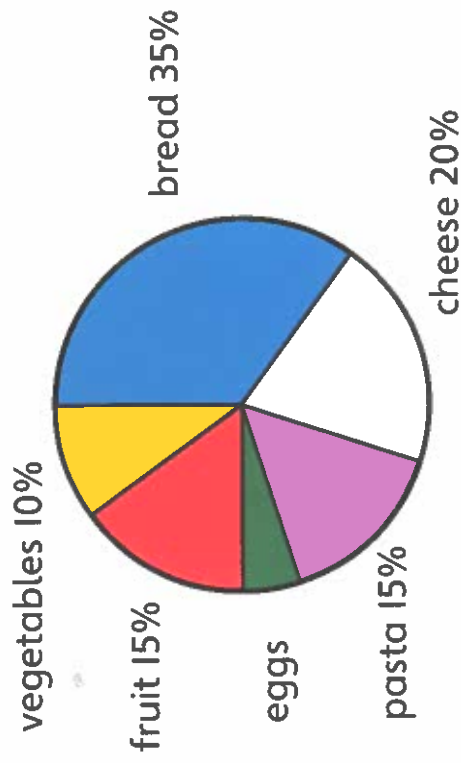


Think together

- 1 This pie chart shows what percentage of Earth's surface is covered by the different features. What are the percentages shown for each section of the pie chart?



- 2 Andy produced this pie chart to show what he ate during the week.



Which statements match the pie chart?

More than one third of his food was bread.

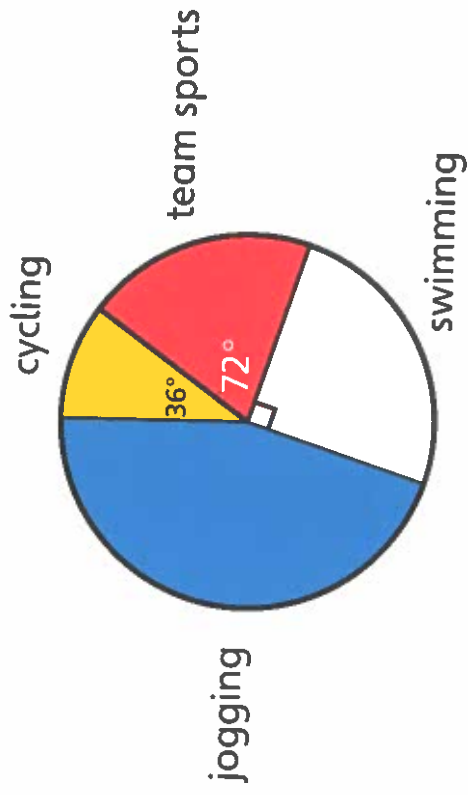
Out of every 250 g, 50 g was cheese.

$\frac{1}{3}$ of his food was fruit and vegetables.

He ate three times as much pasta as eggs.

CHALLENGE

- 3 Some people were asked what exercise they liked doing best.
a) What percentage of the people preferred jogging?



It looks like just less than half the people preferred jogging. I will guess 40%.



I think there is a way to use the angles to be exact. I know 100% would be 360°. So I can work out what 36° must be.



- b) 240 people preferred swimming. How many liked team sports?