

Lesson 2- Reaction rate graphs

Chemistry- Key Stage 3

Energetics

Miss Charlton



Calculating means

Calculate the mean. The first 2 have been done for you.

- 1) Identify anomalies
- 2) Exclude anomalies from mean calculation
- 3) Round to correct number of decimal places (this must be the same as data in the table).

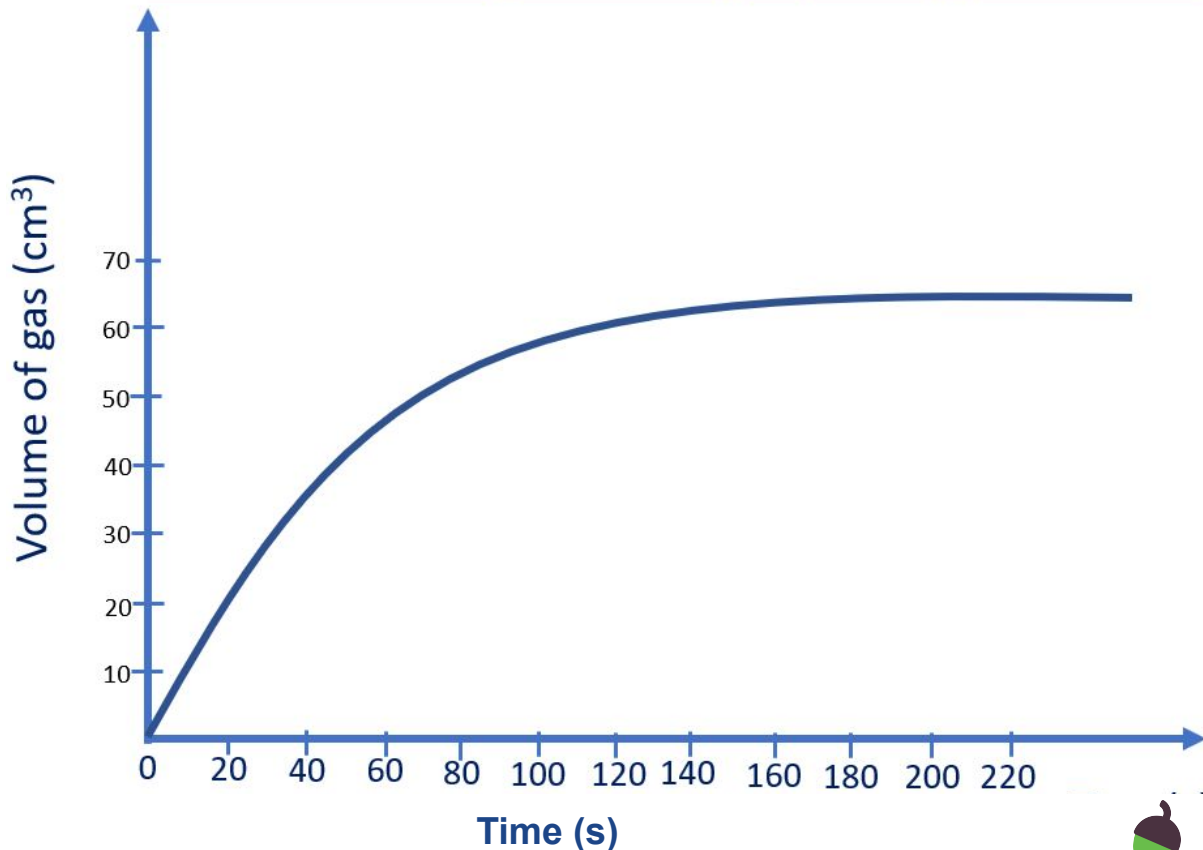
Time (s)	Volume of gas (cm ³)			Mean Volume of gas (cm ³)
0	0	0	0	
20	10	9	11	
40	18	18	17	
60	22	26	24	
80	27	20	28	
100	30	30	50	
120	31	30	29	



Questions

Using the graph:

- 1) Describe the trend in the graph.
- 2) Calculate the volume of gas produced in 40 seconds.
- 3) Calculate the volume of gas produced between 20 seconds and 40 seconds.



Rate of reaction

Question 1

Describe what happens to the rate of the reaction throughout a chemical reaction.

Question 2

Explain why the rate of reaction is fastest at the start of a reaction.



Answers



Calculating means

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100	30	30	50	30
120	31	30	29	30



Answers

Using the graph:

- 1) Describe the trend in the graph.

As time increases, the volume of gas produced also increases. After 160 seconds the volume of gas does not increase any further suggesting the reaction is finished.

- 2) Calculate the volume of gas produced in 40 seconds.

30 cm³

- 3) Calculate the volume of gas produced between 20 seconds and 40 seconds.

20 seconds = 20cm³

40 seconds = 30cm³

30 - 20 = 10 cm³



Rate of reaction

Question 1

Describe what happens to the rate of the reaction throughout a chemical reaction.

At the start of a chemical reaction the rate of reaction is the fastest as there is a higher concentration of reactants which **collide more frequently**. As more product is made the rate of reactions begins to slow down as the reactants **collide less frequently**, until there are no reactants left to react together and the reaction stops.



Rate of reaction

Question 2

Explain why the rate of reaction is fastest at the start of a reaction.

At the start of the reaction we have a **high concentration** of reacting particles, this makes the rate of reaction faster as the reacting particles will **collide more frequently**.

