

Plan, Monitor, Evaluate

METACOGNITION

"Writing out the equations has successfully moved me on to the next step with this task."

TASK:

Mason and Jasmine have £5 between them. Mason has 90p more than Jasmine. How much money does Jasmine have?

3. Evaluation

1. Planning

"I need to think about how we have done these problems before and choose the best strategy."

...I know, I'll start by writing out the problem as an algebraic equation."

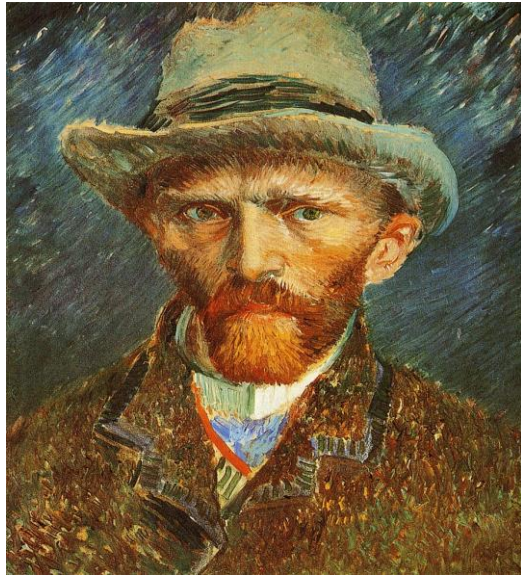
2. Monitoring

"Has this improved my understanding of the task?"

Yes, it now looks like a type of problem I'm familiar with: a simultaneous equation."

COGNITION

Plan, Monitor, Evaluate



Planning:

'What resources do I need to carry out a self-portrait

'Have I done a self-portrait before and was it successful

'What have I learned from the examples we looked at earlier?'

'Where do I start and what viewpoint will I use?'

'Do I need a line guide to keep my features in proportion?'

Monitoring:

'Am I doing well?'

'Do I need any different techniques to improve my self-portrait?'

'Are all of my facial features in proportion?'

'Am I finding this challenging?'

'Is there anything I need to stop and change to improve my self-portrait?'

Evaluation:

'How did I do?'

'Did my line guide strategy work?'

'Was it the right viewpoint to choose?'

'How would I do a better self-portrait next time?'

'Are there other perspectives, viewpoints or techniques I would like to try?'

Plan, Monitor, Evaluate

Electrolysis of hydrochloric acid can produce hydrogen and chlorine.

2.

The apparatus for the electrolysis is

- hydrochloric acid
- two carbon rods
- a suitable container for the electrolysis reaction
- a suitable source of electricity
- test tubes

Describe how the apparatus can be used to electrolyse hydrochloric acid and how the gases produced can be tested to show that they are hydrogen and chlorine.

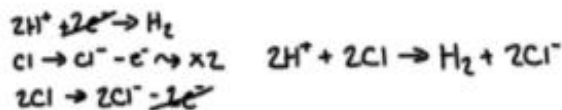
You may use a diagram to help your answer.

(6)

Jottings, Ideas, knowledge: Add notes to help you answer the question here.

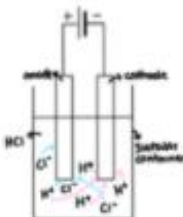
Hydrogen - cathode $2H^+ + 2e^- \rightarrow H_2$

Chlorine - anode $2Cl^- \rightarrow Cl_2 + 2e^-$



Answer: Write your full answer to be marked here.

- electrolysis is the process where we use electrical energy to decompose a substance into elements, hence why we need a suitable source of electricity
- when hydrochloric acid is melted the ions are free to move; the positive ions (H^+) will move to the negative cathode. At the cathode, hydrogen is formed, and it gains electrons to form $2H^+ + 2e^- \rightarrow H_2$
- we can use the squeaky pop test to show that hydrogen is formed.
- the negative anions (Cl^-) will move to the positive anode. At the anode, chlorine is formed, and it loses electrons to form the half equation $2Cl^- \rightarrow Cl_2 + 2e^-$
- we can test that chlorine gas is produced because blue litmus paper will turn red, then white (as it'll be bleached)
- the two half equations then form the ionic equation $2H^+ + 2Cl^- \rightarrow H_2 + 2Cl^-$



Plan:

1. Is this task similar to a previous task?
Yes, the ones in my book
2. What do I want to achieve?
A 6 marker that will get me 6 marks
3. What should I do first?
Familiarise myself with the question
4. Do I need any resources to help me?
Notes from my book
5. Do I have all the information?
Yes, mostly in book

Monitor:

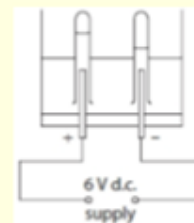
1. Am I on the right track?
I think so
2. What can I do differently?
Make sure I am being clear enough
3. Who can I ask for help?
My teacher or my sister
4. Do I need to change anything?
I don't know

Evaluate:

1. What worked well?
I included tests for the gases and extra information
2. What could I have done differently?
I could have written it as a paragraph, although I think bullet points works the best
3. Can I apply this to other situations?
Yes, for example other 6 markers about electrolysis
4. Is there anything I need to improve?
I think that there's room to improve for everything I've done

Plan, Monitor, Evaluate

Sodium sulfate solution is electrolysed in the apparatus shown.



Sodium sulfate solution contains sodium ions, Na^+ , sulfate ions, SO_4^{2-} , hydrogen ions, H^+ , and hydroxide ions, OH^- .

Hydrogen is produced at one electrode and oxygen is produced at the other electrode.

Explain how these products are formed from the ions in the electrolysis process, indicating how you would identify the products.

You may give ionic equations in your answer.

(6)

Read the exam question and answer the following questions in your book.

1. Which topic/s does this incorporate?
2. What do I already know about these topics?
3. What information do I need?
4. If I need more information, what resources could I use?