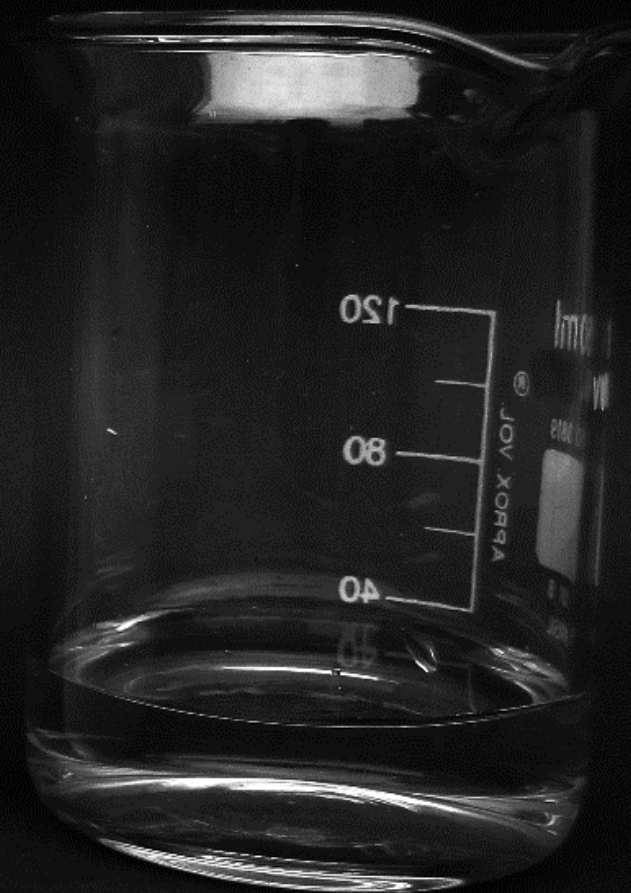


Physical and chemical changes

YEAR 5

AUTUMN 2



LESSON SIX

What happens when we place metals into acid?



Do Now – Retrieval practice

1) What are two signs we see that show that substances are more reactive?

i. _____

ii. _____

2) Match up the definitions for each type of variable

Independent variable	the thing you observe to see how it is affected
Dependent variable	the things you have to keep the same to make sure it is a fair test
Control variables	the thing that you change

3) What is produced when metals are put in vinegar?

Write a chemical equation for when metals are added to vinegar :

_____ + _____ → _____

From previous topics:

4) What do 'melting point' and 'boiling point' mean?

Melting point is the _____.

Boiling point is the _____.



Read the passage below about scientific results

When scientists come to a conclusion, it is important that they have **evidence** for their

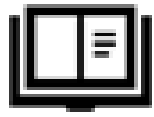


conclusion. This means they must make sure that the results of their investigation agree with their conclusion but they also need to make sure they have not made a large amount of their mistakes when they did their experiment.



What should do all scientists need to use when they make a conclusion?

All scientists make sure that _____
_____.



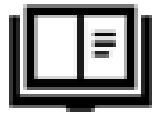
Read the passage below about scientific results

One way to check if they have made mistakes in their investigation is to repeat their investigation for a second time and see if they get the same results. If they do get the same results then their results can be described as **repeatable**.



What does it mean if a scientist's results are repeatable?

Results are repeatable if _____



Read the passage below about scientific results

The other way to check if they have made mistakes is for other scientists to complete the same investigation as them and see if the other scientists get the same results that they did. If the other scientists got the same results as them, we say that the results are **reproducible**.



What does it mean if a scientist's results are reproducible?

Results are reproducible if _____

_____.



How can you make sure you have not made mistakes when you have taken results?



We can make sure our results are repeatable by _____

_____.

We can make sure our results are reproducible by _____

_____.



Complete the investigation using the method you wrote last lesson. Add in your results below. Then repeat your investigation and see if you get the same results.

Sketch the amount of bubbles that were present for each metal:



Metal: _____

The metal that was the most reactive was _____. I could tell it was the most reactive because _____.

The metal that was the least reactive was _____. I could tell it was the least reactive because _____.



Compare your results with two other groups. Write down how their results were the same and how their results were different.

Group	What was the same about their results?	What was different about their results?



Explain if your results were repeatable and reproducible

My results were/were not repeatable. I know this because _____

_____.

My results were/were not reproducible. I know this because _____

_____.

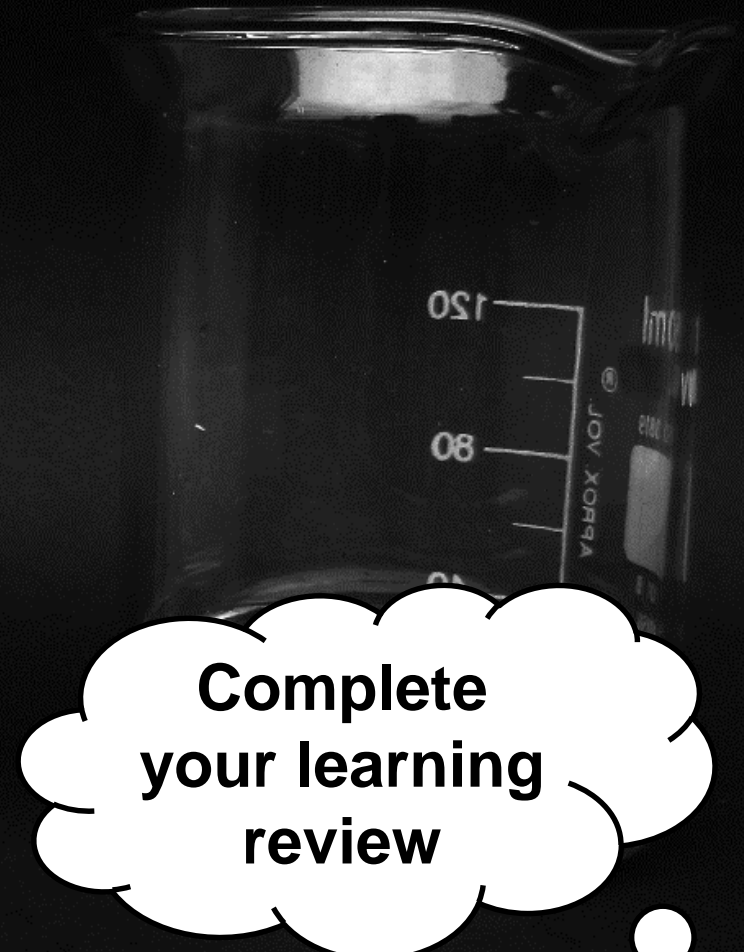


Which metal would rust most quickly if you left it outside in the rain? Why?

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