

More than meets the eye ?

A blank piece of paper has been found on the floor near the missing vase. Is it worth taking a second look ?

1. Look at the paper

Are there any signs of writing, or marks on the paper ?

2. Use the hairdryer to heat the marked area

Does anything appear ?

Yes

What does it say?

No

Go to 3 - **you need to put on safety glasses for the next stage.**

3. Pour a little of one of the developing solutions into the petri dish so that it is about 2 cm deep.

Use the pipette to put a few drops of the solution onto the paper (try to hold the paper above the dish !)

Does anything happen ?

Yes

Keep going till most of the paper is covered

No

Try the other solution

Has the writing become visible ?

Has a reaction taken place ?

The message reads.....



Suitable inks and developers are aqueous solutions of the following:

INK

Potassium hydroxide
Copper sulphate
Phenolphthalein
Tannic acid

DEVELOPER

Iron (II) sulphate
Ammonia
Sodium carbonate
Iron (II) sulphate

Inks that respond to heat alone include aqueous solutions of the following :

Cobalt chloride
Iron (II) ammonium sulphate
A mixture of copper sulphate and ammonium chloride
Lemon juice
or onion juice

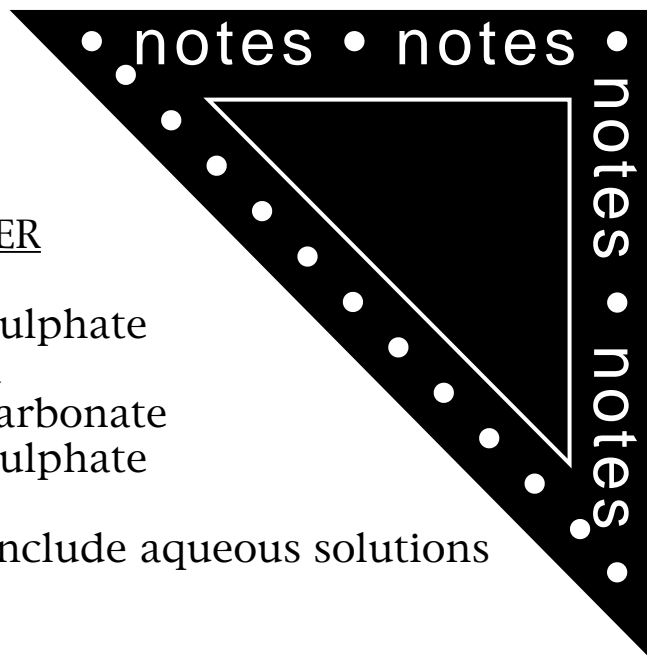
The message should read "**Green dragon 3pm**" and can be written on sheets of filter paper using a pipette. Remember to make one for each pair in the group. They take a while to dry, so this needs to be done at least an hour beforehand. Pupils can then be referred to the map to work out the implication of the message.

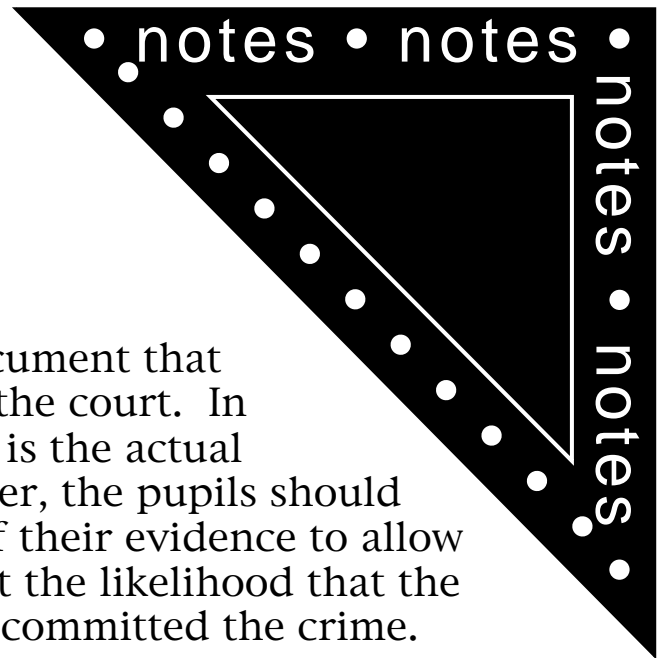
We tested the experiment using the following equipment :

a solution of aqueous KOH
(2g in 40ml of water)
a solution of aqueous FeSO_4
(5g in 50ml of water)
a hair-dryer
sheets of filter paper
petri-dishes
safety glasses & disposable rubber gloves

Both solutions can be made up the night before. This is the shortest experiment and you may want to take the extra time to tell the pupils about what it is like to be a real chemist (!)

More than meets the eye ?





Filling in the Court Reports

The statement of truth is the document that the forensic scientists submit to the court. In general, the only thing recorded is the actual result of the experiment. However, the pupils should also weigh up the implications of their evidence to allow them to come to a decision about the likelihood that the suspect the police have arrested committed the crime.

At the end of the session, call everyone together and let the pupils present their results. The easiest way is to let them talk about the results of the last clue they did.

In the event of a tie, you may need a tie-breaker

For example

How many words can you make from:

FORENSIC CHEMIST