Applied Science

Please type up your answers, save them and print a copy out for your first lesson.

Task 1:
Define these key terms:
- Evaluate
- Analyse
- Accuracy
- Validity

Here are some results from a practical investigation. Please read the following carefully and complete the tasks that follow.

Suzie performed a chromatography experiment, to analyse the pigments present in spinach. Below is her method and results:

Method:
- Draw a pencil line on a piece of chromatography paper
- Attach the chromatography paper with a pin to the stopper and make sure it reaches the bottom of the boiling tube
- Put some spinach in a pestle and mortar and scatter with propane
- Place a couple of drops of chlorophyll solution on the pencil line and place in the boiling tube
- Squirt a small amount of chlorophyll solvent into the bottom of the test tube
- Put the chromatography paper inside and wait until the solvent is 20mm from the top of the paper.

Here are Suzie's results:

Calculated Rf values	Suspected pigment
0.38	Chlorophyll b
0.5	Chlorophyll a
0.83	Carotene

Here are the standard Rf values taken from the following reference:

Roberts, M,B,V: Biology a functional approach student's manual. (WHEN WRITING YOUR REPORTS IN APPLIED SCIENCE YOU MUST REFERENCE EVERYTHING YOU USE!)

Name	Rf value
Carotene	0.95
Phaeophytin	0.83
Xanthophyll	0.71
Chlorophyll a	0.65
Chlorophyll b	0.45

Evaluate the **accuracy** of the method Suzie used

Suggest 4 improvements to Suzie's method

Comment on the accuracy of Suzie's results

Evaluate the conclusions Suzie has come to

Task 2:
These are much more generic – but completing them will make your coursework much easier to write in September.

Identify two different ways to reference scientific journals in your work

Find two examples of sources you could use in a piece of coursework about titrations – Comment on the reliability of these sources

Think about a specific required practical you completed at school, write a method and risk assessment for it suggest improvements you could make to the method