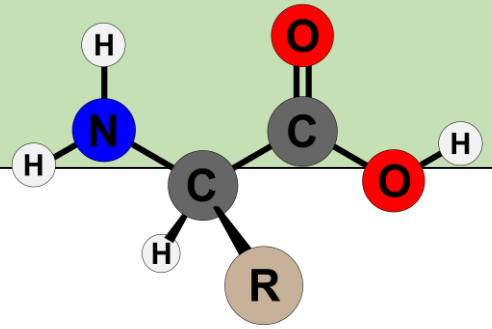
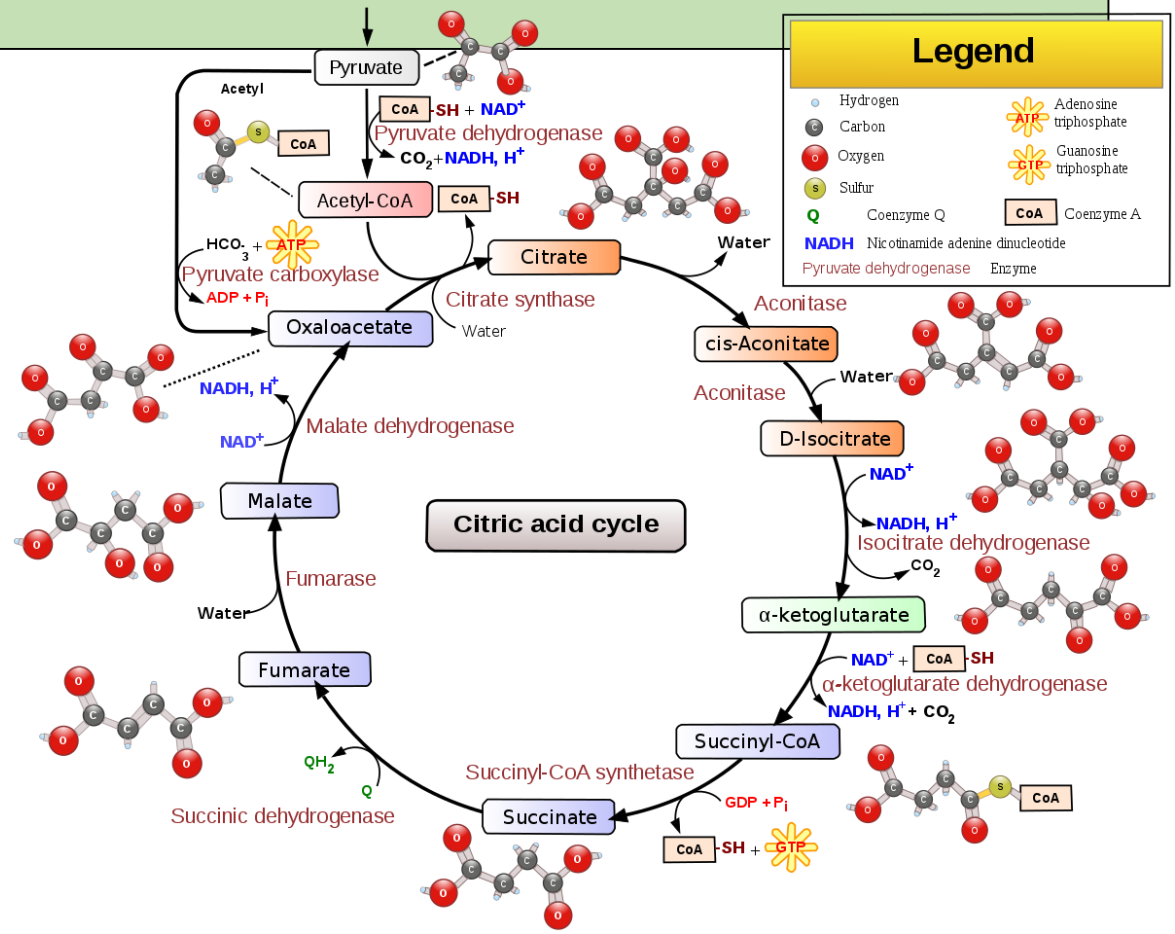
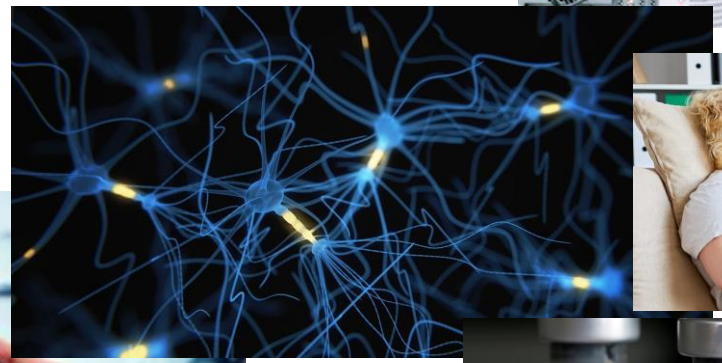
A-Level Biology taster session

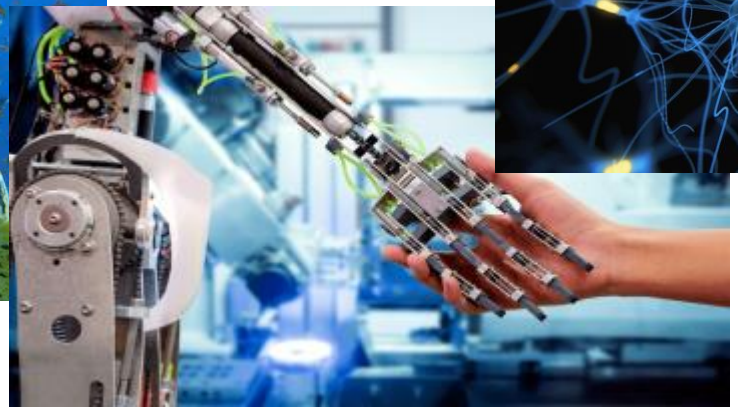


Welcome back Y11!



Where can it take me?



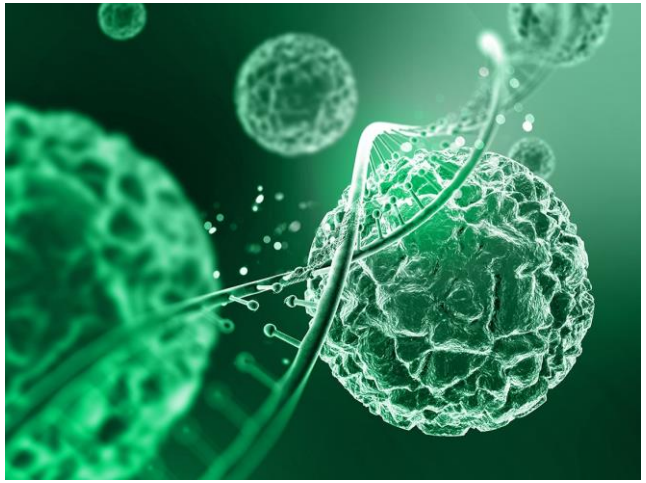


Tools for success on A-Level Biology

Hardworking. *A-Level's are a full time job and for a Science, we will expect 3-4 hours revision per week (on top of homework) to be successful*

An enjoyment of and curiosity about Biology

Complementary subjects: Maths, Chemistry, Psychology, PE/Sports studies



Mathematical and practical skills – There will be 12 required practical's and many maths skills involved!

Topic 1 – Biological molecules

One of the first topics you will study in September is *'Biological molecules'.*

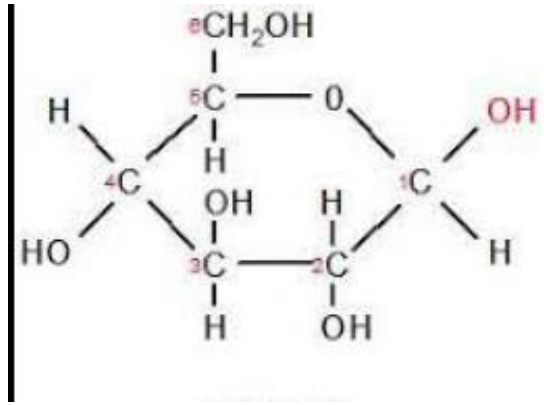
This is the in-depth study of important Biological molecules: **Carbohydrates, Proteins, Lipids and Nucleic Acids.**

- What do they look like?
- What are they formed from?
- What is their Biological importance in the body?
- What are their properties?
- How do we test for them in the lab?

Which one is which?

Can you match the images to the correct Biological molecules?

1.



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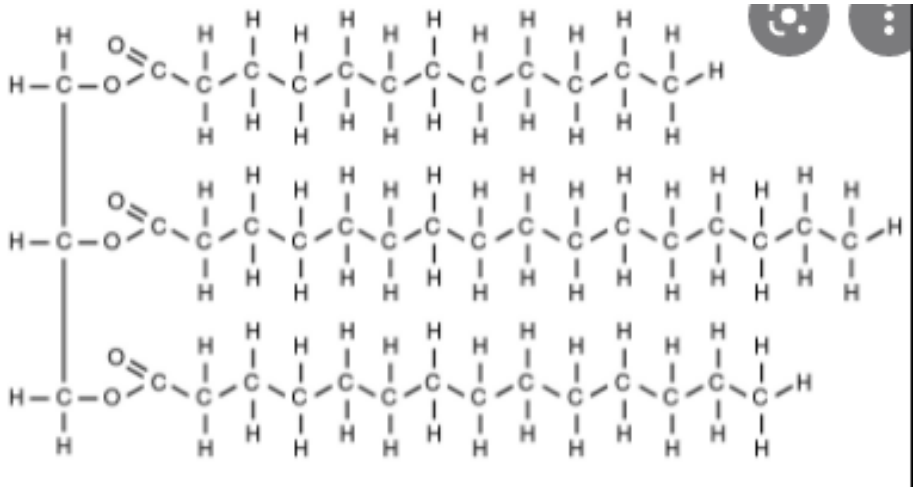

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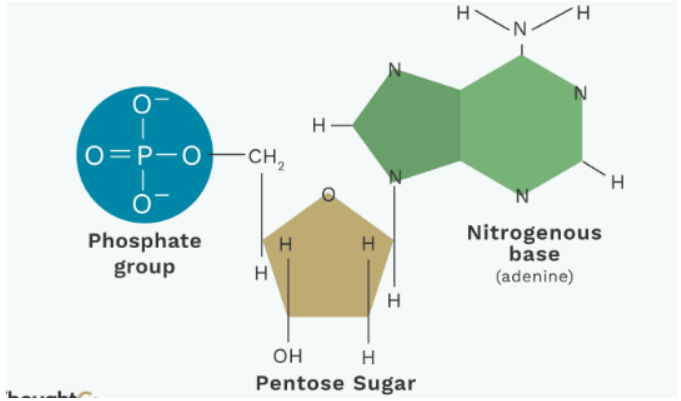

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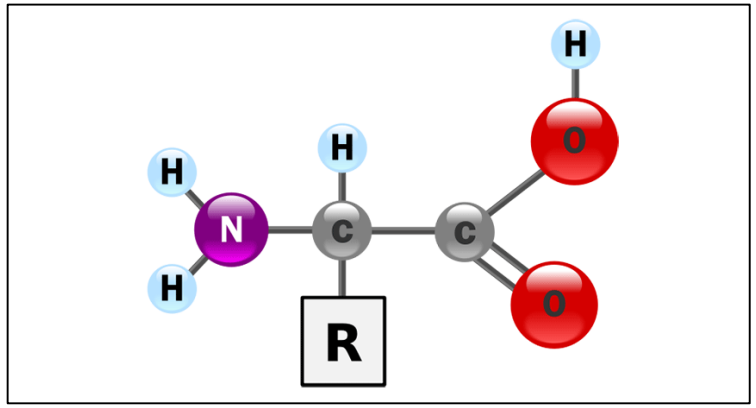

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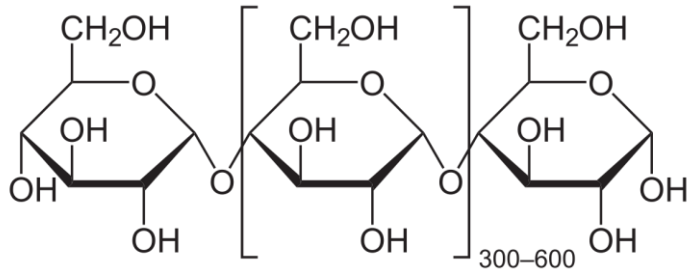


Today's task

Learning objective:

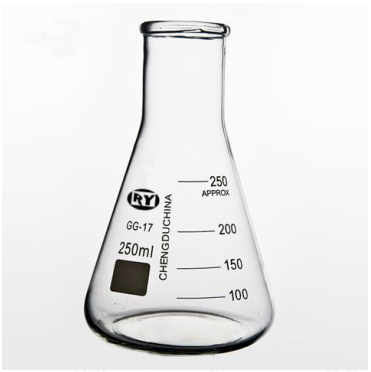
To learn the different methods for testing biological molecules.

To test different biological molecules.

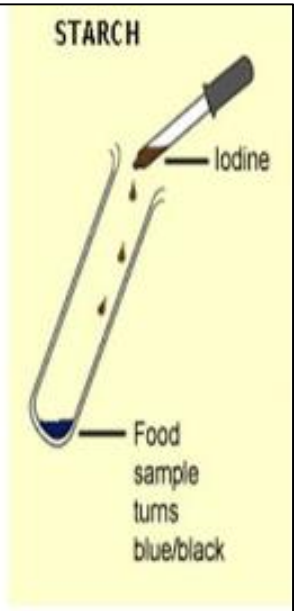
To identify an unknown substance and confirm which Biological molecule it is

Think!

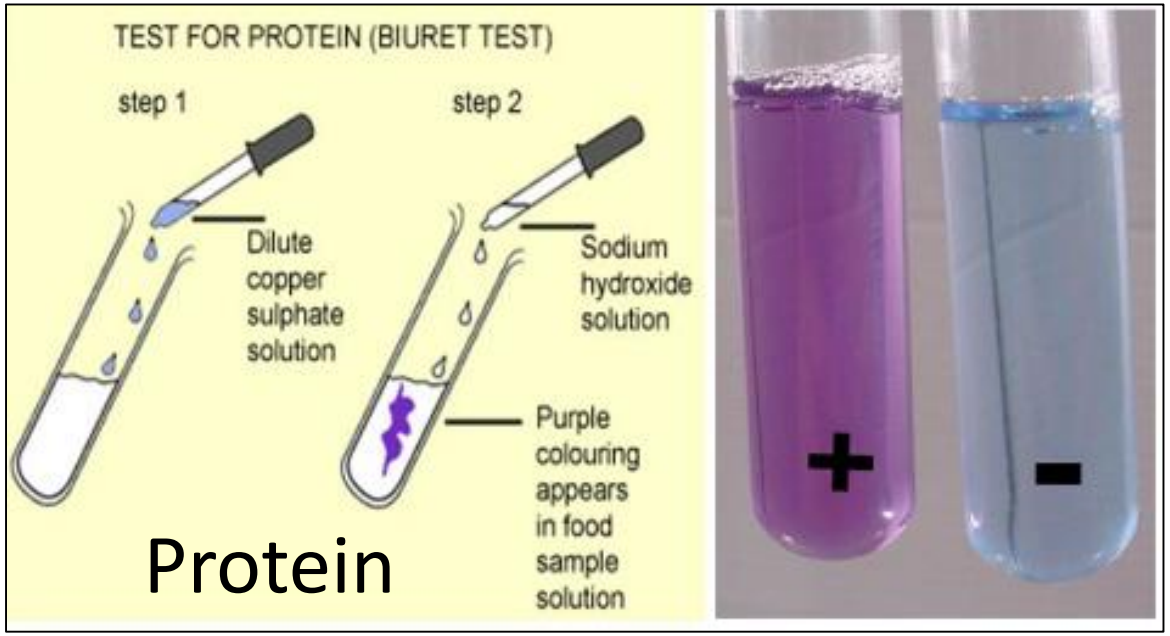
Those of you that have studied separate Biology will already know the tests for some of the food groups.
What are they?



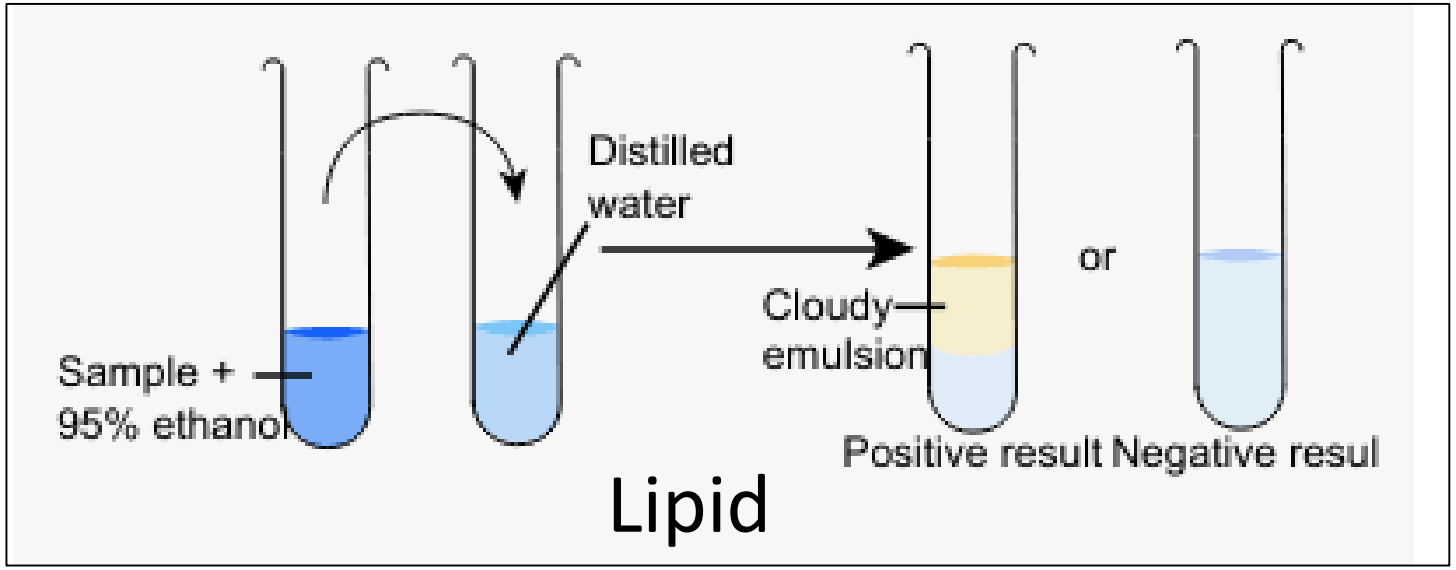
Assessing risk during practical work is an important part of A-Level Biology. How can we minimise risk today?



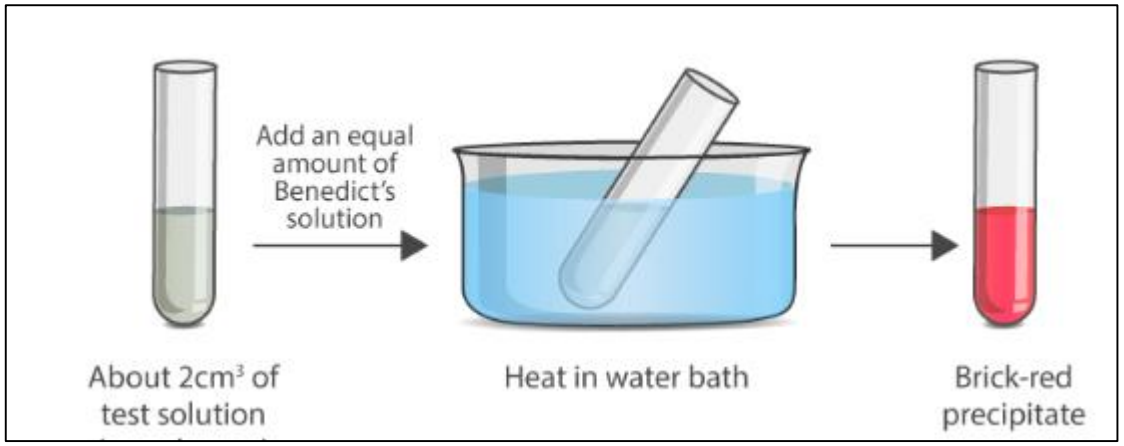
Starch



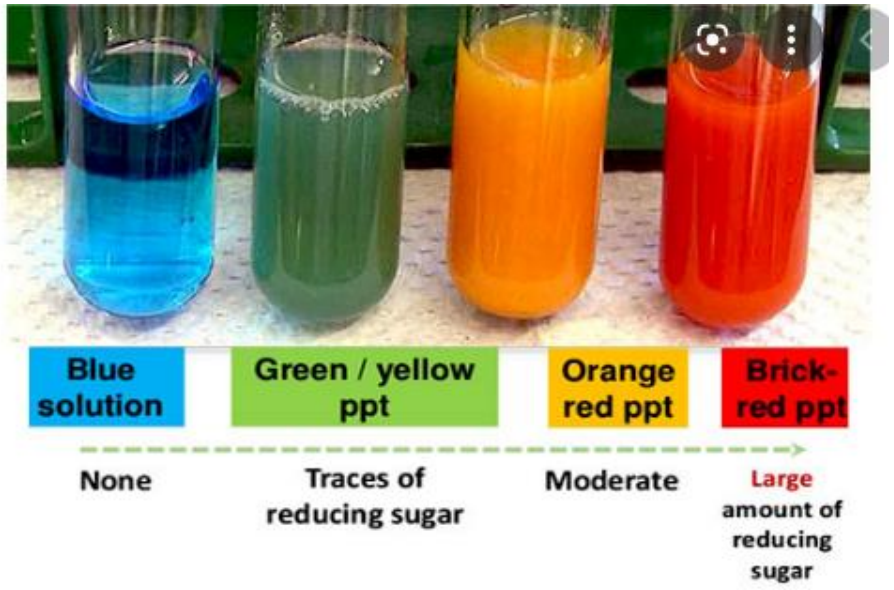
Protein

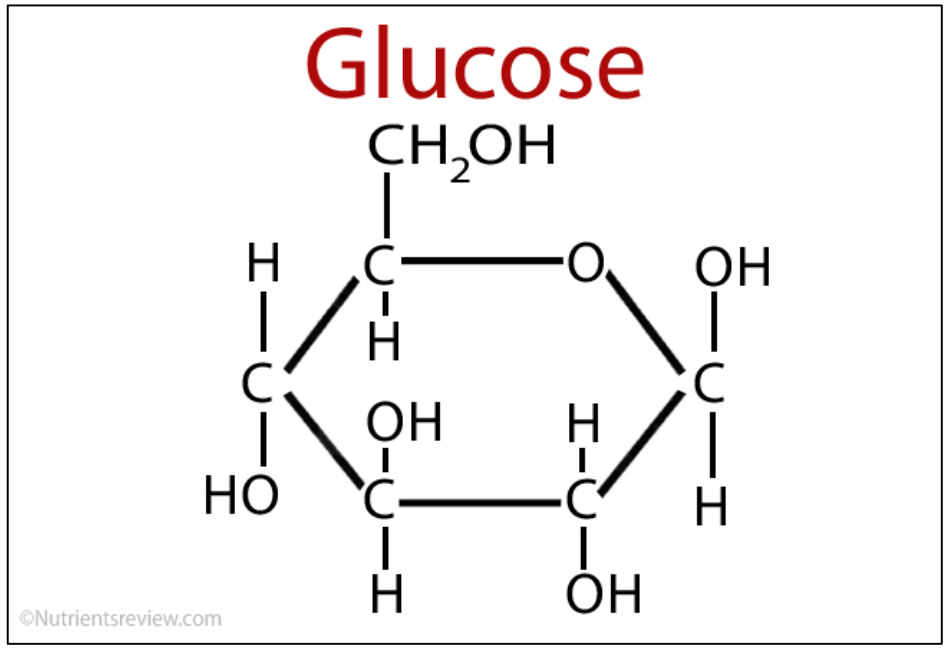


Lipid



Reducing Sugar





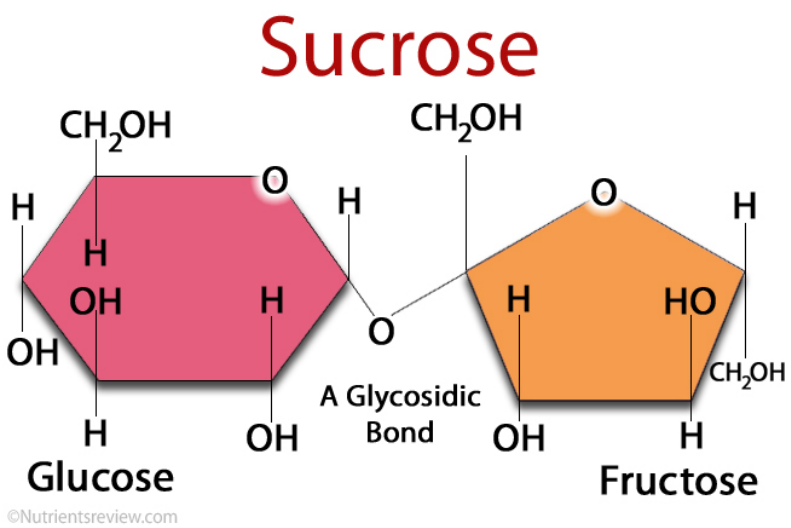
•Sugars can be classified as reducing or non-reducing; this classification is dependent on their ability to donate electrons

•**Reducing sugars can** donate electrons (becoming **oxidised**), the sugars become the **reducing agent.**

- Thus reducing sugars can be detected using the Benedict's test as they reduce the soluble copper sulphate to insoluble brick-red copper oxide
- Examples: **glucose, fructose, maltose**

•**Non-reducing sugars cannot** donate electrons, therefore they cannot be oxidised

- To be detected non-reducing sugars must first be hydrolysed to break the disaccharide into its two monosaccharides before a Benedict's test can be carried out



Non-reducing sugar

OIL RIG

Oxidation is loss of electrons

Reduction is gain of electrons

Further reading on this topic in preparation for Sept

- Biological molecules – crash course Biology: https://www.youtube.com/watch?v=H8WJ2KENlK0
- Biology revision guide - AQA
- Head start on Biology A-Level guide
- Transition material (due for Sept)
- TED talks – a huge amount of fantastic Biology talks to watch in preparation for September.