# Y13 – Chromatography and Spectroscopy

| Stick this checklist into your yellow book at the beginning of the topic. Tick off the topics as you cover them. | | |
|---|---|---|
| In this module you are expected to be able to… | In Notes | Revised |
| Interpret TLC diagrams and calculate $R_f$ values | | |
| Interpret GC chromatograms, including use of calibration curves and use of retention times | | |
| Identify the following organic functional groups with simple chemical tests:<br>• Alkenes<br>• Haloalkanes<br>• Phenols<br>• Carbonyl compounds<br>• Aldehydes<br>• Primary and secondary alcohols<br>• Carboxylic acids | | |
| Use $^{13}$C-NMR to<br>• Predict the number of carbon environments in a molecule<br>• Identify the different chemical environments present from chemical shift.<br>• Suggest possible and impossible structures | | |
| Use $^{1}$H-NMR to<br>• Identify the number of proton environments in a molecule<br>• Identify the different types of proton environment from chemical shift.<br>• Calculate the relative number of protons in each environment from peak area traces.<br>• Calculate the number of neighbouring protons for an environment from the splitting pattern.<br>• Identify the structure of a molecule | | |
| Predict $^{13}$C or $^{1}$H NMR spectra for a molecule | | |
| Explain the use of tetramethylsilane in NMR spectroscopy | | |
| Explain the need for deuterated solvents in NMR spectroscopy | | |
| Identify and state the test to prove the presence of O-H and N-H proton peaks. | | |

Pre-test Evaluation

| I have… | |
|---|---|
| Updated my yellow book notes | |
| Ensured I understand all of my notes | |
| Looked on the open drive for additional work | |
| Asked my teacher for guidance | |
| Confidence rating | I'm doomed! -- - = + ++ I am the BOSS! |