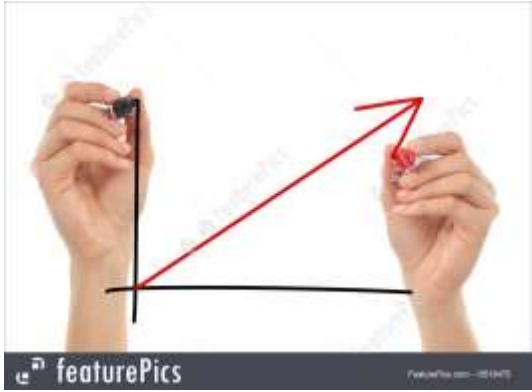
WHAT YOU MUST DO THIS YEAR

1. **Make a point of <u>Enjoying</u> working in this subject.**
2. **Keep track** of the **Year Plan** for the subject – consolidate at home.
3. **Listen** to what your Teacher is discussing in class.
4. **These slides**, with these notes, will be available to you on the D-6 Apollo for its time of study. Either collect them from here, or bring a **flash-drive (memory stick**) to your teacher, for the **ENTIRE** syllabus.
5. **High-Light** key points in your ***Exam Fever <u>Text Book</u>***.
6. **Do the Questions** in the ***Exam Fever <u>WorkBook</u>*** without cheating.
7. **Mark** these ***<u>Questions</u>*** properly from the slides.
8. **Prepare** for **<u>tests/exams</u>** from <u>all</u> these sources.
9. **Include** the ***Exam Fever <u>Q & A Book</u>*** in **Exam** preparations.

BIOLOGICAL SKILLS

1. DRAWING GRAPHS
2. DRAWING DIAGRAMS
3. PLANNING AN EXPERIMENT

1. DRAWING GRAPHS



- Draw the whole graph with a **pencil**.

  (*This **includes** the writing*.)

- The **heading** of a graph is always very long. It tells:
  - What **type** of graph it is.
  - What's on the X-Axis (horizontal).
  - What's on the Y-Axis (vertical).

- The graph always shows two variables:
  - The X-Axis is **independent**: its variable would happen anyway and remains unchanged, (like ***Time***).
  - The Y-Axis values **depend** on those values of the X-Axis.

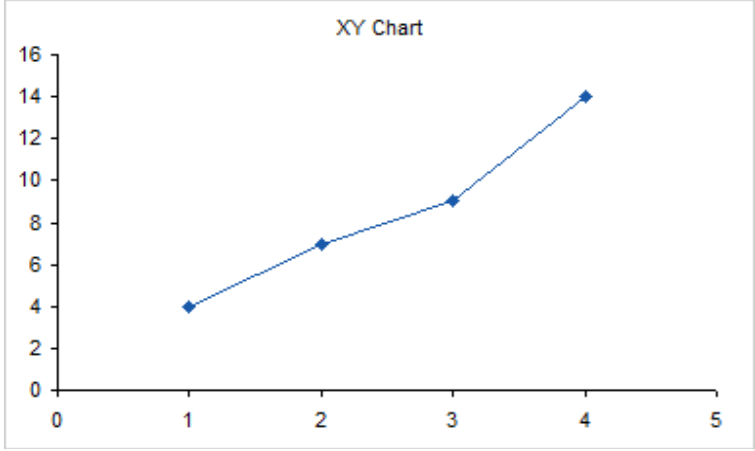
- Both Axes are fully **labelled** (together with the units they are measured in). They are both properly **scaled** so that in each of them the ***same distance in cm*** represents ***the same number of units***. (*Please . . . please . . . please take note of this!*)

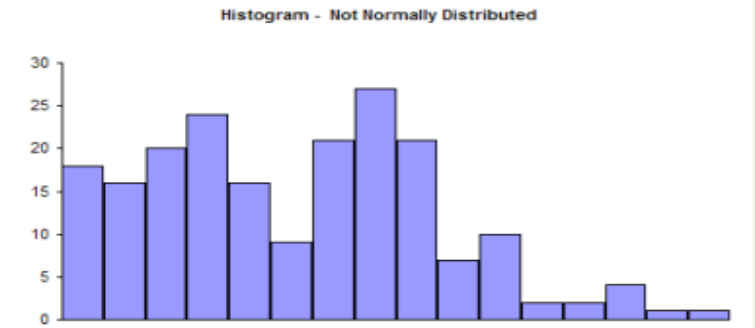
- Always prepare all of these properly **before** you start putting down the details of your graph.

TYPES of GRAPHS

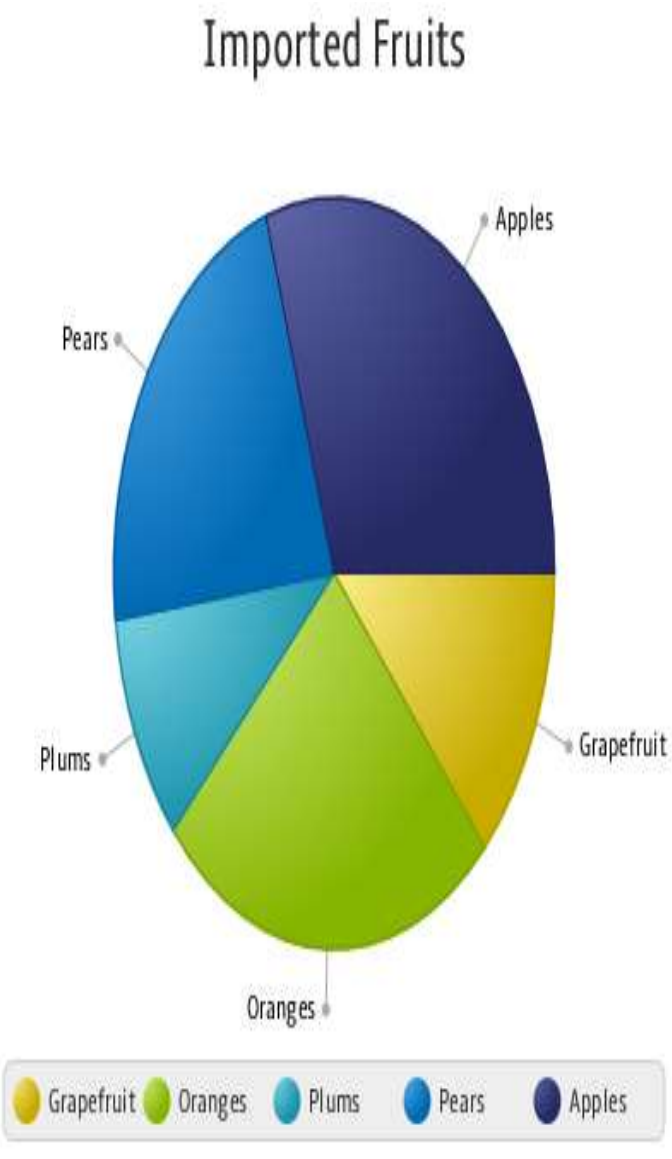
You are given a table. Each **point** has a value on the X-Axis and a value on the Y-Axis. Plot each of these points on the graph.

- **Line Graph** – Mark each point with an X. Then join the Xs.
- **HistoGram** – Mark each point with a small horizontal line, and draw **columns** down from this line to the X-Axis. These columns **must touch** each other – no gaps.
- **Bar Graph** – This is *like* a HistoGram, except that there are **spaces** between the columns. (*It seems like you are looking through prison-bars.*)





Pie Chart – This is a circle (like a pie), showing the different sizes (like slices) of its different parts. So you draw the circle with a compass, and rule a line straight up from the centre. To work out how many degrees each slice must be, you take its fraction and multiply it by 360 (using your calculator). Your slices are measured from the **previous** line, and are drawn from smallest to biggest, going clockwise. Use a key to identify each item.



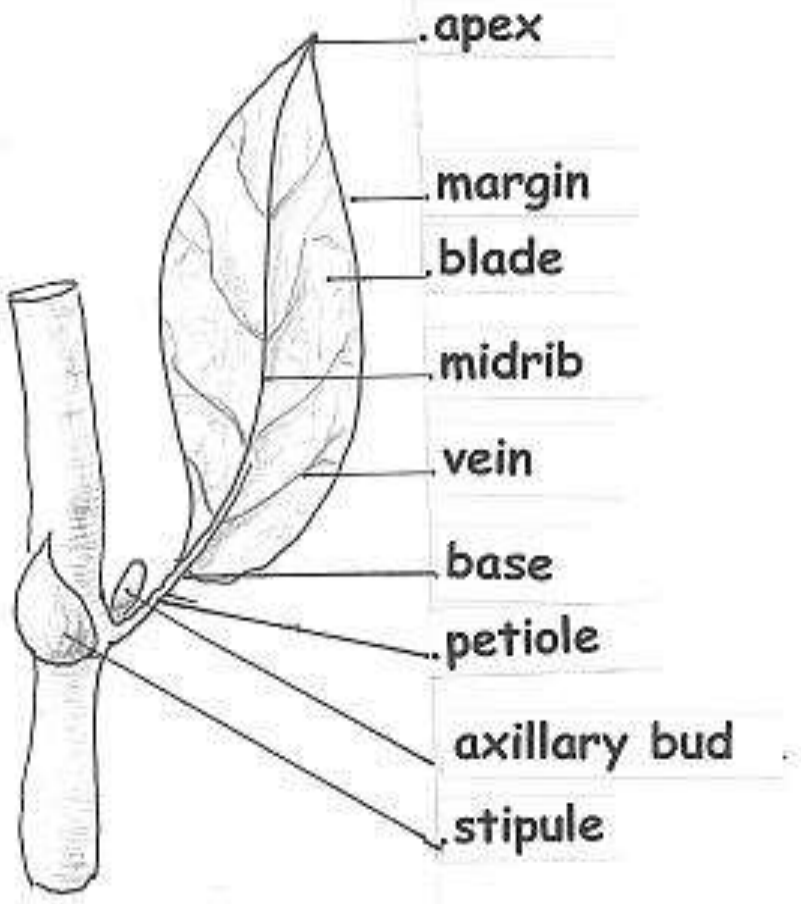
2. DRAWING DIAGRAMS

*We are Scientists – we are **not** artists.*

So – We need a system:

- **Every** drawing needs a heading.
- **Every**thing important on the diagram needs a label.
- Use only a **pencil** (for **every**thing in the drawing). Pens ***MAY*** be used for words and label-lines.
- Use confident lines – **not** blurry pencil strokes.
- Make it big and bold – half a page is good.

- The drawing is slightly on the left, the labels are all on the right.
- Labels (on the right-hand side) are directly under each other, **as if** next to an invisible margin. They are printed neatly in the lower case, and are never underlined.
- These labels have label-lines. These lines are drawn with rulers. They do not cross each other. They do not need to be parallel to each other – their job is to **clearly** connect each label with the diagram. They are **not** bent lines. They are **not** arrows.
- No colours; no shading.



Parts of a leaf

3. PLANNING an EXPERIMENT

1. State your **HypoThesis** . Your educated guess. (**You** are stating to the world what you think **is** probably the answer.)
2. Write down the **AIM** of **what** you are trying to prove.
3. The **METHOD** tells what must be **DONE** in the experiment. It is numbered, step by step. *If necessary, you **can** use a diagram to **help your words** explain a complicated apparatus*.

4. The **RESULTS** tell what actually **HAPPENED** in the experiment.

5. The **CONCLUSION** describes how true or false was the assumption you made in your hypothesis. (The one stated in your **AIM**.)
   - *For extra reliability, repeat the experiment and take averages.*
   - *Some experiments need a **CONTROL** to prove that the result of the **EXPERIMENT** was not just a co-incidence. It is the same as the experiment, except for the central, critical detail.*
   - *To prove the conclusion even more definitely, you might need an even larger sample size. Or more experiments.*