Abbotsford Senior Secondary School

Diploma Programme

Dear Students,

Welcome to IB Physics! This course will be different than any course you have taken previously in your education. It will challenge you to think critically and understand the "why" of the world. Why do things work the way they do? If a cause yields an effect, why did it happen?

Over the course of two years, we will collectively develop a set of tools you can use to solve problems. Your job is to learn the tools and understand how to use them and, most importantly, when. This only comes through practice, practice, practice. Physics is much more than posters about black holes or solving single variable equations like Ohm's law in grade 9 science, nor is it sufficient to apply specific algorithms (steps) the same way every time for a particular type of problem, as in math. Rather it is a new set of skills to acquire (like a new instrument or sport), where each problem and each application is unique. You are going to learn SO much and you will start to see the world around you through a different lens. Exciting!

What can you do to prepare?

If you have already taken Pre-Diploma Science 10 with me, then you are off to a good start. If you have not, have no fear, you will catch on quickly. One of the main things you can do is go over the **Scientific Measurement Workbook** I gave you at the start of the physics unit in grade 10 (if you are new to the program, email me at morrison.physics@gmail.com during the summer for a copy). Here are some pre-requisite skills and knowledge I am expecting you to have a handle on for next year (we will *review* these in September):

- SI units, prefixes, metric multipliers, and scientific notation
- Unit conversions and significant figures
- Area and volume of simple shapes (rectangle, triangle, circle, sphere)
- Algebra (the ability to solve a linear or quadratic equation for "x", including a variable appearing in more than one place or in the denominator of a multi-term expression)
- Trigonometry (minimum: sin, cos, and tan functions of right-angle triangles, ideally: sine and cosine law for oblique triangles)
- Graphing of linear functions using appropriate scales, including best-fit lines, slope, and equation of the line

In addition you can develop your physics sense by checking out the physics simulations at phet.colorado.edu .

I look forward to seeing you all in September, to start this exciting journey!

Mr. Morrison
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