High School Science Program Planning In The Central Bucks School District

Are you interested in science?

Yes/Possibly

Here are possible paths if you are more interested in **health related topics.**

Most Rigorous Program

Grade 10 - Honors Biology **and** Chemistry

Grade 11 and 12 - Honors or AP Physics, AP Biology, AP Chemistry, or Human Anatomy & Physiology

Academic Program

Grade 10 - Academic Biology or Chemistry

Grade 11 - Academic Biology or Chemistry

Grade 12 -Academic Physics, Human Anatomy & Physiology, AP Biology, or AP Chemistry

Here are possible paths if you are more interested in **environmental related topics.**

Most Rigorous Program

Grade 10 - Environmental Geology and Honors Bio, Chem, or Physics

Grade 11 - Oceanography and AP Bio, Chem, or Physics

Grade 12 - AP Environmental Science and Career Academy: Env (9)

AcademicProgram

Grade 10, 11, 12 (any order)- Environmental Geology, Oceanography (.5), Environmental Science (.5), and Academic Bio, Chem, or Physics

Here are possible paths if you are more interested in **engineering, math or computer topics.**

Most Rigorous Program

Grade 10 - Astronomy (.5) and Honors Biology, Chemistry or Physics

Grade 11 and 12 - AP Chemistry, AP Physics: Newtonian Mechanics and AP Physics: Electricity and Magnetism

Academic Program

Grade 10 - Academic Physics, Biology or Chemistry

Grade 11 - Academic Physics, Biology or Chemistry

Grade 12 - AP Physics: Newtonian Mechanics and Astronomy (.5)

No

Most Rigorous Program: Honors Biology, Chemistry, Physics, AP Environmental Science (any order)

Academic Program: Academic Biology, Chemistry and Physics (any order)

Basic Program: Environmental Geology, Practical Biology, Chemistry Concepts or Academic Physics (courses can be taken in any order)

Don't forget these fun and challenging electives during your high school years as well:

- AP Environmental Science
- Environmental Geology
- Forensics
- Oceanography
- Astronomy
- Human Anatomy & Physiology

Please turn over for important information regarding program planning

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It is important for students to consider the following as they program plan:

1. Your best resource is your science teacher – past or present.
2. All students should review the *Program of Studies* for course pre-requisites. Many classes have both science and math pre-requistes.
3. All students are encouraged to explore areas of interest in their course selection. There are a variety of classes available like astronomy, chemistry and forensics and ***any science course taken beyond the 3 credit minimum will count towards the required 'elective' credits***.
4. All **college bound** students should plan to take a Biology, Chemistry and Physics class. These are the core science classes expected by most competive colleges.
    a. Each of these courses can be taken at the academic, honors or advanced placement level. There is a *significant* difference between these levels including but not limited to: differences in the final exams, differences in the pre-requistes, differences in the amount of time they require outside of class, differences in the amount of independent learning they entail and differences in the course text. To give you a little idea of what we mean here are two reading passages; one from each of the text's used in the biology classes.

Excerpt on Microscopes from the Academic Biology Text

When people think of scientific equipment, one of the first tools that comes to mind is the microscope. Microscopes are devices that produce magnified images of structures that are too small to see with the unaided eye. **Light microscopes produce magnified images by focusing visible light rays. Electron microscopes produce magnified images by focusing beams of electrons.** Since the first microscope was invented, microscope manufacturers have had to deal with two problems: What is the instrument's magnification—that is, how much larger can it make an object appear compared to the object's real size? And how sharp an image can the instrument produce?

Excerpt on Microscopes from the Honor's Biology Text

Our understanding of nature often parallels the invention and refinement of instruments that extend human senses to new limits. Before microscopes were first used in the seventeenth century, no one knew for certain that living organisms were composed of cells. The first microscopes, like the ones you may use in a biology laboratory, were light microscopes. A **light microscope (LM)** (**Figure 4.1A**) works by passing visible light through a specimen, such as a microorganism or a thin slice of animal or plant tissue. Glass lenses in the microscope bend the light to magnify the image of the specimen and project the image into the viewer's eye or onto photographic film or a video screen. **Magnification** is the increase in the apparent size of an object. **Figure 4.1B** shows a protist called Euglena.

5. All **college bound** students intending on majoring in a science-related field should consider taking multiple sciences classes each year to best prepare themselves for the rigors of college.