

Dear Homeschooler,

Thank you for your support, which in a very real way has helped with the continued development of our conceptual science curricula. We now have 11 homeschool courses up and running with three new courses currently in the works. This includes *Conceptual Math*, (August 2021), *Conceptual Earth Science* (August 2021) and *Conceptual Biology* (August 2022).

We are often asked what sequence of science courses we might suggest for homeschooling students of different starting points within their middle school through high school years. We crafted this pathways document to help answer this question. Of course, every student is unique. Thus, these flow charts serve only as a broad brush stroke general guide for you to apply to your own particular situation.

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Conceptual Academy is a video rich and innovative course system used by colleges and high schools for introductory science, now available for homeschools, grades 7 – 12. Thank you for visiting our dedicated homeschool support site at LearnScience.Academy





# Considerations

## **Your State Requirements**

You'll want to chose a pathway that allows you meet your state's requirement for science credits. Taking this a step further, if possible, you'll also want to know admission requirements for the type of college your student might be considering.

### **Physics First**

We are "physics first" advocates. Consider, biology is the chemistry of life. Chemistry is the physics of the atom. Physics is the study of the rules of nature. In this way, physics is the most fundamental of all the sciences. It lays a foundation to chemistry, which, in turn, lays a foundation to biology. Across a high school program, we recommend the student take physics first before chemistry, which comes before biology.

But because we are physics first advocates, you'll find each of our textbooks and courses begins with physics! The first two chapters of *Conceptual Chemistry*, for example, are a review of the physics principles needed to do well in chemistry. Thus, if there are compelling reasons for a student to start with *Conceptual Chemistry*, then they can.

## Revisitation

For most students, when it comes to learning, revisiting subjects covered earlier can be a good thing. We need to tell you up front that in moving from one of our courses to the next, your student will find such "revisitation". Our physical science textbook, for example, spells out the concepts of physics within 11 chapters. Our physics textbook does the same, but over 36 chapters allowing for both more depth and breadth. Thus in going from physical science to physics, your student will be revisiting many of the same concepts. Relative to our video library, it will also mean many of the very same videos and even video quizzes, which we may need to reset for you.

## Two Paths for Middle School: Ir and Os

Paths Ti, Si, and He assume the student is starting Conceptual Academy in at least the 9<sup>th</sup> grade and that they've had some exposure to science in middle school from some other resource. Please consider: If the student has already taken *Conceptual Integrated Science Explorations* (CISE) or *Conceptual Physical Science Explorations* (CPSE), then we would expect them to follow through with *Conceptual Physics*. In many ways, *Conceptual Integrated Science* (CIS) is an upper level version of CISE. Similarly, *Conceptual Physical Science* (CPS) is an upper level version of CISE and CPSE are good starting points for younger students, CIS and CPS are good starting points for older students. For most situations, we do not recommend your student moving from CISE straight into CIS, nor CPSE into CPS. Why? Because after completing CISE or CPSE, they're ready to rock n roll right into *Conceptual Physics*, or even straight into *Conceptual Chemistry*. Or even *Conceptual Physics* AND *Conceptual Chemistry* at the SAME time, but spread out over two years, for the ultimate interleaving experience. We tip our hat to Charlotte Mason.



### What About Age Level?

For the pathways graphic we are assuming each student's age and grade level are well matched. You know your student best and how to adjust accordingly. Further, we generally recommend high school students start with *Conceptual Physics* regardless of their grade level. For example, if a student is joining Conceptual Academy in the 11<sup>th</sup> grade, then they should still start with *Conceptual Physics*. A possible exception would be if they are already coming in having had a positive experience in a physics course elsewhere. In that case, they might be well placed directly into *Conceptual Chemistry*.

### **The Potential Pathways**

#### Iridium, Ir

Good For: Incoming 7<sup>th</sup> graders and the traditional Physics, Chemistry, Biology sequence

At the middle school level, the *Conceptual Integrated Science Explorations* (CISE) course with its accompanying textbook can be reasonably completed over a two year period. It provides an age appropriate overview of physics, chemistry, biology, Earth science, and astronomy. The student then follows a traditional physics, chemistry, biology high school sequence, followed by *Conceptual Astronomy* for an upper level capstone review of physics with the big picture view provided by the study of stars and galaxies. Notably, *Conceptual Astronomy* is our shortest course using only select chapters from the *Conceptual Physical Science* textbook and easily completed in a single semester or over the summer allowing for 1) senioritis, and 2) time for managing the many other duties of a senior, such as college applications. Following the iridium path, the student's study of science culminates with a reflective "ah ha!". As an added note: we anticipate creating an astronomy/Earth Science course that seniors would be able to take for a full 1.0 credit.

### Osmium, Os

Good For: Incoming 8<sup>th</sup> graders and reserving the complexities of biology for later

Identical to the iridium path with the exception of starting with *Conceptual Physical Science Explorations* (CPSE), which provides a basic introduction to physics, chemistry, Earth Science, and astronomy (no biology). CPSE can reasonably be extended over a two year period. However, compared to CISE, this course is easier to compress into a single year by focusing primarily on just the physics and astronomy, which may be helpful for incoming 8<sup>th</sup> or 9<sup>th</sup> graders. Note: we have Homeschool Planet planners for both the 2 year and 1 year sequencing of CPSE. Of the major sciences, biology is arguably the most complex. A student following the osmium path won't be introduced to the basic concepts of biology until they already have a solid foundation in physics and chemistry.

### Titanium, Ti

Good For: Students starting Conceptual Academy with a Physical Science overview

*Conceptual Physical Science* (CPS) is the upper level version of CPSE. A student following the titanium path will have had middle school science from somewhere else. We've built two sub-paths: Faster Start and Slower Start. The "faster start" sub-path starts the student with an abbreviated version of CPS focusing on physics, astronomy, and chemistry (PAC). This sets the stage for Conceptual Physics in the subsequent year followed by Conceptual Physics

and Conceptual Biology. The "slower start" sub-path spreads the full contents of CPS over two years, which means it includes Earth Science. This also means a slower pace over the first two years of high school science, which can be of benefit to many students. This sets the stage for the student to take either Conceptual Physics or Conceptual Chemistry in the subsequent year followed by Conceptual Biology. Unlike the iridium and osmium paths, titanium does not culminate in astronomy. Why? Because it *begins* with astronomy as covered in *Conceptual Physical Science*. If your student has a significant interest in the life sciences, then we would point you to the Silicon, Si, pathway.

## Silicon, Si

### Good For: Setting a broad solid foundation of all the sciences in the first two years

Our *Conceptual Integrated Science* course is easily our most comprehensive covering all the major sciences using an integrated approach, which means applications of one science are presented in the context of another. There are many benefits to spreading out an integrated science approach over the first two years of high school. The pace is reasonable and the connections between the "different" sciences becomes more apparent. The two years integrated science also works well for a student starting Conceptual Academy in the 11<sup>th</sup> grade.

### Helium, He

### Good For: The science-shy High School student just starting Conceptual Academy

This pathway can be considered our lightest offering. The student is introduced to the fundamentals of physics within the *Conceptual Astronomy* course, which, as mentioned, is our shortest course and can be completed within a single semester or stretched out even further at a slower pace. You'll find there are four flavors of chemistry courses to choose from allowing for a continued lightness or to start digging in with *Conceptual Chemistry's* full version. As mentioned above we expect to have *Conceptual Earth Science* available by Fall 2021. Also as mentioned above, our *Conceptual Biology* curriculum is still in development with an anticipated publication date of August 2022.

## Path Name Explanations

Not wanting to prioritize one pathway over another, we avoided labeling such as A, B, C, D or 1, 2, 3, 4. Instead, we looked to the periodic table of elements. Iridium, Ir, and osmium, Os, are the densest elements. Accordingly, the iridium and osmium pathways are our most comprehensive offerings ranging from grades 7 through 12. The titanium pathway is light but strong, as represented by the element titanium, Ti. Silicon, Si, is known for its use in integrated circuits, thus its connection to the silicon pathway featuring Conceptual Integrated Science. It also doesn't escape our notice that silicon, Si, lies right below carbon, C, in the periodic table. Carbon, of course, is the element upon which all known life forms are based, which is a nod to the strong biology component of this pathway. Lastly, helium, He, is one of the lightest elements, which aligns with the nature of the helium pathway.

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