

### 1) What changes have been made to the Grade 9 and 10 science curriculum?

The cornerstone of the K-12 science curriculum is that students have the opportunity to practice and learn science as a way of thinking and of knowing about nature. Students are encouraged not only to understand the knowledge developed through science, but to acquire the skills and reasoning needed to ‘do’ science. ASL science courses have three simultaneous strands in which students practice and gain proficiency:

- *Science and Engineering Practices*: the ways in which science investigates, obtains, and evaluates knowledge
- *Crosscutting Concepts*: the types of analysis of a phenomenon that are common among all scientific disciplines
- *Disciplinary Core Ideas*: the knowledge about nature that is essential for students to understand as they come of age in a time in which the understanding of science is crucial.

### 2) How are students in ASL science classes assessed?

The courses are assessed using a variety of methods, based on the learning goals for each standard and unit. Feedback provided by the teacher enables students to improve the quality and accuracy of their work. Students are expected to turn in their work on time and welcome feedback to hone their learning. Students receive feedback in varying forms in class, which they should embrace, and seek to use these observations to revise their thinking. Types of assessment include: quizzes, tests, written analysis, lab reports, modelling, projects, presentations, activities and home-learning assignments. Major and minor assessments take many forms throughout the year.

### 3) How do Science 9 and Science 10 prepare students for AP courses or non-AP electives?

AP Biology, Chemistry, and Physics have all undergone comprehensive redesigns in the last five years, which align them with our science courses. AP courses now have a set of ‘Big Ideas’ (similar to the *Crosscutting Concepts*) and ‘Science Practices’ to which their course and exam expectations are aligned. The students’ experience in Science 9 and Science 10, in developing proficiency in science and engineering practices and crosscutting concepts, is beneficial in preparation for our AP science offerings.

Our non-AP offerings for Grades 11 and 12 are focused on continuing to develop scientific practices in more discipline-specific ways.

### 4) What textbooks and resources are provided to students in Science 9 and Science 10?

#### Textbooks

*Biology for NGSS*, BioZone

*Earth and Space Science for NGSS*, BioZone

#### Resources

The courses use many other high-school level resources as needed throughout course. These are posted publicly to Haiku for student use at appropriate times.

### 5) Whom should I ask if I have questions about a class?

The first person to ask is your student’s teacher, who will have the most specific information regarding questions or concerns about student performance, issues or challenges faced in class, suggestions for further improvement, or ways you can help your student be more successful.

### 6) Where can my student go for extra help?

Students can always talk to their teachers, who are available to assist during conference time, and often during lunch or after school. Students should also utilize ASL's peer tutoring program, which has tutors for Science 9 and Science 10 after school on Tuesdays and Thursdays.

7) Will these changes make placement in science classes when entering/leaving ASL more challenging?

Placement when changing schools is always a challenge. There isn't one standard approach to high school science that is broadly shared. Of the 13 students in the class of 2021, who joined ASL in 2018 in Grade 10, only three had come from a school that taught biology as a Grade 9 course.

Students leaving ASL have enough experience and specific knowledge in science to be able to enter a new curriculum at an appropriate point, both for age-level and content experience. ASL's science curriculum, through both integrated course and non-integrated discipline-specific courses, offers the same opportunity to incoming students.