

# Questions and Answers:

## **What are the new pathway names and what is in them?**

Each pathway is designed to provide students with the mathematical understandings, rigour and critical-thinking skills that have been identified for specific post-secondary programs of study and for direct entry into the work force. The content of each pathway has been based on the Western and Northern Canadian Protocol (WNCP) which governs curriculum in the Western Provinces and Northern Territories.

### **Apprenticeship and Workplace Mathematics**

This pathway is designed for entry into the majority of trades and for direct entry into the work force. Topics include working with formulas, financial mathematics, measurement and representation of 2-dimensional space and 3-dimensional objects. (Courses at grade 10, 11 and 12)

### **Foundations of Mathematics**

This pathway is designed for entry into post-secondary programs such as Arts or Humanities that do not require the study of theoretical calculus. Topics include financial mathematics, statistics, logic and reasoning, and research into the history of mathematics. (Courses at grade 11 and 12)

### **Pre-Calculus**

This pathway is designed for entry into post-secondary programs such as Science or Engineering that require the study of theoretical calculus. Topics include solving equations, functions (including quadratic, polynomial, exponential and trigonometric), logarithms, combinatorics and probability. (Courses at grade 11 and 12)

## **Are there still Provincial Exams in the new courses?**

Yes. The new pathway courses, started in September 2010, have a Provincial exam that counts for 20% of the student's overall course mark (school mark counts for 80%).

## **My daughter/son wants to study university sciences but his or her teacher has recommended the Foundations stream. What should I do?**

While Pre-Calculus 11 or 12 will be required for University Science, Business and Engineering programs, it is important to understand the teacher's recommendation. Foundations may be possibly suggested because your child found the Foundations and Pre-Calculus 10 course very challenging. The concern is that your child will be more challenged in the Pre-Calculus pathway in grade 11 and/or 12. It may also be that your child's learning style is better suited to a less theory based course like the Foundations stream.

## **Can my child get into university or college without Pre-Calculus 11 or 12?**

Yes. There are many different combinations of courses and programs that will allow a student to go to college or university. The specific Math courses that are required by colleges and universities depend entirely on the program a student wants to enter. Some entrance requirements include calculus Math courses (Pre-Calculus pathway) and others do not require calculus courses (Foundations pathway). It is crucial that you check the university or the college to find out which Math courses are needed for entry so that you choose the correct path.

## **What's the difference between the new courses and the old courses?**

Not only have the course names changed, but the content covered in each course is also different. The content comes from WMCP and it has restructured Math instruction from K to 12. Elementary students are already working on WNCP topics in their Math courses. Secondary courses need to change now so the whole structure is more consistent across grades and across provinces (WNCP includes the western provinces and northern territories). These changes have been made purposefully to achieve consistent delivery of curriculum from K to 12.

## **Which Math course is best suited to my child?**

While there is no "rule" about which Math course is right for each student, the decision can be made more easily by thinking about your child's ability and interest in Math, and future education and career plans. The new courses have been designed to facilitate student success after high school. For example:

- If your child has struggled in Math 8 or 9, enjoys working on projects or hands-on activities, or intends to pursue a trade or technical job after high school, then the Apprenticeship and Workplace pathway is the best choice.
- If your child enjoys working on projects or hands-on activities, or is planning further studying in the Social Sciences like Economics Arts or Humanities at post-secondary, then the Foundations pathway will be the best choice.
- If your child has been very successful in Math 9, enjoys the challenges of Math, and is thinking about future education or a career that involves Sciences or Engineering at a university, then starting the Pre-Calculus pathway will be the best choice.

Your child's education choices after high school depend, in part, on the courses they take in high school. To make an informed decision about which course is best suited for your child, you need to find out as much as you can about each pathway. Parents need to remember that grade 10 has ONLY two pathways but there are three pathways in grade 11 to 12.

Students who choose grade 10 Apprenticeship and Workplace CANNOT move to the Foundations stream easily.

## **What happens if we change our mind about the course decision that we have made?**

Because the three pathways were designed to give students different skills, attitudes and knowledge for different career and post-secondary paths, they were NOT designed specifically to allow for lateral movement between pathways. As a result, schools will not be suggesting students move from one pathway to another once a choice has been made and a student is working in one pathway's courses.

## **Is it possible to take more than one pathway?**

The pathways were designed in such a way that students could take more than one course if desired. Taking more than one math course is not unusual. This would give a student the most available opportunities at post-secondary institutions. If, after high school, your son/daughter changes career paths and realizes that he/she needs Pre-Calculus 11 or 12, colleges and universities will offer these or equivalent courses for upgrading.

## **Useful Links:**

- Education Planner: [www.educationplanner.ca](http://www.educationplanner.ca)
- BC Ministry of Education: [www.gov.bc.ca/bced](http://www.gov.bc.ca/bced)
- BC Ministry of Education Graduation Requirements: [www.bced.gov.bc.ca/graduation](http://www.bced.gov.bc.ca/graduation)
- BC Ministry of Education: Provincial Exams: [www.bced.gov.bc.ca/exams](http://www.bced.gov.bc.ca/exams)
- Math Curriculum Document: [www.bced.gov.bc.ca/irp/irp/\\_math.htm](http://www.bced.gov.bc.ca/irp/irp/_math.htm)
- BC Association of Math Teachers: [www.bcamt.ca](http://www.bcamt.ca)

## **CALCULATOR POLICY**

As recommended by the British Columbia Ministry of Education, calculators used in school must be hand-held devices designed primarily for mathematical computations. Each course has unique requirements, and students should consult with their teachers to confirm what specific functions are required.

- All students in grade 8-10 must have a teacher-approved scientific calculator for classroom use.
- All students in grade 11-12 and students in the IB Diploma Program must have a teacher-approved graphing calculator.

Using a calculator that contains information that would be unacceptable in paper form (e.g., programs or pre-entered notes) is prohibited unless previously approved by the teacher. Additionally, calculators are not to be shared during any form of assessment. This will be treated as cheating. All electronic devices that are not primarily used for mathematical computations (e.g., cell phones, musical devices, translators) are not to be used as calculators at school. Please refer to the section in the Student Agenda on Communication Devices for specific school policies.

**As per Ministry of Education requirements, during Provincial Exams a math or science teacher will conduct a calculator inspection for those exams where calculators are permitted.**