

# New Math 10-12 courses starting September 2010

Important information for parents and students about new Math courses starting September 2010.

You probably have many questions . . .

Why are there different Math courses in Grades 10, 11 & 12?

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

What are the new Pathways and where do they lead?

Which Math course is best suited to my child?

Who can help us make the decision?

Is Apprenticeship and Workplace really designed for students thinking of entering the trades?

Will there still be Provincial exams?

Which pathway is the most suitable for the majority of students to be studying?

## 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.

### 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.

### 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.

## Is there still going to be a Provincial Exam in the new Grade 10 courses?

Yes. The new pathway courses starting in Sept. 2010 will have a Provincial exam that counts for 20% of the student's overall course mark (school mark still counts for 80% overall). The exam will include a computation section without the use of a calculator as well as a calculator use section. The exams will still include multiple choice questions but will now also include problem solving that the new curriculum requires.

## My daughter wants to study University Sciences but her teacher has recommended the Foundations stream. What should I do?

While PreCalculus 11 or 12 will be required for University Science and engineering programs, it is important to understand the teacher's recommendation. Foundations was possibly suggested because your child found the Foundations and PreCalc 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. With new courses starting, there will be institutions that accept the Foundations courses for entry to programs instead of PreCalc.

## Can my child get into university or college without PreCalc 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 (Precalculus 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 WNCP 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 western provinces and northern territories). These changes have been made purposefully to achieve consistent delivery of curriculum from K to 12.

## The Goals of the New Pathways

The goals of all three pathways are to provide prerequisite attitudes, knowledge, skills and understanding for specific post-secondary programs or direct entry into the work force.

All three pathways provide students with mathematical understanding and critical thinking skills. It is the choice of topics that varies among pathways. When choosing a pathway, students should consider their interests, both current and future so that the pathway they choose will be the one to engage them in their studies.

### 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 courses in more than one if desired. Taking more than one math course is not unusual in eastern Canada. This would give a student the most available opportunities at post-secondary institutions. If, after high school, your son or 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.

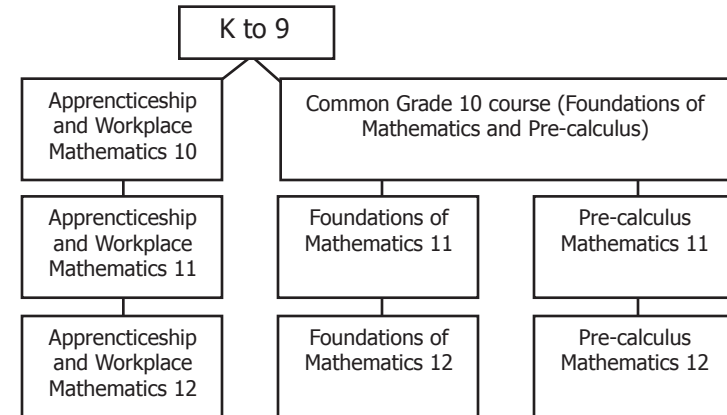
### Which pathway is the most suitable for the majority of students to be studying?

The most challenging pathway for students will be the theory based PreCalculus stream. This leads to University level post-secondary Calculus courses for Sciences and Engineering that only a small number of students enroll in. The majority of students should choose the less theory based Foundations courses for their studies.

### Is Apprenticeship and Workplace really designed for students thinking of entering the trades?

Yes. There were a number of discussions between the high school and post-secondary educators in the development of the new pathways. It was clear that one of the pathways needed to focus more on trades and technical math. This has resulted in reduced overlap between pathways and more specific outcomes for each of the three pathways.

## Math Pathways: transition from grade 9 to 12



Begin your exploration of post-secondary options in BC by visiting <http://educationplanner.bc.ca>

### 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 easier 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 instance:

- 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 study in the Social Sciences like Economics or 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 PreCalculus 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. You can do this by talking to your child's Principal, counsellor and math teacher as well as visiting [www.wncp.ca](http://www.wncp.ca) for curriculum information.

Parents need to remember that grade 10 has ONLY two courses but there are three pathways in grade 11 to 12. You and your child should carefully review the diagram above. Students who choose grade 10 Apprenticeship and Workplace cannot move to the Foundations stream easily.