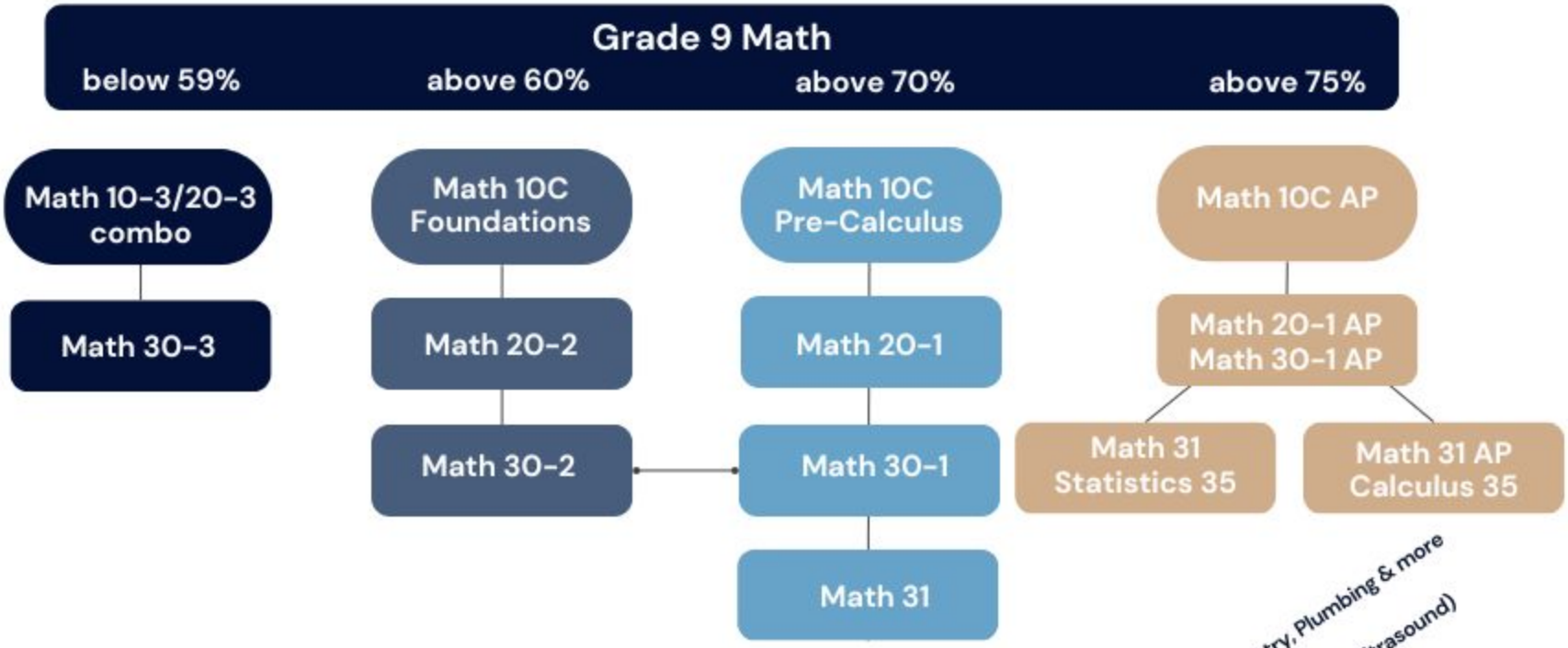
Mathematics Curriculum & Post-Secondary Requirements



Which math should I take for Post-Secondary?

	Bachelor of Arts	Bachelor of Science	Bachelor of Kinesiology	Bachelor of Education (MacEwan Physical Education Transfer)	Bachelor of Commerce	Bachelor of Science in Engineering	Bachelor of Science in Kinesiology	Bachelor of Science in Nursing	Trades: Welding, Electrical, Carpentry, Plumbing & more	Diagnostic Medical Sonography (Ultrasound)	Respiratory Therapy	Primary Care Paramedic	Electrical or Power Engineering
U OF A	30-1^ OR 30-2^	30-1*	30-1^ OR 30-2^	30-1^ OR 30-2^	30-1*	30-1* and 31*	30-1*	30-1^ OR 30-2^					
MACEWAN	30-1^ OR 30-2^	30-1*		30-1^ OR 30-2^	30-1^ OR 30-2^			30-1^ OR 30-2^					
NAIT					30-1^ OR 30-2^				10-3*	30-1^ OR 30-2^	30-1^ OR 30-2^	20-2*	30-1*

This is a general overview of common degrees and programs and is subject to change. Always verify with post-secondary institutions and guidance counsellors for program requirements.

* Required, ^ not required but can be used

More than Marks: Mathematical Proficiency Checklist for Math 10 Course Selection

When selecting your Math course, consider which of the following skills you use regularly. Check each box that applies to you. Colour half the box if the statement is partially accurate. Take some time to reflect honestly on each point. Keep in mind, **each of these items can be improved with practice.**

1. Effort, flexibility & attitude (*Productive Disposition*)

- ☐ I am **self-motivated** and put in a **high degree of effort**
- ☐ I am **diligent** and **persist** when faced with challenging work
- ☐ I regularly **get help** from sources other than my teacher (peers, textbook, on-line)
- ☐ I believe math is **useful** and learning math is **worthwhile**
- ☐ I have a **positive attitude** towards math; I enjoy working through problems
- ☐ I **collaborate** well (take turns, ask questions, respectfully challenge & defend ideas)

2. Communicate and justify thinking (*Adaptive Reasoning*)

- ☐ I can easily **explain my thinking** in words and in writing
- ☐ I easily separate my thinking into **small steps**
- ☐ I **describe** specific steps and **justify** the reasons I chose each step

3. Formulate, represent and solve problems (*Strategic Competence*)

- ☐ I **formulate strategies** to solve problems
- ☐ I use models to represent my thinking (**draw images** and graphs)
- ☐ I pay **close attention to details** and take a **systematic, methodical** approach
- ☐ I **adapt my strategies** based on the information presented

4. Use strategies effectively (*Procedural Fluency*)

- ☐ I **use formulas** and algorithms quickly and correctly
- ☐ I use **strategies** or 'tricks' to remember procedures
- ☐ I perform **mental math** efficiently (in and outside of class)
- ☐ I regularly **estimate** (in and outside of class)

5. Understand concepts (*Conceptual Understanding*)

- ☐ I **understand** mathematical concepts.
- ☐ I know the **meaning** of what I am doing
- ☐ I know the **reasoning** for my choices
- ☐ I recognize **connections** between different concepts
- ☐ I **apply** concepts to new situations

When I think about what I want to do after highschool, how central will Math be to my potential plans?

- ☐ A. I'll need advanced Math including calculus. *For example*: Engineering, Computing Science, Commerce, Kinesiology etc..
- ☐ B. Advanced Math skills will be important, but I won't need calculus. *For example*: Nursing, Education, Arts, Communications, Fine Arts, Respiratory Therapy, and others.
- ☐ C. I am interested in a trade that doesn't require advanced math, or I want to enter the workforce after high school. *For example*: Culinary Arts, Travel and Tourism, Legal Assistant, Welding, Millwright, most Trade Apprenticeships, and others.

Using the Checklist to Assist with Course Selection

Tally the number of checks and record your answer to the question above. **Keep in mind this checklist is just one tool to help you determine your best fit course selection.** Each skill can be improved with practice.

_____ (number of checks) _____ (A,B,or C from question above)

If you have **fewer than 10 checks**, there is a higher likelihood of struggling in 10C Foundations. You may want to consider 10-3.

If you have **between 10 - 15 checks**, you may struggle in 10C Pre-Calculus. You may want to consider 10C Foundations.

If you have **between 15 - 20 checks**, you may want to consider 10C Pre-Calculus or if you are a rigorous, passionate student, 10C Advanced Placement.

Adapted from : http://www.nap.edu/catalog/9822.html; https://www.mathnic.org/tools/06_proficiency.html