**SOUTH SHORE REGIONAL SCHOOL BOARD**
**CURRICULUM UPDATES & CONTACT INFORMATION**
**Last updated: June 29th, 2017**

# MATHEMATICS

## Curriculum Revision

The P-12 Curriculum revision has been completed!

The Western and Northern Canadian Protocol (WNCP) Mathematics Curriculum replaces the Atlantic Canada Mathematics Curriculum introduced in 1997. Teachers reported that they found the Atlantic Canada Mathematics curriculum unmanageable within the instructional time available for mathematics. The WNCP mathematics curriculum has fewer outcomes at each grade level. It focuses clearly on the most important things to learn at each grade level. Concepts are taught for **deeper understanding**, allowing teachers and students time to focus on the process rather than the product. A major focus of the new approach will be to teach through problem solving and provide opportunities for students to use personal strategies when doing computations.

Any teacher feedback is appreciated and can be sent to Mark MacLeod.

| Implementation Schedule | Grades | | | |
|---|---|---|---|---|
| Year 1 (2013–14) | Primary 1, 2, 3 | | | 10 |
| Year 2 (2014–15) | | 4, 5, 6 | | 11 |
| Year 3 (2015–16) | | | 7, 8, 9 | 12 |

## Contacts

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# Curriculum Guides

If teachers have not yet downloaded the curriculum documents or Learning Outcomes Frameworks, they can be found (not all) in various stages (final, draft, conceptual, ..) on the **EduPortal.**

The DoE are now housing all the **curriculum guides/documents** in a one-stop place called the EduPortal. Check this central place out at http://edapps.ednet.ns.ca/eduportal You will need your Employee Number as found on your payroll information to enter the site. Go to Resources and then **Educator's Site and/or the Curriculum Cart** to access/download the curriculum documents.

Curriculum guides may also be accessed through their respective **Moodles** such as: Mathematics P-3, 4-6, 7-9, 10, 11, and 12; P-3 Renew, Revisit, Rebuild; An Innovative Curriculum; 4-6 Renew, Refocus, Rebuild. Innovation and Exploration-Grades 4-6 Streamlined Curriculum; Social Studies grades 3-6 and Mi'kmaw Studies 11; some Family Studies courses like Child Studies 9 and Canadian Families 12; Healthy Living 9: Workplace Health & Safety Module; Entrepreneurship 12 and Cooperative Education. Teachers have been given access to these Moodles with a one-time enrollment key. If you need assistance please go to our SSRSB Curriculum site located on www.ssrsb.ca or contact Mark MacLeod at mmacleod@ssrsb.ca

Besides updated curriculum guides, EduPortal also has easy access to other resources and links such as: the On-Line Video Library, upcoming events such as Webinars, Digital Video Library, EBSCO, Ednet Cloud, Education Media Library, Evaluation Services / Provincial Assessment info, FSL Program Services, IB Program, NSVS, NSSBB Online (ALR), ….

# INFORMATION ITEMS of Interest

- **New Moodles for P-3, 4-6, and 7-9 and 10, 11 and 12** are being made over-message was sent to all current users re the July 15 turn-over to the new design. The Moodle was switched so that it could be better aligned with Goggle and more user-friendly. Plus once you click on a document like EM 11 Curriculum guide it will open in your goggle drive and you can "move to" your goggle drive. The new Moodle interface will have 6 main headings and look a little different. September 1st, 2017 will see the old interface go and teachers who are logged in will go straight to the new interface while new teachers will have to go and log in as usual via NSVS. A reminder that after 185 days of being inactive on the Moodle, you get locked out and will need to re-enroll.
- Very few teachers are using the **Pearson hosted e-Texts** (grades 3-9). More teachers are using the NS version because it is less confusing to access than the Pearson-hosted (i.e. spreadsheet required, ..). Pearson Math Makes Sense ProGuide Files are word.doc files and hosted on the respective Moodle and with Word not being supported in some boards, teachers will not be able to access these files-The DoE are in progress of transferring these Word files to goggle.doc files-stay tuned.
  Flare and Fundamentals-these games are not being used by teachers so likely will not be renewed plus students can't access them on their device-cost to the DoE is also very expensive.
- **Plain Language Documents** were developed for P-3, 4-6 and 7-8 as a means for parents to understand the new mathematics a little better. They are currently waiting for approval at the DoE before distributed. Launch likely will be Sept 2017. Will be sent out in hard copy and on-line.
- Future Goals-Hockey Scholar is a digital education course that **focuses on science and math by teaching those concepts through the game of hockey**. For grades 5-8, this 12-module course is completely free. Visit info.everfi.com/HockeyScholarNS to bring this resource to your school today!
- **French Updates**-Stephane Duguay-DoE Leaps and Bounds will be translated for Grades 1-8 for Immersion (Middle, Intensive and Late)-now license format versus CDs-hopefully completed in Fall 2017. In May 2017, copies to all Grade 1 & 2 Immersion teachers.

- **Grade 3-8 Science French resources** called Predire, observer, expliquer-105 experiences en classe were provided for FI teachers; Grade 4-6 teachers received two Spheros resources; Grade P-6 teachers received Les Maths par L'image (Marian Small)-all sent to Mary at SSRSB.
- **MATHEMATICS CONTESTS** Every year in Canada students from grades 2 to 12 have the opportunity to participate in mathematics contests. The main focus of mathematics contests is to stimulate interest in mathematics. These contests are an excellent way to provide students with a challenging and engaging mathematical experience that can be both competitive and educational. The format and structure vary from multiple-choice answers to essay questions to a team competition that emphasizes mathematical writing skills and effective group work. A collection of problems and solutions from previous years can usually be ordered from the sponsor of the contest. Teachers may also find some problems and solutions in databases posted on contest web sites. Using these materials to help students prepare for the contests is an exciting way to support the curriculum and help students to develop problem-solving strategies. Some teachers may prefer to use these contests to supplement classroom work, while others use them with their math clubs. Setting up some problem-solving displays is an effective way to engage students and parents during math fairs, open houses, or curriculum nights. Some contests are scored internally while others provide opportunity for interschool competitions in which students can compare their results with those of other students in the province or other parts of Canada.
  The contests are also a great tool to challenge our gifted and talented students who may be on an enrichment plan for mathematics. A collection of problems and solutions from previous years can usually be ordered from the sponsor of the contest.
  Below are some useful web sites and a list of the most popular contests with registration deadlines and competition dates. A link to the Nova Scotia Math Circles is also included.

| Website | Annual Mathematics Contests |
|---|---|
| www.nsmathcircles.com | Nova Scotia Math Circles—evening(s) of mathematical fun while exploring the wonder of numbers |
| www.cemc.uwaterloo.ca | Gauss, Pascal, Cayley, Fermat, Fryer, Galois, Hypatia, Euclid, Canadian |

| | |
|---|---|
| | Senior and Intermediate Mathematics Contests, Canadian Team Mathematics Contest (in schools) |
| www.mathematicacentrum.ca | Thales, Byron-Germain, Fibonacci, Pythagoras, Euler, Lagrange, Newton |
| www.cms.math.ca/Competitions | Sun Life Financial Canadian Open Math Challenge, Canadian Mathematical Olympiad |
| www.themathleague.com | The Math League |
| http://kangaroo.math.ca | Canadian Math Kangaroo Contest |
| http://purplecomet.org | Purple Comet! Math Meet—free, on-line, international, team mathematics competition |

- Recommended by the DoE as an **engaging on-line math game** using problem solving skills to challenge students http://www.mitacs.ca/outreach/mathamaze
- www.nctm.org -check it out for **lesson plans**, illuminations, problem solving, latest app recommendations, …..
  Lots of neat engaging activities on http://illuminations.nctm.org! Try this one: **Odd man out**: Use manipulatives to show whether numbers are odd or even. Then generalize about sums of odd and even numbers. Includes activity video, worksheet and answers. ***http://illuminations.nctm.org/Lesson.aspx?id=3892***
- Graph from linear to parabolas to trigonometric to conics to derivatives; both in y= and transformational form; using sliders to change parameters, … check it out at https://www.desmos.com/calculator Also available as a free app on I-Pad or I-Phone.
- You may have used **Desmos**, the free graphing software, but are you aware there is a **Desmos Teacher site** at teacher.desmos.com? The teacher site allows for interaction between the teacher and students using a login code delivered for each activity. Teachers can see results as the students work. Activities such as Central Park bridge the transition from arithmetic to algebra, Polygraph requires students to play Who Am I with graphs of functions, Carnival made with Dan Meyer allows students to discover how values are related to rates of change and the rate of change of the rate of change. Source: teacher.desmos.com
- **Autograph and SMART Math Tools software** are on the school computers at all our high schools, including SSILC. Teachers can also get the software on their personal computer at home-this information was sent out to schools in June 2012.
- The latest version of **Geometer's Sketchpad** is 5.04.
- Fun With Fractions: 7 Tactile & Kinesthetic Games (thanks to Leo for sharing)-check it out at http://www.weareteachers.com/blogs/post/2015/02/24/fun-with-fractions-7-tactile-and-kinesthetic-games
- Playing **games in mathematics**-it works! Check out http://smartblogs.com/education/2014/04/24/when-are-we-ever-going-to-use-this/

- **Some schools have been asking about IXL**: Back in the fall, the provincial math lead team held a meeting with the sole objective of reaching consensus on the usage of math digital sites such as IXL FrontRow Ed, etc. The position from the DOE (although not in writing) is that the use of these sites goes against the *Personal Information International Disclosure Protection Act* (PIIDPA) for the protection of student information by Nova Scotia Educators.
  Sites such as IXL mislead teachers in believing they are actually helping their students in accelerating their learning when in fact they are distancing themselves from it. As, the SSRBS is moving forward in fostering a strong culture of assessment for learning practices, it puts into question this particular practice. If we want our teachers to be highly engaged in observing students' misconceptions and misunderstandings in math, based on what they observe happening at the students' desks, and respond to those in a timely manner, then digital sites where evidence of student thinking cannot be tracked is just not an option.
- Math Myths-"**what amount and kind of mathematics do we really need**?" http://www.pbs.org/video/2365816114/

# Select a grade and/or category for more curriculum/course support & resources

Primary
Grade One
Grade Two
Grade Three
Grade Four
Grade Five
Grade Six
Grade Seven
Grade Eight
Grade Nine
Grade Ten
- Mathematics 10
- Mathematics at Work 10
- Mathematics Essentials 10

Grade Eleven
- Mathematics 11
- Pre-calculus 11
- Mathematics at Work 11
- Mathematics Essentials 11

Grade Twelve
- Mathematics 12
- Pre-Calculus Mathematics 12
- Calculus 12
- Math for the Workplace 12
- Mathematics at Work 12

**Renew, Refocus, Rebuild**
**An Innovative Curriculum Primary-Grade 3**

**NEW for the 2015-16 school year.** There is a **revised** Time to Learn Strategy for **Grades Primary-Three**. Some of the important points are:

- Increased time for Language Arts instruction for P-2 (from 90 mins/day to 123 mins/day) and **Mathematics instruction for P-2 (from 45 mins/day to 75 mins/day)** and increased time for Language Arts instruction for Grade 3 (from 115 mins/day to 158 mins/day) and **Mathematics instruction for Grade 3 (from 60 mins/day to 90 mins/day).**
- An integrated model where outcomes from one or more subject areas (Social Studies, Science, Health, Visual Arts and Information Communication Technology) are addressed within Language Arts and/or **Mathematics** for active and interactive learning.
- The number of SCO's for each subject area of ELA, Social Studies, Science, Health and Visual Arts has been drastically reduced. The SCO's for **Mathematics** will remain as is while the reduction of outcomes for Physical Education and Music are currently being worked on-stay tuned.
- Learning packages were developed to assist teachers in offering daily Physically Active Time (PAT), which is general classroom activity distinct from Physical Education classes. The PAT is set at 10 mins/day.
- Teacher resources were developed to support teachers with combined classes (i.e. 3/4 split).
- Teachers will report only on **Integrated Mathematics** and Integrated Language Arts for all three terms with Physical Education and Music reported on beginning with reporting period #2.
- All the above information and lots more can be found on the **Renew, Refocus, Rebuild-An Innovative Curriculum Moodle**-to get there:
  - ✓ Visit https://nsvs.ednet.ns.ca
  - ✓ Click on Professional Communities of Practice
  - ✓ Log in using your full staff email.
  - ✓ Enter required information (First time users only)
  - ✓ Locate Professional Communities of Practice at the bottom of the page
  - ✓ Scroll down and locate Renew, Refocus, Rebuild; An Innovative Curriculum
  - ✓ You will be prompted to Enrol Me in course. You are now a participant in the course and it will be displayed under "My Courses" each time you log into NSVS.

## Grade Primary Mathematics
## (2013-2014 / Year #1 of Implementation of WNCP curriculum)

**Provincial Guide**

- The SCO's for Primary Mathematics will remain as is with the NEW P-3 Innovative Curriculum-no reductions.
- Mathematics Primary Curriculum Document (May 2013 Draft)
- Mathematics Primary Yearly Plan (Draft June 2013)
- The Time to Learn Strategy recommends a minimum of Mathematics instruction for P-2 (75 mins/day) and Grade 3 (90 mins/day).

**Core Resources**

- Math Makes Sense Primary (Pearson)-a classroom resource package that includes a printed Big Book, and a Projectable Big e-book CD; Teacher Resource Guide (print and CD); Primary Audio CD.
- All P-3 classroom teachers now have access (June 2013) to the Mathematics Learning Commons P-3 Moodle. Teachers can log in at http://nsvs.ednet.ns.ca using the first time enrollment key and their ednet username and password. All P-3 curriculum guides and related support documents (i.e. yearly, unit plans, professional learning videos, Origo Videos, Numeracy Nets K-3, Power Point for Curriculum Night, Let's Talk About .. pamphlets, ALR resources,..) are hosted on the Moodle. Teachers received instructions on how to access the Moodle and to enroll in the Mathematics Learning Commons Primary-3. Contact Mark if you need further assistance.
- Mathematics P–3 Webinar: Big Ideas in P–3 Mathematics: Developing Equality in Mathematics Primary – 3. Equality is one of the essential understandings that students must acquire as they learn mathematics. This is a quest that begins in grade Primary and continues into senior high school. Learn how this big idea unfolds from grades Primary to 3 and discover how this one big idea can set students up for ongoing mathematical success. Topics explored during this webinar will include equality as balance; how equality is tied to partitioning and part-whole reasoning; common misconceptions about equality; and the types of tasks that build the concept of equality. Registering for a Webinar-Teachers wishing to participate in upcoming webinars should register through the EduPortal at https://edapps.ednet.ns.ca/eduportal If teachers can't fit the webinar into their schedules, they can simply wait and view the archived webinars once they are posted on the DVL which this one has been, by going to http://dvl.ednet.ns.ca/browse/results/taxonomy%3A169
- Teachers and students now have access to Pearson Education's Virtual Manipulatives link. This is a license for 7 years. The P-3 and 4-6 Moodles both have links to the Virtual Manipulatives resource.

# Grade 1 Mathematics
# (2013-2014 / Year #1 of Implementation of WNCP)

**Provincial Guide**

- The SCO's for Mathematics 1 will remain as is with the NEW P-3 Innovative Curriculum-no reductions.
- Mathematics 1 Curriculum Document (May 2013 Draft)
- Mathematics 1 Yearly Plan (Draft June 2013)
- Pictorial Representation (Grade 1, SCO NO9) Addition & Subtraction-Story Structures-the aim is not to teach all the pictures/structures in isolation but they be developed from students' experiences on what the students come up with. Showing real student work examples would be more powerful than going through all the structures one by one.
- The Time to Learn Strategy recommends a minimum of Mathematics instruction for P-2 (75 mins/day) and Grade 3 (90 mins/day).

**Core Resources**

- Math Makes Sense Primary (Pearson)-a classroom resource package that includes a printed Big Book, and a Projectable Big e-book; Teacher Resource Guide (print and CD); Student E- Book (print reproducible masters and CD); Grade 1 Audio CD.
- All P-3 classroom teachers now have access (June 2013) to the Mathematics Learning Commons P-3 Moodle. Teachers can log in at http://nsvs.ednet.ns.ca using the first time enrollment key and their ednet username and password. All P-3 curriculum guides and related support documents (i.e. yearly, unit plans, professional learning videos, Origo Videos, Numeracy Nets K-3, Power Point for Curriculum Night, Let's Talk About .. pamphlets, ALR resources,..) are hosted on the Moodle. Teachers received instructions on how to access the Moodle and to enroll in the Mathematics Learning Commons Primary-3. Contact Mark if you need further assistance.
- Mathematics P–3 Webinar: Big Ideas in P–3 Mathematics: Developing Equality in Mathematics Primary – 3. Equality is one of the essential understandings that students must acquire as they learn mathematics. This is a quest that begins in grade Primary and continues into senior high school. Learn how this big idea unfolds from grades Primary to 3 and discover how this one big idea can set students up for ongoing mathematical success. Topics explored during this webinar will include equality as balance; how equality is tied to partitioning and part-whole reasoning; common misconceptions about equality; and the types of tasks that build the concept of equality. Registering for a Webinar-Teachers wishing to participate in upcoming webinars should register through the EduPortal at https://edapps.ednet.ns.ca/eduportal If teachers can't fit the webinar into their schedules, they can simply wait and view the archived webinars once they are posted on the DVL which this one has been, by going to http://dvl.ednet.ns.ca/browse/results/taxonomy%3A169

- The DoE were able to get approval for the provincial purchase of digital files for **Leaps and Bounds 1-2** (English version). The files will be posted to the P-3 Moodle in the near future. The licensing agreement enables English Program teachers who work with students in grades 1 and 2 to use this resource.
- Leaps and Bounds 3-4 is on the P-3 Mathematics Moodle.
- Teachers and students now have access to Pearson Education's Virtual Manipulatives link. This is a license for 7 years. The P-3 and 4-6 Moodles both have links to the Virtual Manipulatives resource.

## Grade 2 Mathematics
## (2013-2014 / Year #1 of Implementation of WNCP curriculum)

**Provincial Guide**

- The SCO's for Mathematics 2 will remain as is with the NEW P-3 Innovative Curriculum-no reductions.
- Mathematics 2 Curriculum Document (May 2013 Draft)
- Mathematics 2 Yearly Plan (Draft June 2013)
- The Time to Learn Strategy recommends a minimum of Mathematics instruction for P-2 (75 mins/day) and Grade 3 (90 mins/day).

**Core Resources**

- Math Makes Sense Primary (Pearson)-a classroom resource package that includes a printed Big Book, and a Projectable Big e-book; Teacher Resource Guide (print and CD); Student E- Book (print reproducible masters and CD); Grade 2 Audio CD.
- All P-3 classroom teachers now have access (June 2013) to the Mathematics Learning Commons P-3 Moodle. Teachers can log in at http://nsvs.ednet.ns.ca using the first time enrollment key and their ednet username and password. All P-3 curriculum guides and related support documents (i.e. yearly, unit plans, professional learning videos, Origo Videos, Numeracy Nets K-3, Power Point for Curriculum Night, Let's Talk About .. pamphlets, ALR resources,..) are hosted on the Moodle. Teachers received instructions on how to access the Moodle and to enroll in the Mathematics Learning Commons Primary-3. Contact Mark if you need further assistance.
- The Grade 2 DEECD Mathematics Common Assessment (discontinued) is being made available to all Grade 2 teachers, just in case they may be interested in viewing, accessing or implementing this tool. There is absolutely no expectation, but it has been uploaded to the P-3 Moodle should they wish to peruse it, use it or otherwise take a look at it. It is a great exemplar of a common assessment which many teachers might also be interested in viewing. The PDF files for the spring version of the Grade 2 Mathematics Classroom-based Common Assessment have been uploaded to the Mathematics P-3 Moodle site. Fall files have also been updated/uploaded, as well as a set of questions (Item Banks) for teachers use.
  The Grade 2 Mathematics Classroom-based Common Assessment files

include:
Teacher Information Sheet (Fall and Spring files)
Administration and Scoring Guide (Fall and Spring files)
Ten-Frames - Interview Questions (Fall and Spring files); Number Cards (Spring file)
Record Sheet (Fall and Spring files)
Student Booklet (Fall and Spring files)
Item Bank (Fall Paper and Pencil Items; Fall Interview Items)
Field Test Observation document (Spring 2016)

- Mathematics P–3 Webinar: Big Ideas in P–3 Mathematics: Developing Equality in Mathematics Primary – 3. Equality is one of the essential understandings that students must acquire as they learn mathematics. This is a quest that begins in grade Primary and continues into senior high school. Learn how this big idea unfolds from grades Primary to 3 and discover how this one big idea can set students up for ongoing mathematical success. Topics explored during this webinar will include equality as balance; how equality is tied to partitioning and part-whole reasoning; common misconceptions about equality; and the types of tasks that build the concept of equality. Registering for a Webinar-Teachers wishing to participate in upcoming webinars should register through the EduPortal at https://edapps.ednet.ns.ca/eduportal If teachers can't fit the webinar into their schedules, they can simply wait and view the archived webinars once they are posted on the DVL which this one has been, by going to http://dvl.ednet.ns.ca/browse/results/taxonomy%3A169
- The DoE were able to get approval for the provincial purchase of digital files for **Leaps and Bounds 1-2** (English version). The files will be posted to the P-3 Moodle in the near future. The licensing agreement enables English Program teachers who work with students in grades 1 and 2 to use this resource.
- Leaps and Bounds 3-4 is on the P-3 mathematics Moodle.
- Teachers and students now have access to Pearson Education's Virtual Manipulatives link. This is a license for 7 years. The P-3 and 4-6 Moodles both have links to the Virtual manipulatives.

## Grade 3 Mathematics
## (2013-2014 / Year #1 of Implementation of WNCP curriculum)

**Provincial Guide**

- The SCO's for Mathematics 3 will remain as is with the NEW P-3 Innovative Curriculum-no reductions.
- Mathematics 3 Curriculum Document (May 2013 Draft)
- Mathematics 3 Yearly Plan (Draft June 2013)
- The Time to Learn Strategy recommends a minimum of Mathematics instruction for P-2 (75 mins/day) and Grade 3 (90 mins/day).

**Core Resources**

- Math Makes Sense 3 Teacher ProGuide (print and CD)
- Math Makes Sense 3 Student Edition (print and E-Text)
- Math Makes Sense 3 Student e-Text. Detailed instructions to **access grades 3-9 e-Texts** for both teacher and student are given on the respective P-3, 4-6 and 7-9 Mathematics Moodles-go to Math Makes Sense and scroll down and follow instructions whether you want Pearson hosted, NS hosted or just a PDF version. **Teachers and students that had registered last year must re-register.** To access the Pearson e-text version, you must register as the teacher and register all your students using a spreadsheet that is sent to Pearson and logins for teacher and students are sent back. You get more bells and whistles with Pearson hosted (interactive tools, video clips, ..) but I would recommend the NS hosted for your first try. You can access the NS hosted e-text without filling in a spreadsheet and waiting for Pearson to respond-just follow the directions that relates to the NS hosted-SLC Information for Teachers form and for SLC Information for Students form found on the respective Math Moodles, P-3, 4-6 and 7-9. With the NS hosted e-text, all students have a nspes.ca login to go to the Student Learning Commons (students may also have a gnspes email but need to use the nspes)-teachers have access to their student's nspes accounts through PowerSchool or through Jim or Alex. Enrollment keys for the various texts P-9 are on the Math Makes Sense tab on the Moodle-near the bottom-teacher gives the student the enrollment key as part of their instructions to access the NS hosted. *French Immersion teachers for grades 3 to 6 do not have access to a ProGuide on the Moodle. The ProGuides in French for grades 3 to 6 came from another publisher and there was an issue with their format and being able to host them on our Moodle. Teachers should have their own copy of the Proguide (DVD) and also have access to all the Word files on the Moodle.
- All P-3 classroom teachers now have access (June 2013) to the Mathematics Learning Commons P-3 Moodle. Teachers can log in at http://nsvs.ednet.ns.ca using the first time enrollment key and their ednet username and password. All P-3 curriculum guides and related support documents (i.e. yearly, unit plans, professional learning videos, Origo Videos, Numeracy Nets K-3, Power Point for Curriculum Night, Let's Talk About .. pamphlets, ALR resources,..) are hosted on the Moodle. Teachers received instructions on how to access the Moodle and to enroll in the Mathematics Learning Commons Primary-3. Contact Gaston if you need further assistance.
- Mathematics P–3 Webinar: Big Ideas in P–3 Mathematics: Developing Equality in Mathematics Primary – 3. Equality is one of the essential understandings that students must acquire as they learn mathematics. This is a quest that begins in grade Primary and continues into senior high school. Learn how this big idea unfolds from grades Primary to 3 and discover how this one big idea can set students up for ongoing mathematical success. Topics explored during this webinar will include equality as balance; how equality is tied to partitioning and part-whole reasoning; common misconceptions about equality; and the types of tasks that build the concept of equality. Registering for a Webinar-Teachers wishing to participate in upcoming webinars should register through the EduPortal at https://edapps.ednet.ns.ca/eduportal If teachers can't fit the webinar

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- The DoE were able to get approval for the provincial purchase of digital files for **Leaps and Bounds 1-2** (English version). The files will be posted to the P-3 Moodle in the near future. The licensing agreement enables English Program teachers who work with students in grades 1 and 2 to use this resource.
- Leaps and Bounds 3-4 Student and Teacher Resource were distributed to each Grade 3 teacher in CD format in April 2013. Most of the Resource teachers working with Primary to Grade 3 students have recently attended a one-day in-service on the Leaps and Bounds Mathematics diagnostic and intervention resource. The goals of the workshop were to understand whom the resource is intended for, how it works to support struggling students and how it aligns with the new Nova Scotia Mathematics curriculum P to 3. The grades 3-4 Leaps and Bounds student and teacher resources are posted on the P-3 Learning Commons Mathematic Moodle under the Assessment For Elementary tab.
- Teachers and students now have access to Pearson Education's Virtual Manipulatives link. This is a license for 7 years. The P-3 and 4-6 Moodles both have links to the Virtual manipulatives.

## Grade 4 Mathematics

## (2014-2015 / Year #1 of Implementation of WNCP curriculum)

**Planning for grades 4-6 took place in 2015-2016 for a streamlined, coordinated, and innovative curriculum with implementation in 2016-2017.**

**To access the site for the NEW Renew, Refocus, Rebuild. Innovation and Exploration-Grades 4-6 Streamlined Curriculum, go to the following URL, use your NSVS password, and enroll.** The site below will also give access to a streamlined /revised curriculum document (in most cases, fewer SCOs-**except for mathematics**) along with other Teaching Learning Supports and other resources.
**http://nsvs.ednet.ns.ca/nsps/nsps26/course/view.php?id=4102**

**Provincial Guide**

- **The SCO's for Mathematics 4 will remain as is with the NEW 4-6 Innovative Curriculum-no reductions.**
- Mathematics 4 Curriculum Guide (Implementation Draft, July 2014).
- Mathematics 4 Yearly Plan (Draft June 2014)
- The sample unit plans (Number) for the first three weeks of school that appear on the 4-6 Math Moodle are the only ones that will be posted. The intent is to provide teachers with an example of how to plan a unit by blending tasks from the curriculum document with lessons selected from the Math Makes Sense resource. As for daily mental math time, teachers are advised that they can continue using the mental math appendix they have been using for the past several years for strategies that align with the new outcomes. You can also conduct

"number talks" as discussed during last summer's workshop during mental math time. This is a link to the book "Number Talks" - it focuses on Primary to Grade 5.
http://www.pearsoncanadaschool.com/index.cfm?locator=PS1zOt&PMDbSiteId=2621&PMDbSolutionId=25862&PMDbSubSolutionId=&PMDbCategoryId=25876&PMDbSubCategoryId=&PMDbSubjectAreaId=&PMDbProgramId=82541

- The **REVISED** Time to Learn Strategy beginning in Sept 2016 requires a minimum of 90 minutes every day (increase from 60 mins) be a guideline for planning the mathematics program (includes Mental Math) in grades 4-6.

**Core Resources**

- Math Makes Sense 4 Teacher ProGuide (print and CD)
- Math Makes Sense 4 Student Text (print and E-Text)
- Math Makes Sense 4 Student e-Text. Detailed instructions to **access grades 3-9 e-Texts** for both teacher and student are given on the respective P-3, 4-6 and 7-9 Mathematics Moodles-go to Math Makes Sense and scroll down and follow instructions whether you want Pearson hosted, NS hosted or just a PDF version. **Teachers and students that had registered last year must re-register.** To access the Pearson e-text version, you must register as the teacher and register all your students using a spreadsheet that is sent to Pearson and logins for teacher and students are sent back. You get more bells and whistles with Pearson hosted (interactive tools, video clips, ..) but I would recommend the NS hosted for your first try. You can access the NS hosted e-text without filling in a spreadsheet and waiting for Pearson to respond-just follow the directions that relates to the NS hosted-SLC Information for Teachers form and for SLC Information for Students form found on the respective Math Moodles, P-3, 4-6 and 7-9. With the NS hosted e-text, all students have a nspes.ca login to go to the Student Learning Commons (students may also have a gnspes email but need to use the nspes)-teachers have access to their student's nspes accounts through PowerSchool or through Jim or Alex. Enrollment keys for the various texts P-9 are on the Math Makes Sense tab on the Moodle-near the bottom-teacher gives the student the enrollment key as part of their instructions to access the NS hosted. *French Immersion teachers for grades 3 to 6 do not have access to a ProGuide on the Moodle. The ProGuides in French for grades 3 to 6 came from another publisher and there was an issue with their format and being able to host them on our Moodle. Teachers should have their own copy of the Proguide (DVD) and also have access to all the Word files on the Moodle.
- Mathematics 4–6. Math Makes Sense 4–6 eText Walk-Through Webinar. You will be shown how to login to the Pearson eText for Math Makes Sense 4–6, and how to use the Course ID to connect your eText with your students' e-texts. This step will enable you to share notes with your students through the eText platform. Other topics covered will include navigating through the text, adjusting page magnification/view, how to take and share notes, how to highlight passages of text, how to access the added content in the text such as program masters, and how to access the videos and virtual manipulatives. Registering for a Webinar-Teachers wishing to participate in upcoming webinars should register through the EduPortal at https://edapps.ednet.ns.ca/eduportal If teachers can't fit the webinar

into their schedules, they can simply wait and view the archived webinars once they are posted on the DVL which this one has been, by going to http://dvl.ednet.ns.ca/browse/results/taxonomy%3A169

- All 4-6 classroom teachers now have access (June 2014) to the Mathematics Learning Commons 4-6 Moodle. Teachers can log in at http://nsvs.ednet.ns.ca using the first time enrollment key and their ednet username and password. All 4-6 curriculum guides and related support documents (i.e. yearly, unit plans, professional learning videos, Origo Videos, Numeracy Nets 4, Power Point for Curriculum Night, Let's Talk About .. pamphlets, ALR resources,..) are hosted on the Moodle. Teachers received instructions on how to access the Moodle and to enroll in the Mathematics Learning Commons 4-6. Contact Mark if you need further assistance.
- Mathematics 4–6 Webinar: Big Ideas in 4–6 Mathematics: Developing Equality in Mathematics 4-6. Equality is one of the essential understandings that students must acquire as they learn mathematics. This is a quest that begins in grade Primary and continues into senior high school. Learn how this big idea unfolds in Mathematics 4, 5, and 6 and discover how this one big idea can set students up for ongoing mathematical success. Topics to be explored during this webinar will include creating and maintaining balance; the concept of a variable; expanding from the equal sign to greater than, less than, greater than or equal; and common misconceptions about equality. Registering for a Webinar-Teachers wishing to participate in upcoming webinars should register through the EduPortal at https://edapps.ednet.ns.ca/eduportal If teachers can't fit the webinar into their schedules, they can simply wait and view the archived webinars once they are posted on the DVL which this one has been, by going to http://dvl.ednet.ns.ca/browse/results/taxonomy%3A169
- Leaps and Bounds 3-4 is a mathematics diagnostic and intervention resource aimed at supporting struggling students and aligns with the new Nova Scotia Mathematics curriculum. The Leaps and Bounds 3-4 and Leaps and Bounds 5-6 files are now on the 4-6 Mathematics Moodle (completed as of Nov 17, 2014) under the Assessment For Elementary tab.
- Numeracy Nets 4 is a resource for the Grade 4 Mathematics program. Numeracy Nets 5 and Numeracy Nets 6 do not correlate with the Mathematics 5 and Mathematics 6 curriculums.
- Teachers and students now have access to Pearson Education's Virtual Manipulatives link. This is a license for 7 years. The P-3 and 4-6 Moodles both have links to the Virtual manipulatives.
- Check out Census at School, an international Web-based classroom activity for students, at www.censusatschool.ca Ties in nicely with the Data Management outcomes. Even more Statistics Canada learning resources at www.statcan.gc.ca/learningresources for mathematics and other subjects.
- Grade 4 Math Assessment resources http://plans.ednet.ns.ca/grade4
  **M4 will be replaced with M3 and in place for the Spring of 2019 as part of RWM3.**
- **Provincial/Board/School Results M4:** Math Performance Levels 1-4, Strand by Strand (i.e. Number, Measurement, ..) levels (at, above or may require attention),

Cognitive Levels (Knowledge, Application, Analysis), scaled score and attempted questions are reported on each of the Mathematics 4, 6 and 8 Provincial Assessments by individual student. Once the embargo is lifted, these are sent out to schools-**latest was 2016-2017**. The spreadsheet also has tabs comparing how your school did on each assessment in relation to our Board and Provincial averages. These would be very helpful for math team PLC discussions, etc

- **M4 Lessons Learned document** was developed based on an analysis of the Item Description Reports for the Nova Scotia Assessment: Mathematics in Grade 4 (2013–2014, 2014–2015, 2015-2016 and 2016–2017). It is intended to support all elementary classroom teachers (in particular grades Primary–3) and administrators at the school, board, and provincial levels, in using the information gained from this assessment to inform next steps for numeracy focus. The analysis of these items form the basis of this document, which was developed to support teachers as they further explore these areas through classroom-based instruction and assessment across a variety of mathematical concepts.
  After the results for each mathematics assessment become available, an Item Description Report is developed to describe each item of the mathematics assessment in relation to the curriculum outcomes and cognitive processes involved with each mathematical strand. The percentage of students across the province who answered each item correctly is also connected to each item. Item description reports for mathematics are made available to school boards for distribution to schools, and they include provincial, board, and school data. Schools and boards should examine their own data in relation to the provincial data for continued discussions, explorations, and support for mathematics focus at the classroom, school, board, and provincial levels.
  This document specifically addresses areas that students across the province found challenging based on provincial assessment evidence. It is essential that teachers consider assessment evidence from a variety of sources to inform the next steps most appropriate for their students. Effective classroom instruction and assessment strategies are responsive to the individual learners within a classroom. The Lessons Learned documents are posted on the PLANS site (www.plans.ednet.ns.ca) and on the Mathematics P-3 and 4-6 Moodle. Check out a webinar on the PLANS site called "Lessons Learned: Mathematics in Grade 4".
- **M4 Item Descriptor Reports** (latest is 2015-16) are also available to schools and list the GCO tested, cognitive level of the assessment item (Knowledge, Application, Analysis), outcome that links to the assessment item, item description and your school's score (out of 100%) for that particular assessment item that was tested on the M4. The report also compares how your school did on each assessment item tested in relation to our Board and Provincial averages. These Item Descriptor Reports would be very helpful for math team PLC discussions, etc. Check out a webinar on the PLANS site called "Using Mathematics in Grade 4 Item Analysis".
- **Adaptations allowed for M4 and M6** are on page 9 of the Nova Scotia Information Guide (plans website)-i.e. students who have the use of an Operation Chart (addition and multiplication) as a DA and regularly use operation charts when writing classroom assessments, are permitted to use them when writing

provincial assessments. If a student uses an operation chart during the assessment, it must be recorded on the back cover of the assessment booklet. Addition, subtraction, multiplication or division tables are not operation charts and are not permitted to be used on provincial assessments. Worked examples or cognitive credit cards/cue cards compromise the validity of the assessment. Therefore, they are not considered appropriate adaptations and are not permitted during the assessment.

## Grade 5 Mathematics
## (2014-2015 / Year #1 of Implementation of WNCP curriculum)

**Planning for grades 4-6 took place in 2015-2016 for a streamlined, coordinated, and innovative curriculum with implementation in 2016-2017.**

**To access the site for the NEW Renew, Refocus, Rebuild. Innovation and Exploration-Grades 4-6 Streamlined Curriculum, go to the following URL, use your NSVS password, and enroll.** The site below will also give access to a streamlined /revised curriculum document (in most cases, fewer SCOs-**except for mathematics**) along with other Teaching Learning Supports and other resources.
**http://nsvs.ednet.ns.ca/nsps/nsps26/course/view.php?id=4102**

**Provincial Guide**

- **The SCO's for Mathematics 5 will remain as is with the NEW 4-6 Innovative Curriculum-no reductions.**
- Mathematics 5 Curriculum Guide (Implementation Draft, July 2014).
- Mathematics 5 Yearly Plan (Draft June 2014)
- The sample unit plans (Number) for the first three weeks of school that appear on the 4-6 Math Moodle are the only ones that will be posted. The intent is to provide teachers with an example of how to plan a unit by blending tasks from the curriculum document with lessons selected from the Math Makes Sense resource. As for daily mental math time, teachers are advised that they can continue using the mental math appendix they have been using for the past several years for strategies that align with the new outcomes. You can also conduct "number talks" as discussed during last summer's workshop during mental math time. This is a link to the book "Number Talks" - it focuses on Primary to Grade 5.
  http://www.pearsoncanadaschool.com/index.cfm?locator=PS1zOt&PMDbSiteId=2621&PMDbSolutionId=25862&PMDbSubSolutionId=&PMDbCategoryId=25876&PMDbSubCategoryId=&PMDbSubjectAreaId=&PMDbProgramId=82541
- The **REVISED** Time to Learn Strategy beginning in Sept 2016 requires a minimum of 90 minutes every day (increase from 60 mins) be a guideline for planning the mathematics program (includes Mental Math) in grades 4-6.

**Core Resources**

- Math Makes Sense 5 Teacher ProGuide (print and CD)
- Math Makes Sense 5 Student Text (print and e-Text)

- Math Makes Sense 5 Student e-Text. Detailed instructions to **access grades 3-9 e-Texts** for both teacher and student are given on the respective P-3, 4-6 and 7-9 Mathematics Moodles-go to Math Makes Sense and scroll down and follow instructions whether you want Pearson hosted, NS hosted or just a PDF version. **Teachers and students that had registered last year must re-register.** To access the Pearson e-text version, you must register as the teacher and register all your students using a spreadsheet that is sent to Pearson and logins for teacher and students are sent back. You get more bells and whistles with Pearson hosted (interactive tools, video clips, ..) but I would recommend the NS hosted for your first try. You can access the NS hosted e-text without filling in a spreadsheet and waiting for Pearson to respond-just follow the directions that relates to the NS hosted-SLC Information for Teachers form and for SLC Information for Students form found on the respective Math Moodles, P-3, 4-6 and 7-9. With the NS hosted e-text, all students have a nspes.ca login to go to the Student Learning Commons (students may also have a gnspes email but need to use the nspes)-teachers have access to their student's nspes accounts through PowerSchool or through Jim or Alex. Enrollment keys for the various texts P-9 are on the Math Makes Sense tab on the Moodle-near the bottom-teacher gives the student the enrollment key as part of their instructions to access the NS hosted. *French Immersion teachers for grades 3 to 6 do not have access to a ProGuide on the Moodle. The ProGuides in French for grades 3 to 6 came from another publisher and there was an issue with their format and being able to host them on our Moodle. Teachers should have their own copy of the Proguide (DVD) and also have access to all the Word files on the Moodle.
- Mathematics 4–6. Math Makes Sense 4–6 eText Walk-Through Webinar. You will be shown how to login to the Pearson eText for Math Makes Sense 4–6, and how to use the Course ID to connect your eText with your students' e-texts. This step will enable you to share notes with your students through the eText platform. Other topics covered will include navigating through the text, adjusting page magnification/view, how to take and share notes, how to highlight passages of text, how to access the added content in the text such as program masters, and how to access the videos and virtual manipulatives. Registering for a Webinar-Teachers wishing to participate in upcoming webinars should register through the EduPortal at https://edapps.ednet.ns.ca/eduportal If teachers can't fit the webinar into their schedules, they can simply wait and view the archived webinars once they are posted on the DVL which this one has been, by going to http://dvl.ednet.ns.ca/browse/results/taxonomy%3A169
- All 4-6 classroom teachers now have access (June 2014) to the Mathematics Learning Commons 4-6 Moodle. Teachers can log in at http://nsvs.ednet.ns.ca using the first time enrollment key and their ednet username and password. All 4-6 curriculum guides and related support documents (i.e. yearly, unit plans, professional learning videos, Origo Videos, Numeracy Nets 4, Power Point for Curriculum Night, Let's Talk About .. pamphlets, ALR resources,..) are hosted on the Moodle. Teachers received instructions on how to access the

Moodle and to enroll in the Mathematics Learning Commons 4-6. Contact Mark if you need further assistance.

- Mathematics 4–6 Webinar: Big Ideas in 4–6 Mathematics: Developing Equality in Mathematics 4-6. Equality is one of the essential understandings that students must acquire as they learn mathematics. This is a quest that begins in grade Primary and continues into senior high school. Learn how this big idea unfolds in Mathematics 4, 5, and 6 and discover how this one big idea can set students up for ongoing mathematical success. Topics to be explored during this webinar will include creating and maintaining balance; the concept of a variable; expanding from the equal sign to greater than, less than, greater than or equal; and common misconceptions about equality. Registering for a Webinar-Teachers wishing to participate in upcoming webinars should register through the EduPortal at https://edapps.ednet.ns.ca/eduportal If teachers can't fit the webinar into their schedules, they can simply wait and view the archived webinars once they are posted on the DVL which this one has been, by going to http://dvl.ednet.ns.ca/browse/results/taxonomy%3A169
- Leaps and Bounds 3-4 and 5-6 are a mathematics diagnostic and intervention resource aimed at supporting struggling students and aligns with the new Nova Scotia Mathematics curriculum. The Leaps and Bounds 3-4 and Leaps and Bounds 5-6 files are now on the 4-6 Mathematics Moodle (completed as of Nov 17, 2014) under the Assessment For Elementary tab.
- Teachers and students now have access to Pearson Education's Virtual Manipulatives link. This is a license for 7 years. The P-3 and 4-6 Moodles both have links to the Virtual manipulatives.
- Check out Census at School, an international Web-based classroom activity for students, at www.censusatschool.ca Ties in nicely with the Data Management outcomes. Even more Statistics Canada learning resources at www.statcan.gc.ca/learningresources for mathematics and other subjects.

## Grade 6 Mathematics
## (2014-2015 / Year #1 of Implementation of WNCP curriculum)

**Planning for grades 4-6 took place in 2015-2016 for a streamlined, coordinated, and innovative curriculum with implementation in 2016-2017.**

**To access the site for the NEW Renew, Refocus, Rebuild. Innovation and Exploration-Grades 4-6 Streamlined Curriculum, go to the following URL, use your NSVS password, and enroll.** The site below will also give access to a streamlined /revised curriculum document (in most cases, fewer SCOs-**except for mathematics**) along with other Teaching Learning Supports and other resources.
**http://nsvs.ednet.ns.ca/nsps/nsps26/course/view.php?id=4102**

**Provincial Guide**

- **The SCO's for Mathematics 6 will remain as is with the NEW 4-6 Innovative Curriculum-no reductions.**
- Mathematics 6 Curriculum Guide (Implementation draft, July 2014)
- Mathematics 6 Yearly Plan (Draft June 2014)
- The sample unit plans (Number) for the first three weeks of school that appear on the 4-6 Math Moodle are the only ones that will be posted. The intent is to provide teachers with an example of how to plan a unit by blending tasks from the curriculum document with lessons selected from the Math Makes Sense resource. As for daily mental math time, teachers are advised that they can continue using the mental math appendix they have been using for the past several years for strategies that align with the new outcomes. You can also conduct "number talks" as discussed during last summer's workshop during mental math time. This is a link to the book "Number Talks" - it focuses on Primary to Grade 5. http://www.pearsoncanadaschool.com/index.cfm?locator=PS1zOt&PMDbSiteId=2621&PMDbSolutionId=25862&PMDbSubSolutionId=&PMDbCategoryId=25876&PMDbSubCategoryId=&PMDbSubjectAreaId=&PMDbProgramId=82541
- The **REVISED** Time to Learn Strategy beginning in Sept 2016 requires a minimum of 90 minutes every day (increase from 60 mins) be a guideline for planning the mathematics program (includes Mental Math) in grades 4-6.

**Core Resources**

- Math Makes Sense 6 Teacher ProGuide (print and CD)
- Math Makes Sense 6 Student Text (print and e-Text)
- Math Makes Sense 6 Student e-Text. Detailed instructions to **access grades 3-9 e-Texts** for both teacher and student are given on the respective P-3, 4-6 and 7-9 Mathematics Moodles-go to Math Makes Sense and scroll down and follow instructions whether you want Pearson hosted, NS hosted or just a PDF version. **Teachers and students that had registered last year must re-register.** To access the Pearson e-text version, you must register as the teacher and register all your students using a spreadsheet that is sent to Pearson and logins for teacher and students are sent back. You get more bells and whistles with Pearson hosted (interactive tools, video clips, ..) but I would recommend the NS hosted for your first try. You can access the NS hosted e-text without filling in a spreadsheet and waiting for Pearson to respond-just follow the directions that relates to the NS hosted-SLC Information for Teachers form and for SLC Information for Students form found on the respective Math Moodles, P-3, 4-6 and 7-9. With the NS hosted e-text, all students have a nspes.ca login to go to the Student Learning Commons (students may also have a gnspes email but need to use the nspes)-teachers have access to their student's nspes accounts through PowerSchool or through Jim or Alex. Enrollment keys for the various texts P-9 are on the Math Makes Sense tab on the Moodle-near the bottom-teacher gives the student the enrollment key as part of their instructions to access the NS hosted. *French Immersion teachers for grades 3 to 6 do not have access to a ProGuide on the Moodle. The

ProGuides in French for grades 3 to 6 came from another publisher and there was an issue with their format and being able to host them on our Moodle. Teachers should have their own copy of the Proguide (DVD) and also have access to all the Word files on the Moodle.

- Mathematics 4–6. Math Makes Sense 4–6 eText Walk-Through Webinar. You will be shown how to login to the Pearson eText for Math Makes Sense 4–6, and how to use the Course ID to connect your eText with your students' e-texts. This step will enable you to share notes with your students through the eText platform. Other topics covered will include navigating through the text, adjusting page magnification/view, how to take and share notes, how to highlight passages of text, how to access the added content in the text such as program masters, and how to access the videos and virtual manipulatives. Registering for a Webinar-Teachers wishing to participate in upcoming webinars should register through the EduPortal at https://edapps.ednet.ns.ca/eduportal If teachers can't fit the webinar into their schedules, they can simply wait and view the archived webinars once they are posted on the DVL which this one has been, by going to http://dvl.ednet.ns.ca/browse/results/taxonomy%3A169
- All 4-6 classroom teachers now have access (June 2014) to the Mathematics Learning Commons 4-6 Moodle. Teachers can log in at http://nsvs.ednet.ns.ca using the first time enrollment key and their ednet username and password. All 4-6 curriculum guides and related support documents (i.e. yearly, unit plans, professional learning videos, Origo Videos, Numeracy Nets 4, Power Point for Curriculum Night, Let's Talk About .. pamphlets, ALR resources,..) are hosted on the Moodle. Teachers received instructions on how to access the Moodle and to enroll in the Mathematics Learning Commons 4-6. Contact Mark if you need further assistance.
- Mathematics 4–6 Webinar: Big Ideas in 4–6 Mathematics: Developing Equality in Mathematics 4-6. Equality is one of the essential understandings that students must acquire as they learn mathematics. This is a quest that begins in grade Primary and continues into senior high school. Learn how this big idea unfolds in Mathematics 4, 5, and 6 and discover how this one big idea can set students up for ongoing mathematical success. Topics to be explored during this webinar will include creating and maintaining balance; the concept of a variable; expanding from the equal sign to greater than, less than, greater than or equal; and common misconceptions about equality. Registering for a Webinar-Teachers wishing to participate in upcoming webinars should register through the EduPortal at https://edapps.ednet.ns.ca/eduportal If teachers can't fit the webinar into their schedules, they can simply wait and view the archived webinars once they are posted on the DVL which this one has been, by going to http://dvl.ednet.ns.ca/browse/results/taxonomy%3A169
- Leaps and Bounds 3-4 and 5-6 are a mathematics diagnostic and intervention resource aimed at supporting struggling students and aligns with the new Nova Scotia Mathematics curriculum. The Leaps and Bounds 3-4 and Leaps

and Bounds 5-6 files are now on the 4-6 Mathematics Moodle (completed as of Nov 17, 2014) under the Assessment For Elementary tab.

- Teachers and students now have access to Pearson Education's Virtual Manipulatives link. This is a license for 7 years. The P-3 and 4-6 Moodles both have links to the Virtual manipulatives.
- Mathematics 6 Curriculum Project (2004/Mark MacLeod)
- Check out Census at School, an international Web-based classroom activity for students, at www.censusatschool.ca Ties in nicely with the Data Management outcomes. Even more Statistics Canada learning resources at www.statcan.gc.ca/learningresources for mathematics and other subjects.
- Grade 6 Math Assessment resources http://plans.ednet.ns.ca/grade6
  Oct 10-Oct 20, 2017. Based on Grade 3-4-5 SCO's.
- **Provincial/Board/School Results M6:** Math Performance Levels 1-4, Strand by Strand (i.e. Number, Measurement, ..) levels (at, above or may require attention), Cognitive Levels (Knowledge, Application, Analysis), scaled score and attempted questions are reported on each of the Mathematics 4, 6 and 8 Provincial Assessments by individual student. Once the embargo is lifted, these are sent out to schools-**latest was 2016-2017**. The spreadsheet also has tabs comparing how your school did on each assessment in relation to our Board and Provincial averages. These would be very helpful for math team PLC discussions, etc
- **M6 Lessons Learned document (August 2016)** was developed based on an analysis of the Item Description Reports for the Nova Scotia Assessment: Mathematics in Grade 6 (2012–2013, 2013–2014, 2014–2015, and 2015–2016). It is intended to support all elementary classroom teachers (in particular grades 3–6) and administrators at the school, board, and provincial levels, in using the information gained from this assessment to inform next steps for numeracy focus. The analysis of these items form the basis of this document, which was developed to support teachers as they further explore these areas through classroom-based instruction and assessment across a variety of mathematical concepts.

  After the results for each mathematics assessment become available, an Item Description Report is developed to describe each item of the assessment in relation to the curriculum outcomes and cognitive processes involved with each mathematical strand. The percentage of students across the province who answered each item correctly is also connected to each item. Item descriptor reports for mathematics are made available to school boards for distribution to schools, and they include provincial, board, and school data. Schools and boards should examine their own data in relation to the provincial data for continued discussions, explorations, and support for mathematics focus at the classroom, school, board, and provincial levels.

  This document specifically addresses areas that students across the province found challenging based on provincial assessment evidence. It is essential that teachers consider assessment evidence from a variety of sources to inform the next steps most appropriate for their students. Effective classroom instruction and assessment strategies are responsive to the individual learners within a

classroom. The Lessons Learned documents are posted on the PLANS site (www.plans.ednet.ns.ca) and on the Mathematics P-3 and 4-6 Moodle. Check out a webinar on the PLANS site called "Lessons Learned: Mathematics in Grade 6". An updated **Lessons Learned document including the M6 written in October 2016 will be available Feb 2017.**

- **M6 Item Descriptor Reports** (latest is 2015-16) are also available to schools and list the GCO tested, cognitive level of the assessment item (Knowledge, Application, Analysis), outcome that links to the assessment item, item description and your school's score (out of 100%) for that particular assessment item that was tested on the M6. The report also compares how your school did on each assessment item tested in relation to our Board and Provincial averages. These Item Descriptor Reports would be very helpful for math team PLC discussions, etc. Check out a webinar on the PLANS site called "Using Mathematics in Grade 6 Item Analysis".
- **Adaptations allowed for M4 and M6** are on page 9 of the Nova Scotia Information Guide (plans website)-i.e. students who have the use of an Operation Chart (addition and multiplication) as a DA and regularly use operation charts when writing classroom assessments, are permitted to use them when writing provincial assessments. If a student uses an operation chart during the assessment, it must be recorded on the back cover of the assessment booklet. Addition, subtraction, multiplication or division tables are not operation charts and are not permitted to be used on provincial assessments. Worked examples or cognitive credit cards/cue cards compromise the validity of the assessment. Therefore, they are not considered appropriate adaptations and are not permitted during the assessment.

We implemented **Mathematics 7, Mathematics 8 and Mathematics 9** in September 2015. Curriculum and Support documents include: Curriculum guides, Yearly Plans, Student text, Teacher Resource, and other supports. An implementation Day 1 workshop for Mathematics 7-8 teachers was held on June 8, 2015 and Mathematics 9 on June 10. Day 2 of our Math PD for 7-8 teachers was held on Friday, October 2nd, 2015 at SSRSB while Day 2 for Math 9 teachers was held on Friday, October 9th, 2015, also at SSRSB.

## Grade 7 Mathematics
## (2015-2016 / Year #1 of Implementation of WNCP curriculum)

Mathematics 7-9 revised Yearly Plans are posted on the Moodle and are posted below under the various courses and copies were also sent to schools for teachers (June 2016). Teacher feedback was instrumental in a lot of these changes. Current and updated Yearly Plans are non-negotiable-main reason is student mobility. Upon completion of the first year of implementation of **Mathematics 7, 8 & 9**, teacher feedback has guided revisions to two of the **yearly plans**, Mathematics 7 and Mathematics 9. Mathematics 8 has not been revised. Word and PDF versions of the yearly plans (sent to schools in June 2016) are to be used by all teachers to prepare their mathematics program for the 2016-2017 school year. These Yearly Plans are also posted to the Mathematics Learning Commons

7-9 Moodle. Where needed, the units of the **curriculum documents** found on the Moodle will be changed to match the new yearly plans-TBA.

**Provincial Guide**

- Mathematics 7 (Implementation Draft, June 2015)
- Mathematics 7 Yearly Plan (**June 2016-Draft)**. The revision includes a rearranging of some of the units and the Geometry unit is now split into 2 units with the outcomes on transformations moving to follow Integers. Please see yearly plan for more information on changes to order and hours.
- The Time to Learn Strategy requires a minimum of 60 minutes per day for grade 7

**Core Resources**

- Math Makes Sense 7 (Pearson), Student Text (print)
- Math Makes Sense 7 ProGuide (Pearson), Teacher Guide (print)
- Math Makes Sense 7 Exam View Extra Practice & Test Generator (Pearson)
- All Math Makes Sense Exam View Test Generator CD's have been purchased for all grade 7, 8, 9 teachers and have been delivered to schools in Nova Scotia (Nov 2015). Pearson Canada grants permission to host our Math Makes Sense 7-9 (WNCP Edition) Exam View Test Generators on the Mathematics Learning Commons 7-9. Teachers are able to download the appropriate test bank package from the Moodle as a zip file - thus eliminating any issues with lost or damaged disks. Teachers can access the files Read me first file, Manual, License Agreement and the 3 Test Generator files from the ASSESSMENT icon on the MLC 7-9.
- Detailed instructions to **access grades 3-9 e-Texts** for both teacher and student are given on the respective P-3, 4-6 and 7-9 Mathematics Moodles-go to Math Makes Sense and scroll down and follow instructions whether you want Pearson hosted, NS hosted or just a PDF version. **Teachers and students that had registered last year must re-register.** To access the Pearson e-text version, you must register as the teacher and register all your students using a spreadsheet that is sent to Pearson and logins for teacher and students are sent back. You get more bells and whistles with Pearson hosted (interactive tools, video clips, ..) but I would recommend the NS hosted for your first try. You can access the NS hosted e-text without filling in a spreadsheet and waiting for Pearson to respond-just follow the directions that relates to the NS hosted-SLC Information for Teachers form and for SLC Information for Students form found on the respective Math Moodles, P-3, 4-6 and 7-9. With the NS hosted e-text, all students have a nspes.ca login to go to the Student Learning Commons (students may also have a gnspes email but need to use the nspes)-teachers have access to their student's nspes accounts through PowerSchool or through Jim or Alex. Enrollment keys for the various texts P-9 are on the Math Makes Sense tab on the Moodle-near the bottom-teacher gives the student the enrollment key as part of their instructions to access the NS hosted. *French Immersion: Grades 7 & 8 do have access to the e-texts. Immersion students (and their parents) are able to access both English and French version of the grades 7-8 e-text. Same instructions as above. The

ProGuide does not exist in French for grade 9 as Pearson took back the translation rights from Chenelière.

**From the Math 7-9 Moodle:**

"To support implementation of the new mathematics curriculum in grades 7-9, the Department of Education and Early Childhood Development has provided teachers and students in Nova Scotia with print copies of new student mathematics textbooks for these grades. In addition to the print copies of these textbooks, students and teachers are able to access a digital mathematics textbook, called an eText, available in several formats:

1) A completely interactive student eText hosted by Pearson Canada. To access this version teachers must register themselves and their students.

2) A partially interactive student eText and PDFs of the student texts, both hosted on the Nova Scotia Student learning Commons.

- The new **Mathematics Learning Commons Grade 7-8-9 Moodle** site for the three new courses (Mathematics 7, Mathematics 8 and Mathematics 9) became live in June 2015 and instructions for access to this Moodle was given to teachers during the PD days in June 2015. If you require an enrolment key to access the Grade 7-8-9 Moodle, please contact Mark. Documents will be added to the Moodle as they become available-yearly plans and draft curriculum guides for all 3 courses, Mathematics 7, Mathematics 8, and Mathematics 9 are currently on there-check it out!
- Leaps and Bounds 7-8 to be placed on the 7-9 Moodle once the 7-9 Math Curriculum is implemented in the Fall 2015.
- From Stephane Duguay-DoE-French Immersion Consultant (stephane.duguay@novascotia.ca)-a quick update on the status of the grade 7 - 9 math resources for the immersion classes. We are hoping to have all three curriculum guides available on the 7-8-9 Math Moodle by late August 2015. The yearly plan, framework and Pearson "Document Companion" are available in French on the Moodle. Teachers will have access to the ProGuides in French on the Moodle for the grade 7 and 8 only as the ProGuide does not exist for the grade 9. Pearson took back the copyrights from Chenelière for grade 9 and many supplementary resources were not translated. Teachers teaching grade 9 FI will receive a copy of the exam generator. Note that this tool is only available in English but the teachers can export the content to a word document and still be able to use the graphics to help generate their assessments in French. Teachers and students will have access to three versions of the French e-texts from the Learning Commons. Directions on how to access these e-texts are the same as for the English Programs and will not be translated to French. Teachers teaching grade 7 and 8 will receive a copy of "cahier d'activité et exercices supplémentaires" as well the "corrigé". Note that the grade 7 teachers already received these resources for the 2014-15 school year. I was also able to provide a manip kit per immersion teacher. Teachers were surveyed and they decided which kit was the most appropriate for their situation. Lastly, the Book Bureau advised me that the remaining grade 8 and 9 textbooks have arrived but they will only

be delivered to the boards/school in September 2015. Do not hesitate to contact Stephane if you have any questions or concerns.

- Mental Math series of 16 short videos which highlights different classrooms and grade levels (1-9) as it demonstrates the various strategies of Mental Math within a curricular context http://dvl.ednet.ns.ca/mental-math
- Check out Census at School, an international Web-based classroom activity for students, at www.censusatschool.ca Ties in nicely with the Data Management outcomes. Even more Statistics Canada learning resources at www.statcan.gc.ca/learningresources for mathematics and other subjects.
- As part of her Masters course work, Amy Peveril (HA) made a bank of math tutorial videos for grade 6 and 7 (mostly number outcomes) that she is willing to share-thanks for sharing Amy. http://peverilmath.weebly.com/

## Grade 8 Mathematics
## (2015-2016 / Year #1 of Implementation of WNCP)

Mathematics 7-9 revised Yearly Plans are posted on the Moodle and are posted below under the various courses and copies were also sent to schools for teachers (June 2016). Teacher feedback was instrumental in a lot of these changes. Current and updated Yearly Plans are non-negotiable-main reason is student mobility. Upon completion of the first year of implementation of **Mathematics 7, 8 & 9**, teacher feedback has guided revisions to two of the **yearly plans**, Mathematics 7 and Mathematics 9. Mathematics 8 has not been revised. Word and PDF versions of the yearly plans (sent to schools in June 2016) are to be used by all teachers to prepare their mathematics program for the 2016-2017 school year. These Yearly Plans are also posted to the Mathematics Learning Commons 7-9 Moodle. Where needed, the units of the **curriculum documents** found on the Moodle will be changed to match the new yearly plans-TBA.

**Provincial Guide**

- Mathematics 8 (Implementation Draft, June 2015)
- Mathematics 8 Yearly Plan (**June 2016-Draft)**. No revisions to Draft-March 2015 yearly plan-will stay as is-just date change to June 2016.
- The Time to Learn Strategy requires a minimum of 60 minutes per day for grade 8

**Core Resources**

- Math Makes Sense 8 (Pearson), Student Text (print)
- Math Makes Sense 8 ProGuide (Pearson), Teacher Guide (print)
- Math Makes Sense 8 Exam View Extra Practice & Test Generator (Pearson)
- All Math Makes Sense Exam View Test Generator CD's have been purchased for all grade 7, 8, 9 teachers and have been delivered to schools in Nova Scotia (Nov 2015). Pearson Canada grants permission to host our Math Makes Sense 7-9 (WNCP Edition) Exam View Test Generators on the Mathematics Learning Commons 7-9. Teachers are able to download the appropriate test bank package from the Moodle as a zip file - thus eliminating any issues with lost or damaged disks. Teachers can access the files Read me first file, Manual, License Agreement and the 3 Test Generator files from the ASSESSMENT icon on the MLC 7-9.

- Detailed instructions to **access grades 3-9 e-Texts** for both teacher and student are given on the respective P-3, 4-6 and 7-9 Mathematics Moodles-go to Math Makes Sense and scroll down and follow instructions whether you want Pearson hosted, NS hosted or just a PDF version. **Teachers and students that had registered last year must re-register.** To access the Pearson e-text version, you must register as the teacher and register all your students using a spreadsheet that is sent to Pearson and logins for teacher and students are sent back. You get more bells and whistles with Pearson hosted (interactive tools, video clips, ..) but I would recommend the NS hosted for your first try. You can access the NS hosted e-text without filling in a spreadsheet and waiting for Pearson to respond-just follow the directions that relates to the NS hosted-SLC Information for Teachers form and for SLC Information for Students form found on the respective Math Moodles, P-3, 4-6 and 7-9. With the NS hosted e-text, all students have a nspes.ca login to go to the Student Learning Commons (students may also have a gnspes email but need to use the nspes)-teachers have access to their student's nspes accounts through PowerSchool or through Jim or Alex. Enrollment keys for the various texts P-9 are on the Math Makes Sense tab on the Moodle-near the bottom-teacher gives the student the enrollment key as part of their instructions to access the NS hosted. *French Immersion: Grades 7 & 8 do have access to the e-texts. Immersion students (and their parents) are able to access both English and French version of the grades 7-8 e-text. Same instructions as above. The ProGuide does not exist in French for grade 9 as Pearson took back the translation rights from Chenelière.

  **From the Math 7-9 Moodle:**

  "To support implementation of the new mathematics curriculum in grades 7-9, the Department of Education and Early Childhood Development has provided teachers and students in Nova Scotia with print copies of new student mathematics textbooks for these grades. In addition to the print copies of these textbooks, students and teachers are able to access a digital mathematics textbook, called an eText, available in several formats:

  1) A completely interactive student eText hosted by Pearson Canada. To access this version teachers must register themselves and their students.

  2) A partially interactive student eText and PDFs of the student texts, both hosted on the Nova Scotia Student learning Commons.
- The new **Mathematics Learning Commons Grade 7-8-9 Moodle** site for the three new courses (Mathematics 7, Mathematics 8 and Mathematics 9) became live in June 2015 and instructions for access to this Moodle was given to teachers during the PD days in June 2015. If you require an enrolment key to access the Grade 7-8-9 Moodle, please contact Mark. Documents will be added to the Moodle as they become available-yearly plans and draft curriculum guides for all 3 courses, Mathematics 7, Mathematics 8, and Mathematics 9 are currently on there-check it out!
- Leaps and Bounds 7-8 to be placed on the 7-9 Moodle once the 7-9 Math Curriculum is implemented in the Fall 2015.

- From Stephane Duguay-DoE-French Immersion Consultant (stephane.duguay@novascotia.ca)-a quick update on the status of the grade 7 - 9 math resources for the immersion classes. We are hoping to have all three curriculum guides available on the 7-8-9 Math Moodle by late August 2015. The yearly plan, framework and Pearson "Document Companion" are available in French on the Moodle. Teachers will have access to the ProGuides in French on the Moodle for the grade 7 and 8 only as the ProGuide does not exist for the grade 9. Pearson took back the copyrights from Chenelière for grade 9 and many supplementary resources were not translated. Teachers teaching grade 9 FI will receive a copy of the exam generator. Note that this tool is only available in English but the teachers can export the content to a word document and still be able to use the graphics to help generate their assessments in French. Teachers and students will have access to three versions of the French e-texts from the Learning Commons. Directions on how to access these e-texts are the same as for the English Programs and will not be translated to French. Teachers teaching grade 7 and 8 will receive a copy of "cahier d'activité et exercices supplémentaires" as well the "corrigé". Note that the grade 7 teachers already received these resources for the 2014-15 school year. I was also able to provide a manip kit per immersion teacher. Teachers were surveyed and they decided which kit was the most appropriate for their situation. Lastly, the Book Bureau advised me that the remaining grade 8 and 9 textbooks have arrived but they will only be delivered to the boards/school in September 2015. Do not hesitate to contact Stephane if you have any questions or concerns.
- Mental Math series of 16 short videos which highlights different classrooms and grade levels (1-9) as it demonstrates the various strategies of Mental Math within a curricular context http://dvl.ednet.ns.ca/mental-math
- Check out Census at School, an international Web-based classroom activity for students, at www.censusatschool.ca Ties in nicely with the Data Management outcomes. Even more Statistics Canada learning resources at www.statcan.gc.ca/learningresources for mathematics and other subjects.
- RWM Grade 8 Math Assessment resources http://plans.ednet.ns.ca/grade8 May 23-June 5, 2018. Based on Grade 6-7-8 SCO's.
- For the 2015-2016 **Nova-Scotia Assessment: Mathematics Grade 8** only, the geometry unit in the yearly plan for grade 8 mathematics **will not be included** in the assessment: Reason: the Geometry unit is currently the last unit in the Mathematics 8 Yearly Plan and would not have been taught by the time the M8 is written. There will however be geometry questions from grades 5 (G01, G02, G03, G04), 6 (G03, G04), and 7 (G01, G02, G03) in the 2015-16 M8 assessments. The 2016-2017 Nova-Scotia Assessment: Mathematics Grade 8 will include the geometry unit found in the REVISED grade 8 mathematics yearly plan.
- The Mathematics 8 Provincial Assessment-English **NEW** Sample Questions and the Mathematics 8-Immersion Sample Questions are now available on the following page: https://plans.ednet.ns.ca/grade8/documents. These **new sample questions** were also sent to schools (March 2016) and

reflect the new Grade 8 curriculum, which is being implemented this school year. We will discuss the M8 and these sample questions further at our Grade 8 Math Workshop on April 18, 2016 at SSRSB. We encourage teachers to use these assessment items (all selected response), in various forms with their students (i.e. formative assessments, ..), to get feedback on where their students are with the new curriculum and what supports are still required.

- **Provincial Results M8:** Math Performance Levels 1-4, Strand by Strand (i.e. Number, Measurement, ..) levels (at, above or may require attention), Cognitive Levels (Knowledge, Application, Analysis), scaled score and attempted questions are reported on each of the Mathematics 4, 6 and 8 Provincial Assessments by individual student. Once the embargo is lifted, these are sent out to schools-**latest was 2015-2016**. The spreadsheet also has tabs comparing how your school did on each assessment in relation to our Board and Provincial averages. These would be very helpful for math team PLC discussions, etc
- The 2016-2017 M8 will be the first true measure of student learning under the new WNCP Math curriculum (these students would have been taught the new Grade 6 and Grade 7 WNCP curriculum). All students wrote the same assessment-English & French for the 1st time. 76 questions (38 each day)-all strands were assessed. Most difficult question was in geometry-perpendicular and angle bisectors (taught end of year in Grade 7)-but no surprise as students don't get to Geometry SCO's in Grade 8. Also difficulty with sum of angles questions, mean, and range related questions.
- **M8 Lessons Learned document (January 2016)** was developed based on an analysis of the Item Description Report for the 2014–2015 Nova Scotia Assessment (NSA): Mathematics in Grade 8 (M8). It is intended to support all Grade 6, 7, 8 and 9 classroom teachers (in particular Grades 7–8) and administrators at the school, board, and provincial levels, in using the information gained from this assessment to inform next steps for numeracy focus. The analysis of these items form the basis of this document, which was developed to support teachers as they further explore these areas through classroom-based instruction and assessment across a variety of mathematical concepts.

  After the results for each mathematics assessment become available, an Item Description Report is developed to describe each item of the assessment in relation to the curriculum outcomes and cognitive processes involved with each mathematical strand. The percentage of students across the province who answered each item correctly is also connected to each item. Item Descriptor Reports for mathematics are made available to school boards for distribution to schools, and they include provincial, board, and school data. Schools and boards should examine their own data in relation to the provincial data for continued discussions, explorations, and support for mathematics focus at the classroom, school, board, and provincial levels.

  This document specifically addresses areas that students across the province found challenging based on provincial assessment evidence. It is essential that teachers consider assessment evidence from a variety of sources to inform the

next steps most appropriate for their students. Effective classroom instruction and assessment strategies are responsive to the individual learners within a classroom. The Lessons Learned documents are posted on the PLANS site (www.plans.ednet.ns.ca) and on the Mathematics 7-9 Moodle. **An updated Lessons Learned document including the M8 written in May 2016 will be available Feb 2017.**

- **M8 Item Descriptor Reports** (latest 2014-2015) are available to schools and list the GCO tested, cognitive level of the assessment item (Knowledge, Application, Analysis), outcome that links to the assessment item, item description and your school's score (out of 100%) for that particular assessment item that was tested on the M8. The report also compares how your school did on each assessment item tested in relation to our Board and Provincial averages. These Item Descriptor Reports would be very helpful for math team PLC discussions, etc.
- A PD workshop for Mathematics 8 teachers took place on November 30, 2016 at SSRSB. The focus will be on teachers getting together and creating a mid-year Mathematics 8 Common Cumulative Assessment. Currently on hold as Work to Rule is in place-hopefully will be in place for the 2017-2018 school year.

## Grade 9 Mathematics
## (2015-2016 / Year #1 of Implementation of WNCP curriculum)

Mathematics 7-9 revised Yearly Plans are posted on the Moodle and are posted below under the various courses and copies were also sent to schools for teachers (June 2016). Teacher feedback was instrumental in a lot of these changes. Current and updated Yearly Plans are non-negotiable-main reason is student mobility. Upon completion of the first year of implementation of **Mathematics 7, 8 & 9**, teacher feedback has guided revisions to two of the **yearly plans**, Mathematics 7 and Mathematics 9. Mathematics 8 has not been revised. Word and PDF versions of the yearly plans (sent to schools in June 2016) are to be used by all teachers to prepare their mathematics program for the 2016-2017 school year. These Yearly Plans are also posted to the Mathematics Learning Commons 7-9 Moodle. Where needed, the units of the **curriculum documents** found on the Moodle will be changed to match the new yearly plans-TBA.

**Provincial Guide**

- Mathematics 9 (Implementation Draft, June 2015)
- Mathematics 9 Yearly Plan (**June 2016-Draft).** The only change to this yearly plan was the re-ordering of the first three (3) units.
- A **Key Messages for Grade 9 Mathematics Teachers** 2016-2017 document was also sent out to schools (June 2016) to share with their Grade 9 teachers.
- The Time to Learn Strategy requires a minimum of 60 minutes per day for grade 9

**Core Resources**

- Math Makes Sense 9 (Pearson), Student Text (print)
- Math Makes Sense 9 ProGuide (Pearson), Teacher Guide (print)

- Math Makes Sense 9 Exam View Extra Practice & Test Generator (Pearson)
- All Math Makes Sense Exam View Test Generator CD's have been purchased for all grade 7, 8, 9 teachers and have been delivered to schools in Nova Scotia (Nov 2015). Pearson Canada grants permission to host our Math Makes Sense 7-9 (WNCP Edition) Exam View Test Generators on the Mathematics Learning Commons 7-9. Teachers are able to download the appropriate test bank package from the Moodle as a zip file - thus eliminating any issues with lost or damaged disks. Teachers can access the files Read me first file, Manual, License Agreement and the 3 Test Generator files from the ASSESSMENT icon on the MLC 7-9.
- Detailed instructions to **access grades 3-9 e-Texts** for both teacher and student are given on the respective P-3, 4-6 and 7-9 Mathematics Moodles-go to Math Makes Sense and scroll down and follow instructions whether you want Pearson hosted, NS hosted or just a PDF version. **Teachers and students that had registered last year must re-register.** To access the Pearson e-text version, you must register as the teacher and register all your students using a spreadsheet that is sent to Pearson and logins for teacher and students are sent back. You get more bells and whistles with Pearson hosted (interactive tools, video clips, ..) but I would recommend the NS hosted for your first try. You can access the NS hosted e-text without filling in a spreadsheet and waiting for Pearson to respond-just follow the directions that relates to the NS hosted-SLC Information for Teachers form and for SLC Information for Students form found on the respective Math Moodles, P-3, 4-6 and 7-9. With the NS hosted e-text, all students have a nspes.ca login to go to the Student Learning Commons (students may also have a gnspes email but need to use the nspes)-teachers have access to their student's nspes accounts through PowerSchool or through Jim or Alex. Enrollment keys for the various texts P-9 are on the Math Makes Sense tab on the Moodle-near the bottom-teacher gives the student the enrollment key as part of their instructions to access the NS hosted. *French Immersion: Grades 7 & 8 do have access to the e-texts. Immersion students (and their parents) are able to access both English and French version of the grades 7-8 e-text. Same instructions as above. The ProGuide does not exist in French for grade 9 as Pearson took back the translation rights from Chenelière.

  **From the Math 7-9 Moodle:**

  "To support implementation of the new mathematics curriculum in grades 7-9, the Department of Education and Early Childhood Development has provided teachers and students in Nova Scotia with print copies of new student mathematics textbooks for these grades. In addition to the print copies of these textbooks, students and teachers are able to access a digital mathematics textbook, called an eText, available in several formats:

  1) A completely interactive student eText hosted by Pearson Canada. To access this version teachers must register themselves and their students.

  2) A partially interactive student eText and PDFs of the student texts, both hosted on the Nova Scotia Student learning Commons.

- The new **Mathematics Learning Commons Grade 7-8-9 Moodle** site for the three new courses (Mathematics 7, Mathematics 8 and Mathematics 9) became live in June 2015 and instructions for access to this Moodle was given to teachers during the PD days in June 2015. If you require an enrolment key to access the Grade 7-8-9 Moodle, please contact Mark. Documents will be added to the Moodle as they become available-yearly plans and draft curriculum guides for all 3 courses, Mathematics 7, Mathematics 8, and Mathematics 9 are currently on there-check it out!
- Leaps and Bounds 7-8 to be placed on the 7-9 Moodle once the 7-9 Math Curriculum is implemented in the Fall 2015.
- From Stephane Duguay-DoE-French Immersion Consultant (stephane.duguay@novascotia.ca)-a quick update on the status of the grade 7 - 9 math resources for the immersion classes. We are hoping to have all three curriculum guides available on the 7-8-9 Math Moodle by late August 2015. The yearly plan, framework and Pearson "Document Companion" are available in French on the Moodle. Teachers will have access to the ProGuides in French on the Moodle for the grade 7 and 8 only as the ProGuide does not exist for the grade 9. Pearson took back the copyrights from Chenelière for grade 9 and many supplementary resources were not translated. Teachers teaching grade 9 FI will receive a copy of the exam generator. Note that this tool is only available in English but the teachers can export the content to a word document and still be able to use the graphics to help generate their assessments in French. Teachers and students will have access to three versions of the French e-texts from the Learning Commons. Directions on how to access these e-texts are the same as for the English Programs and will not be translated to French. Teachers teaching grade 7 and 8 will receive a copy of "cahier d'activité et exercices supplémentaires" as well the "corrigé". Note that the grade 7 teachers already received these resources for the 2014-15 school year. I was also able to provide a manip kit per immersion teacher. Teachers were surveyed and they decided which kit was the most appropriate for their situation. Lastly, the Book Bureau advised me that the remaining grade 8 and 9 text books have arrived but they will only be delivered to the boards/school in September 2015. Do not hesitate to contact Stephane if you have any questions or concerns.
- Mental Math series of 16 short videos which highlights different classrooms and grade levels (1-9) as it demonstrates the various strategies of Mental Math within a curricular context http://dvl.ednet.ns.ca/mental-math
- Each grade 9 Mathematics classroom received a class set of Alge-tiles (March 2011)
- Our High School Math Advisory group, met on Wednesday, March 23rd, 2011, and developed a Placement Document that will help in our students choosing high school math courses that they can be successful in consultation with their teacher, Guidance Counselor and parents. These documents were being used beginning in the 2011-2012 school year and were last updated January 2016.

- Check out Census at School, an international Web-based classroom activity for students, at www.censusatschool.ca Ties in nicely with the Data Management outcomes. Even more Statistics Canada learning resources at www.statcan.gc.ca/learningresources for mathematics and other subjects.

Just to let you know that the new TI-84 Plus CE Graphing Calculator have been web-enabled (2001679 & 2001680) from the ALR and are ready for schools to purchase-they are very thin and sleek in design!
https://education.ti.com/en/us/poducts/calculators/graphing-calculators/ti-84-plus-ce/tabs/overview#!
The old color TI-84 plus color will be obsolete soon and has been removed from the ALR.
https://education.ti.com/en/us/products/calculators/graphing-calculators/ti-84-plus-c-silver-edition/tabs/overview

Students entering Grade 10 in the 2017-2018 school year will require **3 Mathematics credits**, one at each grade level. The Senior High Mathematics Course Pathways document has been shared with schools, effective 2017-2018.

## Grade 10
## (2013-2014 / Year #1 of Implementation of WNCP curriculum for Mathematics at Work 10, Mathematics 10 and Pre-IB 10).

The **revised yearly plans** and other documents for Grades 10-12 Math courses are posted to the appropriate page of the grade specific Moodle and are posted below under the various courses. Teacher feedback was instrumental in a lot of these changes. Current and updated Yearly Plans are non-negotiable-main reason is student mobility. **A summary of the Grades 10-12 Mathematics Yearly Plan revisions for 2016-2017 was sent out to schools (June 2016).** These revised Yearly Plans are to be used by all teachers to prepare their mathematics program for the 2016-2017 school year. While the new yearly plans have now been posted to the Moodle, it might take some time before the rearrangement of the curriculum documents, where needed, will be complete-TBA.

For most of the mathematics courses, sometimes the **textbook goes to far**-extra content (i.e. trig, quadratics, ..), the text books are more general-not 100% match to our guides/Yearly Plans because they were not specifically made for NS due to the cost-so we adopted the general book from WNCP, etc) so important for teachers to align the text with the yearly plan and mandated SCO's.

**Senior High Mathematics: Common Pathways** A diagram that illustrates likely course pathways for senior high mathematics. Grade 10 courses will be implemented in 2013-2014, grade 11 courses in 2014-2015, and grade 12 courses in 2015-2016. The Mathematics Essentials pathway, which is currently available as part of the Public School Programs, will continue.

Provincial examinations for grade 10 mathematics students (Mathematics at Work 10, Mathematics 10) were administered as pilots in 2013–2014; school, board, and provincial results will not be generated for this initial year of these new courses. The first results for these examinations will be made available in September 2015, based on examinations written in January and June 2015.

Mathematics Pre-IB 10 will be two semesters long, a minimum of 220 instructional hours, and will address both the Mathematics 10 curriculum outcomes and the additional curriculum outcomes (sent to schools / PVEC in Nov 2013). All students enrolled in Mathematics Pre-IB 10 will write the NS Mathematics 10 examination in June.

**IPP's in Mathematics**: The use of an IPP code for mathematics indicates that a student has an Individual Program Plan in which outcomes have been deleted or the general curriculum outcomes are being taught at a significantly different specific curriculum outcome level. It could also indicate that a student is working on additional or extended outcomes. **The following codes should be used when using IPP's in mathematics at the high school level**

**Mathematics Grade 10 IPP (MTH101IP) -** used whether the student is enrolled in Mathematics Essentials 11 or Mathematics at Work 10-1 credit courses

**Mathematics Grade 10 IPP (MTH102IP) -** used when the student is enrolled in Mathematics 10-the year long 220 hour - 2 credit course

Nova Scotia's Action Plan for Education outlines a commitment to supporting student achievement in mathematics. The DoE are excited that a new support to be offered is **online homework assistance**. The Nova Scotia Homework Hub/ Appui aux devoirs de la Nouvelle-Écosse will begin province wide with support for students, taking any of the three Grade 10 math courses, beginning September 12, 2016. North Queens was chosen as a pilot to run the system for the months of May and June of 2016. Will be open to all students from 5-9 pm on Sunday-Thursday evenings beginning in the 2016-2017 school year.

**Mathematics 10 (Academic) MT10**
**Prerequisite:** Successful completion of Mathematics 9 and demonstrated good to excellent performance in relation to the expected learning outcomes prescribed for Mathematics 9.

**The new Mathematics 10 course will be a 220-hour year-long academic course. Successful completion will result in two mathematics credits—one of these is an eligible credit for the two mathematics credits required for graduation. The other credit is an eligible credit for the "two others from mathematics, science, and/or technology.**

A **Mathematics 9 and Mathematics 10 Scope and Sequence document** was created and is on the Moodle under Mathematics 10 (also sent out to schools in June

2016). Students entering Mathematics 10 in 2016-17 will be the first group to have completed the new Mathematics 9 program. This document shows the scope and sequence of the Mathematics 9 and Mathematics 10 courses, will help Mathematics 10 teachers identify the prior knowledge students will now bring to the Mathematics 10 course (i.e. very little slope in the NEW Grade 9).

**Provincial Guide**

- Mathematics 10 Curriculum Document (Implementation Draft, July 2013)
- Yearly Plan (**June 2016-FINAL).** Order will remain as is with the Measurement unit being the 1st unit. Some adjustment to the # of hours for Financial mathematics and the Project-currently 40-45 hours. Yearly Plan is now Final-3rd year of Implementation completed.
- An IPP code refers to the grade level at which the student requires an IPP for mathematics, not to the specific classroom in which a student who requires an IPP is placed.

**Core Resources**

- Teacher Technology Resource (DvD)-includes the Teacher Resource
- Mathematics 10 Student Edition (print)-Pearson
- Mathematics 10 Student Web-based e-Book-Pearson (PDF version with some videos- give the student the login from the Mathematics Learning Commons Grade 10 Moodle and they can download a copy of the student text)
- Extra Practice & Exam view Test Generator (CD)-Pearson
- Solutions (CD)-complete solutions to questions found in the Student Edition-Pearson
- Financial Mathematics Student Edition (print and PDF files)-McGraw Hill
- Financial Mathematics Teacher Resource (print and CD)-McGraw Hill
- The DoE have listed a supplementary resource from McGraw Hill for Mathematics 10 entitled Mathematics 10 Enriched. This resource is available for purchase through the NS ALR / book bureau. This is not a core resource, but is a supplementary resource intended to enhance the 220-hour course for students who would like additional enriched learning. Attached both the link to the student and teacher resources and the information to the ALR http://www.mcgrawhill.ca/school/explore/1259021998/western+canadian+mathematics+10+enriched/
- All of the above plus more (Yearly Plan, Assessment, Multi-Media tutorials, webinars, Power Point for Curriculum Night, ALR resources, ..) may also be accessed through the Mathematics Learning Commons Grade 10 Moodle. Teachers received instructions on how to access the Moodle and to enroll in the **Mathematics Learning Commons Grade 10 Moodle**. Contact Mark if you need further assistance.
- The EECD augmented reality app, for **Mathematics 10**, has been updated with four more questions and now it is also available in French. The questions are from chapters 1 and 2 in the Mathematics 10 textbook.
- Engaging site of resources for teachers to use with students site-a repository of engaging activities linked to the WNCP High School Math Curriculum, which

suggests that teachers should "orchestrate the experiences" from which students extract meaning-thanks to Joe MacDonald for sharing! Reminds me of the NCTM Illuminations site. Videos from Dan Meyer and awesome performance assessments like the Tin Can project and much more! Check it out at http://wncpactivemath.wordpress.com/

- A provincial license of Autograph v3.3 has been purchased for all high schools, including Adult High Schools. This provides unlimited access to this software at all high school sites. Two support resources: Autograph Activities: Teacher Demonstrations and Autograph Activities: Student Investigations will also be sent out (March 2011)
- Our High School Math Advisory group, met on Wednesday, March 23rd, 2011, and developed a Placement Document that will help in our students choosing high school math courses that they can be successful in consultation with their teacher, Guidance Counselor and parents. These documents were being used beginning in the 2011-2012 school year and were last updated January 2016.
- David Pilmer has developed a series of Mathematics 49 videos for the NSCC Adult Learning Program (ALP). Topics include Sinusoidal Functions, Quadratic Functions, Systems of Equations and more. To view the videos visit the website http://www.youtube.com/watch?v=eaG4px5o5vs
- NSE resources http://plans.ednet.ns.ca/m10m10w June 20th, 2018
- 2017-2018 SSRSB Common Cumulative Assessment dates: Nov 15, Jan 29, April 24, June 13-18. This teacher developed common assessment is now in Year 2 and has been well received by students, teachers, our board and the community.
- Lessons Learned / Observations documents from the 2013-2014 NSE's for Mathematics 10 and Mathematics at Work 10 NSE's were sent out to teachers- an excellent assessment resource for teacher discussions, CLT PLC's, etc. **An updated Lessons Learned document is expected in February 2017**.
- **Adaptations and Exemptions re NSE's**
  Certain students may require adaptations in order to complete these provincial examinations. Upon request, the department provides Braille, large print, black and white, and read-aloud Audio-CD for examinations; read-aloud audio-CD formats of the English 10 examination are only provided for those students for whom the Read-Aloud Request was submitted to the Department of Education and Early Childhood Development in March 2015. Decisions regarding other adaptations will be made at the school level. Any adaptations provided to a student during the examination must have been provided to the student throughout the course and must be documented in TIENET. Adaptations provided during the examination must be recorded on the back cover of the examination booklet. Please refer to the NSE English 10 and NSE Mathematics 10 Information Guides for further information.
  There may be some students who are granted exemptions. The principal, in consultation with the student and/or parent, may grant an exemption to an individual student in the case of illness, bereavement, or other exceptional

circumstances. In such cases, the student's mark will be exclusive of the examination and determined by the subject teacher, in consultation with the principal. Students who are on Individual Program Plans (IPP) are working with outcomes that may differ from those in the course curriculum, and therefore these students will not write the Nova Scotia Examinations.

- The Formula Booklets and Information Guides for NSE Mathematics 10, NSE Mathematics at Work 10, ENE Mathématiques 10 and ENE Mathématiques pré-emploi 10 have been updated and are now available on the DoE website at http://plans.ednet.ns.ca/m10m10w/documents

**Mathematics at Work 10 (Academic) MTW10**
**Prerequisite:** Successful completion of Mathematics 9 and demonstrated good to excellent performance in relation to the expected learning outcomes prescribed for Mathematics 9.

**The new Mathematics at Work 10 course will be a 110-hour course. Successful completion will result on one graduation credit, eligible for the mathematics graduation requirement.**

**Provincial Guide**

- Mathematics at Work 10 Curriculum Document (Draft, August 2013-says Oct 2013 on the Moodle)
- Yearly Plan (**June 2016-FINAL).** No revisions to the Draft -June 2015-Yearly Plan will stay as is-just date change to June 2016-Final. Yearly Plan is now Final-3rd year of Implementation completed.
- An IPP code refers to the grade level at which the student requires an IPP for mathematics, not to the specific classroom in which a student who requires an IPP is placed.

**Core Resources**

- Mathematics at Work Student Edition (print and PDF version- give the student the login from the Mathematics Learning Commons Grade 10 Moodle and they can download a copy of the student text))
- Mathematics at Work Teacher Edition (print and CD)
- Exercise and Homework Book (print)
- All of the above plus more (Yearly Plan, Assessment, Multi-Media tutorials, webinars, Power Point for Curriculum Night, ALR resources, ..) may also be accessed through the Mathematics Learning Commons Grade 10 Moodle. Teachers received instructions on how to access the Moodle and to enroll in the Mathematics Learning Commons Grade 10 Moodle. Contact Mark if you need further assistance.
- Engaging site of resources for teachers to use with students site-a repository of engaging activities linked to the WNCP High School Math Curriculum, which suggests that teachers should "orchestrate the experiences" from which students extract meaning-thanks to Joe MacDonald for sharing! Reminds me of the NCTM Illuminations site. Videos from Dan Meyer and awesome

performance assessments like the Tin Can project and much more! Check it out at http://wncpactivemath.wordpress.com/

- Education and Early Childhood Development recently purchased a computerized assessment bank to support teachers of Mathematics at Work 10, Mathematics at Work 11 and Mathematics at Work 12. These computerized assessment banks were available on a CD from Pacific Educational Press with an older version of the software ExamView. We negotiated with the vendor to receive these assessment banks separate from the software. Since these computerized assessment banks are from another vendor, the chapters are not aligned perfectly with our current student resource from McGraw-Hill Ryerson, however, the overall course outcomes are the same. We are hosting these resources in our Mathematics Learning Commons Moodles. A short video has been created to help teachers review the steps needed to install both the software and the assessment bank on their computer.
  https://nsvs.ednet.ns.ca/m19dev/file.php/1/moodle_help/Examview_Tutorial_V1.3.mp4
  Mathematics at Work 10 teachers may access these resources from the Mathematics Learning Commons Grade 10 in the specific section of Mathematics at Work 10 icon. Mathematics at Work 11 teachers may access these resources from the Mathematics Learning Commons Grade 11 in the specific section of Mathematics at Work 11 icon. Mathematics at Work 12 teachers will be able to access these resources when the NEW Mathematics Learning Commons Grade 12 is launch later this spring in the specific section of Mathematics at Work 12 icon.
  *** IMPORTANT: PLEASE READ THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT CAREFULLY BEFORE CONTINUING WITH THIS PROGRAM INSTALL. **When downloading this software YOU accept the terms and conditions of this licence agreement.**
- A provincial license of Autograph v3.3 has been purchased for all high schools, including Adult High Schools. This provides unlimited access to this software at all high school sites. Two support resources: Autograph Activities: Teacher Demonstrations and Autograph Activities: Student Investigations will also be sent out (March 2011)
- Our High School Math Advisory group, met on Wednesday, March 23rd, 2011, and developed a Placement Document that will help in our students choosing high school math courses that they can be successful in consultation with their teacher, Guidance Counselor and parents. These documents were being used beginning in the 2011-2012 school year and were last updated January 2016.
- David Pilmer has developed a series of Mathematics 49 videos for the NSCC Adult Learning Program (ALP). Topics include Sinusoidal Functions, Quadratic Functions, Systems of Equations and more. To view the videos visit the website http://www.youtube.com/watch?v=eaG4px5o5vs
- NSE resources http://plans.ednet.ns.ca/m10m10w **This NSE has been discontinued.**

- Lessons Learned / Observations documents from the 2013-2014 NSE's for Mathematics 10 and Mathematics at Work 10 NSE's were sent out to teachers- an excellent assessment resource for teacher discussions, CLT PLC's, etc. **An updated Lessons Learned document is expected in February 2017**.
- **Adaptations and Exemptions re NSE's**
  Certain students may require adaptations in order to complete these provincial examinations. Upon request, the department provides Braille, large print, black and white, and read-aloud Audio-CD for examinations; read-aloud audio-CD formats of the English 10 examination are only provided for those students for whom the Read-Aloud Request was submitted to the Department of Education and Early Childhood Development in March 2015. Decisions regarding other adaptations will be made at the school level. Any adaptations provided to a student during the examination must have been provided to the student throughout the course and must be documented in TIENET. Adaptations provided during the examination must be recorded on the back cover of the examination booklet. Please refer to the NSE English 10 and NSE Mathematics 10 Information Guides for further information.
  There may be some students who are granted exemptions. The principal, in consultation with the student and/or parent, may grant an exemption to an individual student in the case of illness, bereavement, or other exceptional circumstances. In such cases, the student's mark will be exclusive of the examination and determined by the subject teacher, in consultation with the principal. Students who are on Individual Program Plans (IPP) are working with outcomes that may differ from those in the course curriculum, and therefore these students will not write the Nova Scotia Examinations.
- The Formula Booklets and Information Guides for NSE Mathematics 10, NSE Mathematics at Work 10, ENE Mathématiques 10 and ENE Mathématiques pré-emploi 10 have been updated and are now available on the DoE website at http://plans.ednet.ns.ca/m10m10w/documents

**Mathematics Essentials 10 (Grad) MTHE10**
**Prerequisite:** Successful completion of Math 8 and recommendation from their Mathematics 9 teacher

**Provincial Guide**
- Mathematics Essentials 10 (Draft August 2006).
- No formal yearly plan but course outline, resources, activities, handouts and support files are on the Moodle. The Essentials Pathway will be reviewed soon. Looking at reviewing the outcomes, streamlining the number of outcomes and creating Yearly Plans-TBA.
- The DoE will be getting the Teacher-Workgroup back together for reviewing and revising the Mathematics Essentials 10 and 11 courses and to develop the **Mathematics Essentials 12 course** (currently still the Math in The Workplace 12 curriculum-just a name change to Mathematics Essentials 12). With the new Graduation requirements, the three credits via the Essentials Pathway (or could be

a more Real-Life course-financial mathematics pathway course with the curriculum review) needs to be in place by the 2019-20120 school year-stay tuned!

- A teacher workgroup is currently revising the **Mathematics Essentials 10** curriculum and will be working on the revision of **Mathematics Essentials 11** in Jan 2017. Rollout expected in Sept 2018 for Mathematics Essentials 10 and Sept 2019 for Mathematics Essentials 11. The text Mathematics for Everyday Life 10 and Mathematics for Everyday Life 11 are good resources to currently be using.

**Core Resources**

- Mathematics for Everyday Life 10 Student Text / Teacher's Resource
- The City - an exciting resource for teaching financial management. Check it out at http://www.themoneybelt.gc.ca. Mark MacLeod and Jeff Rhodenizer (BHS) have been trained using this resource.
- A provincial license of Autograph v3.3 has been purchased for all high schools, including Adult High Schools. This provides unlimited access to this software at all high school sites. Two support resources: Autograph Activities: Teacher Demonstrations and Autograph Activities: Student Investigations will also be sent out (March 2011)
- Our High School Math Advisory group, met on Wednesday, March 23rd, 2011, and developed a Placement Document that will help in our students choosing high school math courses that they can be successful in consultation with their teacher, Guidance Counselor and parents. These documents were being used beginning in the 2011-2012 school year and were last updated January 2016.

## Grade 11
## (2014-2015 / Year #1 of Implementation of WNCP curriculum for Mathematics at Work 11, Mathematics 11 and Pre-calculus 11)

**Grade 11 Mathematics Course information Pre-Requisites**-this info went out to schools and to families (June 2016)-help in selecting a Grade 11 Mathematics course.

The **revised yearly plans** and other documents for Grades 10-12 Math courses are posted to the appropriate page of the grade specific Moodle and are posted below under the various courses. Teacher feedback was instrumental in a lot of these changes. Current and updated Yearly Plans are non-negotiable-main reason is student mobility. **A summary of the Grades 10-12 Mathematics Yearly Plan revisions for 2016-2017 was sent out to schools (June 2016).** These revised Yearly Plans are to be used by all teachers to prepare their mathematics program for the 2016-2017 school year. While the new yearly plans have now been posted to the Moodle, it might take some time before the rearrangement of the curriculum documents, where needed, will be complete-TBA.

For most of the mathematics courses, sometimes the **textbook goes to far**-extra content (i.e. trig, quadratics, ..), the text books are more general-not 100% match to our guides/Yearly Plans because they were not specifically made for NS due to the cost-so

we adopted the general book from WNCP, etc) so important for teachers to align the text with the yearly plan and mandated SCO's.

**IPP's in Mathematics**: The use of an IPP code for mathematics indicates that a student has an Individual Program Plan in which outcomes have been deleted or the general curriculum outcomes are being taught at a significantly different specific curriculum outcome level. It could also indicate that a student is working on additional or extended outcomes. **The following codes should be used when using IPP's in mathematics at the high school level**

**Mathematics Grade 11 IPP (MTH11IP) -** used whether the student is enrolled in Mathematics Essentials 11, Mathematics at Work 11, Mathematics 11, Pre-calculus 11.

**Mathematics 11 (Academic) MT11**
**Prerequisite:** Successful completion of Mathematics 10. Designed to provide students with the mathematical understanding and critical-thinking skills identified for post-secondary studies in programs that require an academic math credit.

**Provincial Guide**

- Mathematics 11 Curriculum (Implementation Draft July 2014).
- The Mathematics 11 Yearly Plan (**June 2016-Draft**). Relations and Functions unit will now be the unit to start with followed by the Logical Reasoning unit-this is the main change. There were some inconsistencies with the hours (1 class=75 mins)/cumulative review with the original YP so some adjustments were made such as: taking out some of the Puzzles & Games classes (3), added an extra class each for Standard Deviation and Normal Distribution in the Statistics unit, adding 2 classes on Applying Scale for the Measurement unit, the Critically analyze society's use of Statistics (outcome S03) was moved from Relations and Functions unit to the Statistics unit with an extra class added (now 3 classes). Total now is 88 classes (with cumulative review built in) at 75 minutes=110 hours.
- Two documents were also sent out to teachers that distinguish between what is the extent of Quadratics to be done in Mathematics 11 and in Pre-calculus 11.
- IPP code is MTH11IP / 008109. The code refers to the grade level at which the student requires an IPP for mathematics, not to the specific classroom in which a student who requires an IPP is placed.

**Core Resources**

- Mathematics 11: Foundations of Mathematics 11 (Nelson), Student Text (print with e-book- give the student the login from the Mathematics Learning Commons Grade 11 Moodle and they can download a copy of the student text)
- Mathematics 11: Foundations of Mathematics 11 (Nelson), 3-in-1 Teacher's Guide with CD and IWB activities. Digital version is on the Moodle.
- Mathematics 11: Foundations of Mathematics 11 (Nelson), Assessment Bank (CD). Please Note: The Foundation of Mathematics 11 Computerized Assessment Bank CD cannot be loaded on the same computer that has also installed the ExamView Test Generator for Mathematics 10. This is due to the fact that the two

versions of the ExamView software CD are different. Please watch the SHORT VIDEO (attachment was sent to schools in Sept 2014) to explain the steps that must be followed to install the latest ExamView 8.1 with the Foundations of Mathematics 11 Computerized Assessment Bank.

- Mathematics 11: Foundations of Mathematics 11 (Nelson), Solutions Manual (CD)
- The new Mathematics Learning Commons Grade 11 Moodle site for the three new courses (Mathematics at Work 11, Mathematics 11 and Pre-calculus 11) became live in late August 2014 and instructions for access to this Moodle was sent to schools at this time-contact Mark if you need assistance. Documents will be added to the Moodle as they become available-yearly plans and draft curriculum guides for all three courses, Mathematics at Work 11, Mathematics 11, and Pre-calculus 11 are currently on there.
- Engaging site of resources for teachers to use with students site-a repository of engaging activities linked to the WNCP High School Math Curriculum, which suggests that teachers should "orchestrate the experiences" from which students extract meaning-thanks to Joe MacDonald for sharing! Reminds me of the NCTM Illuminations site. Videos from Dan Meyer and awesome performance assessments like the Tin Can project and much more! Check it out at http://wncpactivemath.wordpress.com/
- A provincial license of Autograph v3.3 has been purchased for all high schools, including Adult High Schools. This provides unlimited access to this software at all high school sites. Two support resources: Autograph Activities: Teacher Demonstrations and Autograph Activities: Student Investigations will also be sent out (March 2011)
- Our High School Math Advisory group, met on Wednesday, March 23rd, 2011, and developed a Placement Document that will help in our students choosing high school math courses that they can be successful in consultation with their teacher, Guidance Counselor and parents. These documents were being used beginning in the 2011-2012 school year and were last updated January 2016.
- David Pilmer has developed a series of Mathematics 49 videos for the NSCC Adult Learning Program (ALP). Topics include Sinusoidal Functions, Quadratic Functions, Systems of Equations and more. To view the videos visit the website http://www.youtube.com/watch?v=eaG4px5o5vs

**NEW for 2017-2018**
**Extended Mathematics 11 (academic, 2 credits, 2 semesters) EM 11**
**Prerequisite**: Successful completion of Mathematics 10.

19 schools across the province will be offering **Extended Mathematics 11** for the 2017-2018 school year. LRHS will be offering 2 sections with Julie Haughn and Wayne Deighton teaching the course. The DoE will be providing 16 Chrome books per section plus a Tech Tub to store the Chrome books. Chrome books belong to the course.

The pilot phase for Extended Mathematics 11 began in September 2016 at Liverpool Regional High School (Julie Haughn). Full implementation anticipated for all schools in

for the 2017-2018 school year. Designed to provide students with more time to consolidate their mathematical understanding and to study some new concepts. This course will count as **one** academic mathematics credit for graduation requirements and **one** technology credit. **Same curriculum as Mathematics 11 with the addition of a Big Data unit (30-35 hours) added along with a few scattered outcomes (i.e. Quadratic project re bridges).**

Extended Mathematics 11 is a 220-hour course that is scheduled over the duration of the school year, September to June. Students who successfully complete this course will receive one grade 11 academic mathematics credit and one grade 11 technology credit.

Extended Mathematics 11 is an academic high school mathematics course. Students who select Extended Mathematics 11 will complete the curriculum outcomes for the semestered Mathematics 11 course and additional concepts in Statistics and Data Analytics. They will have extra time to explore concepts using a variety of learning experiences and use technology to enhance their learning.

The typical pathway for students who successfully complete Extended Mathematics 11 will be to take Mathematics 12. Alternatively, students who successfully complete Extended Mathematics 11 may choose to select either Mathematics at Work 12 or Mathematics Essentials 12. While not the typical pathway, Extended Mathematics 11 can also be used as a pre-requisite for Pre-calculus 11. These courses are to be taken consecutively, not concurrently.*

Students in Extended Mathematics 11 will explore the following topics: linear programming, applications of rates, scale diagrams and factors, inductive and deductive reasoning, an introduction to proof, cosine law, sine law, spatial reasoning, statistics, systems of linear inequalities, and quadratic functions, inference making from statistical summaries, analyzing and presenting data and how to extract meaning from data.

*Note: Students who complete Extended Mathematics 11 and then decide to take Pre-calculus 11 followed by Pre-calculus 12 should contact their guidance counselor for scheduling options.

**Pre-calculus 11 (Adv) PCAL11**
**Prerequisite:** Successful completion of Mathematics 11 (or Extended Mathematics 11) and have outstanding performance in relation to the learning outcomes prescribed for Mathematics 11 or Extended Mathematics 11. Designed to provide students with the mathematical understanding and critical-thinking skills identified for post-secondary studies in programs that require the study of theoretical calculus. This course is an advanced high school mathematics course.

**Provincial Guide**

- Pre-calculus 11 Curriculum Guide (Implementation Draft, September 2014).
- The Yearly Plan for Pre-calculus 11 (Revised June 2015 Draft) was slightly revamped (Dec 2014) and sent out to teachers (Dec 19). The Trig unit was moved

down later in the plan so that it flows better and the section on inequalities was moved up after the quadratics section. **Possible other changes to the Yearly Plan coming in Fall 2017.** Sometimes the text goes to far (books are more general-not 100% match because cost, etc) with Trig and Quadratics so align with the yearly plan and mandated SCO's. Work on these **possible revisions** will take place in the fall 2017.

- **It's Happening!!** The removal of TO1 (radian measure) and TO2 (unit circle) SCO's from the Pre Calculus 12 course and placed in the Pre Calculus 11 will take place in the upcoming school year 2017-2018. The DoE will need to alert PowerSchool, change curriculum guides and yearly plans to reflect the change. For the 2017-2018 school year, PC 12 will still keep the two SCOs as students coming from PC 11 in 2016-2017 will have not covered TO1 and TO2. In Semester 2 of 2017-2018, Pre Calculus 11 will add and teach the two outcomes.
- The removal of TO1 (radian measure) and TO2 (unit circle) SCO's from the Pre Calculus 12 course and placed in the Pre Calculus 11 will take place in the upcoming school year 2017-2018. The DoE will need to alert PowerSchool, change curriculum guides and yearly plans to reflect the change. For the 2017-2018 school year, PC 12 will still keep the two SCOs as students coming from PC 11 in 2016-2017 will have not covered TO1 and TO2. In Semester 2 of 2017-2018, Pre Calculus 11 will add and teach the two outcomes.

**Core Resources**

- Pre-calculus 11 (McGraw Hill), Student Text (print)
- Pre-calculus 11 (McGraw Hill) Solutions Manual (CD)-McGraw Hill
- Pre-calculus 11 (McGraw Hill) Computerized Assessment Bank (CD)
- Pre-Calculus 11 and Pre-Calculus 12 **on-line resources** usage is around 10%-very low and these resources are very expensive. The CONNECT student and teacher resource works good for the PC 11 using the enrollment key but then for PC 12 you must re-enter all that info again versus just using your PC 11 data and you also have to send a work ticket to CONNECT more than 1 time-so very cumbersome currently!! It is a good resource with interactive lessons and activities.
- Pre-calculus 11 (McGraw Hill) CONNECT school for students (includes a digital student book- instructions on the Mathematics Learning Commons Grade 11 Moodle to access these as e-texts-the TR is on there also). McGraw Hill. CONNECTSchool offers the complete InterACTIVE Student Resource; the PDF version of the Student Resource; self-assessment and personalized study plans; and more.
- Pre-calculus 11 (McGraw Hill) CONNECT school for teachers (includes digital teacher resource and digital student book)-McGraw Hill. CONNECTSchool offers the entire online Teacher's Resource, including editable Blackline Masters; links to multi-media resources; and a wealth of media assets, interactive lessons and activities.
- The Pre-calculus 11 e-book called CONNECTschool is an exciting resource for teachers and students! Info was sent out to teachers on how to register as a teacher and to register your students/classes (see Nov 24 e-mail from me & PPT sent out

on Dec 19). There was also a Webinar on Dec 4, 2014 that some of our teachers took part in on this CONNECTschool e-book. If teachers of Pre-calculus 11 didn't attend the session on Dec. 4, I would recommend that you visit the Grade 11 Mathematics Moodle and you can watch the archived version (located under Learning Resources). Final enhancements and updates (teacher plans, assignment folder, cleaner unit folders, ..) to the current CONNECTschool e-book will be good to go on Jan 19, 2015-so I would recommend that you don't delve into editing and developing teacher plans on the Interactive e-book until that date-any editing/saving before that date will be lost-feel free to explore the e-book but don't save anything until Jan 19, 2015. A Webinar on the improved enhancements for the Pre-calculus 11 E-Book will take place on Feb 19, 2015 from 3:30-4:30 pm. For technical questions, you can contact mary.lannigan@mheducation.com.

- The new Mathematics Learning Commons Grade 11 Moodle site for the three new courses (Mathematics at Work 11, Mathematics 11 and Pre-calculus 11) became live in late August 2014 and instructions for access to this Moodle was sent to schools at this time-contact Mark if you need assistance. Documents will be added to the Moodle as they become available-yearly plans and draft curriculum guides for all three courses, Mathematics at Work 11, Mathematics 11, and Pre-calculus 11 are currently on there.
- Engaging site of resources for teachers to use with students site-a repository of engaging activities linked to the WNCP High School Math Curriculum, which suggests that teachers should "orchestrate the experiences" from which students extract meaning-thanks to Joe MacDonald for sharing! Reminds me of the NCTM Illuminations site. Videos from Dan Meyer and awesome performance assessments like the Tin Can project and much more! Check it out at http://wncpactivemath.wordpress.com/
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**Mathematics at Work 11 (Grad) MTW11**
**Prerequisite:** Successful completion of Mathematics at Work 10 or Mathematics 10.
Designed to provide students with the mathematical understanding and critical-thinking

skills identified for direct entry into the workforce or for entry into programs of study that do not require academic mathematics.

**Provincial Guide**

- Mathematics at Work 11 Curriculum Guide (Draft July 2014)
- Yearly Plan (**June 2016-Draft**). The revised Yearly Plan will start with Chapter 1 (old Yearly Plan started with Chapter 4)-keeps in line with MaW10.

**Core Resources**

- Math at Work 11 (McGraw Hill), Teacher Guide (print)
- Math at Work 11 (McGraw Hill), Student Text (print). Access to the PDF's and digital files of the McGraw Hill Mathematics at Work 11 student book- give the student the login from the Mathematics Learning Commons Grade 11 Moodle and they can download a copy of the student text).
- The new Mathematics Learning Commons Grade 11 Moodle site for the three new courses (Mathematics at Work 11, Mathematics 11 and Pre-calculus 11) became live in late August 2014 and instructions for access to this Moodle was sent to schools at this time-contact Mark if you need assistance. Documents will be added to the Moodle as they become available-yearly plans and draft curriculum guides for all three courses, Mathematics at Work 11, Mathematics 11, and Pre-calculus 11 are currently on there.
- Engaging site of resources for teachers to use with students site-a repository of engaging activities linked to the WNCP High School Math Curriculum, which suggests that teachers should "orchestrate the experiences" from which students extract meaning-thanks to Joe MacDonald for sharing! Reminds me of the NCTM Illuminations site. Videos from Dan Meyer and awesome performance assessments like the Tin Can project and much more! Check it out at http://wncpactivemath.wordpress.com/
- Education and Early Childhood Development recently purchased a computerized assessment bank to support teachers of Mathematics at Work 10, Mathematics at Work 11 and Mathematics at Work 12. These computerized assessment banks were available on a CD from Pacific Educational Press with an older version of the software ExamView. We negotiated with the vendor to receive these assessment banks separate from the software. Since these computerized assessment banks are from another vendor, the chapters are not aligned perfectly with our current student resource from McGraw-Hill Ryerson, however, the overall course outcomes are the same. We are hosting these resources in our Mathematics Learning Commons Moodles. A short video has been created to help teachers review the steps needed to install both the software and the assessment bank on their computer.
  https://nsvs.ednet.ns.ca/m19dev/file.php/1/moodle_help/Examview_Tutorial_V1.3.mp4

Mathematics at Work 10 teachers may access these resources from the Mathematics Learning Commons Grade 10 in the specific section of Mathematics at Work 10 icon. Mathematics at Work 11 teachers may access these resources from the Mathematics Learning Commons Grade 11 in the specific section of Mathematics at Work 11 icon. Mathematics at Work 12 teachers will be able to access these resources when the NEW Mathematics Learning Commons Grade 12 is launch later this spring in the specific section of Mathematics at Work 12 icon.

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- The City - an exciting resource for teaching financial management. Check it out at http://www.themoneybelt.gc.ca. Mark MacLeod and Jeff Rhodenizer (NGRHS) have been trained using this resource.
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- Our High School Math Advisory group, met on Wednesday, March 23rd, 2011, and developed a Placement Document that will help in our students choosing high school math courses that they can be successful in consultation with their teacher, Guidance Counselor and parents. These documents were being used beginning in the 2011-2012 school year and were last updated January 2016.

**Mathematics Essentials 11 (Grad) MTHE11**

**Prerequisite:** Successful completion of any Grade 10 Mathematics course (Mathematics Essentials 10 or Mathematics at Work 10). Designed for students who either do not intend to pursue post-secondary study or plan to enter post-secondary programs that do not have any mathematics requirements. It is intended to provide students with the development of the skills and understanding required in the workplace, as well as those required for everyday life at home and in the community.

**Provincial Guide**

- Mathematics Essentials 11 (Draft November 2006)
- No formal yearly plan but course outline, resources, activities, handouts and support files are on the Moodle. The Essentials Pathway will be reviewed soon. Looking at reviewing the outcomes, streamlining the number of outcomes and creating Yearly Plans-TBA.
- The DoE will be getting the Teacher-Workgroup back together for reviewing and revising the Mathematics Essentials 10 and 11 courses and to develop the

**Mathematics Essentials 12 course** (currently still the Math in The Workplace 12 curriculum-just a name change to Mathematics Essentials 12). With the new Graduation requirements, the three credits via the Essentials Pathway (or could be a more Real-Life course-financial mathematics pathway course with the curriculum review) needs to be in place by the 2019-20120 school year-stay tuned!

- A teacher workgroup is currently revising the **Mathematics Essentials 10** curriculum and will be working on the revision of **Mathematics Essentials 11** in Jan 2017. Rollout expected in Sept 2018 for Mathematics Essentials 10 and Sept 2019 for Mathematics Essentials 11. The text Mathematics for Everyday Life 10 and Mathematics for Everyday Life 11 are good resources to currently be using.

**Core Resources**

- Mathematics for Everyday Life 11 Student Text / Teacher's Resource
- Mathematics for Everyday Life 12 Student Text / Teacher's Resource
- The City - an exciting resource for teaching financial management. Check it out at http://www.themoneybelt.gc.ca. Mark MacLeod and Jeff Rhodenizer (BHS) have been trained using this resource.
- http://lrt.ednet.ns.ca/PD/HS_Math_Website/High_School_Math.html
- A provincial license of Autograph v3.3 has been purchased for all high schools, including Adult High Schools. This provides unlimited access to this software at all high school sites. Two support resources: Autograph Activities: Teacher Demonstrations and Autograph Activities: Student Investigations will also be sent out (March 2011)
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## Grade 12
## (2015-2016 / Year #1 of Implementation of WNCP curriculum for Mathematics at Work 12, Mathematics 12 and Pre-calculus 12)

The **revised yearly plans** and other documents for Grades 10-12 Math courses are posted to the appropriate page of the grade specific Moodle and are posted below under the various courses. Teacher feedback was instrumental in a lot of these changes. Current and updated Yearly Plans are non-negotiable-main reason is student mobility. **A summary of the Grades 10-12 Mathematics Yearly Plan revisions for 2016-2017 was sent out to schools (June 2016).** These revised Yearly Plans are to be used by all teachers to prepare their mathematics program for the 2016-2017 school year. While the new yearly plans have now been posted to the Moodle, it might take some time before the rearrangement of the curriculum documents, where needed, will be complete-TBA.

For most of the mathematics courses, sometimes the **textbook goes to far**-extra content (i.e. trig, quadratics, ..), the text books are more general-not 100% match to our guides/Yearly Plans because they were not specifically made for NS due to the cost-so we adopted the general book from WNCP, etc) so important for teachers to align the text with the yearly plan and mandated SCO's.

**IPP's in Mathematics**: The use of an IPP code for mathematics indicates that a student has an Individual Program Plan in which outcomes have been deleted or the general curriculum outcomes are being taught at a significantly different specific curriculum outcome level. It could also indicate that a student is working on additional or extended outcomes. **The following codes should be used when using IPP's in mathematics at the high school level**

**Mathematics Grade 12 IPP (MTH12IP) -** used whether the student is enrolled in Mathematics Essentials 12, Mathematics at Work 12, Mathematics 12, Pre-calculus 12 or Calculus 12.

**Mathematics 12 (Acad) MT12**
**Recommended Prerequisite**: Successful completion of Mathematics 11

**Provincial Guide**

- Mathematics 12 (Implementation Draft, June 2015-says October 2015 on the Moodle)-revised Oct 29/2015-errors in Truth Tables on pp 92-93 were corrected
- Mathematics 12 Yearly Plan (Draft March 2015). Draft-March 2015 remains-no revisions at this time-will discuss changes further in Feb 2017. Lots of discussion on the arrangement of the chapters whether Functions (6,7,8) is done at the 1st or at the end-same for Chapter 3, 4, 5-Sets and Probability. Still some discussion from teachers on the project-effectiveness and time. Suggestions for Research Project were shared by Drew Gillen-PVEC.
- IPP code is MTH12IP / 008110. The code refers to the grade level at which the student requires an IPP for mathematics, not to the specific classroom in which a student who requires an IPP is placed.

**Core Resources**

- Mathematics 12: Foundations of Mathematics 12 (Nelson), Student Text (print with e-book access – give the student the login from the Mathematics Learning Commons Grade 12 Moodle and they can download a copy of the student text).
- Mathematics 12: Foundations of Mathematics 12 (Nelson), 3-in-1 Teacher's Resource with CD and IWB activities. See e-text instructions on the Mathematics Learning Commons Grade 12 Moodle.
- Mathematics 12: Foundations of Mathematics 12 (Nelson), Assessment Bank (CD)-can be accessed via the Mathematics Learning Commons Grade 12 Moodle.
- Mathematics 12: Foundations of Mathematics 12 (Nelson), Solutions Manual (CD)

- The new **Mathematics Learning Commons Grade 12 Moodle** site for the three new courses (Mathematics at Work 12, Mathematics 12 and Pre-calculus 12) became live in June 2015 and instructions for access to this Moodle was given to teachers during the PD days in June 2015. If you require an enrollment key to access the Grade 12 Moodle, please contact Mark. Documents will be added to the Moodle as they become available-yearly plans and draft curriculum guides for all 3 courses, Mathematics at Work 12, Mathematics 12, and Pre-calculus 12 are currently on there-check it out!
- A provincial license of Autograph v3.3 has been purchased for all high schools, including Adult High Schools. This provides unlimited access to this software at all high school sites. Two support resources: Autograph Activities: Teacher Demonstrations and Autograph Activities: Student Investigations will also be sent out (March 2011)
- Our High School Math Advisory group, met on Wednesday, March 23rd, 2011, and developed a Placement Document that will help in our students choosing high school math courses that they can be successful in consultation with their teacher, Guidance Counselor and parents. These documents were being used beginning in the 2011-2012 school year and were last updated January 2016.
- David Pilmer has developed a series of Mathematics 49 videos for the NSCC Adult Learning Program (ALP). Topics include Sinusoidal Functions, Quadratic Functions, Systems of Equations and more. To view the videos visit the website http://www.youtube.com/watch?v=eaG4px5o5vs

**Pre-calculus 12 (Adv) PCAL1512**
**Prerequisite:** Successful completion of Pre-calculus 11

**Provincial Guide**

- Pre-calculus 12 (Implementation Draft, March 2016-says June 2016 on the Moodle). Curriculum document now fully completed with final graphics completed and on the Moodle under Pre-calculus 12.
- Pre-calculus 12 Yearly Plan (Draft, Dec 2015-although says March 2015). Draft-Dec 2015 remains (says March 2015 on it). Too much content in this course!!! TO1 (unit circle) and TO2 (radian measure) remain in this course for 2016-2017 because this year's (2015-16) Pre-calculus 11 students wouldn't have TO1 and TO2.
- **It's Happening!!** The removal of TO1 (radian measure) and TO2 (unit circle) SCO's from the Pre Calculus 12 course and placed in the Pre Calculus 11 will take place in the upcoming school year 2017-2018. The DoE will need to alert PowerSchool, change curriculum guides and yearly plans to reflect the change. For the 2017-2018 school year, PC 12 will still keep the two SCOs as students coming from PC 11 in 2016-2017 will have not covered TO1 and TO2. **In Semester 2 of 2017-2018, Pre Calculus 11 will add and teach the two outcomes.**

**Core Resources**

- Pre-calculus 12 (McGraw Hill), Student Text (print)

- Pre-Calculus 11 and Pre-Calculus 12 **on-line resources** usage is around 10%- very low and these resources are very expensive. The CONNECT student and teacher resource works good for the PC 11 using the enrollment key but then for PC 12 you must re-enter all that info again versus just using your PC 11 data and you also have to send a work ticket to CONNECT more than 1 time- so very cumbersome currently!! It is a good resource with interactive lessons and activities.
- Pre-calculus 12 (McGraw Hill) CONNECT school for students (5-year license per student)-includes a digital student book- instructions on the Mathematics Learning Commons Grade 12 Moodle to access these as e-texts-the TR is on there also. CONNECTSchool offers the complete InterACTIVE Student Resource; the PDF version of the Student Resource; self-assessment and personalized study plans; and more.
- Pre-calculus 12 (McGraw Hill) e-Solutions Manual (CD)
- Pre-calculus 12 (McGraw Hill) CONNECT school for teachers (5-year license per teacher teaching Pre-calculus 12- includes digital teacher resource and digital student book). Registration information for ConnectSchool for Pre-calculus 12 for teachers was sent to Pre-calculus 12 teachers in early Sept 2015. The Mathematics Learning Commons Grade 12 Moodle has also been updated with this information. CONNECTSchool offers the entire online Teacher's Resource, including editable Blackline Masters; links to multi-media resources; and a wealth of media assets, interactive lessons and activities.
- Registration information for ConnectSchool for Pre-calculus 12 for students and teachers was sent to Pre-calculus 12 teachers in early Sept 2015. The Mathematics Learning Commons Grade 12 Moodle has also been updated with this information.
- Pre-calculus 12 (McGraw Hill) Computerized Assessment Bank (CD)
- The new **Mathematics Learning Commons Grade 12 Moodle** site for the three new courses (Mathematics at Work 12, Mathematics 12 and Pre-calculus 12) became live in June 2015 and instructions for access to this Moodle was given to teachers during the PD days in June 2015. If you require an enrollment key to access the Grade 12 Moodle, please contact Mark. Documents will be added to the Moodle as they become available-yearly plans and draft curriculum guides for all 3 courses, Mathematics at Work 12, Mathematics 12, and Pre-calculus 12 are currently on there-check it out!
- http://lrt.ednet.ns.ca/PD/HS_Math_Website/High_School_Math.html
- A provincial license of Autograph v3.3 has been purchased for all high schools, including Adult High Schools. This provides unlimited access to this software at all high school sites. Two support resources: Autograph Activities: Teacher Demonstrations and Autograph Activities: Student Investigations will also be sent out (March 2011)
- Our High School Math Advisory group, met on Wednesday, March 23rd, 2011, and developed a Placement Document that will help in our students choosing high school math courses that they can be successful in consultation with their teacher, Guidance Counselor and parents. These documents were

being used beginning in the 2011-2012 school year and were last updated January 2016.

- David Pilmer has developed a series of Mathematics 49 videos for the NSCC Adult Learning Program (ALP). Topics include Sinusoidal Functions, Quadratic Functions, Systems of Equations and more. To view the videos visit the website http://www.youtube.com/watch?v=eaG4px5o5vs

**Calculus 12 (Adv) CAL12**
**Prerequisite:** Successful completion of Pre-Calculus Mathematics 12

**Provincial Guide**

- Calculus 12 (Implementation Draft, December 2004)
- Remains as is for now. A work group will be put together to review the flow from PC 11 and PC 12 to Calculus 12 and to design a Yearly Plan for Calculus 12.

**Core Resources**

- Calculus: Graphical, Numerical & Algebraic Student Text / Teacher's Resource
- A provincial license of Autograph v3.3 has been purchased for all high schools, including Adult High Schools. This provides unlimited access to this software at all high school sites. Two support resources: Autograph Activities: Teacher Demonstrations and Autograph Activities: Student Investigations will also be sent out (March 2011)
- Our High School Math Advisory group, met on Wednesday, March 23rd, 2011, and developed a Placement Document that will help in our students choosing high school math courses that they can be successful in consultation with their teacher, Guidance Counselor and parents. These documents were being used beginning in the 2011-2012 school year and were last updated January 2016.
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**Math for the Workplace 12 (Grad) MWP12**
**Prerequisite:** Successful completion of Mathematics Essentials 11 or Mathematics at Work 11

**Math for the Workplace 12** will be renamed **Math Essentials 12**, beginning in the 2015-16 school year, with the SCO's to be revised at a later date.

**Provincial Guide**

- Math for the Workplace 12 (Draft, Nov 2007)
- The DoE will be getting the Teacher-Workgroup back together for reviewing and revising the Mathematics Essentials 10 and 11 courses and to develop the **Mathematics Essentials 12 course** (currently still the Math in The

Workplace 12 curriculum-just a name change to Mathematics Essentials 12). With the new Graduation requirements, the three credits via the Essentials Pathway (or could be a more Real-Life course-financial mathematics pathway course with the curriculum review) needs to be in place by the 2019-20120 school year-stay tuned!

- Mathematics for the Workplace 12 needs to be revised and will be renamed Mathematics Essentials 12-stay tuned.
- No formal yearly plan but course outline, resources, activities, handouts and support files are on the Moodle. The Essentials Pathway will be reviewed soon. Looking at reviewing the outcomes, streamlining the number of outcomes and creating Yearly Plans-TBA. Also work to be done on the content of Mathematics Essentials 12 as it does not flow from ME 10 and ME 11 as it is Math for the Workplace 12 curriculum.
- This credit cannot be used as one of the two required math credits but can be used as one of the credits for the additional two credits needed for the compulsory math/science/technology area.

**Core Resources**

- The new **Mathematics Learning Commons Grade 12 Moodle** site for the three new courses (Mathematics at Work 12, Mathematics 12 and Pre-calculus 12) and Math Essentials 12 became live in June 2015 and instructions for access to this Moodle was given to teachers during the PD days in June 2015. If you require an enrollment key to access the Grade 12 Moodle, please contact Mark. Documents will be added to the Moodle as they become available-yearly plans and draft curriculum guides for all 3 courses, Mathematics at Work 12, Mathematics 12, and Pre-calculus 12 are currently on there-check it out!
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**Mathematics at Work 12 (Grad) MTW12**

**Recommended Prerequisite**: Successful completion of Mathematics at Work 11 or Mathematics 11

**Provincial Guide**

- Mathematics at Work 12 (Implementation Draft, June 2015)
- Mathematics at Work 12 Yearly Plan (**June 2016-Draft**). Just date change and some hour reductions to the Yearly Plan-order in textbook is fine. The

current Yearly Plan had 115 hours so need to reduce to 110 hours. The Measurement Project will go from 2 to 1 class, the Owning a Vehicle (N02) and Operating a Vehicle (N02) from the Number unit will both be reduced from 4 to 3 classes, and the Cumulative Review (halfway through the course) will be reduced from 4 to 3 classes.

**Core Resources**

- Math at Work 12 (McGraw Hill), Student Text (print)
- Math at Work 12 (McGraw Hill), Teacher's Resource (print)
- Access to the PDF's and digital files of the McGraw Hill Math at Work 12 student book-give the student the login from the Mathematics Learning Commons Grade 12 Moodle and they can download a copy of the student text).
- The new **Mathematics Learning Commons Grade 12 Moodle** site for the three new courses (Mathematics at Work 12, Mathematics 12 and Pre-calculus 12) became live in June 2015 and instructions for access to this Moodle was given to teachers during the PD days in June 2015. If you require an enrollment key to access the Grade 12 Moodle, please contact Mark. Documents will be added to the Moodle as they become available-yearly plans and draft curriculum guides for all 3 courses, Mathematics at Work 12, Mathematics 12, and Pre-calculus 12 are currently on there-check it out!
- Education and Early Childhood Development recently purchased a computerized assessment bank to support teachers of Mathematics at Work 10, Mathematics at Work 11 and Mathematics at Work 12. These computerized assessment banks were available on a CD from Pacific Educational Press with an older version of the software ExamView. We negotiated with the vendor to receive these assessment banks separate from the software. Since these computerized assessment banks are from another vendor, the chapters are not aligned perfectly with our current student resource from McGraw-Hill Ryerson, however, the overall course outcomes are the same. We are hosting these resources in our Mathematics Learning Commons Moodles. A short video has been created to help teachers review the steps needed to install both the software and the assessment bank on their computer.
  https://nsvs.ednet.ns.ca/m19dev/file.php/1/moodle_help/Examview_Tutorial_V1.3.mp4
  Mathematics at Work 10 teachers may access these resources from the Mathematics Learning Commons Grade 10 in the specific section of Mathematics at Work 10 icon. Mathematics at Work 11 teachers may access these resources from the Mathematics Learning Commons Grade 11 in the specific section of Mathematics at Work 11 icon. Mathematics at Work 12 teachers will be able to access these resources when the NEW Mathematics Learning Commons Grade 12 is launch later this spring in the specific section of Mathematics at Work 12 icon.
  *** IMPORTANT: PLEASE READ THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT CAREFULLY BEFORE CONTINUING

WITH THIS PROGRAM INSTALL. **When downloading this software YOU accept the terms and conditions of this licence agreement.**

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