

WNCP .. K to 10

The “U” in UMathX is ... “UNDERSTANDING”

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PART A. PREPARING FOR THE JOURNEY

- **UMathX** is a journey guided by your planning where students are encouraged to think through concepts, choose strategies, articulate ideas towards constructing understanding.
- **This Journey** is focused on you as the professional who will be challenged to create a rich environment which leads to the understanding of math concepts through the implementation of **UMathX**.
- **UMathX** is a full service K to 10 learning environment, supporting a **growth mindset** within a **learning pit** encouraging students and teachers to **grapple** with concepts.



Grappling is
'Productive
Struggling'



The UMathX journey can take many paths.

Frameworks give ideas for UMathX implementation.

For information and resources visit our website at www.umathx.com

Watch the video "UMathX - What is It?" at umathx.com/videos

Build it
Draw it
Talk it
Write it
OWN it!

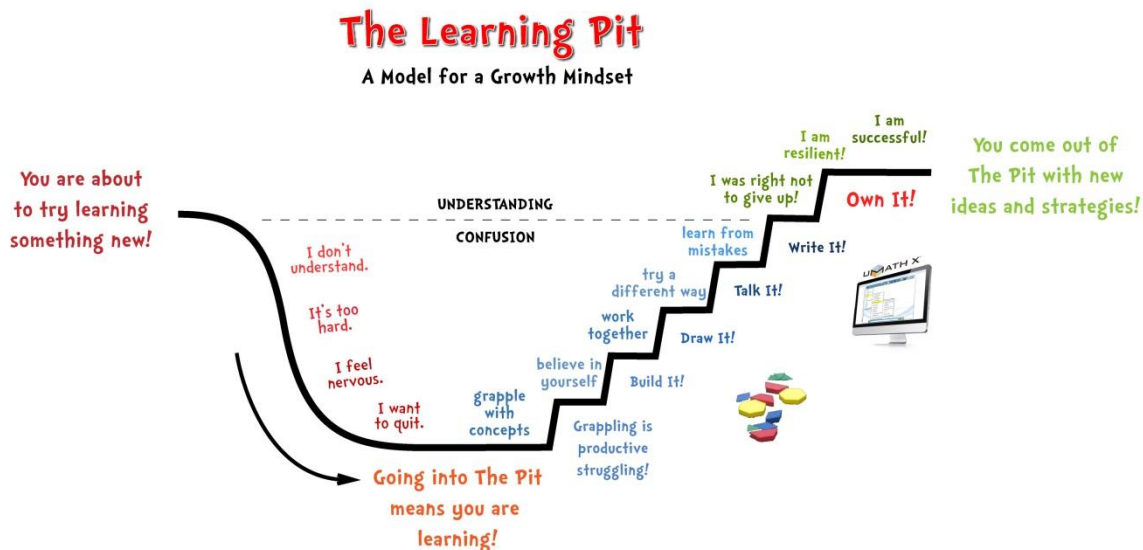
Before beginning this journey, discuss the many possible learning environments.

Show me another way...
Reflect and Connect
What would you do if...?
Why did you... ?



PART A continued
PREPARING FOR
THE
JOURNEY

- REMEMBER to play the video: UMathX–What is it? at www.umathx.com > Media > Videos
- UMathX transforms a “Valley of Despair” into productive struggling in a “learning pit”.



- Play the video <http://www.jamesnottingham.co.uk/learning-pit> followed by discussion.

- **The Learning Environment:**

As a former district mathematics leader, I promoted the district-wide purchase and use of previous versions of this system due to modeling, strategies and visual connections. Dr M.K. Texas

Our teachers have used it extensively with parents, teachers and students. UMath X is perfect to support research and instruction to teacher candidates. S.C. TDSB Toronto

“UMathX helps students gain conceptual understanding better than any other program. Content and Teaching Methodology are exceptional.” Master Teachers, LSU Faculties of Education

I still believe that the UMathX system is by far the most effective learning tool for mathematics that I have seen!” JS – Australia

TOWARDS
UNDERSTANDING
how to use
UMathX
as a
tool
for learning

PART B. BEGINNING THE JOURNEY

- UMathX creates an environment of Exploration for Students and thus for Journeys in Mathematics.
 - Enter the URL www.umathx.com/preview into the address box of any browser.
Enter the Generic Username: **count**
Enter the Generic Password: **umathx**
- There exist 4 Login Types:** student, teacher, principal, supervisor

The Main Menu appears.

The Main Menu is the jump off point for both PLANNING and STUDENT USE.



**LET'S EXPLORE
THE CONTENT
MENU ...**

**ELEMENTARY
Example:**

<PROCEED> is ...

the way that UMathX controls the pace.

It ensures attention to tasks and separates the pieces of the concept being built.

- Select “**CONTENT Menu**”.
Follow this path in order:

1. **Fractions > Equivalent Fractions > Pattern Blocks**. Click on (arrow up)(arrow right)(arrow left)(double arrow up) **Content Menu .. Fractions > Equivalent Fractions > Pattern Blocks > Hexagon1** to work through lesson, Hexagon1

2. Double click on “**This is one Whole Hexagon**” on the first page to have the line read and highlighted.
When <proceed> appears on the bottom right, click on it.
Key in “1”, then press <enter>.
Key in “2” then press <enter>.
Now click on <proceed>.
Enter a number ... try the number .. “2” .. three times before entering the correct answer.
NOTE- Encourage students to risk. A mistake is an opportunity to learn.

3. Click on the 2nd icon at the top of the screen, **MENU**.
Now navigate to **Hexagon1** and complete the lesson.
A blue screen with two options – **GO BACK ..** or .. **CONTINUE**, marks the end of a lesson.
Return to the **Main Menu**.

**LET'S EXPLORE
THE CURRICULUM
MENU ...**

**ELEMENTARY
Example:**

- Select “**Ontario Expectations CURRICULUM Menu**”.
Follow this path in order:

1. **Grade 5** then **N-Number**, then **Number Sense**.
Click (arrow right)(arrow left)(arrow up)(double arrow up).

2. Select **WNCP**.

3. Click .. **Grade 5 > N-Number > Number Sense > 07**
You have now reached suggested lessons to fit **5.N.7**

4. You now have **2 choices** – **Tab 1 – “Lessons”** and **Tab 2 – “Frameworks”**

5. Select **Lessons**.
You are at lessons selected from the **Content Menu** for **5.N.7**.
Lessons are in order that we recommend that they be taught.

6. Double Click the 3rd lesson- **Fractions > Equivalent Fractions > Pattern Blocks > Hexagon1** (Remember this?)
Do a few <proceeds> into the lesson.

7. **Exit the lesson** by clicking on the 2nd icon at the top of the screen, **MENU**.
You are returned to the **Selection Menu** within the **Curriculum Selection, 5.N.7**, ready for another choice.

THREE PART MODEL LESSONS (FRAMEWORKS)

are meant to:

1. Tie on-screen knowledge to it's concrete expression off-computer
2. Provide support for RTI & STEM models.

8. Click on tab “Frameworks”.

You see **tiered 3 part model printable lessons** which give ideas on **implementing UMathX**.

9. Double-Click on ... Equivalent Fractions -1.pdf.

Note the 3 part lesson. It can be printed in colour or in black and white double sided to save on paper. This can be given to a student or a pair of students as a plan for implementation of UMathX. Note that the instructions to the student(s) direct them within the **Content Menu**.

10. Return to UMathX, by moving the mouse to the top of the screen and click on the X for Equivalent Fractions -1.pdf.

- **Select “Help Me Get Started” on the Main Menu.**
“UMathX Videos” will appear.
Select and play the video, “Frameworks for Learning”

UMathX can be used in a wide variety of learning environments.
Frameworks save much time by providing lessons and lesson ideas ready to be used.

LET’S EXPLORE CONTENT MENU & CURRICULUM MENU ...

SECONDARY Example:

- **Select “CONTENT Menu”.**
Follow this path in order:
Graphing > Linear Relations > The Elastic Example > Setup Equations.
 Try some of the lesson.
 Return to the **Main Menu**.

- **Select the WNCP CURRICULUM Menu.**
Follow the path to 9.PR.2
 Click on tab **“Lessons”**.
 Double Click the lesson- **Graphing > Linear Relations > The Elastic Example > Setup Equations**
Click on the tab “Frameworks”.
 Note tiered 3 part lessons, **Linear Relations – Elastic -1, -2, -3** for a suggestion to implement **UMathX**.

MODEL LESSONS (FRAMEWORKS)

Framework Role:

Model Lessons

Implement:

RTI

STEM

- **“Find a Framework” in 3 Ways:**
 1. In the **Main Menu**, select **“View a Framework”** or
 2. **Navigate to .. www.umathx.com/frameworks** or
 3. **Select the appropriate framework within a curriculum.**

Each Framework: Has 1 page – double sides
 Can be printed in colour or in black and white
 Has 3 parts: Get Started
 Working At It
 Reflect and Connect

Two Examples ..

UMATH X
Framework for Learning: Equivalent Fractions - 3
 Leader's Name: Instructor's Initials:
 Co-Leader's Name:
Getting Started:
 In **UMATH X** follow the Content Menu path:
 Fractions > The Meaning of Fractions > Introduction...Think, Write, Say > Circles
 As you work through the lesson, Circles, complete the corresponding notes below.
We Think:
 The circle on the dreamcatcher is cut into equal parts.
 of the equal parts of the circle are green.
We Write:
 ← Number of equal parts shaded green
 ← Total number of equal parts
We Say:
 out of equal parts is green.
 of the shape is green.
Working In It:
 In **UMATH X** follow the Content Menu path:
 Fractions > Equivalent Fractions > Introduction

UMATH X
Framework for Learning: Ratio Tables - Introduction - 1
 Leader's Name: Instructor's Initials:
 Co-Leader's Name:
Getting Started:
 Log into **UMathX**
 From the Content Menu, follow the path below:
 Fractions> Section 7: Ratios and Proportions> Ratio Table
 Select and complete the Lesson: Introduction 2
 As you work through the Introduction 2, complete the table and corresponding notes below.

cups of ginger ale	
cups of cranberry juice	

Method 2: Compare given ratio to new ratio to determine how many groups then .
 Discuss the method used to complete the table and Record a summary of your discussion in the space provided below.

PLAN A LESSON:

OPTION 1

- 1ST **CONTENT MENU**
- 2ND **FRAMEWORK**

OPTION 2

- 1ST **CURRICULUM menu**
- 2ND **LESSON PATHS**
- 3RD **FRAMEWORKS**

- **PLANNING a LESSON–OPTION 1** – Choose from lessons **scaffolded** within the **Content Menu**.
First .. Select the **Content Menu**. Choose the path to a particular lesson or sets of lessons.
Example: [Place Value>Identify Place Value Patterns\(to 1000\)>D>Expanded Notation](#)
Second .. Look for a matching framework in the **Main Menu** at .. “**View a Framework**”. Print.
Example: [Place Value to 1000 – Expanded Notation](#)
- **PLANNING a LESSON–OPTION 2-** This is likely the option if you work within **WNCP**.
First .. Follow the steps in the **WNCP CURRICULUM** menu for your choice.
Second .. Click on the **LESSON** button to make appropriate lessons available.
Third .. Click on the **FRAMEWORKS** button for appropriate frameworks if they exist. Print.

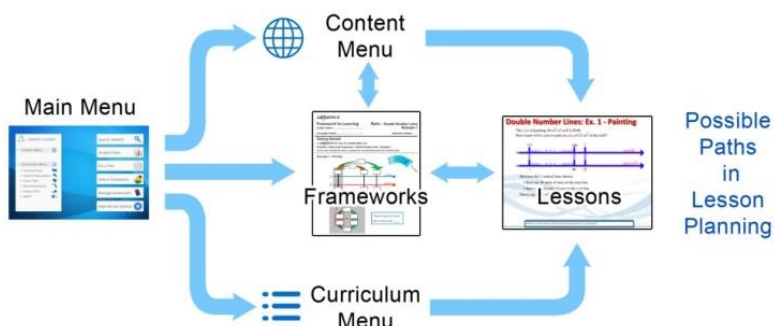
Some Examples of Lesson Option 1 within the WNCP Curriculum

[1.N.4](#) – [Place Value> Model Numbers Grouped in Packages >C>Ones and Groups of Ten](#)

[2.N.4](#) – [Place Value > Identify Place Value Patterns \(to 20\) >C> Tens & Ones to Pictures #2 \(Place Value – 2 Digit Numbers – Different Ways\)](#)

[3.N.5](#) – [Place Value>Identify Place Value Patterns \(to 1000\) >D>Expanded Notation \(Place Value to 1000 – Expanded Notation\)](#)

[3.N.9](#) – [Operations> 23\) Subt 3 Digit Numbers.. Concretely> D \(Subtraction With Regrouping #3\)](#)



[4.N.8](#) – [Fractions> The Meaning of Fract> Intro...Think, Write, Say> Circles \(Fraction Intro- Pattern Blocks-1\)](#)

[4.SS.M.3](#) - [Meas& Geom> Per & Area of Polyg> Areas of Polyg>Polyg to Simple Shapes> Ex 1 \(Polygons Broken -1\)](#)

[5.N.5](#) -[Whole#&Int>Mult&DivofWhole Nu>Multby2DigitMult>Part Prod-Area>Ex 1 \(Mult 2 digit.PP24x37\)](#)

- [Whole # & Int> Mult & Div of Whole Num> Mult by 2 Digit Mult> Partial Prod-Area> Ex 4–Without Blocks](#)

[5.PR.1](#) – [Algebra> Patterns, Patterns, Patterns>Patterns to Formulas> Ex. 4 \(Patterns with Toothpicks\)](#)

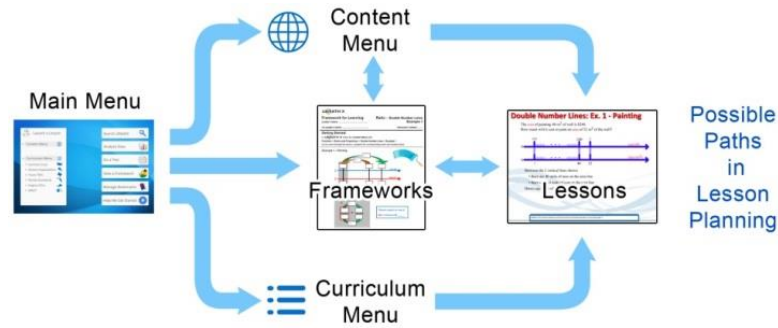
(challenge) – [Algebra>Patterns, Patterns, Patterns> Sum of Seq –Geom – Real Life \(Sum of Geom Seq](#)

[6.N.5](#) –[Fractions >Ratios & Proportions>Ratio,Tape Diagram>Introduction \(Ratios & Proportions - Tape\)](#)

6.N.5 – Fractions> Ratios and Proportions> Proportions> Ex 3 Marbles
(Estimation U Proportions-1,-2,-3)

7.N.2 - Fractions> Mult & Division of Dec> Mult by Partial Products Area> Ex 1
(Mult Dec by Partial Prod 2.4 x 3.7)

7.PR.2-Graphing>Read & Sketch Graphs>Graphs Without Scale> Ex 7, 9, 11
(Graphs Without – Creating -1)



8.N.6 – Fractions> Multiplying Fractions> Developing the Rule> Ex. 3
(Multiply Proper Fractions -1)

8.N.4 – Fractions> Ratios & Proportions> Ratio Table> Introduction 1 & 2
(Ratio Tables-Intro 2)

8.PR.1 – Graphing > Slope of a Line > Slope > Steepness Factor
(Slope In the Real World)

9.PR.1 – Graphing> Eq Str Line > Word Prob-Applic>Walker>
(Slope & Line –Walk in Real World-1)

TEST ACCESS

Landing page
Activity window

TEST TYPES:

WNCP TESTS
CONTENT TESTS
CUSTOM TESTS

PART C. REFLECTING ON THE JOURNEY

- **ACCESS:** Landing Page .. Click on “Do a Test” or Activity Window .. Click on the icon
- **TYPES:** **WNCP Tests** – coverage within curriculum for a specific grade (example 5.NF)
Content Tests cover items within a certain content area across grade levels
Custom Tests are generated by the teacher by choosing any specific content.



DATA ANALYSIS

Lessons & Tests
Growth
Useage

For more information
on Data Analysis,
we welcome you to
contact us.

- Select “**Analyze Data**” in the Landing Page. The “Data Module” requires data by students. The **full version** allows students to do lessons and tests with results recorded into perpetuity. A teacher or student can then check student data .. **tests, lessons, useage, growth and more.**
- ... After a student has created data, the teacher of that student could do the following:
Select “**Analyze Data**”. Select “**Test Data**”. Select a class or a student, a test category and a test. Click on a specific vertical, then horizontal bar. Click on a question that was answered incorrectly.
2 choices. 1 - see results. 2 - launch an appropriate lesson.