

LA,AL,TN,SC,GA
K to Algebra1

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 Algebra1 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!

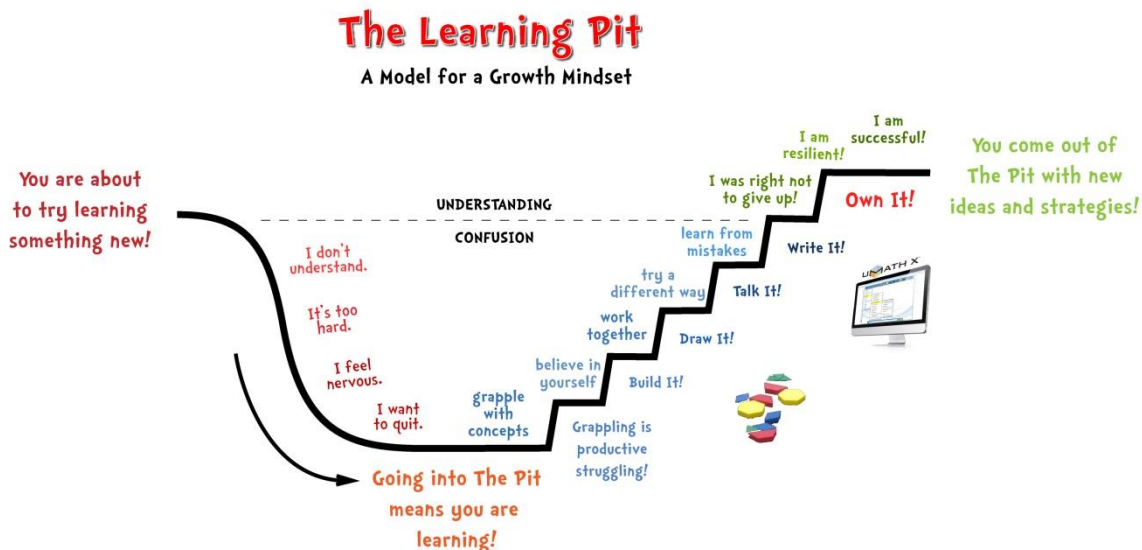
Before beginning this journey, discuss the many possible learning environments.

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 a 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, 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

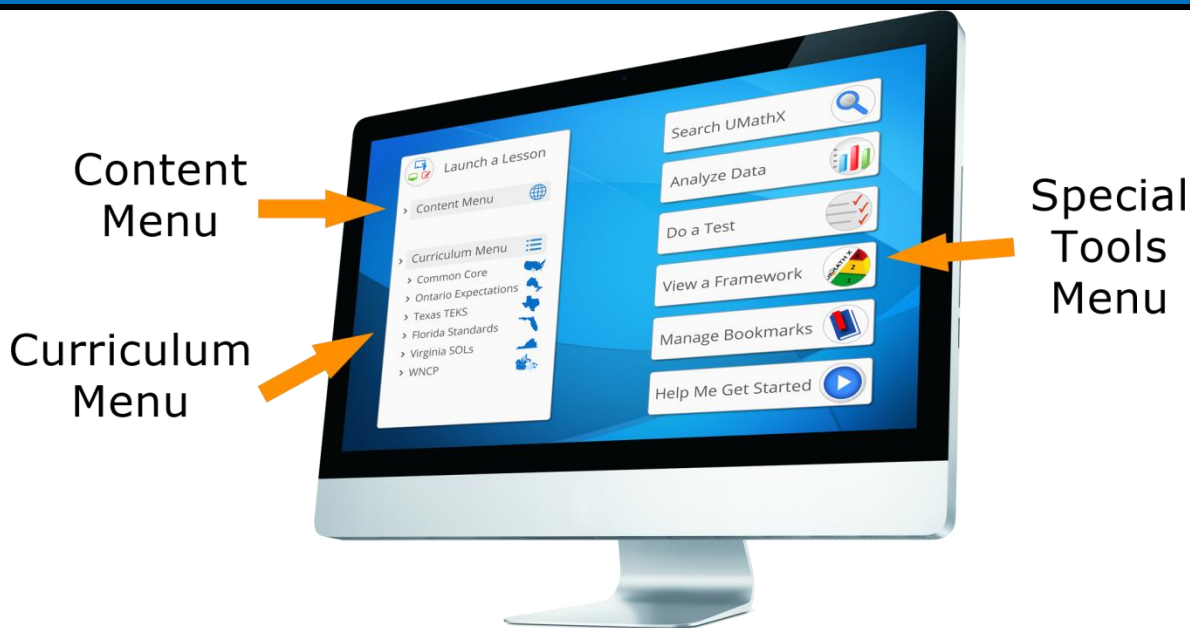
PART B. BEGINNING THE JOURNEY

- 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 the “**Common Core CURRICULUM Menu**”.
Follow this path in order:

1. **Grade 3**, then **3.NF > 01**.
Click (arrow up)(double arrow up).

2. Select **Common Core**.

3. Click .. **Grade 3 > 3.NF > 01 > 03 > b**
You have now reached suggested lessons to fit **3.NF.01.03b**

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 **3.NF.01.03b**.
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, 3.NF.01.03b**, ready for another choice.

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

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 & STEAM 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 color 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 **Common Core CURRICULUM Menu**. Follow the path to **8.F.02.04**. 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 sided
 .. can be printed in color or in black and white
 .. has 3 parts: **Get Started**
Working At It
Reflect and Connect

Two Examples ..

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 set 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 in a version of CCSS.
First .. Follow the steps within the version of the **COMMON CORE CURRICULUM** menu.
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 for PLACE VALUE within the Common Core Curriculum

2.NBT.01.01a – Place Value>Identify Place Value Patterns(to 1000)>D>Expanded Notation
 (Place Value to 1000 – Expanded Notation)

2.NBT.01.03 –Place Value>Identify Place Value Patterns(To 100)>C>Pictures To Numbers #2

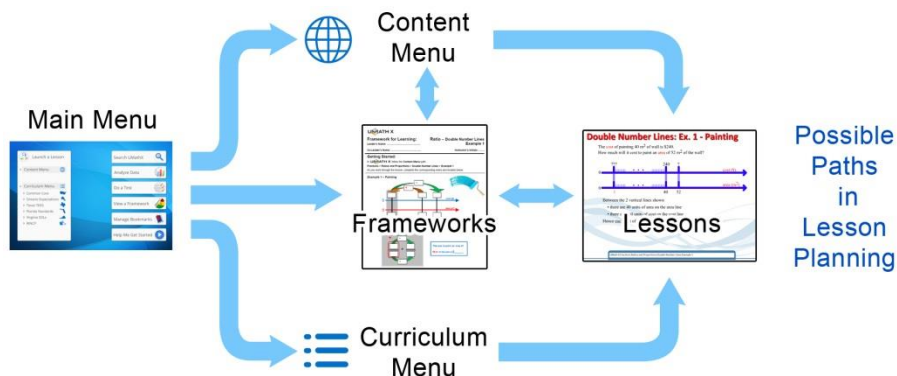
2.NBT.01.03–Place Value>Identify Place Value Patterns(To 100)>C>Tens & Ones To Pictures #2

2.NBT.01.03–Place Value>Identify Place Value Patterns(To 100)>C>Numbers To Pictures #2

2.NBT.01.03–Place Value>Identify Place Value Patterns(To 100)>C>2 Digit Numbers – Different Ways
 (Place Value – 2 Digit Numbers-Different Ways)

2.NBT.01.03- Whole Numbers & Integers>The Meaning Of Whole Numbers>Seeing Number> To Hundreds>Ex1

2.NBT.01.03- Whole Numbers & Integers>The Meaning Of Whole Numbers>Expanded Notation To 999>Ex 1



3.NBT.01.01- Whole Numbers & Integers>The Meaning Of Whole Numbers>Rounding Large Numbers>Concepts
 (Rounding Large Numbers – To Nearest Ten – Concept 1, Concept 2, Example 1, Example 2)

3.NBT.01.01- Whole Numbers & Integers>The Meaning Of Whole Numbers>Rounding Large Numbers>Concepts
 (Rounding Large Numbers – To Nearest Hundred – Concept 3, Example 3)
 (Rounding Large Numbers – To Nearest 10, 100 And 1000)

4.NBT.01.01- Whole Numbers & Integers>The Meaning Of Whole Numbers>Place Value To 999,999>Neighbors
 (Place Value To 999,999 – Neighbors)

4.NBT.01.01- Whole Numbers & Integers>The Meaning Of Whole Numbers>Expanded Notation>To 999> Ex1
 (Expanded Notation – To 999)

4.NBT.01.01- Whole Numbers & Integers>The Meaning Of Whole Numbers>Expanded Notation>To 9999> Ex 1
 (Expanded Notation – To 9999)

4.NBT.01.01- Whole Numbers & Integers>The Meaning Whole Numbers>Expanded Notation>Write As Numerals
 (Expanded Notation – Write As Numerals)

Etc Etc

5.NBT.01.01 - Whole Numbers & Integers>The Meaning Of Whole Numbers>Place Value To 999,999>Neighbors
 (Place Value To 999,999 – Neighbors)

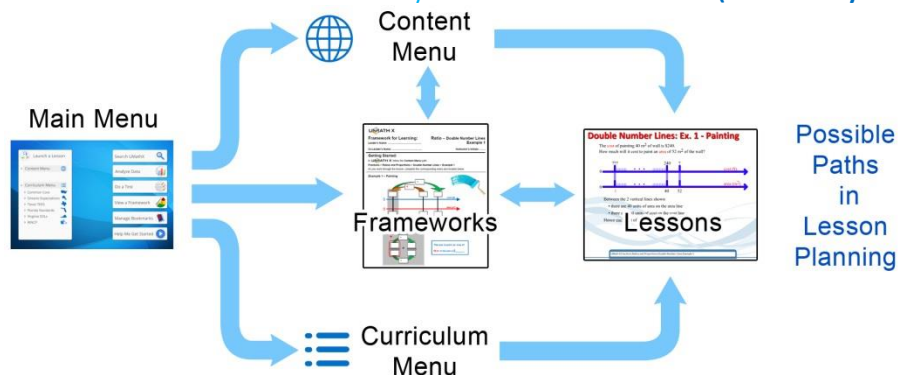
5.NBT.01.03a- Fractions> Intro To Dec> Ones, Tenths, Hundredths, Thousandths>Dec To Thousandths> Ex1, Ex2
 (Decimals To Thousandths)

Etc Etc

**OPTION 2
ADDITIONAL
EXAMPLES**

Additional Examples within the Common Core Curriculum

- 2.NBT.02.05 – Operations>14) Add 2 Digit...Concretely-> C (Add 2 Digit Numbers-Concretely-With Regrouping)
- 2.NBT.02.07 – Operations> 23) Subt 3 Digit Numbers.. Concretely> D (Subtraction With Regrouping #3)
- 3.NF.01.01 – Fractions> The Meaning of Fract> Intro...Think, Write, Say> Circles(Fraction Intro- Pattern Blocks-1)
- 4.NBT.02.05 -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.NF.02.04a – Fractions> Multiplying Fractions> Developing the Rule> Ex. 3 (Multiply Proper Fractions -1)
- 6.NS.02.03 - Fract> Mult & Division of Dec> Mult by Partial Products Area>Ex 1(Mult Dec by Partial Prod 2.4 x 3.7)



- 6.RP.01.03b –Fractions >Ratios & Proportions>Ratio,Tape Diagram>Introduction (Ratios & Proportions - Tape) And ... Fractions>Ratios & Proportions > Ratio Table> Introduction 1& 2 (Ratio – Ratio Tables_Intro-2)
- 7.G.02.06- Meas& Geom> Per & Area of Polyg> Areas of Polyg>Polyg to Simple Shapes> Ex 1(Polygons Broken -1)
- 7.RP.01.03 – Fractions> Ratios and Proportions> Proportions> Ex 3 Marbles(Estimation U Proportions)
- 8.F.02.05-Graphing>Read & Sketch Graphs>Graphs Without Scale> Ex 7, 9, 11 (Graphs Without – Creating -1)
- 8.EE.02.05 – Graphing > Slope of a Line > Slope > Steepness Factor(Slope In the Real World)
- 8.F.02.04 – Graphing> Eq Str Line > Word Prob-Applic>Walker>(Slope & Line –Walk in Real World-1)
- A.CED.01.01 – Graphing> Quadratic Functions> Max Cage Area>Trial & Error to Summary(Quad-Max Cage-1)
- A.CED.01.02 – 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)

TEST ACCESS:
Main Menu (first page)
Activity Window

TEST TYPES:
Common Core Test
Content Test
Custom Test

PART C. REFLECTING ON THE JOURNEY

- **ACCESS:** Main Menu .. Click on “Do a Test”  or Activity Window .. Click on the  icon



- **TYPES:** **Common Core 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.

- **Analyze Data”** in the Main Menu. 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.