

NY,NJ,MI,OH,IL,MD  
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](http://www.umathx.com)

Watch the video "UMathX - What is It?" at [umathx.com/videos](http://umathx.com/videos)

Build it  
Draw it  
Talk it  
Write it  
OWN it!

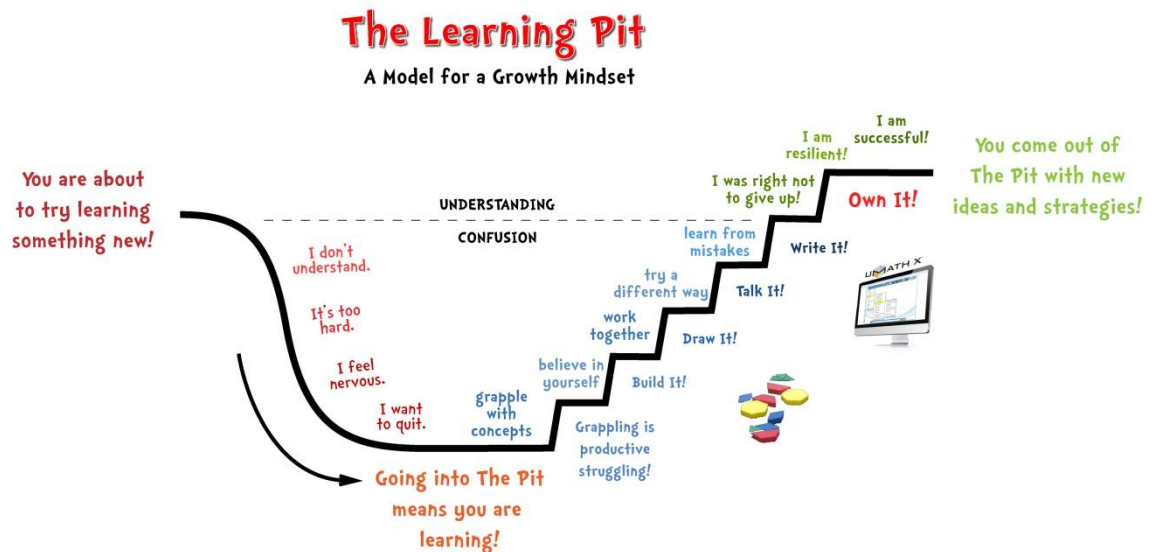
Before beginning this journey, discuss the many possible learning environments.

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](http://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](http://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 2<sup>nd</sup> 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 3<sup>rd</sup> lesson- Fractions > Equivalent Fractions > Pattern Blocks > Hexagon1 (Remember this?)**  
Do a few <proceeds> into the lesson.

**7. Exit the lesson** by clicking on the 2<sup>nd</sup> 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](http://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**

1<sup>ST</sup> **CONTENT MENU**

2<sup>ND</sup> **FRAMEWORK**

**OPTION 2**

1<sup>ST</sup> **CURRICULUM menu**

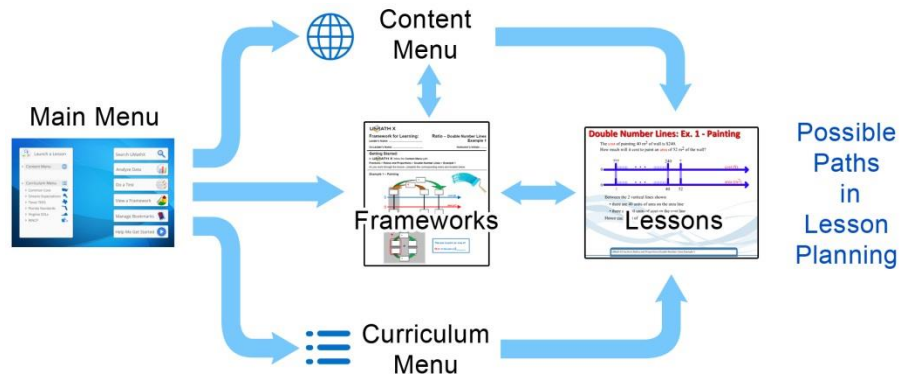
2<sup>ND</sup> **LESSON PATHS**

3<sup>RD</sup> **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

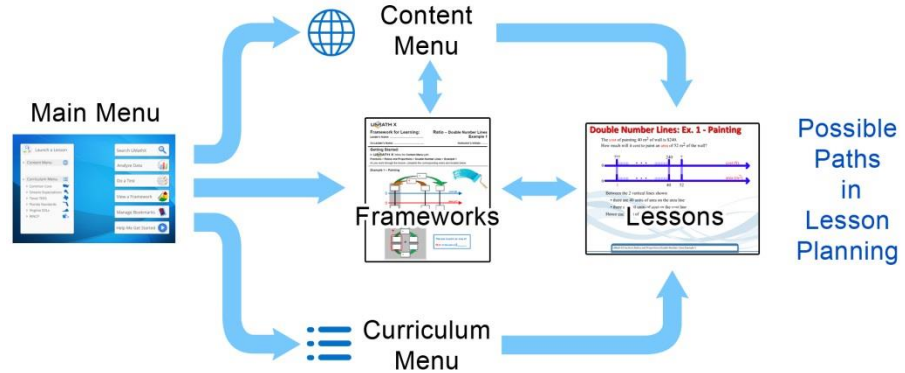


- 3.NBT.01.01- Whole Numbers & Integers>The Meaning Of Whole Numbers>Rounding Large Numbers>Concepts (Rounding Large Numbers – To Nearest Ten – Concept 1, Concept 2, Example 1, Example 2)
- 3.NBT.01.01- Whole Numbers & Integers>The Meaning Of Whole Numbers>Rounding Large Numbers>Concepts (Rounding Large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