

UMathX – A PATH to Understanding Math

UMathX QUICKSTART TEXAS

A QUICKSTART into UMathX (K to Algebra 1)

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STEP 1 – An Introduction

- “UMathX by Neufeld”, 10th version of “Understanding Math”, is an **Exploration of Mathematics Content** and **Teaching Methodology** within a digital learning environment for K to Algebra 1. It offers over 3500 lessons where implementation is modeled through 3 part tiered lessons in a variety of learning environments supporting a growth mindset, encouraging learners to grapple with concepts towards constructing new knowledge through understanding – concrete to abstract.
- “UMathX by Neufeld” Constructs Meaning through two menus. The **Content Menu** fills gaps by scaffolding mathematics along a conceptual path, across grade levels. The **Curriculum Menu** offers lessons aligned to curricula. 3 part tiered lessons, “frameworks for learning”, offer solutions to intervention. **Data Analysis** redirects learning in next steps through Content & Curriculum Tests.
- UMathX by Neufeld is partnering with Faculties of Education to **Conduct Research on Constructing Understanding of Content** as well as **Teach Methodology**.



Constructing Understanding in Mathematics
For Home and School
Modeling to Make Thinking Visible
Develops Deep Conceptual Understanding
Core Instruction – Supplementary Resource – Fill Gaps



We appreciate professional advice from our advisory team.

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- **The Learning Environment:**
“As a former Texas 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.

“Our teachers have used it extensively with parents, teachers and students. UMathX 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

“UMathX is by far the most effective learning tool for mathematics that I have seen.” JS - Australia

STEP 2: Login to UMathX

Open up the FIREFOX browser on your laptop or desktop computer.

Key in www.umathx.com and check the UMathX website briefly.

Now key in www.umathx.com/preview

Use the generic login, **countt**

Use the generic password, **umathx**

a) We will lead you to Explore:

1. A Content Menu to FILL THE GAPS
2. A Curriculum Menu aligned to your curriculum
3. “Frameworks for Learning” .. 3 part lessons

In the full version, there are 3 Login Types: **student, teacher, administrator.**

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.



STEP 3: Explore Menus & Frameworks(Ask for webinar if you wish)

- Select “CONTENT Menu”

Follow the path below 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.

The **Frameworks** are 3 part model lessons on paper. They give ideas for implementing UMathX.

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**.

● **Select “CONTENT Menu” and again follow the path below in order:**

Content Menu..Fractions > Equivalent Fractions > Pattern Blocks >

The green pencil beside “Hexagon1” indicates that a corresponding printable framework is available. **Click on pencil.**

Option 1: After printing it, follow the lesson outline on the framework.

Option 2: Earlier (above) you followed the lesson “Hexagon1” within UMathX.

Return to the **Main Menu**.

● **Select “CONTENT Menu”. and follow the path below in order:**

Fractions > The Meaning of Fractions > Introduction... Think, Write, Say.

The green pencil beside “Circles” indicates that a corresponding printable framework is available. **Click on the pencil.**

Option 1: After printing it, follow the lesson outline on the framework.

Option 2: Follow the lesson “Circles” within UMathX.

Return to the **Main Menu**.

THE CURRICULUM MENU ...

ELEMENTARY Example:

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.

CONTENT MENU

● **Select the “TEXAS TEKS CURRICULUM Menu”.**

Follow this path in order:

1. Grade 3, then **3.3 > F**.

Click (arrow up)(double arrow up).

2. Select Texas TEKS.

3. Click .. Grade 3 > 3.3 > F > i

You have now reached suggested lessons to fit **3.3.F.i**

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 **3.3.F.i**.

Lessons are in order that we recommend that they be taught.

6. Double Click the only 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, 3.3.F.i**, ready for another choice.

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”

Frameworks save much time by providing lessons and lesson ideas ready to be used.

● **Select “CONTENT Menu”.**

Follow this path in order:

Graphing > Linear Relations > The Elastic Example.

Note the green pencil icon beside the lesson, “Setup Equations” . Click on it to display the **framework**.

Option 1: After printing it, follow the lesson outline on the **framework**.

Option 2: Follow the lesson “Setup Equations” within UMathX.

Return to the **Main Menu**.

CURRICULUM MENU ...

SECONDARY Example:

- Select the **Texas TEKS CURRICULUM Menu**.
Follow the path to **7.7.A.ii**
Click on tab "**Lessons**".
Double Click the lesson- **Graphing > Linear Relations > The Elastic Example > Setup Equations**
Click on the tab "**Frameworks**".
DIFFERENTIATION: 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

- **A Framework can be found in 4 Possible Ways:**
 1. In the **Content Menu**, a **green pencil** beside a lesson name indicates that a corresponding printable **framework** is available.
 2. In the **Selection Menu**, within a **Curriculum Menu**, the appropriate framework is available.
 3. In the **Main Menu**, select "**View a Framework**"
 4. **Navigate to .. www.umathx.com/frameworks**
- Each Framework:** .. is on 1 double sided printable page in colour or in black and white
.. has 3 parts: **Get Started**
Working At It
Reflect and Connect

Two Examples .. A Framework is a model lesson, on paper, already prepared for you.

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.

The **FRAMEWORK** offers another way to use UMathX.

It saves the teacher time and effort.

PLAN A LESSON:

Use a prepared lesson, a Framework, if possible.

OPTION 1

1ST CONTENT MENU

2ND FRAMEWORK

OPTION 2

1ST CURRICULUM menu

2ND LESSON PATHS

3RD FRAMEWORKS

STEP 4: Planning a Lesson with UMathX

- **OPTION 1 – Filling the Gap**
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 .. Note a green pencil icon beside .. 1) Expanded Notation
This indicates that a corresponding framework is available.
Click on the framework and print it, possibly 1 for every 2 or 3 students in the group.
If it is a tiered lesson noted by 1, 2, 3 .. and Pyramid .. possibly print all 3 for a class.
- **OPTION 2 – Attending to your Curriculum**
First .. Follow the steps in the **Texas 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 for PLACE VALUE within the TEXAS TEKS Curriculum

- 1.2.B.i – Whole Numbers & Integer > The Meaning of Whole Numbers > Represent Numbers in Many Ways> Ex 1 (Represent Numbers in Many Ways – Place Value -1)
- 1.2.E – Comparing and Ordering > Working with Whole Numbers > C > Compare Numbers #1
- 3.2.A – Place Value > Identify Place Value Patterns (to 20) > C> Pictures to Numbers #1
- 3.2.A – Place Value >Identify Place Value Patterns (to 20)> C>Tens & Ones to Pictures #1
- 3.2.A.- Place Value > Identify Place Value Patterns (to 20)> C> Numbers to Pictures #1
- 3.2.A – Place Value > Identify Place Value Patterns (to 100) > C > 2 Digit Numbers – Different Way

PLAN A LESSON:

OPTION 1

1ST **CONTENT MENU**

2ND **FRAMEWORK**

OPTION 2

1ST **CURRICULUM**
menu

2ND **LESSON PATHS**

3RD **FRAMEWORKS**

3.2.A – Place Value > Identify Place Value Patterns (to 1000) > D > Expanded Notation
(Place Value – 2 Digit Numbers – Different Ways)
(Place Value to 1000 – Expanded Notation)
(Expanded Notation – Write as Numerals)
(Expanded Notation – To 999)
(Expanded Notation – To 9999)

3.2.A.ii – Place Value > Identify Place Value Patterns (to 100) > C> Pictures to Numbers #2
3.2.A.ii – Place Value > Identify Place Value Patterns (to 100)> C>Tens & Ones to Pictures #2
3.4.B.ii – Whole Numbers & Integers > Estimation with Compatible Numbers

4.2.B.i – Whole Numbers & Integers > The Meaning of Whole Numbers > Millions>Examples> Ex 1
4.4.G – Whole Numbers & Integers > The Meaning of Whole Numbers > Rounding Large Numbers:
Concepts> Concept 2

5.2.C- Fractions>Introduction to Decimals > Rounding Decimals>Example 1
(Rounding Decimals – To the Nearest Tenth)
(Rounding Decimals – To the Nearest Hundredth)
5.2.A- Fractions > Introduction to Decimals > Expanded Notation > To Hundredths
(Decimals – Expanded Notation – to Hundredths)
(Decimals – Expanded Notation _ to Thousandths)
(Decimals to Thousandths)

Additional Examples within the TEXAS TEKS

2.4.B.iii – Operations>14) Add 2 Digit...Concretely-> C (Add 2 Digit Numbers-Concretely-With Regrouping)
2.4.D.iv – Operations> 23) Subt 3 Digit Numbers.. Concretely> D (Subtraction With Regrouping #3)
3.3.C.i – Fractions> The Meaning of Fract> Intro...Think, Write, Say> Circles(Fraction Intro- Pattern Blocks-1)
4.4.C.i -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
5.3.D.ii - Fractions> Mult & Division of Dec> Mult by Partial Prod Area > Ex 1 (Mult Dec by Partial Prod 2.4 x 3.7)
6.3.B.i – Fractions> Multiplying Fractions> Developing the Rule> Ex. 3 (Multiply Proper Fractions -1)
6.4.E.i –Fractions>Ratios & Proportions>Ratio,Tape Diagram>Introduction (Ratios & Proportions - Tape)
6.5.A.viii-Fractions>Ratios & Proportions > Ratio Table> Introduction 1& 2 (Ratio – Ratio Tables_Intro-2)
6.5.A.x – Fractions> Ratios and Proportions> Proportions> Ex 3 Marbles(Estimation U Proportions-1,2,3)
6.6.C.i -Graphing>Read & Sketch Graphs>Graphs Without Scale> Ex 7, 9, 11 (Graphs Without – Creating -1)
7.9.C- Meas& Geom> Per & Area of Poly> Areas of Polyg>Polyg to Simple Shapes> Ex 1(Polygons Broken -1)
A.3.B – Graphing > Slope of a Line > Slope > Steepness Factor(Slope In the Real World)
A.3.B – Graphing> Eq Str Line > Word Prob-Applic>Walker>(Slope & Line –Walk in Real World-1)
A.6.C – Graphing> Quadratic Functions> Max Cage Area>Trial & Error to Summary(Quad-Max Cage-1)
A.12.D – 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)

STEP 5: Tests / Data Analysis. Not Available on Preview. Suggest Webinar Training

Individual can learn from mistakes and be directed to suggested lessons.

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



- **TYPES:** **Texas Tests** – coverage within curriculum for a specific grade
Content Tests cover items within a certain content area across grade levels
Custom Tests are generated by the teacher by choosing any specific content.

- **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.

TEST ACCESS

Main Menu first page
Activity window

TEST TYPES:

TEXAS
CONTENT
CUSTOM

BOOKMARKING

DATA ANALYSIS

Lessons & Tests
Growth, Useage

