Mr. Childs

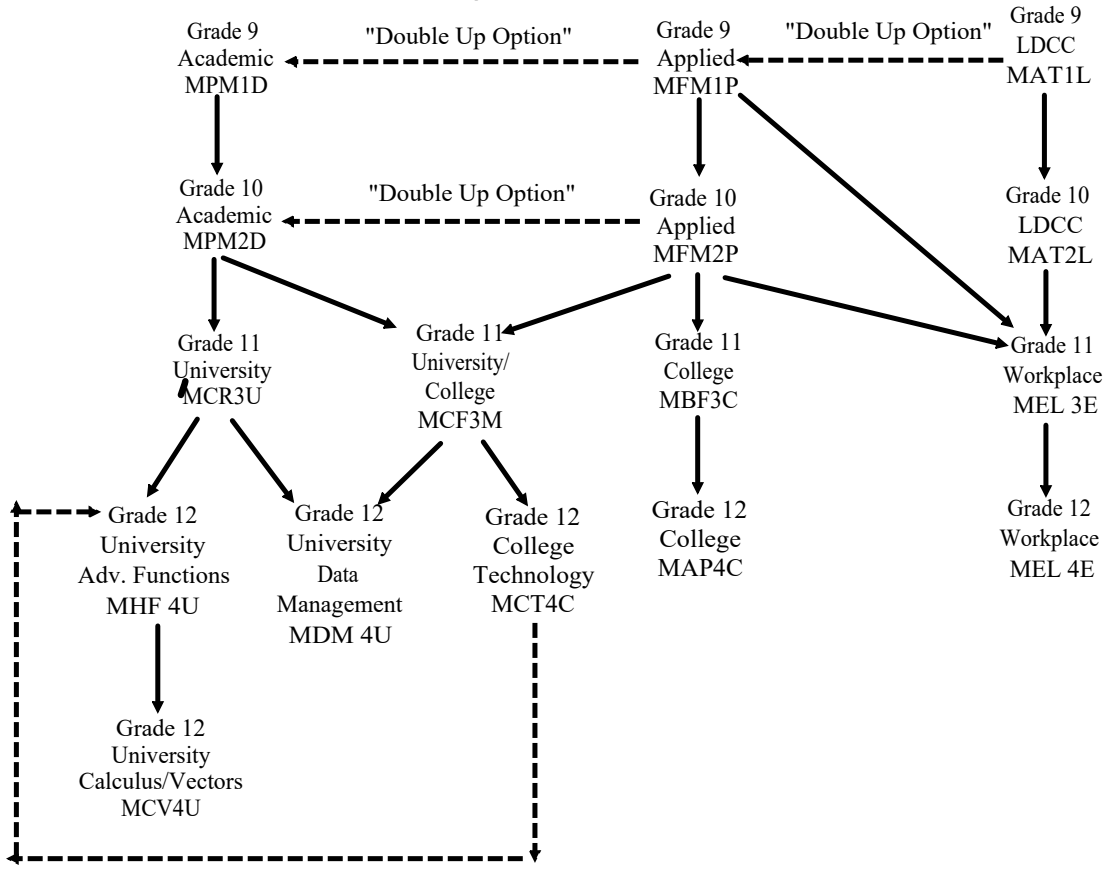
Grade 11 U and UC Math

Prerequisite:

Grade 10 academic or applied math

Aug 30-9:42 AM

Math Pathways



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Big Ideas:

1. Water ok; anything else no thank you
2. Cellphones - hmmmm.....
3. Homework - target 15-20 minutes

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In Groups of 3 - 5,

(i) introduce yourselves

(ii) BRAINSTORM and record you thoughts on....

"Homework?"

Inventory and Pre-Assessment

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Learning Goal:

The goal for today is to activate prior mathematics knowledge in the following areas:

- integers (adding/subtracting/multiplying/dividing)
- Order of operations (BEDMAS)
- basic exponent rules
- solving equations

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Integer Operations

Evaluate the following:

(a) 4 + (-9) + 6 + (-12)

(b) 5 - (-6)

(c) 34 - (-21) + (-12) - 20

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$7 - 4 = 3$

$4 - 7 = -3$

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Integer Operations

Evaluate the following:

(a) (5)(-9)

(b) (-6)(-4)

(c) (-2)(-12)(-2)

(d) (-24) / (-8)

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Integer Summary

The rules for adding/subtracting are DIFFERENT from the rules for multiplying and dividing.

Example

(-2) + (-3) =

(-2) x (-3) =

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Order of Operations (BEDMAS)

B - brackets
E - exponents
D - division
M - Multiplication
A - addition
S - subtraction

Note "D" and "M" can be switched, "A" and "S" can be switched.

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Order of Operations - BEDMAS

Evaluate the following:

(a) $(3)(-9)+(4)(2)$

(b) $(-5)(-4)^2$

(c) $(-2)(-12) - (-2)^3$

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Solving Equations

To solve equations we must use the opposite operation approach to isolate the desired variable.

Isolating a variable means to make the coefficient (number in front of the letter) equal to "1" AND to have the variable (letter) in the "top" or numerator position.

Solve

$2a - 7 = 19$

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Solve the following:

$$\frac{a}{6} + 9 = -2$$

$$\frac{a}{7} = \frac{10}{14}$$

$$5z - 9 = 8z + 15$$

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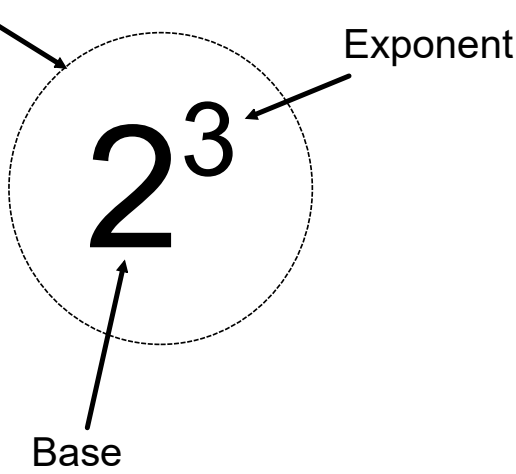
Exponents and Exponent Rules

Terminology

Power (the whole package)



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Standard Form	and	Expanded Form
2^3		2 x 2 x 2
5^4		5 x 5 x 5 x 5
$(-3)^2$		(-3) x (-3)
$(a+5)^3$		(a+5) x (a+5) x (a+5)

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Basic Exponent Rules

$3^4 \times 3^5$ $\qquad a^m \times a^n = a^{m+n}$

$\dfrac{2^5}{2^3}$ $\qquad \dfrac{a^m}{a^n} = a^{m-n}$

$\left(2^3\right)^2$ $\qquad \left(a^m\right)^n = a^{mn}$

$\left(\dfrac{3}{2}\right)^3$ $\qquad \left(\dfrac{a}{b}\right)^n = \dfrac{a^n}{b^n}$

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Mixed Term Operations

Simplify

$(2^3)(a^5)(2^4)(a^3)$

Note:

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Simplify

$$\frac{5^4a^6b^8}{5^2a^4b^7}$$

=

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The ZERO Exponent Rule

$$\frac{27}{27} = \frac{3^3}{3^3} \longrightarrow \frac{27}{27} = 3^{3-3}$$

$$\downarrow \qquad\qquad \downarrow$$

$$\frac{27}{27} = 1 \longrightarrow \frac{27}{27} = 3^0$$

$$a^0 = 1$$

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The NEGATIVE Exponent Rule

By patterning....

2^4 =

2^3 =

2^2 =

2^1 =

2^0 =

2^{-1} =

2^{-2} =

$$a^{-n} = \frac{1}{a^n}$$

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Task - handout

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Attachments

MCF3M-task1-review.doc