

Lesson Plan, **6-9pm, Thursday, 4 October, 12018 HE rm. 211**, SDCE, North City Campus
 Instructor: Ms. S. D. Jones

In our **Learning Toolbox**: this thought:

Vocabulary:

Copy into your notes, and **Mind Map** each word:

<u>Reading Comp. Vocab.</u>	<u>Grammar Vocabulary</u>	<u>Math Vocabulary</u>	<u>Test-taking Skills</u>
Multiple possible interpretations of a text/passage	Capitalization, review, Essay writing outline introduction	Radicals in relation to exponential and radical forms	Organizing your information/choices/forms of data or expression/pros and cons (<i>T-Charts...</i>)
Various	Common Nouns	Radical as exponent	substitution
Interpretations	Proper nouns, I	Fractional Exponent	Different forms, same #
Express an idea, or express a number	Brand name, Titles	Negative Exponents	Process of elimination
In terms of...	Thesis & conclusion	Fractional Exponents	Listing varied possibilities
Quote/citation	Pros and Cons of... Rebuttal/To Rebut	Adding/multiplying Exponents	Most likely possibility

6pm: Spend one minute remembering a misunderstanding you had at some time in your life.

Write one or two sentences explaining: **Write two sentences** explaining various possible interpretations of this song quote:

*“...but I know what I am,
 and I’m glad I’m a man,
 and so is Lola...”* (citation: the Rolling Stones)

6:02 Continue on work from your folder (on Reading/Literature/Science/Social Studies).

7pm: Stand up & Stretch, if you wish...

7:00 to 7:07 Reading Comprehension

7:07 to 7:15 Grammar lecture, using the passage below.

7:15 to 7:25 Math lecture, also using this same passage.

7:25-7:30 We do 1st question/problem from each online worksheet together, then you finish the online activities from all lectures individually on the classroom computers.

Mathematics work online and/or in books from 7:45 until 8:45.

7:00-7:07: **Reading Comp.:** Capitalizing and Essay organizing

Today's Passage: the dropping of the atomic bombs in Japan marked the beginning of the nuclear Age. In August 1949, the Soviet Union exploded its first atomic bomb. The world's two superpowers battled for supremacy and demanded that other nations take sides. (Today's reading comes from P. 289 in Peterson's Master the HiSET, 2nd Edition...)

What are some possible interpretations of the phrase "battled for supremacy?"
Where are the Grammatical errors?

7:07 Grammar lecture part1/2: **Capitalizing review**

Rules: Capitalize These Words

1. **Proper Nouns** (and Brand Names)
2. **Titles** (except articles and prepositions)
3. **First word** in a sentence and the **pronoun I**

(source:

<https://www.ereadingworksheets.com/languageartsworksheets/free-grammar-worksheets/capitalization-worksheets/>)

(Extra help on capitalizing:

<https://www.ereadingworksheets.com/free-grammar-worksheets/capitalization-lesson.mp4>)

Now let's do a Grammar exercise question (**using Chrome Browser...**) from

<https://www.ereadingworksheets.com/free-grammar-worksheets/capitalization-practice-3/>

Grammar lecture part2/2: Four main parts of an Essay

We've introduced the Thesis sentence, now we need to know that an essay should have at least four paragraphs (¶):

Introduction, with your Thesis Sentence,

Body paragraphs, with your pros and cons, and

Conclusion paragraph, summarizing your argument or topic.

(https://www.uvu.edu/writingcenter/docs/handouts/writing_process/basicessayformat.pdf has a nice summary...)

Next week we will start writing an essay together.

7:15 Mathematics Topic: **Exponents and Radicals**, good friends that go together.

Why would we want to convert between forms of expression? *Sometimes a problem is easier to solve in an equivalent form...*

Exponents rules and properties

Rule name	Rule	Example
Product rules	$a^n \cdot a^m = a^{n+m}$	$2^3 \cdot 2^4 = 2^{3+4} = 128$
	$a^n \cdot b^n = (a \cdot b)^n$	$3^2 \cdot 4^2 = (3 \cdot 4)^2 = 144$

Quotient rules	$a^n / a^m = a^{n-m}$	$2^5 / 2^3 = 2^{5-3} = 4$
	$a^n / b^n = (a / b)^n$	$4^3 / 2^3 = (4/2)^3 = 8$
Power rules	$(b^n)^m = b^{n \cdot m}$	$(2^3)^2 = 2^{3 \cdot 2} = 64$
	$b^n^m = b^{(n^m)}$	$2^{3^2} = 2^{(3^2)} = 512$
	$\sqrt[m]{(b^n)} = b^{n/m}$	$\sqrt[2]{(2^6)} = 2^{6/2} = 8$
	$b^{1/n} = \sqrt[n]{b}$	$8^{1/3} = \sqrt[3]{8} = 2$
Negative exponents	$b^{-n} = 1 / b^n$	$2^{-3} = 1/2^3 = 0.125$
Zero rules	$b^0 = 1$	$5^0 = 1$
	$0^n = 0$, for $n > 0$	$0^5 = 0$
One rules	$b^1 = b$	$5^1 = 5$
	$1^n = 1$	$1^5 = 1$
Minus one rule	$(-1)^n = \begin{cases} 1 & , n \text{ even} \\ -1 & , n \text{ odd} \end{cases}$	$(-1)^5 = -1$

(Source: <https://www.rapidtables.com/math/number/exponent.html> and <https://www.homeschoolmath.net/teaching/md/division-repeated-subtraction.php>)

Notice that a negative exponent jumps the fraction bar, so $b^{-n} = 1 / b^n$

Multiplication is repeated addition, so $a^n \cdot a^m = a^{n+m}$

Exponents are repeated multiplication, so $(b^n)^m = b^{n \cdot m}$

Division is repeated subtraction, so $a^n / a^m = a^{n-m}$

Let's look at radicals, which are the flip-side of exponents:

$$\sqrt[m]{(b^n)} = b^{n/m}$$

$$b^{1/n} = \sqrt[n]{b}$$

(Source: <https://web.northeastern.edu/seigen/1250DIR/Handout-ExponentsandRadicals1.pdf>)

So, exponents really are just radicals in a different form!

Now, let's do the first online math worksheet problem together:

<https://www.khanacademy.org/math/algebra/rational-exponents-and-radicals/alg1-radicals/e/roots-of-decimals-and-fractions>

7:30

1.) Please do the rest of our online grammar worksheet: (**using Chrome Browser...**)

<https://www.ereadingworksheets.com/free-grammar-worksheets/capitalization-practice-3/>

and

2.) Please do the remainder of online math worksheet:

<https://www.khanacademy.org/math/algebra/rational-exponents-and-radicals/alg1-radicals/e/roots-of-decimals-and-fractions>

8:40 **Exit Questions:** 1. Please **write** one sentence explaining how you can use a chart to show various forms of the same number.

2. What is a rebuttal?

3. What is the Distributive Property?

4. Show, using exponents, why the square root of five, multiplied by itself, is equal to 5.

8:45 Turn in Exit Slip, Dismissal