

Lesson Plan, **6-9pm, Wednesday, 10 October, 12018 HE rm. 211**, SDCE, North City Campus
Instructor: Ms. S. D. Jones

In our **Learning Toolbox**:
LearnStorm via Khan Academy (ways to grow your brain...)

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>
Separation of powers: Executive Branch	Essay Writing: Conclusion paragr.	exponential forms ARE radical...	Breaking projects down into pieces
Separation of church and state	Summarize why/how you proved your thesis	Exponent rules for radical conversion	Dividing work into smaller chunks
Checks and balances	Pros	Fractional Exponent	Time management
Separation of powers	Cons	Radical is denominator	scheduling
Branches	Rebuttals	Square root	Monitoring progress
authority	conclusion	Cube root	Keeping track of ...

6pm:

Write one or two sentences explaining what you think might be the differences between the executive branches at the state and federal levels.

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.:** Essay organizing and subject-verb-object review

Today's Passage: it is the responsibility of the executive branch to enforce laws. the head of the federal executive branch is the President. Presidential elections are held every four years. The president is the highest ranking commander of all U.S. armed forces. *(Today's reading comes from P. 301 in Peterson's Master the HiSET, 2nd Edition...)*

What is the subject, verb, and object: "Presidential elections are held every four years."
Where are the grammatical errors?

7:07 Grammar Essay writing part 3/4: the Conclusion paragraph

The final paragraph of your essay will summarize your argument or topic. It helps to use a detailed outline to map out this paragraph, just as we have for the other paragraphs in our essay.

The conclusion will mirror and finalize points made in the thesis sentence and in each paragraph of the essay.

Please finish your outline for your 500 word essay, and add your thesis sentence to the outline for me to look at.

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
Power rules	$(b^n)^m = b^{n \cdot m}$	$(2^3)^2 = 2^{3 \cdot 2} = 64$
	$b^{n^m} = b^{(n^m)}$	$2^{3^2} = 2^{(3^2)} = 512$
	$\sqrt[m]{b^n} = b^{n/m}$	$\sqrt[2]{2^6} = 2^{6/2} = 8$
	$b^{1/n} = \sqrt[n]{b}$	$8^{1/3} = \sqrt[3]{8} = 2$

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

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!

Let's chart **some Ways to Express Any Number X**

# Quantity	Fractional Exponents	Radical form	multiply	exponent	fraction	decimal	percent	<i>Por Ciento</i>
8	$(64)^{1/2}$	$\sqrt{64}$	$4*2$	8^1	$64/2, 8/1$	8.0	800%	800/100
	$(1/9)^{1/2}$	$\sqrt{1/9}$	$33/99$		$1/3$.3333	33%	33/100
12	$(144)^{1/2}$	$\sqrt{144}$	$12*1, 3*2^2$	12^1	$12/1, 24/2$	12.000	1200%	1200/100
3	$9^{1/2}$	$\sqrt{9}$	$3*1, 3*3$	3^1	$9/3, 12/4$	3.00	300%	300/100

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

<https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-exponent-properties/e/powers-of-powers>

7:30

1.) Please finish your outline for your 500 word essay, and add your thesis sentence to the outline for me to look at.

and

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

<https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-exponent-properties/e/powers-of-powers>

8:40 **Exit Questions:** 1. Please **write** one sentence explaining how to convert from square root to exponent form.

2. Write one sentence explaining what the power rule is.
3. How does a thesis sentence set the expectations for your essay?
4. Show, using exponents, why the square root of x, multiplied by

itself, is equal to x.

8:45 Turn in Exit Slip, Dismissal