

Grade: 8th Grade	Subject: Math 8
Materials: Computer Notebook and paper	Technology Needed: Computer/iPad (NOTE: Could be easily adapted to be taught in class.
Instructional Strategies: <ul style="list-style-type: none"> <input type="checkbox"/> Direct instruction <input checked="" type="checkbox"/> Guided practice <input type="checkbox"/> Socratic Seminar <input type="checkbox"/> Learning Centers <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Technology integration <input type="checkbox"/> Other (list) <ul style="list-style-type: none"> <input type="checkbox"/> Peer teaching/collaboration/cooperative learning <input type="checkbox"/> Visuals/Graphic organizers <input type="checkbox"/> PBL <input type="checkbox"/> Discussion/Debate <input type="checkbox"/> Modeling 	Guided Practices and Concrete Application: <ul style="list-style-type: none"> <input type="checkbox"/> Large group activity <input type="checkbox"/> Independent activity <input type="checkbox"/> Pairing/collaboration <input type="checkbox"/> Simulations/Scenarios <input type="checkbox"/> Other (list) <ul style="list-style-type: none"> <input type="checkbox"/> Hands-on <input checked="" type="checkbox"/> Technology integration <input checked="" type="checkbox"/> Imitation/Repeat/Mimic <p>Explain:</p> <p>I will give examples and explain concepts. Then, they will complete predetermined problems on their own. When I do an example, they are expected to follow along and so the same steps I do.</p>
Standard(s) 8.EE.1 8.EE.2	Differentiation Below Proficiency: Worksheets will have additional steps and explanations built into them. In addition, the lesson itself will provide what property or steps were taken. Above Proficiency: These students will have a worksheet that is slightly different than their peers. Mostly, the questions will be the same, but some will be more challenging.
Objective(s) The learner will be able to apply properties of exponents to evaluate exponents. Bloom's Taxonomy Cognitive Level: Apply, analyze, evaluation, knowledge	Approaching/Emerging Proficiency: I will incorporate parts of both above and below proficiency into these student's content. If they get hints/steps given they will have fewer than those below proficiency but more than those above. Modalities/Learning Preferences: Visual and Kinesthetic
Classroom Management- (grouping(s), movement/transitions, etc.)	Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.)

<p>Since this is a flipped lesson, no groupings in the physical classroom are necessary. However, the transitions are built in: I will teach and then they are to do the assigned problems as they go. They will be grouped by their proficiency.</p>	<p>Students are expected to pay attention when playing the flipped lesson. In addition, they are expected to also do all of the problems assigned to them for practice, and submit give problems to me.</p>
<p>Minutes</p>	<p>Procedures</p>
<p>0</p>	<p>Set-up/Prep: Students just need to open their device to the link I have given them.</p>
<p>2</p>	<p>Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate question etc.)</p> <p>“Bell ringer”-What are the parts of this number called:</p> <p>$(1/2)^2$</p> <p>$(1/2)$- Power</p> <p>2- Exponent</p> <p>$\frac{1}{2}$- Base</p>
<p>12 minutes</p>	<p>Explain: (concepts, procedures, vocabulary, etc.)</p> <p>Definitions:</p> <p>Power- Product of repeated factors</p> <p>Exponent-Indicates number of times the base is used as a factor</p> <p>Base- The common factor</p> <p>Example 1:</p> <p>$(1/2)^2=(1/2) \times (1/2) =1/4$</p> <p>Note: Remember to always check the exponent and the sign of the base. If we have a negative base inside parentheses taken to an even power, the answer is positive. If we have a negative base inside or outside parentheses taken to an odd power, we have a negative answer.</p> <p>Example 2:</p> <p>Write the product using exponents</p> <p>$(-7) \times (-7) \times (-7)$</p> <p>“We take negative seven three times itself thus our answer is;</p> <p>$(-7)^3$</p>

	<p>Example 3:</p> <p>Write the product using exponents</p> $x * x * x * 3 * 3 * 3 * 3$ <p>“Here we have three copies of x and 4 copies of three. Thus, we have;</p> $x^3 * 3^4$ <p>Pause and allow them to complete some problems on their own.</p> <p>“Now do numbers 1 and 2 on the worksheet corresponding to this lesson.”</p> <p>Example 4:</p> <p>Evaluate the following expression.</p> $(-2)^4 = (-2)(-2)(-2)(-2) =$ <p>“We have (-2) in parentheses and taken to an even power thus our answer will be positive.</p> $2^2 = 4 \quad 2 \times 2 = 2^3 = 8 \quad 2 \times 2^4 = 16$ <p>Example 5:</p> <p>Evaluate the following expression.</p> -2^5 <p>“We know $2^4 = 16$. Thus $2^5 = 16 \times 2 = 32$. However, we have -2^5. The negative is outside the parentheses taken to an odd power. Therefore, we have -32 as an answer. “</p> <p>“Now do 3-7 in your worksheet.”</p>
15	<p>Explore: (independent, concrete practice/application with relevant learning task -connections from context to real-life experiences, reflective questions- probing or clarifying questions)</p> <p>Here, is the time they have to do their hw problems for the day. Given their level of proficiency determines difficulty of problems. Those below proficiency will have additional steps given to help them solve problem: Those above proficiency may have additional questions and will not have extra steps/hints. Those approach proficiency will have a hybrid between those below and above proficiency. Note: The number of problems given to each student will be the same. Some may just have more accommodations.</p>
na	<p>Review (wrap up and transition to next activity):</p> <p>na</p>

<p>Formative Assessment: (linked to objectives)</p> <p>Progress monitoring throughout lesson- clarifying questions, check-in strategies, etc.</p> <p>The problems I assign to them from their worksheet during instruction serve as a check in strategies. Because this lesson is being delivered remotely and prerecorded I also offer a chance for students to send me any and all questions they have via email or screen recording.</p> <p>Consideration for Back-up Plan:</p> <p>If it was insufficient to teach a flipped pre-recorded lesson, I could also do a screen recording or live video feed as I taught. Something like zoom or big blue button.</p>	<p>Summative Assessment (linked back to objectives)</p> <p>End of lesson:</p> <p>In addition, the unit/chapter test also is a summative assessment.</p> <p>If applicable- overall unit, chapter, concept, etc.:</p> <p>Exponents and their properties.</p>	
<p>Reflection (What went well? What did the students learn? How do you know? What changes would you make?):</p> <p>Would have certainly benefitted from correcting the things I forgot to say right away rather than going back to fix them. Also, I had hoped that waiting to go over the practice problems would be beneficial but really that actually hurt the lesson quite a bit in terms of the overall flow.</p>		