**Vaping Unit Revision Proposal 2019**

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| Days | Lesson plan |
| 1 | TOPIC: What do we know about vaping? Is it safe?Introduction to Issue: How should vaping be regulated?expert to novice student groups then break groups into smaller chunks * “How much do I know about vaping? 1-4”
* Then whiteboard questions from PPT in those groups

Vape Madness - Intro to Vaping and Bias Graphic Organizer. * Notice, Wonder worksheet with videos
* # Heads after videos “get into groups of #, share…”

4 corners NPO group selection “How do you feel vaping should be regulated?”* Pair down groups to 3-4 student and summarize how they feel vaping should be regulated

Overview E-Cigarettes articleExit slip quick write questionsHW: Article “Issue Overview - eCigarettes” questions |
| 2 | TOPIC: Understanding Vape Culture Collect HW: Article “Issue Overview - eCigarettes” questions if assigned last classInitial model * Provide scaffolding as needed
* Collect to use on day 4 for mid model part 1

Vaping vocabulary QuizletPoser photo guide* Use picture to fill out POSERS picture Analysis sheet

NPO groups star chart* Break down elements of star
* Culture, politics, science, economics, and history
* What do they think each means and why it is an important aspect of society.
* Give our def. Of Culture
* Have students fill out a sections using the Vape Madness video sheet the class before.

VapingArticle Jigsaw* Read and fill out NEWW sheet
* Share
* Add info to Culture portion of STAR organizer

Closing options1. Give one get one
2. Closing quickwrite
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| 3 | Macro level hierarchyBody System posters* Assign each group of 4 a system and each student a job in that group

If students finish making their posters this day feel free to move into day 4 early |
| 4 | Body system poster notes* Gallery walk of each systems

How does Oxygen travel through all these systems?* On back of notes model this process

How nicotine gets to brain and impacts homeostasis videoMid model* Pass back initial models and evaluate
* Draw mid model
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| 5 | Is It a System Keely Probe* Define what a system is and what makes something a system

Homeostasis notes/ positive and negative feedback loops* Stand up pair up video reflections
* Vaping and homeostasis build a feedback loop

Nicotine and addiction quickwrite* How would you describe the feedback loop of vaping?
* Harvard Medical School classifies addiction as a “chronic disease”, because it “hijacks the brain”, changing both its function and structure. How does this relate to our discussion of feedback loops?

Add notes to star chart from previous class periods* The four body systems and nicotines impact on each
* homeostasis, feedback loops, and addiction

Closing quick write |
| 6 | LESSON NOTE: For this unit the concept of osmosis and predicting how the water moves and its impact on the size of the cell was used as an extension for the Honors section of biology. The general biology classes did not include these components. Any materials and content concerning osmosis may be omitted for a general room without losing understanding of the bigger question concerning how vaping and nicotine impact the body.All classes beaker diffusion demo* Predict what will happen to the food coloring in the three different temperatures of water.
* Draw a model on your whiteboard to explain how particles from the vape pen move into your lungs.

All classes Transport and Membranes notes* Student room diffusion example
* Vaping and lead video/ discussion
* Balloon diffusion modeling activity
* Diffusion box practice problems
* Types of cell membrane proteins

All classes Membrane and diffusion quickwrite* What does the concept of vaping have to do with diffusion?
* Why is it important that our cells are semipermeable?

All classes Membrane diagrams model worksheet* Draw cell membrane and type of proteins in the membrane

All classes Active vs Passive transportOsmosis content classes only* How water can kill you video
* Onion Cells Plasmolysis/ Osmotic Burst of Blood Cells videos
* Osmosis Beaker Review Questions worksheet
* Osmosis with Lettuce, Potato, and unshelled Egg Demo
* Closing Quiz:Osmosis Beaker Formative Assessment
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| 7 | Star chart* Add membrane and diffusion notes to science portion of star

4 essential macromolecules for life* Elements found in the human body
* Carbon as the backbone of life

Macromolecule one pager poster Shuffle Activity* Each round student only fill out one box
* Once posters are done present a poster and fill out macromolecules grid notes while presenting

Extension: Khan Academy - Biological Molecules you are what you eat.Politics, history, and economy of vaping article jigsaw* Each student in each NPO groups reads one of the three articles adding facts to star
* Add old notes and macromolecules to science part

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| 8 | Star chart* Add any missing science information or facts from the articles from last class
* Whip around to add any missing information

Final Model* Optional scaffolding (feedback loop and addiction, body system posters, hand back and evaluate mid moldes similar to initial model)
* Draw final model

Causal map either individually or in NPO groups (teacher discretion)* Come up with a suggestion on how vaping should be regulated
* Fill out causal map marking groups, + or - impact, and how each is impacted

Each group member should take a picture of the causal map so they have a record to use on the culminating project. |
| 9 | Get out completed star charts and causal map from last classIntroduce Culminating project* What the purpose of the project is
* What student will be doing and how they will be graded
* Work on Culminating Activity:

Options on how to continue based on time and teacher's discretion:1. Half way through the class period students can stop working on their culminating projects and switch over to reviewing for the test and test next class then finish the project after they test.
2. Use the whole class period to finish the project then review the following day and test either that day or the next.

Pass out study guide if choosing option 1 half way through the class period |
| 10 | Quick test reviewTestFinish Culminating activity |