

TITLE OF LESSON Outbreak: How Does Disease Spread?	CURRICULUM AREA & GRADE LEVEL Biology & High School	DATE OF LESSON Day 1 of the Zombie Apocalypse Thematic Unit
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CA CONTENT STANDARD(S) ADDRESSED Standard Set 10, Physiology (Infection & Immunity): 10d Students know there are important differences between bacteria and viruses with respect to their requirements for growth and replication, the body’s primary defenses against bacterial and viral infections, and effective treatments of these infections.	CA ELD STANDARD(S) ADDRESSED ELD Collaborative Standard 1 – Exchanging Ideas/Information (Expanding) “Contribute to class, group, and partner discussions, sustaining conversations on a variety of age and grade appropriate academic topics by following turn-taking rules, asking and answering relevant, on-topic questions, affirming others, providing additional, relevant information, and paraphrasing key ideas.”
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BIG IDEA ADDRESSED Diseases, such as a zombie outbreak, are extremely popular in pop culture right now. Many students enjoy this topic without knowing the science background of the topic. In this lesson we delve into what causes disease and ask students to create their own disease based on a set of learned criteria.	ESSENTIAL QUESTIONS ADDRESSED 1. What are different forms of disease and how do they spread?
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OBJECTIVE(S) OR LEARNING GOAL(S) <ul style="list-style-type: none"> Cognitive: After taking notes on viruses and bacteria, students will be able to draw and label their own germ (selecting either bacteria or a virus) that illustrates important differences between bacteria and viruses with respect to their requirements for growth and replication, the body’s primary defenses against bacterial and viral infections, and effective treatments of these infections. Language Development: After completing their independent reading of the Cruise Ship article, students will engage in conversational exchanges and express ideas on disease by asking and answering yes-no questions and wh- questions and responding using phrases and short sentences. 	ASSESSMENT(S) <ul style="list-style-type: none"> Informal, diagnostic: Prior to covering actual material, the teacher will assess current student knowledge on the spread of disease through a whole class discussion. Formal, Formative: Student created bacteria and virus artwork will be collected and assessed for following the format of the selected germ type.
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PREDICTION OF LIKELY DIFFICULTIES STUDENTS MAY ENCOUNTER WITH THIS MATERIAL Students are likely to associate television show’s zombie qualities, such as the Walking Dead, with the introduction of disease. Although the theme of this ITU aims to capture attention based on the popular topic, it is also meant to educate on real life disease, not fantasy fiction ideas.
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INSTRUCTIONAL STRATEGIES: <i>What the teacher does to help students cope with the difficulties in order to succeed</i>			STUDENT ACTIVITIES: <i>What the students do</i>		
STEPS (Fill in each box with specific information)	LEARNING STYLE(S) ADDRESSED	REASONS/RATIONALES	STEPS (Fill in each box with specific information)	LEARNING STYLE(S) ADDRESSED	REASONS/RATIONALES
Anticipatory Set (“Into”) 1. Teacher will show video and lead a whole class discussion.	Visual	This video starts off with a newscast meant to grab student attention.	Anticipatory Set (“Into”) 1. Students will view this video and have a whole class discussion on how sickness could have traveled so quickly on the cruise ship: https://www.youtube.com/watch?v=setSRgYBf7E	Visual	This video starts off with a newscast meant to grab student attention.
Instruction (“Through”) 2. Teacher will lead PowerPoint note presentation on various types of germs, info can be found here:	Visual, Linguistic	This note section gives students necessary background info to understand the following day’s	Instruction (“Through”) 2. Students will take notes on the various types of	Visual, Linguistic	This note section gives students

http://www.mayoclinic.org/diseases-conditions/infectious-diseases/in-depth/germs/art-20045289		activities.	germs		necessary background info to understand the following day's activities.
Guided Practice ("Through") 3. Teacher will show different types of real life visuals of diseases as well as artistic representations.	Visual, Artistic	This makes disease relevant not only as a real life topic, but a topic which our culture has adopted as art.	Guided Practice ("Through") 3. Students will see artistic interpretations of bacteria and viruses: http://www.duskyswonder.com/human-ingenuity-category/virus-and-bacteria-as-art/	Visual, Artistic	This makes disease relevant not only as a real life topic, but a topic which our culture has adopted as art.
Independent Practice ("Through") 4. Teacher will assign the "make your own germ" project, explaining that students must provide an image as well as a description and rationale for their disease. 5. Teacher will show popular videos on germs to spark student interest.	Visual, Artistic	This allows artistic students to express themselves and allows students to review material creatively.	Independent Practice ("Through") 4. Students "create their own germ" through artwork. 5. Students will watch popular (Bill Nye & TedTalks) videos on germs: http://www.youtube.com/watch?v=GQFUziWNj2c & http://www.youtube.com/watch?v=9r3yGCq4InA and respond to prompts regarding the videos.	Visual, Artistic	This allows artistic students to express themselves and allows students to review material creatively.
Closure (<i>summarize; make meaning of the lesson</i>) 6. Knowing that a guest speaker is coming to visit, the teacher will prompt a brief discussion on careers in health, specifically EMTs.	Rational	Students will understand the real world application of what they are learning.	Closure (<i>summarize; make meaning of the lesson</i>) 6. Students will learn how some careers use the information they learned today to help others, such as EMTs.	Rational	Students will understand the real world application of what they are learning.
Transfer ("Beyond") (<i>opportunities to apply the learning</i>) 7. Teacher will describe manners required during classroom guest speaker and assign hw of each student brainstorming at least 3 questions to ask the EMT.	Rational	Students will be prepared to speak with the guest EMT.	Transfer ("Beyond") (<i>opportunities to apply the learning</i>) 7. Students will be asked to think of at least three questions to ask our guest speaker in the next class (this is homework).	Rational	Students will be prepared to speak with the guest EMT.

INFO ABOUT ENGLISH LANGUAGE LEARNERS:

- Rodolfo: CELDT 4, Basic on CST, Likes soccer and video games, has come in for one-on-one support, but needs additional tutoring
- Vanessa: CELDT 4, Grade 9, Proficient/Advanced on CST
- Orlando: CELDT 3, Grade 10, Below Basic on CST testing, will not ask for help, but gladly accepts, very quiet, does not do homework, plays football

INFO ABOUT STUDENTS W/ SPECIAL NEEDS:

- Ryan C: 504, mild asthma, diabetic, Proficient/Advanced on CST, plays football
- Peyton: IEP, SLD, Basic on CST, likes football and gymnastics, interested in Cal Poly
- Angela: 504, No CST info available, plays JV soccer, quiet in class
- Jake: IEP, SLD, OHI; Below Basic/Basic on CST, very fidgety in class, trouble focusing, receiving one-on-one support
- Logan: IEP, Autism, performs very well in class,

	Proficient/Advanced on CST
<p>DIFFERENTIATION FOR ENGLISH LANGUAGE LEARNERS:</p> <ul style="list-style-type: none"> • Content: Difficult wording will be provided on a hand out that describes terms in both English and Spanish • Process: EL students have been arranged closer to the front of the classroom to allow them the opportunity to clearly see and hear the PowerPoint and teacher • Product: The product image will not be differentiated because it is fairly simple, but the written section will be graded at their according level on the rubric whether emerging, expanding, or bridging 	<p>DIFFERENTIATION FOR STUDENTS WITH SPECIAL NEEDS:</p> <ul style="list-style-type: none"> • Content: Frequent videos are shown to capture interest of the students. • Process: Students will be provided with copies of notes to keep at their desk. This will be especially helpful for Jake who can easily lose focus if not frequently reminded of the task at hand.
<p>RESOURCES</p> <ul style="list-style-type: none"> • Videos: <ul style="list-style-type: none"> - Cruise Ship - Disease Art - Bill Nye - TedTalks • Paper, Colored Pencils, Markers • Disease PowerPoint 	<p>REFLECTION:</p> <p>Not applicable since lesson has not been taught.</p>