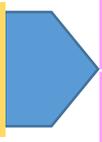


Learning objective	Learning outcome	Taxonomy level	Learning activities	Formative assessment	Summative assessment
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Mechanisms of genetic variation and their impact on the behavior/characteristics of microbes</p>	Describe mechanisms of horizontal gene transfer	<p>Understand Remember</p> <p>Understand</p>	<p>Outside class Read conjugation, Transduction, Transformation</p> <p>In class Concept map of 3 processes</p>	<p>Question and answer Online or class?</p> <hr/> <p>What is gene transfer?</p> <hr/> <p>Key words Donor, recipient, plasmid, phage, genetic recombination (team)</p>	<p>Exam: low order Recall, know the facts?</p> <p>Higher order Case study: Lab strain of <i>S. epidermidis</i> resistant to antibiotic. Explain how it might have Acquired this trait</p>
	<p>Explain how horizontal gene transfer changes the characteristics of bacteria</p> <p>Example antibiotic resistance</p>	Apply, understand, Analyze, skills development	<p>Lab activity + lecture Out of class, Read the procedure for 3 processes,</p> <p>Mechanisms bacteria use to escape</p> <p>In class: lecture Perform the experiments in groups.</p> <p>Read interpret results</p>	<p>Out of class: Online quiz on procedures, mechanisms</p> <p>1 minute essay How is the resistant gene is helping the bacteria Explain it to others As a team, individual</p>	<p>Compare and contrast type of question (higher order)</p> <p>Low order: penicillinase, altering structure of the antibiotic Change target site Over production target enzyme, Transport protein</p>

In class		
10/2	Mini lecture: What is genetic Tr, HGT	LA FA
10/2	Discussion Plasmid, phage	LA FA
10/2	Concept map/Diagram Label, explain	LA FA
11/18	Prelab lec 15 min (lab)	LA
11/18	Set up exp (lab)	LA

10/28 lecture
12/16 lab



Summative assessment, 2 weeks later (In class)	
1.	Low order, facts
2.	Compare and contrast
3.	Situation analysis

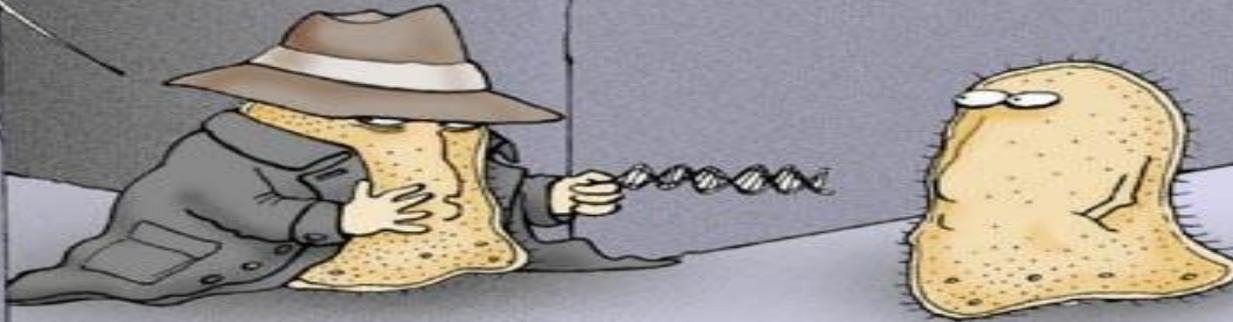
In class		
10/14	Warm up, (AR)	LA
10/14	Mini lecture	LA
10/14	Concept map	LA, FA
11/23	Read results (lab)	LA
11/23	Interpret (lab)	LA, FA
11/23	Explain (lab), Jigsaw group	LA, FA

Out of class		
10/7	Read text	LA
10/13	Content check	FA
11/11	Read proc. (lab)	LA
11/17	Content (lab)	FA

Out of class		
10/7	Read text, paper Antibiotic resistance(AR)	LA
10/13	Read how bac. Escapes Gene products	LA
11/13	Content check	FA,
11/13	Submit 3 muddiest points	LA, FA

LA – Learning activity
FA- Formative assessment

Pssst! Hey kid! Wanna be a Superbug...?
Stick some of this into your genome...
Even penicillin won't be able to harm you...!



It was on a short-cut through the hospital kitchens that Albert was first approached by a member of the Antibiotic Resistance.

Bacteria share their resources (genes) so all the bacteria can become superbugs.

ASM, facilitators share their knowledge so everyone can become better, stronger, more efficient at teaching and learning!!! 😊