

Unit: LS 5 and LS 6 Cycles: 12 lessons

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SKILLS: Collect and Analyze Data and graphing: develop a model describing the cycle of matter and flow of energy between the biotic and abiotic parts of an ecosystem

Related/Supporting Standards: 6 and 10

Ecart should be 8 questions

Check the assessment for vocab: "consistent with data", equation, Main source of the carbon comes Co2

	Learning Target - Warm Up -	Engage and Model	Explain Academic Task(s)- Scaffolds -	Evaluate And small group	Ct reflection
Day 1 10/28	Today I will diagram chemical formulas So that I can build a model of molecules and compounds I'll know I've got it when I can translate a chemical formula into a model	Model reading a chemical formula and identifying the atoms	Academic Task: Translating chemical formulas into pop-bead models Explore: <ul style="list-style-type: none">• Explain: explain the differences between atoms, molecules and compounds. Observe that the equation is balanced• Explain check-in: diagram glucose• Explain part 2: create a model• Small group: use the explore sort to categorize and diagram elements and compounds• Extend: with a partner create and model compounds	Translate a formula into a pop-bead mode IDuring the extend: review of the parts of the atom and Oxygen, Carbon and Hydrogen	This was short-add to it move bean lab to here Maybe good to keep it short, some classes still finishing cells summative posters
Day 2	Today I will draw photosynthesis so that I can diagram the process. I'll know I've got it when I can create an experiment to test photosynthesis	Setting up an experiment	Explore: Pop beads modeling of photosynthesis Explore Check: products and reactants? Explain: choice stations for making the diagram <ol style="list-style-type: none">1.) video2.) differentiated texts3.) Small group Explain check: where does the matter in a	Small group: reading and inner voice worksheet	Need to decrease activities-currently overplanned If using milk cartons teacher needs to poke holes

			<p>tree come from?</p> <p>Extend: Model setting up a graph EDD for the plant lab and lab set up</p>		
Day 3	<p>Today I will observe models of photosynthesis so that I can describe how energy is transferred between sunlight and chloroplast. I'll know I've got it when I can create a diagram that illustrates the biotic and abiotic factors in photosynthesis</p>		<p>Explore: Privet leaf observations -microscopes</p> <p>Explain: create a diagram that illustrates the biotic and abiotic factors in photosynthesis and the organelles</p> <p>Using: textbook, video, reading with organelles</p> <p>Evaluate: formative</p>	<p>FA: photosynthesis</p> <p>Small group: during the explain and the explore About the graphs</p> <p>Small group #1: Analyzing simple graphs or setting up graphs</p>	
Day 4	<p>Today I will observe models of respiration so that I can describe how energy is transferred between plants animals. I'll know I've got it when I can create a diagram that illustrates the reactants, products, and locations of respiration.</p>	<p>Quick question about multicellular and unicellular to create jigsaw groups</p>	<p>Explore: Respiration:Pop-beads modified instructions</p> <p>Explain: graphic organizer (check-in) and summary of respiration</p> <p>Extend: fill in respiration diagram with word bank</p> <p>Extra time: read articles</p> <p>Pull small groups for summary during explain if they struggle with the graphic organizer</p>	<p>Small group: during the explain after check-in</p> <p>Evaluate: Fill in respiration diagram</p>	
Day 5	<p>Today I will conduct an experiment so that I can graph carbon dioxide levels. I'll know I've got it when I can use</p>	<p>Engage:You can see bubbles coming from underwater plants. What are these bubbles? What</p>	<p>Explore :BTB lab</p> <p>Check-in: students who struggle with making graph from BTB lab pulled into small group</p> <p>Explain: graphing practice with resources (graphing cards, sheet protector pages)</p>	<p>FA: Respiration form FA: respiration</p>	<p>Data dialogue of this formative</p>

	a graph to describe a relationship.	are the molecules? Modeling: Graphing	Extend: Use graphing cards to Analyze graphs: predict relationships based on graphs Pull small groups: graphing practice		
Day 6	<p>Today I will review photosynthesis and respiration</p> <p>So that I can compare and contrast photosynthesis and respiration.</p> <p>I'll know I've got it when I can explain how photosynthesis and respiration are codependent</p>		<p>Compare and contrast respiration and photosynthesis</p> <p>Stations:</p> <p>Reading Station: Photosynthesis and Respiration</p> <p>Reading about Respiration/photosynthesis Video photosynthesis and Respiration Writing Station: Card sort, put it in order then write about it</p> <p>Video station: photosynthesis</p> <p>First explain/check-in: how are they similar/different: Venn Diagram</p> <p>Second explain/check-in: explain why photosynthesis and respiration are codependent</p> <p>Try out station work</p>	Use this day to remediate based on the photosynthesis and respiration formative	
Day 7	Today I will visit stations as a carbon atom. So that I can diagram the movement of molecules. I will be able to identify where photosynthesis and respiration happen	Engage:	<p>Explore: Carbon cycle game</p> <p>Give them a blank diagram and have them fill in the arrows, number their path and the molecules</p> <p>Explain: Where in this diagram that you just made is photosynthesis and respiration</p> <p>Extend: NGSS human impact application question about the impact of the cycle or models</p>	Heredity pre-assessment	
Day 8 Nitrogen	Today I will visit stations as a nitrogen atom		<p>Nitrogen cycle - diagram</p> <p>Create an EDD to add fertilizer to our plant experiments</p>	Beginning of class Cycles of matter quiz	

	<p>So that I can diagram the movement of the molecules</p> <p>I'll know I've got it when I can Compare and contrast the carbon and nitrogen cycles</p>		<p>Explore: nitrogen cycle game</p> <p>Check-in: describe the nitrogen cycle in 2 sentences</p> <p>Explain: text/video/simulation/etc to answer discussion questions</p> <p>Check-in: how is it a cycle/why is it not a line/is nitrogen conserved</p> <p>Extend: compare and contrast with carbon cycle</p>	<p>Pull small groups based on this formative</p>	
Day 9	<p>Today I will analyze graphs so that I can create graphs about a specific location. I will be able to represent a set of data on a graph</p>		<p>Engage: make a graphing anchor chart</p> <p>Explore:</p> <p>Explain: analyze the carbon cycle graph</p> <p>Evaluate: Graphing FA</p> <p>*hours of sunlight, temperature, and carbon for a certain location</p>	<p>Graphing FA</p>	<p>Data dialogue to figure out stations</p>
Day 10	<p>Today I will analyze graphs so that I can predict the effect of biotic and abiotic factors on the carbon cycle. I will be able to evaluate models of climate change</p>	<p>mini-lesson</p> <p>Using graphs to make inferences</p> <p>*Describing trends</p> <p>*more scientific language/</p> <p>*related to CO2 changes</p>	<p>Engage: match human activities and graphs of carbon dioxide</p> <p>Explore (using differentiated grouping): read about the effect of deforestation and industrial revolution</p> <p>Explore check-in: industrial revolution graph</p> <p>Explain (with table groups): make a study aide to help explain the carbon cycle and the human impacts on the carbon cycle</p> <p>Extend: Write a persuasive letter to impact the carbon cycle</p>	<p>Test-taking strategies</p> <p>Small group remediation for criterion D</p> <p>Ecart</p>	<p>Small group stations to remediate: respiration and photosynthesis</p>
Day 11			<p>Criterion D: Carbon diagram summative</p>	<p>Or Ecart</p>	
Day 13	<p>Review day</p>		<p>Cycle and cell stations</p> <p>Link to Sci SOL Brain Dump Strategy Slides</p>		

			<p>(slides 11-16 model the strategy)</p> <p>Teach kids how to make a quizlet</p> <p>Cells remediation station</p>		
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