

Garden Grove Unified School District
Office of Secondary Education
Department of 7-12 Instruction

Learning Scale

Course:	Biology	Quarter:	2
Content Standard:	1f and 1g		
Unit of Study:	Energy		
Topic:	Photosynthesis and Cellular Respiration Project		
EMS			
SWBAT describe the processes of photosynthesis and cellular respiration by showing where molecules go and which is used in each step.			
Score	Description	Learning Goal	
5	In addition to exhibiting level-4 performance, in-depth inferences and applications that go BEYOND what was taught in class.	(Level 5 Learning Goal is Optional) -The descriptions show a deep understanding of the processes. -The descriptions and/or transitions between steps in each process show a deep understanding of the sequence and relationship between photosynthesis and cellular respiration.	
4 Target Goal	No major errors or omissions regarding any of the information and/or processes (SIMPLE OR COMPLEX) that were explicitly taught.	In addition to level 3: - The following terms are also included in the description of the process of photosynthesis: NADP ⁺ , ADP, phosphate, ATP synthase -The following terms are also included in the description of the process of cellular respiration: NADH, FADH ₂ -Includes how passive transport and active transport are necessary for photosynthesis and cellular respiration to occur. - The descriptions of the processes show student understanding beyond paraphrasing (i.e. show where the molecules go, which is used in each step, etc.) -The project is engaging, accurate, and creative.	
3	No major errors or omissions regarding the SIMPLER details and processes BUT major errors or omissions regarding the more COMPLEX ideas and processes.	-All components of the assignment are complete both photosynthesis and cellular respiration are included. -The processes are described in the student's own words. -The definitions of photosynthesis and cellular respiration are included in the project and the balanced chemical equations are included in the project. - Shows a glucose molecule being made through photosynthesis, and carbon is tracked through the entire process. - Shows a glucose molecule enter cellular respiration, and tracks it through the entire process. - The following terms are included in the description of the process of photosynthesis: chloroplast, chlorophyll, grana, thylakoid, stroma, light dependent reactions, ATP, NADPH, electron transport chain, light independent reactions, Calvin cycle, carbon dioxide, water, glucose, oxygen. -The following terms are included in the description of the process of cellular respiration: mitochondria, matrix, cristae, aerobic, anaerobic, glycolysis, pyruvate, Krebs cycle, electron transport chain, fermentation, chloroplast, light dependent, light independent(Calvin Cycle), carbon dioxide (CO ₂), water (H ₂ O), glucose (C ₆ H ₁₂ O ₆), oxygen (O ₂), ATP, NADPH	
2	With HELP, a partial knowledge of some of the simpler and complex details and processes (score 3 & 4).	-Partial completion -Partial knowledge of some simpler and complex details and processes	

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1	Even with help, no understanding or skill demonstrated.	
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It is appropriate to include *sample* math problems or vocabulary in a learning goal to clarify intent, however it is not appropriate to include specific strategies (ie. a particular thinking map, CM tool, type of assessment, etc.).