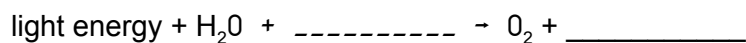
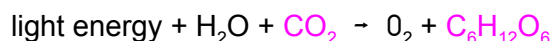


The following equation represents the process of photosynthesis.



Fill in the blanks to complete the equation.



Title

Item Identification Number	6
Grade Level	9-12
Item Type	Cloze (fill-in-the-blank) with math
Item Sub-Type:	
Content Standard	<p>HS-LS1-5. Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy. [Clarification Statement: Emphasis is on illustrating inputs and outputs of matter and the transfer and transformation of energy in photosynthesis by plants and other photosynthesizing organisms. Examples of models could include diagrams, chemical equations, and conceptual models.] [Assessment Boundary: Assessment does not include specific biochemical steps.]</p>
Practice Standard	2. Developing and using models
Claim	
Evidence	In this task, the student shows evidence of understanding the inputs and outputs of photosynthesis by completing the photosynthesis equation.

	<p>The student also shows evidence of understanding the chemical formulas of the inputs and outputs of photosynthesis.</p> <p>The student shows evidence of the NGSS Practice Standard by using a chemical equation to model the inputs and outputs of photosynthesis.</p>
<p>Innovative Characteristic</p>	<ol style="list-style-type: none"> 1. Quality assessment of standard <p>The task is aligned to standards HS-LS1-5 and demonstrates the understanding of these standards setting the foundation for understanding the processes of photosynthesis and carbon cycling.</p> <ol style="list-style-type: none"> 2. Practice-forward 3. Assessing conceptual understanding The task assesses the understanding of the concepts of photosynthesis and the transformation of matter and energy during this process. 4. Integrative task 5. Fluency Assessment 6. Expressing mathematical reasoning 7. Modeling/Application 8. Technology-enhanced <p style="display: flex; justify-content: space-between;"> Incremental Transformative </p> <p>A cloze item type will allow students to independently fill in the missing parts of the chemical equation. Math functionality will allow the student to enter subscripts required in the chemical formula for each substance.</p>

Complexity (see attached reference document)	<p>Low</p> <p>For Part 1 of the task, the student recognizes the missing input of the photosynthesis equation and recalls the chemical formula for carbon dioxide. (DOK 1)</p> <p>For Part 2 of the task, the student recognizes the missing output of the photosynthesis equation and recalls the chemical formula for glucose. (DOK 1)</p>
Approximate length of time to complete the task	2 minutes
Display requirements	The task will be displayed on a regular computer screen.
Response requirements	Students will use the keyboard or an equation editor to enter their response to the item.
Scoring method	Machine scored
Accessibility features	<ol style="list-style-type: none"> 1. Screen readers text-to-speech/speech-to-text software 2. Font size/graphic enlargement 3. Choice of background/text color 4. Highlight critical feature 5. Passage/item/response choice 6. Graphic organizers or representations 7. Customized dictionary or other home language support 8. Embedded pop-up glossary 9. Reducing visual distractions surrounding written text 10. Avatars (personalized for speaking or sign language) 11. Caption for audio

	<p>12. Option response: adapted keyboards, StickyKeys, MouseKeys, FilterKeys</p> <p>13. Customized timing</p> <p>14. Braille printing or refreshable Braille devices</p>
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