|  |  |
| --- | --- |
| Instructors Notes | Activity |
| Day 1:  Pre-reading discussion.   1. Photosynthesis 2. Recall from prior lesson 3. What is Photosynthesis 4. Who uses photosynthesis 5. Why 6. What else do we know about photosynthesis 7. Ingredients 8. **Carbon dioxide** 9. **Water** 10. Sunlight 11. Question and answer about video 12. How are trees like plants? 13. What is different about the leaves of a tree than the leaves of a plant? (trees have many leaves)   Closing Activity: Discuss predictions for labs and connect prior knowledge to introduced. | Pre-reading  Vocabulary review from Unit 4: Lesson 1  Discuss review questions from previous lesson (items i-iv on outline)  New Vocabulary  Video 1: How trees make food  Lab 1: Phototropism or Geotropism  Activity 1: Photosynthesis paper manipulatives |
| Day 2:   1. Process    1. **Light energy** into **chemical energy** (sugar)    2. Latin dissection of photosynthesis    3. All human food energy is directly or indirectly derived from this process.    4. Light stimulates **chlorophyll** (located in **chloroplasts**    5. Plant takes in CO^2 through **stomata** on leaves    6. Water absorbed through roots 2. **Light-dependent reactions** 3. Certain steps of photosynthesis need light. 4. **Light-independent reactions** 5. Certain steps of photosynthesis do not need light. 6. **Respiration** 7. What do you think of when you hear this word? 8. If you through of breathing you are correct. There is an exchange of gasses in breathing and that exchange is called respiration. 9. Use diagram or draw exchange of gasses in the format of a seller and a buyer. Break down only to the point of oxygen and carbon dioxide. 10. **Transpiration** 11. Recall of process from prior lesson. 12. Discuss role in photosynthesis; photosynthesis needs water, photosynthesis takes place in leaves, water needs to get from other parts of plant where it is collected and transported to site of photosynthesis. 13. **Phototropism** 14. Recall driving down a road where there are trees off to the sides. Did you ever notice the trees leaning a certain way? 15. Ever see a potted plant where the flower is leaning a certain way? 16. **Geotropism** 17. How does a seed know which way to grow while underground? 18. Algae and Bacteria use photosynthesis 19. Use chlorophyll and chloroplasts 20. Use additional pigments similar to chlorophyll and chloroplasts that cause the different colors. 21. Byproduct or Waste (in chemical reaction) 22. Scientists involved in photosynthesis 23. Chemist Richard Willstatter 24. Physiologist Otto Warburg 25. Review 26. Review and modeling of using microscope | Reading  Vocabulary: Cross-word Puzzle  Review of Day 1  If time allows, Scientists involved in photosynthesis is in Silverstein book  If time allows, setup to view stoma under microscope. |
| Day 3:   1. Food Webs 2. **Primary Producers** 3. **Primary Consumers** 4. **Omnivores** 5. **Carnivores** 6. **Herbivores** 7. **Autotrouphs** | Reading  Worksheet 1: Vocabulary review  Food Web Activity, Forms A and B. |
| Day 4:  No instruction to be provided to general class. Cover instruction not completed on previous days. Monitor class as they work on vocabulary activities, Food Web activities, Journaling. Review upon request and based on assessments (formative) information that students may need more practice. | Review of Day 3  Food Wed Activity, Forms C and D |
| Day 5:  Formative assessment  Microscope activity | Vocabulary assessment  Cumulative Exam |