



Student Name: _____

Class: _____

Due Date: _____

Introduction to Photosynthesis

Welcome to our homework assignment on photosynthesis! Photosynthesis is the process by which plants, algae, and some bacteria convert light energy from the sun into chemical energy in the form of organic compounds, such as glucose. This process is essential for life on Earth, as it provides the primary source of energy for nearly all living organisms.

Label the Plant Cell

Use the diagram below to label the different parts of a plant cell, including the cell wall, nucleus, mitochondria, and chloroplasts.

- Foundation: Label the basic parts of the plant cell
- Core: Describe the function of each part
- Extension: Research and write about the importance of each part in the process of photosynthesis

Photosynthesis Equation

Write the equation for photosynthesis and explain the role of each reactant and product.

- Foundation: Write the basic equation
- Core: Explain the role of each reactant and product
- Extension: Research and write about the importance of each reactant and product in the ecosystem

Matching Game

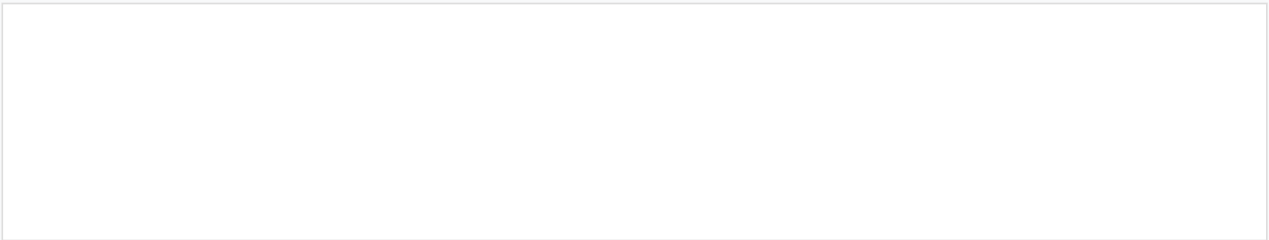
Match the vocabulary words related to photosynthesis with their definitions.

- Foundation: Match the basic vocabulary words
- Core: Define each vocabulary word
- Extension: Research and write about the importance of each vocabulary word in the process of photosynthesis

Photosynthesis Diagram

Create a diagram to illustrate the process of photosynthesis, including the role of light, water, carbon dioxide, and chlorophyll.

- Foundation: Draw a basic diagram
- Core: Label and describe each part of the diagram
- Extension: Research and write about the importance of each part in the ecosystem

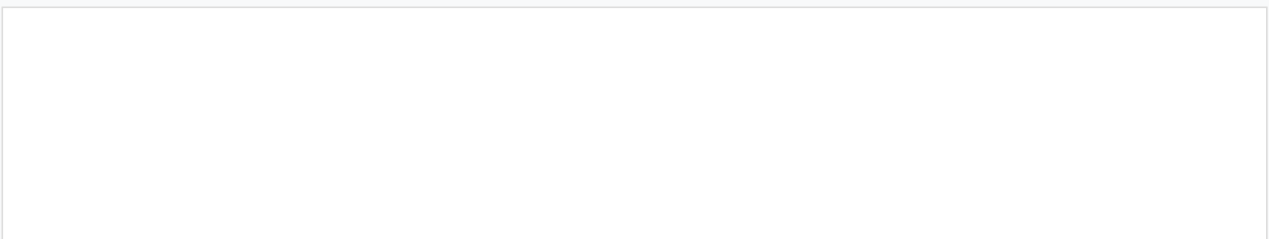


Short Answer Questions

Answer the following questions:

1. What is the role of chlorophyll in photosynthesis?
2. How does light energy contribute to the process of photosynthesis?
3. What are the products of photosynthesis?

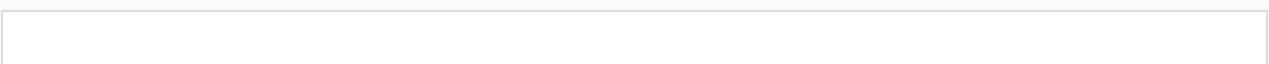
- Foundation: Answer the questions in short sentences
- Core: Answer the questions in paragraphs
- Extension: Research and write about the importance of each question in the ecosystem



Case Study

Read the case study about a plant that has adapted to live in a low-light environment and answer the questions.

- Foundation: Read and answer the basic questions
- Core: Analyze the case study and answer the questions
- Extension: Research and write about the importance of the case study in the ecosystem



Investigation

Design an experiment to investigate the effect of light intensity on the rate of photosynthesis.

- Foundation: Design a basic experiment
- Core: Conduct the experiment and analyze the results
- Extension: Research and write about the importance of the experiment in the ecosystem

Research

Research and write a short report about the importance of photosynthesis in the ecosystem.

- Foundation: Write a basic report
- Core: Research and write a detailed report
- Extension: Present the report to the class

Creative Writing

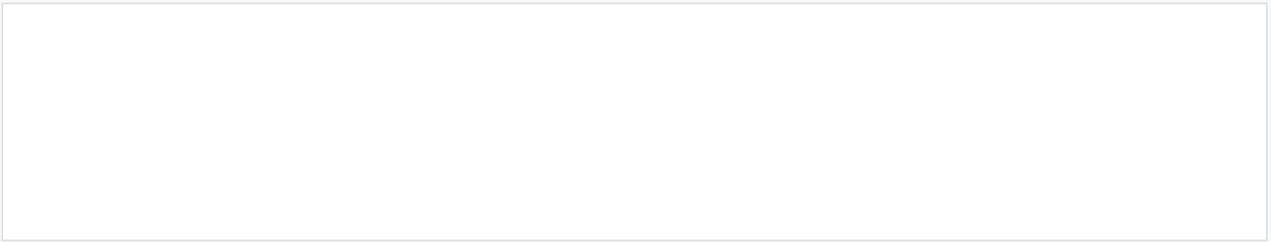
Write a short story or poem about a plant that can photosynthesize in a unique way.

- Foundation: Write a basic story or poem
- Core: Write a detailed story or poem
- Extension: Illustrate the story or poem

Create a Model

Create a 3D model of a plant cell or a photosynthetic organism to demonstrate your understanding of the process.

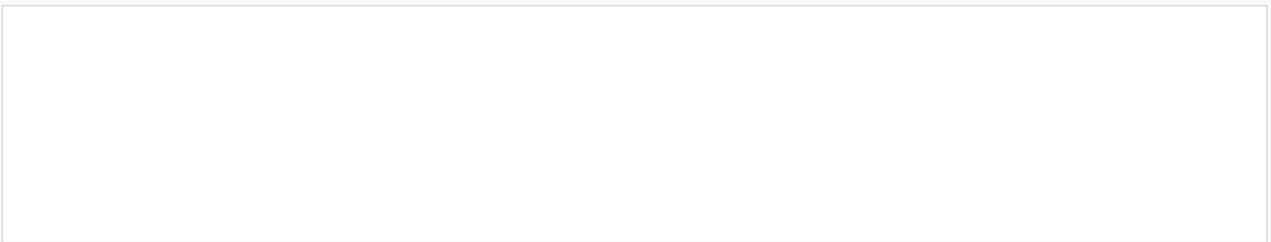
- Foundation: Create a basic model
- Core: Create a detailed model
- Extension: Present the model to the class



Debate

Participate in a debate about the importance of photosynthesis in the ecosystem and the impact of human activities on the process.

- Foundation: Participate in a basic debate
- Core: Research and participate in a detailed debate
- Extension: Lead the debate



Success Criteria

To successfully complete this assignment, you should:

- Demonstrate an understanding of the basic concepts of photosynthesis.
- Complete the mixed-ability tasks to the best of your ability.
- Use the diagram of a plant cell to label the different parts and describe their functions.
- Answer the questions and complete the activities with accuracy and detail.
- Use the success criteria to assess your work and identify areas for improvement.

Parent/Guardian Notes

To support your child in completing this assignment, please:

- Encourage them to read the introduction to photosynthesis and understand the basic concepts.
- Assist them in selecting the mixed-ability tasks that best suit their learning style and ability level.
- Provide guidance on the use of diagrams and labeled illustrations.
- Encourage them to use the success criteria to assess their work and identify areas for improvement.
- Discuss the importance of photosynthesis in the ecosystem and the impact of human activities on the process.

Time Management Guidelines

Estimated completion time:

- Foundation tasks: 10-15 minutes
- Core tasks: 15-20 minutes
- Extension tasks: 10-15 minutes
- Total estimated completion time: 25-35 minutes

Self-Assessment Opportunities

Use the success criteria to assess your work and identify areas for improvement.

- Reflect on your learning and identify what you have learned about photosynthesis.
- Set goals for further learning and improvement.