



ESL Vocabulary Worksheet for Adults

Topic: Reading Comprehension (Science)

No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the publisher.



Passage Title: The Wonders of Photosynthesis

Photosynthesis is a vital biological process used by plants, algae, and some bacteria to harness energy from sunlight. This process converts light energy into chemical energy, which is then used to fuel the organism's activities. Photosynthesis not only sustains plant life but is also the cornerstone of life on Earth, providing oxygen and food for a myriad of organisms.

In the presence of sunlight, plants transform carbon dioxide and water into glucose and oxygen. This transformation is crucial for the survival of both plant and animal life. The glucose produced is essential for plant growth, and the oxygen released is indispensable for most living organisms. Moreover, plants store excess glucose as starch, which can be later used as an energy source.

Photosynthesis also plays a pivotal role in mitigating climate change. By absorbing carbon dioxide, a key greenhouse gas, during this process, plants act as natural carbon

sinks. They help regulate the levels of carbon dioxide in the atmosphere, thus contributing to the global climate balance.

The efficiency of photosynthesis has inspired scientists to explore artificial systems that mimic this process. Such innovations hold the promise of sustainable energy solutions and could be pivotal in addressing the challenges of global warming. Researchers are developing technologies to artificially replicate photosynthesis, aiming to create clean, renewable energy sources. This field of study not only has the potential to revolutionize energy production but also offers insights into new ways of mitigating climate change impacts.

Exercise 2: Multiple-Choice Questions

Based on the passage, answer the following questions:

1. What is the primary process that photosynthesis accomplishes?
 - a) Converting glucose into oxygen
 - b) Transforming light energy into chemical energy
 - c) Changing oxygen into carbon dioxide
2. Which of the following groups of organisms are capable of photosynthesis?
 - a) Only terrestrial plants
 - b) Plants, algae, and certain bacteria
 - c) All living organisms
3. What are the two main products of photosynthesis?
 - a) Carbon dioxide and water

-
- b) Glucose and oxygen
 - c) Nitrogen and helium
4. Photosynthesis plays a crucial role in:
- a) Only oxygen production
 - b) Both oxygen production and carbon dioxide absorption
 - c) Only carbon dioxide absorption
5. The excess glucose produced in photosynthesis is stored as:
- a) Starch
 - b) Proteins
 - c) Fats
6. In the context of climate change, plants act as:
- a) Carbon emitters
 - b) Carbon sinks
 - c) Oxygen sinks
7. The main goal of artificial photosynthesis research is to:
- a) Create new plant species
 - b) Generate sustainable energy sources
 - c) Improve agricultural yield
8. One of the by-products of photosynthesis, oxygen, is essential for:

-
- a) Plant growth
 - b) Animal life
 - c) Soil fertility
9. Photosynthesis is a process that primarily takes place in which part of the plant?
- a) Roots
 - b) Leaves
 - c) Stems
10. The study of artificial photosynthesis could lead to advancements in:
- a) Space exploration
 - b) Renewable energy technology
 - c) Oceanography

Exercise 3: Fill in the Gaps

Complete the sentences based on the reading passage:

1. Photosynthesis is a process that converts _____ energy into _____ energy.
2. The primary products of photosynthesis are _____ and _____.
3. During photosynthesis, plants absorb _____ from the air.
4. _____ is the process where plants use sunlight to produce food.
5. The oxygen released by plants during photosynthesis is vital for _____.
6. Excess glucose in plants is stored as _____ for later use.
7. Photosynthesis helps in regulating atmospheric _____ levels.
8. Artificial photosynthesis research aims to create _____ energy sources.
9. In photosynthesis, _____ is used as a source of energy.
10. The study of artificial photosynthesis could impact _____ and _____ challenges.

Exercise 4: Vocabulary Exercise

Find words in the passage that match the following definitions:

1. A process used by plants to convert light energy into chemical energy:

2. The simple sugar produced during photosynthesis: _____
3. The gas taken in by plants during photosynthesis: _____
4. An essential gas released by plants, crucial for animal life: _____
5. Stored form of glucose in plants: _____
6. The main light-absorbing pigment in plants: _____
7. Devices or systems that imitate a natural biological process: _____
8. Organisms that can perform photosynthesis: _____
9. A greenhouse gas absorbed during photosynthesis: _____
10. The ultimate source of energy for photosynthesis: _____

Exercise 5: Discussion Questions

Reflect and discuss the following questions based on the passage:

1. How does photosynthesis contribute to the balance of gases in Earth's atmosphere?
2. What are the potential environmental and societal impacts of successfully developing artificial photosynthesis technologies?
3. In what ways does photosynthesis illustrate the interdependence of plant and animal life?
4. Discuss how understanding photosynthesis can influence our approach to tackling climate change.
5. How might advancements in artificial photosynthesis technology change the way we produce and consume energy in the future?

Exercise 6: Summary Writing

Instructions: Write a summary of the passage in 100-150 words.



No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the publisher.