# Lesson Plan for College of Education, STEM Department

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|---|---|---|---|
| **Date & Time Created:** | Monday Mar25 2024 | | |
| Date & Time Modified: | Monday Mar25 2024 | | |
| **Subject** | biology | | Types of Nutrition |
| **Grade** | 12 | | 12 |
| **Teacher:** | Demiana Emad | **School** | STEM ASSUIT |
| **Learning Outcome** | | | |
| **LO Code** | BL.2.12 | **LO text** | The difference between autotrophic organisms and heterotrophic organisms and the comparison between them |

| **Concepts** | **Skills** |
|---|---|
| • Nutrition<br>• Cellular Respiration<br>• Autotrophic Organisms<br>• Heterotrophic Organisms | 1. Learning practice - use what you learned to answer questions about the different types of nutrients<br>2. Reading awareness - make sure that you know the most important information from the lesson on nutrients<br>3. Explaining information - make sure that you can read information about calcium and explain it correctly. |

**Duration of Learning Outcome**

BL.2.12 (Week 1)

**Evidence of Learning Outcome**

Quiz:

https://docs.google.com/forms/d/1S1NZCagQTNUVEiF-QNouz1wZugHj3EltOjNB6Dg08Mo/edit

**Capstone Connection**

How does the industrial base affect evolution?

**Textbook & Resource Material**

Modern Biology – SEP UP .

**Essential Question/s**

What is nutrition?
What are autotrophic organisms?
What are heterotrophic organisms?

What are autotrophic organisms?

**1**

**Objective/s for Lesson**

You will be able to:

1. explain the importance of nutrition in living organisms,
2. recall the defining characteristics of autotrophic and heterotrophic nutrition and compare and contrast

them.

3. identify types of heterotrophic nutrition, including parasitic, saprophytic, and holozoic,
4. identify organisms that use holozoic nutrition as carnivores, omnivores, and herbivores.

| Evidence of Achievement of Lesson |
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| https://docs.google.com/forms/d/1S1NZCagQTNUVEiF-QNouz1wZugHj3EltOjNB6Dg08Mo/edit |
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| Instructional Activity #(1 ) | |
|---|---|
| Purpose of Activity | attracting attentions to the topic |
| Estimated Time: | 5 Min |
| Organization of Students - Student will work in: | Individually |
| Teaching Strategy | Question, brain storming. |
| Specific concept and/or skill addressed | Types of Nutrition |
| Description of Activity | This activity is done by guessing the pictures that are displayed, whether they follow plant, animal, or mixed nutrition. |
| Connections to Capstone, Grand Challenge, other subjects | No connection |
| Formative Assessment During Learning: | Students answer to the pictures shown |

| Instructional Activity #(2 ) | |
|---|---|
| Purpose of Activity | attracting attentions to the topic |
| Estimated Time: | 10 Min |
| Organization of Students - Student will work in: | Group |
| Teaching Strategy | Educational games strategy , Collaborative work |
| Specific concept and/or skil addressed | Types of Nutrition |
| Description of Activity | Students are divided into groups and each group plays a role-play explaining a specific type of nutrition and the important nutrients in it. |
| Connections to Capstone, Grand Challenge, other subjects | No connection |
| Formative Assessment During Learning: | Good explanation of the important nutrients |

| Instructional Activity #(3 ) | |
|---|---|
| Purpose of Activity | attracting attentions to the topic |
| Estimated Time: | 10 Min |
| Organization of Students Student will work in: | Group |
| Teaching Strategy | Group work or cooperative learning |

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|---|---|
| Specific concept and/or skill addressed | Types of Nutrition |
| Description of Activity | Students are divided into groups, and each group begins by conducting a short research on different types of nutrition and their importance, and then presenting the results to the class. |
| Connections to Capstone, Grand Challenge, other subjects | No connection |
| Formative Assessment During Learning: | Good presentation of the information obtained |

| Instructional Activity #(4 ) | |
|---|---|
| Purpose of Activity | attracting attentions to the topic |
| Estimated Time: | 5 Min |
| Organization of Students - Student will work in: | Individually |
| Teaching Strategy | Discussion or critical thinking |
| Specific concept and/or skill addressed | Types of Nutrition |
| Description of Activity | In this activity, students are asked to discuss the benefits and drawbacks of each type of nutrition, and whether or not one type is better for overall health. |
| Connections to Capstone, Grand Challenge, other subjects | No connection |
| Formative Assessment During Learning: | Good discussion work and critical thinking |

**Evaluation of Evidence:**

Quiz:
https://docs.google.com/forms/d/1S1NZCagQTNUVEiF-QNouz1wZugHj3EltOjNB6Dg08Mo/edit

**Homework:**

Answer these questions:

1. Which of the following is not a benefit of proper nutrition?

A. Provides the energy needed for vital processes.
B. It can treat genetic disorders of the organism.
C. Provides materials for growth and repair.

2. In order for autotrophs to perform photosynthesis, they need to obtain all of the following from the surrounding environment, EXCEPT:

A. Carbon dioxide
B. Water
C. Organic matter
D. Sunlight

3. Which of the following terms describes a person?

A. carnivore
B. herbivore
C. Feeding throw
D. Feed mixture

4. Which of the following applies to the method of feeding bacteria?

A. Some bacteria are autotrophs.
B. Some saprophytic bacteria.
C. Some bacteria are heterotrophic.
D. All answers are correct

5. What are the properties of nutrients that non-autotrophs obtain from other organisms?

A. It is low energy and simple to install.

B. They are characterized by high energy and complex structure.

C. It is characterized by high power and simple installation.

D. It is characterized by low energy and complex installation.

| **Teacher Notes and Reflections:** |
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| **Samples of Student Work (Exceeds Expectations, Proficient, Needs Work):** |
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