

Grade: 6

Learning Area: Natural Science and Technology

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Learning Area: Natural Science and Technology

Topic: Photosynthesis – Plant and Food

SILENT SITTING:

- Sit up straight.
- Gently close your eyes.
- Relax your muscles and smile as you breathe in and out.
- Visualize yourself walking through green fields with a gentle breeze blowing and bringing in the fragrance of the plants.
- You are one with nature.
- You feel at peace.
- Gently open your eyes, relishing your experience.

VALUE: Peace

SUB VALUE: Sharing

CONTENT:

A) AS PER CURRICULUM (*May use your required template as per National protocol or this part*)

Integrate whenever as asterisks appears on lesson plan

- The sun and air come free of cost. This is creation. The work of God.
- Why can't man live off the land with fresh fruit and vegetables and lead a healthy life.
- How would man benefit by having plants in his home?
- Besides animals who else need oxygen to survive?

Additional Homework

Look for spekboom plants and share with other learners. Research the benefits of spekboom. Ask your parents to assist you.

B) INTEGRATION:

1. *Within Learning Areas*

Refer to the asterix on the lesson plan.

2. *Between Learning Areas*

Science/life skills

3. *Into The Universe/ Cosmos/ Creation*

We must learn from nature how to give and expect nothing in return (sun, air, water etc.).

c) SELF REFLECTION:

Learn to live off the land by planting and nurturing simple seeds and sapling like meethi, also planting of trees which provides us with oxygen, shade, fruit, etc.

TOPIC: Photosynthesis

1 A

Term 1, Week 1, Lesson A
Lesson Title: Plants and Food
Time for lesson: 1 hour

A POLICY AND OUTCOMES					
Sub-Topic		Photosynthesis			
CAPS Page Number		47			
Lesson Objectives					
By the end of the lesson, learners will be able to:					
<ul style="list-style-type: none"> • describe the process of photosynthesis • draw a flow diagram of the process 					
Specific Aims	1. DOING SCIENCE + TECHNOLOGY			✓	
	2. UNDERSTANDING + CONNECTING IDEAS			✓	
	3. SCIENCE, TECHNOLOGY + SOCIETY			✓	
SCIENCE PROCESS + DESIGN SKILLS					
1. Accessing & Recalling Information	✓	7. Raising Questions	✓	13. Interpreting Information	✓
2. Observing		8. Predicting		14. Designing	
3. Comparing		9. Hypothesizing	✓	15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying		11. Doing Investigations		17. Communicating	✓
6. Identifying problems & issues		12. Recording Information	✓		

TOPIC: Photosynthesis

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 1: Photosynthesis	

C CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

What living things make their own food?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

Plants make their own food.

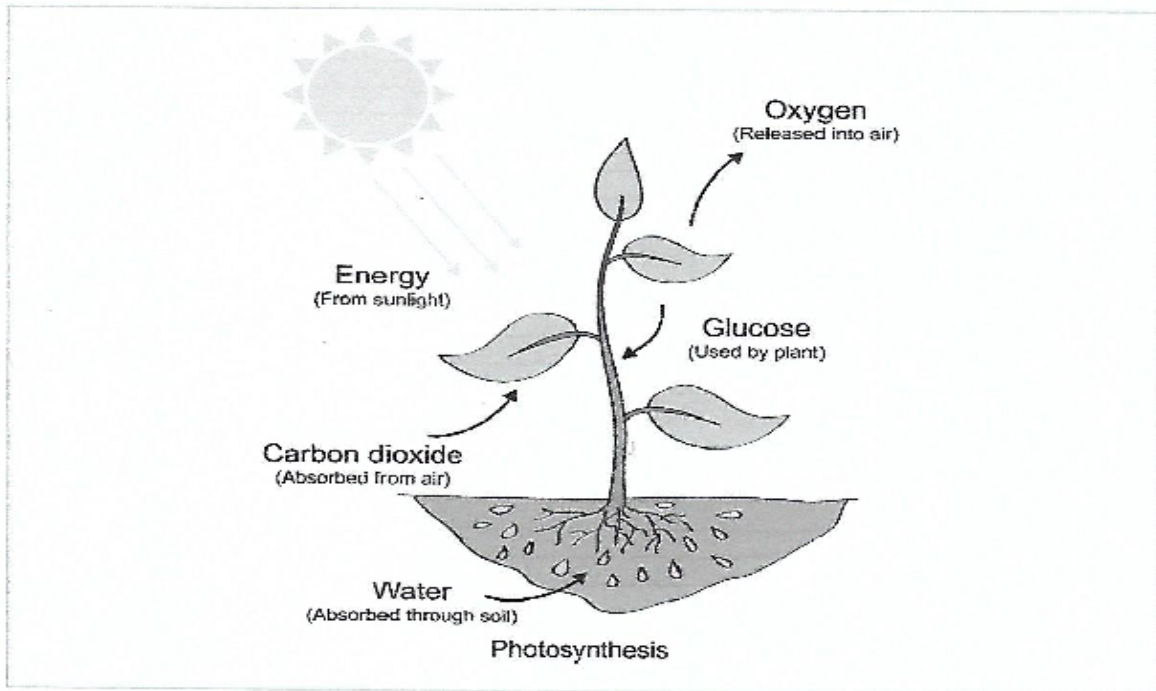
D ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

PHOTOSYNTHESIS

1. Like people, plants need food.
2. Unlike people, plants make their own food.
3. This process is called photosynthesis.
4. Photosynthesis changes the energy from sunlight into energy for food.
5. This food is a type of sugar called glucose.
6. Photosynthesis happens in the green parts of the plant, mainly the leaves.
7. Plants need three things to make food: water, sunlight and carbon dioxide.
8. Water is **absorbed** through the roots of the plant.
9. Carbon dioxide is absorbed by the green parts of the plants.
10. This changes into oxygen that the plant gives off (*releases*).

TOPIC: Photosynthesis



2. Explain this to the learners as follows:

- Plants are the only living things that make their own food.
 - This process is called photosynthesis.
 - Energy from the sun, water from the soil and carbon dioxide from the air is needed for photosynthesis.
 - Photosynthesis makes food in the form of a special type of sugar called glucose sugar.
 - The process of photosynthesis also absorbs carbon dioxide and releases oxygen.
3. Give learners some time to copy this information into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

- What is photosynthesis?
- What three things do plants need for photosynthesis to occur?

Answers to the checkpoint questions are as follows:

- Photosynthesis is the process by which plants make their own food.
- Plants need sunlight, water and carbon dioxide for photosynthesis.

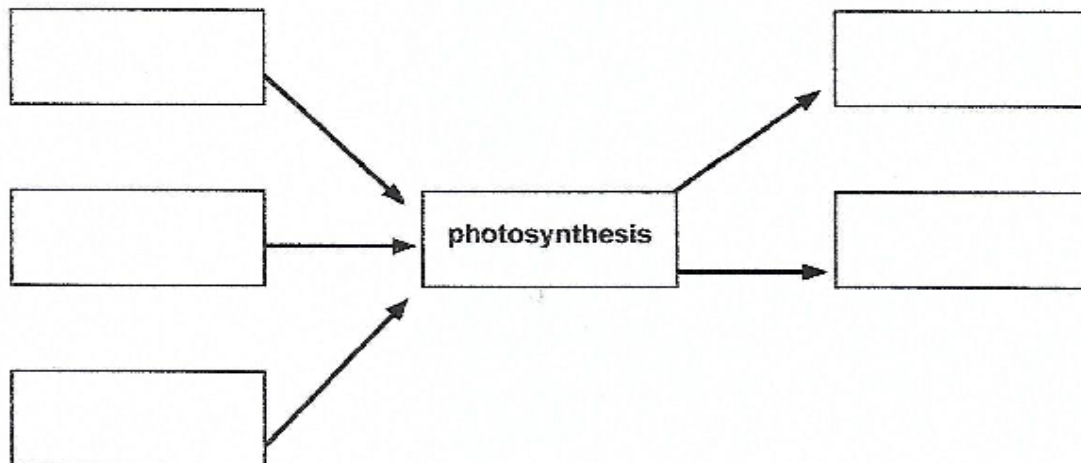
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TOPIC: Photosynthesis

CONCEPTUAL DEVELOPMENT

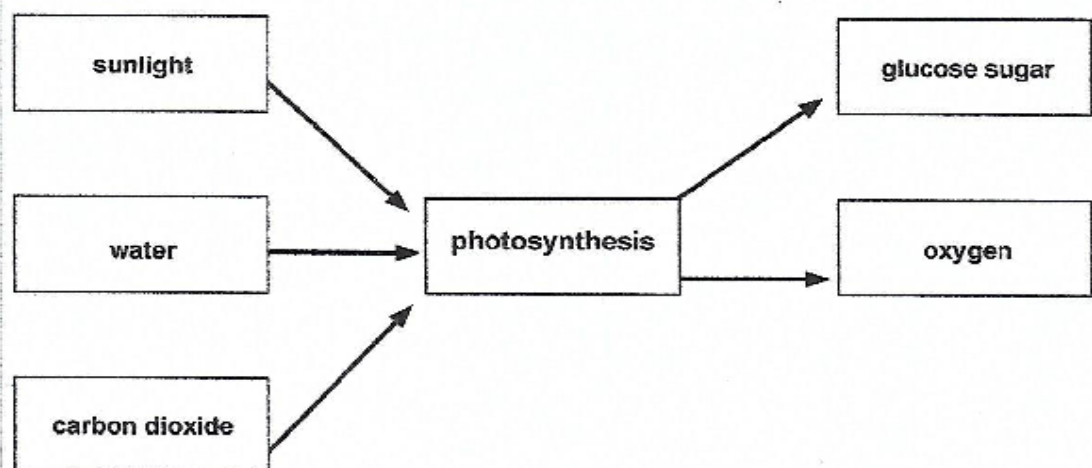
1. Draw the following onto the chalkboard (always try to do this before the lesson starts):

ACTIVITY: THE PROCESS OF PHOTOSYNTHESIS



2. Explain the task to the learners:
 - a. In the three blocks on the left, fill in the three things that photosynthesis needs to make food for the plant.
 - b. In the two blocks on the right, fill in the two things that result from the process of photosynthesis.
 - c. Point out the arrows to the learners. Explain that these arrows show the steps in the process.
3. Give learners some time to complete this task in their workbooks.
4. The model answer is:

THE PROCESS OF PHOTOSYNTHESIS



TOPIC: Photosynthesis

5. ACTIVITY: Why animals need plants.

Write the following on the chalkboard (always try to do this before the lesson starts):

Question: Why would animals not survive if there were no plants? Give two reasons for your answer.

6. Explain the following to the learners:
- Each learner must write down an answer to the question. Give the learners two minutes to do this.
 - Each learner must share their answers with a partner. They must discuss their answers and change their answers if they need to.
 - Ask three learners to share their answers with the rest of the class. Discuss these answers.
7. The model answer is:

- Plants release oxygen which animals need in order to breathe.*
- Animals eat plants or other animals which also eat plants.*

Checkpoint 2

HOMWORK

Ask the learners the following questions to check their understanding at this point:

- Give two reasons why animals need plants.
- What type of sugar do plants make for their own food?

Answers to the checkpoint questions are as follows:

- Animals need plants as they eat plants or animals that eat plants. Plants release oxygen which animals need in order to breathe.
- Plants make glucose sugar.

8. Ask the learners if they have any questions and provide answers and explanations.

Grade:6

Learning Area: Natural Science and Technology

Topic: A simple circuit: Components of a simple circuit (CAPS pg. 52)

SILENT SITTING:

Sit up straight with hands on your lap and eyes closed. Breathe in and out. Visualize a beautiful sunrise with the rays streaming into the class. Feel a sense of warmth and wellbeing. Smile. Gently open your eyes.

VALUE: Peace/ Right Conduct

SUB VALUE: Sharing and Caring/ Respect

CONTENT:

A) AS PER CURRICULUM (*May use your required template as per National protocol or this part*)

Lesson objectives: Pupils will be able to:

1. Name the 3 necessary components of a circuit.
2. State the purpose of each of the components.

Specific aims:

1. Doing science and technology
2. Knowing the subject content and making connections

Resource: a simple circuit

Classroom management: Ask the following question: "What is the output energy of an electric stove?"

Learners should discuss with the teacher and with fellow learners.

Important to share knowledge, explain it to your fellow classmates who don't have electric stoves. Answer the question in their workbook.

The answer will then be given by the teacher: "an electric stove's output energy is heat."

Question: Do we have any other type of stoves that can be used, and heat will still be produced? Discuss. What do you do when there is load shedding? What do homes without electric stoves use?

A. Notes as follows should be given to pupils:

1. The 3 components of circuit, a circuit has at least 3 components
 - a source of electrical energy
 - conducting material such as wire made from a metal
 - a device that transfers energy.
2. A cell or a battery is a source of electrical energy
3. The conducting wire connects the cell to the other components of the circuit.
4. The output device converts electrical energy to useful energy.
5. The conducting wire then connects the output device back to the cell.
6. This provides a closed system for the electrical energy to be transferred from the cell to the output device and back to the cell.
7. This is called a circuit; the teacher should show a model of this.

B. Explain fuels and petrol to the learners as follows (give notes):

1. A circuit must have 3 components: a source of electrical energy, conducting wire and an output device.
2. These 3 components must connect to make a circuit.
3. Cells and batteries provide electrical energy.
4. Electric wire is metal wire covered with insulated material.
5. The electric wire connects the source of energy to the output device.
6. The output device converts electrical energy to some form of useful energy.

Questions:

1. Name the 3 components that a circuit must have.
2. What does conducting wire do?

Homework: Draw a diagram of a simple circuit. You may seek help from your parents.

B) INTEGRATION:

1. *Within Learning Areas*

Not everyone can afford electricity, but everyone can enjoy the warmth of the sun. How does your family cope without electricity, think of nature? Burning fires in winter will keep you warm. Share wood/coal with your neighbors. If your school undertakes a winter warm up project how can you help?

2. *Between Learning Areas:*

Science/ Geography/ English

People in different parts of the world use electric circuits. However, note that not everyone can afford electricity, hence they make use of other modes of obtaining heat.

3. *Into The Universe/ Cosmos/ Creation*

The sun gives light without connecting to any circuit, the sunlight shines free of cost. However, whatever is made by man has a cost to it. Enjoy solar energy free of charge.

talk about natural resources that can provide heat.

c) SELF REFLECTION:

Child asks himself/herself:

I reflect on my childhood days when we used coal stoves and lanterns. Makes me appreciate the simplicity of life. Do I take note of the child in class who has no electricity at home. How can I help?

Grade: 6

Learning Area: Natural Science and Technology

Topic: Solids, Liquids and Gases

SILENT SITTING:

- Sit up straight
- Put your hands on your lap
- Gently close your eyes
- Breathe in and out
- Feel the air that you take in through your left nostril filling your lungs
- Exhale from your right nostril removing all negativity
- Repeat a few times
- Imagine you are a balloon filled with air, floating up into the sky
- Enjoy your flight
- Now gently open your eyes and realize you are back in the class
- Ask yourself if you can float like that
- Discuss with other learners later

VALUE: Love

SUB VALUE: Harmony

CONTENT:

A) AS PER CURRICULUM (*May use your required template as per National protocol or this part*)

See attached lesson plan

Integrate where there is an asterisk (*)

- * mankind must learn to understand and adjust
- * is it possible for man to make his own food using natural resources
- * like our soul that can never be destroyed
- * there is harmony in their movement pattern
- * show unity in diversity – same as us as we come from diverse background and respect each other

B) INTEGRATION:

1. *Within Learning Areas*

As indicated above

2. *Between Learning Areas:*

Science, Geography and Life Skills

3. *Into the Universe/ Cosmos/ Creation*

The clouds break and the rain falls.

The soil parts and a seedling sprouts

We live in harmony requiring all 3 (Liquid, Solids and Gases) which form part of our existence.

C) SELF REFLECTION:

Appreciating every moment and everyone in the universe