



WINTER EDITION  
AUTUMN

# NEWSLETTER

## MANDELA DAY

JULY 2022

Nelson Mandela Day is celebrated every year on 18 July. This year, the theme is **DO WHAT YOU CAN, WITH WHAT YOU HAVE, WHERE YOU ARE.**

We think this is a very fitting theme for all our schools and learners as we begin a new two-year EduPlant cycle!



## CONGRATULATIONS AND WELCOME TO ANOTHER EXCITING EDUPLANT CYCLE!

The first workshop introduced you to permaculture and agroecology concepts, and this EduPlant newsletter is designed to equip you with more tools to help you manage your sustainable food garden and nourish young minds

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# THE JOURNEY TO SUSTAINABLE FOOD GARDENS HAS BEGUN!

## GRACE AND HOPE PRIMARY SCHOOL

in Seshego have started implementing permaculture techniques in their garden. Their spiral shaped garden beds are looking immaculate!



## MULAKGORO PRIMARY SCHOOL

have started spending more time in the garden, preparing the beds and building the soil for healthy, nutrient dense plants.



## MC WEILER FULL SERVICE SCHOOL

in Alexandra, Johannesburg, are hard at work, gathering mulch for the compost heaps.

Stuck for lesson content?  
Here's a Grade 6 lesson plan to help you out!

## LESSON PLAN - Photosynthesis

Learning Outcomes:

Assessment Standards:

Aims and Objectives:

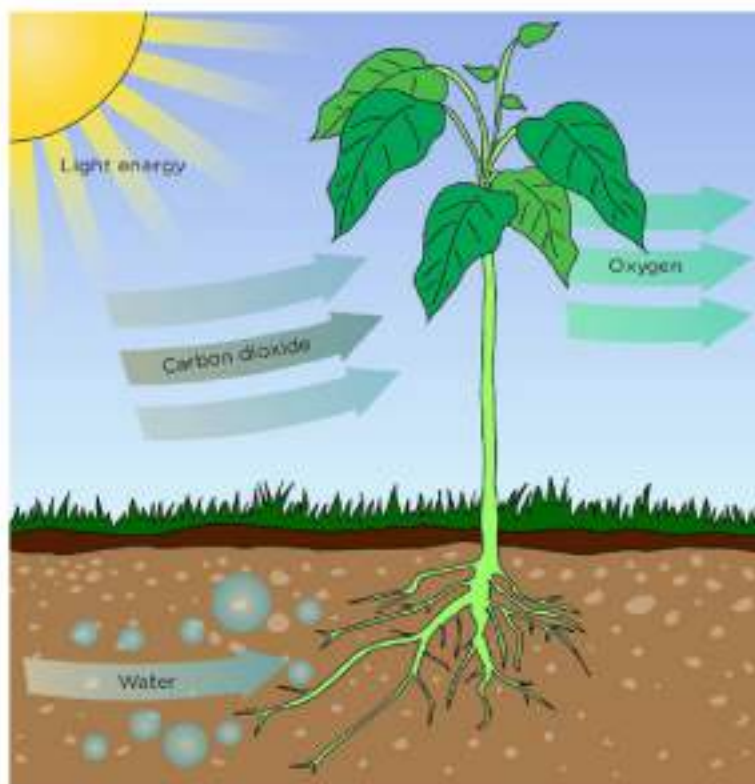
- Understand the role of plants in gaseous exchange (Carbon dioxide & oxygen)
- Understand that the process of photosynthesis results in food production

Resources - Charts, diagrams and the garden (plants are studied)

### LESSON CONTENT

Teacher's Activity - commence the lesson with the questions below, followed by detailed explanation of the content:

- Why can a plant make its own food but an animal cannot?
- What is needed for photosynthesis to happen?
- How do plants make and store food?
- Why do plants need so much water?
- Can plants live in the dark?
- Why are plants mostly green?



COPY ME!



## PLANTS AND FOOD

Green plants are just like factories! They make food for themselves and every animal on earth using sunlight energy, water and the gas called carbon dioxide. They also recycle the air and make oxygen for us to breathe. Scientists have found out exactly how plants are able to do all these things.

### THE PROCESS OF PHOTOSYNTHESIS

Photosynthesis is the process that plants use to change the energy from sunlight (radiant energy) into energy for food. Plants change light energy from the sun into food energy. Photosynthesis happens in all green parts of a plant. Leaves are usually the greenest parts. So plants do this mostly in their leaves.

### REQUIREMENTS FOR PHOTOSYNTHESIS

**Chlorophyll:** Chlorophyll is a green substance that plants use to capture light energy from the sun. Chlorophyll is very important, because without it, plants cannot use the sunlight energy to make food. Also, oxygen levels in the air will be reduced. If that happens, plants and animals will suffocate.

**Sunlight:** Sunlight has energy. Plants use this energy to make sugars from water and carbon dioxide.

**Water:** The roots of a plant absorb water and nutrients from the soil. Water is a solvent in all living things. Dissolved substances are moved around the body to where they are needed. Just like you, plants have veins for this movement. They move minerals from the roots upwards. They move sugars from the leaves downwards. Photosynthesis can only happen in a water solution. Water is also important because it provides support to the plant to keep it upright. Like you, plants have skeletons. But unlike you, many plants have water skeletons!

**Soil:** The soil provides mineral nutrients and water for the plant that are necessary during photosynthesis. Soil also provides anchorage to the plant, otherwise the plant cannot stand up straight.

**Carbon dioxide:** The plant absorbs or takes in carbon dioxide from the air through little holes (Stomata). These holes are found all over the plant, mostly under the leaves.



## HOW DOES PHOTOSYNTHESIS OCCUR?

Plants use chlorophyll, sunlight, water and carbon dioxide to make food:

- Chlorophyll captures the sunlight energy.
- Energy splits the water into hydrogen and oxygen.
- Oxygen is released into the air.
- Hydrogen is used with the carbon dioxide to make glucose (sugars).
- Sugars are moved from the leaves to other parts of the plants where they are stored.
- Water in the plant veins carries the sugars. When the sugars reach the storage parts they are changed into starch. Plants can store the starch in these places:
  - leaves (cabbage, spinach, lettuce)
  - fruit (apples, banana, peaches)
  - stem (sugar cane)
  - seeds (wheat or mealies)
  - flowers (nasturtiums, broccoli and cauliflower)
  - roots (carrots or beetroot)



**ACTIVITY!**

**Learner Activity** - Design a poster for your grade 4 friends to explain the process of photosynthesis to them. You can use sentences and short paragraphs but make sure you use many illustrations.

**Assessment** - Learners present their illustration of the process of photosynthesis.

**Teacher Reflection** - Link this topic to food groups and healthy food choices.

**FULL  
MARKS!**



## MEET ANNUNZIETTA NYANGALA

Nunzi has been an EduPlant facilitator since 2001. She says that it is her moral obligation to empower schools and communities by imparting skills and knowledge that will pave paths to sustainability and self-reliance



### Why do you do the work you do?

Our schools are central operational hubs within our communities whereby educators, learners and the surrounding communities can be reached, making this a vital entry point for empowerment.

The EduPlant vehicle strives to reach very important objectives and the ones that stand out for me are: Food Security, Health & Nutrition, Environmental Management, Entrepreneurship, Community Involvement and Curriculum Integration.

Sowing seeds in young minds on the importance of sustainable development and self-reliance has and will undoubtedly transform individuals, families, communities and our country.

### What does this work mean to you?

Firstly, I believe that the work I do is vital to uplifting the people in our country. It is very rewarding, and I am driven by a passion for the positive transformation that I see every day in this programme. I have the privilege of being a part of the bigger picture, and meeting dynamic individuals from various schools and communities over the years. Knowing that I was a part of their empowerment is very fulfilling.





**"Empowerment"**

**"Transformation"**

**"Sowing seeds"**

**"Future  
Leaders"**

**"Self-Reliance"**

Briefly tell us about one school in your cluster that stands out and highlight what the school has implemented post-workshop one.

MC Weiler Full Service School in Alexandra, Gauteng, has definitely taken the lead post-workshop one. The garden showcases mulched beds, companion planting, and herbs and onions on the perimeters that serve as pest control.

There is a composting area, and the soil is well fed and rich. The learners are very involved in gardening operations.



**Do you have any advice for the schools we are currently working with?**

Firstly, remain focused, remain positive, remain enthusiastic, and keep your eyes on your goals, no matter what challenges you may face in the development of your gardening project. In permaculture we say that every challenge is a potential solution. The benefits definitely outweigh the obstacles and the hard work. Most importantly, have fun as this is very exciting!!!

Secondly, healthy compost will produce healthy soil – healthy soil will produce healthy vegetables – and healthy vegetables will produce a healthy diet. A nutritious and healthy diet packed with fresh fruit and vegetables result in a healthy lifestyle!!!



# RECIPE - Creamy Vegetable Soup

## INGREDIENTS

1kg ground beef (optional)	200g fresh peas
30ml vegetable oil	200g green beans
4 potatoes peeled and diced	200g fresh mealie kernels
3 carrots diced	2 tsp salt
2 onions chopped	½ tsp ground thyme
4 celery ribs chopped	Black pepper to taste
250g chopped tomatoes	3 cups of water



## INSTRUCTIONS

1. Fry the meat and onions lightly.
2. Add all other ingredients except peas and corn.
3. Cook for approximately an hour. Use a handheld stick blender to mash carrots and potatoes. This should thicken your soup.
4. Add peas and corn and cook for another 30 minutes.
5. If too thin, use a tablespoon of flour mixed to a paste with water, to thicken.





**THANKS FOR  
READING!**



**FOLLOW EDUPLANT:**

