NUTRIENTS FOR LIFE NUTRIMENTS POUR LA VIE

HERE'S A LESSON WORTH TEACHING

Lesson # 4

Fertilizer 101

Appropriate for All Ages

SUPPLIES NEEDED

House plant or garden bag/box of Fertilizer

OVERVIEW

It doesn't matter if it's corn in Ontario, peaches in British Columbia, potatoes in Prince Edward Island, or canola in Saskatchewan, every plant needs three main nutrients to survive. With this lesson students will learn the importance of nitrogen, phosphorus, and potassium.

Healthy soil = healthy plants and healthy plants = healthy people

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PROCEDURE

Step 1: Explain that no matter what you grow, it needs the three primary nutrients N, P and K. In science, we call nitrogen "N." Ask for a volunteer and have them represent "N" as part of the NPK team with the provided visual aid. Nitrogen (N): About 78% of earth's atmosphere is made of nitrogen. However, most plants can't use the nitrogen directly from the air, so it must be converted. Plants need nitrogen to be green and healthy. Without nitrogen, plant leaves will be weak and yellow. Some plants require a lot of Nitrogen, so N is the first member of the NPK team.

Step 2: Ask for a volunteer to represent P. The second member of the team is P, which stands for Phosphorus. What color is the visual aid? (Yellow!) Why do you think phosphorus is represented as yellow? Without phosphorus the plant cannot conduct photosynthesis. The leaves of a plant take in energy from the sun and turn it into energy for the plant. Phosphorus or Phosphate rock is mined in many areas around the world. Phosphorus also helps encourage plants to grow strong and healthy roots, as well as helps the plant produce quality seeds, flowers, and fruit.

Step 3 : Ask for the final volunteer to represent K. Scientists call Potassium K. When mined, Potassium looks like a pink rock. Potassium protects plants against diseases and helps the plants when it is cold or dry. It also helps the food you buy stay fresh. Potassium affects the plant shape, size and taste of the produce.

Step 4: Have students give the NPK Team volunteers a round of applause. Optional questions include asking students what each N, P and K stands for as well as why it is needed by the plant as a review.

Step 5: Now, ask the students how we add these nutrients back to the soil if they are missing. Fertilizers! Show students a fertilizer bag or label and explain the three numbers represented on the bag. Every plant

needs a specific amount of these nutrients, similar to a recipe when cooking. Some need more nitrogen, some need more phosphorus. Farmers send soil samples to agronomists, or soil scientist to find out how much they need to add to their fields. Farmers strive to be environmentally friendly, as well as economical.

Step 6: Next, relate that we as humans need NPK as well. Ask students, "where do we get these nutrients for our bodies?" We get it from the plants that we eat. They got it from the soil. Use the How do Plants Grow poster as a visual aid to reiterate.

MAJOR CONCEPTS

The three primary macronutrients ALL plants need to grow are nitrogen (N), phosphorus (P) and potassium (K)
Plants need a total of 17 nutrients for healthy growth
Nutrients must be added to the soil, as they are taken up and used by the plant
Plant nutrients help plants grow healthy and increase food production

OUR MISSION

Educating Canadians about the sustainable use of nutrients to increase the health and quality of our soil, improve production of nutritious food, and preserve green spaces.

Nutrients for Life Foundation Canada is a non-profit organization that provides information and resources to educators and individuals like you, to help inform the public about the vital role that plant nutrients play in feeding the world. The information we have compiled is science-based and user-friendly. It has been successfully implemented by educators across the country. Through a grassroots effort, we can spread the word about soil health to students of all ages and to adult organizations that are always looking for

programs. Our story is not only important, but it is interesting and serves a vital **role in** educating consumers and decision-makers in the future.

This lesson is found in NFL's resource, ***Nourishing the Planet in the 21st Century***.

All of our resources are free to teachers across Canada.

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Please print the following signs for Nitrogen, Phosphorus and Potassium to use with the lesson

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PHOSPHORUS

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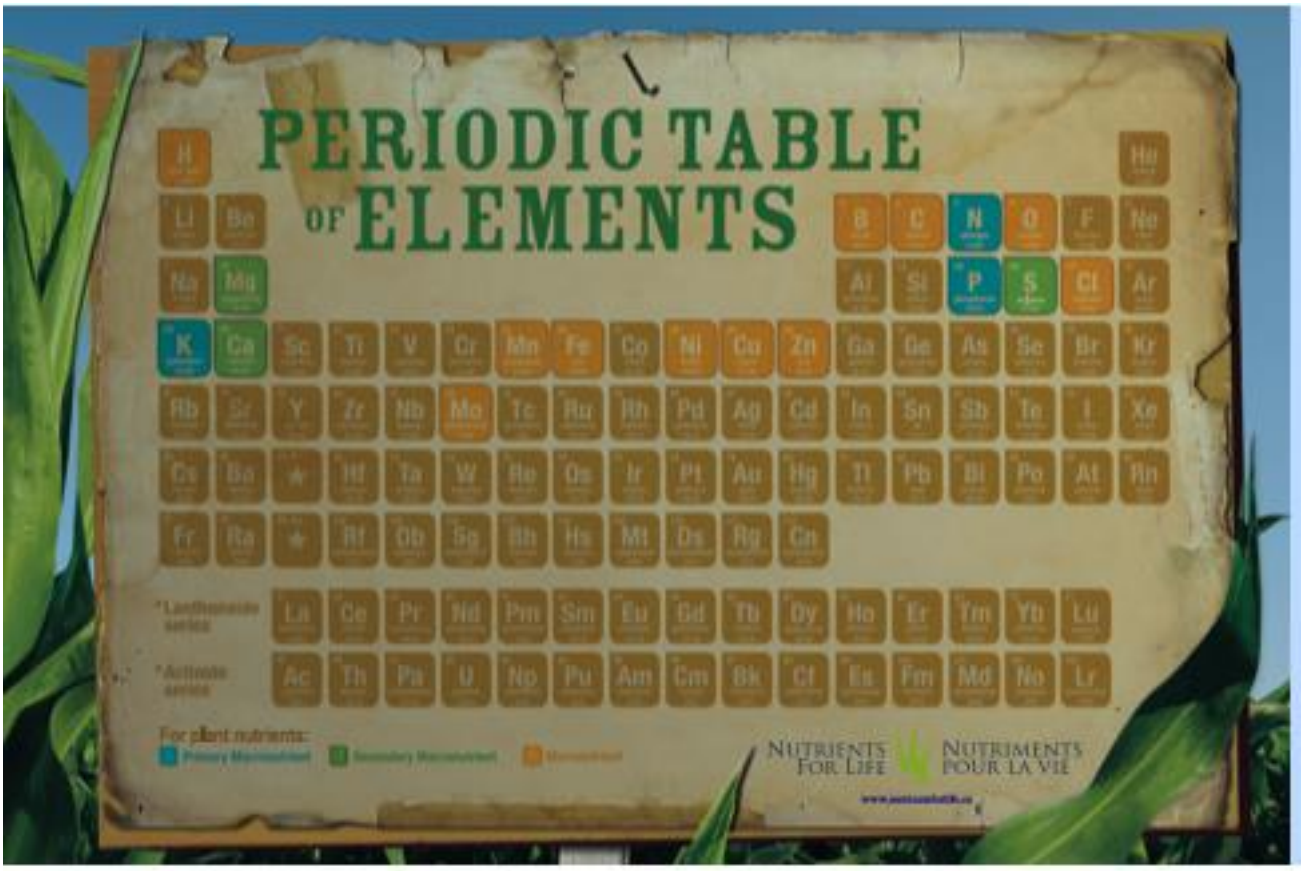
Sample of a fertilizer container

24 (Nitrogen)- 8 (Phosphorus)- 16 (Potassium)



Here is our poster highlighting all 17 essential nutrients that plants need to grow (order online today)

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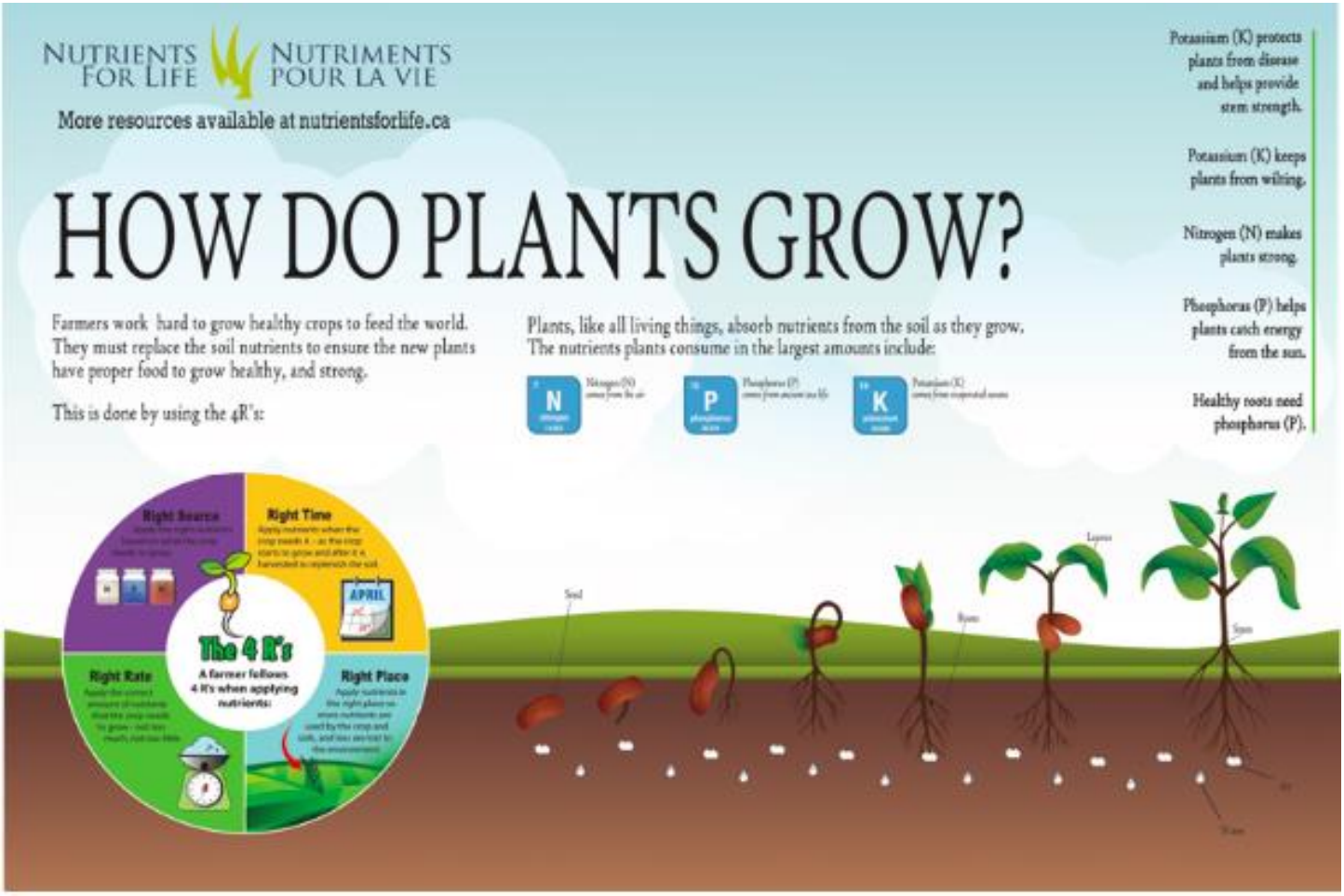

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