# Diversity on your table

Why is Biodiversity important?

**"Finding out"**

Learners will find out how genetic and species variation relates to Biodiversity

**Grading**:

**Time**:

**Place**: Inside

**Group size**: Whole class and/or small groups

***Activity Outcomes:***

*Learners are able to:*

- understand the importance of genetic variation
- appreciate the variety of plants and animals
- record and interpret data
- draw conclusions

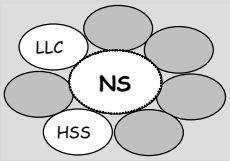
***Assessment:***

- Group assessment
- Assess understanding of concepts through discussion

***Skills:***

- Investigation
- Appreciation of species and genetic variation

***Learning Area links***




## *Background*

The food we eat today comes from many parts of the world, domesticated by the people of diverse cultures from a variety of wild plants and animals. In a given day, we may eat food that originated on 6 different continents. It is important that learners consider the **genetic diversity** that allows this and that provides the genetic material for different food in the future.

## *Activity Guidelines*

**Needed**: *Food Origins page (Page B7)*

- Learners make a list of all the foods they have eaten in the last 24 hours
- Ask the learners:
  - if they know where the food comes from; is the food from their garden; from a farm or was it transported from another area of the country.
  - where was the food originally grown.
- Read the Food Origin handout to find out how international their diet is.
- Write the country of origin next to the food on the list.
- Discuss with the learners how different their diet would be if they only ate foods that were grown locally. Would their diet be as nutritious or as interesting?

## *Variations*

### Discussion

Discuss what the people indigenous to your area ate before foods were brought in from around the world. Would it be possible to find those same plants and animals today? How has the change in local biodiversity influenced your diet?

## Problem solving

Read the following paragraphs to the learners. Let them discuss the questions below.


The potato was domesticated from wild plants in the mountains of Peru long ago. Farmers there have developed 100's of varieties that have different flavours and colours, are adapted to different climates and altitudes, are resistant to different pests and diseases, and are appropriate for different types of preparation (baking, frying, etc). European explorers brought back a few varieties to Europe and by the 1800's, the staple food of Ireland was the potato. In the 1840's, a fungal infection called "the blight" wiped out the potato crop. It is estimated that one million people starved and as many emigrated to other countries. Why was the blight so devastating? Because all the potatoes grown in Ireland were one variety; there was no genetic variation and every potato was susceptible to the disease.

- How could the Irish have prevented or at least lessened this problem?
- In nature, there often are droughts, floods, and diseases but rarely do entire species disappear as a result. How does genetic variation help plant species?
- How many varieties of mealie are grown in South Africa? How many varieties of potato and other staple foods are grown here? To find out, learners may have to ask a farmer or an owner of a fruit and veg shop, or call a Department of Agriculture office. Could a blight cause starvation here? Traditionally, small farmers plant a variety of crops, not just for variety in their meals but in case of disease, flood, or drought. Usually at least some plants survive to provide food for the farmer. Today, huge farms tend to grow one variety of one type of crop. Do you think this is a smart strategy?

***Varieties***

Visit a local nursery, choose a flowering plant e.g. a rose: find and list the different varieties.

## *Food Origins*

| Food | Origin |
|---|---|
| Apples | Europe |
| Apricots | Asia |
| Avocado | Tropical America |
| Bananas | South Asia |
| Beans (Green) | Central America |
| Beans (Dried) | Central America |
| Beef | Asia |
| Blackberries/raspberries | Asia |
| Chicken | South Asia |
| Cranberries | North America |
| Brinjals | Central America |
| Carrots | Europe |
| Coffee | East Africa |
| Goat | Middle East |
| Grenadilla | South America |
| Grapes | Middle East |
| Green Peppers | Central America |
| Lamb | Middle East |
| Lentils | Asia |
| Lettuce | Europe |
| Mealie | Central America |
| Millet | Africa |
| Onions | Europe |
| Oranges | South Asia |
| Peaches | Asia |
| Peanuts | West Africa |
| Peas (Green) | Europe |
| Pineapples | South Asia |
| Potatoes | South America |
| Rice | Asia |
| Squash | Central America |
| Tea | Asia |
| Tea (Rooibos) | South Africa |
| Tomatoes | Central America |
| Abelone | South Africa |
| Wheat (Bread, Pasta) | Middle East |