Interdependence

"Tuning in & Finding out"

Learners research the biodiversity of species and their dependence on each other and on natural resources.

Grading:

Time:

Place: Outside and/or inside

Group size: Whole class and groups of up to 6

Activity Outcomes:

Learners are able to:

- appreciate the dependence of one species on another and therefore the importance of biodiversity
- understand the importance of every link in the web

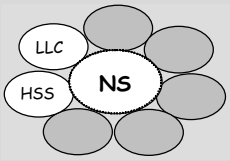
Assessment:

- Educator assesses understanding through food web choices. Take note of how they managed the activity.

Skills:

- Communicating and creating the web
- Interpretation and drawing conclusions
- Appreciation for all interactions in nature

Learning Area links



What a tangled web we weave

Background

The plants, animals, and non-living resources in ecosystems are all intricately connected. By visually linking these elements, one can see that a web is formed. But should anything happen to some of the strands forming the web, the web can no longer function. So it is with ecosystems. There are different levels of diversity, within an ecosystem, which are needed in order that the system can function properly.

Activity Guidelines

Needed : *20 m of string or yarn, name tags, poster paper and koki pens.*

- The learners as a class, make a list of all plants, animals, decomposers and other resources (soil, water, sun) that they can think of for a particular ecosystem (i.e. fynbos, high veld). This may first require some research.
- Each learner then chooses (or is assigned) to be one of the components of the ecosystem and creates a nametag for him/herself. They can use written words or/and pictures.
- Then the learners all stand in a big circle.
  - One learner holds one end of the ball of string and then tosses the ball to another learner who represents a plant, animal or resource that is directly related to the ecological component that the first learner represents. (For example, if the first learner is a striped mouse, she may toss the string to a learner representing a puff adder – which eats striped mice - or a pincushion plant - which are eaten by striped mice.)
  - The second learner then holds on to his piece of string and tosses the ball to a third learner. **Soon a web will be created.** (See illustration on page E27.)
- When all the learners have been included in the web, introduce the idea of an event that causes one of the components of the ecosystem to be destroyed or go extinct. (For example, frequent burns that do not allow the pincushion plants to

This activity can be used as an extension of Activity 1.3.

regenerate. Then pugnacious ants and striped mice will go hungry and their populations will drop.) Tell the learners affected by the event to let go of the string. Without those species, other species are affected. The learners discuss what has happened, the long term repercussions and what can be done to avoid such problems. They should discuss how ecosystems need all their components to function properly and that the loss of a key component can cause the whole system to collapse.

Variations

South African Posters

Learners create posters depicting food webs for several South African ecosystems.

Create a Wall Web

On a large bulletin board or wall, tack or tape the plant and animal nametags used in creating the web and connect them with the string—reproducing the web created by the students.

Observation of nature

Learners explore the connections in nature around them. In a natural area of the school or near to the school, allow learners time to observe the interconnections such as birds with trees, flowers with soil, sun and insects. Have each of them sit in one spot to observe, with each learner seeing things from a slightly different perspective. Encourage them to be creative in the connections they see. Later, as a whole class, discuss how these connections are important.