A New Forest; The Next Generation
For Teachers use Indoors

Introduction

A New Forest: The Next Generation is based on a program offered at the Natural Resources Education Centre in Nova Scotia. It is aimed at students at the grade 3 - 4 level. It is designed to increase their awareness of the importance os sustaining the forest resource and allow them to make their own discoveries. The following activities are meant to instill curiosity and knowledge in the students, and to make their experience with nature a positive one.

This lesson is aimed at those Teachers and students who are unable to access a "wild area" and allows Teachers to bring nature into the classroom. The program includes a basic lesson guide that introduces the basic concepts to be explored as well as a selection of hands-on activities to help reinforce these basic concepts.

Introductory Lesson - Phase 1

For this introductory phase it would be beneficial to have a small potted tree in your classroom. (coniferous or deciduous).

The first topic to explore is the tree. You can use the following questions to assist you in your dialogue with the students:

Q. ***Lets look closely at this tree, can you tell me anything about it? What kind of a tree is it?***

A. Hardwood (deciduous or broadleaf) or Softwood (coniferous or evergreen) Softwood trees are easily identified by their green needle-like leaves. The other distinguishing factor is that they always keep their needles year round (one exception is the larch tree). The hardwood trees have leaves which drop each year in the fall. In Nova Scotia we have approximately 40 native species of trees.

Q. ***How old is the tree? Do you think it is old or young?***

A. Young trees can be aged by counting the whorls of branches. Starting at the top of the tree, find each group of branches that completely encircles the stem. This would be counted as one year.
In older trees you have to get a cross-section of the stem so that you can count each annual ring.

Q. ***Is the tree healthy?***

A. Most trees will indicate whether they are healthy by displaying a deep green color. If the color is yellow-green, this usually indicates poor soil and as a result a lack of nutrients and minerals that the tree needs. Other signs of health problems could be an overabundance of old man's beard, fungus, witch's broom, scars, etc.

Introductory Lesson - Phase 2

The second phase of discussion will involve the basic needs of trees. In this part of the program you are instilling in the children the basis of what any healthy tree or healthy forest needs. If you can collect some tree seeds (cones, nuts, etc.), and bring them into the classroom having enough for each child to carefully observe, it will prove helpful in completing this exercise.

Q. ***Can anyone tell me what a recipe is?***

A. A recipe provides three things:
1 - the ingredients you need
2 - how much of each ingredient you need
3 - the instructions of how to make you recipe

There is a recipe for a healthy tree and a healthy forest as well. Trees need:

A - Sun (for making food) * See Coloring Sheet Attachment on photosynthesis
B - Soil (to stabilize and provide water and nutrients)
C - Seeds (for reproduction) * have the students look closely at the seeds - if you have a good selection have the students group the seeds together into hardwood seeds and softwood seeds.
D - Space (room to grow)
E - Shelter (protection from the elements)

Q. ***Is there an exact measurement for each ingredient?***

A. No, but so that students get an idea that these five things are needed in some proportions you can complete the recipe as follows - see Forest Recipe attachment.

A - Pinch of **Seeds**
B - Heaps of **Sunshine**
C - Buckets of **Soil - Water**
- Nutrients
D - Lots of **Space**
E - Piles of **Shelter**

Supplementary Activities

The following activities can be completed in the classroom with some resourcefulness. These activities will be of benefit to the students as it allows them to be an intricate part of the whole learning process.

Activity # 1: Plant-A-Seed

For this activity you will need the following supplies: potting soil,, tree seeds (try a local landscape nursery), water, plastic wrap, small paper cup, and an elastic. The following

instructions will guide you through this exercise:

A) Each student takes a paper cup. Punch five or six drain holes in the bottom with the point of a pencil from the outside in.

B) Dip each cup into a bin of potting soil and fill to the brim. Press down until the surface of the soil is firm.

C) Slowly wet the soil in each cup until thoroughly moistened.

D) Sow seeds: four or five seeds in each cup.

E) Cover the cups with a layer of thin plastic wrap to prevent drying out during the next two or three weeks. Secure the plastic in place with an elastic. At the first sign of germination, remove the plastic and place on a sunny window sill. Water lightly as needed daily misting is beneficial too. If water is chlorinated, let stand overnight before using). When seedlings are several centimeters tall, select the sturdiest looking one and snip off the rest at soil level (do not pull, this disturbs the roots of the one left). Best results will be noticed if this is done before the seedling is 21 days old (from the date of germination).

Activity # 2: Tree Identification Collection

This is a simple way for the students to understand the differences between hardwoods and softwoods as well as the variety of trees we have in Nova Scotia. This activity can be done anytime, with the only difference being in the collection of the deciduous specimens. In the late spring and early fall, they will be collecting leaves and in the winter they will be collecting twigs (twig identification is more difficult unless you have an experienced eye).

You will need the following items:
A) A tree identification book (recommended book is *Trees of Nova Scotia, by G.L. Saunders)*.
B) Tape
C) Large sheets of paper to allow the students to individualize their collection depending on the number of samples they collect.
D) Markers so that once identified the samples can then be labeled.

There are two options for collecting the tree samples:

1) If you are fortunate enough to have trees on your school yard, you could use them as a source.
2) If you don't have trees on the school yard, ask the students to bring samples from home; This option will probably provide a wider variety of samples.

Have the students tape the samples to the large sheets of paper.

Once completed, the collections can then be individually decorated and then displayed as wall hangings.