

## **ADVENTIST VIRTUAL LEARNING NETWORK LESSON PLAN**

**Title: Growth and Changes in Plants**

**Subject(s): Science, Language Arts, Art**

**Intended Grade Level(s): 3&4**

**Duration of the lesson: 2-4 weeks**

**Description:**

We are taking a field trip to a green house and the Museum of Man and Nature. Our digital camera will allow the students to take pictures for their future project. The camcorder will allow them to review all the questions and information that have been shared with us during our excursion.

Students observe and investigate local plants, but a deeper understanding and appreciation is developed through planting, nurturing, and observing individual plants over time.

Connections are made to students' prior knowledge of animal needs (grade 2- cluster 1: Growth and changes in Animals) by identifying needs that are similar between plants and animals and how those needs are met.

Students will look at the importance of plants to the environment as well as the significance of food, shelter, medicine and other plant products to humans.

Students will also use their computer class to research information concerning the different aspects of plants and keeping a journal of their findings.

## **Materials/Hardware/Software:**

The technologies that will be used this fall in this lesson are digital camera, camcorder, and television monitor.

## **Curriculum Outcomes:**

- 3-1-01 Use appropriate vocabulary related to their investigations of growth and changes in plants.
- 3-1-02 Observe, compare, and contrast the structure and appearance of several types of plants.
- 3-1-03 Show respect for plants as living things.
- 3-1-04 Conduct experiments to determine conditions needed for healthy plants growth.
- 3-1-05 Recognize that a plant uses the Sun's energy to make its own food.
- 3-1-06 Identify the basic parts of plants and describe their functions (include; roots, stems, leaves, flowers, pistil, stamen, ovule, pollen, seeds, fruit).
- 3-1-10 Care for a flowering plant throughout its life cycle, tracking its growth and its changes over time
- 3-1-13 Describe ways that plants and animals depend on each other
- 3-1-14 Describe ways plants are important to the environment.
- 3-1-18 Explain how humans replenish the plants they use and the consequences if plants are not replenished.

## **Activities/Procedures:**

The main purpose of the lesson is to acquaint the students with plant growth and its environment, as well as emphasize how human beings rely on these plants for our own survival. This is accomplished through the following activities:

1. A general introduction to the growth and changes in plants is done through the use of video. Pictures, posters, and stories are available to the students. Students are able to sit with their group and brainstorm about the video they have just seen. They are able

to write their ideas and thoughts down and share them with their classmates.

2. Each group is given a card with five vocabulary words on it. They must find the meaning of each word using pictures, words or drawing. This would allow each group to come up with unique ways of presenting vocabulary words. Some students may wish to create an object to define their word(s), this is also acceptable.
3. Invite a botanist to come and speak to the class about the importance of handling plants carefully. Students have a tendency of getting really excited when doing new projects. They need guidelines and safety procedures to follow to ensure that they show respect for plants as living things such as
  - ? Avoid trampling on plants
  - ? Touch plants only after an adult has given permission
  - ? Touch and bend the plant gently to avoid damage
  - ? Observe using sense of sight and sense of smell before using sense of touch, etc.

Assign one person from each group to take a few pictures our speaker and the interaction with the other students.

4. With the help of the botanist, a plant observation center is set up where students sort and classify plants.
  - ? There will be a large amount of plants that show a variety of roots, leaves, flowers, and seeds.Students must be able to explain the method used and then resort and relabel the groups.
5. Students are able to conduct experiments to determine which conditions (light, water, air, space, warmth, growing medium, nutrients) are necessary for plant growth. Only one variable is changed at a time and all other conditions remain constant. Each group of students will be responsible for one of the conditions and must ensure that all the other conditions are kept constant
  - ? Each group must record their observation about each condition in their science journal.
  - ? Each group will take pictures of their group's plant growth. They will use Blackline Master – Observation Checklist to answer a few questions about the group work.

- ? Each group will look back at creation – how plants lived before sin entered our planet, and how the growth and changes in plants were affected after sin.

At the end of their experiment, they can scan pictures, create slide shows, or use software to create multimedia presentations. Then they can present their findings to the class.

6. Each student will select a plant of their choice and identify the basic parts of the plant and describe their functions. They will present their report to the different grade levels (k,1,2,5,6) group. The plant from each group will be compiled into a booklet that will be laminated and used in our class for future reference.
7. Each group will be responsible for taking care of a plant. Do a short discussion on what techniques work best for the plant to grow;
  - ? Playing music
  - ? Talking to the plant
  - ? Saying kind words
  - ? Watering the plant
  - ? Expose the plant to sunshine
8. After loggers harvest trees, new ones should be planted to ensure a future lumber supply. Students will watch a video on reforestation. Using their science journals, they would reflect on why it is important to plant trees to replace those that are harvested or destroyed by fire, and the effect it has on our environment etc.
9. Each person will write a letter to their parents and loved ones inviting them to come and share what they have learned about “growth and changes in plants”. Everything would be set up prior to their visitation. Parents would be allowed to ask questions on anything that may not be clear. Students will be able to answer their questions.

I have found the following websites to be very helpful and appropriate for gathering information for both teacher and students. There are some students who may struggle with print. The pictures and sentence structure

are appropriate for the grade level. Some of these sites will lead you to many other sites that are helpful.

[http://www.bbc.co.uk/schools/revisewise/science/living/06\\_act.shtml](http://www.bbc.co.uk/schools/revisewise/science/living/06_act.shtml)

[http://www.ec.gc.ca/envirozine/english/issues/11any\\_questions\\_e.cfm](http://www.ec.gc.ca/envirozine/english/issues/11any_questions_e.cfm)

<http://www.linkolearning.com/life/plants.htm>

### **Assessment/Evaluation:**

Students will be assessed on their journal, group presentation/report, their research, and their slide show, or power point presentation.

### **Follow-up Activities:**

Students will compile all their work to form three or four booklet ( poems, story on plants, and facts on plants. One copy of each booklet will remain in the class as an archive.

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