Overview: Plants have many unique ways of adaptation to their growing environments. In this lesson students will learn about evergreen trees and especially focus on coniferous ones that are abundant in Saskatchewan. At the end of the lesson students will create a cardboard evergreen tree that they can decorate.

PL3.1 Curriculum: Growth and development of plants (grade 3)

Materials: - heavier green construction paper, two sheets per student
- some scissors, tape, stickers of Christmas decorations or crayons
- two glasses and small amount of plastic wrap for the experiment

Explore: Start the class by talking about the change of seasons from fall to winter. Explain that once all the leaves fall off the trees things can look a bit grey. Before long it begins to snow and one of the nicest sites is the evergreen tree covered in snow. Ask the students why they think evergreen trees stay green all year round? They should have an idea that here in Saskatchewan we have two main categories of trees the broad leaf ones that lose their leaves every fall (deciduous) and the evergreen ones that always have needle leaves on them (coniferous).

Explain that needles are leaves. Evergreen trees are regular trees whose leaves are rolled and covered with wax. The needle leaves can be short and prickly, longer and have two needles coming out from the same point or grow in clumps of long thin needles. This will depend on the species of the trees. Explain that species are different types of evergreen trees. Just like all the students are humans each is an individual from a family. You could relate to the students that trees also have sort of families groups that are similar. Write on the board and show pictures of the following evergreen tree examples to display the various species (families).

Jack Pine
Black Spruce
Balsam Fir
Let the students know that these are only examples of the many evergreen trees (conifers) that are part of our boreal forest. Around the world there are many types of evergreen trees that are not coniferous. An example would be a palm tree.

Evergreen trees are used by birds and animals for shelter and food. People need evergreen trees for shade, wood and building supplies. Native people have used evergreen pitch as a soothing medication and for sunburn prevention. The tips on the young branches of some evergreens provide vitamin C when eaten. This is good to know if you are ever lost and in a survival mode.

Many places there are even Christmas tree farmers that grow and sell trees for the Christmas season. Ask the students if any of them have gone to a tree farm to pick out a Christmas tree for their home. Do a quick survey of how many students have live trees in their homes at Christmas verses those with artificial trees? Make the point that farming trees is similar to farming food crops.

Evergreen trees look green all year long but that does not mean they are not losing their leaves (needles). If you look under an evergreen tree you will find many shed needles. Often they lose their oldest needles at the same time they are producing new ones. Ask one of the students if any hair comes out when they brush their hair? Ask them why they are not bald then? For the evergreen tree it is similar they are losing needles and at the same time producing new ones so they always appear green.

Plants evolve adaptations to help them survive. For the evergreen trees in Saskatchewan the growing season is very short compared to southern locations. Trees use light and water and nutrients from the soil to make their food. Always having green needles the tree can gather light in winter. Being small and rolled up with a waxy coating the needles also conserve water. So in the winter if water is available in a useable form they can make food for themselves all year long.

Experiment: To bring home the point that the needles conserve water with the help of their waxy coating show the students two glasses of water. Tell them you are going to cover one with plastic wrap to simulate the wax covering on the evergreen tree needles. Tell them you will put the two glasses in the sun and check over time which glass the water will evaporate fastest. Have the students predict which one the water will be gone from first. Follow up in a couple of days when the water is gone from the first glass.

Indicate that now that the students have a better understanding of evergreen trees they are going to create a construction paper one that they can decorate and take home. For fun you can ask them the following jokes as you get the supplies ready to hand out.

Riddle: What do elephants and trees have in common?
Answer: They both have trunks.

Q: What did the little tree say to the big tree?
A: Leaf me alone!

**Conclusion:** It is important to learn about the things we see around us. Evergreen trees are abundant in our forest. Suggest that the students teach their parents some of the things that they learned about evergreen trees when they show their creation to them.
Here is how to make a stand up Christmas tree.

Fold heavy colored paper, two sheets together.

Draw tree outline.

Cut out the tree then fold in half.

Separate the two halves. Cut one half way up and the other half way down. Insert one tree into the other.

You can add bits of tape at the top and bottom of the tree (inside) to strengthen it for standing. Students can then lay the tree flat and draw on lights and decorations.

Samples pictures of decorations that students may draw on their trees: