Science 10 – Introduction to Weather Dynamics

Weather is defined as the day to day, short-term environmental conditions that are experienced in a location. *Climate* refers to the patterns of weather, including temperature, rainfall, wind, humidity, pressure and cloudiness, in an area over a period of years. It is what can be expected. Both weather and climate are created by interactions between the Earth and the Sun. Since weather is so much a part of our everyday lives, it is important for students to develop a working knowledge of weather dynamics. The weather determines what we'll wear, where we go on vacation, when to plant a garden or crop and what kind of tires to put on our vehicles. The goal of this unit is to familiarize students with:

a) factors that affect our climate
b) how *energy* and *water cycle* around the planet
c) the affects of severe weather on the Earth and its inhabitants
d) how humans are contributing to a changing climate.

Some of the key questions that students will be able to answer on completion of this unit (as outlined by Sask. Learning curriculum) are:

1. What is the difference between weather and climate?

2. What are the impacts of severe weather on our planet?

3. How do *meteorologists* collect data?

4. What are the scientific principles that explain global weather dynamics?

5. How do meteorologists forecast the weather locally and globally?

6. What major natural and human factors influence climate change?

7. What are the effects of global climate change on our *environment*?

Vocabulary

climate – the weather conditions of a location averaged over many years

energy – the capacity to do work

environment – surroundings of an organism, including the biotic and abiotic parts

meteorologist – a person who studies the Earth's atmosphere and weather systems

water cycle – (hydrological cycle) cyclic movement of water from the Earth's surface to the atmosphere, via evaporation and transpiration, and then back to Earth's surface via precipitation

weather – the day to day environmental conditions in a location