Snowflakes

Materials:
Black construction paper
Magnifiers
Snowflake identification Chart

“These tiny, beautiful shapes are gifts from the sky that are pure magic to a child” says childhoodbynature.com.

On a snowy winter day, you can take your class outside and catch snowflakes on the black construction paper provided (or black mittens or a black coat) and use the magnifiers to study the shapes. You can figure out what type of snowflakes are falling using the identification chart provided.

A study of snowflakes reveals that each snowflake has a distinctive shape that is determined by the conditions under which it was formed. All snowflakes have 6 sides because the snow crystal begins with a hexagonal plate. As the crystal grows bigger on its journey to earth, branches or arms sprout from the six corners of the plate.

Snowflakes form in very cold air when water vapor freezes around bits of dust to form solid crystals which are heavier and fall to the ground. As they tumble through the clouds, the arms grow depending on the humidity and temperature of the air. So each snowflake is symmetrical because it experiences conditions in the same way, but the next snowflake takes a different route and experiences different conditions, so it looks different. No two snowflakes can travel the same route to earth.

Because of the fascinating way they are formed, snowflakes come in an infinite number of shapes. Scientists classify the different shapes. There are Stella crystals, powder crystals, Graupel, hexagonal plates, needle crystals, and column crystals.

Snowflake Game

Materials:
2 ropes to delineate cloud and puddle, set up about 7 metres from each other
A way of differentiating the dust particle from the water vapour (bandana?)

This is a game of blob tag that represents how a snowflake is formed.
You'll need one person to be a "dust particle" for every 6 people who are "water vapour". The water vapour people are hanging out in the cloud (a delineated area). The dust particle enters and conditions are right, so every water particle that is tagged turns into a solid crystal and is now a part of the snowflake and cannot let go. The snowflake grows with each person tagged. Once the dust particle has 6 crystals attached, they are too heavy and must fall to earth (another delineated area). All 7 people fall gracefully to earth as one. Once there, the ice crystals melt and the sun hits them and they turn back into vapour and return to the cloud as separate entities, to start the cycle over again!
Students are also learning about water in its three different forms (solid, liquid, gas), and the water cycle.
It's fun to imagine where the snowflake is landing (in a river, on your house, in the mountains or a tree). You can invent snowflake dances, snowflake stories, and snowflake art.