

Snowflakes could be executed by creating a particle system in the scene that rains down particles. The particles could be made three-dimensional (not billboard), be given a low falling velocity and subject to a certain amount of noise based on the desired conditions. The low velocity is used to simulate the lightness of the snowflakes and the noise can simulate different degrees of windiness. In addition to this, the particles could be made to randomly fall in different directions. A spritesheet of some sort with multiple snowflake shapes can be used to create some variation in the snowflake shapes and make it more realistic. Depending on the shapes on the spritesheet, the snow could be made to look very intricate as snowflakes often do, or if such detail is unnecessary, the images can be switched out for more irregular looking shapes.

Through the use of a shader the snowflakes could also be subject to some light and perhaps reflect some. The color can be manipulated to reflect the snowflakes melting or disappearing after touching the ground.

It is possible that this particle system could also be used to simulate other precipitation by tweaking some parameters and changing the particle image. Rain would fall with a higher velocity and more linearly. The number of particles produced can determine whether the rain is that of a thunderstorm or a light drizzle. The rain could even trigger a sub emitter on collision to make small splashes. Hail would behave similarly but instead of disappearing or splashing would bounce against the ground somewhat and persist before melting away. Sleet could possibly be achieved by mixing together parameters of rain and hail.

