

PATIENT SNOWFLAKES

SESSION A



Patience is:

- * Waiting calmly without getting upset.
- * Trusting that things will turn out right in the end.
- * **Taking time to do something properly.**
- * Tolerating delays without complaining.

LEARNING OBJECTIVES:

To understand the importance of patience in scientific observation.

Preparation:

You will be taking a short look at the life of Wilson Alwyn Bentley, an early pioneer of snowflake study. The website <http://www.snowflakebentley.com/bio.htm> [available 03/15] is a tribute to his life and work. Search online for images of snowflakes and **electron microscope snowflakes**.

Script:

“This week we are studying patience, which means being able to wait calmly without becoming upset. Some things take time and don’t happen as quickly as we would like them to. For instance at this time of the year we often expect to see snow, and many of us look forward to it, but, did you know that a single snowflake can take up to one hour to fall to the ground?” *Show a picture of a snowflake.* “Many of these snowflakes will melt on their journey to the ground, before anyone has the chance to observe their beauty and uniqueness.”

As you can see the crystal structure of the flake is very delicate and almost all snowflakes are unique. Snowflakes occur in a wide variety of beautiful shapes and it is very unlikely that anyone will find two snowflakes that are the same. A scientist named Wilson Alwyn Bentley photographed thousands of snowflakes with a microscope from 1885 onward and found the wide variety that we know about today. He said: “*Under the microscope, I found that snowflakes* [http://snowflakebentley.com/WBsnowflakes.htm]

[available 03/15] were miracles of beauty; and it seemed a shame that this beauty should not be seen and appreciated by others. Every crystal was a masterpiece of design and no one design was ever repeated. When a snowflake melted, that design was forever lost. Just that much beauty was gone, without leaving any record behind.”

It is thanks to the patience of Wilson Alwyn Bentley that people were given a chance to see so many examples of the unique beauty of the snowflake.

Suggested Activities:

Class Discussion Starters:

Does a snowflake practise patience?

How could we use the snowflake as a symbol of patience?

What other examples of patience can the class find in the natural world?

Writing:

Write a paragraph explaining how Wilson Alwyn Bentley would have needed patience in his study and photography of snowflakes.

Maths: Snowflake Maths Activity

<http://deceptivelyeducational.blogspot.ca/2012/12/its-snowing-angles.html> [available 03/15]

Photocopy some snowflake images and have children patiently investigate how many right, obtuse and acute angles they can find.

