



Hans and Zacharias Janssen

Meeka the microscope can take the most ordinary things and show their details in a way and helps us understand the world around us from a different perspective. Let's learn about how Meeka the microscope was invented.

Strewn across the spectacle workshop of Hans Janssen were brassy wires, tightly curled coils, metal rims, shiny lenses and discarded tubes. In other words: there was a treasure chest of toys for his young son, Zacharias, to play and explore with! Just like you have probably played with paper towel tubes and made toilet paper binoculars or telephones, little Zach loved to play with his father's things in the workshop. He especially loved toddling outside into the beautiful farmland of Middleburg, Holland and looking at different plants and animals.

Whenever Zach held up something to look at under the lens, he noticed a whole new world of detail and texture – things that just weren't there before. It was magical. One day, this young scientist had a brilliant idea – as young scientists often do. He decided to put a lens into a tube. This was the beginning of the invention of the microscope!

Meeka is a new and modern version, part of a family that has been around for a long, long time. Meeka's great-great-great-great-grandmother is thought to have been invented by Hans and Zach, the father and son team who made glasses together.

Since this all happened so long ago, there are many different possibilities about how and when the microscope was invented. Although historians say Zacharias was very young at the time, he helped his father Hans in big, important ways. Together, they explored their ideas and tinkered, fiddled and played with their materials until they got a working machine! This was around the year 1590.

If we can use lenses and science to help people see better, perhaps we can use more than one lens to magnify something that's already magnified, they thought.

The earliest microscopes were long tubes with lenses connected to the eye-piece. Sometimes, they were two and a half feet long, and shaped like dolphins from expensive, heavy materials like brass! Other times, there were tubes that could slide into each other and were used by holding it in your hand, without a stand to mount things on. In those days, making something appear three to nine times bigger than its true size was a very big achievement indeed.

When Zacharias later used two lenses in the microscope, he was able to see things 20 to 30 times bigger than their actual size! It was known as a miracle.

Although it wasn't until much later that Meeka's family members began being used for research, this fabulous family has been helping us look closely at things for centuries! With a simple idea – let's put two lenses in a tube – little Zach helped inspire a whole list of discoveries.

For example, many years after the earliest compound microscope was found, Robert Hook wrote a book called *Micrographia*, where he made beautiful illustrations of the world's smallest creatures. Many scientists have discovered new species, made important observations and figured out how things work because of little Zach's curiosity and inquisitiveness.

And now, you're continuing that exciting adventure! There are so many species left to be discovered...in fact, there are over 15,000 to 18,000 new species discovered every year. With Meeka by your side, you might just make the next one! There's nothing too small to lead to a giant scientific discovery or invention.