



IMAGING PARTNERSHIP

Exploring Education Through Imaging

Nanotechnology Engineering

Sessions Overview

Through a series of entertaining and educational workshops, based on practical hands-on experiences, this course is designed to give an appreciation of how Nanotechnology contributes more and more to everyday applications, through the medium of Photography/Imaging and for pupils to gain an insight into a range of related careers. Each session incorporates facts and stories about the future of Nanotechnology, in addition to photographing smaller and smaller objects.

Breakdown of Sessions for the Nanotechnology Workshops:

Session 1: Introduction to Nanotechnology

Learning opportunities include:

- What is Nanotechnology?
- What does it mean to me?
- Very Big Numbers to Very Small Numbers

Session 2: Size and Scale

Learning opportunities include:

- Is Nanotechnology good or bad? (Dual Use Technology)
- What's in our Classroom? – giving pupils a sense of size and scale based on their immediate environment

- Size and Scale – visualizing the numerical properties of a range of objects from the nanoscale to the visible
- Scale Models – giving a sense of size and scale to objects that can't be seen by the naked eye.

Session 3: Surface area and Volume

Learning opportunities include:

- What is 'Molecular Manufacturing'?
- Area
- Perimeter
- Volume
- Surface Area

Session 4: Small Things - Taking a Closer Look

Learning opportunities include:

- What are 'Personal Nanofactories'?
- How a magnifying glass works
- How a microscope works
- How a scanning electron microscope works

Session 5: Small Things – Shrink Me

Learning opportunities include:

- What is meant by 'Grey Goo'?
- Measuring length on the Nanoscale
- Understanding size and scale of objects shrunk by orders of 10

Session 6: Small Things – Micro and Macro

Learning opportunities include:

- What is 'Nano Pollution'?
- Understanding the size and scale of objects that can and can't be seen by the naked eye