Our immune system protects us from illness. Most viruses are not harmful but some are contagious and can make us unwell.

When we are young our immune system is only just starting to get good at spotting intruders. If our white blood cells are unable to destroy an intruder fast enough, we can quickly become unwell and need help. A vaccine contains a safe form of the virus to encourage our body to make antibodies. Once exposed to the virus from the vaccine our immune system ‘remembers’. This means our body is ready to recognise the virus and destroy it before it can make us unwell. This means you will have immunity to this virus.

**What is measles?**

This illness is caused by a virus that can be caught from other people through touch or the air. Measles can bring on a fever, and can result in an itchy rash. For some people it can become more serious with life-threatening complications with infection in the lungs (pneumonia) and the brain (encephalitis). With viruses, antibiotics will not work, so the only way we can protect ourselves and others is through a vaccine. In 1980 2.6 million people worldwide died from measles who were mostly children. By 2014 this was down to 73,000 deaths due to more vaccines being available.

Take a look at the drawing to see the surprising beauty of measles. Viruses are tiny and take over our cells with instructions to make more viruses. They can be seen here emerging and bursting out like bubbles from an infected cell on the left. Each virus particle can infect other cells and spread, making us unwell. The line is a scale and represents 100 nanometres (ten thousandths of a millimetre). About 1,000 measles viruses would fit across the width of a human hair.