Assembly Activities
## Pack Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction and welcome</td>
<td>Page 4</td>
</tr>
<tr>
<td>Health campaigns</td>
<td>Page 5</td>
</tr>
<tr>
<td><strong>1. Introduction to microbes</strong></td>
<td></td>
</tr>
<tr>
<td>1.1 How big is a microbe?</td>
<td>Page 7-8</td>
</tr>
<tr>
<td><strong>2. Spread of Infection</strong></td>
<td></td>
</tr>
<tr>
<td>2.1 Respiratory hygiene</td>
<td>Page 9-10</td>
</tr>
<tr>
<td>2.2 Hand hygiene</td>
<td>Page 11-13</td>
</tr>
<tr>
<td>2.3 Sexual health</td>
<td>Page 14-15</td>
</tr>
<tr>
<td><strong>3. Treatment of Infection</strong></td>
<td></td>
</tr>
<tr>
<td>3.1 How antibiotics work demonstration</td>
<td>Page 16-17</td>
</tr>
<tr>
<td>3.2 Antibiotic resistance demonstration</td>
<td>Page 18-20</td>
</tr>
<tr>
<td>3.3 Antibiotics misconceptions: right or wrong</td>
<td>Page 21-30</td>
</tr>
<tr>
<td><strong>4. Prevention of Infection</strong></td>
<td></td>
</tr>
<tr>
<td>4.1 Vaccination</td>
<td>Page 31-36</td>
</tr>
<tr>
<td>4.2 Oral hygiene</td>
<td>Page 37-38</td>
</tr>
</tbody>
</table>
Welcome and Introduction

This pack outlines a number of short, fun and interactive activities suitable for demonstration in an assembly setting. Activities cover topics around hygiene, microbes, antibiotics and vaccination.

These activities are perfect for assemblies, particularly on science themed days or during national health campaigns. More information about relevant health campaigns can be found on page 4 and also on the teacher section of the e-Bug website.

Many of these activities have been adapted from our e-Bug teaching resources. If you would like to view these please visit the e-Bug website at: www.e-bug.eu.

All activities are marked with a recommendation for primary or secondary schools; however teachers can adapt activities to suit any age and ability.
Health Campaigns

e-Bug links to national and international health campaigns. These campaigns can be an excellent opportunity to get students engaged in key health matters. Schools can join in on campaigns to coincide with science or health weeks and these are great to focus on in assemblies for school wide learning.

A health campaign timeline can be viewed on the e-Bug website [here](http://www.e-bug.eu/campaign) or by visiting [www.e-bug.eu/campaign](http://www.e-bug.eu/campaign).

Campaigns vary from world TB day to global hand washing day, and many of the e-Bug activities and resources can be used to teach about these topics. More information on which resources can be used for each health campaign can be found on the campaign timeline page on the e-Bug website.
Introduction to microbes

Activity 1.1: How big is a microbe?

Primary & Secondary
Activity time: 15 minutes

This short activity gives students an introduction to microbes; teaching them the 3 different types of microbe and how they differ in shapes and sizes.

This activity would be suitable for a school science or biology week.

For this activity you will need:
- Balloon, glitter and a pin.

1. Prior to the activity fill the balloon with glitter using a funnel and blow the balloon up. You may wish to prepare a few depending on how many times you wish to demonstrate the activity.

2. At the start of the assembly activity, ask the students if they know what a microbe is, encourage students to give their ideas. They may know that microbes can make us ill, but they may not know that there are 3 different types. Explain that there are 3 types of microbes: fungi, bacteria and viruses and they can be both harmful and useful to us.

3. Fungi are the largest microbe and they can be useful or harmful. Give an example of useful and harmful fungi, for example Penicillium is a fungi used to create the antibiotic penicillin which is used to kill bacteria! Students may not know that mushrooms that we eat are also a type of fungi that is good for us. An example of harmful fungi is one that cause’s athlete’s foot; an itchy foot condition.

4. Bacteria are the middle size microbe and can also be useful or harmful. Again give examples of both useful and harmful bacteria. For example lactobacillus is a useful bacteria used to make dairy products such as yoghurt, there are other ‘probiotic’ bacteria found in yoghurts that can aid in our digestion of food. Examples of harmful bacteria are ones that can cause chest infections or food poisoning in spoiled food. Bacteria also come in different shapes: rods, balls or spirals.

5. Viruses are the smallest type of microbe and are mostly harmful. Some scientists can use viruses in their lab to help make new medicines, but generally all viruses are bad. Viruses cause colds and flu.
6. Remind the children of the names of the microbes and their sizes. Explain that most microbes are too small to see with the naked eye and that it can be hard to understand their shapes and sizes.

7. Ask the children to imagine that if a fungi, the largest of the 3 microbes, was the size of the room they are in, how big do they think a bacteria would be in comparison? Show the children the balloon and explain that this is how big the bacteria would be. Ask how big they think a virus would be in relation to this. Pop the balloon and explain that a virus would be the size of a piece of glitter.

- Optional: if there is an interactive board in the assembly hall/room you could also play the e-Bug how big is a microbe animation, which can be found here.

- You can see a member of the e-Bug team giving an introduction to microbes here: https://www.youtube.com/watch?v=VXzmCYJ9fj4
Spread of Infection

**Activity 2.1: Respiratory hygiene, giant sneezes**

This visual interactive activity shows students the importance of proper respiratory hygiene in preventing the spread of infection.

This activity would be suitable for a school hygiene or health event for instance during cold and flu season.

For this activity you will need:
- A spray bottle
- A mask to go over the spray bottle (optional)
- Green food colouring
- Length of white roll out paper or lining wallpaper
- Tissues or paper towels
- Disposable plastic gloves
- Marker pens (optional)
- Meter ruler or tape measure (optional)

Before this activity you will need to:
- Create a sneezing runway down the middle of the assembly by placing white paper in a long strip.
- Fill one spray bottle with water and green food colouring to symbolise snot.

1. Ask for 6 students to volunteer or use pre-arranged volunteers from the assembly group to be ‘sneezers’; tell students that they will be demonstrating a huge sneeze.

2. To demonstrate the distance a sneeze and microbes in the sneeze travel, students should take turns holding the bottle at the end of the runway and simulate a sneeze by squeezing the trigger once over the paper.

3. Before ‘sneezing’ (squeezing the trigger) ask students how far they think the sneeze will travel, you could ask 2-3 different volunteers sat closest to the runway to mark on the paper with a marker pen where they think the sneeze will travel to.

4. After ‘sneezing’ ask a volunteer to measure how far and how wide the sneeze spreads with
a meter ruler or tape measure and determine which student guessed the closest. Repeat this with another ‘sneezing’ volunteer.

5. The next step is to observe what happens when we put our hand over our nose when we sneeze; the microbes stay on our hands and can spread to anything we touch. You may wish to put some fresh paper on the runway for this demonstration.

6. From the group of ‘sneezing’ volunteers have one student be the new ‘sneezee’ and a second student should be the ‘sneeze catcher’, they will need to put on the disposable glove and hold their hand about 2 – 5cm away from the spray bottle nozzle. Before ‘sneezing’ ask students what they think will happen- will the sneeze travel as far as before?

7. Students should notice that the hand catches most of the sneeze but some still escapes on the paper. Ask the ‘sneeze catcher’ to show the assembly the hand covered in the ‘snot’ spray and then ask them to place their hand on the white paper sprayed side down. Explain that sneezing in your hand can spread the microbes to things that we touch, so if you do sneeze into your hand, for example if you don’t have a tissue, you should wash your hands as soon as possible.

8. Finally, we want to observe what happens when we cover our nose with a tissue during sneezing. Ask the last two ‘sneezing’ volunteers to be the ‘sneezee’ and the ‘sneeze catcher’; the catcher will hold the tissue directly in front of the spray nozzle. The sneeze is successfully caught in the tissue and won’t infect anyone else if the tissue is thrown in the bin straight away. Make sure there is a bin nearby and ask the sneeze catcher to throw the tissue away.

9. Ask students to recite what they have learned, for example by repeating the phrase ‘catch it, bin it, kill it’. Reinforce that catching a sneeze in a tissue is the best way to prevent the spread of microbes to others around you.

➢ You can see a member of the e-Bug team demonstrating this activity here: https://www.youtube.com/watch?v=XzCs3XSGm0Y
Spread of Infection

Activity 2.2: Hand hygiene, Glitter hands

This interactive activity shows students the importance of hand hygiene in preventing the spread of infection.

This activity would be suitable for a school hygiene or health event, for instance during cold and flu season.

For this activity you will need:

- Glitter
- Washing up bowl x2
- Hand soap x2
- Paper towels
- Copy of 6 steps of hand washing poster (page 14)

Before this activity you will need to:

- Set up 2 hand washing areas at the front of the room/hall (washing up bowl, soap and paper towels).
- Print out a copy of 6 steps of hand washing poster, or alternatively have the document open on an interactive white board or screen if available.

1. Explain to students that microbes are everywhere and they get on to our hands from the things that we touch, or by coughing and sneezing. We then pass these on to other people through touching each other or touching things that others will then touch. Washing our hands is the best way to remove these microbes from our hands before they spread to others.

2. Explain to the assembly when we should wash our hands – before and after preparing food, after using the toilet, after touching animals and after coughing or sneezing.

3. Explain to the assembly that they are going to demonstrate how microbes spread from person to person. Explain that you will use glitter to demonstrate this, ask the students to imagine that the glitter is pretend microbes, as microbes themselves are too small to see with the naked eye.
4. Ask the students sitting in the front row to hold out one of their hands. Cover each student’s hand with glitter.

5. Tell the students to imagine they have sneezed into their hands and they are now covered in microbes. They are then going to turn to the person behind them and shake their hand. This continues all the way to the back of the assembly.

6. Ask for a volunteer from the back of the assembly hall, one from the middle, and one right at the front. Ask these volunteers to show their hand to the hall to show the difference in the spread of glitter. The volunteer from the front should have the most glitter and the one from the back may not have any. If necessary ask students for a show of hands who at the back of the hall has glitter on their hand to show how far the microbes have spread.

7. Explain that this is what happens when you don’t wash your hands. You may want to give an analogy of this; for example, when someone in class has a nasty cold, they might sneeze onto their hand and touch other people or objects in the class, eventually most of the class may get the cold!

8. Ask for a few volunteers to come to the front and demonstrate washing their hands in the washing up bowls as they would usually and give kitchen roll to each person to dry their hands.

9. Demonstrate the proper way to wash hands with soap and ask them to follow your movements: do the six step technique – palm to palm, back of the hands, in between the fingers, back of the fingers, the thumbs, and tips of the fingers (illustrated on poster on page 13).
The 6 Steps of Hand Washing

1. Palm to palm
2. The back of the hands
3. In between the fingers
4. The back of the fingers
5. The thumbs
6. The tips of the fingers
Spread of Infection

Activity 2.3: Sexual health

This visual and interactive activity shows students how sexually transmitted infections can spread unknowingly between people.

This activity would be suitable for a school wide campaign on sexual health, or during national campaigns, such as sexual health week, cervical cancer prevention week or think about sex day.

For this activity you will need:
- Test tube rack
- Test tubes x1 per student taking part.
- Dropper or pipette x1 per student
- Iodine
- Starch solution
- Milk
- Water
- Gloves
- Cling film or cotton balls

Before this activity you will need to:
- Half-fill a test-tube with milk – one test tube per student
- Replace one of the test-tubes with the starch solution
- Cover 2 of the test tubes (not the starch) with cling film or a cotton ball.

1. Give students an introduction to sexual health, and explain that you will be doing a demonstration on how sexually transmitted infections are spread.

2. Choose at least 10 volunteers or pre-arranged volunteers (you may want to choose students who will not be picked on or play up) and ask them to come to the front. Explain that they will be demonstrating how sexual contact can lead to infection with STIs by exchanging fluid (representing bodily fluid) between two test tubes.

3. Give each student a test tube full of fluid, with one containing starch. DO NOT let the students know that one of the test-tubes contains starch, although the teacher should
know who has the test tube. Tell students that 2 of the test tubes are covered in cling film.

4. Tell each student that they must exchange fluid with 3 other students (increase or decrease depending on number of volunteer’s demonstrating) by using a dropper to drop 2-3 drops of fluid into each other’s test tube. Fluid cannot be exchanged with the test tubes covered in cling film.

5. When finished, tell the assembly that one of the test tubes originally carried fluid which contained a simulated STI. The teacher should go to each volunteer and test for the STI by adding a drop of iodine to each test tube, including the two covered in cling film. If the fluid turns black that person was infected.

6. Students may notice that most of the test tubes have been ‘infected’, with the exception of the two covered in cling film. Explain how 1 person infected can spread to a large number of people if not controlled. Explain that the cling film represents a condom, and these people are protected from catching the STI.

7. If necessary, repeat the activity by reducing the number of times students exchange fluid (have sexual encounters) to 1. Does the assembly notice the decrease in the number of infected people?
Treatment of Infection

Activity 3.1: How antibiotics work demonstration

This visual activity shows students how antibiotics should be taken correctly.

This activity would be suitable for an event related to antibiotic resistance, for instance European Antibiotic Awareness day held on the 18th November each year.

For this activity you will need:
- Pipettes
- Vinegar and water
- Phenol red indicator
- Test tubes
- Test tube holder
- Giant microbes (optional - may be helpful for demonstrations.)

1. Prepare test tubes by filling a third full with water and adding a drop of indicator. This will turn the water red.
2. Dilute vinegar in bowl with water.
3. Test the experiment to see how many drops of vinegar are required to turn the solution in the test tube yellow. Ideally this should be around 7. Strengthen or dilute the vinegar as required until the correct dilution is reached.
4. Keep the test tube with the yellow solution to demonstrate.

1. Tell the students that you will be doing a demonstration on how antibiotics should be taken. If doing as a standalone activity, give students a background to antibiotics by asking if anybody knows what an antibiotic is and if anyone has ever had them. Explain that antibiotics kill bacteria and make us feel better if we have a bacterial infection, however they don’t work against infections caused by viruses such as colds and flu.

2. Explain that it is very important for us to finish our full dose of antibiotics, and that this demonstration will show us why.

3. Show the children the test tube containing the yellow solution and say that it represents a person’s body, and the colour yellow means that the person is completely healthy with no bacterial infection.
4. Hold up one of the test tubes that were pre-prepared with the red solution and say that whenever we see the colour red, we know that bacteria are present in the person’s body, making them unwell.

5. Ask the group whether they think that antibiotics can make the ill person better – remind them that antibiotics should help because this is a bacterial infection. Say that the doctor has prescribed a course of 7 antibiotics for the person to take (if necessary, adjust to your test from the morning).

6. Start to add drops of the dilute vinegar using a pipette and ask the children to count with you – you can include days of the week and time of day too.

7. Halfway through the dosage show the children that some of the solution has turned yellow – say that this shows that the person is feeling better.

8. Then mix the solution with a pipette (it will stay red) and say that even though the person is feeling better, the solution is still red showing the bacteria are still there, so they must keep taking their antibiotics until they are completely healthy.

9. Finish adding the dose and mix to make the solution yellow. Tell the children that because they finished the whole course of antibiotics, the person is completely healthy. Explain that if the person didn’t finish the whole course of antibiotics, the bacteria could have come back stronger (resistant to antibiotics). Ask if anyone has heard of antibiotic resistant bacteria. This could tie in with activity 3.2.

You can see a member of the e-Bug team demonstrating this activity here: https://www.youtube.com/watch?v=nwcv39Qi-Ec
Treatment of Infection

Activity 3.2: Antibiotic resistance demonstration

This visual activity shows students how bacteria can become resistant to antibiotics.

This activity would be suitable for an event related to antibiotic resistance, for instance European Antibiotic Awareness day held on the 18th November each year.

For this activity you will need:
- Selection of balloons of at least 2 different colours
- Sellotape or masking tape
- A pin

Before this activity you will need to:
- Prepare around 4-6 balloons, mostly yellow with one or two red ones (different colours may be used).
- Put sellotape or parcel tape on the red balloons. Clear parcel tape works the best; if sellotape or brown parcel tape is used, several layers may be required for the experiment to work.
- The sellotape is best placed on the end of the balloon where the balloon is thickest. The yellow balloons represent bacteria and the red balloon with tape on represents antibiotic resistant bacteria. The pin represents the antibiotic.

1. Ask students if they know what antibiotics are, explain that antibiotics are special medicine that we take to kill bacterial infections. If necessary give an example of a bacterial infection e.g chest infection. Antibiotics do not work against infections caused by viruses such as colds and flu.

2. Ask students if they know what antibiotic resistance means. Explain that this means that the bacteria itself has become resistant to an antibiotic and this antibiotic will no longer kill it. This can mean that some resistant bacteria can’t be treated and can make people very ill. Bacteria are continually developing ways to avoid being killed by antibiotics, and this is known as antibiotic resistance.

3. Explain that you will show a demonstration to describe antibiotic resistance.
4. Hold up the red balloon and explain that it represents antibiotic resistant bacteria, while the yellow balloon represents normal bacteria. Hold up the pin and explain that this represents the antibiotic.

5. Explain that when we take an antibiotic, the bacteria are killed or damaged – pop some yellow balloons with the pin. In particular, one group of antibiotics (the penicillins) damage the bacterial cell wall.

6. Then explain that in bacteria that are antibiotic resistant, the cell walls are now not affected by the antibiotics – this time put the pin through the sellotape in the red balloons, it will not pop. The antibiotic is ineffective and these bacteria cannot be killed.

7. This makes it more likely for the resistant bacteria to survive and reproduce. They have a selective advantage.

8. Ask if anyone knows where resistance comes from? Explain that it is due to a change in the bacterial DNA GENES that tell the bacteria how to make the cell wall or enzymes.

9. Explain that bacteria can pass these resistant genes on to other bacteria – put sellotape on a remaining yellow balloon, which represents the transfer of antibiotic resistance to another bacterium. This can happen in our body.
10. Resistance is also passed on when bacteria reproduce – demonstrate this by blowing up another red balloon and putting sellotape on in.

11. Explain that resistant bacteria can be passed from person to person just as normal bacteria can be. Ask how these bacteria can spread? The easiest way is via our hands. Examples include direct skin to skin contact or touching surfaces which may contain bacteria.
Activity 3.3: Antibiotics Right or Wrong

This interactive activity can be used to correct common misconceptions about antibiotics.

This activity would be suitable for an event related to antibiotic resistance, for instance European Antibiotic Awareness day held on the 18th November each year.

For this activity you will need:
- Copy of right or wrong speech bubbles on page 23-30. Print these out on A3 or A4 and laminate if possible.

1. The speech bubbles on page 23-30 teach students not to take antibiotics for coughs and colds, to take antibiotics as prescribed and not to use other people’s or left-overs.

2. Ask students if they know what antibiotics are, explain that antibiotics are special medicine that we take to kill bacterial infections. If necessary give an example of a bacterial infection e.g chest infection. Antibiotics do not work against viruses such as colds and flu.

3. Ask students if anyone has taken antibiotics before, how did they take them? Explain that due to the growth of antibiotic resistant bacterial infections; bacteria that have grown resistant to certain antibiotics, and cannot be killed with them, we must make sure we protect our antibiotics by using them correctly.

4. Explain to students that they will be doing an activity about how to correctly take antibiotics and that you will hold up 8 different statements and students have to say whether they think it is right or wrong.

5. Optional: To make the activity interactive, tell a student that if they think the statement is right, to stand up, and if they think it is wrong, to remain sitting.

6. After students have guessed each statement, tell them the answer and then the reason why; this can be found on the statement guide on page 22.

7. Finally explain that it is important we do not do any of the ‘wrong’ things with antibiotics as some bacteria are becoming resistant to antibiotics and these can be very dangerous. By protecting our future antibiotics we are protecting ourselves.
<table>
<thead>
<tr>
<th>Statement</th>
<th>Right or Wrong</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>He was coughing and sneezing everywhere. You would have thought the doctor would have given him antibiotics!</td>
<td>Wrong</td>
<td>Most common infections will get better by themselves through time, bed rest, liquid intake and healthy living. Antibiotics do not work on viruses.</td>
</tr>
<tr>
<td>My doctor told me to take my antibiotics for 7 days so that is what I did.</td>
<td>Right</td>
<td>Take antibiotics exactly as given by your doctor or nurse.</td>
</tr>
<tr>
<td>When my friend was ill, I gave her my old antibiotics. I like helping my friends.</td>
<td>Wrong</td>
<td>You must not use other people’s or any leftover antibiotics.</td>
</tr>
<tr>
<td>Antibiotics don’t help coughs and colds; you just need bed rest, lots of fluids and eat healthily.</td>
<td>Right</td>
<td>Most common infections will get better by themselves through time, bed rest, liquid intake and healthy living. Antibiotics do not work on viruses.</td>
</tr>
<tr>
<td>All drugs are bad for you. I can’t see the point in taking antibiotics.</td>
<td>Wrong</td>
<td>Antibiotics can help severe infections such as meningitis, pneumonia or kidney/urine infections.</td>
</tr>
<tr>
<td>My doctor gave me antibiotics to take for 7 days but I feel better after 3 days so I’m going to stop taking them.</td>
<td>Wrong</td>
<td>Take antibiotics exactly as given by your doctor or nurse. Even if you feel better after 3 days you might still have the infection.</td>
</tr>
<tr>
<td>My headache and flu symptoms are really getting me down. I think I need antibiotics!</td>
<td>Wrong</td>
<td>Most common infections like flu will get better by themselves through time, bed rest, liquid intake and healthy living. Antibiotics do not work on headaches or viruses.</td>
</tr>
<tr>
<td>I don’t take antibiotics unless I really need them as they might not work in the future.</td>
<td>Right</td>
<td>If you over use antibiotics they might not work when you really need them for a severe infection.</td>
</tr>
</tbody>
</table>
He was coughing and sneezing everywhere. You would have thought the doctor would have given him antibiotics!
My doctor told me to take my antibiotics for 7 days so that is what I did.
When my friend was ill, I gave her my old antibiotics. I like helping my friends.
Antibiotics don’t help coughs and colds; you just need bed rest, lots of fluids and eat healthily.
All drugs are bad for you.
I can’t see the point in taking antibiotics.
My doctor gave me antibiotics to take for 7 days but I feel better after 3 days so I’m going to stop taking them.
My headache and flu symptoms are really getting me down. I think I need antibiotics!
I don’t take antibiotics unless I really need them as they might not work in the future.
Prevention of Infection

Activity 4.1: Vaccination demonstration

This interactive activity shows students how vaccination can protect us from infection.

This activity would be suitable for an event related to vaccination, such as European Immunisation week, or during a week when students are receiving vaccinations at school.

For this activity you will need:

- Print outs of pages 33-36, enough so that volunteers taking part have 1 of each card, e.g if 10 volunteers, print out 10 of each card.

1. Explain to the assembly that they are going to simulate how vaccinations stop people getting ill.
2. This activity is best done with a number of volunteers at the front, such as 10. Have students line up in front of the class.
3. Provide volunteers with a red (infected), white (immune), blue (recovering but still infectious) and yellow (vaccinated) card.

4. **Scenario 1** (Demonstration of the spread of infection and immunity)
   a) Select the person in the middle of the line up (student in position 5) and ask them to hold up their red card. Explain that they are now infected by a disease. Ask them to touch a person next to them. This person is now infected and they must hold up a red card. This marks the end of day one. *We say the end of day 1 because for this ‘infection’ it takes that long for the infection to incubate and for the first symptoms of the infection to manifest themselves.*

   b) After a few seconds tell the class it is now day 2. Student 1 should now be holding a blue card i.e. s/he is recovering but still infectious. Student 2 should now be holding a red card. Ask each of these students to touch the next uninfected person next to them (i.e student 1 would touch the person on the other side of them). These two people are now infected and they must hold up a red card. This marks the end of day two.

   c) After a few seconds tell the class it is now day 3.
      i. Student 1 should now be holding a white card i.e. s/he is now immune *(This person is a normal healthy individual with a...*
healthy immune system therefore they were able to fight off the disease and develop immunity.

ii. Student 2 should now be holding a blue card, i.e. s/he is recovering but still infectious

iii. Student 3 and 4 should be holding red cards i.e. they are now infected

5. **Scenario 2**: Demonstration of the spread of infection and immunity through vaccination

a) Ensure that each student has a set of cards (as for scenario 1). Explain to the class that in this scenario they are going to observe what happens during vaccination programmes. The process will be the same only this time some of the students will be vaccinated (immune).

b) Choose 2 of the line up to be vaccinated and hold their vaccinated card, it is best to place these people separate in the line-up, e.g at position 3 and 8 so that herd immunity can be demonstrated.

c) Repeat scenario 1, however when an infected student reaches a vaccinated student they are protected and cannot be infected. Now the infection has been stopped and the students on the other side of them are now protected from the disease. Explain to students that this is herd immunity. When a certain number of the population are vaccinated against a disease they protect others who cannot be vaccinated. This is why it is important that everyone who is able to be vaccinated is vaccinated.

d) If appropriate you can demonstrate herd immunity further by having 1 student surrounded by students holding up their vaccinated card. If an infected person tried to reach the unvaccinated student in the middle they are blocked from doing so.

- Optional: For older students (secondary or sixth form) the e-Bug vaccination myths slideshow could be demonstrated, found [here](#).
Infected
Immune
Recovering but still Infectious
Vaccinated
Prevention of Infection

Activity 4.2: Oral hygiene: How much sugar?

This visual activity shows students how much sugar can be in commonly consumed drinks. This activity would be suitable for an event related to healthy eating or good oral hygiene practices.

For this activity you will need:

- Selection of drinks, covering a range of sugar content, such as fizzy drinks, juices, and water. Ensure the amount of sugar in grams is visible on the bottle.
- Bag of sugar or sugar cubes
- Plastic sealable sandwich bags
- Teaspoon

Before this activity you will need to:

- Set up a table at the front of the assembly hall with the bottles of drink lined up in order of sugar content.
- For ease you may wish to put a sticky label on each drink with its sugar content displayed.

1. Tell students that they will be learning about the sugar content of popular drinks.

2. Ask students what they know about sugar; what food and drinks that we eat contain sugar, and what the effects of sugar are. Some students may know that too much sugar can be bad for our health, but they may not know about the effect it has on our teeth.

3. Tell students that when we consume sugary foods and drinks, this is classified as a sugar attack to our teeth. Sugar attacks should be kept to a minimum and limited to mealtimes to reduce the risk of tooth decay.
4. When we consume sugary foods and drinks, the bacteria on our teeth use the sugars and make acid as a by-product. Over time the acid begins to dissolve the enamel on our teeth, this can lead to a hole (cavity) appearing which can spread into the second layer of tooth (the dentine), this is tooth decay. Tooth decay is preventable if we limit sugary foods and drinks and clean our teeth.

5. Ask a few students what their favourite drink is and how much sugar they think is in it (not much or a lot?). How often do they have this drink?

6. Hold up the example bottles of drinks and ask if any students drink these, with a show of hands for each. Ask students by a show of hands which drink they think has the highest sugar content and which has the lowest content.

7. You can either demonstrate to the whole school or ask for a number of volunteers to help fill the bags of sugar.

8. Fill the sandwich bags with the corresponding amount of sugar for each drink; a teaspoon is roughly 4 grams. You can either work out how many spoonful’s are needed before the activity or work this out with the students.

9. Finally hold up the bag of sugar for each drink, students may be shocked at how much sugar is in some of their favourite drinks.
This pack contains a series of fun, interactive and visual activities that are suitable for the setting of an assembly. Topics include microbes, and the spread, prevention and treatment of infection, including antibiotics and antibiotic resistance.

Topics can be linked to national and global health campaigns as well as more local campaigns to engage students in important health related matters.