Learning Outcomes

All students:
- Will understand that infection can be spread through unclean hands
- Will know that hand washing can prevent the spread of infection
- Will know that the best way to stop the spread of infection from sneezing is using a tissue.

Key Stage 2
Sc1: 1a, 1b, 2a, 2b, 2c, 2d, 2e, 2f, 2g, 2h, 2i, 2j, 2k, 2l
Sc2: 2g, 5f
Unit 6 – Micro-organisms

Key Stage 3
3. Range and Content
3.3 Organisms, behaviour and health

Estimated Teaching Time
40 minutes

Within schools, respiratory and gastrointestinal infections are a major cause of childhood illness however it has been proven that washing hands with soap can reduce the risk of diarrhoea by 42%–47% and that hand washing is important in the prevention of acute respiratory infections.

This is the official lesson plan for the 2012 Hand Hygiene Challenge Guinness World Record attempt on the 15th October 2012. Please follow the lesson plan to make sure your school is included in the attempt. If you have any queries, please contact us on e-bug@hpa.org.uk

2012 Hand Hygiene Challenge Lesson Plan
Materials Required
For Verification
☐ Video camera
☐ Photographic camera

Activity 1
☐ Hand washing film
☐ 6 steps of hand washing poster or PowerPoint slide.

Activity 2 – per group
☐ Student worksheet
☐ A sneezing runway
☐ Sneezer spray bottle containing green food colouring solution
☐ Measuring tape or ruler
☐ Disposable gloves
☐ Large tissue or piece of kitchen roll

What is Global Handwashing Day?
Global Handwashing Day was originally created for children and schools, but can be celebrated by anyone promoting handwashing.

Each year, over 200 million people are involved in celebrations in over 100 countries around the world. Global Handwashing is endorsed by a wide array of governments, international institutions, civil society organizations, NGOs, private companies, and individuals.

This year e-Bug have teamed up with School Councils UK to promote hand hygiene via this Guinness World Record Breaking attempt. If successful your school, and many others across the UK, will be part of the Guinness Record Breaking family with your students learning some valuable hand hygiene lessons along the way.

Background Information
Schools are a haven of harmful microbes that spread rapidly from child to child via touch. Colds and flu are the most common illnesses in the classroom and perhaps among the most contagious. Washing your hands is one of the best ways to STOP harmful microbes from spreading and prevent yourself becoming ill.

Our hands naturally secrete oil which helps to keep our skin moist and stops it getting too dry. This oil, however, is a perfect place for microbes to grow and multiply and helps microbes ‘stick’ to our skin.

Washing hands in water alone will eliminate visible dirt and grime; however, soap is required to break up the oil on the surface of the hands which traps microbes.

Sneezing is a way in which our body tries to get rid of any harmful microbes and dust we might inhale. The harmful microbes and dust get caught on the nose hair and tickle our nose. The nose sends a message to the brain which then sends a message back to your nose, mouth, lungs and chest to blow the irritation away.

In the case of colds and flu, millions of virus particles rush out and contaminate the surface on which they land; this could be our food, furniture or our hands, so it is important that we practice good hand hygiene.
**Guinness World Record Requirements**

1. Have a video camera in place ready to record the ENTIRE lesson plan, this must include the counting of the students and a constant view of the entrance/exit.
2. Have a photographic camera ready to take a group shot of the entire class participating in the event.
3. 2 independent witnesses overseeing the event.
4. 1 steward per 50 participants.
5. 1 timekeeper.

**Activity 1**

1. Have the film uploaded to your whiteboard or other presentation facilities.
2. Have the 6 steps of handwashing poster either
   a. Uploaded to your whiteboard ready to show the entire class
   b. Printed for the steward to show their group of 50 students

**Activity 2**

1. For each group of 5-7 students create a sneezing runway by either
   a. Placing 3 – 4 desks in a row with a vertical back board and covering them with white paper (lining wallpaper is a cheap alternative) as illustrated below, or tape bin bags to the floor around the end of the runway instead of a back board.
   b. Line a section of the floor with bin bags (to protect the floor surface) and create the runway on top by covering with white paper (lining wallpaper is a cheap alternative)
2. Fill one spray bottle per group with water and food colouring.
3. Cover a student’s hand with a disposable glove.
4. Create a large tissue from a section of kitchen roll.
1. Begin the lesson by explaining to the students that today is Global Handwashing Day and to mark this event they, with students from all over the UK, will be attempting to break a Guinness World Record.

2. Begin the lesson by asking students how many have washed their hands today? Ask them why they washed their hands (to wash away any germs that might be on their hands) and what would happen if they didn’t wash away the germs (they might get ill as they will eat or breathe in harmful germs from their dirty hands).

3. Tell the students that we use our hands all the time, and that they pick up millions of germs every day and that although most of these are harmless some could be harmful and make us ill. Explain to the students that we spread our germs to our friends and others through touch, and this is why we should wash our hands. Ask them to think about when might be a good time to wash their hands (after using the toilet, after petting animals, before preparing our food, after playing outside, etc).

1. Explain to the students that it is very important that we wash our hands properly and we are going to see a film of how a nurse in a hospital washes her hands.

2. After watching the film, ask the class “hands up if you wash your hands like this every day?” Display the poster of the 6 steps of handwashing on the whiteboard and ask students as a group to practice each of the steps, there is no need to use water just practice in the air.
Now that students know how to wash their hands, it is just as important to teach them WHEN to wash their hands. Ask students to try and remember the last time they had the cold or flu.

1. Explain to students that the germs found in a cold and flu spread through the air when they sneeze but did they know that cold and flu germs also spread from person to person through touch. Explain that we are going to do an experiment to show how harmful germs from a cold and flu can spread through the air and through touch.

2. Divide the class into groups of 5-7 students. Each group should be provided with the sneezing runway, a sneezing bottle, a measuring tape or ruler, a disposable glove and a giant tissue (these stations should be set up prior to the lesson).

3. Ask students to guess how far a sneeze travels. Tell them we are going to see by using our sneeze runway. To demonstrate, a student in each group should hold the bottle at the end of the runway and simulate a sneeze by squeezing the trigger once over the paper. After ‘sneezing’ students should measure and record on their results sheet how far and wide the student’s sneeze spread.

4. The next step is to observe what happens when we put our hand over our mouth when we sneeze (the microbes stay on our hands and can spread to anything we touch). Ask the class how many of them have put a hand in front of their mouth to catch a sneeze? Explain that we are going to see what happens to the germs in a sneeze if we catch a sneeze with our hand. One student in each group should be the ‘sneezer’ and a second student should place their gloved hand about 2 – 5cm away from the spray bottle. Students should fill in the sneeze measurements on their group results sheet.

5. Discuss with students the outcome of the second sneeze. Ask them to look at the hand and notice that the spray ‘microbes’ are still on it. Show them that when they place the hand on the paper, sprayed side down, the microbes transfer to the paper. Explain that sneezing in your hand can spread the microbes to things that we touch, including our friends, furniture and food.

6. Finally, ask students what they could do to prevent the spread of harmful germs when we sneeze (cover our mouth with a tissue). Ask a different student in each group to be the ‘sneezer’ and ask another student to hold the tissue directly in front of the spray nozzle. Students in the group should fill the dimensions of the final sneeze on their worksheet and draw a graph of the results.

Plenary
Discuss with students the outcome of their results

a. Why is it important to wash our hands?

b. What is the best way to stop the germs in a sneeze spreading to other people?

c. Why should we wash our hands after sneezing into them?
My Observations
How far did your sneeze travel?

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<thead>
<tr>
<th></th>
<th>Predicted</th>
<th>Outcome</th>
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<tbody>
<tr>
<td>Sneeze</td>
<td>Length (cm)</td>
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<td></td>
<td>Width (cm)</td>
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<tr>
<td>Sneeze with hand</td>
<td>Length (cm)</td>
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<td></td>
<td>Width (cm)</td>
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<tr>
<td>Sneeze with tissue</td>
<td>Length (cm)</td>
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<td>Width (cm)</td>
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Hand in front of sneeze
1. What happened when you put the hand over the mouth to sneeze?

______________________________________________

Tissue in front of sneeze
2. What happened when you put the tissue over the mouth to sneeze?

______________________________________________

My results
Don’t forget to put in your units!

Length of Sneeze (cm)

Uncovered Hand Tissue

Look at your results
What do you think is the best thing you can do to stop germs from spreading when you sneeze?

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