Antibiotic Guardian Schools Ambassadors

School Survival Guide

A toolkit for teachers and Antibiotic Guardian schools ambassadors to deliver antibiotic awareness sessions in schools during

World Antimicrobial Awareness Week
18-24 November
European Antimicrobial Awareness Day
18 November

https://antibioticguardian.com/schools-registration-waaw/

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Version 4 – October 2022

World Antibiotic Awareness Week (WAAW) is an international public health awareness week held from 18-24 November each year. The UK Health Security Agency (UKHSA) are encouraging healthcare professionals (HCP) such as doctors, nurses, pharmacists, local authority health protection advisors as well as scientists to volunteer in schools/communities as Antibiotic Guardian Schools Ambassadors to educate young people on important public health topics such as microbes, hygiene, infection prevention and antibiotics.

Why is this important?

Antimicrobial resistance remains one of the key problems within community and hospital settings within Europe. In many European countries, antibiotic prescription rates are highest in children.

Improved hygiene in schools/communities reduces the transmission of infection (including COVID-19). it reduces illness in young people and their parents and resulting absenteeism. Antimicrobial resistance is a major threat to public health and it is essential to educate our future generation of antibiotic users and prescribers about this issue. HCPs will make use of the freely available and evidence-based Public Health England resources, e-Bug, Keep Antibiotics Working and Antibiotic Guardian, to educate young people.

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How will this benefit your local school/community?

- Improve hygiene and subsequent illness in schools/communities
- Use evidence-based resources linked to the English National Curriculum
- Receive expert advice and experience on important public health topics
- Support application for Healthy Schools status

What can you do as an AG Schools Ambassador?

1. Deliver a (remote) education session. This can be delivered in a variety of ways such as in person (where schools allow) or a remote lesson to one class or during an assembly to the whole school via Microsoft Teams, Zoom etc.

And/or

2. Encourage your school to use this toolkit to plan a lesson of their own.
3. Encourage your local school to include a newsletter item on antibiotic resistance during World Antibiotic Awareness Week (template available)
4. Support engagement by judging student entries for best poster, song, performance, video or essay addressing the importance of tackling antimicrobial resistance

Next Steps

- Contact a school(s) as soon as possible to arrange a date/time to visit (template email available)
- Ask school(s) to register as a participating organisation on the Antibiotic Guardian website
- If your school will be delivering a session, consider recording a short introductory video entitled 'Why tackling AMR is important to me' and sending this to your school to play.

Please contact Dr Diane Ashiru-Oredope at espaur@ukhsa.gov.uk if you have any questions.

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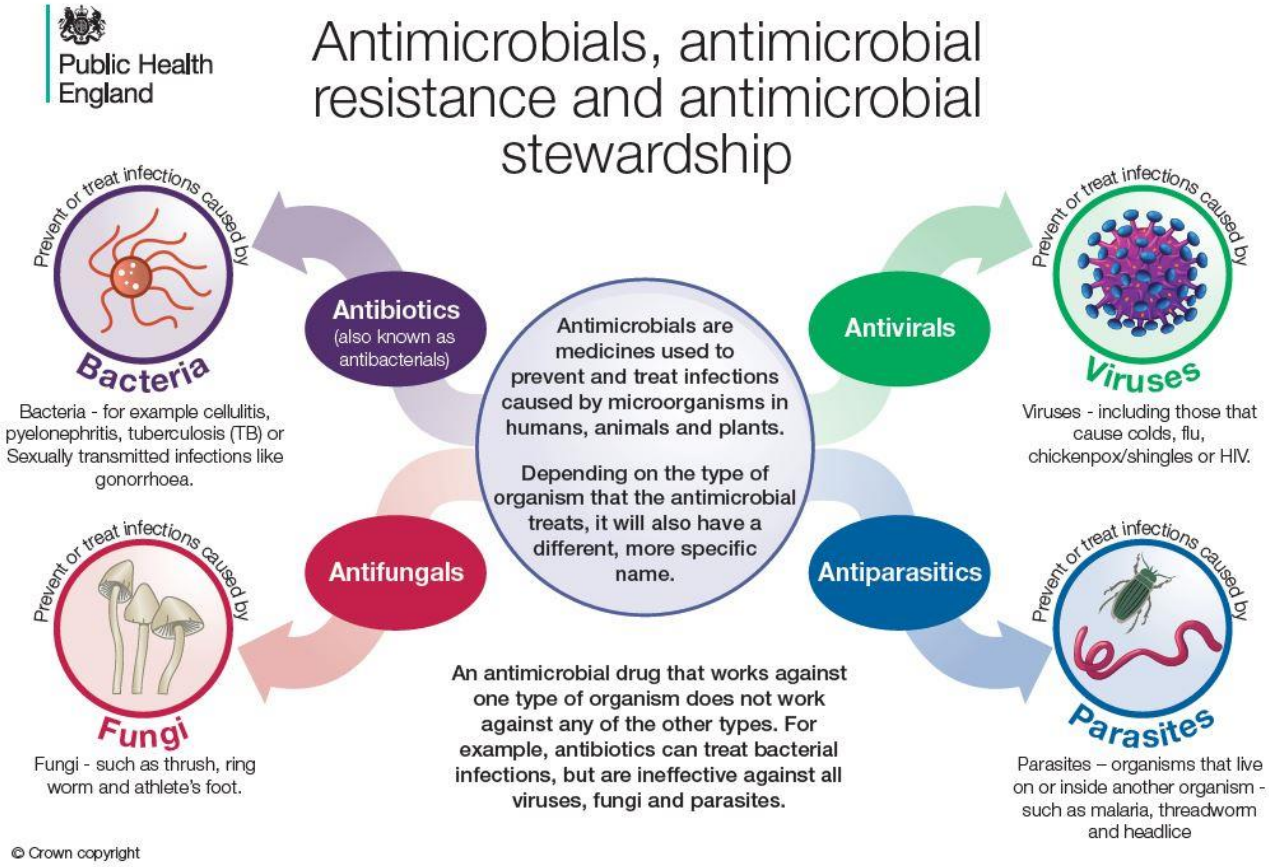
What do we mean by 'Antimicrobials' and 'Antimicrobial resistance' or 'AMR'?

Antimicrobials are medicines used to prevent and treat infections caused by microorganisms in humans, animals and plants. Depending on the type of organism that the antimicrobial treats, it will also have a different, more specific name. See the infographic below for a summary.



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What do we mean by 'Antimicrobials' and 'Antimicrobial resistance' or 'AMR'?

Antibiotics are used to treat bacterial infections such as meningitis, tuberculosis and pneumonia. They do not work on viruses, so antibiotics cannot treat viral infections such as colds and flu. Antibiotics work by targeting structures unique to bacteria; thereby they do not cause damage to human cells and they do not kill viruses.

Antibiotics are either bactericidal, meaning they kill the bacteria, or they are bacteriostatic, meaning they slow the growth of bacteria. Penicillin is an example of a bactericidal antibiotic, which targets the peptidoglycan layer in the cell wall leading to cell death. Bacteriostatic antibiotics interfere with processes the bacteria need to multiply, such as protein production, DNA replication or metabolism.

Antibiotics can be narrow spectrum, affecting only one or two species of bacteria, or broad spectrum, affecting many different species of bacteria in the body, including useful bacteria in the gut. As a result of killing many bacteria in the gut, broad spectrum antibiotics are more likely to cause diarrhoea.

Bacteria are continually adapting to develop ways of not being killed by antibiotics. This is called antibiotic resistance. Resistance develops due to mutations in the bacterial DNA. The genes for antibiotic resistance can spread between different bacteria in our bodies through horizontal gene transfer, which includes transformation, transduction and conjugation. Resistance genes can also spread by vertical gene transfer when genetic material in chromosomes is passed from parent to offspring during reproduction.

Antibiotic resistant bacteria can be carried by healthy or ill people and can spread to others just as other types of microbes would, for example by shaking hands or touching all types of surfaces on animals, vegetables or food where bacteria are present.

Antibiotic resistance arises in our bodies, bacteria, or in animals, due to the overuse and misuse of antibiotics. The more often a person takes antibiotics, the more likely they are to develop antibiotic resistant bacteria in their body. To prevent resistance, antibiotics should only be taken as prescribed by a doctor or nurse. The important points to remember are:

1. antibiotics do not need to be taken for colds and flu or most coughs, sore throats, ear infections or sinusitis as these usually get better on their own
2. Antibiotics do not need to be taken to treat symptoms of COVID-19, if it is suspected that this is the cause of the symptoms.

3. it is important to take the antibiotic exactly as instructed and complete the course of antibiotics, to decrease the risk of emergence of resistance

4. antibiotics are personal and prescribed for individuals and for a particular infection. They should not be shared or taken for a different illness

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What is required: In a nutshell

Here is a brief summary of what we ask ambassadors to do. The following slides will expand on this summary.

1. Register as an Antibiotic Guardian Schools Ambassador if you have not already
2. Contact local schools/community groups in order to seek permission to provide a teaching session
    1. If schools are unable to host you, you may be able to provide a virtual session, send a recorded video or share this toolkit with them to plan their own lessons
3. Ask schools to register activity here
4. Use this toolkit to plan a teaching session, working with your school/community group to organise what is required
5. Provide your teaching session, being sure to collect feedback – this toolkit includes resources to do that
6. Send schools/student feedback to us at ESPAUR@ukhsa.gov.uk
7. Complete the post project feedback survey, here.

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Share your activities with us

Please ask your school to share their activity with Antibiotic Guardian via the short online form on the schools/community group registration page. For Ambassadors on the Trainee Pharmacists, please remind schools to indicate this in the form.

We encourage both yourself as an Ambassador and Schools to promote involvement in the AG Schools Ambassadors scheme on social media and via other communications channels. Please use the hashtags #AntibioticGuardian #AntibioticGuardianAmbassador and #KeepAntibioticsWorking in your social media activity. See the next slide for examples of images shared by previous Ambassadors.

If you record an introductory video to be played at the start of your school's lesson, please share this with us via ESPAUR@ukhsa.gov.uk. This email address can also be used to send any creative works from students (posters, images, creative essays etc.) or photos from your lessons. Please follow your group GDPR guidelines for taking images with children and only send photos with permission as these pictures may be used in our evaluation/promotion of the project.

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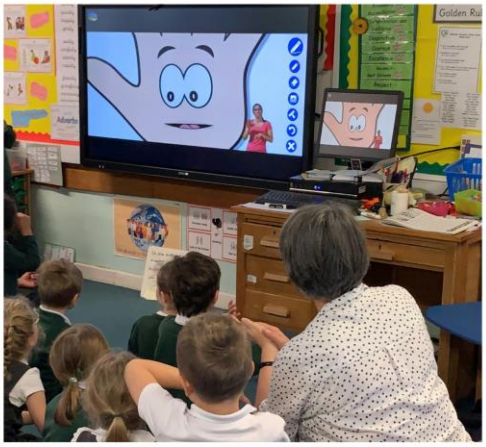
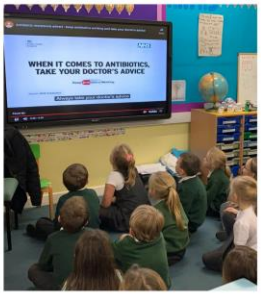
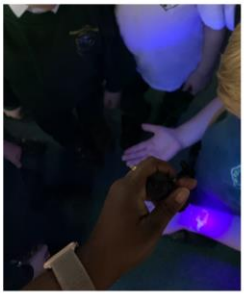
Activity shared with us previously







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Evaluating the campaign

- Please help us to evaluate impact of the AG Ambassadors project by engaging with the following:
    - Get feedback from students during teaching sessions using templates provided. This includes:
        - Pre and post-session quizzes for secondary school students
        - Feedback forms for primary and secondary school children
        - A template for collecting feedback from large groups/very young children via a 'show of hands'
    - Input results from feedback into the forms found here and return to ESPAUR@ukhsa.gov.uk
    - schools registration form once you have made contact.
    - Complete the post-project evaluation form:
        - Use this form if you have joined through a trainee pharmacist scheme
        - Use this form for all other Ambassadors

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Resources Available

e-Bug Health Educator Training

In collaboration with the British Society for Antimicrobial Chemotherapy (BSAC), eBug has developed a free online training course designed to improve your ability to teach children and young people how to prevent the spread of infection and to use antibiotics responsibly.

Use this course to learn more about important health topics and increase your knowledge, skills and confidence in using e-Bug resources, which tie into efforts to reduce the spread of infections and antibiotic resistance in the UK. The course can be used to support parents, carers and educators to teach children using the e-Bug resources during the COVID-19 pandemic.

Future Learn

BRITISH SOCIETY FOR ANTIMICROBIAL CHEMOTHERAPY

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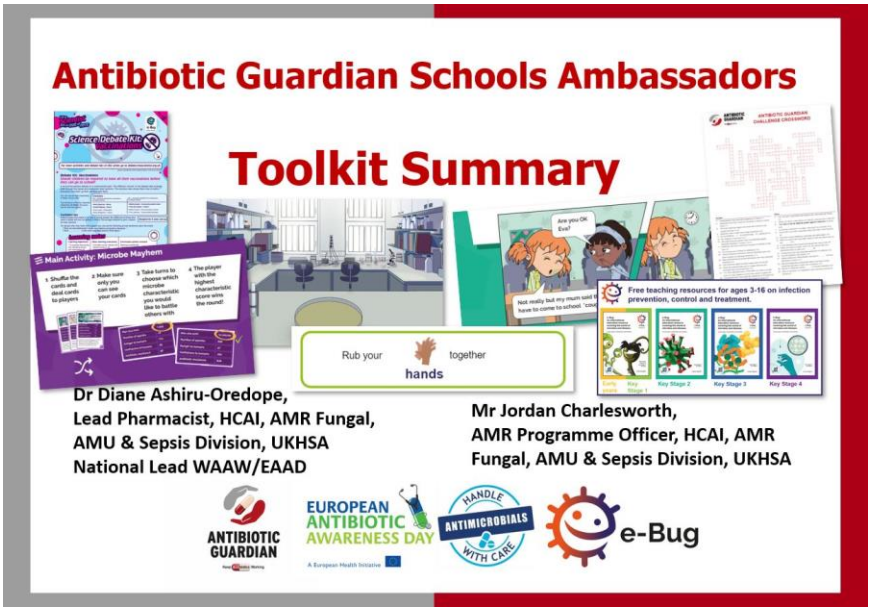
Training webinar and toolkit run-through

Please view the recording of a training webinar given previously for the Antibiotic Guardian Ambassadors project, as well as a brief recorded run-through of the toolkit.



These will provide a summary of what is required of ambassador, the resources and support available. These are available here.

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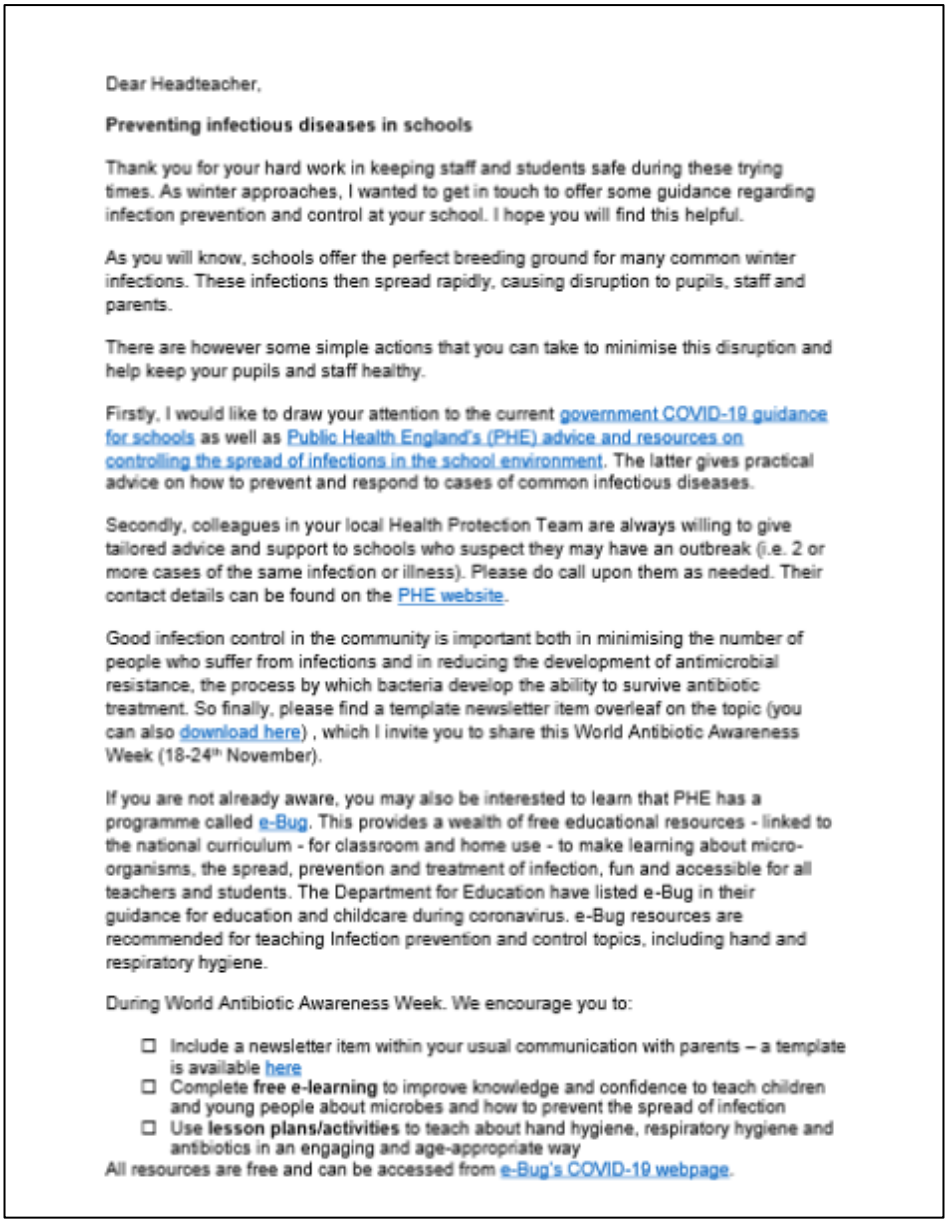
Template letter to school headteacher

We have provided a letter template for you to share with your school(s) headteacher(s) which provides an introduction to World Antibiotic Awareness Week and encouraging them to get involved.
These can be download in Word version here



Dear Headteacher,

Preventing infectious diseases in schools

Thank you for your hard work in keeping staff and students safe during these trying times. As winter approaches, I wanted to get in touch to offer some guidance regarding infection prevention and control at your school. I hope you will find this helpful.

As you will know, schools offer the perfect breeding ground for many common winter infections. These infections then spread rapidly, causing disruption to pupils, staff and parents.

There are however some simple actions that you can take to minimise this disruption and help keep your pupils and staff healthy.

Firstly, I would like to draw your attention to the current government COVID-19 guidance for schools as well as Public Health England's (PHE) advice and resources on controlling the spread of infections in the school environment. The latter gives practical advice on how to prevent and respond to cases of common infectious diseases.

Secondly, colleagues in your local Health Protection Team are always willing to give tailored advice and support to schools who suspect they may have an outbreak (i.e. 2 or more cases of the same infection or illness). Please do call upon them as needed. Their contact details can be found on the PHE website.

Good infection control in the community is important both in minimising the number of people who suffer from infections and in reducing the development of antimicrobial resistance, the process by which bacteria develop the ability to survive antibiotic treatment. So finally, please find a template newsletter item overleaf on the topic (you can also download here) , which I invite you to share this World Antibiotic Awareness Week (18-24th November).

If you are not already aware, you may also be interested to learn that PHE has a programme called e-Bug. This provides a wealth of free educational resources - linked to the national curriculum - for classroom and home use - to make learning about micro-organisms, the spread, prevention and treatment of infection, fun and accessible for all teachers and students. The Department for Education have listed e-Bug in their guidance for education and childcare during coronavirus. e-Bug resources are recommended for teaching Infection prevention and control topics, including hand and respiratory hygiene.

During World Antibiotic Awareness Week. We encourage you to:

- ☐ Include a newsletter item within your usual communication with parents – a template is available here
- ☐ Complete **free e-learning** to improve knowledge and confidence to teach children and young people about microbes and how to prevent the spread of infection
- ☐ Use **lesson plans/activities** to teach about hand hygiene, respiratory hygiene and antibiotics in an engaging and age-appropriate way

All resources are free and can be accessed from e-Bug's COVID-19 webpage.

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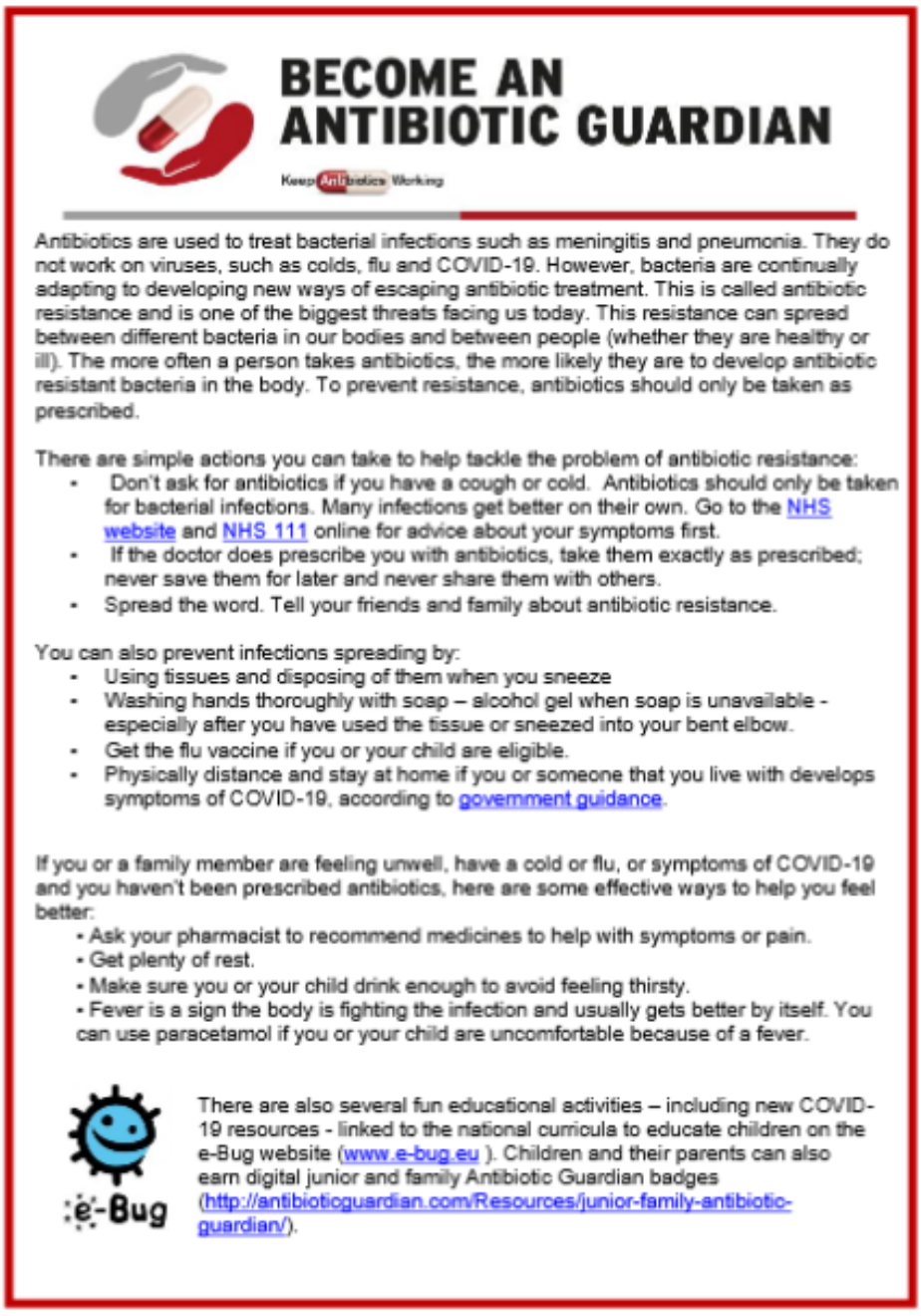
Template newsletter item

A sample newsletter item is also provided as an attachment to the letter which can be included in school newsletters to ensure the message is shared across the school.
These can be download in Word version here.



BECOME AN ANTIBIOTIC GUARDIAN

Keep Antibiotics Working

Antibiotics are used to treat bacterial infections such as meningitis and pneumonia. They do not work on viruses, such as colds, flu and COVID-19. However, bacteria are continually adapting to developing new ways of escaping antibiotic treatment. This is called antibiotic resistance and is one of the biggest threats facing us today. This resistance can spread between different bacteria in our bodies and between people (whether they are healthy or ill). The more often a person takes antibiotics, the more likely they are to develop antibiotic resistant bacteria in the body. To prevent resistance, antibiotics should only be taken as prescribed.

There are simple actions you can take to help tackle the problem of antibiotic resistance:

- Don't ask for antibiotics if you have a cough or cold. Antibiotics should only be taken for bacterial infections. Many infections get better on their own. Go to the NHS website and NHS 111 online for advice about your symptoms first.
- If the doctor does prescribe you with antibiotics, take them exactly as prescribed; never save them for later and never share them with others.
- Spread the word. Tell your friends and family about antibiotic resistance.

You can also prevent infections spreading by:

- Using tissues and disposing of them when you sneeze
- Washing hands thoroughly with soap – alcohol gel when soap is unavailable - especially after you have used the tissue or sneezed into your bent elbow.
- Get the flu vaccine if you or your child are eligible.
- Physically distance and stay at home if you or someone that you live with develops symptoms of COVID-19, according to government guidance.

If you or a family member are feeling unwell, have a cold or flu, or symptoms of COVID-19 and you haven't been prescribed antibiotics, here are some effective ways to help you feel better:

- Ask your pharmacist to recommend medicines to help with symptoms or pain.
- Get plenty of rest.
- Make sure you or your child drink enough to avoid feeling thirsty.
- Fever is a sign the body is fighting the infection and usually gets better by itself. You can use paracetamol if you or your child are uncomfortable because of a fever.

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There are also several fun educational activities – including new COVID-19 resources - linked to the national curricula to educate children on the e-Bug website (www.e-bug.eu). Children and their parents can also earn digital junior and family Antibiotic Guardian badges (http://antibioticguardian.com/Resources/junior-family-antibiotic-guardian/).

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Levels of engagement from AG Schools Ambassadors

We recognise that schools may have different policies on allowing Ambassadors into schools. For this reason, we have made the following suggestions for how Ambassadors can get involved:

1. Ask if you are able to enter schools to give a lesson during WAAW, using this toolkit to help plan your activities.
2. Ask if you can give a virtual lesson or speak in an assembly on the importance of tackling AMR and learning good hand hygiene.
3. Ask if schools are able to use the toolkit to plan a lesson, with the Ambassador sending in a short introductory video to introduce the lesson. This video will be titled 'Why tackling AMR is important to me'
4. Ask if the school can run a competition as part of their lesson during WAAW. This could be to design the best AMR/hygiene poster, or write the most interesting creative essay (see later toolkit sections). Ask if you can judge these entries and share them with Antibiotic Guardian by sending to ESPAUR@ukhsa.gov.uk
5. If the school is not able to support a lesson during WAAW, send the newsletter item (see later toolkit section) for them to include in their school newsletter during WAAW. Please still ask if this can be done even if a lesson is also planned.
6. Ask schools to register their activity during WAAW via this short online form.

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Suggested activities – primary school

- Lesson plans for early years children, key stage 1 and key stage 2 students are available for use in primary schools. Lesson plans on hand hygiene, respiratory hygiene, oral hygiene and microbes are available for download with instructions and discussion points for the presenter

- Interactive whiteboard sessions are also accessible here, which include learning outcomes and a range of activities and aids for discussion

    - The first part of the presentation includes a discussion on why we wash hands
    - The second part of the presentation includes a 'balloon hands' activity to demonstrate good hand hygiene and a flashcard exercise.

- A further presentation guide is available here

- Play the Keep Antibiotics Working video and consider giving leaflets to children to take home (will need to order from campaign resources website)

- Ask the children to share what they have learnt through a creative medium such as a poster/ comic strip, song/rap and ask them to colour one of the microbe colouring sheets from the 'Design a bug' resources in the KS2 pack. Engage with the school as an Ambassador by judging the best entries.

- Ask the children to make an Antibiotic Guardian pledge to always do one thing to help protect antibiotics. This may be as simple as washing hands or something more advanced like teaching others about antibiotics

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Suggested activities – secondary school

- Lesson plans for key stage 3 and key stage 4 students are available for use in primary schools. Lesson plans on hand hygiene, respiratory hygiene, oral hygiene and microbes are available for download with instructions and discussion points for the presenter

- A template presentation, "Infections and Antibiotic Resistance" is available for download and use.
  - The first part of the presentation explores how infection can spread and how this can be mitigated, including the best practice for hand washing.
  - The second part of the presentation is on antibiotic resistance.
  - Student worksheets and teacher answer sheets are provided, they supplement the class exercises and are all available to download.

- Play the Keep Antibiotics Working video and consider giving leaflets to children to take home (will need to order from campaign resources website)

- Ask the students to make an Antibiotic Guardian pledge to always do one thing to help protect antibiotics. This may be as simple as washing hands or something more advanced like teaching others about antibiotics Facilitate a group debate - antibiotic or vaccination debate kit available. Debate kits can be downloaded online and delivered remotely

- A crossword and quiz on antibiotics is also available for download Secondary school children may wish to write a creative essay on the importance of tackling antimicrobial resistance. Engage with the school as an Ambassador by judging the best entries. Share these for upload to the Antibiotic Guardian website by emailing ESPAUR@ukhsa.gov.uk

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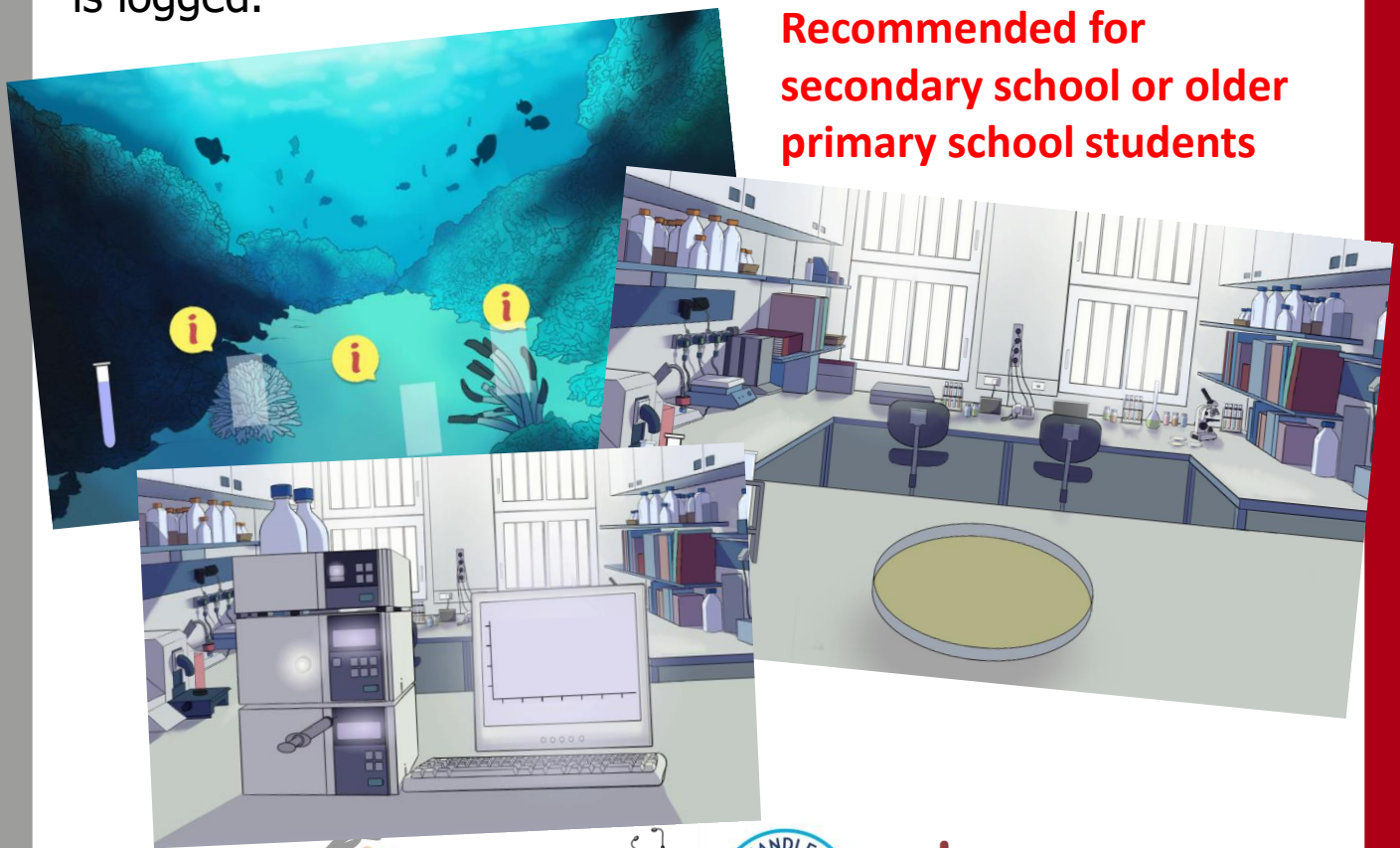
Online game: distancing-friendly!

You may wish to utilise the following online game produced by the University of Strathclyde as part of your lesson. This can be played on individual computers, or played on a large screen for the class to play cooperatively. The game is available from here.

Dr Dirt aims to teach young people about haw the AMR crisis is being combatted by the discovery of new antibiotics. It covers how microbes from the environment can be isolated and tested for their production of antimicrobial agents. Students are then taken through an interactive process of isolating these agents, tasting them to characterise which pathogens they are effective against and how this information is logged.

Recommended for secondary school or older primary school students



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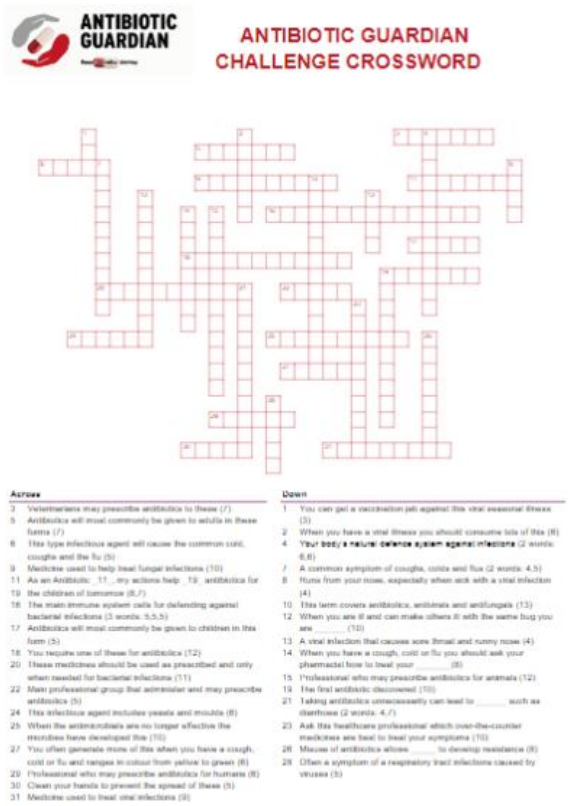
Crosswords and Quizzes

An Antibiotic Guardian Crossword and Quiz is [available for download] which the school can print and distribute ahead of time



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ANTIBIOTIC GUARDIAN CHALLENGE CROSSWORD

Across

3 Veterinarians may prescribe antibiotics to these (7)
5 Antibiotics will most commonly be given to adults in these forms (7)
8 This type infectious agent will cause the common cold, coughs and the flu (5)
9 Medicine used to help treat fungal infections (10)
11 As an Antibiotic _11_ my actions help _19_ antibiotics for the children of tomorrow (8,7)
16 The main immune system cells for defending against bacterial infections (3 words: 5,5,5)
17 Antibiotics will most commonly be given to children in this form (5)
18 You require one of these for antibiotics (12)
20 These medicines should be used as prescribed and only when needed for bacterial infections (11)
22 Main professional group that administer and may prescribe antibiotics (5)
24 This infectious agent includes yeasts and moulds (8)
25 When the antimicrobials are no longer effective the microbes have developed this (10)
27 You often generate more of this when you have a cough, cold or flu and ranges in colour from yellow to green (6)
29 Professional who may prescribe antibiotics for humans (8)
30 Clean your hands to prevent the spread of these (5)
31 Medicine used to treat viral infections (6)

Down

1 You can get a vaccination jab against this viral seasonal illness (3)
2 When you have a viral illness you should consume lots of this (6)
4 Your body's natural defence system against infections (2 words: 6,6)
7 A common symptom of coughs, colds and flu (2 words: 4,5)
8 Runs from your nose, especially when sick with a viral infection (4)
10 This term covers antibiotics, antivirals and antifungals (13)
12 When you are ill and can make others ill with the same bug you are _____ (10)
13 A viral infection that causes sore throat and runny nose (4)
14 When you have a cough, cold or flu you should ask your pharmacist how to treat your _____ (6)
15 Professional who may prescribe antibiotics for animals (12)
19 The first antibiotic discovered (10)
21 Taking antibiotics unnecessarily can lead to _____ such as diarrhoea (2 words: 4,7)
23 Ask this healthcare professional which over-the-counter medicines are best to treat your symptoms (10)
26 Misuse of antibiotics allows _____ to develop resistance (8)
28 Often a symptom of a respiratory tract infections caused by viruses (5)

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THE ANTIBIOTIC GUARDIAN QUIZ

Winter is coming...

1. **Antibiotics are not effective against coughs, colds, flu and most sore throats...**
   - **A.** since these are mostly caused by viruses, which antibiotics do not work against
   - **B.** but antibiotics sometimes work against viruses, so I should take them just in case
   - **C.** however antibiotics work against everything

2. **When I have a cough, cold or sore throat, I should...**
   - **A.** book an appointment with my GP for all mild symptoms or illness
   - **B.** seek immediate emergency medical attention
   - **C.** check with a pharmacist about how to treat my symptoms

3. **There are lots of colds going around. I've been told taking antibiotics 'just in case' can drive up the number of drug-resistant infections, but...**
   - **A.** taking antibiotics when you don't need to allows bacteria to develop a resistance to the antibiotic
   - **B.** only older people can get drug-resistant infections
   - **C.** taking antibiotics will help build up your defences and stop you getting a cold in the first place

4. **My GP has only given me a short prescription of antibiotics but I think I need them for longer. I should...**
   - **A.** use some of my friends antibiotics as they didn't use all the ones they were given last year
   - **B.** take one less a day than prescribed, to make them last longer
   - **C.** take the antibiotics exactly as prescribed – or they may not clear the infection

5. **Drug-resistant infections, also known as antibiotic resistant infections are serious because...**
   - **A.** antibiotics may not work against resistant bacteria
   - **B.** without effective antibiotics many routine treatments or operations like chemotherapy, surgery and Caesarean sections will become increasingly dangerous or impossible
   - **C.** overuse of antibiotics means that antibiotic resistance will spread faster and faster
   - **D.** drug-resistant infections affect both humans and animals
   - **E.** all of the above

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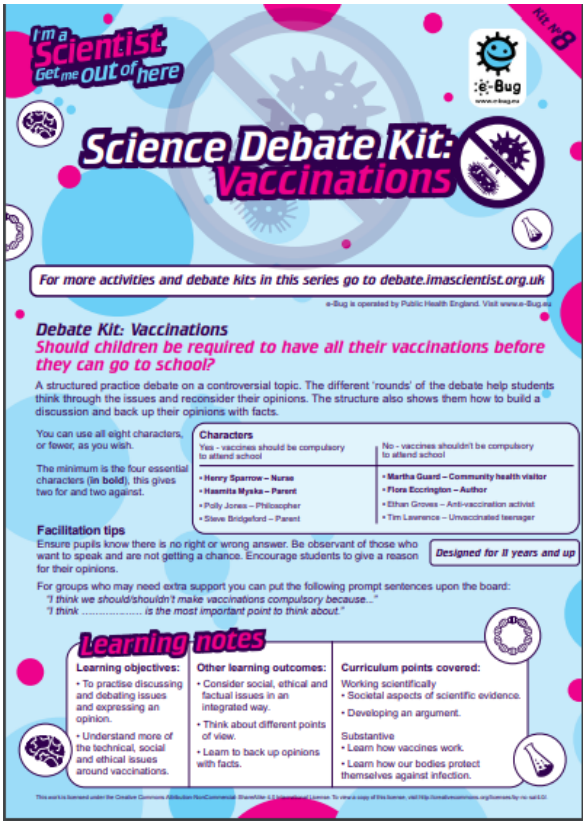
Debate Kits

In collaboration with 'I'm a Scientist', e-Bug has developed debate kits on antibiotic resistance and vaccinations. Full teacher instructions are provided on how to use the kits. These kits can be used in different school and community settings to get young people discussing topical issues around antibiotics and vaccines.
The kits can be downloaded from here



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BECOME AN ANTIBIOTIC GUARDIAN

Antibiotic Guardian

The One-Health Antibiotic Guardian campaign, led by UKHSA, aims to stimulate behaviour change and increase engagement to tackle antimicrobial resistance, through an online, action-based pledge system.

Children and families are invited to become Antibiotic Guardians by choosing one simple pledge on how they will make better use of antibiotics. For example, "*Sing the ABC song when washing our hands with soap and water" or "Visit the e-Bug website to take one of the antibiotic awareness quizzes together".*

Resources for public:
https://antibioticguardian.com/public/

See what other individuals and organisations have done with children & families to tackle antibiotic resistance: https://antibioticguardian.com/sharedlearning/children-and-family/ (also on following pages)

Remember to share your activities, outcomes, pictures and campaign case studies with Antibiotic Guardian Chair, Dr Diane Ashiru-Oredope by email espaur@ukhsa.gov.uk

Please send competition entries if you choose to judge this also.

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HANDLE ANTIMICROBIALS WITH CARE

e-Bug

Supporting Children and Students to Choose or Make a Pledge

1. Discuss with the group why it is important that we protect antibiotics, one of our most important medicines, for the future. What are the risks of using antibiotics incorrectly (e.g. for a viral infection where it is not needed?)

- The bacteria can become resistant to the treatment
- Infections become harder to treat and can be life threatening
- Operations and cancer treatment rely on antibiotics to prevent and treat infections, without effective antibiotics it will be much harder to do these treatments

You can play the video on www.antibioticguardian.com

2. Discuss with the group the best ways to prevent the need for antibiotics by not getting ill. How can you stop spreading and being infected by microbes?

- Hand washing
- Using a tissue when we sneeze and throwing it away
- Being vaccinated

3. Ask the group what else they have learnt and what they will do differently in the future to protect antibiotics.

4. Ask the group to each make an Antibiotic Guardian pledge and promise to always do one thing to help protect antibiotics, this may be as simple as washing hands or something more advanced like teaching others about antibiotics.

Have the supporting teacher take photos of the event – take screenshots to show the virtual event and once all the pledges have been written or chosen, take a group photo with the pledges and/or posters and share on social media with the hashtags #AntibioticGuardian and #KeepAntibioticsWorking

Please follow your group GDPR guidelines for taking images with children and if unsure just share images of the pledges and posters.

Encourage the group to go home and ask their friends and family to become antibiotic guardians via the website: www.antibioticguardian.com

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ANTIBIOTIC GUARDIAN

Keep Antibiotics Working

e-Bug

I will keep antibiotics working by....

- ☐ Singing happy birthday twice whilst washing my hands with soap and water
- ☐ Using a tissue when I sneeze and throwing it in the bin
- ☐ Going to the pharmacy for advice instead of the doctor if I have a cold, cough or sore throat
- ☐ Telling my friends and family about antibiotics and why it's important to protect them
- ☐ Asking my friends and family to pledge to be an antibiotic guardian at www.AntibioticGuardian.com
- ☐ Visiting www.e-Bug.eu and playing the online games

ANTIBIOTIC GUARDIAN

Keep Antibiotics Working

e-Bug

I will keep antibiotics working by....

Printable word versions of these pledge cards are available to send to the school for printing here

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Additional Resources Available

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e-Bug (operated by the UK Health Security Agency) provides free educational resources for classroom and home use, as well as complimentary resources for parents and carers and community groups. The resources make learning about micro-organisms, the spread, prevention and treatment of infection, including antibiotics and vaccination, fun and accessible for all students including a range of interactive activities. This includes a COVID 19 page, which was introduced in 2020.

The e-Bug website (www.e-bug.eu) provides all the resources including worksheets, handouts and classroom activities for download in accessible formats. Resources for AG Schools Ambassadors and teachers can be found on here and includes:

- Lesson plans
- Student worksheets
- Animations
- Activity demonstrations
- Presentations

The main aim of the programme is to ensure all students leave school implementing good infection prevention control and antimicrobial stewardship behaviours, to mitigate the threat of antimicrobial resistance for the next generation. The e-Bug programme works with the international community to ensure every child and young person, in every community, have the opportunity to understand microbes, infection prevention, control and treatment, and build on this knowledge throughout their time in school, empowering them to become antimicrobial stewards in their community.

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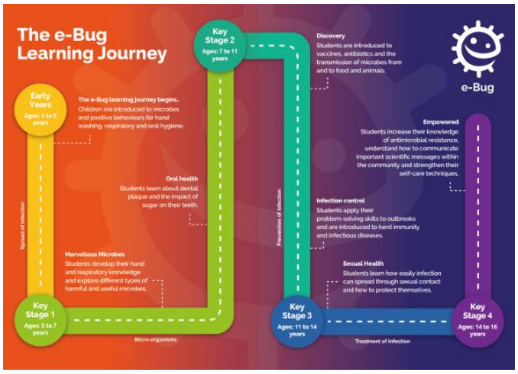
e-Bug Lesson Packs

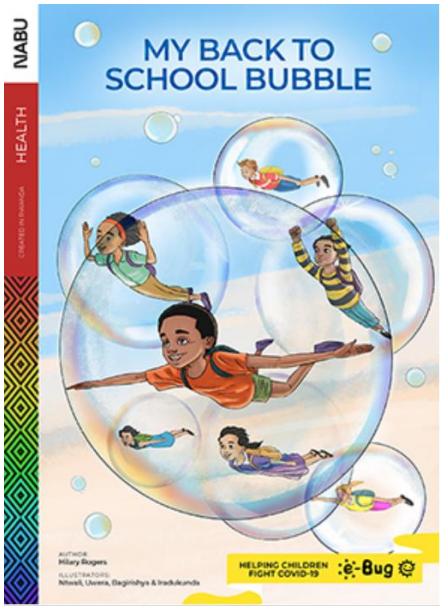
e-Bug has a number of lesson packs, designed to bring the world of microbes, infection prevention, and antibiotics to life for children and young people in the school environment. These are free to download and are available at www.e-bug.eu

The packs are provided in a series for Early Years and Key Stages 1, 2, 3 and 4. The packs provide age appropriate lesson plans along a learning journey that build students' knowledge and understanding from the basics of hand, respiratory and oral hygiene, to understanding microbes, how to prevent infections (including sexually transmitted infections for key stage 3 and 4), and how to treat, with lessons on vaccination and antibiotics. The packs include interactive experiments, worksheets, extension activities, discussion points and teacher guidance.

Each of the lesson plans are mapped to the National Curriculum – following the e-Bug 'learning journey' - with particularly strong links to Science and PSHE/RSE. All the material is accredited by the Association for Science Education.



COVID-19 specific resources are also available including 'My back to school bubble' e-Storybook, hand and respiratory hygiene posters to use in the classroom.



Please consider directing the school you are working with to the e-Bug website in order to promote antimicrobial stewardship throughout the school year.

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E-Bug - Resources for Early Years

The Early Years packs are designed to introduce students aged 3-5 to positive behaviours for hand washing, respiratory, and oral hygiene. Lesson plans are designed to complement the Early Years Foundation Stage framework. The hand hygiene pack is included in this toolkit, although packs for respiratory and oral hygiene are also available from the e-Bug website – here. The provided pack focusses on hand hygiene and has the following learning outcomes:

- Understand that we wash hands to remove germs (microbes)
- Understand the sequencing of hand washing and nose blowing.
- Understand how to blow our nose to minimise the risk of transmission of infection.

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e-Bug for Key Stage 1

The Key Stage 1 packs follow on from the early years packs. The hand hygiene pack is included in the toolkit, with further packs available on the e-Bug website, here.

Each of these sections contain:

- Creative inquiry based activities to promote active learning
- Highlighted learning outcomes which introduce students to what microbes are, and deepen their understanding of hand, respiratory and oral hygiene
- Activities that encourage students to take more responsibility for their own health

https://app.box.com/s/74s7nzacyuj4td90613tsg8h88kfpyrr

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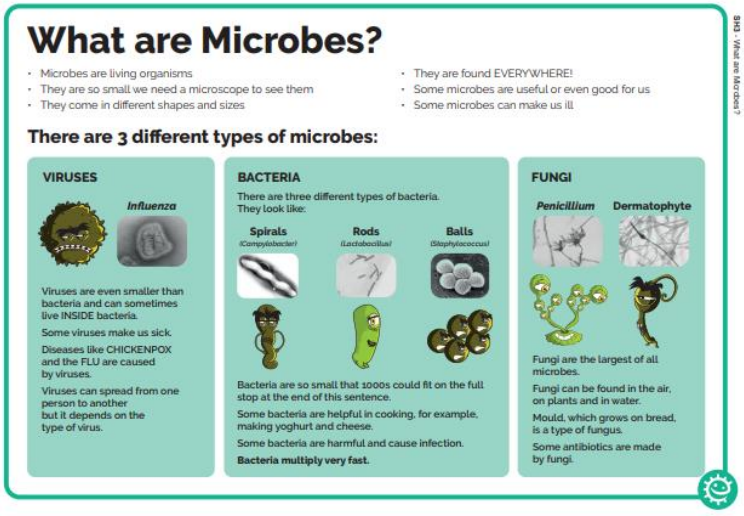
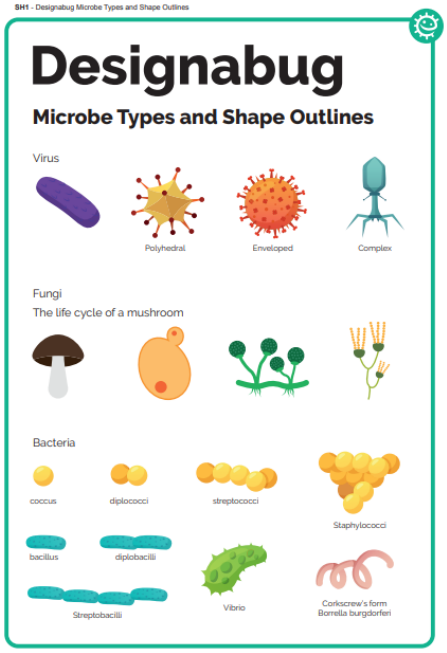
e-Bug for Key Stage 2

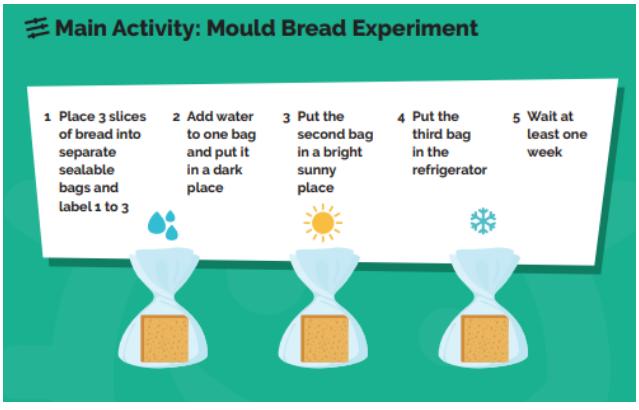
You may wish to look at the following topics:

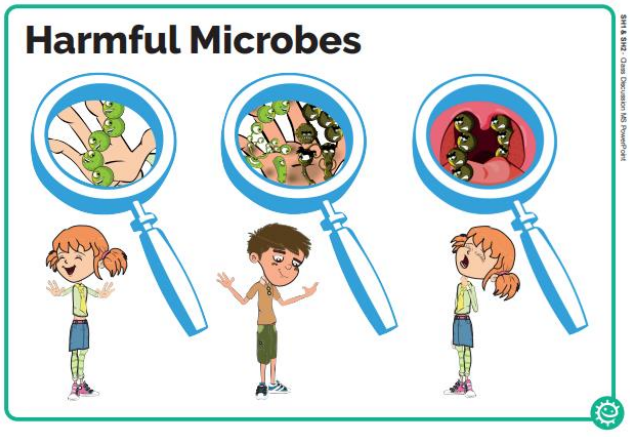
- Hand Hygiene
- Respiratory Hygiene
- Harmful Microbes
- Antibiotic Use

The pack can be downloaded from here









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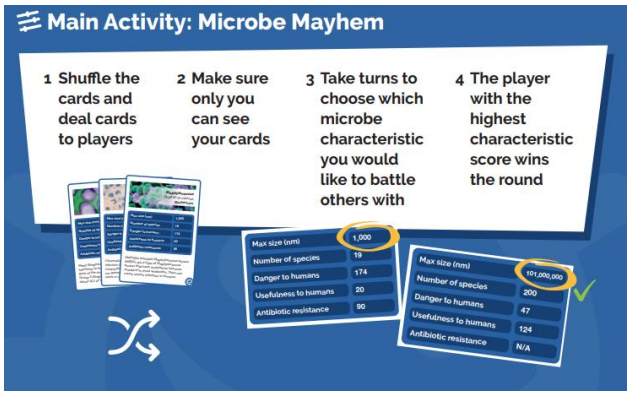
e-Bug

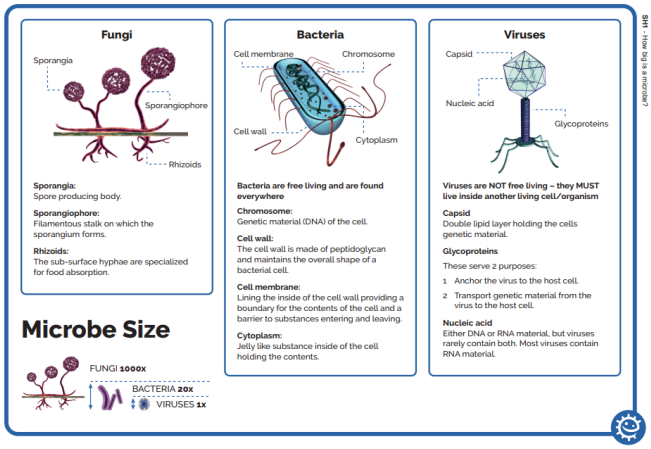
e-Bug for Key Stage 3

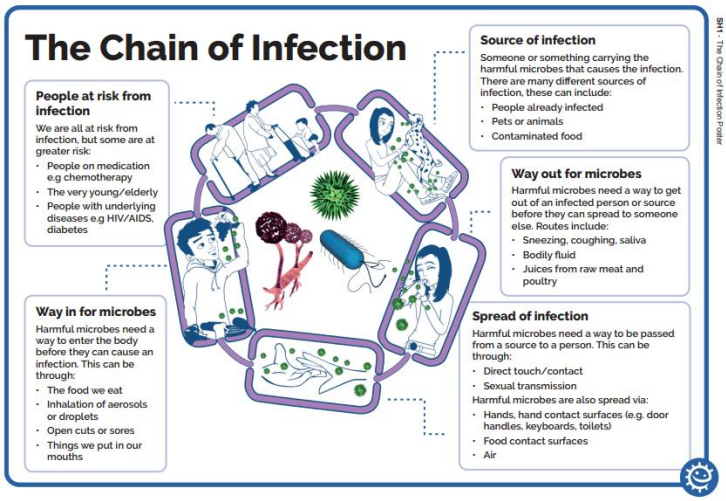
You may wish to look at the following topics:

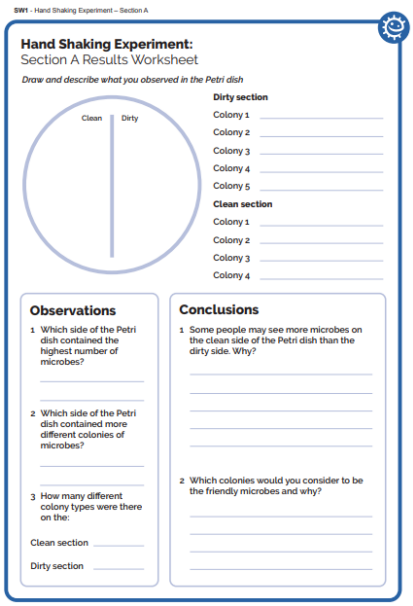
- Hand Hygiene
- Respiratory Hygiene
- Harmful Microbes
- Antibiotic Use

The pack can be downloaded from here









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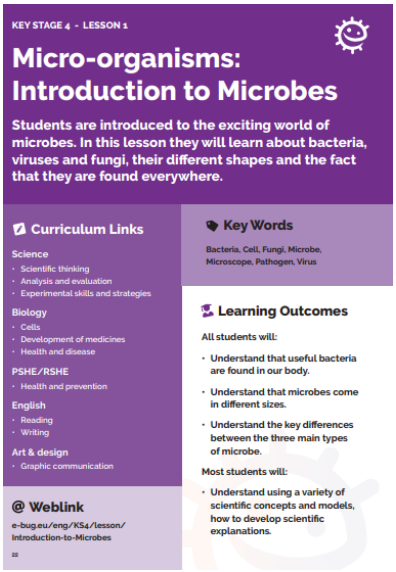
e-Bug

e-Bug for Key Stage 4

The e-Bug for Key Stage 4 resource pack contains lesson plans, worksheets and activities for 14-16 year olds on infection prevention, control and treatment including antibiotic resistance and vaccinations. In addition to worksheets for teachers and students, the packs contains information and references to animations.


KEY STAGE 4 - LESSON 1

Micro-organisms: Introduction to Microbes

Students are introduced to the exciting world of microbes. In this lesson they will learn about bacteria, viruses and fungi, their different shapes and the fact that they are found everywhere.

Curriculum Links

Science
- Scientific thinking
- Analysis and evaluation
- Experimental skills and strategies

Biology
- Cells
- Development of medicines
- Health and disease

PSHE/RSHE
- Health and prevention

English
- Reading
- Writing

Art & design
- Graphic communication

Weblink

e-bug.eu/eng/KS4/lesson/introduction-to-Microbes

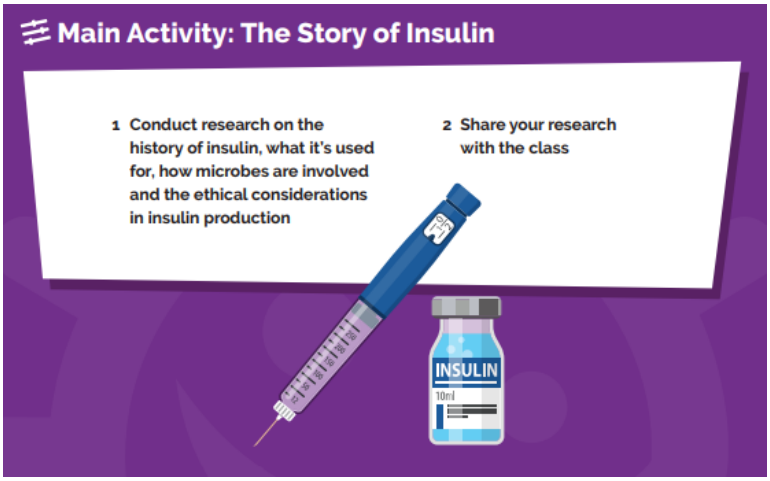
Key Words

Bacteria, Cell, Fungi, Microbe, Microscope, Pathogen, Virus

Learning Outcomes

All students will:
- Understand that useful bacteria are found in our body.
- Understand that microbes come in different sizes.
- Understand the key differences between the three main types of microbe.

Most students will:
- Understand using a variety of scientific concepts and models, how to develop scientific explanations.



Available here

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e-Bug

Example of children and family activities

WORKING TOGETHER to implement & measure the impact of e-Bug in schools

SARAH GODSELL
Partnership Officer
(Health in school settings)
South Gloucestershire Council

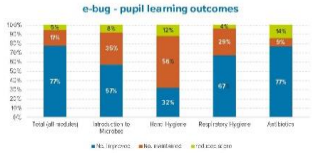
AMY THACKER
Emergency Planning and Health Protection Officer
South Gloucestershire Council

INTRODUCTION

The aim of the pilot was to work collaboratively to implement e-Bug modules within school settings through the local health in schools programme's (HiSP); to measure impact of identified health behaviour outcomes and increase pupil knowledge. The pilot ran in the academic year 2017- 2018, in four primary schools. Schools received the e-Bug Train the Trainer training and identified pupils to receive the project.

METHODS

- Qualitative data was gathered from staff through questions developed by the project team.
- Quantitative data was gathered from pupils through pre/ post learning e-Bug questionnaires.
- Schools were encouraged to monitor attendance data.



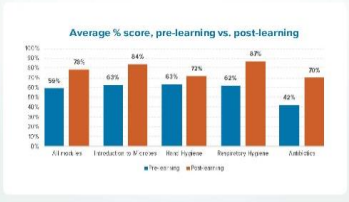
Of the **155** pupils surveyed, **41** scored **below 50%** in the baseline/ pre-learning questionnaire. Two of these were lost on follow-up. **37 (95%)** of the remaining **39** pupils showed an improvement in their knowledge.

RESULTS

- **95%** of pupils (**155** participants) showed improvement in learning or maintained knowledge across all four e-Bug modules. Average % pre-learning was **59%** vs. post-learning **78%**.
- Data from one school showed a percentage increase in attendance: term 3 2017 showed **5.71%** of children were absent from school with colds/flu/sickness, compared to **4.68%** of children absent with colds/flu/sickness in the same term in 2018 and after the teaching of e-Bug.
- One school measured soap use pre/post intervention, with some surprising results.

CONCLUSIONS AND RECOMMENDATIONS

Three schools successfully completed and gained the silver HiSP award through the pilot, demonstrating the impact of e-Bug on healthier behaviour change and increased knowledge. Initial findings demonstrate changes in hand washing behaviour and increased pupil knowledge. Teacher capacity to receive Train the Trainer training to participate in project was a limiting factor.



KEY LESSONS

- Named local lead to support and liaise between project team and school contacts
- Teacher capacity to attend Train the Trainer
- Flexibility required for schools to run within own timeframes and in own way (e.g. Science lessons, after-school club, whole-school assemblies).

MODULE 1 INTRO TO MICROBES

Children's questionnaires showed 100% better knowledge of microbes by the end of the project.

MODULE 2 HAND HYGIENE

I can't believe they know so much about hand washing and how to stop germs spreading, even the younger ones.

MODULE 3 RESPIRATORY HYGIENE

Children and governors loved this session. It had the biggest impact on hand washing and awareness of sneezing into tissues and putting the tissue in the bin.

MODULE 4 ANTIBIOTICS USE & MEDICINE

The children have learnt about the four key areas in a fun and interesting way.

ACKNOWLEDGEMENTS

The researcher would like to thank the school leaders, pupils and parents for taking part in the pilot.

sarah.godsell@southglos.gov.uk | amy.thacker@southglos.gov.uk

e-Bug

Health in Schools

South Gloucestershire Council

Example of children and family activities

Antimicrobial Resistance Campaign

Initial idea

Gloucestershire County Council, NHS providers and commissioners, Public Health England and the Local Pharmaceutical Committee all teamed up with a panel of the target audience, to help raise awareness of antibiotic resistance.

Over 40 local schools and colleges were approached and asked to submit entries to an awareness raising competition as sixteen – twenty four year olds are amongst the highest misusers of antibiotics.

What we asked the competition to demonstrate:

To develop a communications and media campaign for Gloucestershire aimed at 16 to 24 year olds and owners of domestic pets.
The campaign must communicate at least one of the following:

1. What is antimicrobial resistance?
2. Why is antimicrobial resistance relevant to you?
3. What are some of the actions you can take to stop antimicrobial resistance, and to protect yourself and your friends, family and community from antimicrobial resistance?

THE WINNERS...

Drinks mats

Online quiz

Posters

Key campaign success stats

Social media reach (across Twitter and Facebook) reach of **461,000, 440 clicks**

Website page hits over **13,000**

People who watched the video over **10,000**

Bus adverts seen by an estimated **509,000** residents within Gloucestershire

Bus adverts

Streetliner

Bus rear

Based on a winning campaign creative from students at Gloucestershire College

NHS Gloucestershire COUNTY COUNCIL

Example of children and family activities

Girlguiding Orkney World Antibiotic Awareness Week Challenge: an all-age activity challenge for girls & leaders

Catriona Innes on behalf of the NHS Orkney Antimicrobial Management Team
✉ catriona.innes@nhs.net

Background

Antimicrobial resistance (AMR) is one of the biggest threats to global health facing the world today[1] and tackling it requires a sustained multi-faceted approach; engaging children and young people is one way to increase AMR awareness for future generations. Girlguiding is the leading charity for girls and young women in the UK and is active within the local community in Orkney. The NHS Orkney antimicrobial management team (AMT) planned to work with Girlguiding Orkney to develop an all-age challenge to help raise awareness of what antibiotic resistance means and why it is important in a fun – and challenging – way.

Development of Challenge

AMT representatives met with the Girlguiding Orkney guiding development lead in July 2018 and agreed to develop a challenge and badge in line with Girlguiding guidelines.[2] Approval was obtained from the Scottish Antimicrobial Prescribing Group and eBug to include their resources within the challenge and from Girlguiding UK to use their branding.

The challenge consisted of five parts. Each part included demonstrations to increase knowledge about the topic and activities for girls to choose from. To gain the challenge badge girls needed to have carried out the demonstration in, and completed at least one activity from, each part (figure 1). As far as possible these activities were guiding section (i.e. age) specific to ensure their appropriateness; some activities were appropriate across all sections.

Parts of challenge:

- Meet the microbes
- Spreading bugs
- Antibiotics & antibiotic resistance
- Become an Antibiotic Guardian
- Sepsis

Figure 1: Challenge activity pack

The challenge was launched in November 2018 and the local antimicrobial pharmacist and infection control nurse (both involved in local guiding) visited units on request to help facilitate and run the challenge (figure 2).

Figure 2: Challenge activities

Figure 3: Media coverage of challenge

Outcome and Impact

- The challenge was undertaken by several guiding units across Orkney and the north of Scotland (~100 girls to date) covering a wide range of ages (5-16 years old) and their leaders (figure 2).
- The challenge received media coverage during World Antibiotic Awareness Week 2018 in the weekend edition of the Press and Journal (regional newspaper covering northern and highland Scotland, circulation approx. 48,000) and on Twitter getting the antimicrobial resistance message out to a much wider audience (figure 3).
- Significant interest was shown in the challenge from other NHS Scotland colleagues as many are Scout and Guide leaders themselves and discussions were mooted about development of a Scottish national badge.

Future Plans

A national joint Girlguiding and Scout badge is being developed by Public Health England for launch in time for World Antibiotic Awareness Week 2019 which will use work done with this badge as part of the development process.

References

1. WORLD HEALTH ORGANIZATION, 2018. *Antibiotic Resistance*. [online]. Geneva, Switzerland: World Health Organization. Available from: https://www.who.int/news-room/fact-sheets/detail/antibiotic-resistance [Accessed 13 June 2019].
2. GIRLGUIDING, 2017. *Challenge Pack Guidelines*. [online]. London: Girlguiding. Available from: https://www.girlguiding.org.uk/globalassets/docs-and-resources/branding-and-resources/challenge_pack_guidelines-2014.pdf [Accessed 13 June 2019].

Acknowledgements

With thanks to Healthcare Improvement Scotland Scottish Antimicrobial Prescribing Group, eBug, Girlguiding Orkney and all the girls and leaders who took part in the challenge.

Ideas from Scouts and Girl Guiding

Members are given the opportunity to share what they have learnt through a creative medium. Suggestions are provided below; however you may like to allow members to choose what type of resource they would like to make.

Posters

Develop an eye-catching poster to show others how and why they should protect antibiotics.

Members should be encouraged to focus on one area they feel strongly about:

- Microbes
- Hand Washing
- Respiratory Hygiene
- Spread of infection
- Not using antibiotics for viral infections
- Going to the pharmacy before a GP for colds, coughs and sore throats
- Getting vaccinated to prevent getting ill

Take it further:

- Encourage the school to make a display of posters around the meeting location such as in the toilets.
- Encourage young people to take posters home and present to family
- Send to your local public health team or hospital to share with others in the community
- Share your resource on twitter with the hashtags #AntibioticGuardianBadge #AntibioticGuardian and #KeepAntibioticsWorking

Ideas for other resources

- Develop a song or jingle as a group and invite parents to listen at the end of a session
- Create fridge magnets that can be displayed at home with key hygiene messages
- Develop a social media campaign: posters and infographics to be shared online (may be appropriate as part of a larger project for older scouts and guides)
- Have students produce short 30 second videos to explain what they have learned and why tackling antibiotic resistance is important

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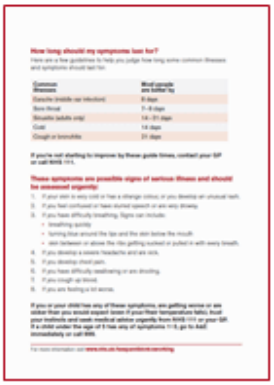
Keep Antibiotics Working

Keep Antibiotics Working is the UK Health Security Agency's campaign highlighting that taking antibiotics when you don't need them puts you and your family at risk. To help keep antibiotics working you are urged to always take your doctor or nurse's advice on antibiotics. The campaign is not actively running on TV and radio this year, but all resources are still available and you are encouraged to use these.

You can share the campaign video (found here) as part of your activity.

Leaflets and posters for families can be downloaded from the campaign resources centre

These resources have been translated into 13 languages, which can be found here



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Annex 1: Hand hygiene game

Learning Objectives

- Harmful microbes can spread to others via hands and cause illness
- The best way to stop harmful microbes from spreading is to wash your hands with soap and water

Equipment

- UV gel or powder and UV torch and lamp (alternative is to use glitter or other sticky substance like pepper)
- Access to hand washing facilities with soap and copy of '6 steps of handwashing' (a slide on this is included in the provided presentation for primary school suggested activity)

Activity Instructions

- Explain to the group that they are going to demonstrate how microbes spread from person to person. Explain that you will use UV gel/glitter to demonstrate this. Ask the group to imagine that the UV/glitter is pretend microbes, as microbes themselves are too small to see with the naked eye.
- Ask children to get into lines of 4 -5 children. Have the supporting teacher in the room place UV gel or glitter on the hand of the first child and ask them to shake hands with the person behind them, and so on until all have shaken hands.
- If you used UV gel, have the supporting teacher turn off the lights and show how the gel has spread from child to child. If glitter show how the glitter has spread to each child.
- Demonstrate remotely the proper way to wash hands with soap and ask them to follow your movements: do the six step technique. Use the torch again to show how well children have washed hands.

Supporting Information

To find out more about infections and antimicrobial resistance:

- Visit the Antibiotic Guardian website to find out how you can help keep antibiotics working with a sample pledge: https://antibioticguardian.com/
- Visit the NHS website to find out about Antibiotics and antibiotic resistance: https://www.nhs.uk/conditions/antibiotics/antibiotic-antimicrobial-resistance/
- Read blog articles from the UK Health Security Agency Public blog on Antimicrobial resistance: https://publichealthmatters.blog.gov.uk/category/priority3/antimicrobial-resistance/
- Visit the European Centre for Disease Prevention and Control website to find out what actions are being taken in Europe: https://ecdc.europa.eu/en/antimicrobial-resistance
- Visit the European Antibiotic Awareness Day webpage containing information and resources to share with others: https://antibiotic.ecdc.europa.eu/en
- Visit the World Health Organisation website on Antimicrobial resistance to find out what actions are being taken globally: https://www.who.int/antimicrobial-resistance/en/
- Visit the Microbiology Society website to find out more about education and outreach: https://microbiologysociety.org/
- Visit the e-Bug website to find resources to be used with young people https://e-bug.eu/
- Visit the e-Bug YouTube channel to see demonstrations of some of the activities https://www.youtube.com/channel/UCKhJ4-fTiRKMU1FtkEirEfw

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Thank you

We look forward to hearing all about your activity

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