

Communicating with the public during the development of e-Bug



Dr Donna Lecky
Dr Cliodna McNulty

19th September 2003



What is e-Bug?



Developmental Team:

Project Coordinator	Clodna McNulty
Pack Developer	Donna Lecky
Web Lead	Patty Kostkova
Web Developer	David Farrell
Lead Administrator	Diane Stallabrass

Associate Partners:

Belgium (BE)	Herman Goossens Stijn De Corte
Czech Republic (CZ)	Jiri Benes Tereza Kopřivová Herotová
Denmark (DE)	Jette Holt Marianne Noer
France (FR)	Pierre Dellamonica Pia Touboul
Greece (EL)	Jenny Kremastinou Koula Merakou
Italy (IT)	Guiseppe Cornaglia Raffaella Koncan
Poland (PL)	Pawel Grzesiowski Anna Olczak-Pienkowska
Portugal (PT)	Antonio Brito Avo
Spain (ES)	José Campos
United Kingdom (UK)	Julius Weinberg

Collaborating Partners:

Croatia	Arjana Tambic Andrasevic
Finland	Pentti Huovinen
Hungary	Gabor Ternak
Ireland	Robert Cunney
Latvia	Sandra Berzina
Lithuania	Rolanda Valinteliene
Slovakia	Tomáš Tesař
Slovenia	Marko Pokorn

- A pan European educational resource
 - Junior and Senior School children
- 18 European Countries
- Personal hygiene and prudent antibiotic use



Schools and teachers



- Focus groups with science teachers
 - What do they require from e-Bug?
 - What resources do they already use?
 - Examination of other resources
 - What would make you use e-Bug above other resources?





Teacher requirements



- MUST link closely to the National Curriculum
- MUST be adaptable
- Important to have IT links
- Beneficial to cover a range of teaching styles
- Be student friendly
- Be teacher friendly



Student Questionnaire 1



e-Bug

Looks like he
tries to be
funny but
isn't!



Looks like
she gets up
to a lot of
mischief



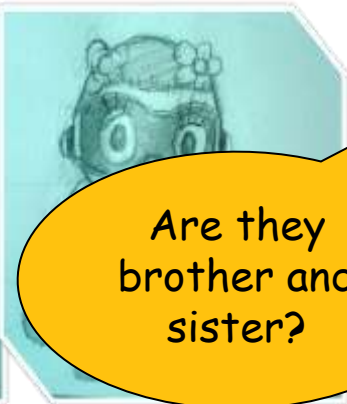
She thinks
she's cool but
she's not

A devil in
disguise -
look at his
grin



A devil in
disguise -
look at his
grin

Are they
brother and
sister?



They look
like they're
made out of
rubber!



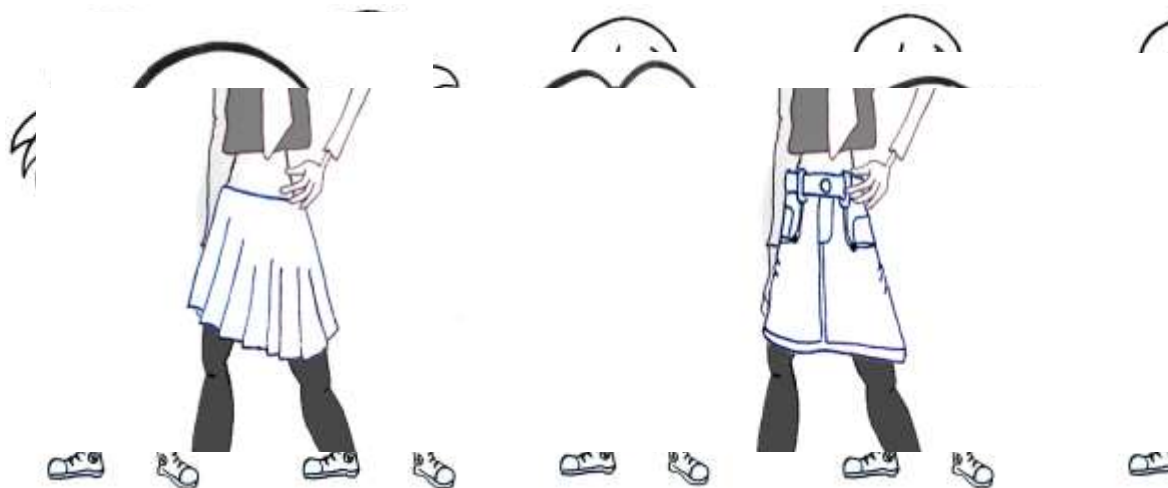


Student Questionnaire 2 – Girl character



Healthy Schools

Amy



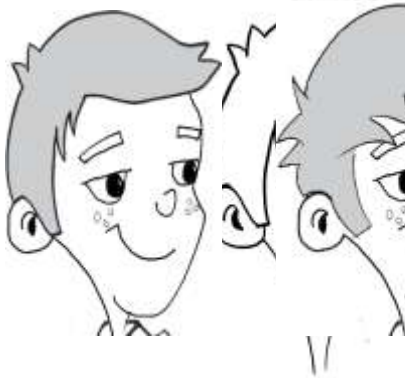


Student Questionnaire 2 – Boy character



Harry

'Protect Yourself'





Questionnaire 3 – Bug characters

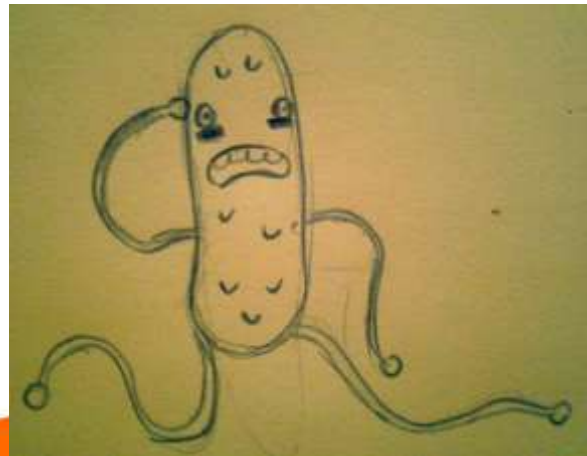


*e-Bug

Good bugs



Bad bugs



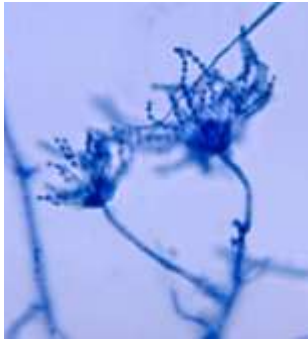


e-Bug

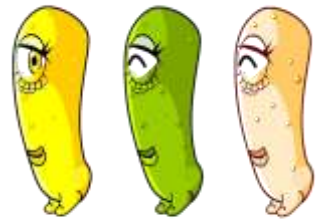
Student Questionnaire 3 – Bug Characters



Good Bugs



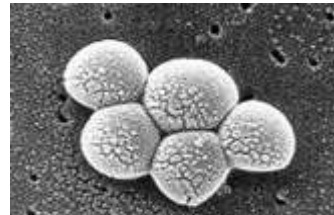
PENICILLIUM



LACTOBACILLUS



Bad Bugs



STAPHYLOCOCCUS



CAMPYLOBACTER



INFLUENZA



DERMATOPHYTE





Activity Trials – Student Feedback



Chicken Salad Questionnaire

Thank you for taking time to fill out the questionnaire. It shouldn't take long to complete and will help us to improve the activity and make it more fun! Please be honest in your answers.

1. How enjoyable did you find the activity?

- Loved it
 liked it
 neutral
 disliked it
 hated it

2. Name three things you liked about the activity:

- a. _____
- b. _____
- c. _____

3. What was the BEST part of the activity and why?

4. What was the WORST part of the activity and why?

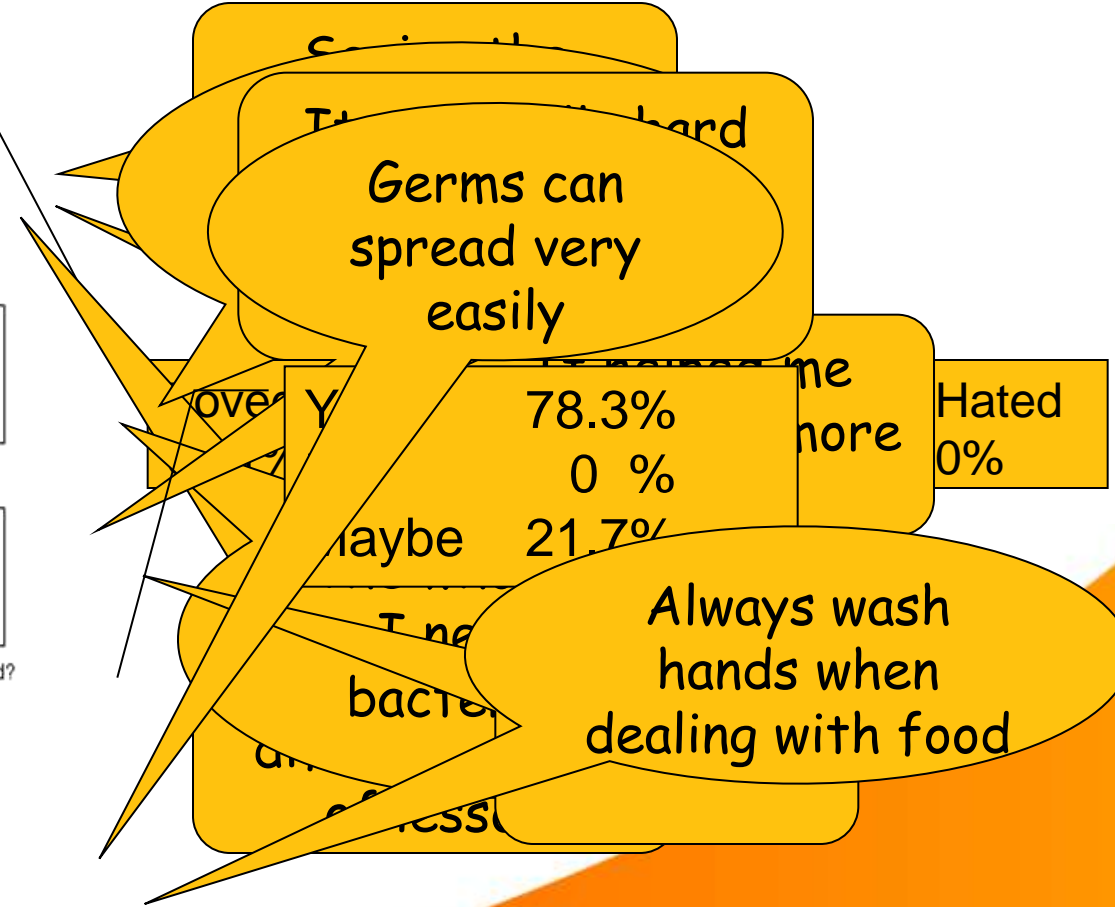
5. After this activity, would you think more about washing your hands when handling food?

- Yes
 No
 Maybe

6. What was the main thing you learned in this lesson?

7. Are you a boy or girl?

- Boy
 Girl





Activity Trials – Teacher feedback



- It would be beneficial to have some background information for teachers
- Some of the activities were too long – it would be much better to stick to one main activity
- Really liked the individual student sheets
- The activities are a new fun way to teach the curriculum for both the students AND the teachers





Junior School Pack Teacher section



National Curriculum Link

e-Bug

Introduction to Microbes

In this section students are introduced to the world of microbes, starting by exploring the different types and sizes of microbes.

In this introductory activity, students use their observation skills to create a mixture of their own choice and answer the various microbial types and shapes.

The education activity 'Microbe Maze' encourages the classroom lesson and allows students to decide whether they describe being discussed in a maze.

Microbes

e-Bug

1.1 Micro-Organisms An Introduction

Learning Outcomes

- All students:
 - Will know that bacteria, virus and fungi are three different types of microbes
 - Will understand that microbes are found everywhere
- More able students:
 - Will know that microbes come in different shapes and sizes

Background Information

Micro-organisms, also known as germs, bugs or microbes, are tiny living organisms too small to be seen with the naked eye. They are found almost everywhere on earth and can be both beneficial and harmful to humans (this will be explored in later sections). Although extremely small, microbes come in many different shapes and sizes. There are three main groups of microbes:

Bacteria are the smallest of the microbes and are generally harmful to humans. Viruses are single-celled organisms and cannot survive without a host. They need a host cell in order to survive and reproduce. Once inside the host cell they rapidly multiply by the millions of destroy the cell in the process!

Fungi are multi-cellular plant like organisms that can be both helpful and harmful to humans. Fungi obtain their food by either decaying dead organic matter or by living as parasites on a host. Fungi are harmful by causing infection or being poisonous to eat, others are beneficial or harmless e.g. Penicillin (produces antibiotics) can be eaten (the fungus requirement).

Bacteria are single-celled organisms that can multiply and are over 22 kinds. During their normal growth, some (pathogenic) bacteria which are extremely harmful to humans or disease (Staphylococcus) other bacteria are completely harmless whereas others are extremely beneficial (Lactobacillus in the food industry) and even necessary such as those involved in plant growth (Nitrosobacterium). Bacteria are called non-pathogenic, while harmful bacteria are pathogenic. Over 70% of bacteria are harmless to humans.

Bacteria can be simply divided into three groups: Cocci, Bacilli and Spirilli. Cocci can also be further grouped by how the cells are arranged: Diplococci (pairs), Streptococci (chains) and Diplococci (pairs).

Materials Required

- Microscope
- Slides and coverslips
- Petri Dishes
- Jell-Cast
- Slips
- Glass
- Balloons
- Safety Tablets
- Coloured paper
- Safety Glass
- Marker pen

Admission Preparation (30 mins)

- Organise the site and create material
- Prepare slides and coverslips for every member
- Prepare slides and coverslips for the class

e-Bug

1.1 Micro-Organisms An Introduction

Lesson Plan

Introduction (10 mins)

- Begin the lesson by asking children what they already know about germs or bugs. Ask the children 'Have they, or where is that? What are the bacteria and what do they think caused it?'
- Display to the children that diseases are caused by germs and that there are three types of microbes: bacteria, virus and fungi. Use the colour posters provided (see below).
- Separate the three microbes into three different types of microbes: bacteria, virus and fungi. Use the colour posters provided (see below).
- Display to the children that although microbes are so small that they can only be seen through a microscope. Use the slides to demonstrate the different sizes of microbes.

Main Activity (30 mins)

- The activity can be done either individually or in groups. Children can be given either a colour poster or a slide to use as a reference. They should be asked to draw the shape of the microbe on the slide and label it with the name of the microbe. They should also be asked to draw the shape of the microbe on the slide and label it with the name of the microbe.
- Provide each group with a bag of multi-colored beads and other soft materials (e.g. safety tablets, balloons, string, etc.).
- Children should be asked to create a mixture of their own choice and answer the various microbial types and shapes.
- Each child should be asked to create a mixture of their own choice and answer the various microbial types and shapes.
- Children should be asked to create a mixture of their own choice and answer the various microbial types and shapes.
- Children should be asked to create a mixture of their own choice and answer the various microbial types and shapes.

Plenary (10 mins)

Check for understanding by asking the children the following questions:

- What are the most common types of microbes?
- What are germs?
- What are microbes found?
- Are all microbes harmful?
- What are the different shapes of bacteria?

Classroom Activity

- Provide each child with a slide and a coverslip.
- By using the microscope and the slides, children should be asked to create a mixture of their own choice and answer the various microbial types and shapes.

Answers:
Top (1 - 4) Bacteria, Bacteria, Fungi, Bacteria
Bottom (1 - 4) Virus, Fungi, Bacteria



Junior School Pack Student section



What are Microbes?



e-Bug

Make
Design a microbe of your choice using the materials provided.
Before you start, do

Bacteria

- Use the balloons to make bacteria.
- Use the string, coloured paper, marker pens, etc to design your bacteria.

Top Tip

Bacteria come in lots of different shapes and sizes - some are round like balls, some are like spirals and some are long like rods. Some even use tail like structures to help them zoom and move!



e-Bug

Microbe Mania

There are 3 different types of microbes - bacteria, virus and fungi.

From the pictures and descriptions can you work out which microbe is which?

Hint

Remember there are three different types of bacteria

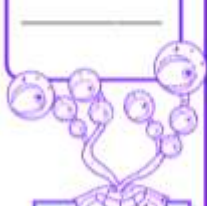
- rods
- spirals
- cocci or spheres



My Observations

1. Is it a good or bad microbe?

2. Choose a name for your microbe.



Fascinating Fact

YOU are home to 1,000 million microbes!

This is a picture of my _____



My name is Staphylococcus. If stream I am round in shape in your nose on your skin on your spots. Why?

Staphylococcus



My name is Influenza. I am generous; headaches spread through me. What am I?

Influenza is



e-Bug

What are Microbes?

- Microbes are living organisms
- They are so small we need a microscope to see them
- They come in different shapes and sizes

- They are found EVERYWHERE!
- Some microbes are useful or even good for us
- Some microbes can make us ill

There are 3 different types of microbes:

BACTERIA

- There are three different types of bacteria. They look like:

Spirals (<i>Campylobacter</i>)	Rods (<i>Lactobacillus</i>)	Balls (<i>Staphylococcus</i>)

- They are so small that 1000s of bacteria could fit on the full stop at the end of this sentence.
- Some bacteria are helpful in cooking, for example, making yogurt and cheese.
- Some bacteria are harmful and cause infection.

VIRUS

Influenza



- Viruses are even smaller than bacteria and can sometimes live INSIDE bacteria!
- Most viruses make us sick.
- Diseases like CHICKENPOX and the FLU are caused by viruses.
- Viruses are easily spread from one person to another.

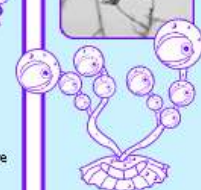
Fascinating Fact

Many of our everyday illnesses are caused by viruses, for example:

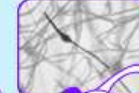
- Colds
- Flu
- Most Coughs
- Some Earache
- Some Sore throats

FUNGI

Penicillium



Dermatophyte



- Fungi are the largest of all microbes.
- Fungi can be found in the air, on plants and in water.
- Mould, which grows on bread, is a type of fungi.
- Some antibiotics are made from fungi!



Communicating with adults through e-Bug



Extension Activities

- Homework sections
- Promoting key messages in the home

Science fairs

- Collaboration with e-Bug, HPA, DH, BSAC, APUA, DG-Sanco
- Promoting key health messages from e-Bug to the local community



