



Spread of infection: Food Hygiene

Students will go through an interactive quiz which follows the preparation of a meal. Along the way, students will have to make decisions about what to do next and answer questions.

Curriculum Links

Science

Working scientifically, Living things and their habitats; Animals, including humans

PSHE/RSHE

Health and prevention

English

Reading and comprehension;
Spoken Language

Design and Technology

Cooking and nutrition

Key Words

Microbes, Foodborne illness, Bacteria,
Use by, Best before, Refrigeration

@ Weblink

[e-bug.eu/eng/KS2/lesson/
Food-Hygiene](http://e-bug.eu/eng/KS2/lesson/Food-Hygiene)

Learning Outcomes

All students will:

- Understand that microbes can be found on our food and can transfer to humans.
- Understand that cooking food properly can kill harmful microbes.
- Understand that bacterium multiply very quickly.

Most students will:

- Understand that refrigeration only stops microbes growing, it doesn't kill them.
- Understand the difference between "use by" and "best before".

📎 Resources Required

Starter Activity: Class Discussion

Per class

- Copy of SH1
- Copy of SH2

Main Activity: Kitchen Check

Per class

- Copy of PP1 (available from e-bug.eu website)

Extension Activity 1:

Fridge Raiders

Per group

- Copy of SH3
- Copy of SH4
- Copy of TS1

Extension Activity 2:

Food Hygiene Quiz

Per student

- Copy of SW1

Extension Activity 3:

Spot the Mistake

Per group

- Copy of SW2

Extension Activity 4: Label Sort

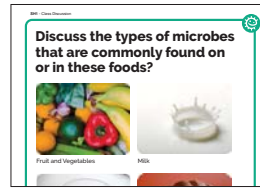
Per student

- Copy of SW3

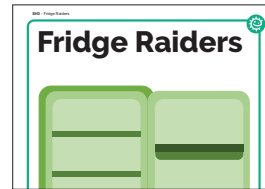
☰ Advance Preparation

For the Extension Activity Fridge Raiders, laminate a copy of SH3 and the images on SH4. Alternatively MS PowerPoint Slides of the images are available on the e-Bug website e-bug.eu.

📄 Supporting Materials



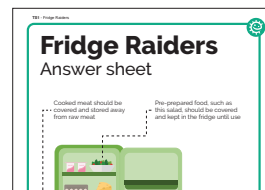
SH1 & SH2 Class Discussion



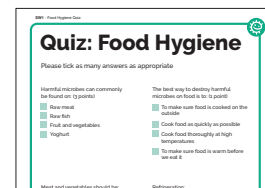
SH3 Fridge Raiders



SH4 Fridge Raiders



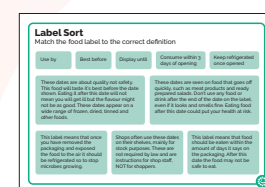
TS1 Fridge Raiders



SW1 Food Hygiene Quiz



SW2 Spot the Mistakes



SW3 Label Sort

Lesson Plan



≡ Introduction

1. Explain to the students that some microbes like to grow in nice warm damp places, such as inside our bodies, and when they find somewhere they like, they grow and multiply. But they usually don't like places that are very warm or cold. Explain to the class that for this lesson they will be learning how harmful microbes can enter our bodies through the food we eat.
2. Ask students if they know why we cook food or keep it in a fridge. Explain that putting food in the fridge only slows or stops microbial growth, it doesn't kill it. The microbes will grow again when they come out of the fridge. The only way to kill microbes is to cook food until it is really hot and cooked all the way through. This is because very warm temperatures kill many harmful microbes.
3. Discuss with the class which foods contain the most harmful bacterium. Show the class pictures of various food types (SH1) and ask them which they think could contain the useful/harmless bacteria and which contain the harmful bacterium. Answers for the discussion are provided on SH2.

Main Activity: Kitchen Check

1 Open the Kitchen Check MS PowerPoint quiz

2 Make decisions about preparing a meal

3 Learn about good food hygiene along the way



Main Activity: Kitchen Check

- 1.** Set up the Kitchen Check MS PowerPoint quiz (available on the e-Bug website e-bug.eu) on a computer, tablet or projector.
- 2.** Students take part in an interactive quiz which follows the preparation of a meal. Students will be presented with questions to answer and explanations will be displayed.
- 3.** At the end of the quiz, students will understand where food hygiene risks lie and will be able to apply them to their own food preparation practices.

Extension Activities

Fridge Raiders

Using the laminated copies of SH3 and SH4, lay out the images of the large fridge and foods kept in the fridge on a table or display the student handouts on a whiteboard.

Ask students to place the foods in the fridge on the correct shelf according to best food hygiene practices. Ask the students which foods should also be covered up to prevent cross contamination. Teacher answers can be found in TS1.

Students learn how to store food safely, and that refrigeration only slows the growth of microbes, it doesn't kill them.

Food Hygiene Quiz

Provide SW1 to groups of 3 or 4 students.

The team with the most points wins.

Alternatively the quiz can be completed at the beginning of the lesson to measure understanding. Answers are available on the e-Bug website.

Spot the Mistake

Provide SW2 to groups of 2 or 3 and ask students to spot the best practice kitchen mistakes and discuss them with the class. Answers are available on the e-Bug website.

Label Sort

Allocate SW3 to groups of 3 or 4. Ask students to match food labels to their correct definition to help students learn how to consume food safely.

Learning Consolidation

At the end of the lesson, ask the class if they can name ways to reduce the spread of microbes when handling food.

For example:

- Wash my hands before and after handling food.
- Clean kitchen surfaces and utensils before and after preparing food.
- Wash fruit and vegetables before eating them.
- Don't wash raw meat to avoid harmful microbes splashing onto other foods and surfaces.
- Don't eat food that is past its used by date.





Discuss the types of microbes that are commonly found on or in these foods?



Fruit and Vegetables



Milk



Yoghurt



Bread



Chicken



Sausages





Answers



Fruit and Vegetables: Most of the microbes found on fruit and vegetables are harmless, but sometimes harmful microbes can be found in the soil in which they are grown. It is therefore important to wash all fruit and vegetables before cooking and/or eating them.



Milk: Fresh milk contains *Lactobacillus* Bacterium which help us digest food. There can also be harmful microbes that are removed when the milk is heated up (pasteurized) before it is sent to the shops.



Yoghurt: Yoghurt usually contains *Lactobacillus* Bacterium which help us digest food.



Bread: The yeast *Saccharomyces cerevisiae* helps bread to rise.



Raw Chicken: Raw chicken may contain *Salmonella*, *E. coli* or *Campylobacter* Bacterium, all of which can cause food poisoning in humans.



Raw Sausages: Raw meat may contain *Salmonella*, *E. coli* Bacterium which can cause food poisoning in humans.





Fridge Raiders

Answer sheet

Cooked meat should be covered and stored away from raw meat

Pre-prepared food, such as this salad, should be covered and kept in the fridge until use



Some jars of food, for example jam, need to be stored in the fridge once opened

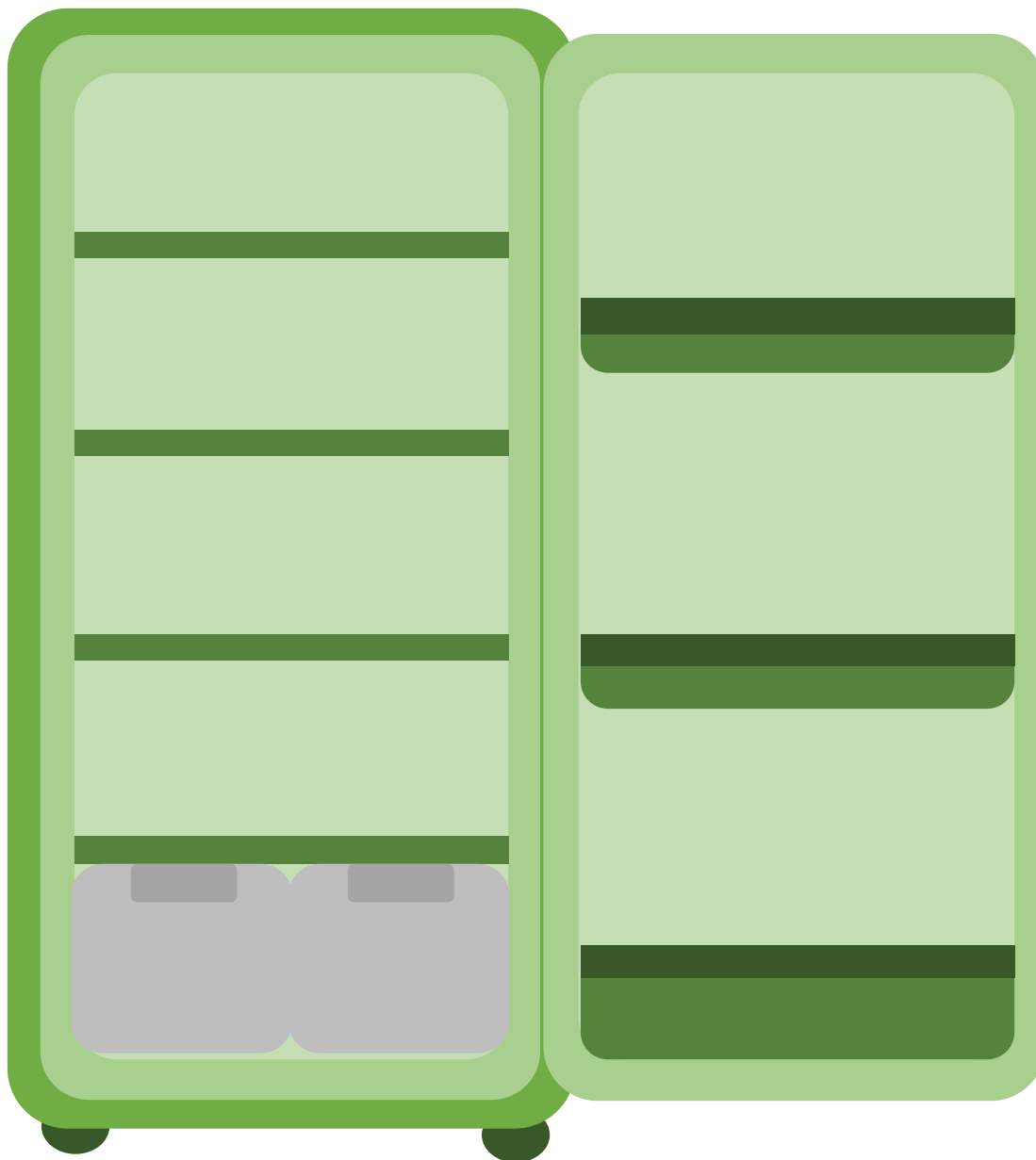
Raw meat and fish should be covered and kept on the bottom shelf in the fridge

Store fruit and vegetables and salad in the draw at the bottom of the fridge



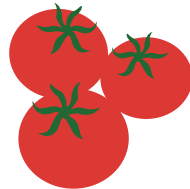
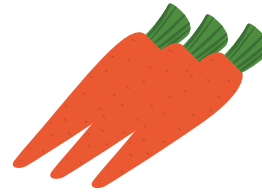
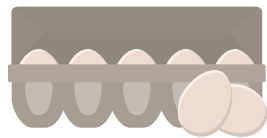
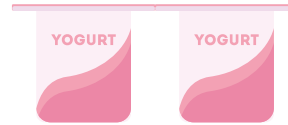
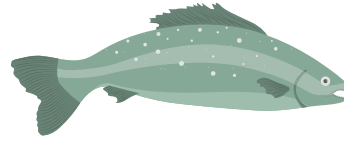
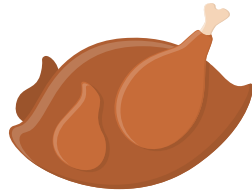


Fridge Raiders





Fridge Raiders





Quiz: Food Hygiene

Please tick as many answers as appropriate

Harmful microbes can commonly be found on: (3 points)

- Raw meat
- Raw fish
- Fruit and vegetables
- Yoghurt

The best way to destroy harmful microbes on food is to: (1 point)

- To make sure food is cooked on the outside
- Cook food as quickly as possible
- Cook food thoroughly at high temperatures
- To make sure food is warm before we eat it

Meat and vegetables should be: (1 point)

- Sorted on the same shelf in the fridge
- Cut on different chopping boards
- Cut with the same knife
- Stored in a warm cupboard

Refrigeration: (2 points)

- Kills all microbes
- Speeds up microbe growth
- Only stops microbes growing, it doesn't kill them
- Should be set to 4°C or below

Which food may contain useful microbes? (3 points)

- Cheese
- Yoghurt
- Bread
- Raw chicken

How can we prevent food poisoning? (2 points)

- Store raw meat/chicken in the fridge
- Cook meat/chicken thoroughly before we eat it
- By washing raw chicken
- Eating yoghurt





Quiz: Food Hygiene

Continued.....

Match the terms with their definitions:
(3 points)

Best before

Use by

Food spoilage

The deterioration of colour, texture and flavour of food

The food is safe to eat after this date, but may no longer be at its best quality

Food is safe to eat up until this date, but should not be eaten after it

Which of the following is not one of the four key ways you can prevent food poisoning? (1 point)

- Cleaning during food preparation
- Cooking food thoroughly
- Using the same chopping board and utensils during food preparation
- Storing food correctly in refrigerators at $\leq 4^{\circ}\text{C}$

What infections can you get from poor hand washing? (1 point)

- Salmonella
- Cold and flu
- Diarrhoea
- All of the above





Can you circle 9 things that the students in this cookery class should not be doing and why?





Label Sort

Match the food label to the correct definition

Use by

Best before

Display until

Consume within 3 days of opening

Keep refrigerated once opened

These dates are about quality not safety. This food will taste it's best before the date shown. Eating it after this date will not mean you will get ill but the flavour might not be as good. These dates appear on a wide range of frozen, dried, tinned and other foods.

These dates are seen on food that goes off quickly, such as meat products and ready prepared salads. Don't use any food or drink after the end of the date on the label, even if it looks and smells fine. Eating food after this date could put your health at risk.

This label means that once you have removed the packaging and exposed the food to the air it should be refrigerated so to stop microbes growing.

Shops often use these dates on their shelves, mainly for stock purposes. These are not required by law and are instructions for shop staff, NOT for shoppers.

This label means that food should be eaten within the amount of days it says on the packaging. After this date the food may not be safe to eat.

