Stage 2

Microbes
MICROBES

Fungi -

A topic based language learning programme for students learning English at English Language Intensive Programme (ELIP) Stage 2

Age: Secondary

mushrooms  yeast  mould
# CONTENTS

<table>
<thead>
<tr>
<th>TOPICS</th>
<th>LANGUAGE FOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. The parts of a microscope</td>
<td>Key words</td>
</tr>
<tr>
<td>B. Microbes - an overview</td>
<td>Key words, Singular and plural nouns, Simple and compound sentences</td>
</tr>
<tr>
<td>C. Fungi - an introduction</td>
<td>Key words, Nouns, verb phrases, prepositions</td>
</tr>
<tr>
<td>D. Mushrooms</td>
<td>Key words, Explanation text</td>
</tr>
<tr>
<td>E. Yeast</td>
<td>Key words, Synonyms, Phrasal verbs, Prepositional phrases</td>
</tr>
<tr>
<td>F. Mould</td>
<td>Key words, Simple sentences, Verb phrases, Written description, Written explanation</td>
</tr>
</tbody>
</table>

*This unit has been written for the English Language Intensive Programme by Shirley Smith 2004.*
INTRODUCTION

MICROBES
Fungi, mushrooms, yeast, mould

The purpose of this unit is to teach some of the basic skills of English using a scaffolded learning approach. The topic fungi is linked to the Year 11 Science curriculum. The theme is microbes and there are three topics - fungi, bacteria and viruses. This unit is on the topic of fungi. The unit begins with a look at the parts of a microscope and an introduction to the general theme of microbes.

Possible things to do:

- Allow students to use a microscope. It may be possible to borrow some slides from the Science Department or students may be able to have a lesson in a science laboratory.

Mushrooms
- Obtain some large field mushrooms, break some in half and arrange the mushrooms in clusters for students to study and sketch.
- Many types of dried mushrooms can be purchased from supermarkets.

Yeast
- Show students a variety of breads - those with yeast and those without.
- Put some dried yeast in a glass with sugar to demonstrate the chemical reaction.
- Arrange a visit to a local bakery to watch bread being made. This is an opportunity for procedural and recount writing.

Mould:
- As you begin teaching the Microbes unit, start growing some bread and fruit mould in a dark place. The tiny threads are visible and your students can see how mould grows. Show students blue vein cheese.
Teacher notes - Objectives and activity guide

Overall objectives.
At the end of this unit students will be able to:
- Identify technical words related to parts of the microscope, microbes and fungi.
- Know the forms of some singular and plural nouns.
- Distinguish between simple and compound sentences.
- Identify prepositional phrases and phrasal verbs.
- Identify verb phrases.
- Understand synonyms.
- Write a description and a scientific explanation using simple and compound sentences.

ACTIVITY 1-6 ~ Reading and word focus

TOPIC A: The parts of a microscope
Diagram: a. eyepiece  b. barrel  c. high powered lens  d. low powered lens  e. clips  f. stage  g. mirror  h. base  i. arm

Activity 1
a) Write on the whiteboard the definition of a microscope such as:

A microscope is an instrument used to magnify very small things so that we can look at them and study them.

Erase a word one at a time and get students to read the definition until most or all the words are erased. Leave a line the length of each word as a clue. Students then write out the definition.

b) Label the parts of the microscope. Use the OHT to assist students.

c) Demonstrate how a crossword works. Complete the crossword using the diagram to find the information. ANSWERS.

Across.  1. arm  3. barrel  5. stage  6. low  8. clips  
Down.  2. mirror  3. base  4. eyepiece  6. lens  7. high

TOPIC B: Microbes - An overview

KEY WORDS: microbes float air water soil tiny microscope disease harmful harmless necessary people animals survive fungi bacteria viruses
Activity 2
Teacher to sketch the pictures on the whiteboard or students draw their own pictures to illustrate the words.

Activity 3
Match the words with the pictures.

Activity 4 (photocopy the word list twice)
   a) Students find the definitions using their dictionaries.
   b) Students cut, match and paste the definitions next to the words.

Activity 5
   a) Use the OHT of the text to read the passage. Discuss any difficult words and draw attention to syllabification, word stress and tonal grouping of phrases as the text is read.
   b) Use the OHT of fungi, a bacterium and viruses. Students copy the pictures onto their workpage.

Activity 6
   a) Complete the crossword puzzle.
   Across: 4. air 5. animals 7. viruses 9. microbes 10. people
   Down: 1. fungi 2. microscope 3. bacteria 6. disease 8. soil
   b) Use the words from the puzzle to complete the text Microbes.

Activity 7
Nouns - singular and plural

ACTIVITY 8 ~ Listening and writing focus

Activity 8
Disappearing text (Completion Dictation: Nation 1955)
More and more words are deleted until the students write every word. Make sure that students fold each section so that they can only see one section at a time. Pens down at all times other than when writing the dictation.
ACTIVITY 9 ~ Grammar and writing focus

Activity 9
Teach simple and compound sentences. (page 25)

a) Cut out the sentence parts and combine to make simple sentences. Write in workbooks. Underline the verb phrases.

b) Combine the simple sentences to make compound sentences.

   Sentences: 1. A microscope magnifies very small things.
   2. Most bacteria are very helpful.
   3. Mould grows on soft fruit and bread.
   4. A mushroom has a cap, a stalk and gills.
   5. Microbes live in air, water and soil.
   6. Viruses can cause serious diseases.

ACTIVITY 10 ~ Reading, writing, speaking and listening focus

Activity 10
Partnership dictation. Each student has a partner. They dictate to each other in turn. If you give the dictation on Monday, then students can prepare one dictation for 4 nights of the week. For homework the dictation is written out three times each with attention to spelling of the more difficult words. Teachers may prepare more partnership dictation for each of the topic headings. Change partners each week.

ACTIVITY 11 ~ Word focus

TOPIC C Fungi – An overview

KEY WORDS: absorb surroundings nutrients a particle ripe drift enzymes food spores food supply

Activity 11
Match the words with the definitions.

ACTIVITY 12 ~ Reading and grammar focus

Activity 12
Use the OHT texts Fungi, How fungi feed, How fungi reproduce for whole class reading. Identify verb phrases.
TOPIC D: Mushrooms
KEY WORDS: web, fresh, dried, cultivate, scale, reproduce, surface, preserved, dehydrated

Activity 13
Read the text and label the parts of a mushroom.

Activity 14
Use dictionaries to complete the word list.

ACTIVITY 15 - 17 ~ Reading, word and writing focus

Activity 15
a) Read the text and complete the chart.
   b) Tick the boxes and use the information to write simple sentences such as
      - "A plant has leaves", and compound sentences using but such as "Plants
        need light to grow but mushrooms can grow in the dark".

Activity 16
a) Students work individually.
   b) Find and underline the puzzle words in the Mushroom text.
   c) Complete the puzzle.

Activity 17
Teacher reads the sentences and students sequence and match with the pictures.

Activity 18
a) Draw students' attention to the language features of an explanation text.
   b) Students cut out the sentences and reconstruct a paragraph and then
      write the paragraph in their workbooks. Underline the verb phrases.

ACTIVITY 19 ~ Listening and writing focus

Activity 19
Disappearing Text. Same as Activity 8.
ACTIVITY 20 - 21 ~ Word and reading focus

TOPIC E: Yeast
KEY WORDS: a cell evaporate moisture warmth dough alcohol a bud rise bake carbon dioxide bread

Activity 20
Match the words with the definitions.

Activity 21
Use the OHT for whole class reading. Identify the verb phrases and nouns.

Activity 22
Synonyms. Students complete the table with the synonyms.
1. warmth 2. moisture 3. is mixed 4. feed on 5. produces 6. dough 7. expands 8. is placed 9. stops 10. kills

ACTIVITY 23 ~ Grammar focus

Activity 23
a) Underline the phrasal verbs.
b) Underline the prepositional phrases.

ACTIVITY 24 ~ Reading focus

Activity 24
Cut out the pictures and sentences. Match, sequence and paste onto the worksheet.

ACTIVITY 25 ~ Word focus

TOPIC F: Mould
KEY WORDS: threads tangled secrete moist moisture ripe

Activity 25
Complete the word list using dictionaries.
**ACTIVITY 26 ~ Reading and writing focus**

**Activity 26**
Use the OHT for whole class reading. Identify the verb phrases and nouns. Match the sentence parts and write out the sentences.

**ACTIVITY 27 ~ Reading, speaking, listening and writing focus**

**Activity 27**
Cut and stick in places at one end of the classroom. Divide the class into pairs. One student reads a sentence and runs to tell their partner who is seated at a desk at the opposite end of the room. They listen and write the sentence down. When all the sentences have been dictated, the students swap tasks.

**ACTIVITY 28 ~ Grammar focus**

**Activity 28**
Identify and underline the verb phrases.

**ACTIVITY 29 - 31 ~ Word focus**

**Activity 29**
Vocabulary assessment worksheets. These can be given at the end of the unit.

**Activity 30**
Writing assessment
a) Introduce the topic of cheese. Show students different kinds of cheese and discuss the process of cheese-making. Use a mind map to record students' background knowledge of cheese. They may use this information in the written description. Teach the technical terms fermentation, rennet, a starter culture, curds and whey. Use the text (teacher copy) as a guide.
b) Show the students some 'blue cheese'. Explain how mould is used in cheese-making and how cheese becomes blue. Use the text (teacher copy) and illustrations as a guide. Students then write a description of cheese and an explanation of how cheese becomes blue.
Activity 31
Bingo. Use the word lists to play Bingo. Students draw a grid for 9 words and students select 9 words from the list of 12. This game can be played periodically throughout the unit. This game promotes listening and spelling skills.
The parts of a microscope

a lens
OHT and student copy  The parts of a microscope

mirror  base  arm  stage  eyepiece  clips
high powered lens  low powered lens  barrel

a. _______________
b. _______________
c. _______________
d. _______________
e. _______________
f. _______________
g. _______________
h. _______________
i. _______
The parts of a microscope

- Look at the diagram of a microscope and complete the crossword puzzle.

Across
1. The ______ is the part you can hold onto when you move the microscope.
3. The tube you look down is called the ____________.
5. The part where you put the slides is called the _________.
6. This lens gives _____ magnification. (shortest one)
8. The ___________hold the slide on the stage.

Down
2. The ________ reflects the light.
3. The ________ is the flat part at the bottom of the microscope.
4. The lens you look into is called the ____________.
6. A _________ provides magnification.
7. This lens gives _______ magnification. (longest one)
INTRODUCTION

Microbes

- Fungi
  - mushrooms
  - yeast
  - mould
- Bacteria
- Viruses
<table>
<thead>
<tr>
<th>Key words</th>
<th>Microbes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>air</th>
<th>water</th>
<th>soil</th>
<th>microscope</th>
<th>disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>people</td>
<td>animals</td>
<td>fungi</td>
<td>bacteria</td>
<td>viruses</td>
</tr>
<tr>
<td>Key words</td>
<td>Microbes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>----------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>air</td>
<td>water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>people</td>
<td>soil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>animals</td>
<td>microscope</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fungi</td>
<td>bacteria</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>disease</td>
<td>viruses</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*ACTIVITY 3*
**Microbes**

- Use your dictionary to find the meaning of each word.

<table>
<thead>
<tr>
<th>First language</th>
<th>English</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>microbes</td>
<td>noun</td>
<td></td>
</tr>
<tr>
<td>float</td>
<td>verb</td>
<td></td>
</tr>
<tr>
<td>air</td>
<td>noun</td>
<td></td>
</tr>
<tr>
<td>water</td>
<td>noun</td>
<td></td>
</tr>
<tr>
<td>soil</td>
<td>noun</td>
<td></td>
</tr>
<tr>
<td>tiny</td>
<td>adjective</td>
<td></td>
</tr>
<tr>
<td>microscope</td>
<td>noun</td>
<td></td>
</tr>
<tr>
<td>disease</td>
<td>noun</td>
<td></td>
</tr>
<tr>
<td>harmful</td>
<td>adjective</td>
<td></td>
</tr>
<tr>
<td>harmless</td>
<td>adjective</td>
<td></td>
</tr>
<tr>
<td>necessary</td>
<td>adjective</td>
<td></td>
</tr>
<tr>
<td>people</td>
<td>noun</td>
<td></td>
</tr>
<tr>
<td>animals</td>
<td>noun</td>
<td></td>
</tr>
<tr>
<td>survive</td>
<td>verb</td>
<td></td>
</tr>
<tr>
<td>groups</td>
<td>noun</td>
<td></td>
</tr>
<tr>
<td>Key words - assessment</td>
<td>Microbes</td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>----------</td>
<td></td>
</tr>
<tr>
<td>Give one list to each student. Paste next to the matching word.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>living things that are not plants, people or microbes</td>
<td>living things that are not plants, people or microbes</td>
<td></td>
</tr>
<tr>
<td>humans</td>
<td>humans</td>
<td></td>
</tr>
<tr>
<td>to stay alive</td>
<td>to stay alive</td>
<td></td>
</tr>
<tr>
<td>very important</td>
<td>very important</td>
<td></td>
</tr>
<tr>
<td>can hurt or harm you</td>
<td>can hurt or harm you</td>
<td></td>
</tr>
<tr>
<td>will not hurt or harm you</td>
<td>will not hurt or harm you</td>
<td></td>
</tr>
<tr>
<td>an instrument that magnifies small objects</td>
<td>an instrument that magnifies small objects</td>
<td></td>
</tr>
<tr>
<td>very, very small</td>
<td>very, very small</td>
<td></td>
</tr>
<tr>
<td>sickness</td>
<td>sickness</td>
<td></td>
</tr>
<tr>
<td>a liquid</td>
<td>a liquid</td>
<td></td>
</tr>
<tr>
<td>a mixture of gases that we breathe</td>
<td>a mixture of gases that we breathe</td>
<td></td>
</tr>
<tr>
<td>the top layer of the earth's surface - plants grow in it</td>
<td>the top layer of the earth's surface - plants grow in it</td>
<td></td>
</tr>
<tr>
<td>very tiny living things</td>
<td>very tiny living things</td>
<td></td>
</tr>
<tr>
<td>drift</td>
<td>drift</td>
<td></td>
</tr>
<tr>
<td>things or people linked together in some way</td>
<td>things or people linked together in some way</td>
<td></td>
</tr>
<tr>
<td>First Language</td>
<td>English</td>
<td>Definition</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>microbes</td>
<td>noun</td>
<td>very tiny living things</td>
</tr>
<tr>
<td>float</td>
<td>verb</td>
<td>drift</td>
</tr>
<tr>
<td>air</td>
<td>noun</td>
<td>a mixture of gases that we breathe</td>
</tr>
<tr>
<td>water</td>
<td>noun</td>
<td>a liquid - all living things need it</td>
</tr>
<tr>
<td>soil</td>
<td>noun</td>
<td>the top layer of the earth's surface - plants grow in soil</td>
</tr>
<tr>
<td>tiny</td>
<td>adjective</td>
<td>very, very small</td>
</tr>
<tr>
<td>microscope</td>
<td>noun</td>
<td>an instrument that magnifies very small things</td>
</tr>
<tr>
<td>disease</td>
<td>noun</td>
<td>sickness</td>
</tr>
<tr>
<td>harmful</td>
<td>adjective</td>
<td>can hurt or harm you</td>
</tr>
<tr>
<td>harmless</td>
<td>adjective</td>
<td>will not hurt or harm you</td>
</tr>
<tr>
<td>necessary</td>
<td>adjective</td>
<td>very important</td>
</tr>
<tr>
<td>people</td>
<td>noun</td>
<td>humans</td>
</tr>
<tr>
<td>animals</td>
<td>noun</td>
<td>living things that are not plants, people or microbes</td>
</tr>
<tr>
<td>survive</td>
<td>verb</td>
<td>to stay alive</td>
</tr>
<tr>
<td>groups</td>
<td>noun</td>
<td>things or people linked together in some way</td>
</tr>
</tbody>
</table>
Activity: OHT for students to copy.

<table>
<thead>
<tr>
<th>Fungi</th>
<th>a bacterium</th>
<th>Viruses</th>
</tr>
</thead>
</table>
Microbes

Microbes are found everywhere. Some float in the air and some live in water and soil. Microbes are very tiny so we must use a microscope to see them.

There are thousands of different types of microbes. Some microbes are harmful and cause disease but most of them are harmless. Some microbes are very necessary and people and animals could not survive without them.

There are three main groups of microbes. They are fungi, bacteria and viruses.

<table>
<thead>
<tr>
<th>m__________</th>
<th>f__________</th>
<th>b__________</th>
<th>v__________</th>
</tr>
</thead>
<tbody>
<tr>
<td>fungi</td>
<td></td>
<td>bacteria</td>
<td>viruses</td>
</tr>
</tbody>
</table>

Three main groups of microbes
Microbes – Crossword puzzle

Across
4. we breathe it in
5. living things - cows, sheep, camels
7. microbes that cause disease
9. tiny living organisms
10. humans

Down
1. mushrooms, yeast, mould
2. magnifies very small things
3. some are helpful, some are harmful
6. sickness
8. plants grow in this
Write the ten words from the puzzle in the boxes below.

Use the words to complete the text. You may need to use the same word more than once.

Microbes

[Table with ten boxes for words]

Microbes

_______ are found everywhere. Some float in the ___ and some live in water and ____. _________ are very tiny so we must use a __________ to see them.

There are thousands of different types of _______. Some are harmful and cause _______ but most of them are harmless. Some _________ are very necessary and without them ________ and ________ could not survive.

There are three main groups of _________. They are ______, ________, and _______.

23
Nouns

Nouns can be singular (microbe) or plural (microbes). We add an ‘s’ to some words to change them from singular to plural.

- Complete the following table.

<table>
<thead>
<tr>
<th>SINGULAR</th>
<th>PLURAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>soil</td>
<td>diseases</td>
</tr>
<tr>
<td>microscope</td>
<td>arms</td>
</tr>
<tr>
<td>animal</td>
<td>bases</td>
</tr>
<tr>
<td>virus</td>
<td>organisms</td>
</tr>
<tr>
<td>mirror</td>
<td>instruments</td>
</tr>
<tr>
<td>human</td>
<td>gases</td>
</tr>
<tr>
<td>liquid.</td>
<td>plants</td>
</tr>
</tbody>
</table>

Sometimes we change the spelling of a word to change it from singular to plural.

<table>
<thead>
<tr>
<th>fungus</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>bacterium</td>
<td></td>
</tr>
<tr>
<td>lens</td>
<td>(add ‘es’)</td>
</tr>
</tbody>
</table>

Sometimes a noun means both singular and plural. The spelling stays the same.

| people  | water   | air    |
Microbes
Disappearing text

There are ______ of different types __ microbes. Some microbes are _____ and cause disease but most of them are harmless. Some microbes are ____ necessary. People and _____ could not survive without ____. There are three main _____ of microbes. They are fungi, _______ and viruses.

FOLD A

There are thousands of ______ types of ______. Some microbes ___ harmless and cause disease but _____ of them are harmless. Some ______ are very necessary. _____ and animals ______ not survive _____ them. There are _____main groups of microbes. They are ______, bacteria and viruses.

FOLD B

There are _______ of _______ types of ______. Some microbes are ______ and cause disease but most of _____ are _______. Some microbes are very ________. People and animals could ___ survive ______them. There are three _____ _____ of microbes. They are ______, ______ and ______.

FOLD C

__________________________________________________________
__________________________________________________________
__________________________________________________________
__________________________________________________________
__________________________________________________________
__________________________________________________________
__________________________________________________________
__________________________________________________________
__________________________________________________________
__________________________________________________________

25
Simple sentences and compound sentences

What is a sentence?

- A sentence must make complete sense.
- The first word of a sentence must begin with a capital letter.
- Each sentence ends with a full stop.
- Each sentence must have a finite verb (one that is marked for tense).

Simple sentences

- A clause is a group of words that always contains a finite verb.
- A simple sentence is a main clause. It can stand alone or be part of a longer sentence.

Microbes are found everywhere.
Some microbes float in the air.
A microscope magnifies very small things.

Compound sentences

- A compound sentence is made up of two main clauses.
- The two clauses are joined together by conjunctions such as and, but or so.

Microbes are found everywhere and most of them are harmless.

Microbes are found everywhere. MAIN CLAUSE
Most of them are harmless. MAIN CLAUSE

Some microbes are harmful but most of them are harmless.

Some microbes are harmful. MAIN CLAUSE
Most of them are harmless. MAIN CLAUSE
<table>
<thead>
<tr>
<th>Microbes</th>
<th>can cause</th>
<th>very small things.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most bacteria</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A microscope</td>
<td>magnifies</td>
<td>very helpful.</td>
</tr>
<tr>
<td>Mould</td>
<td>grows</td>
<td>in air, water and soil.</td>
</tr>
<tr>
<td>A mushroom</td>
<td>live</td>
<td>a cap, stalk and gills.</td>
</tr>
<tr>
<td>Viruses</td>
<td>has</td>
<td>on soft fruit and bread</td>
</tr>
<tr>
<td>Microbes</td>
<td>are</td>
<td>serious diseases.</td>
</tr>
</tbody>
</table>
**Compound sentences**

- Match the following clauses and use a conjunction to make compound sentences. Write the sentences on the lines below. Use *and*, *but* or *so*.

<table>
<thead>
<tr>
<th>MAIN CLAUSE</th>
<th>MAIN CLAUSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A microscope is an instrument.</td>
<td>People could not survive without them.</td>
</tr>
<tr>
<td>2. Some microbes live in the air.</td>
<td>It must be carried carefully.</td>
</tr>
<tr>
<td>3. Water is a liquid.</td>
<td>Some are harmless.</td>
</tr>
<tr>
<td>4. Some bacteria are harmful.</td>
<td>I went for a walk.</td>
</tr>
<tr>
<td>5. Some microbes are necessary.</td>
<td>Mould is used to make cheese.</td>
</tr>
<tr>
<td>6. Yeast is used to make bread.</td>
<td>Air is a gas.</td>
</tr>
<tr>
<td>7. The rain stopped.</td>
<td>I ate my lunch.</td>
</tr>
<tr>
<td>8. A microscope is heavy.</td>
<td>Mushrooms grow in soil and humus.</td>
</tr>
<tr>
<td>9. Mould grows on bread.</td>
<td>It is used to magnify things.</td>
</tr>
<tr>
<td>10. I felt hungry.</td>
<td>Some live in soil and water.</td>
</tr>
</tbody>
</table>

1. ____________________________________________
2. ____________________________________________
3. ____________________________________________
4. ____________________________________________
5. ____________________________________________
6. ____________________________________________
7. ____________________________________________
8. ____________________________________________
9. ____________________________________________
10. __________________________________________
### Fungi, bacteria and viruses

<table>
<thead>
<tr>
<th>1.</th>
<th>2.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some microbes are too small to be visible to the human eye. We need to use a microscope to see them. Microbes are everywhere. Some float in the air and some live in water and soil.</td>
<td>There are three kinds of fungi. Different kinds have different shapes and sizes. Yeast is used to make bread. Moulds are made up of tiny, thin threads. Mushrooms can be seen without a microscope.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.</th>
<th>4.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most bacteria are helpful to humans. Bacteria are found everywhere. They are found in the air and soil, in our food and drink and in plants and animals. Bacteria are probably the most numerous living things on earth.</td>
<td>The smallest microbes are viruses. They can only be seen through an electron microscope. Viruses need other living organisms to reproduce. They lie on the borderline between living and non-living things.</td>
</tr>
</tbody>
</table>

Do you know the meaning of these words? Use a dictionary to check the meanings. Make sure you know these words in your first language.

**visible** .......................................................... (adjective)

**numerous** ....................................................... (adjective)

**an electron microscope** .................................. (noun)

**borderline** .................................................... (adjective)
Fungi

mushrooms  yeast  mould
# Key words

## Fungi

<table>
<thead>
<tr>
<th>First language</th>
<th>Word</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>verb</td>
<td>to take in, soak up</td>
</tr>
<tr>
<td></td>
<td>noun</td>
<td>are substances that help people, plants or animals grow</td>
</tr>
<tr>
<td></td>
<td>noun</td>
<td>the area or place where something lives or grows</td>
</tr>
<tr>
<td></td>
<td>noun</td>
<td>a very small piece of something</td>
</tr>
<tr>
<td></td>
<td>verb</td>
<td>to float in the wind or on water</td>
</tr>
<tr>
<td></td>
<td>adjective</td>
<td>when a pod is ready to burst open or fruit is ready to be eaten</td>
</tr>
<tr>
<td></td>
<td>noun</td>
<td>chemical substances</td>
</tr>
</tbody>
</table>

**ACTIVITY 11**

- absorb
- surroundings
- nutrients
- a particle
- ripe
- drift
- enzymes
Fungi - an introduction

Fungi
Fungi do not have roots, leaves, flowers or seeds. They do not make their own food like plants do. Fungi absorb and use nutrients from their surroundings. Some fungi are very large. Some are very tiny and can only be seen with a microscope.
**Fungi – an introduction**

**How fungi feed**
Fungi feed by absorbing food through the hyphae. Fungi grow on top of their food supply. The hyphae grow down through the food source. Enzymes break down the food so that it can be absorbed by the hyphae.

**How fungi reproduce**
Fungi grow from spores. These are tiny microscopic particles. When the spores land on a suitable food source a new fungus will grow. Spores are made inside the sporangia. When the sporangia are ripe, they burst open and the spores drift away.

1. Spores land on food.
1. Spores grow hyphae and then sporangia appear.
3. The sporangia burst open.
Mushrooms
Read the text and complete the diagram.

The parts of a mushroom

hyphae  mycelium  stalk  cap  gills  spores

The hyphae take in water and nutrients from the soil. The fine web of threads is called a mycelium. On top of the stalk is the cap. Inside the cap are the gills. The spores grow on the gills.
Key words

<table>
<thead>
<tr>
<th>First language</th>
<th>Word</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>web</td>
<td>noun</td>
</tr>
<tr>
<td></td>
<td>fresh</td>
<td>adjective</td>
</tr>
<tr>
<td></td>
<td>dried</td>
<td>adjective</td>
</tr>
<tr>
<td></td>
<td>the wild</td>
<td>noun</td>
</tr>
<tr>
<td></td>
<td>cultivate</td>
<td>verb</td>
</tr>
<tr>
<td></td>
<td>scale</td>
<td>noun</td>
</tr>
<tr>
<td></td>
<td>reproduce</td>
<td>verb</td>
</tr>
<tr>
<td></td>
<td>surface</td>
<td>noun</td>
</tr>
</tbody>
</table>

**Word focus**

These mushrooms are growing in the wild.

These mushrooms are cultivated.

These mushrooms are fresh.

These mushrooms are dried.
Mushrooms

Mushrooms are a type of fungus. Both fresh and dried mushrooms are an important food. They grow in the wild but in many countries they are cultivated on a large scale. They are grown on mushroom farms. Often, they are grown in places where there is no light. Unlike plants, mushrooms do not need light to grow.

- Read the text and write the information in the chart.

<table>
<thead>
<tr>
<th>What are they?</th>
<th>Where do they grow?</th>
<th>Why are they cultivated?</th>
<th>How are they preserved?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- How is a mushroom different from a plant? Tick the boxes and then write six simple sentences. Write two compound sentences using the conjunction but.

<table>
<thead>
<tr>
<th>What it has</th>
<th>a mushroom</th>
<th>a plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>leaves</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>roots</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hyphae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cap</td>
<td></td>
<td></td>
</tr>
<tr>
<td>gills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>branches</td>
<td></td>
<td></td>
</tr>
<tr>
<td>flowers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>can grow in the dark</td>
<td></td>
<td></td>
</tr>
<tr>
<td>needs light to grow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>grows from spores</td>
<td></td>
<td></td>
</tr>
<tr>
<td>grows from a seed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Use a dictionary to find the meaning of these words

preserve

dehydrate
Find the words in the text *Mushroom*

<table>
<thead>
<tr>
<th>Across</th>
<th>Down</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Noun. 9 letters. They are fungi that we can eat.</strong></td>
<td><strong>Noun. 9 letters. They are places where people live.</strong></td>
</tr>
<tr>
<td><strong>Adjective. 9 letters. The last letter is a 't'.</strong></td>
<td><strong>Noun. 6 letters. Begins with 'pl'.</strong></td>
</tr>
<tr>
<td><strong>Adjective. 5 letters. Begins with 'fr'.</strong></td>
<td><strong>Noun. 6 letters. Begins with 'pl'.</strong></td>
</tr>
<tr>
<td><strong>Noun. Begins with 'sc'.</strong></td>
<td><strong>Adjective. Begins with 'dr'.</strong> All the moisture has been removed.</td>
</tr>
<tr>
<td><strong>Adjective. This word means the same as big. It begins with 'l'.</strong></td>
<td><strong>Adjective. Begins with 'f'.</strong></td>
</tr>
<tr>
<td><strong>Noun. 4 letters. All living things need this to stay alive. It begins with 'f'.</strong></td>
<td><strong>Noun. Begins with 'l'. It means the opposite of dark.</strong></td>
</tr>
</tbody>
</table>
Fungi
How a mushroom grows from a spore.

1. It lands on damp soil.

2. When two threads meet, a mushroom starts to grow.

3. The spore starts to grow threads.

4. A spore falls off a mushroom gill.

5. The mushroom grows and pushes through the soil.

6. As the mushroom grows, the cap breaks away from the stalk.
Fungi

Explanations:

- An explanation tells *how* or *why* something happens.
- An explanation usually starts with *why* or *how*.

**Text structure**

**How a mushroom grows from a spore.**

A mushroom spore grows on a gill inside a mushroom cap. When a spore is ripe, it falls. If a spore *falls* onto damp soil, it begins to grow hyphae (threads). When two hyphae meet, a mushroom begins to grow. As the mushroom *grows*, it pushes through the soil. As the mushroom gets bigger, the cap breaks away from the stalk.

**Grammar**

- Usually starts with a *'why'* or *'how'*.
- Action verbs – *'timeless'* present tense.
Cut out the sentences and sequence them correctly. Copy the paragraph into your workbooks.

As the mushroom gets bigger, the cap breaks away from the stalk.

If a spore falls onto damp soil, it begins to grow hyphae (threads).

A mushroom spore grows on a gill inside a mushroom cap.

How a mushroom grows from a spore.

When a spore is ripe it falls.

When two hyphae meet, a mushroom begins to grow.
Fungi

Disappearing Dictation

How a mushroom grows from a spore.

A mushroom spore ____ on a gill inside a mushroom cap. When a spore is ____, it falls. If a spore ____ onto damp soil it ____ to grow hyphae (threads). When two hyphae ____, a mushroom begins to grow. As the _____ grows it pushes through the ____. As the mushroom gets _____, the cap breaks away from ____ stalk.

Fold A

____ mushroom ____ grows on a gill ____ a mushroom cap. When a spore is ripe, ____ falls. If a spore falls onto ____ soil, it begins to grow hyphae (threads). When ____ hyphae meet, a _______ begins to grow. As the mushroom _____, it pushes _______ the soil. As ____ mushroom ____ bigger, the ____ breaks away ______ the _____.

Fold B

______ spore grows on a ____ inside a mushroom ____. When a spore is ripe, ____ falls. If a ____ falls onto damp ____ soil, it begins ___ grow _______ (threads). ______ two hyphae ______, a mushroom ______ to grow. As ____ mushroom grows, it ______ through the _____. As ___ mushroom gets bigger, ___ cap ______ away ______ the stalk.

Fold C

-------------------------------------------------------------

-------------------------------------------------------------
Yeast
<table>
<thead>
<tr>
<th>First Language</th>
<th>Word</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>noun</td>
<td>the smallest part of a living thing</td>
</tr>
<tr>
<td></td>
<td>noun</td>
<td>a new growth</td>
</tr>
<tr>
<td></td>
<td>verb</td>
<td>move upwards</td>
</tr>
<tr>
<td></td>
<td>noun</td>
<td>a mixture of flour and water before it is baked</td>
</tr>
<tr>
<td></td>
<td>noun</td>
<td>a colourless liquid with a strong taste</td>
</tr>
<tr>
<td></td>
<td>verb</td>
<td>change from a liquid into a gas</td>
</tr>
<tr>
<td></td>
<td>verb</td>
<td>to cook in an oven</td>
</tr>
<tr>
<td></td>
<td>noun</td>
<td>a slight amount of heat</td>
</tr>
<tr>
<td></td>
<td>noun</td>
<td>tiny drops of water</td>
</tr>
<tr>
<td></td>
<td>noun</td>
<td>a gas, CO</td>
</tr>
</tbody>
</table>

**Diagram:**
- Evaporate
- A cell
- Moisture
- Dough
- Warmth
- Alcohol
- Carbon dioxide
- Rise
- Bake
- A bud
Yeast

What is yeast?
Yeast is one of the single-celled fungi. It does not grow threads. Each cell will produce a small bud that will grow to form another cell. Yeast is used to make bread rise.

How yeast makes bread rise.
Yeast is used to make bread. It is mixed with flour, salt, sugar and water. Yeast causes the dough to rise. Bread made without yeast is flat.

Yeast changes sugars in the dough into carbon dioxide and alcohol. The bubbles of carbon dioxide make the dough rise. They make the dough soft and light. The alcohol evaporates during baking.

How yeast affects sugar.

| Yeast | Sugar | Makes carbon dioxide + alcohol |

Yeast is mixed with flour, water, sugar and salt.
The dough is placed in a warm place. It rises.
The dough is kneaded and then put in a baking tin. It rises again before it is baked in an oven.
Yeast

Why yeast grows:

1. Yeast is a fungus. It needs warmth, moisture and food to grow. When yeast is mixed with flour, it feeds on the flour and produces carbon dioxide. The gas makes bubbles inside the dough. The dough expands because of the bubbles. It becomes twice the size. The dough is allowed to rise before it is placed in the hot oven. The dough rises even more in the hot oven. It stops rising when the heat kills the yeast at 45°C.

Synonyms: Find words in the text that have the same meaning or a similar meaning to the words in the list. Each line of the text has a number to help you locate (find) the synonym.

<table>
<thead>
<tr>
<th>Line</th>
<th>Synonym</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>a little heat</td>
</tr>
<tr>
<td>2</td>
<td>a little water</td>
</tr>
<tr>
<td>3</td>
<td>is blended</td>
</tr>
<tr>
<td>4</td>
<td>eats</td>
</tr>
<tr>
<td>5</td>
<td>makes</td>
</tr>
<tr>
<td>6</td>
<td>uncooked bread</td>
</tr>
<tr>
<td>7</td>
<td>gets bigger</td>
</tr>
<tr>
<td>8</td>
<td>put</td>
</tr>
<tr>
<td>9</td>
<td>ceases</td>
</tr>
<tr>
<td>10</td>
<td>destroys</td>
</tr>
</tbody>
</table>

A synonym is a word with the same or similar meaning to another word.
An antonym is a word with the opposite meaning to another word.
Adverbial phrases – prepositional phrases

Sometimes a verb group will include an adverb or a preposition. These verb groups are called phrasal verbs.

burst open     breaks away
break down     take in
drift away

Activity
Read the sentences and underline the phrasal verbs.
1. The enzymes break down the food particles.
2. The spores drift away into the air.
3. The sporangia burst open and release the spores.
4. The hyphae take in water and nutrients.
5. The cap breaks away from the stalk.

Prepositions are usually single words. Sometimes they can be multiple words or phrases (eg on top of). This is a list of some common prepositions. There are many more.
in on over under to with before from off past through

A prepositional phrase begins with a preposition.

Activity
Underline the prepositional phrases
1. Some microbes float in the air.
2. Some microbes float in water.
3. Some fungi can only be seen with a microscope.
4. Fungi absorb food through their hyphae.
5. They grow on top of their food supply.
6. The cap is on top of the stalk.
7. The gills are inside the cap.
8. The mushroom pushes through the soil.
9. The cap breaks away from the stalk.
10. Yeast changes sugars in the dough.
11. Carbon dioxide makes bubbles inside the dough.
12. The bread is placed in the hot oven.
### How bread is made.

<table>
<thead>
<tr>
<th>Picture</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>
How bread is made.

Allow the dough to rise until it is twice the size.

Let the bread cool and cut a slice!

Place the bread tin in a warm place.

Knead the dough to make it soft and light.

Bake in a hot oven.

Blend the flour, salt, sugar and yeast.
Mould
### Key words

**Mould**

<table>
<thead>
<tr>
<th>First language</th>
<th>Word</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>threads</td>
<td>noun</td>
</tr>
<tr>
<td></td>
<td>tangled</td>
<td>verb</td>
</tr>
<tr>
<td></td>
<td>secrete</td>
<td>verb</td>
</tr>
<tr>
<td></td>
<td>moist</td>
<td>adjective</td>
</tr>
<tr>
<td></td>
<td>ripe</td>
<td>adjective</td>
</tr>
</tbody>
</table>

### Word focus

- **These threads** are **tangled** together.
- **Some trees and plants** secrete sap.
- *Hyphae secrete* enzymes.
- **When fruit is ripe**, it falls off the tree.
- **This sporangia** is ripe. It bursts open.
- **Bread and fruit** are moist. They contain water.
**Moulds**

Moulds are fungi. They are much smaller than mushrooms. They are made up of many fine threads called hyphae. Moulds can be seen when many threads are tangled together. This network of threads is called the mycelium. The threads secrete enzymes that break down the food and absorb nutrients from it.

Mould spores are everywhere but they need to land on the right food before they can grow. Moulds grow best on moist food such as bread and soft, ripe fruit. Different types of spores grow different moulds. For instance, bread mould can only grow on bread. It will not grow on an apple.

Read the text and circle the correct end of each sentence. Write each sentence in the boxes below.

<table>
<thead>
<tr>
<th>Moulds are</th>
<th>1) small mushrooms. 2) large fungi. 3) smaller than mushrooms.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyphae are</td>
<td>1) small mushrooms. 2) large fungi. 3) tiny threads.</td>
</tr>
<tr>
<td>Mycelium are</td>
<td>1) invisible. 2) tiny mushrooms. 3) tangled threads.</td>
</tr>
<tr>
<td>The threads absorb</td>
<td>1) nutrients. 2) enzymes. 3) mould.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mould spores grow</th>
<th>1) on moist food. 2) everywhere. 3) on fungi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mould grows</td>
<td>1) on eggs. 2) in milk. 3) on apples.</td>
</tr>
<tr>
<td>Bread mould grows</td>
<td>1) on bananas. 2) on apples. 3) on sandwiches.</td>
</tr>
</tbody>
</table>

1) to produce a liquid. 2) absorb liquid. 3) to grow.
Moulds are smaller than mushrooms.

Moulds grow on moist fruit and bread.

The threads secrete enzymes.

The threads absorb nutrients from the food.

Moulds grow best on moist food.

Different types of spores grow different moulds.

Some moulds are blue and some are yellow.
**Verb phrases**

Sometimes a verb phrase consists of more than one word. It can take more than one word to express the meaning of the verb.

**Moulds**

Moulds are fungi. They are much smaller than mushrooms. They are made up of many fine threads called hyphae. Moulds can be seen when many threads are tangled together. This network of threads is called the mycelium. The threads secrete enzymes that break down the food and absorb nutrients from it.

Mould spores are everywhere but they need to land on the right food before they can grow. Moulds grow best on moist food such as bread and soft, ripe fruit. Different types of spores grow different moulds. For example, bread mould can only grow on bread. It will not grow on an apple.

- Underline the verb phrases in the following texts

**Fungi**

Fungi do not have roots, leaves, flowers or seeds. They do not make their own food like plants do. Fungi absorb and use nutrients from their surroundings. Some fungi are very large. Some are very tiny and can only be seen with a microscope.

**Why yeast grows.**

Yeast is a fungus. It needs warmth, moisture and food to grow. When yeast is mixed with flour, it feeds on the flour and produces carbon dioxide. The gas makes bubbles inside the dough. The dough expands because of the bubbles. It becomes twice the size. The dough is allowed to rise before it is placed in the oven. The dough rises even more in the hot oven. It stops rising when the heat kills the yeast at 45 Celsius.
Key word assessment

Microbes

Choose a word from the box to complete each sentence.

There is one extra word in the box.

1. Sheep and cows are ________________.
2. The word ________________ means to stay alive.
3. Some bacteria are ________________ for people and animals to stay alive.
4. There are three main ________________ of microbes.
5. Some types of microbes cause disease in plants, animals and ________________.

- groups
- survive
- animals
- necessary
- microscope
- people

- harmless
- water
- diseases
- microscope
- tiny
- soil

1. We look at microbes through a ________________.
2. Microbes are very ________________.
3. Microbes live in air, water and ________________.
4. Some microbes are ________________. Some can cause disease.
5. Medicine can help prevent people from getting ________________.

- water
- air
- float
- magnify
- microbes
- harmful

1. If we drink dirty ________________ we can get a disease.
2. Some microbes are ________________. They will cause disease.
3. We use a microscope to ________________ very small things so we can see them.
4. Microbes ________ in the air.
5. ________________ are very tiny living things.

- surroundings
- absorb
- particle
- enzymes
- drift
- ripe

1. The word ________________ means a very small piece of something.
2. ________________ are chemical substances in living things.
3. When sporangia are ________________ they burst open.
4. The spores ________________ in the air.
5. Fungi like moist ________________. Fruit and bread are moist.
1. Some mushrooms grow in _______________. People find them and pick them.
2. People ___________ mushrooms. They grow them for food.
3. Mushrooms ___________ from spores.
4. Some people cultivate mushrooms on a large ___________. They sell them to shops.
5. Fungi ______________ food through their hyphae. (threads)

1. Spores grow on the ___________ of a mushroom gill. Bacteria live on the surface of our skin.
2. A mycelium is a tangled ____ of tiny threads. Spiders weave their webs carefully.
3. Yeast needs food, moisture and ___________ to grow.
4. We soak ___________ mushrooms in water to make them soft. Then we cook them.
5. We can slice ___________ mushrooms and put them in a salad or a stir-fry.

1. The new growth on a yeast cell is called a ___________. It breaks away to make a new cell.
2. A _______ is the smallest part of a living thing.
3. When yeast feeds on sugar it produces ___________.
4. The alcohol ___________ in the hot oven. It turns into a gas.
5. When yeast is mixed with dough and put in a warm place, it ___________. The bubbles made by the carbon dioxide cause the dough to rise.

1. Yeast needs ___________, moisture and food to grow.
2. ___________ is kneaded to make it soft and light.
3. ___________ evaporates during baking.
4. We ___________ bread in an oven.
5. Bread and fruit contain ___________. They are moist. Mould grows on moist food.
### Key word assessment

#### Microbes

<table>
<thead>
<tr>
<th>mould</th>
<th>mouldy</th>
<th>secrete</th>
<th>threads</th>
<th>tangled</th>
<th>mushrooms</th>
</tr>
</thead>
</table>

1. We do not eat ____________ fruit and bread.
2. Mould is made up of many tiny ____________ called hyphae.
3. The ____________ threads of a fungi are called a mycelium.
4. Hyphae ____________ enzymes that soften food.
5. ____________ are delicious to eat.

**Match each word with a picture.**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="mould" /></td>
<td><img src="image2" alt="mouldy" /></td>
<td><img src="image3" alt="secrete" /></td>
</tr>
<tr>
<td><img src="image4" alt="threads" /></td>
<td><img src="image5" alt="tangled" /></td>
<td><img src="image6" alt="mushrooms" /></td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image7" alt="light to bread" /></td>
<td><img src="image8" alt="bubbles" /></td>
<td><img src="image9" alt="bacteria" /></td>
</tr>
<tr>
<td><img src="image10" alt="viruses" /></td>
<td><img src="image11" alt="bread mould" /></td>
<td><img src="image12" alt="a baker" /></td>
</tr>
<tr>
<td><img src="image13" alt="threads" /></td>
<td><img src="image14" alt="a lens" /></td>
<td><img src="image15" alt="a mirror" /></td>
</tr>
<tr>
<td><img src="image16" alt="mouldy fruit" /></td>
<td><img src="image17" alt="medicine" /></td>
<td><img src="image18" alt="a slide" /></td>
</tr>
<tr>
<td><img src="image19" alt="a loaf of bread" /></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

57
Cheese is a food. It is made from fermented milk. Write a description of cheese and a scientific explanation of how cheese becomes blue. Use the texts on yeast as a model.

**TEXT A.** Write a description of cheese. The heading is *What is cheese?*
- Use the words and phrases from the box to help you write your text.
- You will need to add more words to make sentences.
- Make sure you use capital letters and full stops.

*What is cheese?*

<table>
<thead>
<tr>
<th>food</th>
<th>cows, goats or sheep's milk</th>
<th>thousands of years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>many parts of the world</td>
<td>ingredients</td>
</tr>
<tr>
<td>milk</td>
<td>rennet</td>
<td>a starter culture of bacteria</td>
</tr>
<tr>
<td></td>
<td>white mould</td>
<td>blue mould</td>
</tr>
</tbody>
</table>

**TEXT B.** Write a scientific explanation of *How cheese becomes blue*.
- Use the illustrations to help you write the text.
- Make sure you use capital letters and full stops.
- Write simple and compound sentences.

When you have finished writing both texts ~
- Write an S at the beginning of each simple sentence. Write a C for each compound sentence.
- Underline the verb phrases.
- Put a circle around the prepositional phrases.
- Write a T above the technical words.
- Check that you have used correct punctuation and spelling.
How cheese becomes blue.
What is cheese?

Cheese is fermented milk. It is made from cows’, goats’ or sheep’s milk. It has been made for thousands of years in many parts of the world. The main ingredients in cheese are milk, rennet, starter cultures of bacteria and salt. White mould is grown on the outside of cheese. Blue mould is grown inside cheese.

How cheese becomes ‘blue’.

First, blue mould, rennet and a starter culture are added to warm milk. Then the milk turns into curds. The whey is removed from the curds. The curds are put into containers and then salted. Then the cheese is put into a storeroom to mature.

After a week, the cheese-makers put holes in the cheese with a stainless steel spike. The holes allow air to circulate through the cheese so that the mould will spread. The mould begins to grow along the holes and after two weeks threads of mould can be seen growing through the cheese. The cheese is now called ‘blue cheese’.

Key terms

<table>
<thead>
<tr>
<th>fermentation noun</th>
<th>a chemical reaction that changes the milk into a solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>rennet noun</td>
<td>a liquid that contains enzymes from a calf’s stomach.</td>
</tr>
<tr>
<td>a starter culture noun</td>
<td>a liquid containing acid-forming bacteria that turns milk sour</td>
</tr>
<tr>
<td>curds noun</td>
<td>the solids that form when milk ferments</td>
</tr>
<tr>
<td>whey noun</td>
<td>the watery substance that separates from the curds when cheese is made.</td>
</tr>
<tr>
<td>to mature verb</td>
<td>to develop the flavour</td>
</tr>
<tr>
<td>List 1</td>
<td>List 2</td>
</tr>
<tr>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>microbes</td>
<td>float</td>
</tr>
<tr>
<td>fungi</td>
<td>absorb</td>
</tr>
<tr>
<td>bread</td>
<td>cell</td>
</tr>
<tr>
<td>smaller</td>
<td>tangled</td>
</tr>
<tr>
<td>rise</td>
<td>carbon dioxide</td>
</tr>
<tr>
<td>ripe</td>
<td>moist</td>
</tr>
<tr>
<td>moist</td>
<td>soft</td>
</tr>
<tr>
<td>moisture</td>
<td></td>
</tr>
</tbody>
</table>
These websites have additional information and task sheets.

http://www.microbeworld.org/htm/aboutmicro/microbes/resources.htm
- a very comprehensive website, with lots of graphics

http://www.microbeworld.org/htm/aboutmicro/microbes/uses.htm
- a link on the microbeworld website with very good review information on microbes in everyday products

- an excellent website that has information at different levels (elementary to advanced) and very useful models and graphics of microbes in action; it also has suggestions for practical experiments with microbes.

It is also linked to Educyclopedia, which has links to many resources on maths, physics and many other areas of the curriculum.

http://www.umsl.edu/~microbes/links.html
This website is a portal to many other microbes sites, with articles, images and activities on microbes

http://www.agresearch.co.nz/scied/search/sitemap.htm
- a New Zealand website (AgResearch) with clear information on different types of microbes and a link to a series of pages on yoghurt - properties and experiments- and other links to the New Zealand curriculum
Microbes

Microbes are found everywhere. Some float in the air and some live in water and soil. Microbes are very tiny so we must use a microscope to see them.

There are thousands of different types of microbes. Some microbes are harmful and cause disease but most of them are harmless. Some microbes are very necessary and people and animals could not survive without them.

There are three main groups of microbes. They are fungi, bacteria and viruses.
Fungi

Fungi do not have roots, seeds, flowers or leaves. They do not make their own food like plants do. Fungi absorb and use nutrients from their surroundings. Some fungi are very large. Some are very tiny and can only be seen with a microscope.
Fungi
How many syllables in each word?

<table>
<thead>
<tr>
<th>One syllable</th>
<th>Two syllables</th>
<th>Three syllables</th>
</tr>
</thead>
<tbody>
<tr>
<td>do</td>
<td>fungi</td>
<td></td>
</tr>
<tr>
<td>not</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**How fungi feed.**

Fungi feed by absorbing their food through their hyphae. They grow on top of their food supply. The hyphae grow down through the food source. Enzymes break down the food so that it can be absorbed by the hyphae.

**How fungi reproduce.**

Fungi grow from spores. They are tiny microscopic particles. Each spore can grow into a new fungus if it lands on a suitable food source.

Spores are made inside sporangia. When the sporangia are ripe, they burst open and spores drift away.
Mushrooms

Mushrooms are a type of fungus. Both fresh and dried mushrooms are an important food. They grow in the wild but in many countries they are cultivated on a large scale. They are grown on mushroom farms. Often, they are grown in places where there is no light. Unlike plants, mushrooms do not need light to grow.

What is another word that means the same as dried? It starts with the letter 'd' and has four syllables.
How a mushroom grows from a spore.

A mushroom spore grows on a gill inside a mushroom cap. When a spore is ripe, it falls. If a spore falls onto damp soil, it begins to grow hyphae (threads). When two hypae meet, a mushroom begins to grow. As the mushroom grows, it pushes through the soil. As the mushroom gets bigger, the cap breaks away from the stalk.
What is yeast?
Yeast is a single-celled fungus. It does not grow threads. Each cell will produce a small bud that will grow to form another cell. Yeast is used to make bread rise.

How yeast makes bread rise.
Yeast is mixed with flour, salt, sugar and water. Yeast causes the dough to rise. Bread is flat, tough and chewy without yeast.

Yeast changes sugars in the dough into carbon dioxide and alcohol. The bubbles of carbon dioxide make the dough rise. It makes the dough light and fluffy. The alcohol evaporates during baking.
**MICROBES**

**Fungi -**

A topic based language learning programme for students learning English at English Language Intensive Programme (ELIP) Stage 2

*Age: Secondary*

<table>
<thead>
<tr>
<th>mushrooms</th>
<th>yeast</th>
<th>mould</th>
</tr>
</thead>
</table>
Moulds

Moulds are fungi. They are much smaller than mushrooms. They are made up of many fine threads called hyphae. Moulds can be seen when many threads are tangled together. This network of threads is called the mycelium. The threads secrete enzymes that break down the food and absorb nutrients from it.

Mould spores are everywhere but they need to land on the right food before they can grow. Moulds grow best on moist food such as bread and soft, ripe fruit. Different types of spores grow different moulds. For instance, bread mould can only grow on bread. It will not grow on an apple.