

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_  
 Science: Photosynthesis

# Science

## Photosynthesis

It is not necessary to carry out all the activities contained in this unit. Please see *Teachers' Notes* for explanations, additional activities, and tips and suggestions.

Theme	Photosynthesis	
<b>All students:</b>  Activities that are suitable for <b>Learning Support, Language Support</b> and the <b>Mainstream Subject Class</b> include:	Keywords	3
	Vocabulary File	4-5
	Activating Students' Existing Knowledge	6
	Completing Sentences	12
	Multiple Choice	13
	Writing	14
	Wordsearch	17
<b>Learning support and Language support:</b>  Activities suitable for students receiving Learning or Language Support include:	Working with words	7
	Picture Sentences	8
	Odd One Out	9
	Science Keywords	10
	Unscramble the letters	11
	Alphaboxes	16
	Play Snap	18-20
<b>Language support:</b>  Additional activities for Language Support:	Vocabulary	15
<b>Levels for Language Support</b>	<b>A1 – B1</b> The language level of each activity is indicated in an information box.	
<b>Learning focus</b>	Using Science textbooks and accessing curriculum content and learning activities.	
<b>Acknowledgement</b>	The <i>English Language Support Programme</i> acknowledges the permission of Gill and Macmillan to reproduce excerpts from <i>Science Revision for Junior Cert.</i> by Shea Mullally	

**Note:** The categorisation of activities is indicative only and should not prevent teachers from using any activities that are considered suitable for a particular group of students.

## Making the best use of these units

### Learning Record

A copy of the Learning Record should be distributed to each learning support and language support student.

Students should:

1. Write the subject and topic on the record.
2. Tick off/date the different statements as they complete activities.
3. Keep the record in their files along with the work produced for this unit.
4. Use this material to support mainstream subject learning.

**Introduction** of a topic or activity should ensure that students understand **what** they are doing and **why**. Many students will have some difficulty in understanding both the language in the activity and the instructions/purpose for carrying out the activity.

You can create your **personal teaching resource** by printing these units in full and filing them by subject in a large ring binder.

### Encourage students to:

- Bring the relevant **subject textbooks** to learning/language support class. It does not matter if they have different textbooks as the activities in these units refer to vocabulary and other items that will be found in all subject textbooks. These units are based on curriculum materials.
- Take some **responsibility for their own learning** programmes by:



Developing a **personal dictionary** for different subjects, topics, and other categories of language, on an on-going basis. This prompt is a reminder.

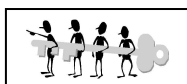


Have you ticked this activity on your Learning Record?

Recording what they have learnt on the **Learning Record**, which should be distributed at the start of each unit.



Keeping their own **files** with good examples of the work produced for different subjects and topics. This file will be an invaluable **learning resource** in supporting mainstream learning.



Indicates that answers may be found at the end of the unit.

Don't forget that many of the activities in these units are also suitable as **homework** tasks or for **self-study**.

**NAME:** \_\_\_\_\_ **DATE:** \_\_\_\_\_  
**Science: Photosynthesis**

## **Keywords**

The list of keywords for this unit is as follows:

### **Nouns**

carbon  
cell  
chemical  
chlorophyll  
chloroplasts  
dioxide  
experiment  
glucose  
iodine  
leaf/leaves  
light  
methylated  
photosynthesis  
plant  
pores

respiration  
spirit  
starch  
tile

### **Adjectives**

green  
hot  
white

### **Verbs**

boil  
combine  
test  
trap

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_  
Science: Photosynthesis

### Vocabulary file 1

Word	Meaning	Note or example*
spirit		
light		
boiling		
starch		
trap		
soften		

\* You may wish to write a sentence or phrase, make a note of the page in your textbook where this word appears or, if English is not your first language, provide a translation into your language.



Get your teacher to check this and then file it in your folder so you can use it in the future.

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_  
Science: Photosynthesis

### Vocabulary file 2

Word	Meaning	Note or example
respiration		
plant		
iodine		
cell		
glucose		
chemical		



Get your teacher to check this and then file it in your folder so you can use it in the future.

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_  
Science: Photosynthesis

Language Level: all  
Type of activity: whole class  
Suggested time: 10 minutes

## Activating students' existing knowledge

Use a spidergram to activate students' ideas and knowledge on the key points in this chapter. See **Teachers' Notes** for suggestions.

Possible key terms for the spidergram:

### Plants

### The Sun

- Invite newcomer students to provide key words in their own languages.
- Encourage dictionary use.
- Encourage all students to organise their vocabulary into relevant categories (e.g. meaning, nouns, keywords, verbs etc.).





All students should record vocabulary and terms from the spidergram in their personal dictionaries.

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_  
Science: Photosynthesis

Language Level: A1  
Type of activity: pairs or individual  
Suggested time: 30 minutes

### Working with words

#### 1. Tick the correct answer

	a) This is a flower. b) This is a leaf. c) This is a garden. d) This is a tree
	a) This is a river. b) This is a town. c) This is sunlight. d) This is a star

#### 2. Find these words in your textbook.

Write your own explanation for these words. Then write a note or example to help you remember the word. Use your dictionary if necessary.

Word	Page in textbook	Explanation	Note or example
photosynthesis			
chlorophyll			
carbon dioxide			
oxygen			



Check that these key words are in your personal dictionary.

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

Science: Photosynthesis

Language Level: A1/A2  
Type of activity: pairs or individual  
Suggested time: 30 minutes



## Sentences

1. Look in your textbook, then match the names with the symbols

$O_2$

a) water

$H_2O$

b) carbon dioxide

$CO_2$

c) oxygen

2. Put these words in the correct order to form sentences about photosynthesis.

process/photosynthesis/ a/ is

---

food/from /light energy/ green plants/ use/ the sun/ to produce

---

a plant/the green pigment/ chlorophyll/ of/ is

---



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

Science: Photosynthesis

Language Level: A1/A2  
Type of activity: pairs or individual  
Suggested time: 20 minutes



### Odd One Out

1. Circle the word which does not fit with the other words in each line.

Example: *apple orange banana taxi*

carbon                  dioxide                  oxygen                  child

plant                  leaf                  house                  tree

starch                  energy                  angel                  glucose

green                  soil                  brick                  plant

2. Find these words in your textbook. Then put them in short sentences in your own words. Use a dictionary if necessary.

to test \_\_\_\_\_

to boil \_\_\_\_\_

to combine \_\_\_\_\_

to provide \_\_\_\_\_

to trap \_\_\_\_\_



Check that these key words are in your personal dictionary.

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

Science: Photosynthesis

Language Level: A2 / B1  
Type of activity: individual  
Suggested time: 20 minutes



### Keywords

1. Fill in the missing letters of the keywords listed below.  
On the line beside each word, write whether the word is a noun, an adjective or a verb.

l\_g\_t \_\_\_\_\_

s\_ir\_t \_\_\_\_\_

i\_d\_ne \_\_\_\_\_

p\_an\_ \_\_\_\_\_

2. Write as many words as possible related to **Photosynthesis**. You have 3 minutes!

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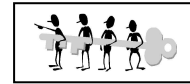
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Check that these key words are in your personal dictionary.

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_  
Science: Photosynthesis

Language Level: A1 / A2  
Type of activity: pairs or individual  
Suggested time: 20 minutes



## Unscramble the letters

1. This is a green chemical CHOLROHPLYL

**Answer** \_\_\_\_\_

2. Chlorophyll is found in the COLHROPLSATS

**Answer** \_\_\_\_\_

3. Chlorophyll traps LGIHT

**Answer** \_\_\_\_\_

4. This travels around the plant in cells GCUSOLE

**Answer** \_\_\_\_\_

## Solve the secret code

English	A	C	D	E	H	R	N	M	O	S	T	U
Code	B	X	Y	F	G	Q	R	O	L	E	A	W

ex: EAWYFRA = STUDENT

EABQXG \_\_\_\_\_

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

Science: Photosynthesis

Language Level: A2 / B1  
Type of activity: pairs or individual  
Suggested time: 30 minutes



### Completing sentences

Fill in the blanks in these sentences. Use words from the Word Box below.

Plants make glucose from carbon dioxide and water by using the \_\_\_\_\_ from the sun and a catalyst called chlorophyll. Glucose can be \_\_\_\_\_ as energy, stored as starch, converted into protein or used to \_\_\_\_\_ cell walls.

Most leaves are broad, \_\_\_\_\_ and thin. This allows the maximum amount of \_\_\_\_\_ to be absorbed and also allows carbon dioxide in quickly.

### Word Box

make      light      used      flat      energy

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Science: Photosynthesis

Language Level: A2 / B1  
Type of activity: individual  
Suggested time: 40 minutes



## Multiple choice

*Read the text below and choose the best answers.*

Carbon dioxide is taken in through tiny holes in the leaf called stomata.

- Water is taken up from the roots.
- Energy is provided by the sun.
- Chlorophyll acts as a catalyst.
- Oxygen is released through the stomata.
- Glucose is transported to the rest of the plant.

1. What is taken in through tiny holes in the leaf?

- |                   |                   |
|-------------------|-------------------|
| a) photos         | b) image          |
| c) carbon dioxide | d) photosynthesis |

2. Where is the water taken from?

- |                |              |
|----------------|--------------|
| a) paint       | b) chlorine  |
| c) chlorophyll | d) the roots |

3. What provides the energy?

- |                                |            |
|--------------------------------|------------|
| a) chloroplasts of plant cells | b) school  |
| c) chlorine                    | d) the sun |

4. Glucose is transported to the plant.

- |         |          |
|---------|----------|
| a) true | b) false |
|---------|----------|

5. Is oxygen released through the stomata?

- |        |       |
|--------|-------|
| a) Yes | b) No |
|--------|-------|



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_



Science: Photosynthesis

Language Level: A2/B1  
Type of activity: individual  
Suggested time: 30 minutes



## Vocabulary

### 1. Plurals. Fill in the missing words

	This is a picture of a _____.
	There are lots of _____ in this picture.

2. There are many spelling rules, but not all of them work! The following is a list of nouns that have irregular plurals. Write in the plural then check your dictionary.

a potato - some \_\_\_\_\_      a tomato - a kilo of \_\_\_\_\_  
the factory - two \_\_\_\_\_      a pony - lots of \_\_\_\_\_  
a monkey - lots of \_\_\_\_\_      one knife - many \_\_\_\_\_  
his wife - their \_\_\_\_\_      the shelf - lots of \_\_\_\_\_  
a house - a lot of \_\_\_\_\_      a sheep - some \_\_\_\_\_  
a foot - two \_\_\_\_\_      a woman - two \_\_\_\_\_

3. Based on the spellings above, can you write out some spelling rules?  
Check your suggestions with the Answer Key.


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## Alphaboxes

Using your textbook, find **one** word beginning with each of the letters of the alphabet. Write the word in the relevant box. You could also write the word in your own language.

a	b	c
d	e	f
g	h	i
j	k	l
m	n	o
p	q	r
s	t	u
v	w	xyz

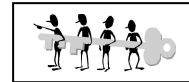
Do you understand all these words?



Get your teacher to check this, then file it in your folder so you can use it in the future.



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### Word search

Find the words from the list below.

I Y  
 J Q  
 F V H Q  
 M B V R  
 V O P Z M N  
 G H Q B G X

W A T E R M W U G L U C O S E V L K S V  
 O Q S T A R C H F P E F R N O X Y G E N  
 P D T R A P S B O I L I N G G Y C D  
 I I W C H L O R O P H Y L L E R  
 B V M E T H Y L A T E D O N  
 L D I O X I D E U P R M  
 C N P O R E S P I R I T T A  
 G C C O M B I N E W H I T E  
 S F E C H L O R O P L A S T S Z  
 T E S T G Q B O P U R H S X  
 G R E E N H B Q I O D I N E  
 E O A D X P R Q X R  
 E M H Y N R V R  
 K W Q F

BOILING	GLUCOSE	PORES	WATER
CHLOROPHYLL	GREEN	SPIRIT	WHITE
CHLOROPLASTS	IODINE	STARCH	
COMBINE	METHYLATED	TEST	
DIOXIDE	OXYGEN	TRAPS	

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_  
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## Play Snap

Make Snap cards with 2 sets of the same keywords. See *Notes for teachers* for ideas about how to use the cards.



photosynthesis	photosynthesis
chlorophyll	chlorophyll
oxygen	oxygen

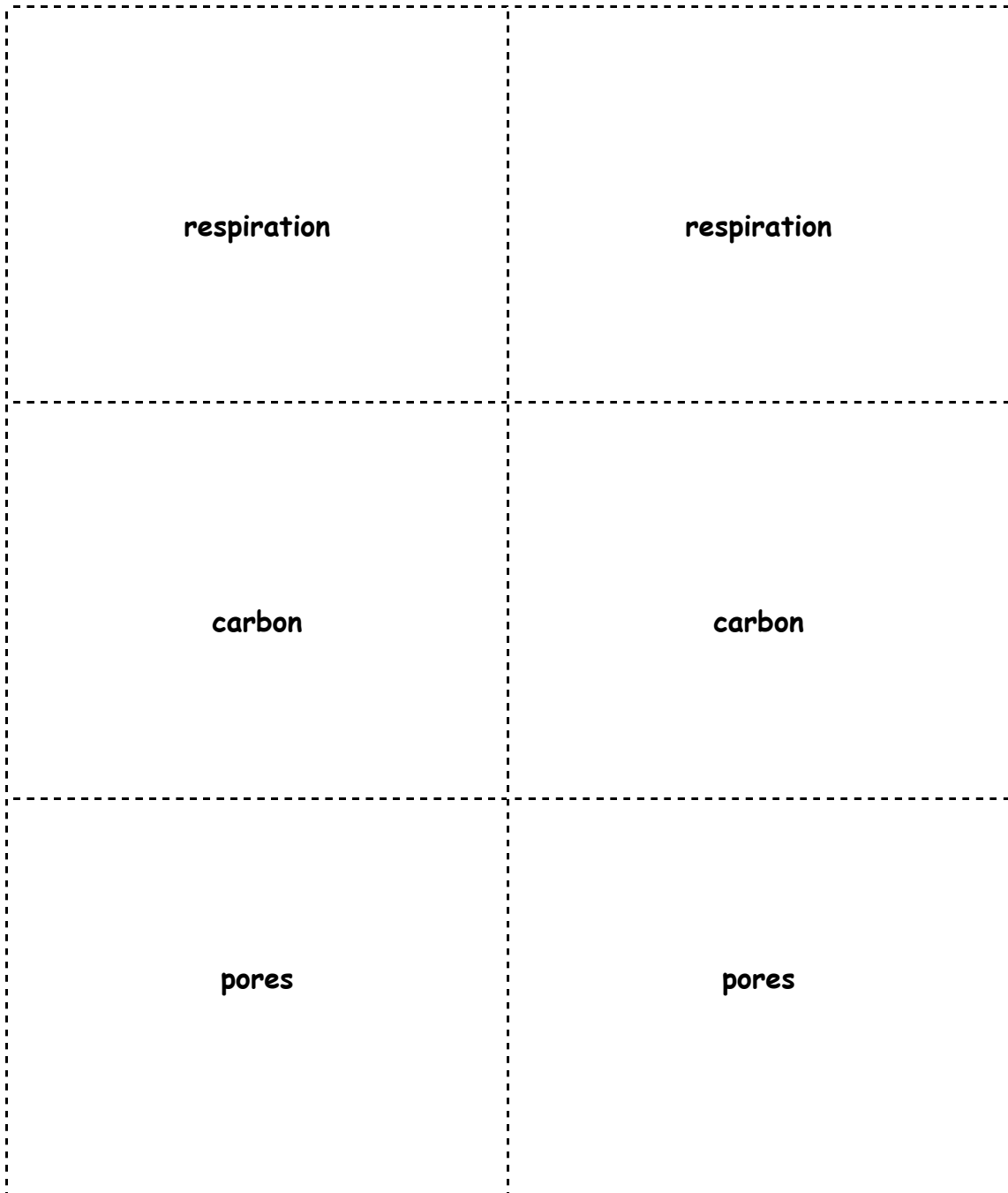
NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

Science: Photosynthesis

<b>starch</b>	<b>starch</b>
<b>iodine</b>	<b>iodine</b>
<b>light</b>	<b>light</b>

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Science: Photosynthesis



## Answer key

### Working with words, page 7

1. b,c

### Sentences, page 8

1. a) water H<sub>2</sub>O

b) carbon dioxide CO<sub>2</sub>

c) oxygen O<sub>2</sub>

2. Photosynthesis is a process.

Green plants use light energy from the sun to produce food.

The green pigment of a plant is chlorophyll.

### Odd one out, page 9

Child, house, angle, brick

### Keywords, page 10

Light (noun, verb, adjective), spirit (noun), iodine (noun), plant (noun or verb)

### Unscramble the letters, page 11

Chlorophyll, chloroplasts, light, glucose

Secret Code: starch

### Completing Sentences, page 12

Plants make glucose from carbon dioxide and water by using the **energy** from the sun and a catalyst called chlorophyll. Glucose can be **used** as energy, stored as starch, converted into protein or used to make **cell** walls.

Most leaves are broad, **flat** and thin. This allows the maximum amount of **light** to be absorbed and also allows carbon dioxide in quickly.

### Multiple Choice, page 13

1. c, 2.d, 3.d, 4.a, 5.a

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**Vocabulary, page 15**

a potato - some potatoes, a tomato - a kilo of tomatoes

the factory - two factories, a pony - lots of ponies,

a monkey - lots of monkeys, a knife - many knives,

his wife - their wives, the shelf - lots of shelves

a house - a lot of houses, a sheep - some sheep

a foot - two feet, a woman - two women

**Spelling Rules:**

The regular plural ending is s/es.

We add es after o in potato, tomato, hero.

After a consonant, y changes to ies (but when y comes after a vowel, ey, the plural is regular).

F and fe change to ves in knife, shelf, wolf, thief, half, life, leaf, loaf.

Sheep, deer and most names of fish have the same plural and singular nouns.

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Word Search, page 17

I Y  
J Q  
F V H Q  
M B V R  
V O P Z M N  
G H Q B G X  
W A T E R M W U G L U C O S E V L K S V  
O Q S T A R C H F P E F R N O X Y G E N  
P D T R A P S B O I L I N G G Y C D  
I I W C H L O R O P H Y L L E R  
B V M E T H Y L A T E D O N  
L D I O X I D E U P R M  
C N P O R E S P I R I T T A  
G C C O M B I N E W H I T E  
S F E C H L O R O P L A S T S Z  
T E S T G Q B O P U R H S X  
G R E E N H B Q I O D I N E  
E O A D X P R Q X R  
E M H Y N R V R  
K W Q F