

SCIENCE

Respiration and Breathing

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	Respiration and Breathing	
All students: Activities that are suitable for Learning Support, Language Support and the Mainstream Subject Class include:	Keywords	3
	Vocabulary File	4-6
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	Writing	15-16
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Learning support and Language support: Activities suitable for students receiving Learning or Language Support include:	Working with words	8
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	Science Keywords	11
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	Play Snap	21-23
Language support: Additional activities for Language Support:	Grammar points	17-18
Levels for Language Support	A1 – B1 The language level of each activity is indicated in an information box.	
Learning focus	Using Science textbooks and accessing curriculum content and learning activities.	
Acknowledgement	The <i>English Language Support Programme</i> acknowledges the permission of Gill and Macmillan to reproduce excerpts from <i>Extracts from 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:



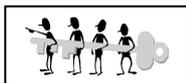
Developing a **personal dictionary** for different subjects, topics, and other categories of language, on an on-going basis. This prompt is a reminder.



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: Respiration and Breathing

Keywords

The list of keywords for this unit is as follows:

Nouns

air
alveoli
animal
blood
breath
bronchi/bronchioles
capillary/capillaries
carbon
carbon dioxide
characteristic
concentration
demonstration
diaphragm
diffusion
energy
filter
flask
heat
inhalation
limewater
lungs
oxygen
plant
presence
process
produce (*noun*)
products
release (*noun*)
respiration
seed/seeds
thermos
vapour
windpipe

Verbs

to breathe
to cause
to contain
to control
to damage
to demonstrate
to exchange
to exhale
to expire
to expel
to extract
to force
to inhale
to pass through
to produce (*verb*)
to release (*verb*)
to respire

Adjectives

active
aerobic
anaerobic
blue
breathing (*adjective*)
gaseous
living
pink
respiratory
tiny

Other key words/phrases

in a given time
is composed of
per second
the same
the time taken

NAME: _____ DATE: _____
SCIENCE: Respiration and Breathing

Vocabulary file 1

Word	Meaning	Note or example*
alveoli		
breath		
bronchi		
capillary		
carbon dioxide		
characteristic		
diaphragm		

* 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, then file it in your folder so you can use it in the future.

NAME: _____ DATE: _____
SCIENCE: Respiration and Breathing

Vocabulary file 2

Word	Meaning	Note or example
diffusion		
energy		
filter		
lungs		
respiration		
vapour		
windpipe		



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

NAME: _____ DATE: _____
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Vocabulary file 3

Word	Meaning	Note or example
to breathe		
to exchange		
to extract		
to respire		
aerobic		
gaseous		
is composed of		



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

NAME: _____ DATE: _____
SCIENCE: Respiration and Breathing

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/ideas for the spidergram:

Air

(hint: look at other things such as when we sing, how other living things breathe etc.)

- 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: Respiration and Breathing

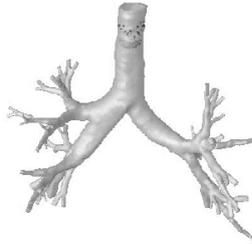
Language Level: A1

Type of activity: Pairs or individual

Suggested time: 30 minutes

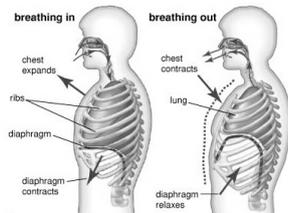
Working with words - Tick the correct answer

1 - Tick the correct answer



- a) blood
- b) air
- c) bronchi
- d) bike

2 - Tick the correct answer



- a) respiration
- b) athlete
- c) animal
- d) vapour

Find these words in your textbook.

Write your own explanations for the 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
to breathe			
to exchange			
to release			
to respire			

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

Picture Sentences - Tick the correct answer

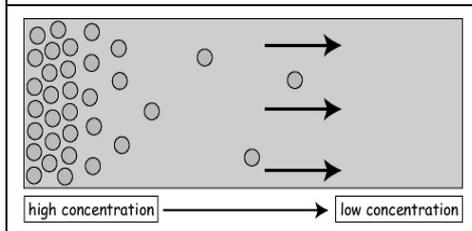
1.

- a). This is a train.
- b). This is a flask.
- c). This is a car.



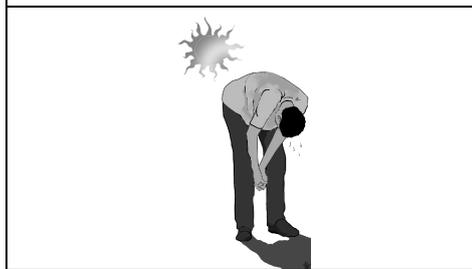
2.

- a). This is diffusion.
- b). This is an athlete.
- c). This is a pencil.



3.

- a). This is sweating.
- b). This is flying.
- c). This is sailing.



Put these words in the correct order to form sentences.

lungs we when our down breathe and up move

process respiration the breathing of is

athlete her fast after race breathes very the



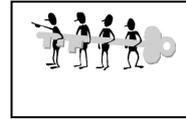
Don't forget!

You must have a capital letter and full stop in each sentence.

NAME: _____ DATE: _____

SCIENCE: Respiration and Breathing

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



Odd One Out

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

Example: chair desk book **train**

- | | | | | |
|----|-------------|---------|----------|-------------|
| 1. | boy | girl | man | lungs |
| 2. | air | men | oxygen | respiration |
| 3. | breath | bronchi | windpipe | cloud |
| 4. | capillaries | sound | blood | oxygen |



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

alveoli _____

breathe _____

carbon dioxide _____

diffusion _____

seeds _____



Check that these keywords are in your personal dictionary.

NAME: _____ DATE: _____
SCIENCE: Respiration and Breathing

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

Science keywords

Fill in the missing letters of the keywords listed below.

On the line next to the keywords, write down whether this word is a noun, an adjective or a verb.

1. l_ng_ _____

2. en_rg_ _____

3. c_rb_n _____

4. di_ph__gm _____

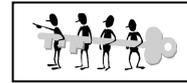


Write as many words as possible relating to breathing and respiration. You have 3 minutes.

Write the plurals of these words:

capillary _____
man _____
lung _____
breath _____

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



Unscramble the letters

1. Respiration is the release of energy from FDOO

Answer _____

2. The air passes through the WIDNPIEP

Answer _____

3. We breathe in the air to the LNGUS

Answer _____

4. We inhale oxygen and we exhale ACRBNO DIXODIE

Answer _____

Look at each word as you write the answer.

Is your spelling correct?

Can you pronounce the word?

Do you know what the word means?

Have you got this word in your personal dictionary?



Solve the secret code

English=	V	P	D	E	N	O	R	U	A	S	T	U
Code=	B	X	Y	F	R	Q	G	O	L	E	A	W

example: EAWYFRA = STUDENT

BLXQOG _____

NAME: _____ DATE: _____

SCIENCE: Respiration and Breathing

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



Completing text

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

Oxygen passes through the walls of the alveoli and into the blood capillaries by _____. Carbon dioxide passes the other way by diffusion.

Smoking damages your _____, which makes _____ difficult and causes lung diseases including cancer.

The products of _____ respiration are carbon dioxide, water and heat.

_____ is a strip of muscle which forces the air to move in and out of the lungs.

Word Box

diaphragm diffusion aerobic
breathing lungs

 Fill in the past tenses of these verbs! Are there any irregular verbs?	Tenses	
	Present	Past
	to breathe	
	to produce	
	to exchange	
	to contain	
to respire		



Are these verbs in your personal dictionary?

NAME: _____ DATE: _____

SCIENCE: Respiration and Breathing

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



Multiple choice

(Read the text below and choose the best answers)

Respiration is a characteristic of all animal and plant cells. It is the release of energy from food.

Aerobic respiration requires the presence of oxygen.

Humans breathe by exchanging oxygen for carbon dioxide in the lungs. Fish breathe by extracting oxygen from water in their gills.

Breathing is the process by which animals bring air or water into contact with their gaseous exchange surface.

1. What is a characteristic of all animal and plant cells?
 - a) cancer
 - b) respiration
 - c) dry skin
 - d) nothing

2. What does aerobic respiration require?
 - a) energy
 - b) oxygen
 - c) people
 - d) food

3. What do humans exchange oxygen for?
 - a) oxygen
 - b) cakes
 - c) food
 - d) carbon dioxide

4. Where do fish extract water from?
 - a) gills
 - b) fins

5. Is breathing a process?
 - a) Yes
 - b) No

NAME: _____ DATE: _____

SCIENCE: Respiration and Breathing

Language Level: B1

Type of activity: Pairs / small groups

Suggested time: 40 minutes

Planning text

Use this chart to plan a short text on the topic, 'Respiration in humans'.

Introduction

First paragraph

Second paragraph

Concluding points

Important words for this topic.

What is the difference between to inhale and to exhale?
Look carefully at the spelling.



Have you ticked this activity on your Learning Record?

NAME: _____ DATE: _____

SCIENCE: Respiration and Breathing

Language Level: All
Type of activity: Individual
Suggested time: 30 minutes

Grammar Points

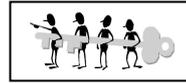
In this Unit, we came across the following words:

- living
- tiny
- active

Look up these words in your dictionary. Are they nouns, adjectives or verbs?

Word	Meaning	Opposite	Meaning
living			
tiny			
active			

Adjective Hunt



Circle the 10 adjectives in these columns. Score 4 points for each correct answer. Who will score the highest? Perhaps you will. Good luck!

respiration

wet

waste

cobalt

energy

living

gauze

energetic

muscle

big

bronchi

blue

better

dioxide

attack

water

active

respiratory

dry

breathing

gaseous

Score: _____ points

NAME: _____ DATE: _____

SCIENCE: Respiration and Breathing

Language Level: All
Type of activity: Individual
Suggested time: 30 minutes

Grammar points

Adverbs describe how things are done. In this unit we have been studying respiration and breathing.

Look at these sentences. The adverbs are underlined.

Write another sentence using the same adverb.

	Another sentence
A running man breathes <u>quickly</u> .	
Blood is pumped <u>rapidly</u> in the body.	
You must read your textbook <u>carefully</u> .	
It is important to write <u>clearly</u> .	
You must do your experiments <u>slowly</u> .	

Now write your own sentences using these adverbs:

quietly _____

loudly _____

tidily _____

sleepily _____

Alphaboxes

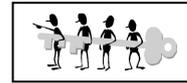
Using your textbook, find **one** word beginning with each of the letters of the alphabet. Write the word in the relevant box. You could also write the word in your own language.

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.



Word search

Find the words in the box below.

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

AEROBIC AIR ALVEOLI CARBON DIOXIDE EXPIRED OXYGEN	PRODUCES PRODUCING RELEASE RESPIRATION
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NAME: _____ DATE: _____
SCIENCE: Respiration and Breathing

Play Snap

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

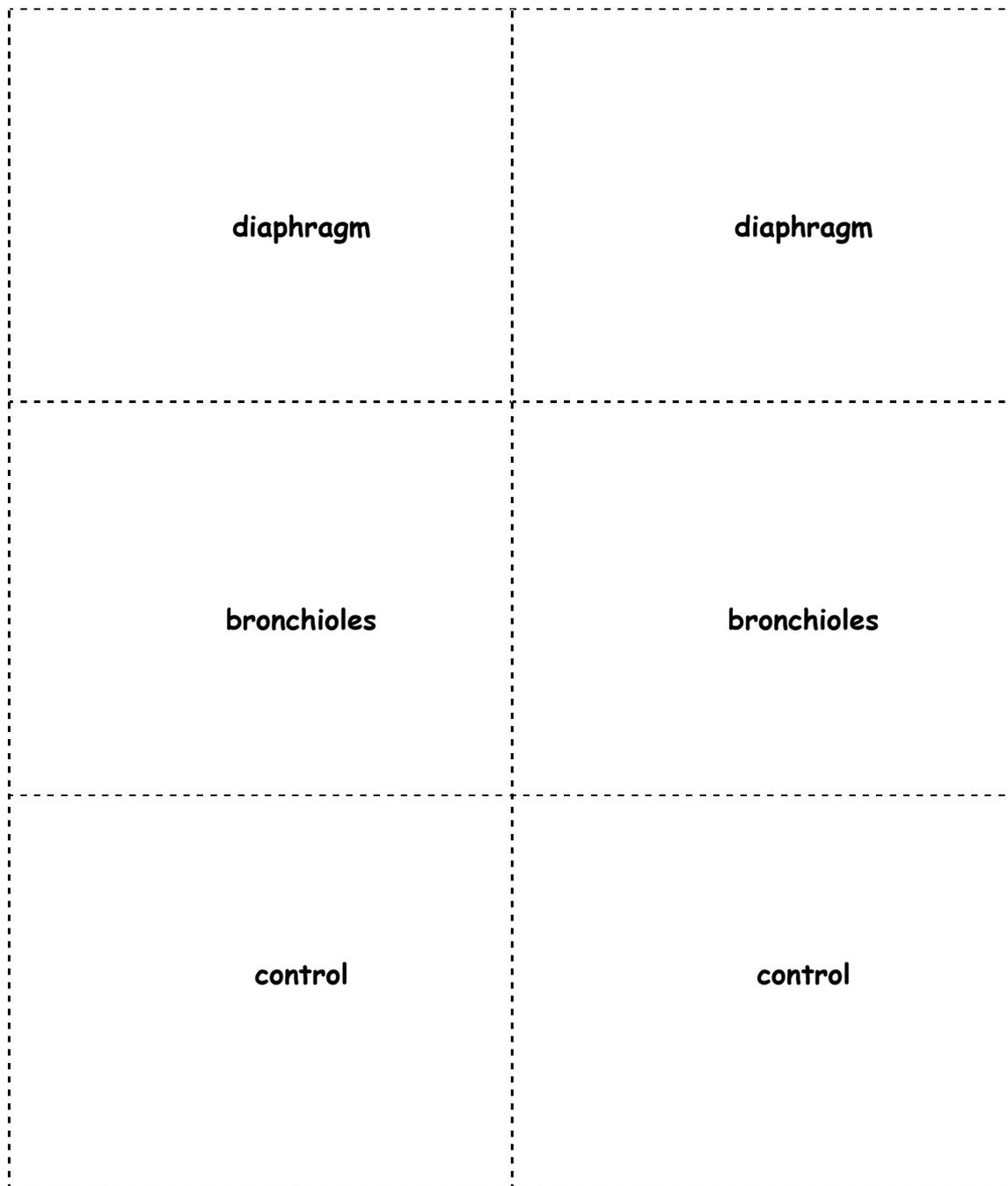


muscle	muscle
respiration	respiration
windpipe	windpipe

NAME: _____ DATE: _____
SCIENCE: Respiration and Breathing

oxygen	oxygen
carbon	carbon
dioxide	dioxide

NAME: _____ DATE: _____
SCIENCE: Respiration and Breathing



Answer key

Scramble sentence =

When we breathe our lungs move up and down.

Respiration is the process of breathing.

The athlete breathes fast after her race. (or *After her race the athlete breathes fast.*)

Odd One Out =

lungs, men, cloud, sound

Letter Scramble =

food
windpipe
lungs
carbon dioxide

Secret Code =

vapour

Completing text =

Oxygen passes through the walls of the alveoli and into the blood capillaries by diffusion.

Carbon dioxide passes the other way by diffusion.

Smoking damages your lungs, which makes breathing difficult and causes lung diseases including cancer.

The products of aerobic respiration are carbon dioxide, water and heat.

Diaphragm is a strip of muscle which forces the air to move in and out of the lungs.

(Science Revision for Junior Certificate. Page 96)

Multiple Choice =

b, b, d, a, a

Grammar Points = big, better, dry, wet, energetic, active, living, blue, respiratory, gaseous

NAME: _____ DATE: _____
 SCIENCE: Respiration and Breathing

Word Search:

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