

# GRUP D'EXPERIMENTACIÓ PER AL PLURILINGÜISME

## ***BREATHE IN, BREATHE OUT***

Àrea: Science, Primary education

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## **BREATHE IN, BREATHE OUT**

Material elaborat durant la realització de la formació adreçada als docents que implementen el pilotatge del GEP (Grup d'Experimentació per al Plurilingüisme) durant el curs 2015-2016, realitzada amb la formadora de OUP.

SG de Llengua i Plurilingüisme  
Servei de Llengües Estrangeres

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### Ten tips for learning success

- ❖ Do activities that develop thinking skills and problem solving.
- ❖ Work collaboratively in groups, share your own ideas and come up with your own conclusions.
- ❖ Use different kinds of materials such as authentic texts and multimedia.
- ❖ Use different strategies to help you understand scientific information.
- ❖ Use different resources to understand how the respiratory system works.
- ❖ Learn about the respiratory system by making a lung simulator.
- ❖ Measure your lung capacity and compare with your classmates.
- ❖ Draw conclusions from a scientific experiment.
- ❖ Assess your own work and that of others.

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## Respiratory System

Watch this video about the respiratory system:

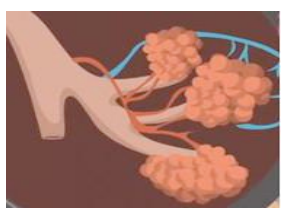
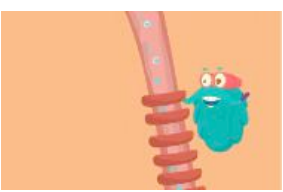



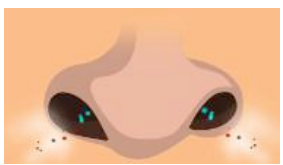
[https://www.youtube.com/watch?v=mOKmjYwfDGU&list=PLA5zMpSS7T2eT2BsAY9\\_GNqMvzK4eK9y6](https://www.youtube.com/watch?v=mOKmjYwfDGU&list=PLA5zMpSS7T2eT2BsAY9_GNqMvzK4eK9y6)

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## Activities

### Explicit

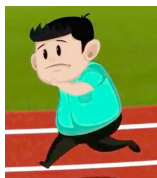
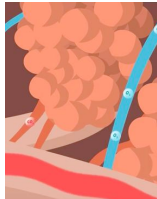
1. Match the vocabulary with the pictures:

	LUNGS	
	ALVEOLI	
	TRACHEA	
	NOSTRILS	
	BRONCHI	
	NOSE	

2. Circle the words that appear in the video:

NOSE – EYE – LUNGS – ALVEOLI – LEG – ARM – TRACHEA - DIAPHRAGM

3. Tick the correct sentence:

	<p>- When you run, your body needs more <b>oxygen</b>. <input type="checkbox"/></p> <p>- When you run, your body needs more <b>nitrogen</b>. <input type="checkbox"/></p>
	<p>- The exchange of oxygen and carbon dioxide happens in the <b>alveoli</b>. <input type="checkbox"/></p> <p>- The exchange of oxygen and carbon dioxide happens in the <b>trachea</b>. <input type="checkbox"/></p>

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## Implicit

4. Which is the correct path for oxygen?

NOSE → LUNGS → TRACHEA → BRONCHI

LUNGS → TRACHEA → NOSE → BRONCHI

NOSE → TRACHEA → BRONCHI → LUNGS

5. Match these words from the video with their definition:

DIAPHRAGM

Small air sacs in the lungs where the exchange of oxygen and carbon dioxide takes place.

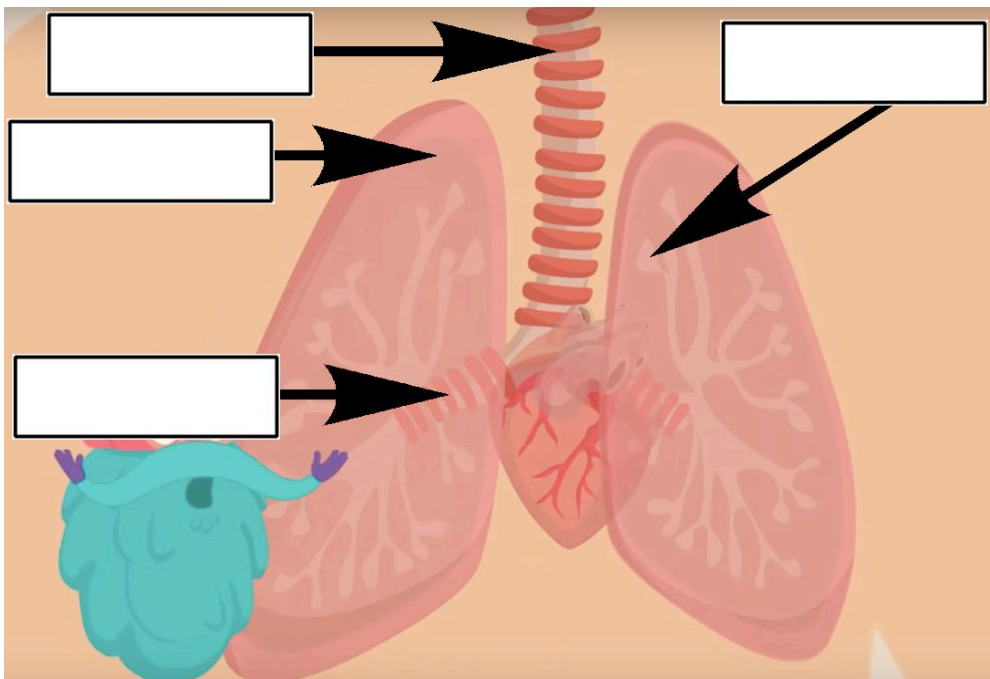
LUNGS

A large muscle that separates the chest cavity from the abdominal cavity and helps with breathing.

ALVEOLI

The major organs of the respiratory system.

6. Label the parts of the respiratory system and draw the **diaphragm**:



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## Referential

7. When do you need more oxygen? Discuss in pairs:

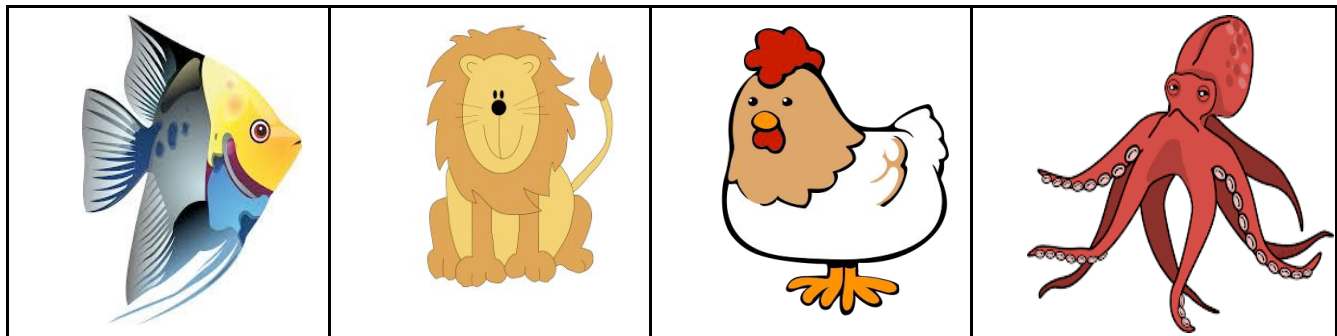
We need more oxygen...			
			
...when we are watching T.V.	...when we are playing tennis.	...when we are walking.	...when we are sleeping.

You can use the following structures:

- In my opinion ...

- I think that ...

8. Which of these animals breathe using lungs?



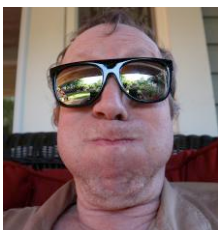
Fish

Lion

Chicken

Octopus

9. Do you die if you hold your breath? Discuss in pairs and choose the correct answer:



a) Yes, because we need oxygen.

b) No, because we don't need to breathe.

c) No, because we pass out and start breathing again.

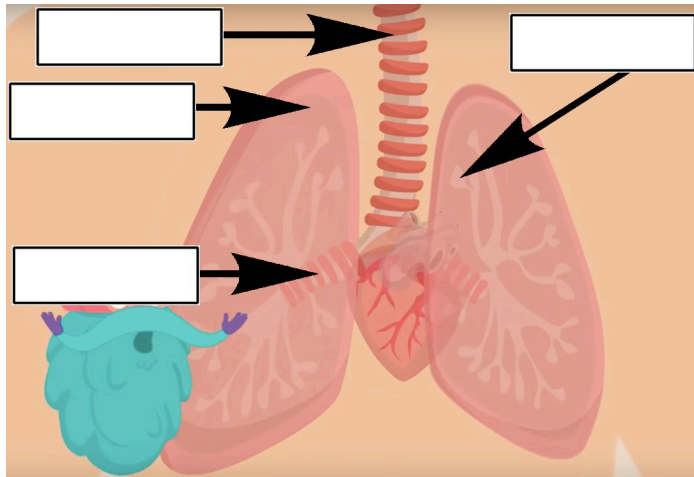


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## Revision

1. Label the parts of the respiratory system using the words below:

LUNG – TRACHEA – ALVEOLI – BRONCHI



2. Observe the picture and complete the text using the words below:

LUNGS – ALVEOLI – TRACHEA – BRONCHI – NOSE

An anatomical illustration of the human respiratory system. It shows the nose, tongue, larynx, pharynx, trachea, right and left bronchi, right and left bronchioles, right and left lungs, and the diaphragm. A circular inset shows a magnified view of the alveoli. Labels with arrows point to: Nose, Tongue, Larynx, Pharynx, Right Lung, Left Lung, Right Bronchus, Left Bronchus, Left Bronchioles, and Diaphragm.	<p>First, you breathe air through your ..... .</p> <p>The air travels down your ..... . Then it goes through the ..... and into your ..... .</p> <p>Finally, the air arrives to your ....., where the oxygen and the carbon dioxide are exchanged</p>
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3. Tick the words related to the respiratory system:

KIDNEY	
LUNG	
ALVEOLI	
LEG	

TRACHEA	
NOSE	
DIAPHRAGM	
HAIR	

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## Extension

Observe this infographic and answer the questions below:



1. Say if these sentences are **true** or **false**:

	TRUE	FALSE
The left lung is bigger than the right one.		
Lungs can float on water.		
The air is heated inside your nose.		
The surface area of the lungs is very small.		

2. Lets do some maths: According to the poster, we breathe in 13 pints of oxygen per minute.

How many pints of air do we breathe in 2 minutes?

And in 5 minutes?

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3. Why do you think that lungs can float on water?

- a) Because they are made of rubber.
- b) Because they are full of air.
- c) Because they are balloon-shaped.

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## Project: collaborative problem solving

Working in groups of three, pupils have to make a lapbook.

During 5 or 6 sessions, pupils are going to do different activities in order to have the material for their lapbook.

At the end of the project, each group has to have their own lapbook, so they can give their presentation.

Diagram of the lapbook:

MEMORY GAME	PAPER MODEL OF THE RESPIRATORY SYSTEM	EXPERIMENT 1: LUNG CAPACITY CHART
TRIVIA FACTS		EXPERIMENT 2: LUNG SIMULATOR PICTURES

### ACTIVITIES:

#### 1. Lab experiment 1: measuring lung capacity

Using a measuring device from the school lab, you are going to measure your lung capacity. Try three times and complete the chart, then glue it in your lapbook:

MEASURING LUNG CAPACITY			
NAME	TRIAL 1	TRIAL 2	TRIAL 3

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## 2. Lab experiment 2: building a lung simulator

- In order to explore the inhalation/exhalation process, you have to build a lung model using 2 small balloons, 1 big balloon, 2 straws, some rubber bands and a plastic bottle.

Look at this video to learn how to do the model:

[https://www.youtube.com/watch?v=P\\_Cah94kYEs](https://www.youtube.com/watch?v=P_Cah94kYEs)

- Take pictures of your model and glue them in your lapbook.
- Complete the answers and glue them with the pictures:

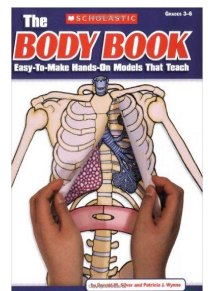
1. What happens when you pull the diaphragm down?	- The ..... inflate and the ..... goes in.
---	--

2. What happens when you leave the diaphragm up?	- The ..... deflate and the air goes ..... .
--	--

Your can use some of these words: lungs – air – bronchi – in – out – nose - trachea

## 3. Create a paper model of the respiratory system

Using photocopies from “The body book. Easy-to-make hands-on that teach” (Donald M. Silver and Patricia J. Wynne), you have to make a paper model of the respiratory system and glue it in your lapbook.



## 4. Prepare a memory game about the respiratory system vocabulary

- ✓ Look for pictures about the respiratory system.
- ✓ Make a set of cards with the pictures.
- ✓ Make another set of cards with the names of the pictures.
- ✓ Put the cards inside an envelope and glue the envelope in the lapbook.
- ✓ Your memory game is ready!!

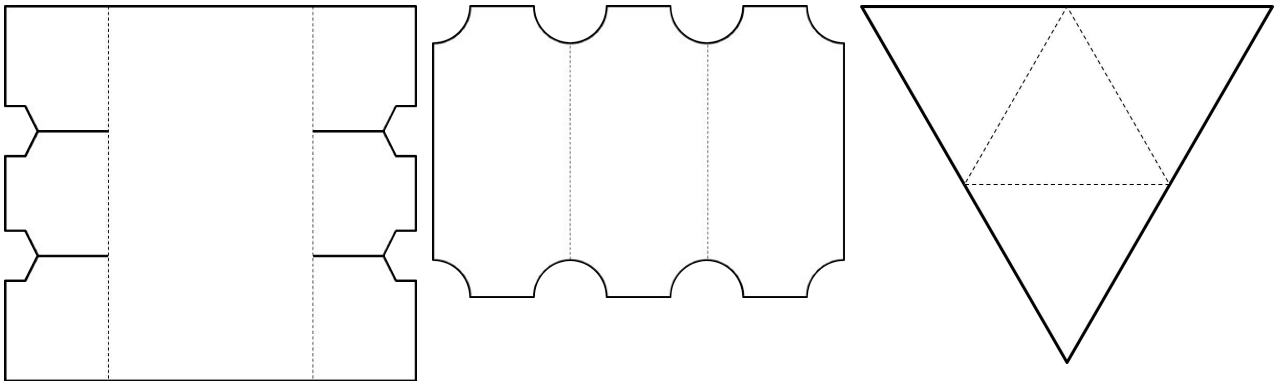
Key words: lungs – trachea – diaphragm – alveoli – bronchi – nose – nostrils

## 5. Create a collection of trivia facts about the respiratory system

- Search for 3-6 trivia facts about the respiratory system (you can find some in the video we watched as an introduction, and in the infographic we used for the extension activities).

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- Write them using one of the templates below and glue them in the lapbook.
- You can label the activity: "DID YOU KNOW THAT?"



**d) *Present your lapbook to the rest of the class.***

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## Assessment

Rubric:

	4	3	2	1
<b>CONTENT</b>	The lapbook has all the required elements.	The lapbook has almost all the required elements.	The lapbook has some of the required elements, but some of them are missing.	The lapbook has irrelevant information and most of the required elements are missing.
<b>FORMAT</b>	The lapbook has excellent formatting and very well organized information.	The lapbook has good formatting and well organized information.	The lapbook has some organized information with random formatting.	The lapbook's format and organization of material are confusing to the reader.
<b>USE OF ENGLISH</b>	All the writing is done in complete sentences. Capitalization and punctuation are correct. All the vocabulary is correct.	Most of the writing is done in complete sentences. Most of the capitalization and punctuation are correct. Most of the vocabulary is correct.	Some of the writing is done in complete sentences. Some of the capitalization and punctuation are correct. Some vocabulary is wrong.	Most of the writing is not done in complete sentences. Most of the capitalization and punctuation are not correct. Most of the vocabulary is wrong or written wrongly.
<b>UNDERSTANDING OF THE TOPIC</b>	Students show full understanding of the topic.	Students show a majority of understanding of the topic.	Students show some understanding of the topic.	Students show poor understanding of the topic.
<b>ORAL COMMUNICATION</b>	Students were able to verbally express the topic to its fullest.	Students were able to verbally express the majority of the subject.	Students were able to verbally express some of the subject.	Students were unable to verbally express the subject.
<b>COLLABORATIVE WORK</b>	All students worked toward group goals. Everyone contributed with knowledge, opinions and skills. Everybody stayed on task all the time.	Almost all students worked toward group goals. Everyone contributed with knowledge, opinions and skills. Everybody stayed on task most of the time.	Almost all students worked toward group goals. Not everyone contributed with knowledge, opinions and skills. Not everybody stayed on task.	Students rarely worked toward group goals. Students rarely contributed with knowledge, opinions and skills. They rarely stayed on task.



## Checklist

(individually, pupils are 7 years old)

While doing your project, did you...

- ❖ work together?
- ❖ all participate?
- ❖ listen to each other?
- ❖ respect the other members' ideas?
- ❖ talk to the others respectfully?
- ❖ use the material correctly?
- ❖ finish every task on time?
- ❖ make a neat and attractive lapbook?
- ❖ learn new concepts?
- ❖ improve your English?