EXPERIMENTING
The Respiratory and Circulatory Systems
CLIL Course University of Nottingham

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Lesson 1: THE RESPIRATORY SYSTEM

Resources needed:
- Pupils’ notebook
- Worksheet 1
- Worksheets 2 & 3.

Introduction:
This topic is going to last five lessons, showing the main parts of the respiratory system and understanding the processes of breathing. We are going to play some games involving respiration and carry out two experiments to find out what the organs are like and how our lungs work.

This lesson is the starting point of the whole unit about Respiration and we are going to begin with two simple games to motivate the pupils.

Activities:

Activity 1
Grouping: Plenary

In this first activity, the pupils have to find out the importance of breathing and how this process is essential for life.

The teacher encourages the children to count how many seconds they can hold their breath. He/she starts counting the seconds aloud. Each child has to write down his/her score in the notebook.

Activity 2
Grouping: Plenary

After that they are going to do a classroom survey asking each other the question:  

*How many seconds can you hold your breath?*
Activity 3

Grouping: Individual
Pupils have to fill in a chart with the time (range of five seconds) and the number of children in each group. (Worksheet 1).

Activity 4:

Grouping: Plenary/pair work
The next game consists of counting how many times we breathe in a minute. The teacher says when they have to start and finish. The pupils have to pay attention to their inhalations and exhalations. Afterwards they are going to investigate the acceleration of breathing when we play sport or take physical exercise. They have to stand up to do a moving game: walk fast, jump, and hop around the classroom. When they stop they have to count the number of respirations per minute again and write down their own results. The teacher asks the pupils to try to answer the following question in pairs:

Why do we breathe faster when we exercise?

Activity 5:

Grouping: Individual
Pupils have to be calm and sit down to look deeper into the topic. The teacher gives out the worksheet to each child. It is a reading activity. Pupils have to read a text about “Oxy”, an oxygen molecule. In the short story they are going to find its journey from when it goes into the nasal cavity until it arrives at the lungs. (Worksheet 2). Then they ask for the vocabulary they don’t know or don’t remember.

Activity 6:

Grouping: Individual / pair work
In the same handout they have a picture of the different parts of the respiratory system. The teacher asks the pupils to match the organ names with the correct parts. They have to label them according to what they have just read. (Worksheet 3). When they finish they have to work in pairs, asking each other different questions:

What are the lungs? What is the trachea? How many bronchi have we got? Where are the bronchioles? Where are the alveoli?
**Lesson 1: THE RESPIRATORY SYSTEM**

**Session 2: ORGANS AND FUNCTION OF THE RESPIRATORY SYSTEM**

**Resources needed:**
- A Power Point presentation
- Worksheet 4
- Worksheet 5
- Post-its

**Introduction:**
In this presentation we introduce a great deal of vocabulary and it is very important for our pupils to know what they are going to learn, what it is expected from them and how the teacher is going to help them.

It is advisable to spend some time going over the presentation, modelling the target language and activating previous knowledge.

**Activities:**

**Activity 1**
**Grouping:** Plenary

There is a specific Power Point presentation for giving a general view of the topic. It introduces new words and explains how the respiratory system works. It is advisable to watch it calmly with the pupils and make the appropriate explanations or comments needed. The contents also can be found in the worksheets. During the presentation the teacher has to ask the pupils to read the text, observe the pictures and answer several questions:

- What can you see in the picture?
- What are the main parts of the Respiratory System?
- Which organ connects the nasal cavity with the lungs?
- How many bronchi have we got?
- What is the name of the smallest tubes?
- How do we name the tiny air sacs in the lungs?
- How do you get oxygen? How do you breathe?
Activity 2:
Grouping: Individual

After watching the slides carefully and commenting on the content, the pupils are going to write some sentences in order. They are going to choose the correct ones from a substitution table. (Worksheet 4).

<table>
<thead>
<tr>
<th>The air</th>
<th>1. enters the body through</th>
<th>5. the lungs</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. goes into the lungs through small tubes called</td>
<td>2. the trachea</td>
<td></td>
</tr>
<tr>
<td>2. travels from the nose to</td>
<td>4. the bronchioles</td>
<td></td>
</tr>
<tr>
<td>3. goes from the trachea to two tubes called</td>
<td>3. the bronchi</td>
<td></td>
</tr>
<tr>
<td>6. passes into the blood through</td>
<td>6. the alveoli</td>
<td></td>
</tr>
<tr>
<td>5. arrives in two spongy organs called</td>
<td>1. the nasal cavity</td>
<td></td>
</tr>
</tbody>
</table>

The activity has to be checked with the whole group.

Activity 3:
Grouping: Individual/ pair work

A word search.

This activity is very easy. Pupils are going to memorise some key vocabulary. They have to search for the 10 words related to the topic. (Worksheet 5).

Activity 4:
Grouping: pair work

The pupils are going to play a guessing game in pairs. It deals with the structures related to the functions of the main organs. It allows the pupils to build sentences in an easy way, since they are going to have the key phrases on the board.

The teacher draws a picture of the respiratory system on the board and writes down the definitions of the organs (They can be on a handout as well).

The teacher sticks a post-it on each child’s forehead with the name of one organ, without allowing the pupil to look at the word he/she has. They stand up and find a partner. Looking at the board or at the handout, one of them starts giving some clues about the organ that the other child has got on the forehead until he/she guesses which part it is. They take turns and when they finish they can change the partner. Pupils can practise some questions and answers instead of saying sentences.
Lesson 1: THE RESPIRATORY SYSTEM

Session 3: CARRYING OUT AN EXPERIMENT

Resources needed:
Worksheet 6 (dissection process)
A pig’s respiratory system for each group (four).
Laboratory equipment.
Rubber gloves.
Worksheets 7 & 8 (results)

Introduction:
To carry out this activity the number of children has to be twelve as maximum.
Although some Catalan is expected, the teacher should encourage the pupils to ask
questions and express ideas with the target language.
They are going to observe and dissect a pig’s respiratory system. This mammal has
been chosen because its lungs are very similar to the human ones.

Activities:

Activity 1
Grouping: Plenary
The teacher asks pupils to make groups of four. He/She explains that they are going to
carry out an experiment and they have to go to the laboratory.
The teacher asks each group to place themselves around one table per group. Then
he/she distributes four roles (scientist, helper, secretary and reader).
Scientist: He/She performs most of the experiment.
Helper: He/She helps the scientist.
Secretary: He/She writes the results on the worksheet.
Reader: He/She reads the worksheet: the method and the questions.
Pupils are going to swap roles in the subsequent experiments.
The teacher provides each group with the material they need to do the experiment.
Before starting, He/She encourages the children to read carefully and follow the steps.
Activity 2
Grouping: Individual / Plenary
The teacher asks the pupils to start filling in the handout: the question, the required equipment and the sentences with their predictions. Children then talk about and compare their predictions.

Explaining the experiment:
The teacher is going to work with a group. He/She is going to explain the procedure while he/she is carrying out the experiment, allowing the children to do the activity on their own as much as possible.
It is better to do the activities altogether. Otherwise there is no surprise when the pupils blow through the trachea and the lungs swell up.

Activity 3
Grouping: Groups of four.
Children carry out the experiment.

Activity 4:
Grouping: Pair work
After finishing the experiment the children have to complete the handouts (worksheets 7 & 8) filling the gaps and writing short conclusions.

Activity 5:
Grouping: Plenary
Drawing conclusions:
The teacher asks for a volunteer from each group to come in front of the class to report what they have looked into and learnt.
He encourages all the pupils to talk about the conclusions.
They can complete the three worksheets as homework.
Lesson 1: THE RESPIRATORY SYSTEM

Session 4: MAKING A MODEL OF OUR LUNGS

Resources needed:
- Worksheet 9 (experiment explanation)
- Plastic bottles
- Some balloons
- Scissors
- Cutter
- Worksheets 10 & 11 (results)

Introduction:
The experiment consists of making a model lung and sees it inflate and deflate as it "breathes".

The model shows how our lungs work with the balloon at the bottom of the model being the diaphragm. As this muscle moves down, the air flows into our lungs and as it relaxes the air goes out.

The teacher begins the lesson by taking a balloon and blowing it up. He/She asks the pupils if they have an idea what organ might be similar to the balloon and the way it was inflated. They should arrive at the answer: the lungs. The teacher presents some information on the respiratory system. To do this he/she asks some questions using the previous power point, if it considers necessary. This quick review should include:

- The organs that work together in the respiratory system: the nose, the trachea, the bronchi, the bronchioles and the lungs.
- Everybody has a set of two lungs.
- The lungs are similar to balloons. They are spongy and smooth.
- The air first enters our body through the nose (nasal cavity).
- When we breathe in, our lungs fill with air.
- When we breathe out, we are breathing out carbon dioxide.
The trachea, the bronchi and the bronchioles are tubes that allow the air to go to the lungs.

Our lungs work together with our heart to carry oxygen all over our body.

He/She has to introduce as well what the diaphragm and the ribs (ribcage) are and their functions.

Activities:

Activity 1
Grouping: Plenary
Before starting the experiment, the teacher asks the pupils to look into how our diaphragm works. He/She says:

- Breathe in and breathe out.
- Can you feel your diaphragm muscle working?

Activity 2
Grouping: Individual / Pair work.
The teacher asks the pupils to begin to fill the handout: the question, the required equipment and the sentences with their predictions. Children talk about them and compare their predictions in pairs.

Activity 3
Grouping: Plenary
Explaining the experiment:
The teacher asks for a volunteer to try to explain the procedure while he/she is carrying out the experiment. The teacher helps and encourages the pupil to explain it.
He/She asks for one more volunteer and after that the groups of children can start carrying out the experiment themselves.
The teacher goes around the groups helping them to proceed and giving opportunities to speak.
Activity 4

Grouping: Groups of four
Children carry out the experiment in groups of four. In each group there are the roles explained, in the previous experiment: scientist, helper, secretary and reader.

Activity 4

Grouping: Pair work
After carrying out the experiment the children have to finish the handouts (worksheets 10 & 11). There they have to complete and write some sentences.

Activity 5:

Grouping: Two groups
This activity is a revision and conclusion of the content from the session. The children have to use the vocabulary and structures worked on the previous days. The teacher splits the class in two teams to play a game. He/She has to ask some questions and they have to answer in turns. Two points are given for each correct answer and one point for the other group if they can answer.

- Why do you need to breathe?
- Why do you need to take in air?
- What do you breathe in?
- What do you breathe out?
- When does the diaphragm move down?
- When does the diaphragm move up?
- How many bronchi have we got?
- What is the name of the smallest tubes?
- Which organ connects the nasal cavity with the lungs?
- What are the main parts of the Respiratory System?

Activity 6:

Grouping: Individual
Pupils have to complete the three worksheets as homework.
### Lesson 1: THE RESPIRATORY SYSTEM

#### Session 5: BUILDING UP A DISPLAY

**Resources needed:**
- 4 big sheets of cardboard to make 4 displays
- Glue
- Worksheet 12
- Coloured sheets
- Big pictures of the respiratory system

**Introduction:**

This is the last session about the respiratory system. Two tasks are planned in order to summarize the contents and share them with the whole group. Both activities involve more language demand and the teacher moving around to help. The first one can be used to assess the lesson. A discussion about healthy habits is going to be the last activity.

**Activities:**

**Activity 1**

**Grouping:** Groups of three.

A jigsaw activity

The group of 12 pupils is going to split into four groups of three. Each group chooses a colour (blue, green, yellow). Each child in the group (“home”) has got two coloured labels with the name of one part of the respiratory system.

The teacher places strips of coloured paper with the definitions of each organ: nasal cavity (or nose), trachea (or windpipe), bronchi, bronchioles, lungs and alveoli. They can be placed on the walls of the classroom.

All the pupils leave their “home” group to look for their definitions around the classroom. The three pupils with the same labels and definitions meet to form the
“expert” group. Then, they read the texts, talk about them and decide how to present the definitions to the other members of their “home” group. After that, they return to their “home” group to teach their portion of the materials and to learn from the other members of their group (the same colour). In the end they have to put the parts in order.

Finally, each group sticks the definitions and the respective labels on the mural (it is an “empty” picture of the respiratory system).

**Activity 2**

**Grouping:** Groups of three.

This activity involves discussion among students. They have to sit in groups of three and, in turns, debate (5 minutes) about the following topic:

- Smoking and health.

The teacher should draw a non-smoking sign on the board and some sentences to help the children to speak:

- When people smoke, they breathe in…
- Tobacco contains …
- Smoking is …………. for the lungs.
- The smoke eliminates the cilia from …
- Smoking can cause…

Although the pupils may use some Catalan (L1), the teacher should walk around the groups to help and encourage them to express ideas in the target language.

The teacher should help with some new words and expressions which arise during the discussion such as: cilia, tobacco, cigarette, smoker’s cough, dangerous substances, bad chemicals, nicotine, tar, lung diseases, unhealthy habit, …

At the end of the session, all the pupils are going to gather together to share the ideas. They are going to do a round table discussion to draw some conclusions about the topic.
Lesson 2: THE CIRCULATORY SYSTEM

Session 6: INTRODUCTION TO THE CIRCULATORY SYSTEM

Resources needed:
- A stopwatch or a watch with a second hand
- Worksheets 14 & 15
- A computer
- A projector
- Video about the Circulatory System:
  http://kidshealth.org/PageManager.jsp?lic=1&article_set=59298&cat_id=20607

Introduction:
This topic is going to last five units, working on the main parts of the circulatory system, the function of the heart, the blood composition and the circulation. We are going to play some games about how our heart beats, carry out two experiments to find out the pulse rate and do a pig’s heart dissection.
This lesson is the starting point of the whole unit in order to motivate the pupils to learn more about the heart and the blood circulation.

Activities:

Activity 1

Grouping: Plenary / Pair work
The main objective of this session is to define and demonstrate the function of the heart. In the first activity the pupils are going to measure their heart rate (or pulse).

The teacher starts by asking some questions:
The teacher encourages the children to take their own pulse placing two fingers (not the thumb!) at their wrist. They count the number of beats in ten seconds and then multiply by 6 this to get the number of beats per minute. They practise using the stopwatch. They do it altogether. The teacher might say: “Ready, steady, go”.

They record these four times.

After that they compare their rate with a partner. (Worksheet 14).
(Some children may find it difficult to find their pulse point, so it might be a good idea to encourage them to find it sometime before the lesson). Then allow the children to walk fast, run, jump… for two minutes and record their pulse using the same method. Finally let them rest for a few minutes and then take their pulse again and record it. How long did it take to return to the normal rate?

**Activity 2**

**Grouping:** Plenary

The pupils should now to calm down. The teacher discusses with the children what has happened to their pulse rate after exercising. Did it increase, stay the same or fall?

He / She helps the children to understand that the heart beats faster after the exercise in order to pump more blood (oxygen) to the working muscles.

The teacher encourages the pupils to make oral predictions and write them on the handout.

**Activity 3**

**Grouping:** Pair work

The children are going to work in pairs. They have to fill in the charts with the pulse rate and then complete the sentences in the worksheet. The conclusion may be finished at home as homework in order to revise what they have done.

**Activity 4**

**Grouping:** Plenary

The last activity in this session is watching a video.

First of all the teacher introduces the idea of the importance of the heart and the blood asking the children some questions and helping them with the answers:

*Where is your heart? What does it do? Why is so important?*

*It is important to tell them the correct words: pump, blood…*

*The web page is:*

http://kidshealth.org/PageManager.jsp?lic=1&article_set=59298&cat_id=20607
The video gives a general view of the topic. It introduces a lot of new vocabulary and explains what the heart is like and the blood circulation. It is advisable to watch it calmly and stop to make appropriate explanations or comments.

At the end of the session the pupils will be able to answer the following questions:

- **How many chambers are in the heart?**
- **What are the names of the chambers?**
- **What are the names of the blood vessels?**
- **What substances does the blood carry?**

There are other interesting videos:

http://lgfl.skoool.co.uk/keystage4.aspx?id=848

http://homeschooling.gomilpitas.com/explore/heart.htm

**Activity 5**

**Grouping:** Individual

After watching the video there is a very simple handout. (Worksheet 15).

The children have to label the main parts of the circulatory system and the chambers of the heart.
Lesson 2: THE CIRCULATORY SYSTEM

Session 7: CARRYING OUT TWO EXPERIMENTS

Resources needed:
- A stopwatch or a watch with a second hand.
- Two pieces of plastic tubing (30 centimetres long approximately).
- Two small kitchen funnels or two plastic bottle funnels cut from the top third of plastic water bottles.
- Scissors.
- A piece of plasticine or blu-tack.
- A drinking straw.
- Worksheets 16, 17, 18, 19.

Introduction:
During this session we are going to carry out two experiments that are very easy. The main objectives of these experiments are to define and demonstrate the functions of the heart. First, we are going to construct a simple stethoscope and use it to listen to our heartbeat and then we are going to observe the vibration of a straw due to the pulsation of blood in the wrist. Secondly, the teacher is going to introduce another topic: blood composition.

Activities:

Activity 1
Grouping: Plenary
The first experiment consists of making a model stethoscope using simple materials. The pupils will understand the functions of the heart and that as the heart contracts blood is forced through the blood vessels. They will also understand through the use of the stethoscope that sound waves pass along the tube to the ear and that the funnel collects the sound made by the beating heart.
The teacher asks for a volunteer to read the procedure from the first handout while he/she is showing the material. He/She gives out the experiment worksheets to the children and they have to decide what the question is going to answer after carrying out the experiment. *(How does our heart sound? What are we going to listen to?)*

The teacher encourages the pupils to make a prediction and write it on the handout.

*I think we are going to feel* ........................................................…………………………..

**Activity 2**

**Grouping:** Pair work / individual

The pupils work in pairs preparing a simple stethoscope following the instructions. They have to be quiet because it will be very hard to hear the sound of a heartbeat if there is a lot of background noise and talking.

One child places one end of the funnel on his ear while the second child places the other funnel near the left side of the chest.

The children listen to the heartbeats of themselves and partners using the stethoscope they have just made and compare rates.

In the end they can calculate the number of times their heart beats in one hour.

The teacher can also make some questions and help them with the answers:

- *How do you think the stethoscope works?*
- *Did you hear the “lub dub” sounds of the valves with each heartbeat?*

The pupils can complete the worksheets as homework (pictures and conclusion).

**Activity 3**

**Grouping:** Pair work

The second experiment is going to help the pupils to find the pulse point in the inside of their wrist.

They have to carry out the experiment carefully. Each child has to lay the arm flat on the table and keep it very still. When they place the plasticine on the wrist, they have to move it around the thumb side of the wrist until the straw starts to vibrate slowly. In this case they may notice the straw rocking back and forth slightly as the blood pumped by the heart passes through the wrist.
After the observation the teacher should ask:
- *How many times does the straw vibrate back and forth in one minute?*

Then he/she should explain that the blood moves at a rhythmic rate. All blood vessels have this throbbing motion, but the vessels in the wrist are close to the surface of the skin and can be felt more easily.

The pupils will understand the functions of the heart and that as the heart contracts blood is forced through the blood vessels.

**Activity 4**

**Grouping:** Plenary / pair work

The next activity is a reading comprehension about blood composition.

The teacher gives the handouts. He/She reads the text aloud and focuses attention on important information and the pictures. Perhaps he/she has to explain some new words: “clot”, “bleed” and “illness” (or “disease”).

After that the children have to read the text in pairs, one sentence at a time. The teacher goes around the classroom helping with the new vocabulary pronunciation.

The teacher should ask questions in order to memorize what blood is made of and the function of each component (plasma and blood cells):
- What four main things does blood contain?
- Which blood cells carry oxygen?
- Which blood cells fight disease?
- What is plasma?
- What blood cells help to clot your blood?

**Activity 5**

**Grouping:** Individual

The pupils are going to write sentences related to blood composition with the help of a substitution table.

Then they correct them aloud or on the board.
Lesson 2: THE CIRCULATORY SYSTEM

Resources needed:
Worksheets 20&21.
On line Quiz:
http://www.bbc.co.uk/schools/ks2bitesize/science/tests/keeping_healthy.shtml

Introduction:
This is a “dense” unit because there is a lot of content. The pupils have to read a quite long text and the teacher should explain the blood circulation and the exchange of substances. Depending on the pupils’ level, the explanation may be more or less complicated.

There is an on line quiz at the end of the session to motivate the pupils. The questions are not difficult.

Activities:
Activity 1
Grouping: Plenary
This is a reading comprehension activity. The teacher gives out the worksheet to each child. The pupils have to read a text silently and underline the words and structures that they don’t understand.

Afterwards, some of them are going to read aloud parts of the text and they are going to ask about possible doubts.

This text is the story about “Bly”, a tiny drop of blood. It explains what the heart and the blood vessels are like and the blood journey around the body.

The teacher should make a summary:
“The circulatory system consists of the heart, arteries, veins and the blood. Blood is pumped around the body by the heart. It carries nutrients (food) and oxygen to the muscles and organs. Arteries carry blood away from the heart and veins carry it back to the heart”.

The double circulation may have been explained, if it is possible:

1. The main artery of the heart, the aorta, takes oxygenated blood to the capillaries in the body. It goes out of the heart from the left ventricle.

2. The blood delivers oxygen and food to the body cells and collects waste and carbon dioxide. It goes to the kidneys to be cleaned.

3. The deoxygenated blood travels back to the right side of the heart in the main vein, the vena cava. It comes into the heart through the right atrium.

4. The blood then leaves the heart in the pulmonary artery to collect oxygen from the lungs. It goes out of the heart from the right ventricle.

5. The pulmonary vein brings oxygenated blood back to the heart and the cycle begins again. It comes into the heart through the left atrium.

Activity 2
Grouping: Pair work / individual
After reading and discussing about the heart and the circulation, the teacher asks the pupils to do both activities on their own (Worksheet 20). First, they have to match the parts of the circulatory system with their function and second, they have to label the chambers of the heart and the main artery and vein.

| 1. Heart | a. Carries blood back to heart. |
| 2. Blood | b. Pumps blood around the body. |
| 3. Artery | c. Carries blood away from the heart. |
| 4. Vein | d. Carries food and oxygen around the body. |

Activity 3
Grouping: Pair work / Individual
The last activity is going to be an on line quiz. So they are going to do the activity in pairs. The pairs have to share a computer. Each partner can do it in turns.

http://www.bbc.co.uk/schools/ks2bitesize/science/tests/keeping_healthy.shtml

It is a multiple-choice quiz and there are 10 questions about the topic.
### Lesson 2: THE CIRCULATORY SYSTEM

#### Session 9: THE HEART

#### Resources needed:
- A pig's heart for each group.
- Laboratory equipment (tray, scalpel, tweezers, scissors).
- Gloves.
- Worksheets 21 & 22.

#### Introduction:
During this session the pupils are going to carry out and experiment. It is advisable to be twelve children as maximum. They are going to observe and dissect a pig's heart. This mammal has been chosen because its heart is very similar to the human one. Although some Catalan is expected, the teacher should encourage the pupils to ask questions and express ideas with the target language.

At the end of the session the pupils have to discuss about what they have observed.

#### Activities:

**Activity 1**

**Grouping:** Plenary

The teacher asks the pupils to make groups of four. He/She explains that they are going to carry out an experiment in the laboratory and they have to pay attention and keep quiet.

The teacher shows the material and asks the pupils if they know what they are going to do. The children should guess the topic and think of the question they are going to write in the handout.

**Activity 2**

**Grouping:** Pair work / individual

The teacher asks the pupils to begin to fill the handout: the question, the required equipment and the sentences with their predictions. The children talk about them and compare their hypothesis in pairs.
Activity 3
Grouping: Groups of four
The children carry out the experiment in groups of four. In each group there are the roles explained in the previous experiments: scientist, helper, secretary and reader. They swap roles.

The teacher explains the procedure and asks for one child to read the first part of the instructions (External observation). He/She is going to do the experiment at the same time, showing the pupils how to proceed.

The children have to open the heart carefully. The teacher goes around the groups helping and encouraging them to use the target language.

Activity 4
Grouping: Pair group/ Individual
After carrying the experiment the pupils have to tidy up the laboratory and finish the handouts (Worksheets 21 & 22). There they have to draw and complete some sentences.

Activity 5
Grouping: Groups of four
The pupils are going to prepare an explanation of the experiment to the rest of the class with the help of the worksheets.

- One group has to explain the material and their predictions (looking at the sentences in worksheet 22).
- The second group has to explain what they have observed (worksheet 21: External and internal observation).
- The last group has to explain the conclusions (worksheet 22: “What I have learned”).

After the explanation the children have to check their answers in the worksheets. (The correction can be written on the board, if is necessary).
**Lesson 2: THE CIRCULATORY SYSTEM**

**Session 10: THE CIRCULATION**

**Resources needed:**
Worksheets 23 & 24
Game: The heart and the lungs.
One board game for each pair.
Two different coloured sets of picture cards of blood, lungs, heart and vessels.

**Introduction:**
This session is a revision of both systems: The respiratory and the circulatory system. The session should start with a discussion about healthy habits and blood donation. There is a quiz to do in two groups and a game to play in pairs. There is also an optional handout (worksheet 23) to do if the pupils’ level is high enough, since it explains the double blood circulation.

**Activities:**

**Activity 1**

**Grouping:** Groups of three

The teacher introduces a short PowerPoint presentation as a summary of both lessons. The pupils are going to watch it in groups of three, answering the questions they are going to find in it.

After that, the pupils are going to discuss in groups of three and, in turns, debate (5 minutes) about three topics related to health.

- Exercising regularly keeps healthy.
- Enjoy a variety of food every day.
- Giving blood saves a lot of lives.

The teacher should write some phrases and sentences on the board to help the children to speak:

At the end of the discussion each group has to express some ideas to the others.
Activity 2

**Grouping:** Pair work / individual

This activity is a revision and conclusion of the content from both systems. The pupils have to remember the vocabulary and structures worked on the previous sessions. The teacher splits the class in two teams to play the game. He/She gives them the questions (without the possible answers). They have to discuss all the questions and try to agree.

1. **What does your heart do?**
2. **Which activities make your heart beat faster?**
3. **What does your pulse rate tell you?**
4. **Why does your heart beat faster when you exercise?**
5. **Why are foods like eggs, fish and milk important in a healthy diet?**
6. **Blood moves round your body in special tubes called blood vessels. Say their names.**
7. **What happens to your blood when it reaches your lungs?**
8. **Where is your heart?**
9. **Why smoking cigarettes is bad for you?**

After that they can start the contest. The teacher starts the game reading aloud the questions and then he/she also reads the three possible answers. As the children have been talking previously about the answers, it is easy to decide which is the correct one. The secretary of each group shows a card: A, B, C, depending on the right answer.

Activity 3

**Grouping:** Pair work

This is played like the “Noughts and crosses” game. The children can play in pairs or better two against two, because it encourages more discussion. They need the board and a set of picture cards (blood, lungs, heart and blood vessels). They have to put the cards in two piles, faced down. They should take turns to pick one of their cards and match it to the description written on the board. The first player to get four cards in a row wins. The row can be vertical, horizontal or diagonal.
Lesson 2: THE CIRCULATORY SYSTEM

Session 10: THE CIRCULATION

PICTURE CARDS:
### Board Game: The Heart and the Lungs
### Connect Four Game

<table>
<thead>
<tr>
<th>It pumps the blood around the body</th>
<th>Blood collects oxygen from these.</th>
<th>The pulse measures beats from this.</th>
<th>It is bright red when full of oxygen.</th>
<th>Blood without oxygen is pumped back to these.</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is a muscle.</td>
<td>They take in oxygen.</td>
<td>We have two of these.</td>
<td>It is dark red when it does not contain oxygen.</td>
<td>It carries oxygen round the body.</td>
</tr>
<tr>
<td>They connect all parts of the body to the heart</td>
<td>Smoking is bad For them.</td>
<td>They are protected by the rib cage.</td>
<td>Blood travels through these tubes.</td>
<td>It travels to every part of the body.</td>
</tr>
</tbody>
</table>
Lesson 2: THE RESPIRATORY AND THE CIRCULATORY SYSTEM

Session 11: VOCABULARY ACTIVITIES

There are two vocabulary exercises made with the “GenWord” generator:

- Respiratory_system (One activity).
- Circulatory_system (Two connected activities).
<table>
<thead>
<tr>
<th>Teachers’ notes</th>
<th>EXPERIMENTING IN HUMAN NUTRITION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSESSMENT</strong></td>
<td></td>
</tr>
<tr>
<td><strong>LANGUAGE – ORAL PRODUCTION</strong></td>
<td>Taking notes during the discussion activities, presentations and explanations.</td>
</tr>
<tr>
<td></td>
<td>Taking notes during the reporting of the experiments.</td>
</tr>
<tr>
<td></td>
<td>With this sort of ASSESSMENT the teacher may also see if the pupils have understood the content and if they are able to communicate what they have learnt through English.</td>
</tr>
<tr>
<td><strong>CONTENT</strong></td>
<td>Collecting the individual, pair work and group tasks written on some worksheets.</td>
</tr>
<tr>
<td></td>
<td>Doing a Unit Test, if necessary. (Only if the teacher does not have enough or appropriate information about any aspects of the unit).</td>
</tr>
</tbody>
</table>