

SCIENCE

Student Book

▶ **3rd Grade | Unit 1**

.....

SCIENCE 301

YOU GROW AND CHANGE

Introduction |3

1. Your Body Breathes Air 4

The Air Comes into Your Body |6

The Air Goes to the Lungs |8

The Body Needs Oxygen |12

The Body Gives off Carbon Dioxide |14

Self Test 1 |16

2. Your Body Digests Food 18

Food Comes into the Mouth |20

Food Goes to the Stomach |21

Food Is Ready for the Body |23

Self Test 2 |25

3. Your Body Exercises and Rests 27

The Muscles Work Hard |28

The Bones Are Important |34

The Body Rests |36

Self Test 3 |38

4. Your Body Is Different from an Animal ... 40

Your Conscience |41

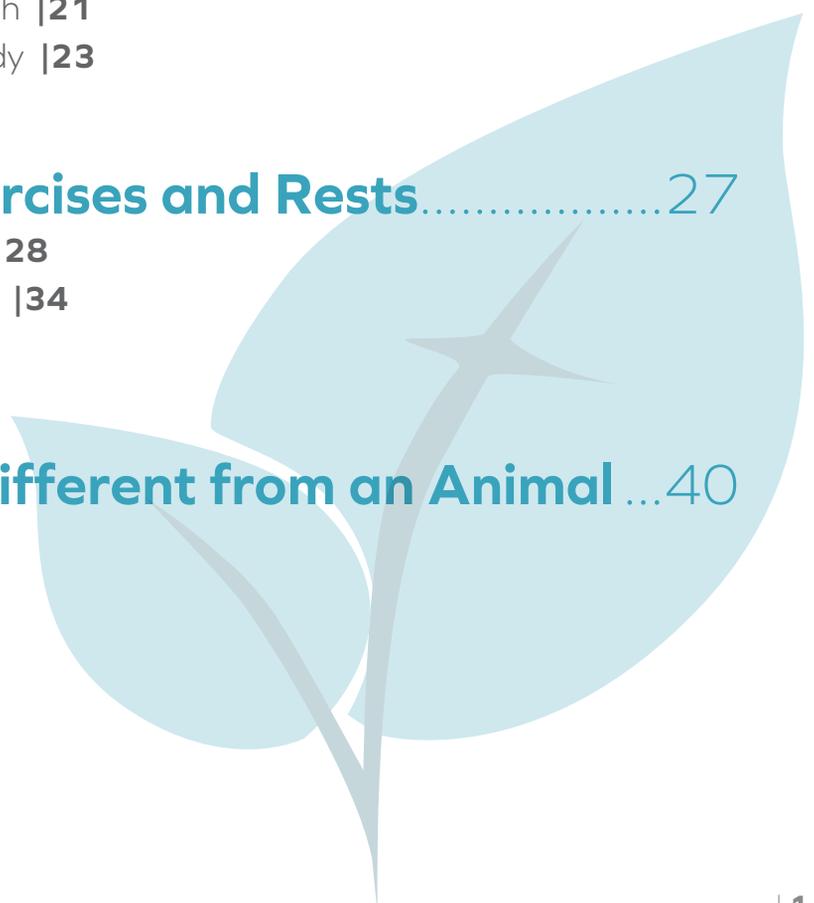
Your Spirit |42

Your Mind |43

Your Growth |44

Self Test 4 |47

LIFEPAC Test |Pull-out



Author:

Zella Mary Osborn

Editor:

Richard W. Wheeler, M.A.Ed.

Consulting Editor:

Harold Wengert, Ed.D.

Revision Editor:

Alan Christopherson, M.S.

Media Credits:

Page 3: © Comstock, Stockbyte, Thinkstock; **4:** © erlobrown, iStock, Thinkstock; **6:** © lukaves, iStock, Thinkstock; **8:** © LCOSMO, iStock, Thinkstock, **10:** © Antonio Guileem, iStock, Thinkstock; **13:** © Garydyson, iStock, Thinkstock; **14:** © Ami-Rian, iStock, Thinkstock; **18:** © Fuse, Thinkstock; **20:** © Tigatelu, iStock, Thinkstock; **21,35:** © abstractdesignlabs, iStock, Thinkstock; **23:** © Daniel Cole, Hemera, Thinkstock; **27:** © Chris Amaral, Digital Vision, Thinkstock; **28:** © lukaves, iStock, Thinkstock; **29:** © PrettyVectors, iStock, Thinkstock; **31:** © Gorge Doyle, Stockbyte, Thinkstock; **34:** © branca_escova, iStock, Thinkstock; **36:** © Victor_Brave, iStock, Thinkstock; **40:** © Wavebreakmedia Ltd, Thinkstock; **41:** © lawdesign, iStock, Thinkstock; **42:** © Aleksangel, iStock, Thinkstock; © kulinci, iStock, Thinkstock; © Sibiryanka, iStock, Thinkstock; **43:** © stockerteam, iStock, Thinkstock; © Huntstock, Thinkstock; **44:** © Brian A Jackson, iStock, Thinkstock



**804 N. 2nd Ave. E.
Rock Rapids, IA 51246-1759**

© MCMXCVI by Alpha Omega Publications, Inc. All rights reserved.
LIFEPAC is a registered trademark of Alpha Omega Publications, Inc.

All trademarks and/or service marks referenced in this material are the property of their respective owners.
Alpha Omega Publications, Inc. makes no claim of ownership to any trademarks and/or service marks other than their own and their affiliates, and makes no claim of affiliation to any companies whose trademarks may be listed in this material, other than their own.

YOU GROW AND CHANGE

Hello! In this LIFE PAC[®] you are going to learn about your body. God shows His love by giving you a body that lives and grows in a wonderful way. You will learn how your body **digests** food. You will find out how you **breathe**. You will read about exercise and rest. You will learn how you are the same as an animal and how you are different. You will learn how to measure your growth.

Objectives

Read these objectives. The objectives tell you what you will be able to do when you have finished this LIFE PAC.

1. You will be able to tell how your body breathes air.
2. You will be able to tell how your body digests food.
3. You will be able to tell why exercise is important to your body.
4. You will be able to tell why rest is important to your body.
5. You will be able to tell how you are different from an animal.

1. YOUR BODY BREATHES AIR

Did you know that you are living on the bottom of an ocean of air? Air is made up of gases. Air is mostly **oxygen** and **nitrogen**.

Air was **created** by God on the second day. God spoke and caused the air to surround the world. God knew that all the living things that He was going to create would need air. God made it possible for each living thing to be able to breathe air.

Vocabulary

Study these new words. Learning the meanings of these words is a good study habit and will improve your understanding of this LIFE PAC.

blood (blūd). The red liquid inside the body.

breathe (brēFH). To force air in and out of the lungs.

carbon dioxide (kär' b ən dī ök' sīd). The gas exhaled from the lungs.

create (krē āt'). To make for the first time.

digest (dī jěst'). To change food so the body can use it.

exhale (ěks hāl'). To breathe out.

inhale (ĩn hāl'). To breathe in.

lungs (lũngz). The organ in the body that takes in air while breathing.

nitrogen (nī' tr ə j ən). A gas that is part of the air you breathe.

nostrils (nös' tr ə lz). The openings in the nose.

oxygen (ök' sī j ən). A gas that is part of the air you breathe.

scientist (sī ən tīst). A person who studies science.

trachea (trā' kē ə). The windpipe where air is carried from the throat to the lungs.

tube (tōōb). A pipe-shaped object.

Special Words

Joseph Priestley

Note: All vocabulary words in this LIFEPAC appear in **boldface** print the first time they are used. If you are unsure of the meaning when you are reading, study the definitions given.

Pronunciation Key: hat, āge, cāre, fār; let, ēqual, tērm; it, īce; hot, ōpen, ôrder; oil; out; cup, pūt, rüle; child; long; thin; /FH/ for **th**en; /zh/ for mea**sure**; /u/ or /ə/ represents /a/ in **a**bout, /e/ in ta**k**en, /i/ in pen**c**il, /o/ in le**m**on, and /u/ in **c**ircus.

Ask your teacher to say these words with you.



Teacher check:

Initials _____ Date _____

The Air Comes into Your Body

How do you breathe air? Close your mouth and take in air through your **nostrils**. When you take in air, you **inhale**.

When you let the air back out, you **exhale**. When you are inhaling and exhaling, you are breathing.

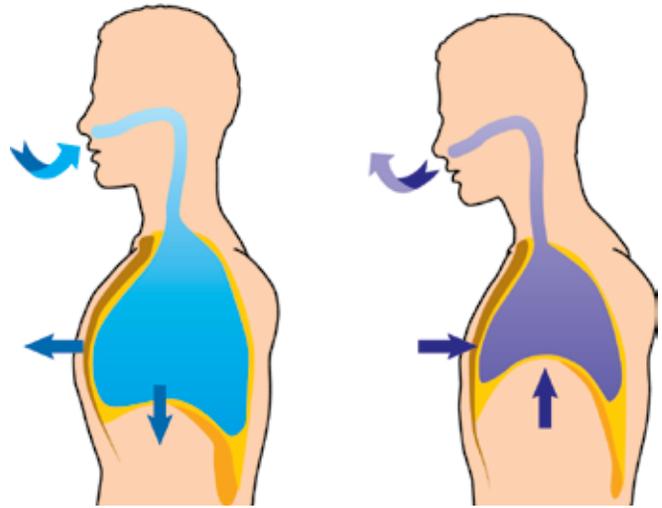
You inhale to breathe in oxygen.

Your body must have oxygen.

Inhaling is the way your body gets oxygen from the air.

When you exhale, you get rid of

carbon dioxide. Too much carbon dioxide in your body is harmful.



| When you breathe, you inhale and exhale.

FIND YOUR RATE OF BREATHING



You will need this thing:

a clock with a second hand (Your classroom wall clock probably has a second hand.)

Follow these directions. Put a check in the box when you do each step.

- 1. Watch the clock and count the times you breathe in one minute.
- 2. Write down the number of times you breathed in one minute.
- 3. Run in place for thirty seconds.

(Continued on the next page)

- 4. Watch the clock and count the times you breathed in one minute.
- 5. Write down the number of times you breathed in one minute.

Did you breathe more times in a minute after you ran in place?

- Yes No

When you were running in place, your body was using up its oxygen faster. When you stopped running, you had to breathe more often to get oxygen back in your body.



Answer the questions. Use complete sentences.

- 1.1** Why do you think people say that someone is “out of breath” after the person has been running or exercising?

- 1.2** Your body needs to breathe in oxygen. Why do you think it is hard on you and harmful to hold your breath for too long a time?

The Air Goes to the Lungs

It is important to breathe in through your nostrils. Inside your nostrils many tiny hairs grow. These little hairs help keep dust and germs out of your body.

Under the skin inside your nose are many tiny **tubes** that carry warm **blood** through your nose. As the air goes over these warm tubes, it is heated.

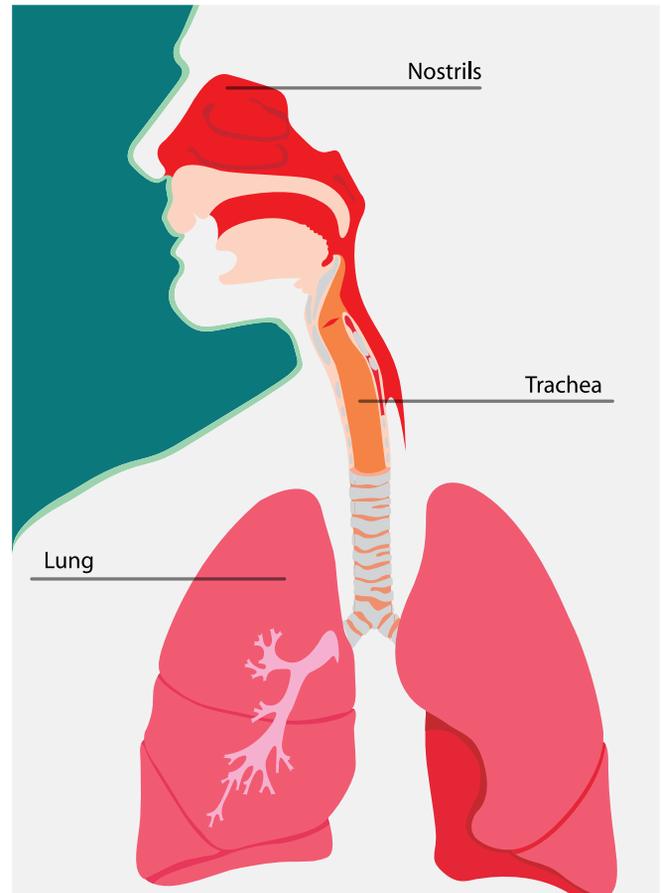
Then the air travels down a tube called the **trachea**. The air goes into your **lungs**. Your body has two lungs.

The lungs take the oxygen from the air you breathe. The oxygen goes from the lungs into the blood. The blood takes the oxygen to all parts of your body.

When you were born, your mother listened carefully to hear your first cry. How happy she was to hear it! Do you know why? When you cried, she knew that your lungs had opened up to take in air. You could breathe for yourself!

You will always have air in your lungs. Even when you exhale, or breathe out, you will have air in your lungs. Without air in your lungs you would not live.

Take a deep breath. Close your mouth and take in air through your nose. Now let the air come out of your lungs.



| The parts we use to breathe



Write the answer in the blank using the correct word. Use the following words.

air

hairs

warm

blood

lungs

trachea

- 1.3** No living thing can live without _____ .
- 1.4** God made you so that you could use His gift of air by giving you a nose, trachea, and _____ .
- 1.5** You should breathe through your nostrils so that the little _____ in the nostrils will keep dust and germs from going into the lungs.
- 1.6** The oxygen from the air in your lungs is picked up and carried to all parts of the body by the _____ .
- 1.7** The many tiny tubes carrying blood through the inside of your nose _____ the air before it goes into your lungs.
- 1.8** The tube that carries air into your lungs is called the _____ .

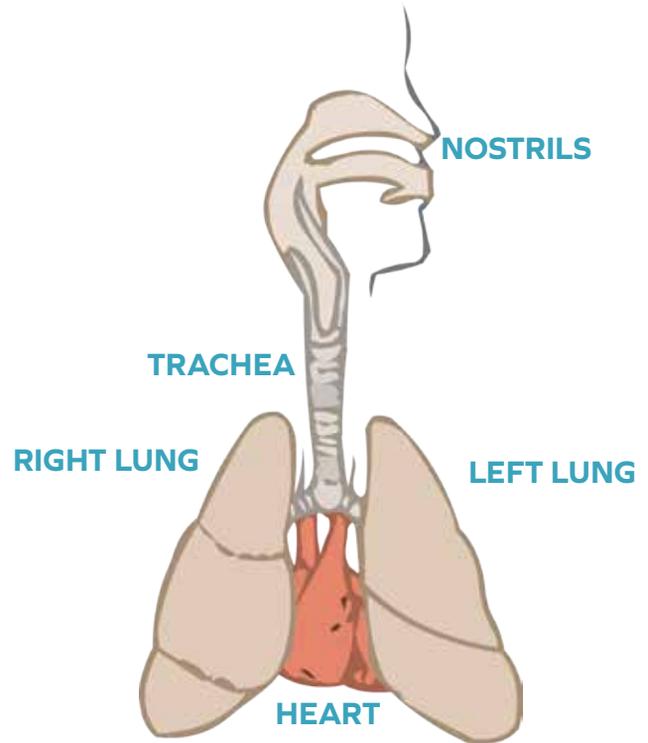


Study the picture.

1.9

Write the words from the picture that go in the blanks.

- a. The openings in your nose shown in the picture are called _____.
- b. The tube that goes to your lungs is the _____.
- c. How many lungs do you have? _____



Breathe in and out through your nostrils again. Do you think it is easy? Even in your sleep you breathe. Your body keeps on working all the time. Inside of you many parts of your body work together to keep you well and make you grow.





DISCOVER THAT AIR FILLS SPACE

You will need this thing:

a sponge

Follow these directions. Put a check in the box when you do each step.

- 1. Take a sponge.
- 2. Close your hand.
- 3. Open your hand.

Answer the questions.

1.10 What happened when you closed your hand around the sponge?

1.11 What happened when you opened the hand that held the sponge? _____

1.12 Did air fill the sponge? _____

Follow these directions. Put a check in the box when you do each step.

- 1. Put your hands on your chest with your fingers touching.
- 2. Breathe in deeply.

(Continued on the next page)

Answer these questions.

1.13 When you breathed in, did your fingers move apart?

1.14 Why do you think they moved? _____

1.15 Did air fill your lungs? _____

The Body Needs Oxygen

Joseph Priestley was a **scientist**. Joseph Priestley discovered oxygen. He put a lighted candle in a glass jar. He covered the jar. The flame of the candle went out.

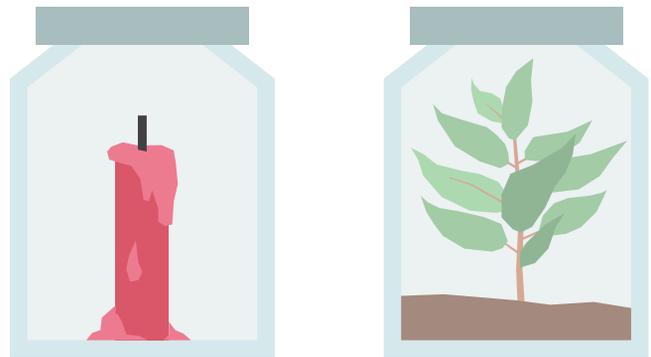
Next, he put a mouse in a jar with a lighted candle. He covered the jar. The candle flame went out, and the mouse died.

The scientist thought, “The candle and the mouse needed the same gas.” “What spoiled the air?” he wondered.

He tried something else. He placed a small growing plant in a glass jar. He covered the jar. After ten days, the plant was still alive!

Next, Joseph Priestley put a mouse in with the plant and covered the jar. Both the mouse and the plant stayed alive!

He had to be sure. He took the plant from the jar and left the mouse. The mouse died. His thoughts were right.



| Candle and plant experiment

The animals and the lighted candle both needed the same gas. What was that gas? It was oxygen.

In your studies about plants, you learned that plants gave off oxygen. The mouse needed oxygen from the plant.

You may ask, "Would it be better if all the air were oxygen?"



| Statue of Joseph Priestley

Another scientist did an experiment. He put a live mouse in the bottom of a bottle of pure oxygen. Do you know what happened?

It made the mouse so lively that he soon was tired. You need nitrogen in the air to make the oxygen weaker.



Answer each statement *yes or no*.

- 1.16** All living creatures need oxygen. _____
- 1.17** It is better to breathe through your mouth. _____
- 1.18** The blood is always moving to all parts of the body.

- 1.19** Joseph Priestley found out about oxygen. _____
- 1.20** Your lungs are something like a sponge. _____

The Body Gives off Carbon Dioxide

Your blood is always moving. The blood takes oxygen to all parts of your body. When the blood takes the air back to the lungs, the air has changed. There is a lot more carbon dioxide in that air. This air goes from the lungs to the trachea. It goes up the trachea and out through the nostrils. We breathe out carbon dioxide.



Write the answers to the questions. Use complete sentences.

1.21 What does *inhale* mean? _____

1.22 What does *exhale* mean? _____

1.23 What gas is taken from air that is inhaled? _____

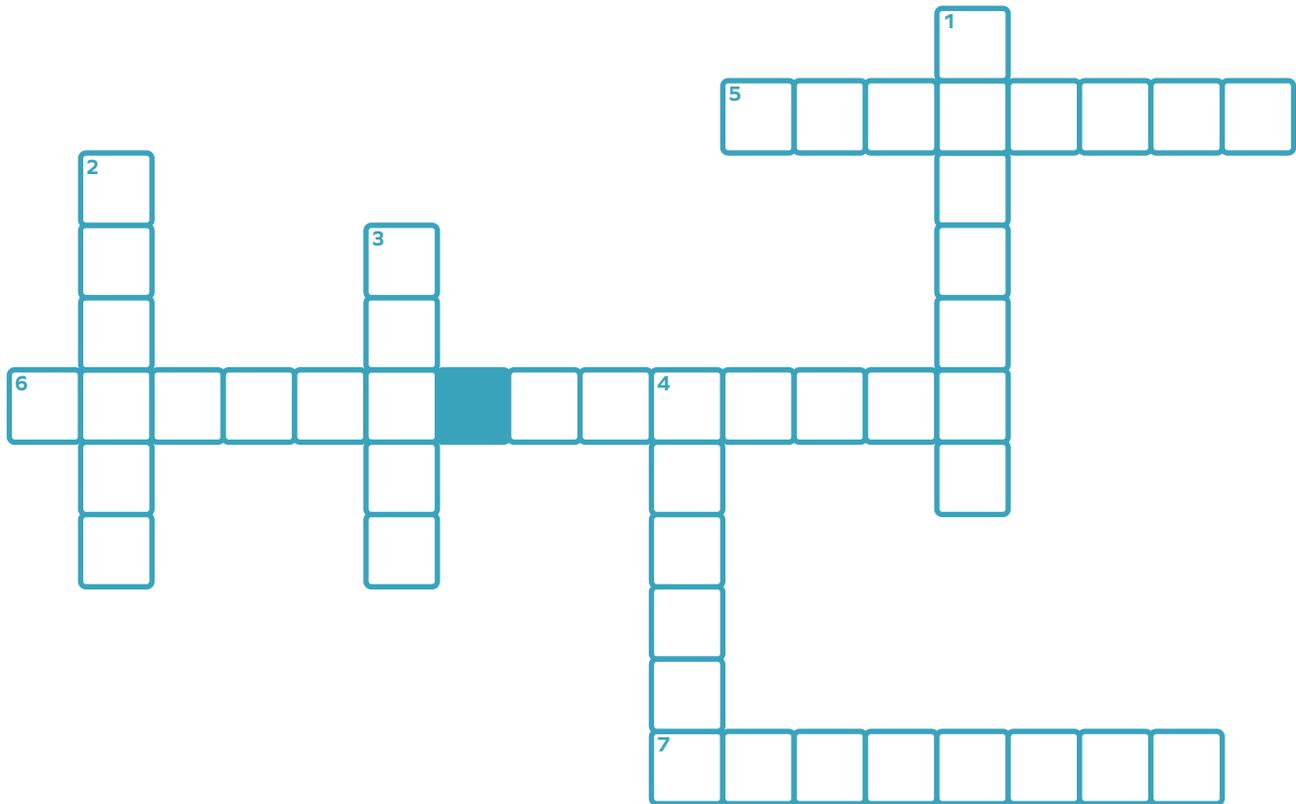
1.24 What gas is exhaled? _____



Complete the puzzle.

1.25 Finish the puzzle by using the words in the box. Use the puzzle clues on page 15.

lungs	oxygen	nostrils	nitrogen
create	trachea	carbon dioxide	

**Down**

1. The tube that carries oxygen to the lungs
2. To make
3. The part of our body that takes in oxygen and gives out carbon dioxide
4. The gas that our lungs take from the air

Across

5. The gas that is mixed with oxygen in the air we breathe
6. The air we breathe out from our lungs (two words)
7. Openings in the nose

**Teacher check:**

Initials _____ Date _____



For this Self Test, study what you have read and done. The Self Test will check what you remember.

SELF TEST 1

Each answer = 1 point

Fill in the circle in front of the answer that best finishes the sentence.

- 1.01** The part of the body that takes in oxygen and gives out carbon dioxide is the _____ .
 foot lungs eyes
- 1.02** The gas that the lungs take from the air is _____ .
 oxygen carbon dioxide nitrogen
- 1.03** The gas that is breathed out of the lungs is _____ .
 oxygen carbon dioxide nitrogen
- 1.04** The small amount of gas that is mixed with oxygen in breathing is _____ .
 oxygen carbon dioxide nitrogen
- 1.05** The openings in the nose are _____ .
 holes nose holes nostrils
- 1.06** The tube that carries the carbon dioxide from the lungs out through the nostrils is the _____ .
 air tube trachea gas pipe
- 1.07** The man who found out about oxygen was _____ .
 Jacob Ministerly Joseph Priestley Jose Pastorly
- 1.08** Blood takes oxygen to all parts of the _____ .
 body toe house
- 1.09** All living things need _____ .
 a new car to study oxygen
- 1.010** It is better to breathe through the _____ .
 mouth skin nose

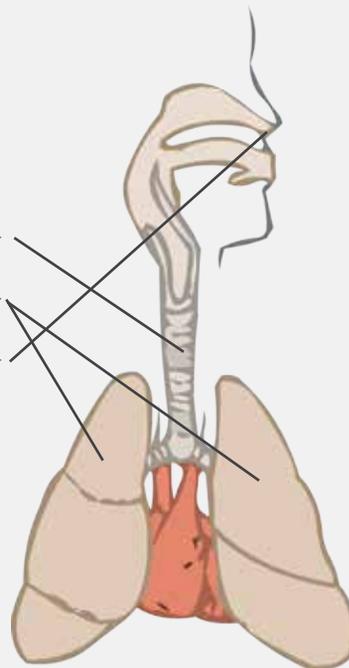
Match the words.

- | | |
|------------------------|---|
| a. number of lungs | b. man who studies life |
| c. breathing in | d. air becomes this before going into lungs |
| e. breathing out | g. cleans the air in nose |
| f. lungs are like this | |

- 1.011 _____ hairs
- 1.012 _____ inhale
- 1.013 _____ exhale
- 1.014 _____ warm
- 1.015 _____ two
- 1.016 _____ sponge
- 1.017 _____ scientist

Write the names of the body parts that are marked.

- a. _____
- b. _____
- c. _____

**Teacher check:**

Score _____

Initials _____

Date _____

16
20



SCI_Gr3-5



804 N. 2nd Ave. E.
Rock Rapids, IA 51246-1759

800-622-3070
www.aop.com

SCI0301 – Jan '16 Printing

ISBN 978-0-86717-721-3



9 780867 1177213