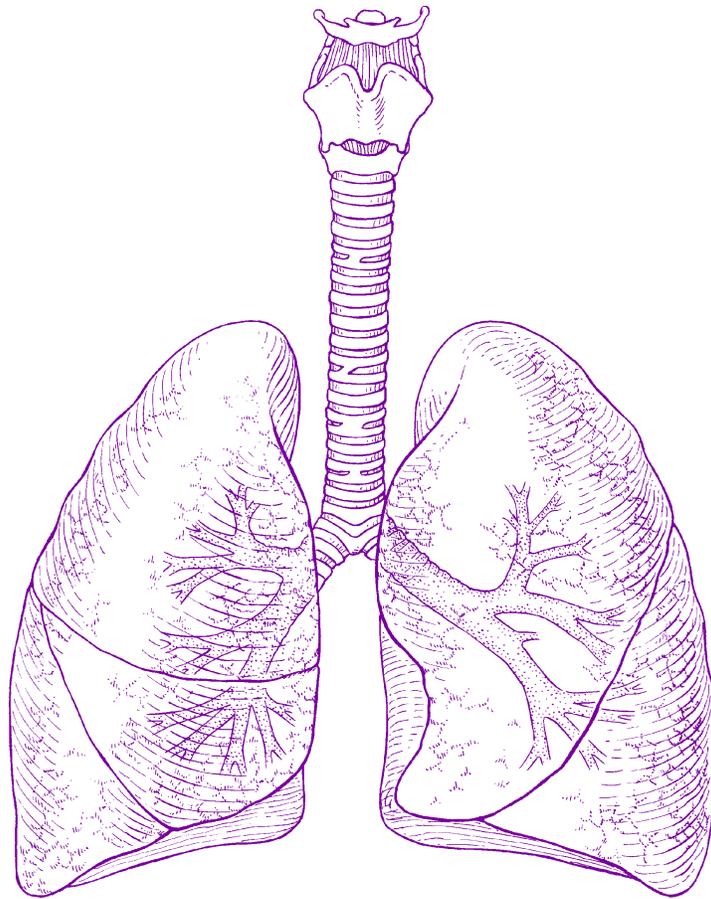


Designing Your  
Own School Program **4**

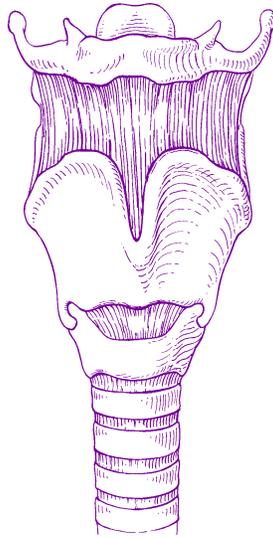
# THE PRINCIPLE OF BREATHING



A "True Education" Voice Series

“THE Spirit of God HATH made me,  
and the breath of the Almighty  
HATH given me life.”

Job 33:4



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# Student Section



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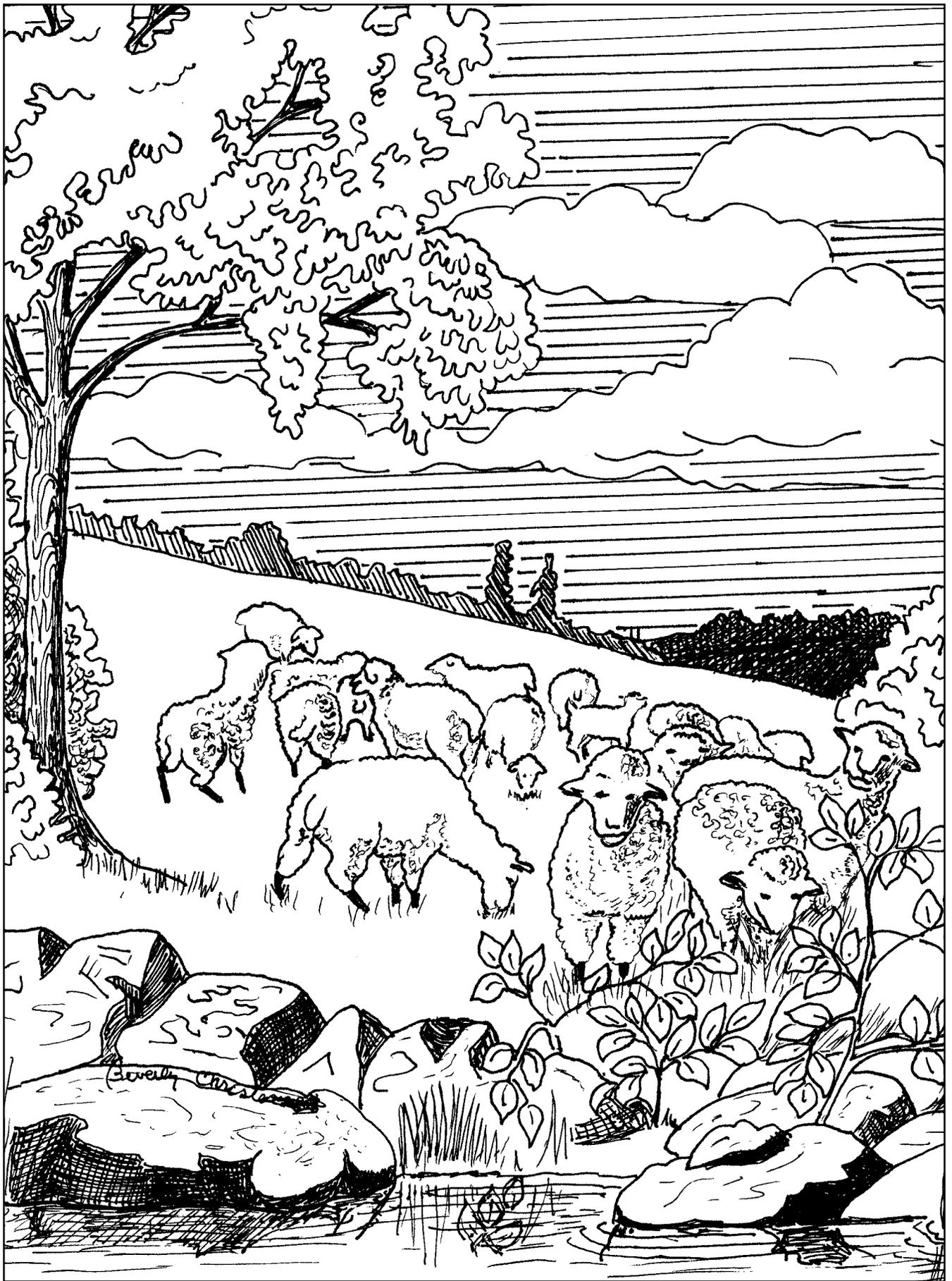
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Beverly Christian

# THE PRINCIPLES OF BREATHING

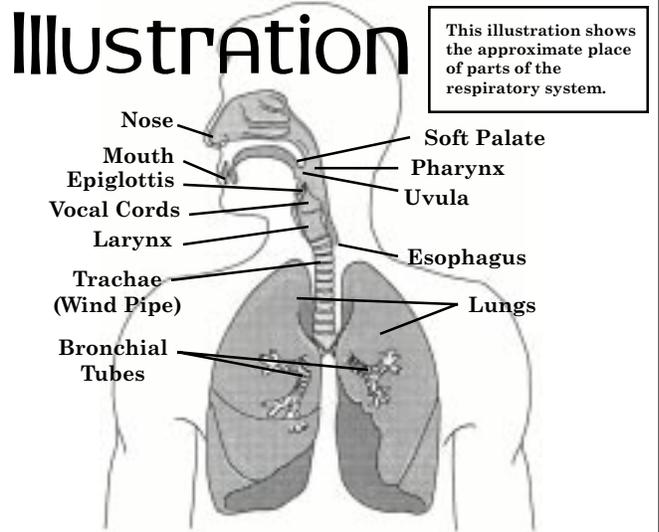
## Research Breath of Life

“THE Spirit of God  
HATH MADE ME,  
AND THE BREATH  
of THE Almighty  
HATH given ME  
life.”

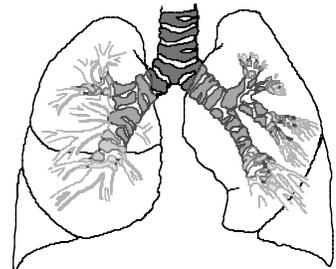
Job 33:4

The breath of life is a great mystery. Breathing is not the breath of life, and yet we must breathe to live. Air is not the breath of life, but we must have air to breathe. The act of breathing is a physical object lesson God has put in our bodies to remind us of our constant need to be in communion with Him. As the air flows into and out of our lungs continually, it symbolizes our need to “*pray without ceasing*” (I Thessalonians 5:17). “Unceasing prayer is the unbroken union of the soul with God, so that life from God flows into our life; and from our life, purity and holiness flow back to God.”\*

\*Steps to Christ 98 \*\*The Desire of Ages 44



We can live for days without water and food but it will only be a matter of moments that a person deprived of air will be gasping for it. The intense longing for air when we have run out of breath can remind us how, in Israel, there were “a few” who “were longing to behold the Unseen. To these heaven’s embassy was sent.”\*\* As breathing out is followed by the filling of the lungs with air, so the breath of their prayers went out to God and He answered by fulfilling their request.



## Organs of Respiration

“And the Lord God..breathed into His nostrils  
the breath of life...”



Genesis 2:7



Before we study how to breathe, let us learn about what we breathe with; that is, what the organs of respiration are.

Plants, animals, and man all breathe. The “*breath of life*” sustains them all. It is interesting to notice how, and by what means the breath of life is taken into these different living things. Man and the animals have lungs with which to take in air; plants breathe through special cells on their leaves, and so they breathe over all the surface of their bodies. This is also true of the human skin. Did you know there are cells all over our bodies through which we breathe? But, the main organs of respiration are the air-passages, the lungs, with the thorax, or chest, with its muscles and ribs. The mouth, nose, and nasal cavity are the beginning of the air-passages. Then, the pharynx connects the back parts of the nasal and mouth cavities.

**One main organ  
of respiration  
is the lungs.**

The “soft palate” separates the pharynx from the mouth, and the “uvula” hangs down from the center of it. The next organ in the throat on the way down, is the larynx, or, as it is sometimes called, the “voice box.” This is the upper part of a tube of cartilage leading to the lungs. In the upper portion of this cartilage tube are the vocal cords which we use to make the sounds of speech. The esophagus, the tube which carries the food to the stomach, is very close to the larynx, being just behind it. We would get into serious trouble if our food went down the wrong “pipe” and so the Lord has provided a little trap-door called the epiglottis to fit down tight over the larynx. The epiglottis is a spoon-shaped piece of cartilage, hinged at the root of the tongue, so that in swallowing, when the tongue is drawn back, the cover is drawn down tight. Have you ever been in a hurry to breathe and swallow at the same time? That is what causes you to get choked. Then you cough until the food or drink is expelled from the larynx, where it does not belong. As this tube extends down farther it is called the trachea, or windpipe. It

is made of from sixteen to twenty rings of cartilage. It divides into two branches at the upper part of the lungs. The branches are called the bronchial tubes, one of which goes to the right and the other to the left. The bronchial tubes branch off into many other tubes in the lungs. In fact, if you look at a drawing of the windpipe and the bronchial tubes along with the lungs, it will look surprisingly like an upside-down tree. It can remind you of the Tree of Life. Just as we must constantly breathe in order to live, so Adam and Eve had to keep partaking of the Tree of Life in order to have immortality. When we realize how dependent we are on the breath of life moment by moment, it helps make us **humble**. *“If he set his heart upon man, if he gather unto himself his spirit and his breath; all flesh shall perish together, and man shall turn again unto dust”* (Job 34:14-15).

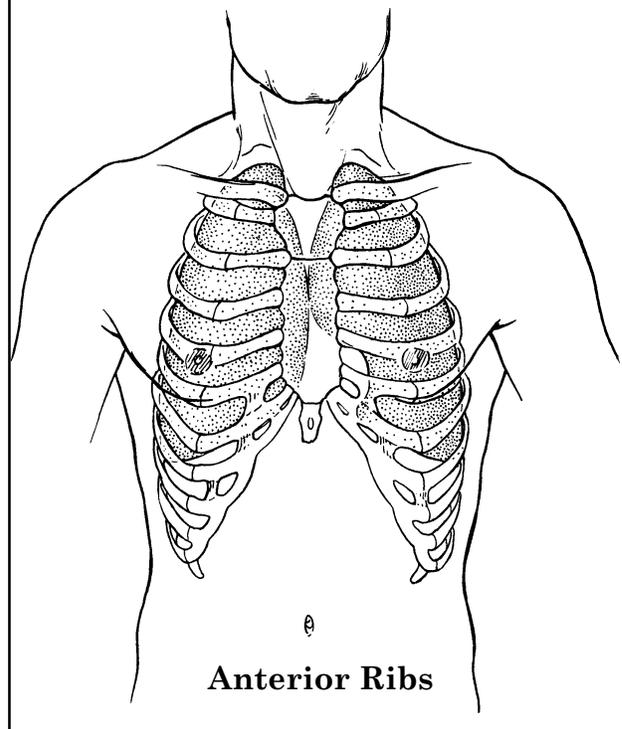
The lungs are the two main organs of respiration. They are made of air cells and tubes. The lungs are light, spongy, and elastic. The air cells are bound together by connective tissue and quite a bit of yellow elastic tissue which gives the lungs their ability to expand. A special membrane called the pleura covers the lungs.

The chest cavity is called the thorax. It is made up of the ribs and the muscles and tissues that cover them and which fill the spaces between them.

The backbone and the breastbone help to form the thoracic cavity which houses the lungs.

The diaphragm, a large muscle, closes the under side of the cavity and divides the chest from the abdominal cavity. We will study more about it in the next lesson.

**We are dependent  
on the breath of life  
moment by moment,  
it helps make us **humble!****



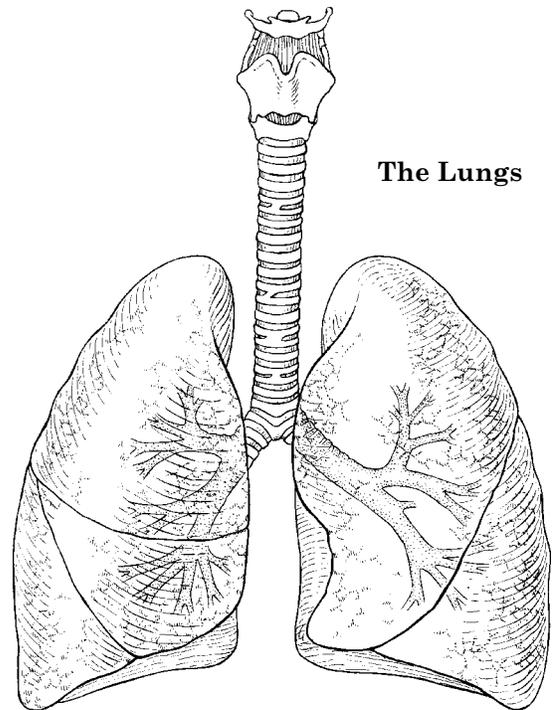
## The Sacred Chest

God has planted the “tree of life” deep within our chest. The chest cavity is strongly protected by the bones of the rib cage and the back bone. This “living chest” with the “tree of life” inside can remind us of the ark of the covenant and what it held. It was the beautiful sacred chest that contained God’s words called the Ten Commandments. “The Word of God is to us the tree of life.”\* The two lungs can remind us of the two tables of the Ten Commandments. The right lung is larger than the left lung. Just so, there are more commandments that deal with our duty to our fellow man (6) than there are dealing with our duty to God (4).

This “tree of life” within you also bears fruit. It is the “*fruit of the lips*” (Isaiah 57:19). If under God’s control, our voice can be the means of bringing spiritual life to those around us. If it is not under God’s control, it becomes instead more like the “*tree of the knowledge of good and of evil,*” in which “*out of the same mouth proceed blessing and cursing*” (James 3:10).

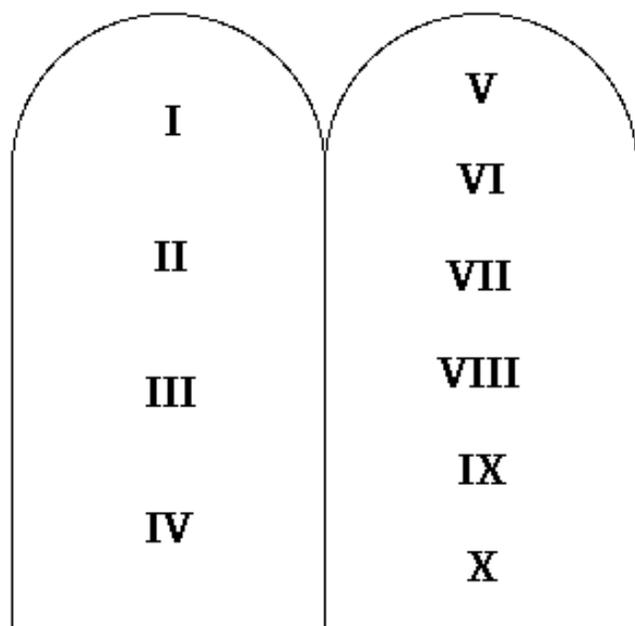
**THE “living chest”  
with the “tree of life”  
inside is the lungs.**

\*7 Bible Commentary 989



**THE two lungs  
CAN remind us  
of the two tables  
of the  
Ten Commandments.**

The Law



# Reinforce

## Place II - III

1. Look up the lungs in an encyclopedia. See if you can find a picture of the windpipe and the way it branches into a "tree of life." Notice how the right lung is larger than the left.
2. Without looking back at the encyclopedia, draw a picture of what the windpipe and lungs look like. Then compare your drawing with the encyclopedia picture.
3. Measure your chest when you have taken a full breath and then again when you let it out.

## Place III

4. Look up the organs of respiration and related parts in an encyclopedia. Locate the following:

pharynx  
larynx  
esophagus  
epiglottis  
trachea  
bronchial tubes  
lungs  
ribs

# Review

## Place II - III

1. Our constant need of air reminds us how we should "\_\_\_\_ \_ \_ \_ *without ceasing*" (I Thessalonians 5:17).
2. Plants breathe through their \_\_\_\_ \_ \_ \_\_\_\_\_. Men and animals breathe through their \_\_\_\_ \_ \_ \_\_\_\_.
3. Another name for the voice box is the \_\_\_\_ \_ \_ \_\_\_\_.
4. Explain what happens when a person gets choked. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. What do the lungs and the chest symbolize? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### Place III

6. Arrange these parts in the order air would travel through them in the act of taking a breath.

- lungs 1. \_\_\_\_\_
- nose 2. \_\_\_\_\_
- bronchial tubes 3. \_\_\_\_\_
- pharynx 4. \_\_\_\_\_
- trachea 5. \_\_\_\_\_
- larynx 6. \_\_\_\_\_

7. What is the spoon-shaped ring of cartilage hinged at the root of the tongue called? \_\_\_\_\_

8. The lungs are made up of \_\_\_\_\_ cells and \_\_\_\_\_ .

9. What makes it possible for the lungs to stretch? \_\_\_\_\_

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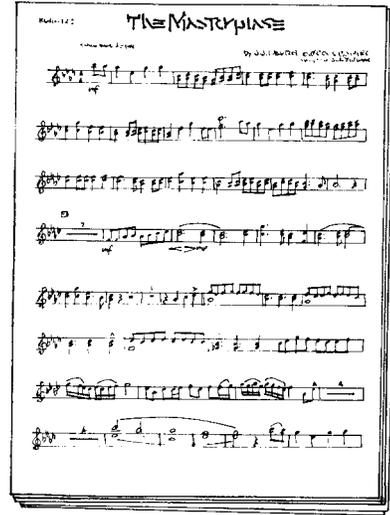
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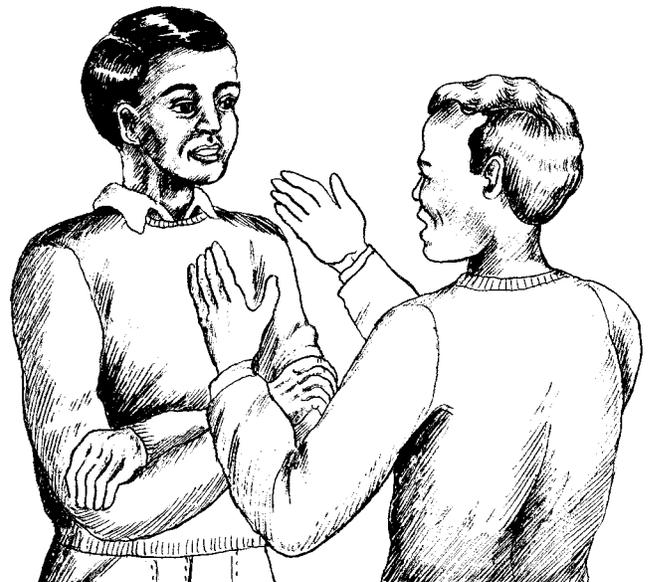
10. The chest cavity is also called the \_\_\_\_\_ .

## Reinforce

1. Sing the hymn, "Breathe on Me Breath of God."



2. Use your voice to **humbly** tell someone about the gospel. "Many are gasping for a breath of life from heaven. They will recognize the gospel when it is brought to them in the way that God designs it to be brought." *Evangelism* 559



# Research

## Importance of Breathing

“I AM COME THAT THEY MIGHT HAVE life,  
AND THAT THEY MIGHT HAVE it MORE ABUNDANTLY.”

JOHN 10:10

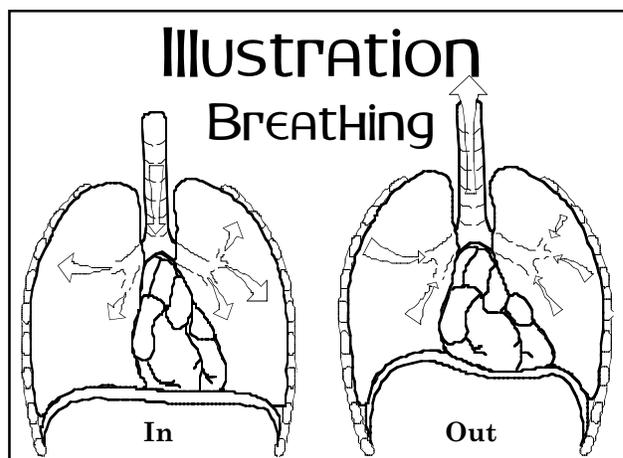
Elizabeth Barrett Browning once said, “He lives most life, who breathes most air.” Why do you suppose she said that? The study of chemistry shows, that air is made up of one part of oxygen and four parts of nitrogen with just a little carbon dioxide mixed in. Oxygen is the great purifier of the blood. It is a life-giving element we need.

God breathed into man “*the breath of life*” and as long as man breaths, he lives; when his breath is taken from him, he will die. Then since oxygen is necessary to support man’s life, should it not be true that the more we breathe in, the more abounding life we have? This fact can remind us of why Jesus came to earth. He said, “*I am come that they might have life, and that they might have it more abundantly*” (John 10:10). This breath of God is our most valuable gift and it should be rightly appreciated and used.

We breathe or inhale oxygen which is taken up by the red blood cells which go through the lungs. From there it is carried by the circulation to every cell and tissue.

In the tissues of our bodies, an exchange takes place. The red blood cells “**humble** themselves” by trading their load of oxygen for a load of carbon dioxide. Then they carry the carbon dioxide back to the lungs where it is exhaled. Carbon dioxide is so poisonous that people have died when they had to breathe their own exhaled breath over and over again.

This gas exchange the red blood cells make can remind us about the exchange that Jesus made when He left the pure atmosphere of Heaven and **humbled** Himself to come to the earth with its poisonous atmosphere of sin. “Yet this was but the beginning of His wonderful condescension.”\*



\*The Desire of Ages 49

## Vitality

Our vitality depends upon the amount of oxygen we can take in; and that is the reason why a good lung capacity is so important. Deep, full, regular breathing is a sign of good vitality. Weak, quick, panting breath, on the other hand, shows low vital power. Exercise calls for more breath, more air; this is one of the reasons why exercise is valuable. It is said, "He who does not take time for exercise will have to take time for illness."

As in the physical life, so in the spiritual. Our spiritual life will be vital if we **humble** ourselves and pursue a deep prayer life. But superficial, shallow prayers will result in spiritual weakness.

Breathing properly will help to lengthen a person's life by increasing their vital power. They will be less likely to become diseased. Deep breathing increases the capacity of the chest. The lungs, being elastic, grow by exercise and increase in strength as well as size. Prayer causes the Christian to grow in strength and in his capacity to serve God.

Deep breathing will help with right thinking because it supplies the brain with more oxygen. This can remind us about how sincere prayer brings the wisdom of God.

"He  
who does not  
take time for exercise  
will have to take time  
for illness."

Deep breathing  
will help with  
right thinking  
because it supplies  
the brain  
with more oxygen.



# Reinforce

## Place II - III

1. Test your parents' "breathing out" capacity. Have them open their mouth wide and see if they can blow out a paper match held three inches (7.5 centimeters) from the lips.

2. Do the following breathing exercise:

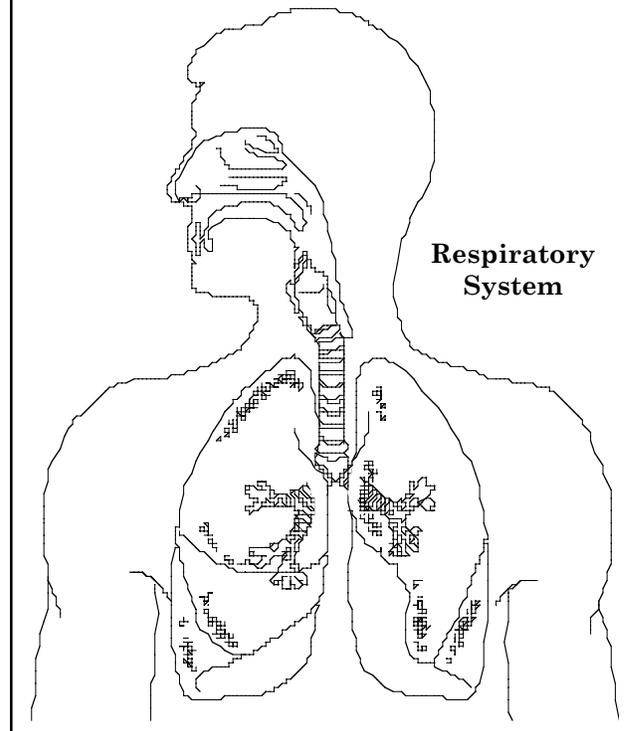
Open your mouth and exhale all you can. Now purse your lips and blow. Notice how there was lots of air left in your lungs. This shows that we do not generally use very much of our lung capacity.

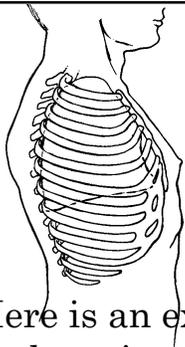
Now choose a chapter out of the Bible to practice reading aloud. On the first day, read as many lines or verses as you can without rushing through on only one breath. Write down the word where you ran out of breath. Do this again for two weeks and try to gradually increase the number of lines you can read without inhaling.

**Breathing properly  
will help to lengthen  
a person's life  
by increasing  
their vital power.**

3. Draw your shoulder blades together. This immediately opens up the chest cavity. Usually, because of poor posture, too much of the weight of the lungs is pressed down on the diaphragm. This keeps it from rising and falling in rhythm. Be aware of the position of your shoulder blades this week and try to form the habit of keeping them close together.

**Notice the position  
of your shoulder blades  
and try to form the habit  
of keeping them  
close together.**

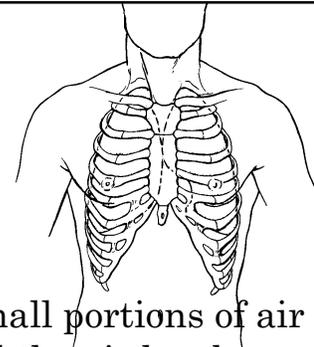




# Reinforce

## Place III

### Breathing Experiment



Here is an experiment Dr. Rossiter has given that will help you to understand the movement of air in the body and to develop your lungs.

Stand straight, resting on the balls of the feet, with the hips back, chest forward, and head erect. Now breathe out as much air as possible. Keep the mouth closed. Place one hand on the abdomen and the other on the middle of the chest. Take a sniff of air (this is called the “sniffing breathing exercise,” only a small portion of air being taken in at a time), and follow this with several more sniffs in quick succession, until you can inhale no more. At the first sniff, you notice an outward movement of the abdomen, and finally the hand on the chest moves forward also as the chest expands. This movement should always take place in normal inspiration, and in an exaggerated form in forced inspiration. The abdominal muscles are perfectly passive in this movement. To continue the experiment: Hold the breath a few seconds after the lungs have been inflated as just directed. Now ex-

hale quickly small portions of air at a time, until all the air has been expelled. You will notice that the hand over the abdomen moves first. In other words, the air leaves the lower part of the lungs first, and then gradually the rest of the lungs from below upward. You will notice that in this last experiment, the abdominal muscles are tense, or contracted, and aid in forcing out the air.

Any one who will daily take time to exercise in this way mentioned will, in a very few days, see marked improvement in his breathing. In this kind of breathing, each inspiration instead of being superficial, and confined to the upper part of the chest, will become deep and more refreshing. In expiration the abdominal muscles will form a habit of assisting in expelling the air, and so will not be as rigid as at first. If these muscles are trained to aid in expelling air in ordinary breathing, they will serve as the chief force in expiration when one is talking or singing, in which case they play a more important part than in ordinary breathing.

## Natural Breathing

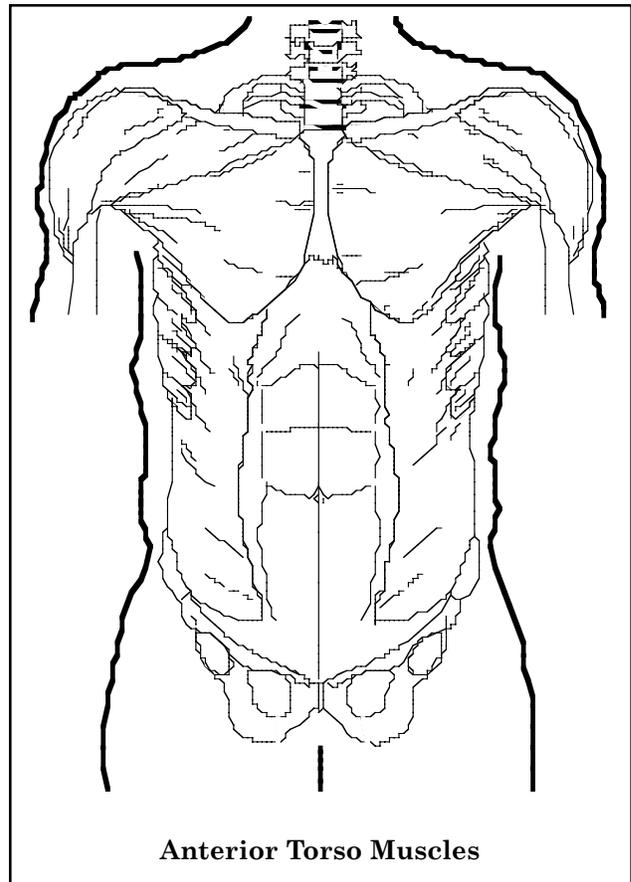
“Glory to God in the Highest, and on earth peace,  
good will toward men.”

LUKE 2:14

When the abdominal muscles, together with the diaphragm, are in control during expiration, talking or singing becomes an easy, natural condition. No strain is placed upon the throat, since it serves only as a channel for the passage of air. When natural breathing is practiced, there will be no unnatural “throaty,” rasping tones of voice. The throat will not become tired after singing a short hymn. In talking or singing, time should be taken for deep inspirations of air. Then, by “breath control,” air will only be allowed to escape over the vocal cords as needed in producing loud or soft tones. Speaking of tone, I wonder what kind of tones the angels sang in when “earth was hushed, and heaven stooped to listen to the song—‘*Glory to God in the highest, and on earth peace, good will toward men.*’” \*

In the use of the voice either in speaking or singing, it is necessary to know how to exercise breath control, and how to produce the desired tone. The desired tone, in a great degree, depends upon a thorough understanding of breath con-

trol. All effort in expiration should receive its power from the strong abdominal muscles, the relaxation of the diaphragm (but under control), and the internal intercostal muscles (the little muscles between the ribs). In forced expiration, other muscles also play an important role. In any exercise of the vocal organs, expiration becomes more marked. It varies according to the power of tone needed.



\*The Desire of Ages 48

LEARN  
to Play Skillfully  
Your Voice

The way the voice can be changed to give more power can remind us of Isaiah 40:9 and how the angels and the shepherds lifted up their voices to tell the world that the Saviour was born. *“O Zion, that bringest good tidings, get thee up into the high mountain; O Jerusalem, that bringest good tidings, lift up thy voice with strength; lift it up, be not afraid, say unto the cities of Judah, Behold your God!”* *“And the shepherds returned, glorifying and praising God for all the things that they had heard and seen”* (Luke 2:20).

It is harmful to the delicate structures in the throat to try to produce loud tones with those tissues that were not designed to supply power, but, rather, to give grace of expression. May God help you to learn to *“play skillfully”* the beautiful musical instrument He has given you—your voice.

“And the shepherds  
returned, glorifying and  
praising God...”

## Ask the Beasts

“Ask now the beasts, and  
they shall teach thee.”

Job 12:7

Did you ever watch a dog bark? If you will observe, you will see that when a dog barks, it does not use its throat to produce the bark, for every structure here is relaxed, except there is a marked muscular action in the sides of the dog over the belly. The abdominal muscles become tense, the intercostals contract; and if the bark is prolonged to a howl, the diaphragm, together with the other muscles, remains in a state of contraction, and only relaxes when the tone stops. A good, clear, musical tone can never be produced until this principle of breathing is mastered. It lies at the foundation of true vocal culture. *“Ask now the beasts, and they shall teach thee”* (Job 12:7).



## Reinforce

Observe  
a dog  
barking.

## Review

### Place I - II - III

1. Circle the gas in the air which purifies the blood. Underline the poisonous one.

nitrogen    oxygen    carbon dioxide

2. Our vitality depends upon the amount of \_\_\_\_\_ we take in.

3. What is a sign of good vitality?  
\_\_\_\_\_

4. What does a weak, quick, panting breath show? \_\_\_\_\_  
\_\_\_\_\_

5. What increases the capacity of the chest? \_\_\_\_\_  
\_\_\_\_\_

6. Fill in the blanks. The lungs can be made to \_\_\_\_\_ in size and \_\_\_\_\_.

7. What does deep breathing have to do with right thinking? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8. The desired tone in singing depends, in a great degree, on \_\_\_\_\_  
\_\_\_\_\_.

## Remind

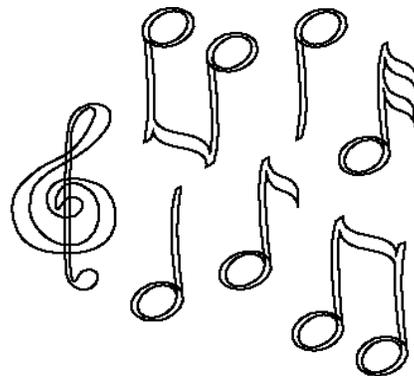
1. When you are doing your chores and need to lift something, take a deep breath and notice how much easier it seems.

2. Practice being **humble** like Jesus and exchange an easy chore with your brother or sister for a harder one.

3. When you have a hard problem to solve, breathe deeply to help your mind to think more clearly. Also, pray.

4. When singing a hymn, notice how far you can sing without drawing another breath.

## Reinforce



Read the poem,  
"At Bethlehem."

# At Bethlehem

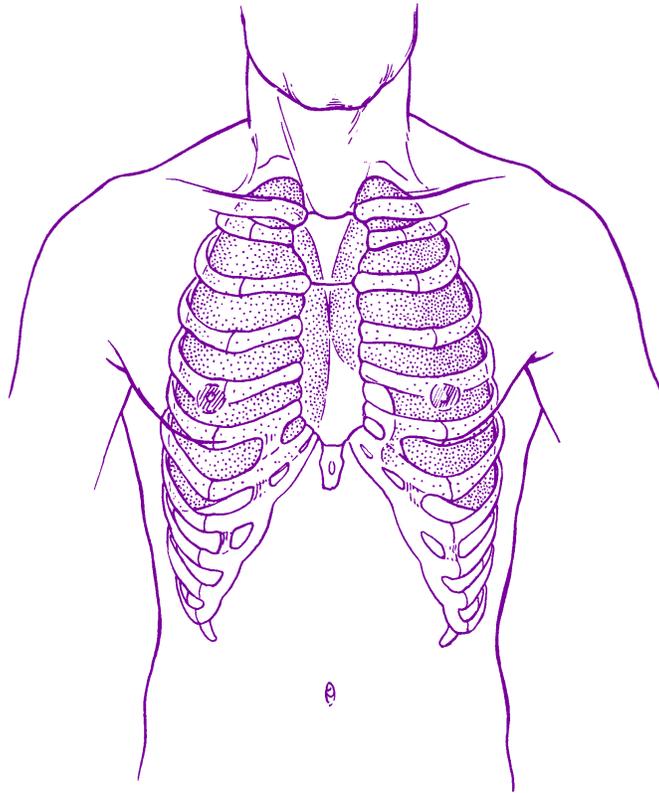


So many hillsides, crowned with rugged rocks!  
So many simple shepherds keeping flocks  
In many moonlit fields! but only they—  
So lone, so long ago, so far away—  
On that one winter's night, at Bethlehem,  
To have white angels singing lauds for them!

—*Sir Edwin Arnold*

“I AM COME  
THAT THEY MIGHT HAVE LIFE,  
AND THAT THEY MIGHT HAVE IT  
MORE ABUNDANTLY.”

JOHN 10:10



Each booklet in the series,  
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- 8 – RESONATING Chamber, RESONANCE
- 9 – GROWING VOICE
- 10 – VOICE in COMMUNICATION



Mark 4:29