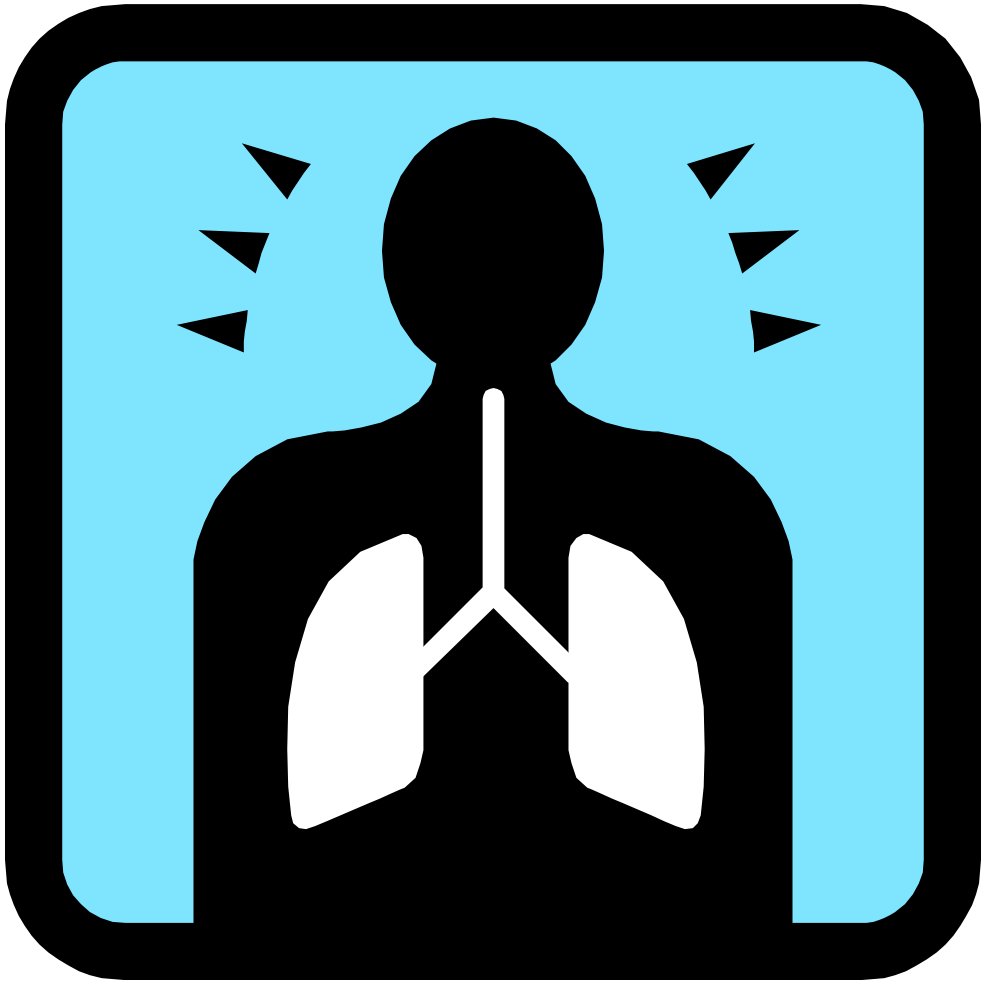
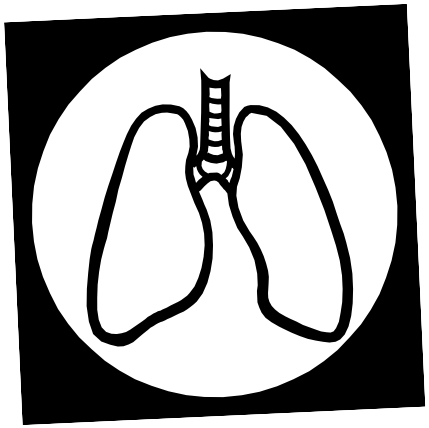
5th Grade Health
Lungs Lesson 1





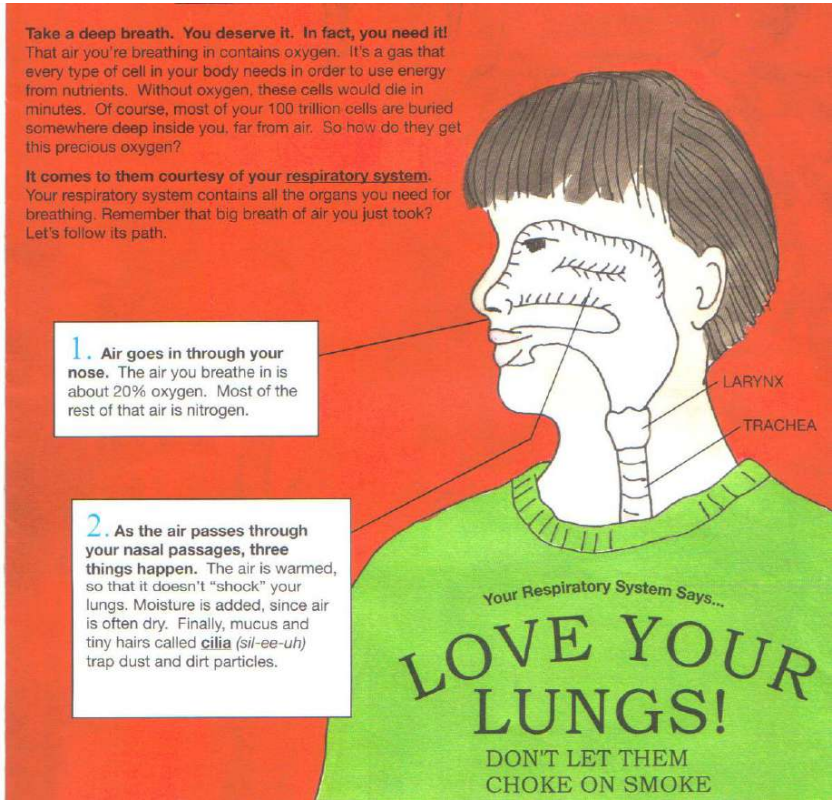
- This month in the Great Body Shop we will be learning about the respiratory system. This is the system that is made up of all the organs which are involved in breathing. I am sure that many of you have some thoughts as to what these organs are called, where they are located, and the special jobs they do.

Activity

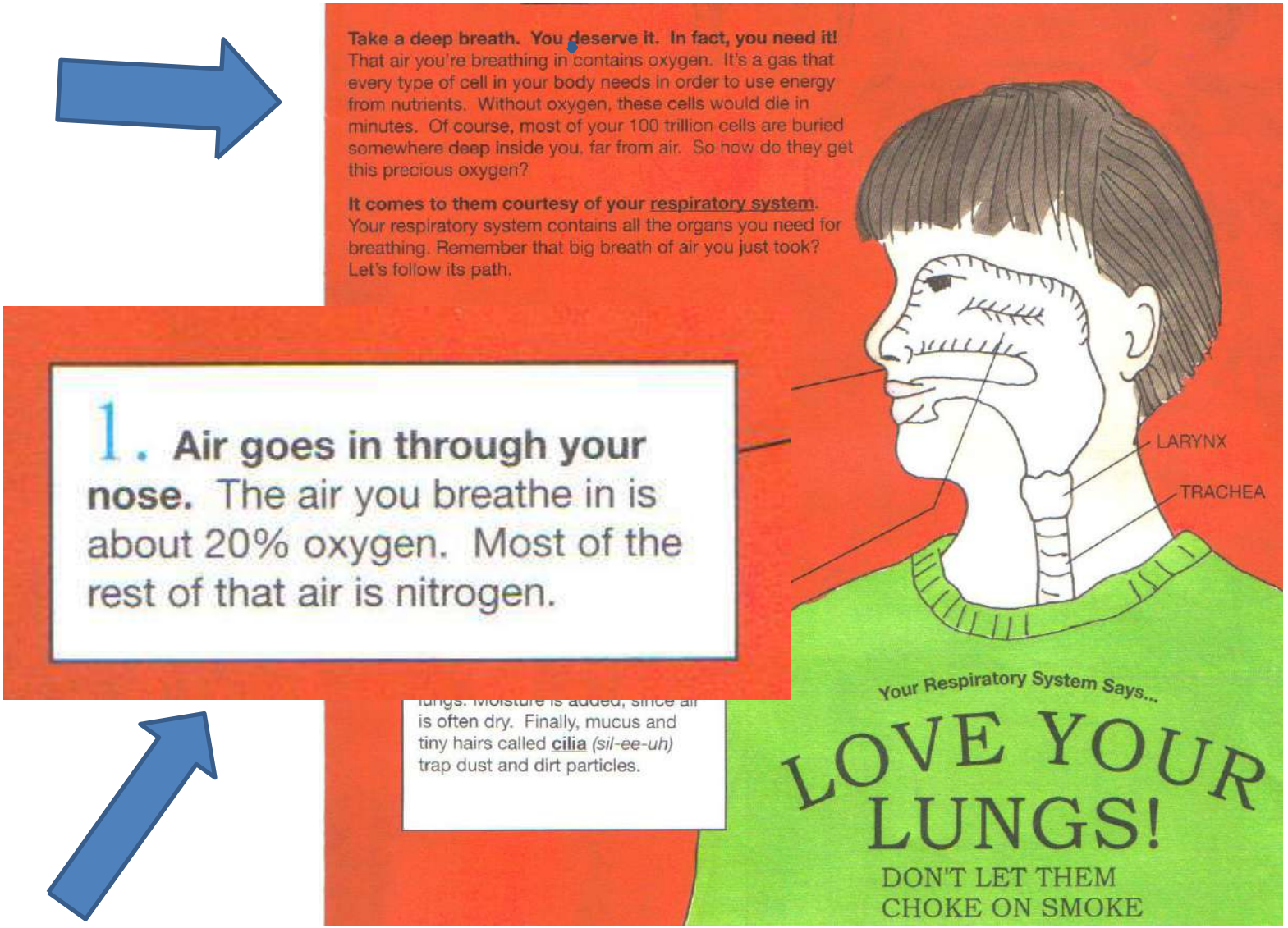
- I will create work groups
- Choose one person from your group to lie on the paper and draw an outline around them
- Work together to brainstorm. Draw pictures of and label all the parts of the respiratory system that you know

Let's see how we did…

- Write your name on your Student Issue
- Review the information.



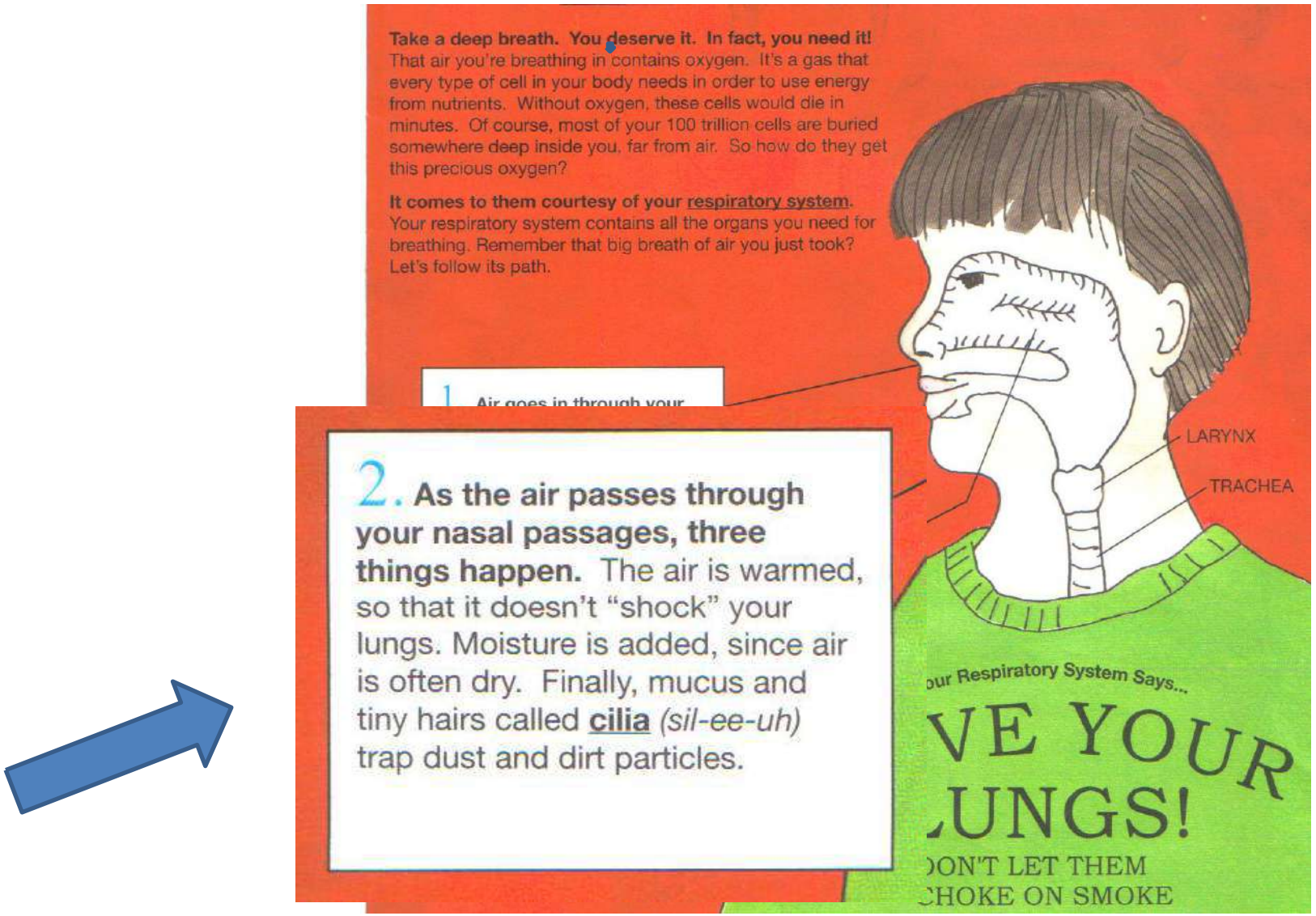
- Let's Read the front page and box 1



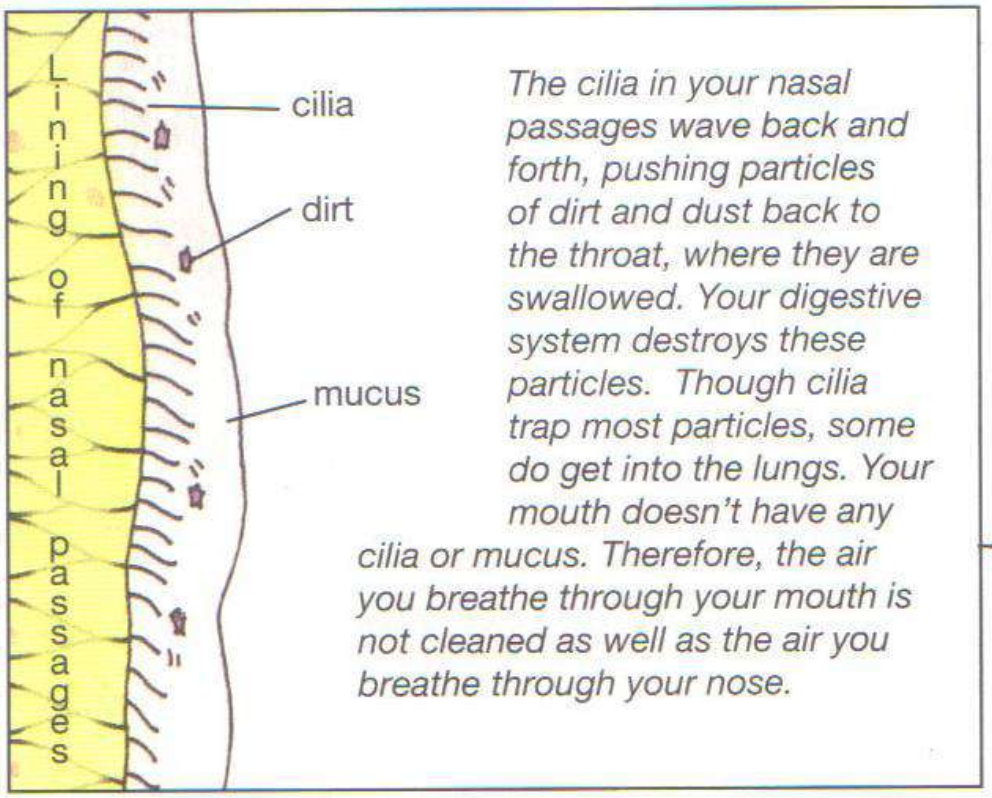
Oxygen

- Oxygen is a gas that your cells need
- It is required by the cells to derive energy from the food you eat
- As your cells use this energy, they create carbon dioxide, the waste gas cells give off
- About 20% of the air you breathe is oxygen, the rest is mostly nitrogen

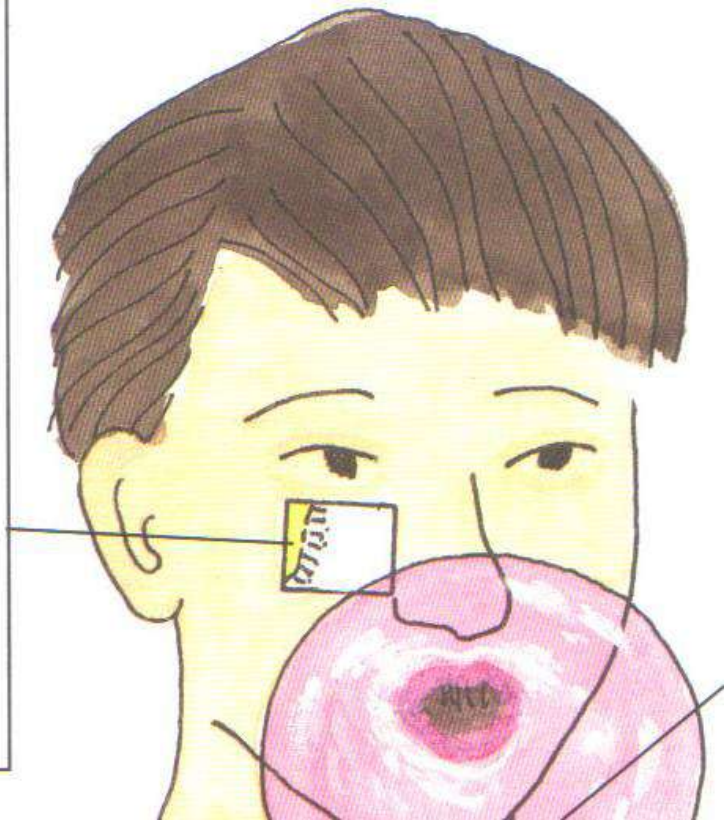
- Let's Read box 2 From the front page



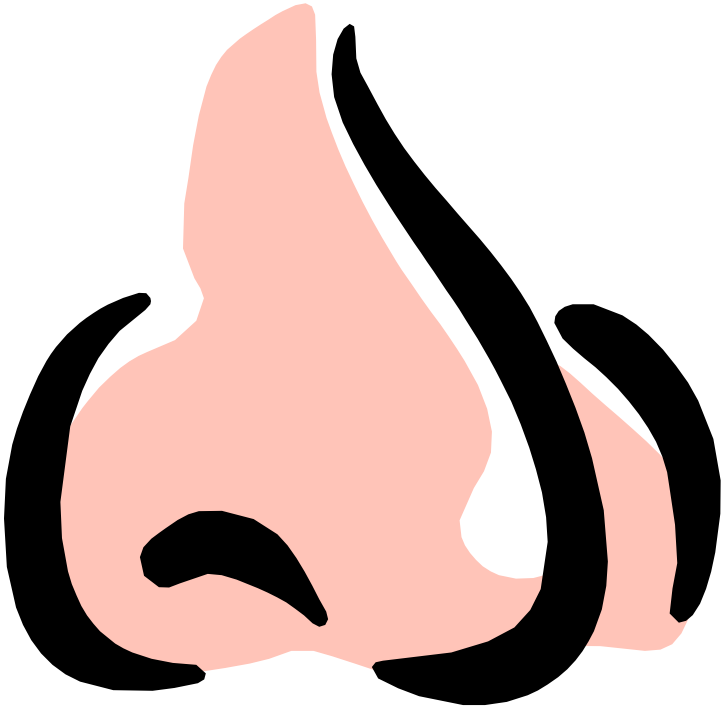
Let's Learn About Cilia



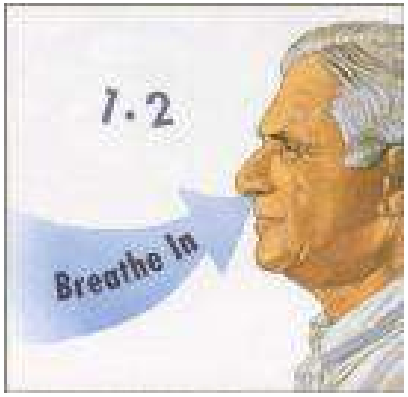
The cilia in your nasal passages wave back and forth, pushing particles of dirt and dust back to the throat, where they are swallowed. Your digestive system destroys these particles. Though cilia trap most particles, some do get into the lungs. Your mouth doesn't have any cilia or mucus. Therefore, the air you breathe through your mouth is not cleaned as well as the air you breathe through your nose.



More about those cool Cilia…



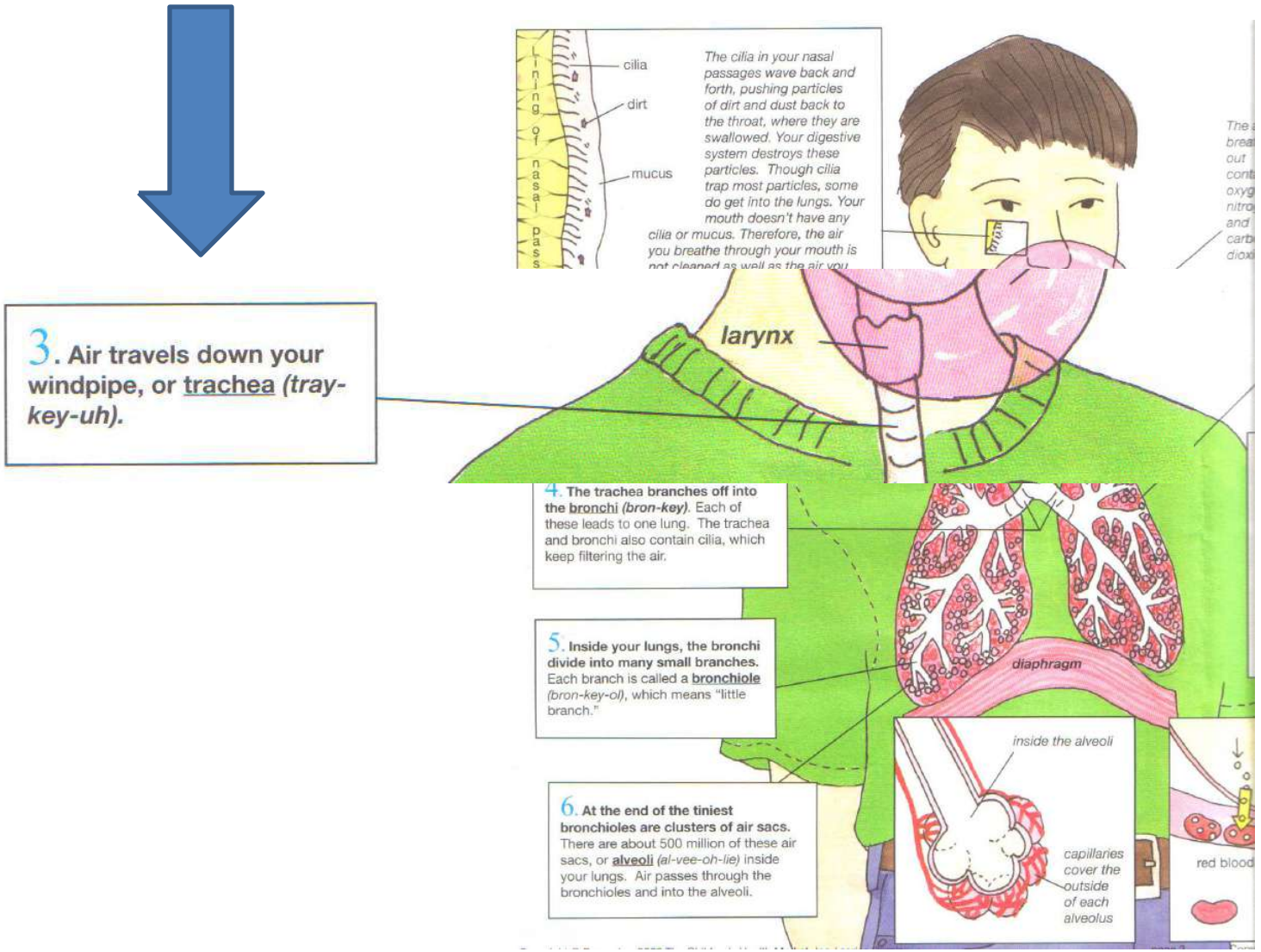
✓ There may be hundreds of cilia to each cell
✓ The cilia wave back and forth constantly about 1000 times a minute
✓ The cilia push most of the mucus and dust to the throat so you swallow it.
✓ The digestive juices in your stomach destroy these particles.
✓ Some particles do get into your lungs.
✓ You cough or Sneeze to expel them
✓ There are also some special cells (called macrophages) in your lungs that can "swallow" and destroy many of these particles

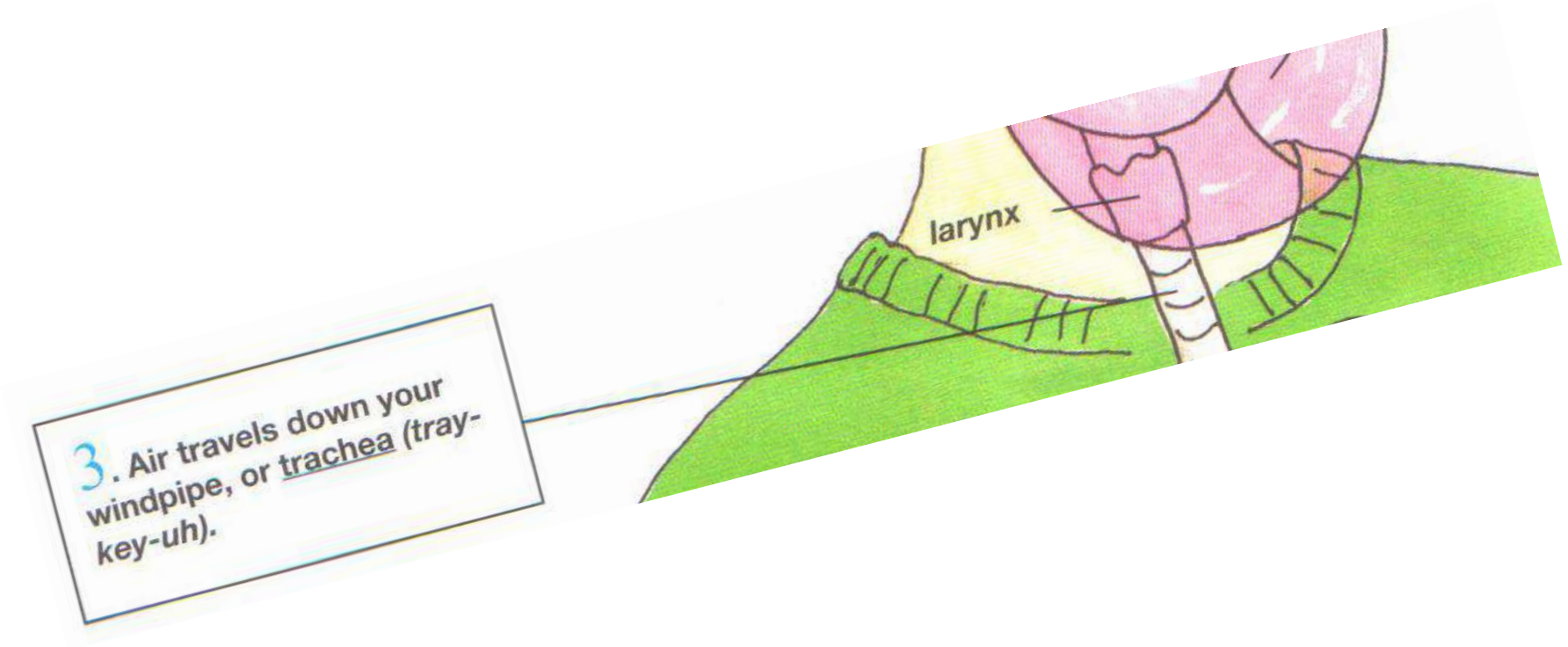


Knowing what Cilia does to air as you breath, why should we breath in our nose and out our mouth?

- It is important to breath in through your nose and exhale either through your nose or mouth
- When you inhale through your nose, cleaner air and fewer particles get into your lungs
- This is important when you are exercising because more carbon dioxide leaves the body when you exhale through your mouth.

Let's Read Box 3 on Page two of your Student Issue



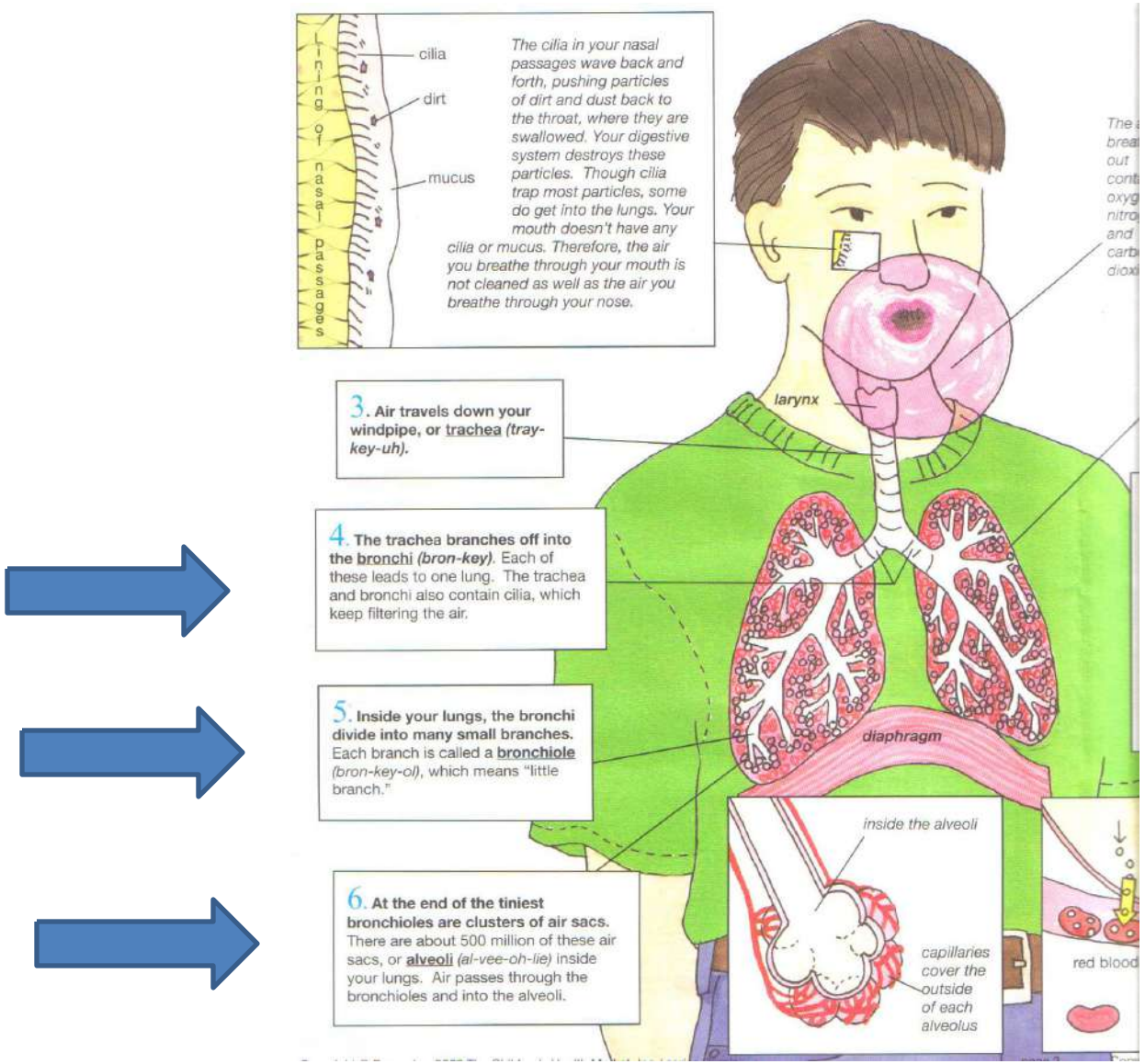


- Pictured here is the trachea, sometimes called the windpipe.
- There is another pipe, connected to the back of your throat (not pictured) called the esophagus, or your food pipe.
- The openings for both pipes are close together, your body has a flap of skin that covers the opening to the trachea whenever you swallow.
- This flap is called the epiglottis.
- The epiglottis is found at the back of the throat above the larynx

Question: Why is it important to chew your food completely, and not talk when eating???

- When you swallow too quickly, such as when laughing or talking, the epiglottis may not close in time, causing food to go down the "wrong pipe". You'll cough to get this food out of your windpipe, or you will choke.

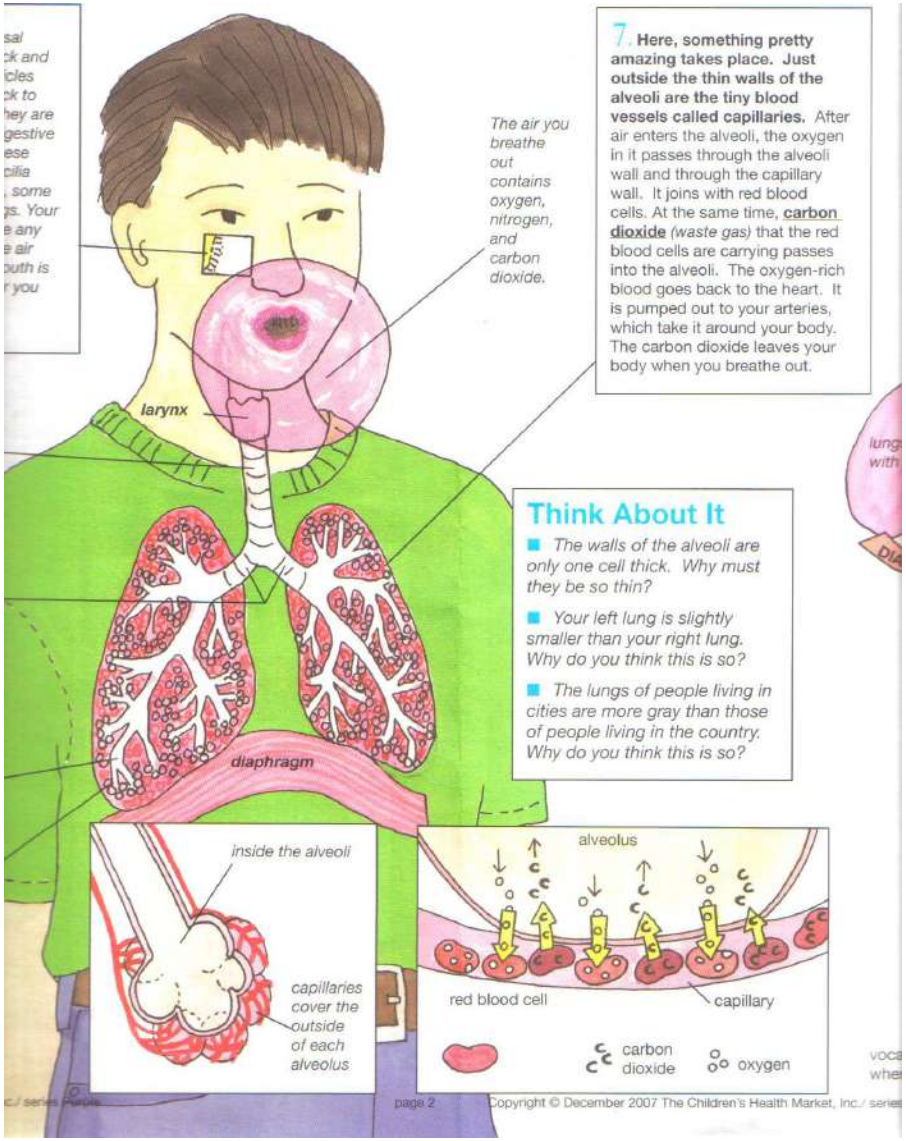
Let's read boxes 4, 5 and 6



Bronchi

- Think of bronchi as the trunk of a tree
- Midway up the trunk, it begins to split off into thick branches.
- Each of these branches becomes smaller and smaller
- These tiny branches are called bronchioles.
- At the end of the bronchiole are the “leaves” or clusters of alveoli.

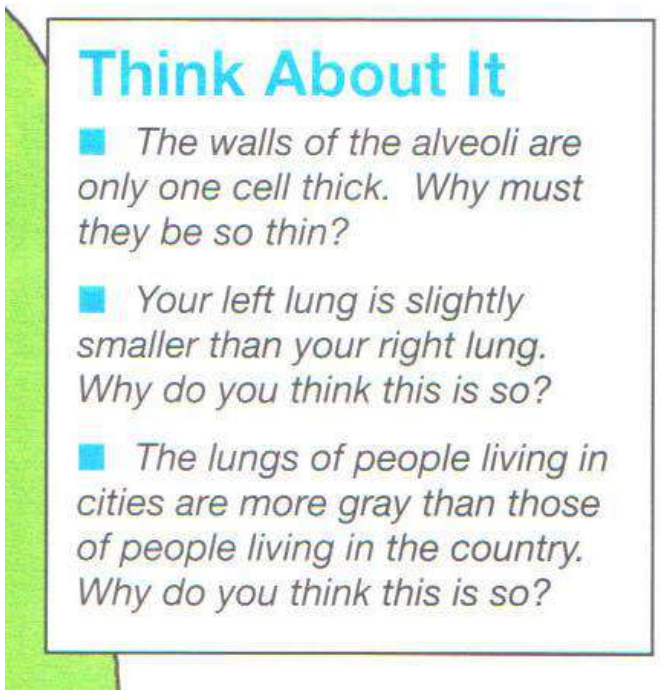
Let's read box 7



Alveoli

- It is through the alveoli that the oxygen and carbon dioxide exchange takes place.
- These gases can pass easily through the thin walls of the alveoli and into the capillaries.
- Examine the pictures at the end of page 2

Think About It…



1. The walls of the capillaries and alveoli must be thin to allow gas to pas easily. Gas could not pass through thicker walls. The walls of the alveoli and capillaries are similar to cell walls. The cell wall, or membrane, also allows gasses to pass through, yet keeps the parts of the cell intact.
2. Your left lung is slightly smaller than your right because your heart is on your left side. The lung overlaps the heart slightly, and has a space in which the heart is nestled.
3. People who live in the city have lungs which are grayer than people who live in the country. There is more pollution in the city; the more smoke or pollution in a community, the more particles which are trapped in the lungs.