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CELEBRATE BASIC SCIENCE SKILLS

Basic does not mean boring! There certainly is nothing dull about . . .

- . . . snooping around the body like a detective to solve body mysteries
- . . . watching body parts search the classified ads for jobs
- . . . tracking down body organs and designer genes
- . . . learning about the talents of periosteum, pectorals, the pancreas and the patella
- . . . visiting the Broken Bones Clinic to figure out which bones are fractured
- . . . figuring out how patients taste and smell hospital food
- . . . searching for a safety pin lost in someone's digestive system
- . . . sympathising with 30 different complaining patients in an emergency room
- . . . looking over shoulders to see if first aid students are making good first decisions

The idea of celebrating the basics is just what it sounds like – enjoying and getting good at knowing all about the parts of the body and the way they function. Each page invites learners to try a high-interest, appealing exercise that will sharpen or review one specific science skill, concept or process. This is not just another ordinary fill-in-the-blanks way to learn. These exercises are fun and surprising. Students will do the useful work of deepening science knowledge while they follow dozens of delightful doctors, patients and workers around a Medical Centre. These quirky characters will lead them to explore and deepen their understanding of the functioning of the body and the basics of health and fitness.



The pages in this book can be used in many ways:

- for individual students to sharpen a particular skill
- with a small group needing to relearn or strengthen a skill
- as an instructional tool for teaching a skill to any size group
- by students working on their own
- by students working under the direction of an adult

Each page may be used to introduce a new skill, to reinforce a skill, or even to assess a student's performance of a skill. And there's more than just the great student activities! You will also find an appendix of resources helpful for students and teachers – including a ready-to-use test for assessing skills and understandings about the body.

The pages are written with the assumption that an adult will be available to assist the student with their learning and practice. It will also be helpful for students to have access to science resources such as a science textbook, encyclopedias and Internet reference sources.

As your students take on the challenges of these adventures with the human body and health, they will grow. As you watch them tick off the basic science skills they have sharpened, you can celebrate with them!

The Skills Test (pages 54–57)

Use the skills test as a pretest and/or a post-test. This will help you check the students' mastery of basic skills and understandings related to the human body and health. It can also prepare them for success on tests of standards, instructional goals or other individual achievement.

BODY MYSTERIES

Students at the Body-Wise Medical Centre learn about mysteries of the human body. These 22 mysteries are part of a study guide they are using to prepare for a test. Use your clever thinking, good resources, and knowledge of the human body to track down the solutions to these mysteries.



1. Dr Neuron is standing on her head. Amazingly, when she eats a biscuit it goes through her oesophagus into her stomach. What process keeps the food from sliding back up into her mouth as she stands on her head?

2. A green substance is lurking in the gallbladder. What is this substance?

3. Several small white structures are lodged in sockets in the maxillae and the mandible. What are these structures?

4. Some reactions are having a great time leaping across synapses. What are these reactions?

5. A liquid is always flowing through the kidneys, being filtered by a million tiny filtering units called nephrons. What is the flowing substance?

6. A mysterious substance is frequently coming out of the islets of Langerhans. What is this substance?

7. A substance is getting smashed into tiny pieces in the liver during digestion. What is this substance?

8. Red blood cells are busy carrying heavy loads of a substance. What is it?

9. A strange reaction is happening inside a body. The diaphragm muscle and muscles in the abdominal wall are strongly contracting. Partly digested food is being forced up out of the stomach. What is happening?

10. Dr Neuron's wrist rotates when she does her skipping rope workout. What allows her wrist to rotate?



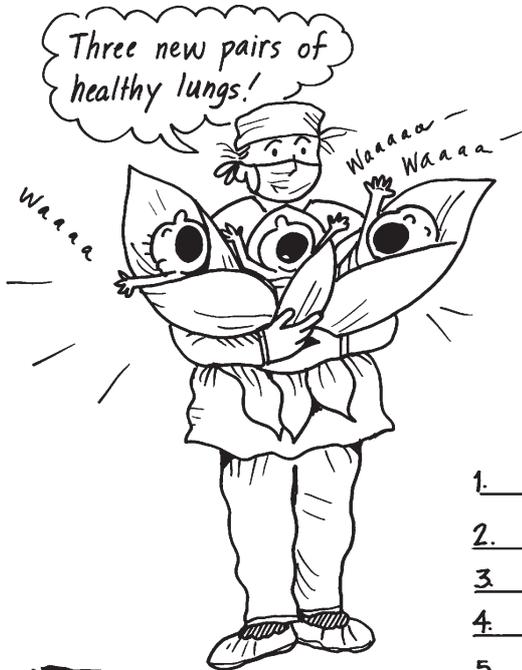
Name _____

EASY BREATHING

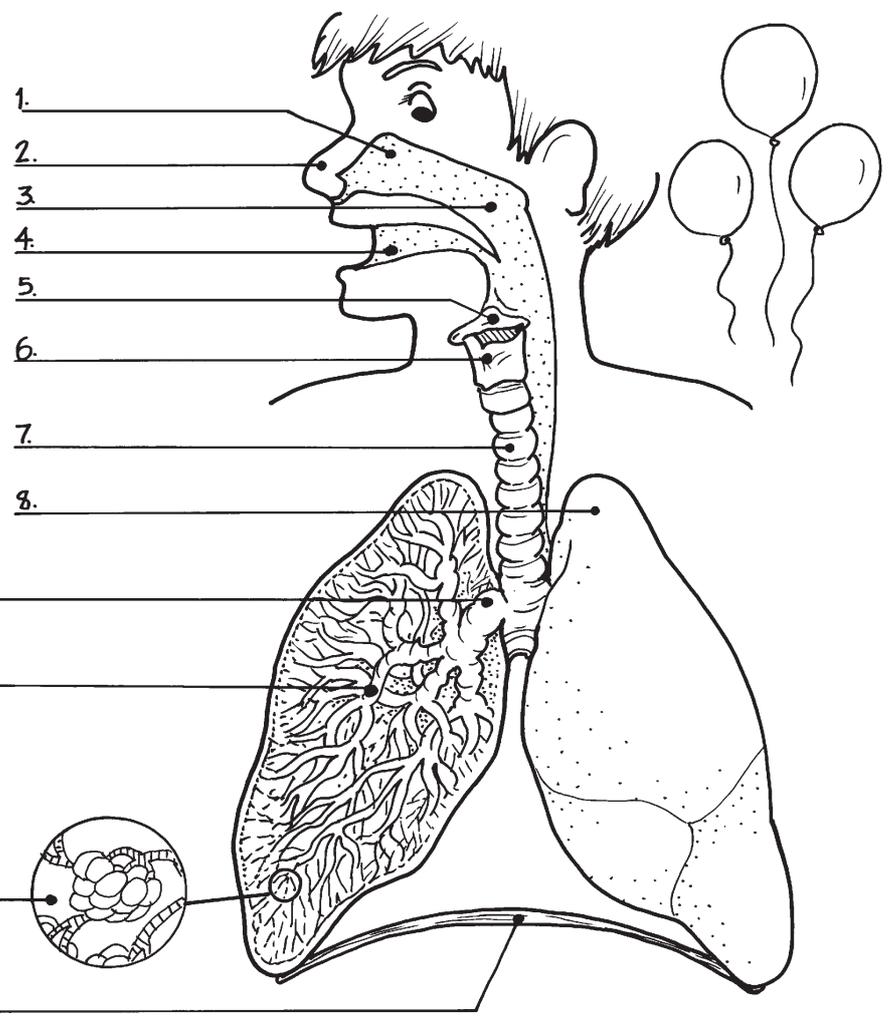
The entire staff in the obstetrics unit is celebrating the birth of triplets. They are blowing up balloons to decorate the nursery. It's a good thing there are some healthy respiratory systems in the group!

Since they've got 100 balloons, they'll need to do a lot of breathing in and out for this task.

Label the body structures that are used in the breathing process.



- Use these labels:
- trachea
 - epiglottis
 - pharynx
 - mouth
 - alveoli
 - bronchi
 - lung
 - diaphragm
 - bronchioles
 - nose
 - nasal cavity
 - larynx



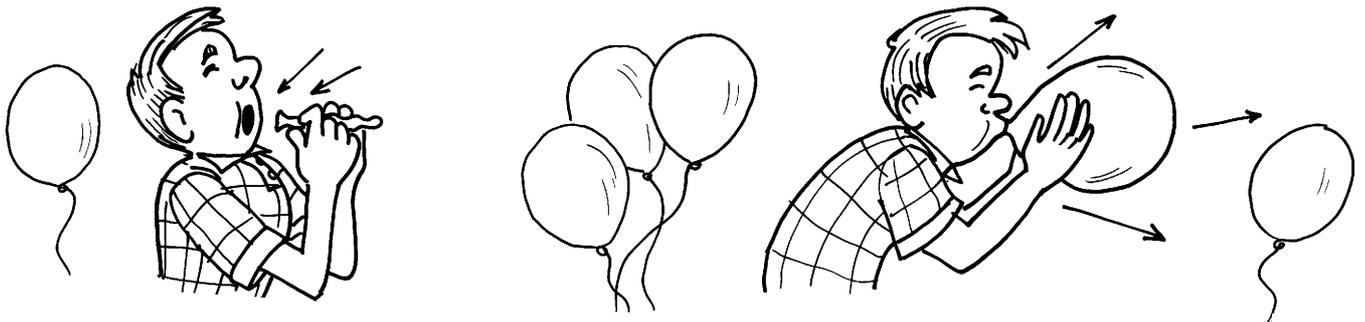
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Answer the questions to describe how the respiratory system of Nurse Rex Hale is functioning as he breathes in and out to blow up balloons.

BREATHING IN

1. What do the hairs in his nose and the mucus in his nose and throat accomplish when he inhales?

2. Where does air travel after it is taken into his mouth? _____
3. What happens to his ribs when he inhales? _____
4. What does his diaphragm do when he inhales? _____
5. What happens to the volume of his chest cavity when he inhales? _____
6. How does oxygen that he breathes in with the air get into his blood? _____
7. What does his epiglottis do when he inhales? _____



BREATHING OUT

8. How does the carbon dioxide get out of the bloodstream back into his lungs to be breathed out?

9. What path does the air with wastes follow to leave his body? _____

10. What happens to his ribs when he exhales? _____
11. What does his diaphragm do when he exhales? _____
12. What happens to the volume of his chest cavity when he exhales? _____

Name _____