Science 8

Blackline Master

This blackline master package, which includes student worksheets and materials for teachers to make their own overhead transparencies or photocopies, is designed to accompany Open School BC's ***Science 8*** course. The course and blackline master were developed by BC teachers, instructional designers, graphic artists, and multimedia experts.

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The Science 8 course consists of 4 modules, Science 8 SOS Package, blackline master, and the *Science 8 Media CD*. Science 8 is available in both print and online versions. Science 8 can be purchased as individual components or as a complete resource, ***Science 8 Resource Package***. The following supporting resources are required for print and online versions of the course. All are available from Open School BC.

Textbooks
BC Science 8 ***or*** *BC Science Probe 8*

To order, contact:

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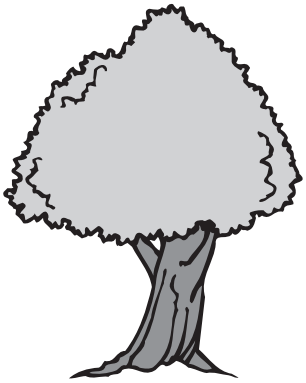
Guided Practice 1.1A
Living or Non-living?

For each item, circle the correct classification: living or non-living.

1. living or non-living

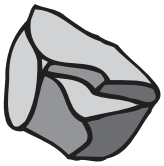


6. living or non-living

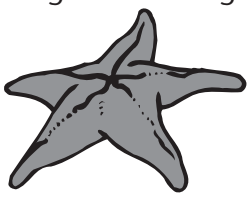
2. living or non-living

7. living or non-living

3. living or non-living



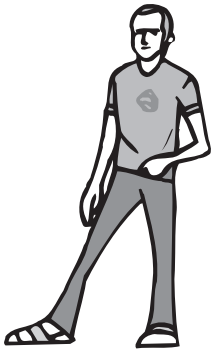
8. living or non-living



4. living or non-living

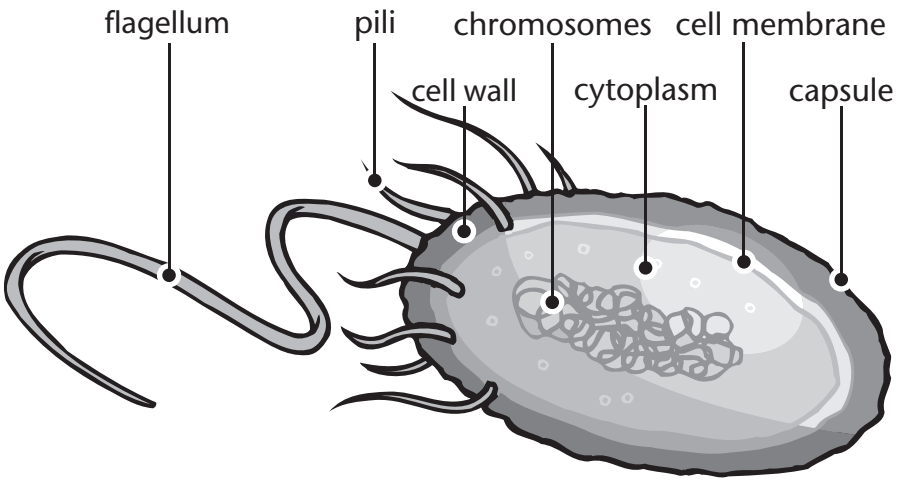
9. living or non-living

5. living or non-living



10. living or non-living

Bacteria



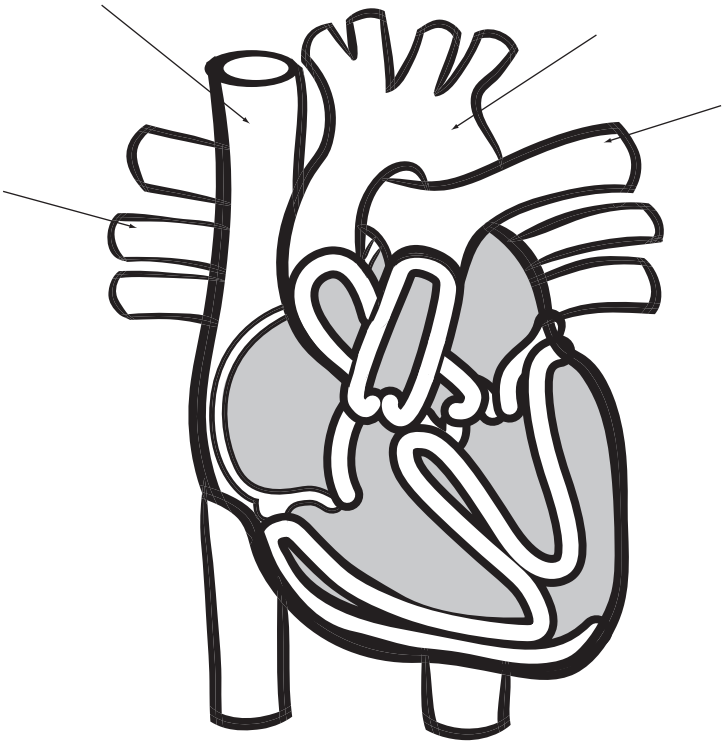
Guided Practice 1.2B 1

Diagram of the Heart

Below is a diagram of the circulatory system.

1. Label the following parts: the aorta, the vena cava, the pulmonary artery, and the pulmonary vein.

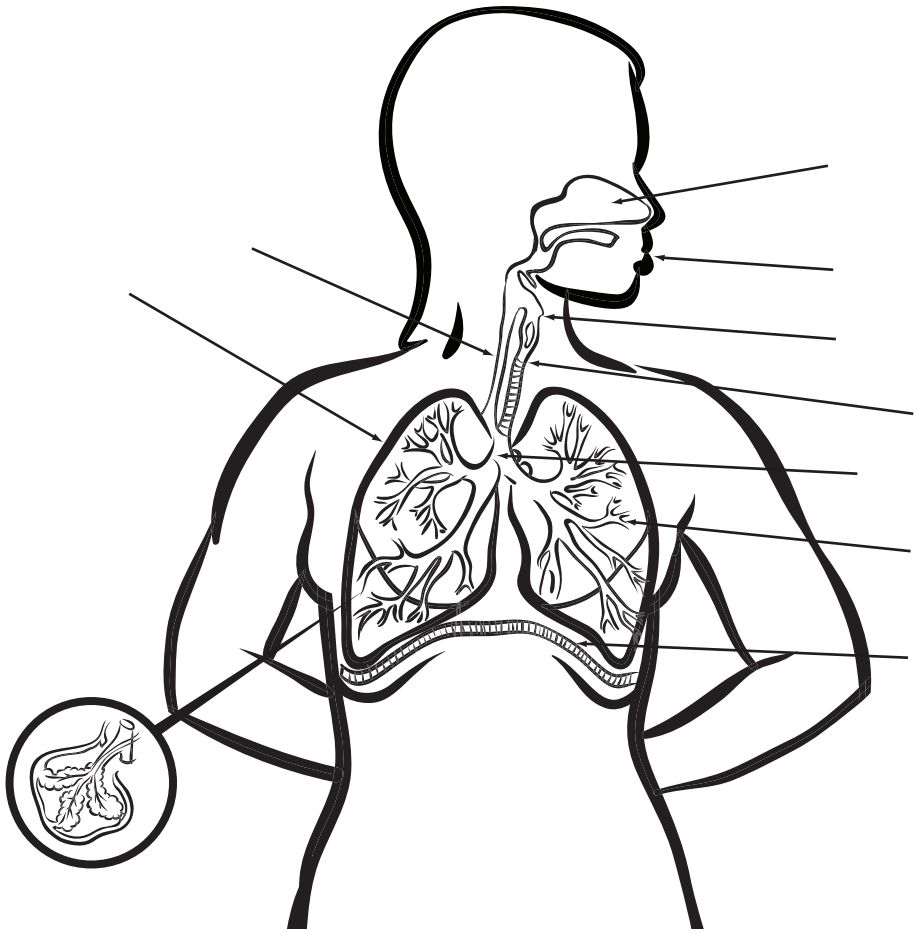
2. Draw arrows to show in which direction blood flows as it makes a complete circuit through the system.



Guided Practice 1.2E 2

A Single Breath

1. Label the following diagram of the respiratory system by writing the correct word by the line.



2. Describe the two main differences in the composition of inhaled and exhaled air.

3. List one advantage and two disadvantages of breathing through the mouth instead of the nose.

Section Assignment 1.2 Part D:
Heart Assessment or Organ Transplant

Choose either Option A or Option B to complete.

Option A: Heart Assessment

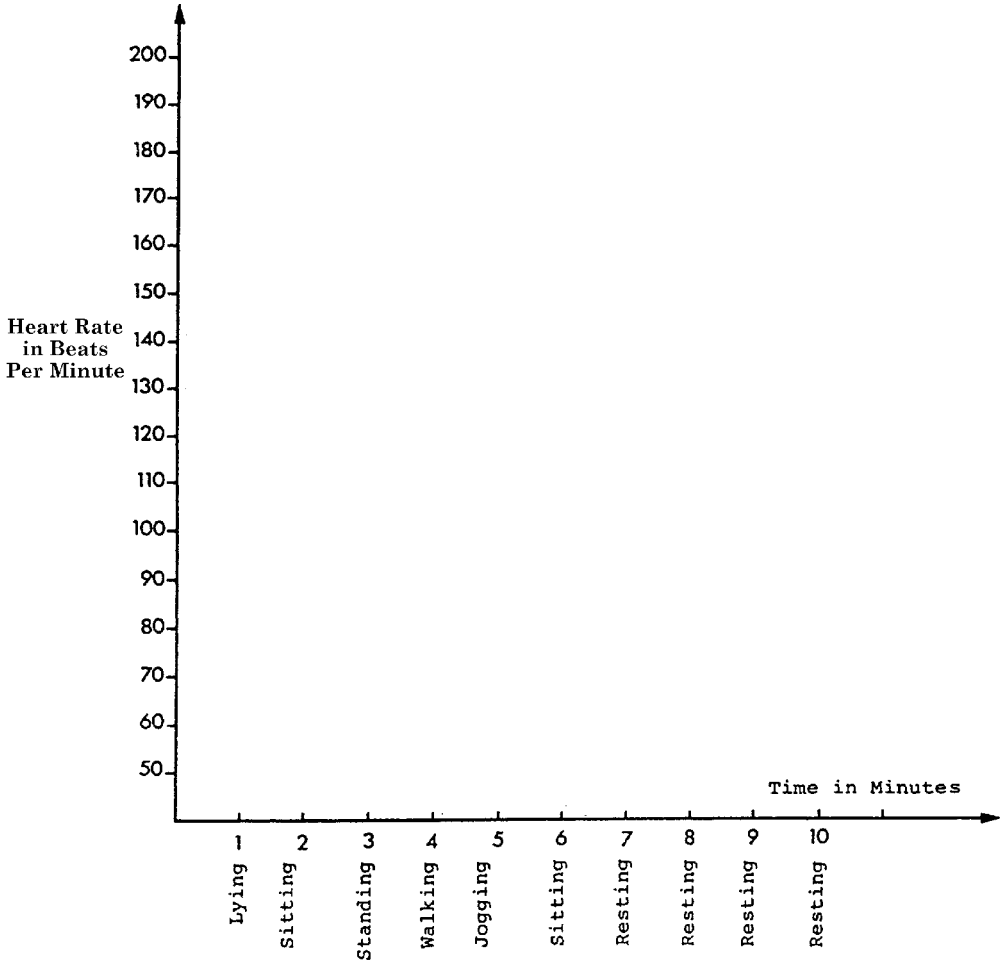
Materials:

Stop watch or clock with a second hand

1. Carry out each of the following activities and immediately take your heart rate for ten seconds. Record it in the following table.

Activity	10-second Heart Rate	Heart Rate per Minute (10-second rate X 6)
l. Lie down for one minute.		
2. Sit for one minute.		
3. Stand for one minute.		
4. Walk for one minute.		
5. Jog for one minute.		
6. Sit for one minute.		
7. Rest for one minute.		
8. Rest for one minute.		
9. Rest for one minute.		
10. Rest for one minute.		

2. Plot your results (heart rates per minute) on the graph provided. (10 marks; 0.5 marks deducted for each error or omission)



3. How long did it take your heart rate to return to the starting rate? This is your recovery time. (1 mark)

4. Write a paragraph explaining how heart rates and activity levels are related, and why recovery rates differ from person to person. (4 marks)

Section Assignment 1.2 Part E: The Digestive System

1. Write the letter of the term in Column A beside the correct definition in Column B. (9 marks)

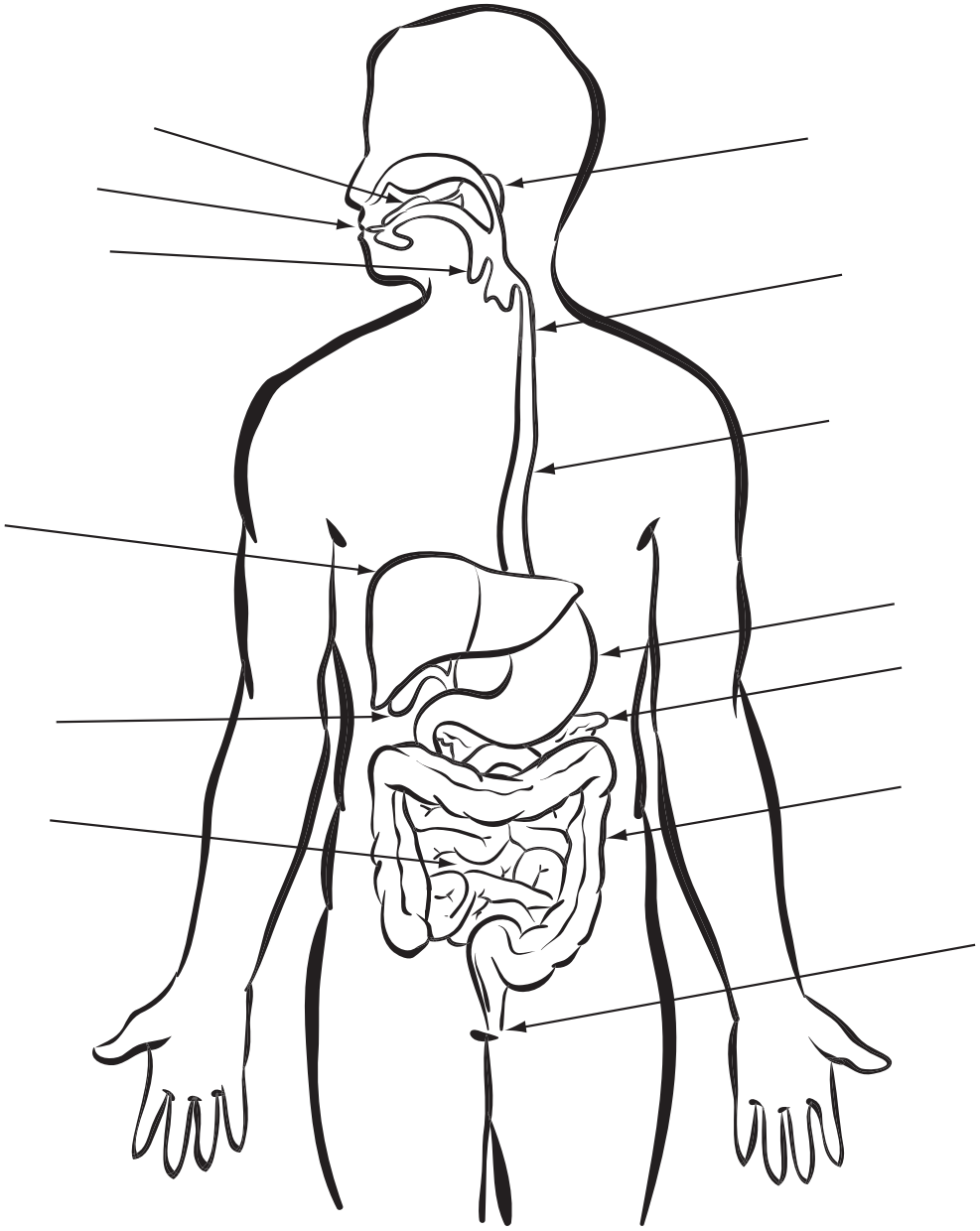
Column A	Column B	
A. teeth	1. The tube that passes from the mouth to the stomach.	
B. amylase	2. Bile is stored here.	
C. epiglottis	3. The fleshy trap that covers the trachea.	
D. esophagus	4. Used to chew food into smaller pieces.	
E. pyloric sphincter	5. The muscle through which fecal matter is eliminated.	
F. liver	6. Opens to allow food to pass from the stomach to the small intestine.	
G. gall bladder	7. The enzyme that breaks starch into glucose molecules.	
H. peristalsis	8. The rhythmic contracting and relaxing of muscles that aids in the movement of a substance from one place to the next.	
I. anus	9. The large organ that produces bile.	

2. Label the following structures on the diagram of the digestive system: (13 marks)

teeth tongue salivary glands epiglottis esophagus

stomach liver gall bladder pancreas small intestine

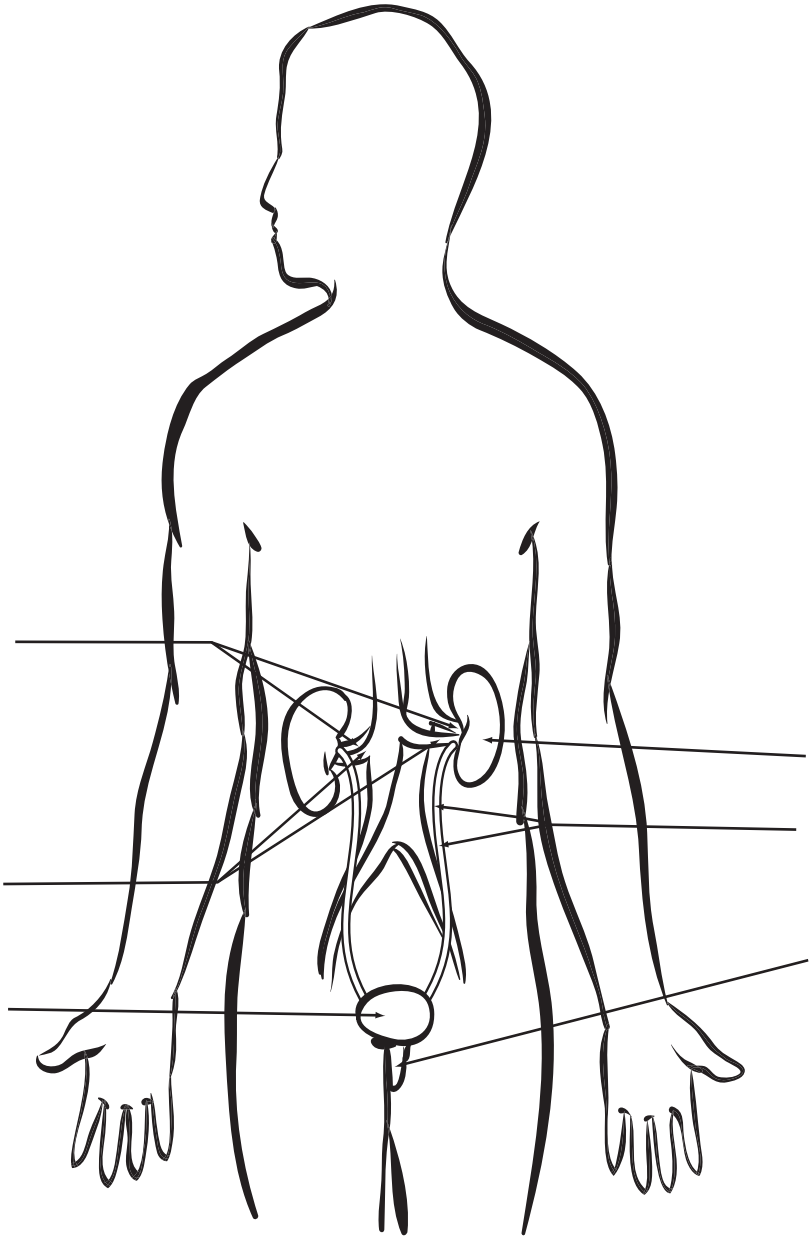
large intestine rectum pharynx



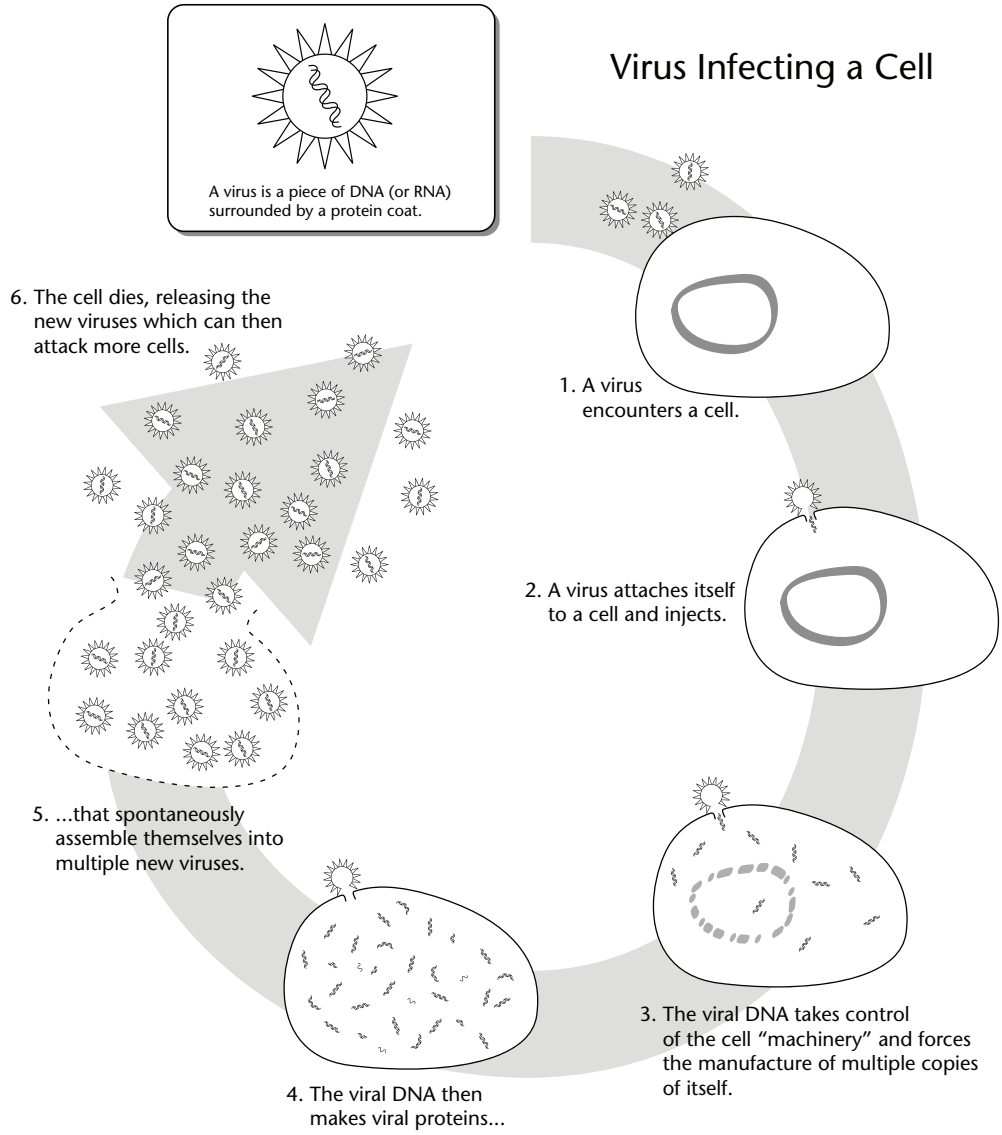
Section Assignment 1.2 Part G: Wastes

Answer the following questions.

1. Briefly explain why wastes must be removed from the body. (2 marks)
2. What are the three organs involved in excretion? (3 marks)
3. Label the following diagram of the excretory system. (6 marks)



The Invaders



Try It Out!

Hand Washing: Do You Know How?

First, go wash your hands before reading any more of this activity!

Okay, have you washed your hands? Then read on to see if you are washing them properly!

One of the simplest, cheapest, and best ways to protect yourself from **infection** is to wash your hands, but do you know how? This may seem like a silly question! Try this activity then decide for yourself what the best hand washing method is.

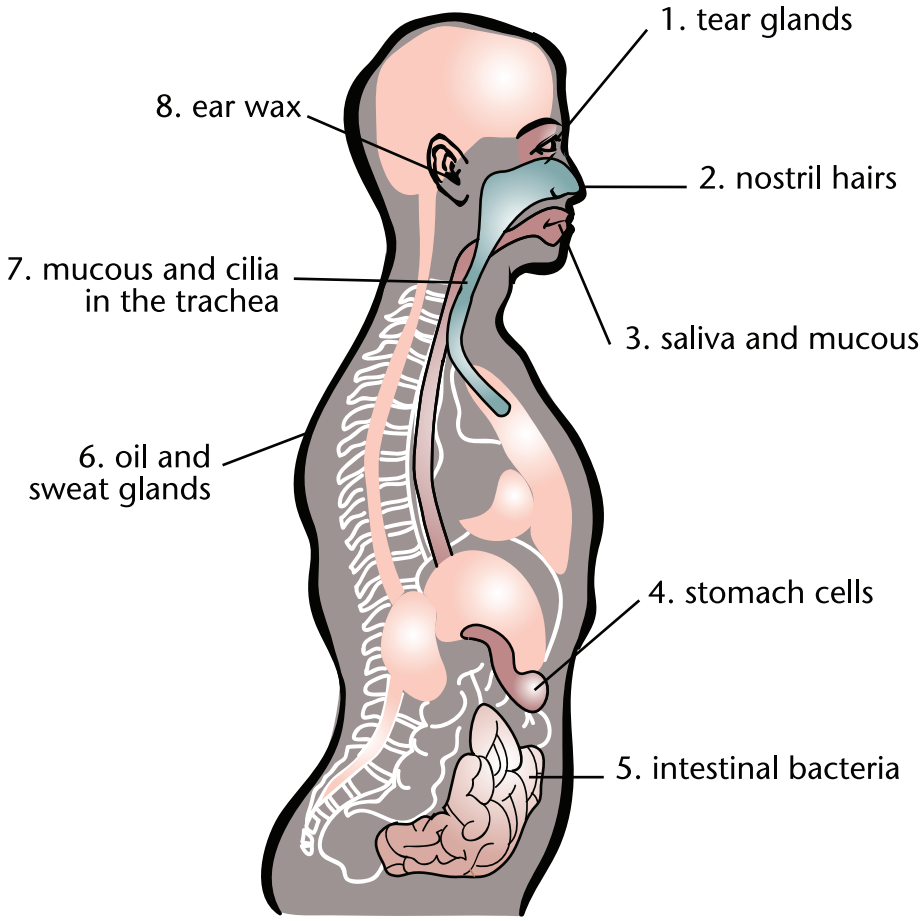
1. Mix about 15 millilitres of vegetable oil with enough cinnamon to make a goopy substance that will stick to your hands. The cinnamon represents the germs (bacteria, viruses, and fungi) that stick to your hands.

2. Wash your hands four times. After each attempt re-goop your hands.
   - cold water for 10 seconds
   - cold water and soap for 10 seconds
   - warm water and soap for 10 seconds
   - warm water and soap for 30 seconds (try singing the Alphabet song slowly while you wash; it's about 30 seconds long)

Which method worked best to remove the germs?

Guided Practice 1.3B

First Line of Defence



Match each function or action to the correct description of what each specialized cell or gland does to defend the body.

A. produce gastric acid that kills invaders

B. traps foreign materials

C. produce enzymes that kill invaders

D. filter dust and foreign invaders

E. engulf and destroy foreign invaders

F. trap and kill invaders

G. sticks to bacteria and sweeps it out

H. kill bacteria

Section Assignment 1.3 Part A: Pathogens and Antigens

Do the work on your own paper unless space is provided.

1. Knowing what you now know about how to keep your immune system healthy, comment on one thing that you can change or do starting today to keep your immune system strong. (2 marks)

2. When your doctor calls with blood test results, you are told that your white blood cell count is abnormally high. What does that tell you? (1 mark)

3. Explain why diseases may spread faster in the 21st century compared to an earlier time, such as the 18th century.

   Hint: Think about factors such as population and transportation. (2 marks)

4. What is the best method for washing hands? (2 marks)

5. Use the Internet and other resources such as your textbook or library to learn more about two infectious diseases. Complete the chart on the next page. An example has been done for you. (12 marks)

Common Name	Common Symptoms	Treatment	How Disease is Transmitted	How Disease is Prevented	Interesting Fact(s)
Measles	Rash, high fever, cough, runny nose, and red, watery eyes (lasts about a week)	There is no treatment for measles. The virus has to run its course. Bed rest and fluids are recommended to make the patient more comfortable.	Measles is caused by infection with the measles virus and spread by coughing and sneezing (highly contagious)	The measles vaccine is 95% effective at preventing measles.	The virus leaps from one person to another, since it's an airborne virus.

Section Assignment 1.3 Part B: Battling the Intruders

Column A	Column B	
a. A chemical signal is released by the invaders when entering the body	1. A physical barrier, such as a moat or tower	_____
b. Injured tissues	2 Trumpets sounding alert the soldiers	_____
c. White blood cells	3. Sending in the troops	_____
d. Pus	4. Soldiers	_____
e. Skin	5. Reinforcement/defensive strategy	_____
f. Inflammation, pain	6. The invaders attack	_____
g. Fever	7. The battle scene has lots of this!	_____
h. Pathogens or invaders released	8. Casualties	_____
i. Increased blood flow	9. Containment of the battle ground	_____

Section Assignment 1.3 Part C: Defence Systems

Write the letter of the term in Column A beside the correct definition in Column B.

Column A	Column B	
A. Immune system	1. Cells that attack and destroy bacteria and viruses	_____
B. Disease	2 Ability of the body to protect itself from invaders and disease-causing agents	_____
C. Pathogens	3. Foreign objects, living or non-living, found on or in the body	_____
D. Toxins	4. Once antibodies have been produced for a certain antigen or pathogen, the body keeps some extras to guard against a possible future attack	_____
E. Antigens	5. A white blood cell that engulfs bacteria or foreign particles and remains of dead body cells	_____
F Viruses	6. A bodily response to injury in which heat, redness, pain, swelling, and more than the usual amount of blood are present in the area affected	_____
G. Vaccine	7. White blood cells that kill virus-infected cells and tumor cells by cell-to-cell combat	_____
H. Booster	8. Digested invaders and fragments of white blood cells	_____
I. Epidemics	9. Promotes production of antibodies without causing disease	_____
J. Infection	10. Disease-causing agent, such as viruses, bacteria, and fungi	_____
K. Tertiary	11. Unicellular organisms that are neither plants nor animals that can be found in almost any moist environment	_____
L. Protists	12. Poisons	_____
M. Invaders	13. Of third rank of importance	_____
N. Phagocyte	14. A vaccine that is given years after the first immunization to boost the amount of antibodies needed to protect against a specific disease	_____
O. Pus	15. Outbreak of disease	_____
P. Natural killer cells	16. An illness in which part of the body does not function properly	_____
Q. Antibodies	17. A foreign, non-living substance that stimulates the immune system to react	____
R. Immune response	18. A non-cellular parasite consisting of an outer capsule; no organelles inside, just a small strand of genetic information	_____
S. Immunity	19. Antigens and pathogens that invade the body and interfere with the normal activities of cells	_____
T. Inflammation	20. All the cells in your body that protect the body against invaders	_____