

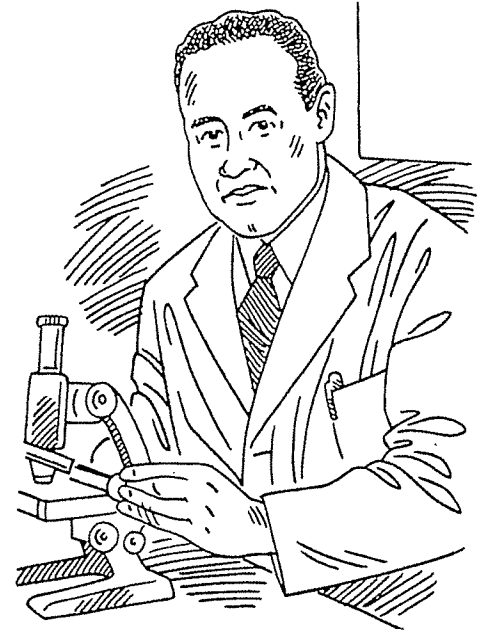
The Man Who Preserved Blood

Dr. Charles Drew was on duty one night when a little girl was brought into the emergency room. The girl had been in an accident, and she needed blood immediately. Unfortunately, at that time there weren't any blood banks. In 1933, no one knew how blood could be stored and preserved. Hospitals could arrange for donors of the correct blood type to be available if an operation was scheduled, but hospitals didn't have access to an immediate supply of blood.

Despite doing all that he could, Drew's patient died. Drew knew that the little girl could have been saved if there had been a supply of blood at hand. Drew was determined to stop this kind of tragedy from happening again. He was determined to find a way to preserve and store blood.

With tireless research, Drew found a way to preserve blood. In addition, he developed a systematic way to collect and store it. Drew was asked by the director of the American Red Cross to be the medical director of the nationwide collection of blood for the U.S. Armed Forces. Thanks to Drew's skill and knowledge, the blood-collection project was up and running in just a short time. It was an amazing success.

Then, in 1941, the government did something. It was an ignorant act. The government said that it would only accept blood from white people. Drew, a healthy African-American, was no longer an eligible donor! Drew resigned, unable to accept such an ignorant policy. Today, eligibility for donating blood has nothing to do with skin color. As it should, it has only to do with one's age, weight, and health.



Dr. Charles Drew

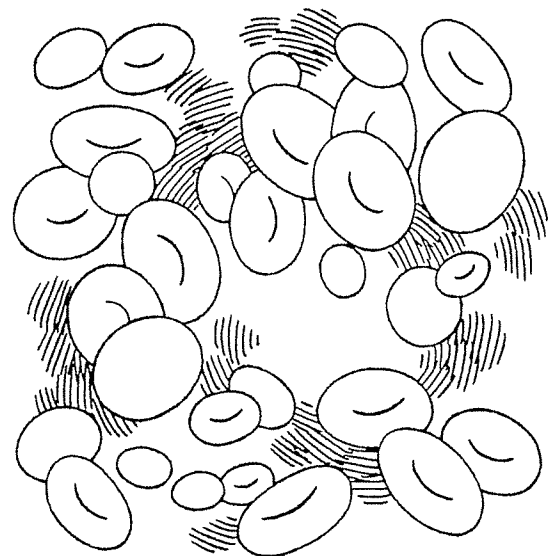
One, Two, or Three

At dinner that night, Brandon's older sister Kendra said, "I helped at least one person today. I may have helped three, but I'll never know."

"How can you not know?" asked Brandon. "You can count. Did you help one, two, or three people?"

Kendra laughed, "Oh, Brandon, even being able to count doesn't mean I'll ever know. There was a blood drive at school today, and I donated blood. Tens of thousands of pints of blood are donated each year in the U.S. and Canada, but still there are shortages. That's because very few eligible donors donate, and every two seconds someone is in need of blood.

"My whole blood may have been given to just one person, or it may have been broken down into its primary components of red blood cells, platelets, plasma, and cryoprecipitate and used to help as many as three people. I don't know exactly how blood and its components are used, but I know whole blood is needed for open-heart surgery and newborns. Red blood cells are used for trauma, anemia, and surgery. Cancer patients receiving chemotherapy need platelets, and burn patients or those needing massive transfusions need plasma. People suffering from hemophilia—that's an inherited disease where one's blood doesn't clot—need cryoprecipitate."



blood cells

Brandon thought about what Kendra said, then exclaimed, "You may have helped the next president! You may have helped the person who discovers the cure for cancer! You may have helped a famous novelist!"

Laughing, Kendra said, "In a way, donating blood is a random act of kindness. I'll never know exactly who or how I helped, but I'll always know that it made me feel good."

Show What You Know

The following are questions based on the passages "The Man Who Preserved Blood" and "One, Two, or Three." If needed, you may look back at the passages to answer the questions

- 1. Dr. Charles Drew resigned because**
 - (A) he was not an eligible blood donor.
 - (B) he could not accept an ignorant policy.
 - (C) he had found a way to collect and preserve blood.
 - (D) he needed access to an immediate supply of blood.
- 2. If Kendra's blood went to a newborn, Kendra could help a total of how many people?**
 - (A) one
 - (B) two
 - (C) three
 - (D) four
- 3. What do both stories have in common?**
 - (A) blood storage
 - (B) blood donation
 - (C) blood eligibility
 - (D) blood preservation
- 4. One reason Dr. Drew wanted to develop a way to preserve and store blood was because**
 - (A) there are very few eligible donors.
 - (B) hospitals needed to arrange more operations.
 - (C) someone is in need of blood every two seconds.
 - (D) tens of thousands of pints are donated each year.
- 5. From the stories, one can tell that Kendra**
 - (A) would one day need blood.
 - (B) had learned about Dr. Drew in school.
 - (C) knew her blood was going to the armed forces.
 - (D) was the right age to be an eligible blood donor.

Show What You Know (cont.)

6. Fill in the boxes to show the story elements found in the first four paragraphs of the story "The Man Who Preserved Blood."

<i>Setting</i>	<i>Characters</i>	<i>Problem</i>	<i>Outcome</i>

7. Fill in the chart with information from the story "One, Two, or Three."

<i>Blood Product</i>	<i>Main Uses</i>
<i>whole blood</i>	

Write three or more sentences that tell what each story is about.

8. "The Man Who Preserved Blood"

9. "One, Two, or Three"

10. Write one paragraph or more where you discuss the possibility of you, yourself, one day donating blood. In your answer, bring up what information you would want to know or questions you would want answered before agreeing. *(Use a separate piece of paper.)*

End Day 1

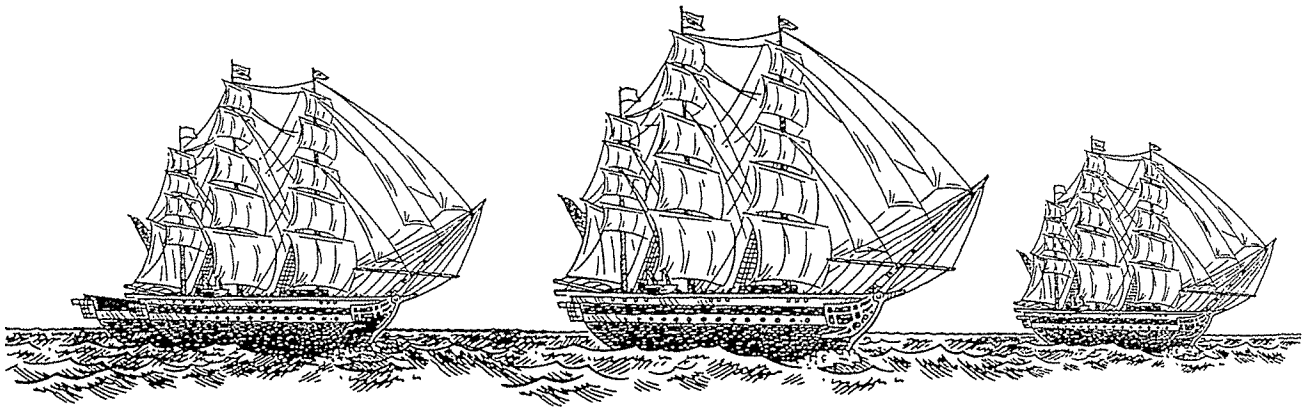
What Stopped Columbus

Christopher Columbus sailed into the Caribbean Sea for the first time in 1492. At one point, his three ships were forced to a halt. The ships had to wait for several hours. They had to allow for something to pass. What was Columbus waiting for, and what was preventing him from sailing forward? It was thousands and thousands of migrating green sea turtles.

There are more than 200 different species of turtles in the world. Only seven species are sea turtles. One species of sea turtle is called the green sea turtle. The green sea turtle's name did not come from the color of its shell. Its shell is brown or black. Its name came from the color of its body fat, which is green.

Before the arrival of Europeans, green sea turtles were especially abundant in the Caribbean Sea. Biologists estimate that at one time there were more than 60 million in the Caribbean alone. Biologists also believe that the largest turtle rookery, or nesting place, in the world was a green sea turtle rookery in the Caribbean. Columbus found this rookery in 1503. It was in the Cayman Islands. Columbus wrote that the turtles there were "very good and wholesome meate."

Unfortunately, as news of the rookery spread, more and more hunters came to plunder it. During the 17th century, thousands of turtles were slaughtered there each year. By the 18th century, the rookery had collapsed. As hunters plundered other nearby rookeries, the population of green sea turtles plummeted. One biologist wrote that "the greatest assemblage of turtles the world has ever known has been methodically wiped out."



The Only Reptile with a Shell

Isabella's little sister Rebecca said, "I know a tremendous amount about sea turtles. Turtles are the only reptiles with a shell, but unlike land turtles, sea turtles can't pull their heads and legs inside their shells."

"I'm impressed you're so well informed," said Isabella.

"I'll tell you what's impressive," said Rebecca. "A green sea turtle's heart can slow down to one beat every nine minutes. You have to be impressed because the average human heart would beat at least 550 times in nine minutes."

"I'm enormously impressed," laughed Isabella. "What else do you know?"

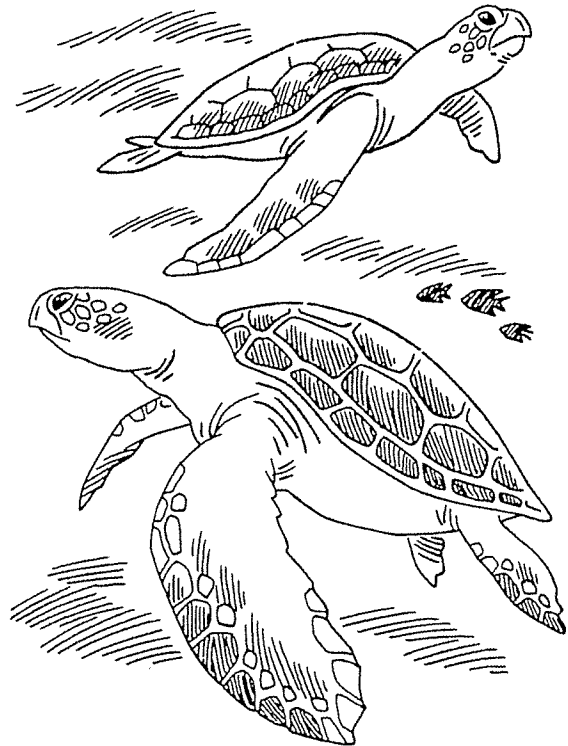
"I know why sea turtles cry," Rebecca answered. "Sea turtles cry because they are endangered. Their population numbers have plummeted because too many are getting killed."

"Rebecca," Isabella said, "You're right that sea turtles are endangered, and that may make *you* want to cry, but it isn't why turtles shed tears. Sea turtles get an excess of salt from the ocean water they drink. Too much salt will kill them, so they need to excrete it. They excrete the extra salt by shedding big, salty tears."

Rebecca laughed and said, "I stand corrected—but I wish I could correct other people."

"What do you mean?" asked Isabella.

"I wish I could correct other people's behavior," explained Rebecca. "I wish I could get people to stop consuming turtle products and start protecting beaches where turtles nest. I wish I could get fishermen to use turtle-safe nets and stop people from littering because many turtles die when they mistake plastic bags and old helium balloons floating in the water for jellyfish and eat them. Those items really clog up a turtle's digestive system."



Show What You Know

The following are questions based on the passages "What Stopped Columbus" and "The Only Reptile with a Shell." If needed, you may look back at the passages to answer the questions.

1. Not counting the green sea turtle, how many species of sea turtles are there?
 - (A) 4
 - (B) 5
 - (C) 6
 - (D) 7
2. When waste matter is excreted,
 - (A) it is consumed.
 - (B) it is in excess.
 - (C) it is protected.
 - (D) it is gotten rid of.
3. What do both stories have in common?
 - (A) information about European explorers
 - (B) information about protecting turtles
 - (C) information about reptiles with shells
 - (D) information about the world's largest turtle rookery
4. From the stories, one can tell that
 - (A) Isabella knew how the digestive system of the sea turtle worked.
 - (B) Columbus knew that the color of the sea turtle's body fat was green.
 - (C) a biologist tried to protect the largest turtle rookery in the world.
 - (D) Rebecca knew what had prevented Columbus's ships from sailing forward.
5. Most likely, all turtle rookeries are located
 - (A) on islands.
 - (B) on beaches.
 - (C) in the ocean.
 - (D) in the Caribbean Sea.

Show What You Know (cont.)

6. Write a fact related to each number mentioned in "What Stopped Columbus."

3 _____	1492 _____
7 _____	1503 _____
200 _____	60,000,000 _____

7. On the longer line next to each quote from "The Only Reptile with a Shell," write down who said it. On the shorter line write down the order in which it was said. Put "1" by what happened first. Put "5" by what happened last.

_____ "I wish I could get fishermen to use turtle-safe nets."	_____
_____ "...sea turtles can't pull their heads and legs inside their shells."	_____
_____ "Sea turtles get an excess of salt from the ocean water they drink."	_____
_____ "I'm impressed you're so well informed."	_____
_____ "...the average human heart would beat at least 550 times in nine minutes."	_____

Write three or more sentences that tell what each story is about.

8. "What Stopped Columbus"

9. "The Only Reptile with a Shell"

10. Some people want laws to protect endangered animals. Other people feel these laws go against a person's personal rights. Do you think there should be laws protecting endangered animals like sea turtles, and do you think the laws will be enough to stop the animals from being endangered? Write one or two paragraphs explaining your answer. (Use a separate piece of paper.)

End Day 2

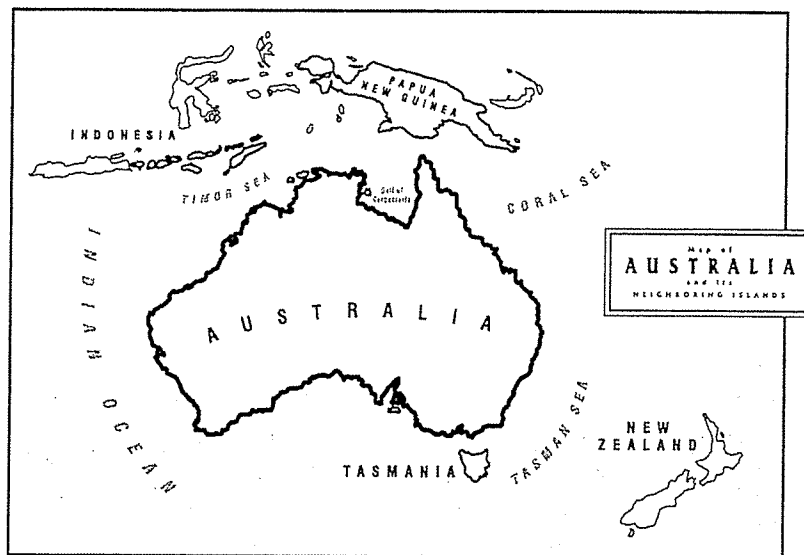
Where Voting Is the Law

Australia has a very high election turnout, with about 95 percent of all eligible voters participating. All persons who are Australian citizens and at least 18 years old are eligible. This is a much higher turnout than in other countries. Why is the turnout so high? In Australia, one is required to vote. It is the law. One must pay a penalty if one chooses not to.

Australians do not use a winner-take-all system in federal elections. They use a preferential system. In this system, a voter does not vote for one candidate. Instead, the voter ranks the candidates in order of preference.

If a candidate wins at least 50 percent of the vote, the candidate wins the election. If no one candidate wins at least 50 percent, the votes of the candidate with the lowest number of votes are redistributed. The votes are given to the voter's second-choice candidate. If there is still not a candidate with at least 50 percent of the vote, the next-lowest-ranking candidate's votes are redistributed. This process goes on until one candidate has at least 50 percent of the vote.

This system is set up so that the person who wins is the most preferred candidate. The person who wins is the least disliked candidate. In a winner-take-all system, the *most* disliked candidate may win! The person may have won because he or she received the majority of the votes (30 percent, for example). Yet the person may have won only because the rest of the votes (70 percent) were split between three candidates with similar views.



The Scam

"I'll show you the brochures for the Australian tour I'm thinking of booking," Heather's Aunt Gwendolyn said. "I'll see kangaroos, koalas, and penguins."

"Penguins?" asked Heather suspiciously. "Aunt Gwendolyn, are you sure this tour isn't a scam? How are you paying for this?"

"I have to pay in cash," answered Heather's aunt, "but by paying cash, I receive a 50% discount and a special seat on the bus. And yes, there are penguins found on the southern coast of the continent and Tasmania. I read about them in the brochures."

As Heather went to check penguin facts in the encyclopedia, Heather's aunt continued to talk. "This is a picture of the luxury bus I'll be traveling in. Come here, and I'll show you my seat."

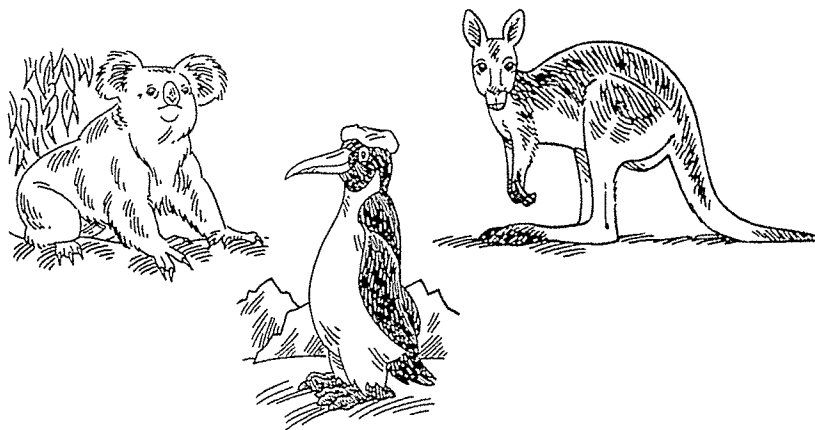
Putting the encyclopedia down, Heather studied the picture her aunt handed her. She saw the bus driving down the right-hand side of the road. Behind the cars going in the opposite direction, Heather spotted two blurry kangaroos.

Pointing, Heather's aunt said, "This seat on the left immediately behind the driver is guaranteed mine if I pay cash now."

Heather studied the picture of the luxury bus and then said, "The encyclopedia says that there are penguins in Australia, but Aunt Gwendolyn, I know it's a scam."

"How can you say that?" demanded Heather's aunt.

Heather replied, "In Australia, people drive on the left-hand side, and therefore the driver's wheel is on the right hand side. If the pictures were taken in Australia, the bus driver would be behind the wheel on the vehicle's right side and driving on the left-hand side of the road!"



Show What You Know

The following are questions based on the passages "Where Voting Is the Law" and "The Scam." If needed, you may look back at the passages to answer the questions.

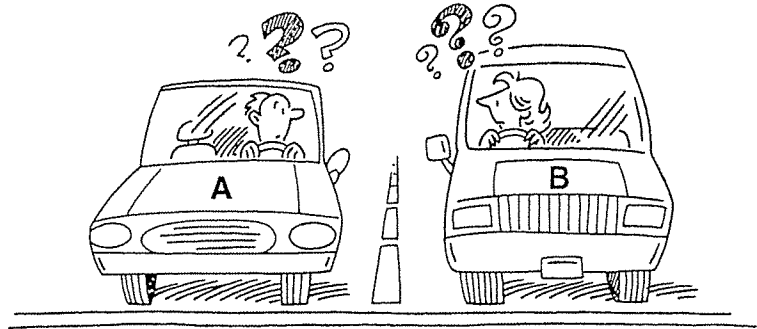
- 1. If a candidate who received less than 50 percent of the votes wins a federal election in Australia, it is because**
 - (A) voting is a winner-take-all system.
 - (B) the candidate was the most disliked.
 - (C) eligible voters had to vote or pay a stiff penalty.
 - (D) votes of lower-ranking candidates were redistributed.
- 2. What Australian animal is not named in the story "The Scam"?**
 - (A) koalas
 - (B) penguins
 - (C) kangaroos
 - (D) kookaburras
- 3. What do both stories have in common?**
 - (A) They both take place in Australia.
 - (B) They both are about what is preferred in Australia.
 - (C) They both are about how some things are done in Australia.
 - (D) They both are about receiving 50% discounts in Australia.
- 4. From the stories, one can tell that in Australia,**
 - (A) all eligible voters choose not to pay penalties.
 - (B) most eligible voters choose not to pay penalties.
 - (C) all eligible drivers drive on the right-hand side of the road.
 - (D) most eligible drivers drive on the right-hand side of the road.
- 5. Which statement is most likely true?**
 - (A) All countries have the same system of voting.
 - (B) Penguins do not live on the same continent as kangaroos.
 - (C) There are different systems of voting in different countries.
 - (D) Penguins can be found on the southern coast of all continents.

Show What You Know (cont.)

6. Look at the percentage of the vote each candidate received the first time the votes were counted. Answer the questions below by filling in the blank to complete each sentence.

Candidate	A	B	C	D
% of Vote	30	21	25	24

- a. The votes of Candidate _____ will be redistributed.
- b. These redistributed votes will go to the candidate the voter ranked as _____ choice on the ballot.
7. Imagine that these two cars are driving along a road in Australia. Circle the one that is going the wrong way!



Write three or more sentences that tell what each story is about.

8. "Where Voting Is the Law"

9. "The Scam"

10. Think of something mentioned in the stories about Australian voting or driving that is done differently in your country or another country. Describe the difference. Then, discuss the advantages or disadvantages of doing it a certain way. (Use a separate piece of paper. Your answer should be at least one paragraph long.)

End Day 3

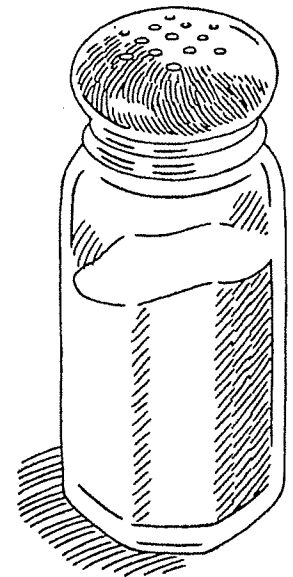
The Blue Men

On September 25, 1944, 11 men were brought by ambulance into the emergency room of a hospital in New York City. The men didn't know each other, and they were all different ages. Yet all the men exhibited the same symptoms: the nose, lips, ears, and fingers of each man were sky blue.

Emergency room doctors called the city health department. The health department sent over two epidemiologists. An epidemiologist is a disease doctor who tracks down the cause of a disease. He or she looks for its root. Looking for common traits or some type of intersection between the men, the epidemiologists started asking questions.

The epidemiologists discovered that all the men were homeless, and that the men had all eaten breakfast at the same cafeteria. The breakfast consisted of oatmeal, rolls, and coffee. At the cafeteria, the doctors went through the cook's ingredients. When they tested some cans, they found that a can of sodium nitrite was next to an identical-looking can of sodium nitrate. The two substances look and taste the same (like table salt), but they are different. Sodium nitrite is a mild poison. It is toxic.

The blue men exhibited the signs of sodium-nitrite poisoning, but how were they poisoned? Over 100 people had eaten the same batch of food. Only the 11 men had gotten ill. Then one of the epidemiologists remembered something. He remembered that some people salt their oatmeal. Back at the cafeteria, the doctor found that the blue men had all eaten at the same table. They had all salted their oatmeal. The saltshaker on that table had been mistakenly filled with sodium nitrite.



My Dream Career

When I grow up, I would like to be an epidemiologist. I feel this is a dream career because it combines two things. First, one has to be a medical doctor, knowledgeable about disease; and second, one has to be a detective. One has to track disease outbreak origins and figure out how to prevent their spread.

I first began to think about my future in the field of epidemiology when we studied the Black Death. The Black Death, also known as the bubonic plague, terrorized people in the Middle Ages. Spreading across Europe and parts of Asia, the disease ravaged the land. Entire villages lay empty, fields remained bare, and society came to a standstill.



At the time, no one knew how the Black Death was spread. All people knew was that before death, egg-sized buboes, or swellings, grew on the necks, armpits, and groins of those who were struck down. The skin of the afflicted became covered in dark splotches, and their skin erupted in pus-oozing boils.

There are still cases of bubonic plague today, but they don't hold the terror that they did before because we know the cause of the disease and how it's spread. The disease is caused by a particular bacterium. It's spread to humans by fleas from infected rats. We can prevent the disease by keeping our surroundings clean and sanitary—and if afflicted, we can kill the bacterium with antibiotics.

Being an epidemiologist, I'd never be bored. Each case would be a puzzle waiting to be solved. My work would be in or out of a lab. It might entail interviewing people, searching for parasites, or inspecting restaurants.

Show What You Know

The following are questions based on the passages "The Blue Men" and "My Dream Career."
If needed, you may look back at the passages to answer the questions.

1. **The key intersection between the blue men was that they**
 - (A) all had oatmeal for breakfast.
 - (B) all used the same saltshaker.
 - (C) all ate at the same cafeteria.
 - (D) all exhibited the same symptoms.

2. **Most likely, the bubonic plague spread during the Middle Ages because**
 - (A) people's homes were infested with fleas.
 - (B) people's skins erupted in pus-oozing boils.
 - (C) people lived under more sanitary conditions.
 - (D) people were afflicted with egg-sized buboes.

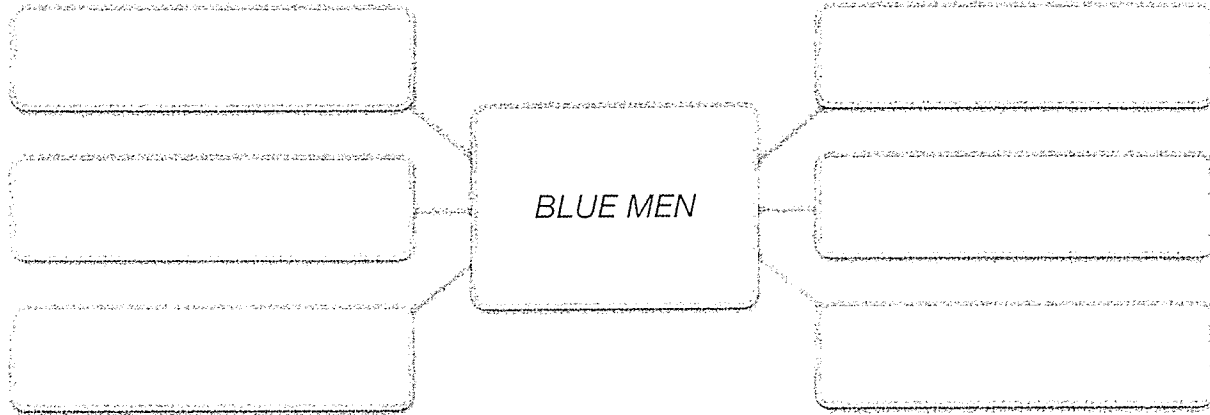
3. **What do both stories have in common?**
 - (A) They both are about detecting a poison.
 - (B) They both are about one doctor's career.
 - (C) They both are about origins of an outbreak.
 - (D) They both are about the ravages of a plague.

4. **What did the epidemiologists working on the case of the blue men most likely have to do in the lab?**
 - (A) collect salt shakers
 - (B) interview emergency-room doctors
 - (C) study the symptoms of the patients
 - (D) identify the contents of cans from the cafeteria

5. **An epidemiologist would most likely be called if doctors did not know why**
 - (A) many cities became infested with rats.
 - (B) many restaurant kitchens were unsanitary.
 - (C) many children exhibited the same symptoms.
 - (D) many patients living in a village couldn't work.

Show What You Know (cont.)

6. Fill in the boxes with information that is common to all the patients from the story "The Blue Men."



7. Fill in the chart with information about the bubonic plague.

<i>Symptoms</i>	<i>Cause</i>	<i>How Spread</i>	<i>Prevention</i>	<i>Treatment</i>

Write three or more sentences that tell what each story is about.

8. "The Blue Men"

9. "My Dream Career"

10. Write one or two paragraphs on a possible dream career for you. Include in your essay a description of what the job entails, what sparked your interest in this field, and why it interests you. *(Use a separate piece of paper.)*

End Day 4