

Think, Pair, Share



- A Look at the picture. What do the lines mean? Think about it.
- **B** Talk with your partner.



Oh, what makes you say that?

C Share with the class.

we think that ...

- D Think and discuss. What do the police do when there is a crime? How do they try to solve it?
- **E** Read, think, and write. Read the paragraph. Then describe Ann.

Ann Higgins is Mrs. Higgins' daughter. They look alike because they are almost the same height. Their eyes and faces are the same shape, too. However, their eyes and hair are different colors. Mrs. Higgins has blond hair and brown eyes.





Now read **Solving Crime with Science**

Figure It Out

SOLVING CRIME WITH SCIENCE







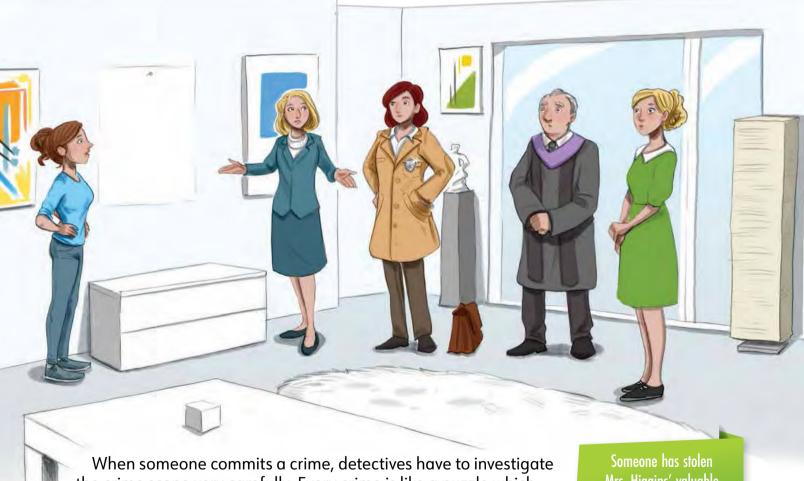
Ann Higgins



Professor Roberts



Sarah Carmen



the crime scene very carefully. Every crime is like a puzzle which the police have to solve by putting together the pieces. They use scientific methods called forensic science to help them.

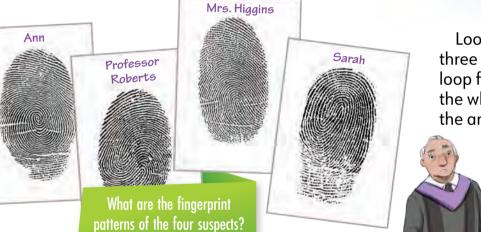
Forensics uses the idea that criminals usually leave clues at a crime scene, or take clues from the crime scene away with them. The police use many different methods to find these clues.

Mrs. Higgins' valuable painting. Can you follow the clues and solve the crime?

Collecting Fingerprints

Every time we touch something, our fingers leave behind small amounts of oil, sweat, or skin in our fingerprints. No two people leave exactly the same fingerprints; everyone's fingerprints are unique. There are often fingerprints at a crime scene. Detectives have used fingerprints to solve crimes for more than a hundred years.

Studying fingerprints is a good way to identify who the criminal is and solve crimes. Fingerprints can show if a suspect has committed more than one crime. They can also show if more than one person committed a crime.



Loop, whorl, and arch are the three main fingerprint shapes. The loop fingerprint looks like a bean, the whorl looks like a circle, and the arch looks like a wave.

Tracks

Like fingerprints, footprints (the marks feet or shoes make) can also be valuable clues. Detectives study footprints to find out what type of shoe left tracks at a crime scene. Perhaps the suspect's shoes match the tracks. They can do the same with tire tracks. This information can help the police find the criminals faster.

Words in Context

Find these words in the reading. What do you think they mean?

puzzle identify forensics unique amounts genetic tire

Digital Tracks

We leave tracks in the digital world as well as in the real world. Detectives can follow an electronic trail to find evidence. When a crime happens, they can sometimes find information on electronic devices such as phones, tablets, or computers. These devices might give clues from search histories, emails, text messages, maps, or GPS information.

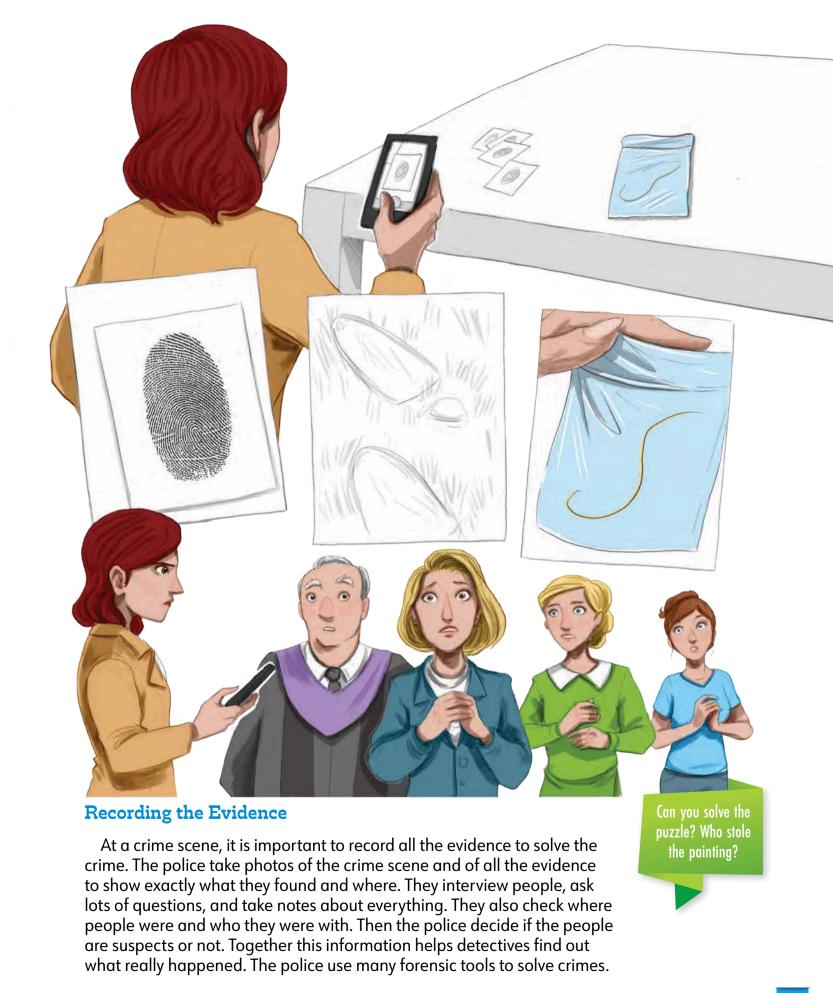


DNA Evidence



DNA is in the cells of all living things. It carries our genetic information, the building blocks of our bodies. Each person's DNA is a mix of genetic information from both parents, and it decides their characteristics, such as eye color and height.

Criminals often leave behind some of their DNA at a crime scene. It might come from their sweat, hair, or skin cells. If the criminal had a drink of water, there might be DNA left on the glass. Because everyone's DNA is unique, it is possible to use it to identify a specific person.



Explore the Reading

- A Read and choose the answers.
 - 1 What is forensics?
 - a. a sport

- **b.** a police officer
- c. a science
- 2 What do our fingers leave behind when we touch something?
 - a. a photo

- **b.** a pattern
- c. electronic evidence
- 3 What are the three main types of fingerprints?
 - a. curly, wavy, and straight
- b. arch, loop, and whorl
- c. round, striped, and spotted
- 4 What are some kinds of tracks studied by forensic scientists?
 - a. footprints, tire tracks, and electronic tracks
- **b.** puzzles, blocks, and phones
- c. tools, photos, and fingerprints
- 5 What can be found in our hair, sweat, or skin cells?
 - a. DNA

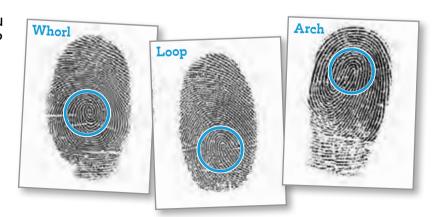
b. suspects

c. contact details

- 6 How do police record a crime scene?
 - a. take photos
- b. interview people
- c. both a and b
- B Think and discuss. Why do you think detectives use so many different tools?
- C Complete the table with your fingerprints. Label whorls, loops, and arches.

Finger	Finger	Finger	Thumb
	Finger	Finger Finger	Finger Finger Finger

D Think and share. What do you notice about the fingerprints?



A Read the article and answer the questions.

Suspects Arrested After Break-in

Thieves broke into a house last Friday night. There was no one in the house because the family was away on vacation. A neighbor, who came to feed the cat each morning, found the kitchen window broken.

"The place was a mess," she said. She called the police. Detectives arrived five minutes later. They worked quickly and found many clues: fingerprints on a jewelry box in one of the bedrooms, footprints in the yard, and tire tracks on the concrete.

"We have arrested two suspects," a detective said. "Their fingerprints match the ones we found at the scene."

- 1 Why didn't the family hear the thieves last Friday night?
- 2 How did the detectives know the house was broken into?
- 3 What evidence did the detectives use to make the arrest?

When we **draw conclusions**, we use clues, evidence, and our inferences from the reading to decide what happened, how it happened, and why it happened—even when the author didn't specifically tell us. We can also use prior knowledge of the subject to help us decide.

Read. Then draw a conclusion and write.

Mr. Wilson is sitting in Sherlock Holmes' living room. Mr. Wilson tells the famous detective that his assistant helped him apply for a job. He worked there for eight weeks. Then, one day he came in and the office was closed.

What do you think Mr. Wilson's problem is?



C Think and discuss. What famous crimes do you know about?

Now read **The Red-Headed League**





RED-HEADED LEAGUE



What are the clues?

back is when the story breaks its normal order and goes back into the past. It tells the reader about something important that happened

Sherlock Holmes and Dr. Watson are listening to a very interesting case.

You see, my little shop in the city hasn't been very busy. I've been very worried about money for a long time.

Two months ago, my new assistant showed me a newspaper advertisement.



He told me to apply and try to get the job.

Your hair's very red, mr. Wilson, and you need the money.

An excellent idea, Smith.

THEN WENT





Excellent, Mr. Wilson! You're perfect for the job. Come to this office every day and write all the words in the

My assistant took me to the interview. Every red-headed man in London

was there, but my assistant pushed me to the front of the line.

It seemed a strange job, but I needed the money.









Explore the Reading

A Read and complete. What did Sherlock Holmes learn from these clues?

Clue	Conclusion
1 The assistant showed Mr. Wilson the newspaper advertisement.	
2 The shop was near the bank.	
3 The sidewalk sounded empty in front of the bank.	
4 The assistant's knees were dirty.	
5 The Red-Headed League closed down.	

Think and write. How did Holmes use these skills to solve the crime? Give examples from the story.

1	listening	CONCLUIN		
		core luiv		

looking carefully

thinking

problem solving

Think and discuss. Do you have the skills to make a good detective? Why or why not?



Literary Term Closed Compound A **closed compound** is a word formed when two different words are joined together. They do not have a space between them. They make a new word with a new meaning.

Read and write.

Now find more compound words in the reading.

How do we use clues to solve problems?

A Read and check. Then discuss. Who might use these techniques?

Technique	Modern Forensic Scientist	Sherlock Holmes
Checking an email trail on a lap	otop	
Studying a footprint in the dirt		
Testing the DNA found on a gla	SS	
Studying a person's clothes		
Problem solving		
Looking at the GPS on a cell ph	one	
Investigating a fingerprint on a	window	

B Read the puzzle. Do a Think, Pair, Share.

Puzzle: Kiera wants to find Jade's house. Jade gives Kiera some clues. Use the clues to find the right house.

Clues:

1 The number of Jade's house is between 30 and 50.

2 Jade's house is an odd number.

3 If you add the two digits of the number together they equal less than 10.

4 The number can be divided by nine.

C Write your own puzzle. Trade and solve.

My Reading Journal

Questions I still have after the unit are ...

What did you find surprising about solving crime?

Go back to page 41. What new thoughts do you have to share?