

***“Ned said, ‘Nancy Drew is the best girl detective in the whole world!’”***

***“Don’t you believe him,” Nancy said quickly.***

***“I have solved some mysteries, I’ll admit, and I enjoy it, but I’m sure there are many other girls who could do the same.”***



*—from Nancy’s Mysterious Letter by Carolyn Keene*



# Detective

**S**tories, movies, and television are full of amazing detectives solving mysteries and bringing criminals to justice. Their jobs are important, exciting, and take serious skills—skills you can try in this badge. Grab your magnifying glass and dive into the science of detecting!

## *Steps*

1. Practice the power of observation
2. Communicate in code
3. Fingerprint for fun
4. Try out detective science
5. Follow the clues to solve a real mystery!

## *Purpose*

When I’ve earned this badge, I’ll know how to follow clues and discover facts like a real detective.



### More to Explore

## Crack a Book's Code

Read a mystery book with your Junior friends. Try to solve the mystery before the characters do.

Once you know whodunnit, go back and find the codes to the mystery—the hidden clues and red herrings (fake clues meant to mislead you!) that kept you guessing.

### Detective Test:

What are the differences between these two rooms?



Every step has three choices. Do ONE choice to complete each step. Inspired? Do more!

STEP

# 1 Practice the power of observation

One of a detective's most important skills is the ability to watch people and situations very closely. Work on your observation skills with one of these activities.

### CHOICES - DO ONE:

- Ask an adult helper to find and watch a one-minute online video.** Have your helper come up with three questions about the details, such as, "What was the jogger wearing?" Then, watch the video and try to answer the questions.

**FOR MORE FUN:** Research memory to learn why recalling details can be difficult.

**OR**

- Shake up a room.** Have someone take five items out of a room and see if you can identify what was taken. Then ask someone to add items to the room and try to spot them.

**FOR MORE FUN:** Try this in a room that is crowded or really full of stuff.

**OR**

- Take notice.** Every day for one week, make note of three things you never noticed before as you go home from school. Is there a different car in someone's driveway? Was a tree cut down in a yard? Was a new sign put up at a store?

# STEP 2 Communicate in code

Sometimes detectives, spies, or special agents can't talk to one another because of distance or the chance of being found out. They have to use other ways to get messages to each other. Try cracking one of these cool codes.

## CHOICES - DO ONE:

**Learn some classic codes.** First, try Morse code with one of your friends. Send them at least a five-word sentence. Then send the same message in Pigpen code, transposition, or another code. In what situations are each of these codes used?

**OR** 

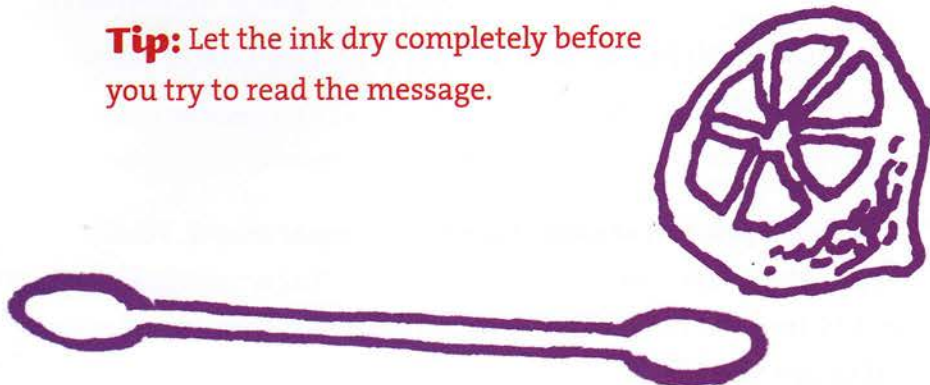
**Create your own code with your friends.** Write the letters in the alphabet, and beneath each, draw a picture or symbol. Make a dictionary so you can remember the code.

**FOR MORE FUN:** Find a page written in French, Spanish, Italian, or German. See how many words you recognize because you know "codes" from the English language.

**OR** 

**Make invisible inks.** Write a message using a cotton swab dipped in lemon juice. Dry the paper in the sun or with a hair dryer to see the message. Then try again using baking soda and water—hold it under a light to see the words. Trade ideas with friends about why heat causes the inks to reveal your message.

**Tip:** Let the ink dry completely before you try to read the message.



## Morse Code

Morse code is a way to send messages with a system of dots and dashes. Each letter in the alphabet is given its own set of these symbols. The dots and dashes can be written or made with short and long flashes of light or sound.

A	• —
B	— •••
C	— • — •
D	— •••
E	•
F	•• — •
G	— — •
H	••••
I	••
J	• — — —
K	— • —
L	• — ••
M	— —
N	— •
O	— — —
P	• — — •
Q	— — • —
R	• — •
S	•••
T	—
U	•• —
V	••• —
W	• — —
X	— •• —
Y	— • — —
Z	— — ••



## STEP 3 Fingerprint for fun

Fingerprinting is used to find criminals and identify missing or injured persons. Take prints using an ink pad, or you can use a pencil to color on a piece of paper. Rub your finger on the pencil marks, then stick a piece of transparent tape on your finger. Remove the tape and see your print!

No matter your method, keep these pointers in mind:

- Roll your finger from one side to the other
- Press the finger hard to get a good print
- Take care not to smudge the print
- Now you're ready to get started!

### CHOICES – DO ONE:

**Study three sets of prints.** Take yours and those of two friends. The FBI compares seven different patterns in fingerprint identification: the loop, arch, whorl, tented arch, double loop, central pocket loop, and accident. Try to identify the patterns in your prints. How are the three sets the same and how are they different?

**FOR MORE FUN:** Ink prints onto a balloon, and blow it up to look at them really closely.

**OR** 

**Make your own identity card.** Ink your fingerprint onto a card and label the patterns in it. List details about yourself that others might not know. Then play detective with your Junior friends—choose a card and use the clues to guess the identity!

**FOR MORE FUN:** Make it a detective party! Play Clue or other mystery games.

**OR** 

**Get fingerprinted at your local police department.** While you're there, ask about the importance of fingerprinting, what prints are used for, and how many prints the department takes in a week.

### More to Explore

#### Dust for Fingerprints

Work with your family to find an area that it's okay to get messy. Lightly dust powder over the area, then carefully place a piece of tape over the powder to "lift" the print. Now see if you can find who the print belongs to.

STEP

# 4 Try out detective science

Detectives use cutting-edge science to figure out what happened, whodunnit, and sometimes even to find a motive (the reason for an action). Try one of these.

**CHOICES - DO ONE:**

- Look at three kinds of "evidence."** Use a microscope or magnifying glass to compare fabrics or soils. You might look at cotton, wool, and linen, or sand, dirt, and gravel. When detectives identify fabric at a crime scene, they can figure out what someone was wearing. Soil might be matched to the clothing of someone who was there.



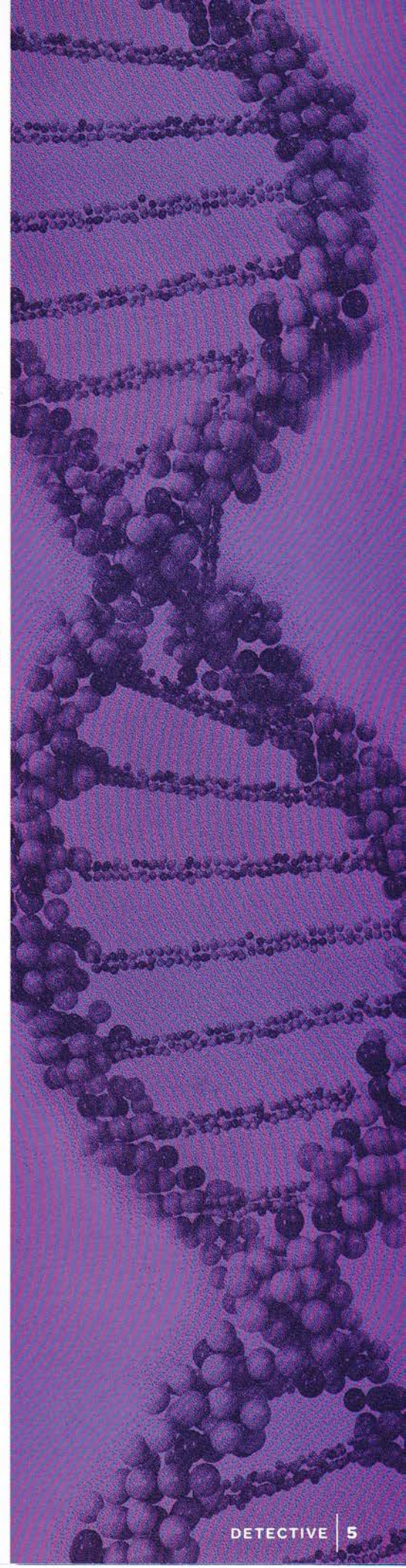
**OR** 

- Find out about DNA.** Work with a science teacher or other expert to find out what DNA is and what it's made of. What kinds of DNA evidence do forensic scientists use to help identify people? (Forensic scientists are scientists who use their skills to help solve crimes.)

**FOR MORE FUN:** Find a recent case in the newspaper or online where DNA played a part in convicting or freeing someone.

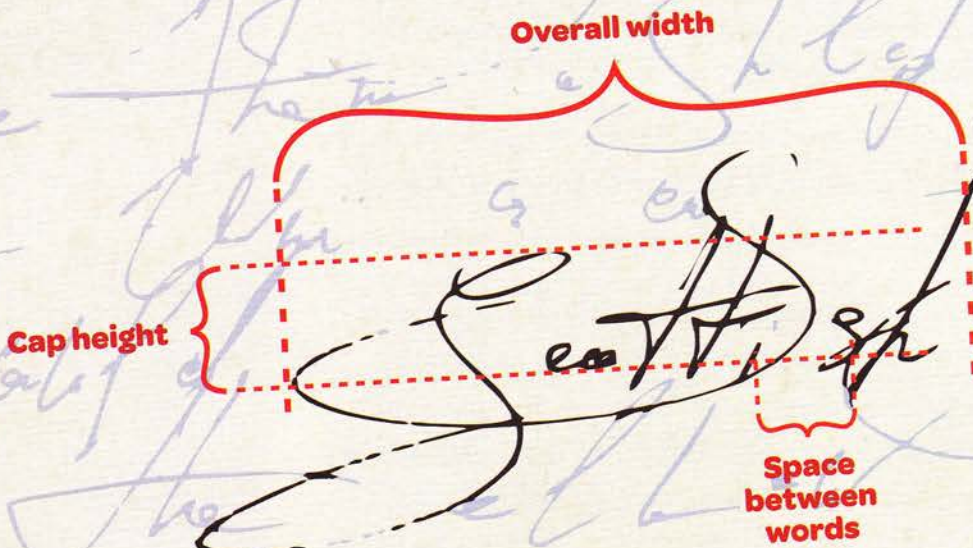
**OR** 

- Detect handwriting details.** Find an article or story about detecting or detectives. Read it, then copy one paragraph in handwriting. Ask a friend to do the same. Compare your writing to see how it's alike and different. Finding details in handwriting can help detectives solve forgeries.



# Graphology

Each of us has a unique style of handwriting, and some people also believe that personality traits can be revealed in handwriting. This field is called "graphology." Graphologists think the slant of your handwriting, the space you leave between letters, and how hard you press with the pen can show if you're happy, selfish, or secretive. The idea has been around since the 1600s, and some graphologists have offered their reports in court as evidence of how a possible criminal was thinking or feeling. Most scientists don't believe graphology is accurate—but it's fun.







### ***Add the Badge to Your Journey***

For step 5, use your detective skills to figure out how a building or room can be more energy efficient. Check for clues like drafts, wasted electricity, and water use. Add your observations to your energy audit and share your ideas about how to save energy. That's solving a real mystery!

### **Now that I've earned this badge, I can give service by:**

- Helping Brownies make up fun codes
- Using my powers of observation to help my family and friends remember where things are
- Creating an easy scavenger hunt "mystery" for Daisy detectives



***I'm inspired to:***