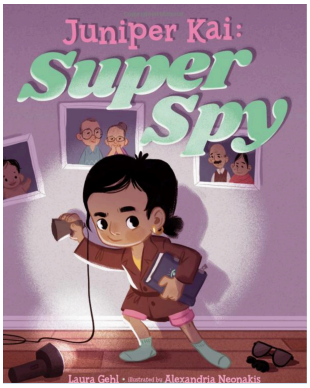


# JUNIPER KAI: SUPER SPY Teacher's Guide

**First, read Juniper Kai: Super Spy aloud to your class. Then have fun with one or more of the activities below.**

## *Writing/discussion prompts*

1. If you could invent any spy gadget, what would it be?
Write about your invention, or draw a picture.

2. In Juniper Kai: Super Spy, Juniper is sometimes lonely without any siblings and is very excited when she finds out she will have a younger brother soon. Are you an only child? What do you like about being an only child? What do you dislike? Or if you have siblings, are they older or younger? What do you like about having a sibling? What do you dislike?

3. Juniper's spy hero is superspy James Bond, who has a code name of 007. If you were a spy, what would you want your code name to be? Do you think Juniper should have a code name? What should her code name be? Make a list of code names for your family members or classmates.

## *Write a message in code!*

Write a message in code, then trade with a classmate and decode one another's messages.

Use one of these simple codes, or make up your own:

1) Substitute a number for each letter of the alphabet. A=1, B=2, etc. all the way to Z = 26.

2) Use a book cipher. You will give 3 numbers to tell the other person each word of your message. For example, 23, 7, 4 means go to page 23, look at the 7th line from

the top, then look at the 4th word in the line. Of course, you will have to give the other person the book you used in order for him or her to decode your message.

## *Science extension: Write a message in invisible ink!*

Writing a coded message to a co-agent is great…but what if the message looks like a blank piece of paper? Even better!

You will need:
Lemons cut in half
Q-tip
Paper
Bowl
Lamp or other light bulb, or hairdryer (adult supervision required)

Squeeze lemon juice into a bowl. You can add a little bit of water too (about half a teaspoon for each half lemon).

Dip Q-tips in the lemon juice to write the message. Wait for the paper to dry, and the message will be invisible!

For the co-agent to reveal the message, hold the paper close to a light bulb or hairdryer (adult supervision required). As the lemon juice is heated, the message will show up. Why? Because lemon juice oxidizes when heated, turning brown. In more detail: when you heat the paper, chemical bonds break down, freeing carbon to come into contact with the air. This causes the carbon to turn a darker color. Oxidation is also what causes apple slices to turn brown after they sit around for a while (making many kids refuse to eat them!). In the case of apples, no heat is needed for the oxidation reaction to take place.

Something else to try: You can write a message in invisible ink with lemon juice, let it dry, then write a DIFFERENT message in pencil on the same piece of paper. This will be sure to confuse anyone who intercepts the paper!

Fun history fact: George Washington's army used invisible ink (made of ferrous sulfate and water) to send secret messages during the American Revolution!

## *Research extension: Animal disguises*

Spies use disguises. So do animals! Research an animal that uses camouflage. Possibilities include stick insects, octopuses, arctic foxes, and many others!