

Detective: Invisible Ink

Adventure Description:

In this adventure, students will think like a detective and send a secret message using invisible ink!

Activity

Step 1: Background On Detectives (5-10 minutes)

- Ask students what they know about detectives. Answers may include that they are connected with police officers, they investigate serious crimes, they look for clues, etc.
- Explain to students that while detectives are investigating crimes, they have access to a lot of information that is top secret. This includes information about evidence that has already been found, the identity of witnesses, and when secret surveillance is going to happen.
- Sometimes detectives need to pass information secretly without other people being able to read it.
- Detectives could choose to use invisible ink to hide their messages.
- When using invisible ink, the detective would write his or her message on a piece of paper, but the paper would still look blank! The detective could pass the paper to the person who needs to get the message. If anyone saw the paper, they wouldn't know the message! Once in a safe place, the person who got the message would be able to reveal it, by making the ink visible again!

Step 2: Activity Set-up (10-15 minutes)

- Explain to students that today they will develop their own invisible ink and use it to send a secret message to a classmate.
- Give students [Handout: Creating and Using Invisible Ink](#) and read through the steps as a class.
- Give students the following materials:
 - 1 tablespoon of baking soda
 - 1 tablespoon of water
 - Light bulb, clothing iron, or other heat source
 - Paintbrush or cotton swab
 - Measuring spoon
 - Dixie Cup(s)
 - Purple grape juice (optional)

Please contact Allison Bischoff, Director of Teacher Support, at allison@rozzylearningcompany.com or 314-272-2560 with questions.

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Step 3: Creating and Using Invisible Ink (15 + minutes)

- Have students complete steps 1-3 on the handout.
- Students may want to practice several messages. If students run out of ink, they can make more, using the instructions in step 1. If students run out of space for their messages, they can use blank, white computer paper.
- While students are working, ask them the following questions:
 - What is the hardest part about working with invisible ink?
 - Which method is the easiest for revealing the message? Which is the hardest?
- Note: If students are writing a lot of messages, they may run out of ink and need more baking soda and water

Step 4: Sending Secret Messages (15 + minutes)

- Explain to students that each group will now test their skills by sending a secret message to another group.
- Have students complete step 4 on the handout.

Step 5: Discussion (10 + minutes)

- Have students share their struggles and success with writing and revealing invisible messages.
- Have a concluding discussion on the following:
 - Which method was the easiest to reveal the messages? the hardest?
 - Do you think anyone would have been able to read your messages if they didn't know how to reveal your ink?
 - Why is it important for detectives to use things like invisible ink to help keep information secret?

Materials List

Provided online:

- Handout: Creating and Using Invisible Ink

Not provided (each student or group needs):

- 1 tablespoon of baking soda (at least)
- 1 tablespoon of water (at least)
- Light bulb, clothing iron, or other heat source
- Paintbrush or cotton swab
- Measuring spoon
- Dixie Cup(s)
- Purple grape juice (optional)
- White paper

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