



# Investigating ink

## ★ What do I do?



1. Read the ACTIVITY CARD to familiarise yourself with the activity.
2. Check the Resources list including how to prepare the ransom note - see overleaf.
3. Set the scene by discussing the news story and examining the ransom note with the children. Show the children the suspects' pens.
4. Give the children time to talk about ways of identifying which ink was used to write the ransom note. Give them a black pen or a blob of black ink and some white paper towel to explore the effect of water on ink.
5. Then let them explore the pens and the note. You will need to cut the ransom note into strips so that groups can each try out their tests. Cut more strips than you need to have some spares. You will probably need plenty of them!

6. Some children may need help to examine the different patterns and colours produced by each pen.
7. Give children time to talk about their evidence and to identify the culprit.
8. Children can now create a wanted poster to help detectives track down the criminal they have identified. Encourage them to include all the evidence they have collected.
9. There are extra challenges on the ACTIVITY CARD which can be used if there is spare time or if children want to carry on investigating and earn a bonus sticker.



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## ★ Handy hints

### Resources

- ★ Absorbent paper e.g. blotting paper, white filter paper, white coffee filters
- ★ Four pens (not biros) with black water- soluble ink inside, labelled with the suspects' names – it's better to have a set per group
- ★ Additional pen or black ink for the initial exploration – you must check that the colour separates
- ★ Ransom note (written using one of the pens prior to the activity). Don't worry if it spreads a bit.
- ★ Beakers or pots
- ★ Scissors
- ★ Extra non-permanent marker pens in various colours
- ★ Plain paper for wanted posters

### Things to look out for

- ★ Test the pens/ink prior to the activity by putting marks on pieces of blotting paper and dropping water on them.
- ★ Some black inks will separate better than others. You need the criminal's pen to produce a different pattern from the others.
- ★ Your ransom note must be written on absorbent paper e.g. blotting paper. Write a large note so there is enough for everyone. Your note could read: Lady Feline. If you want Colin returned safely, put £100,000 in a brown paper bag and leave it under the big oak tree by the town hall at 5.15 pm prompt tomorrow.

### Safety

- ★ Use plastic beakers for this activity.
- ★ Any spills should be cleaned up quickly to avoid accidents.
- ★ Avoid using permanent marker pens.

### Background information

- ★ Ink is made up of a mixture of different colours. Different inks will be made up of different colours even if they look the same. With water-soluble inks you can separate the colours from one another using water (chromatography).
- ★ The colour from some other items such as food colouring, jelly beans and other sweets can be separated in the same way.
- ★ Chromatography is used to separate and identify all sorts of substances in police work. Drugs can be identified in urine and blood samples, often with the aid of chromatography.

