

Discoveries Magazine

Can science catch bombers?

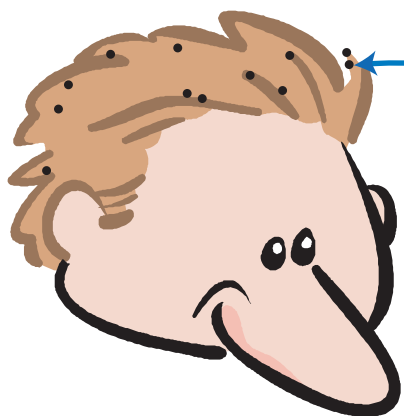
Scientists may have discovered a new way to catch bombers: **testing their hair for explosives**. When people make bombs, tiny amounts of explosives bind to their hair. The explosives stay in the hair even after a few washes. Scientists use **chromatography** to identify the explosives. Testing hair is better than testing clothes – it is easy for bombers to destroy their clothes but not so easy to shave off all their body hair.



The magazine is running an article on how chromatography can discover if a suspect has handled explosives. The editor wants you to complete a step-by-step diagram in words and pictures.

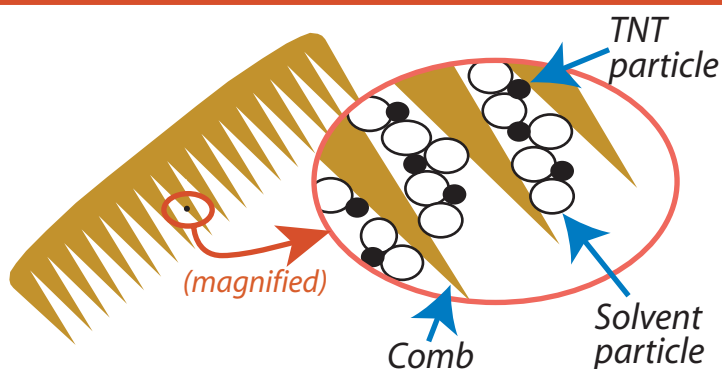
- 1 Make sure each card has a diagram – you will have to draw some!
- 2 Put the cards in the correct order.

Cards to catch a bomber



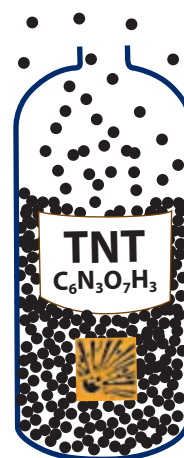
Some particles of TNT bind to the bomber's hair.

The scientist puts a drop of the solution from the comb onto a piece of chromatography paper. She puts the paper in a beaker that has a little solvent in the bottom.



Some TNT particles dissolve in the solvent on the comb.

The bomber opens the bottle of the explosive, TNT. Particles of TNT evaporate into the air and diffuse.



The solvent moves up the paper. It carries the TNT with it.

Some TNT stays in the hair even after washing and brushing.

A scientist dips a comb in solvent. She uses it to comb the bomber's hair.

Later the scientist examines the chromatogram. She compares it with a chromatogram that definitely has TNT on it. If the chromatograms are the same then she knows that the bomber had been handling TNT.

