

## Hanging by a thread

A few threads of material were found caught on the broken window through which the suspect may have entered. Can you help to identify the type of fabric ?

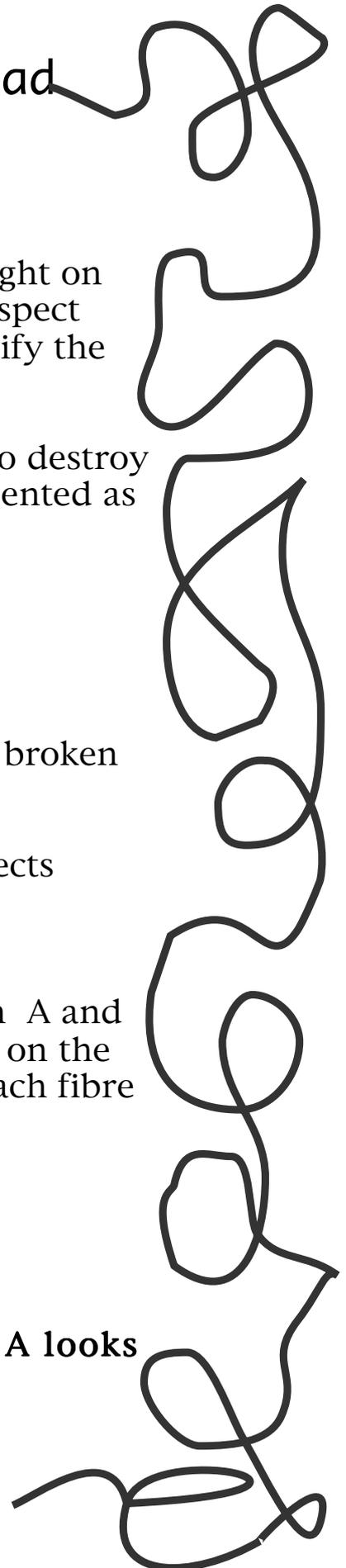
Remember that you must be careful not to destroy all the sample because it needs to be presented as evidence in Court.

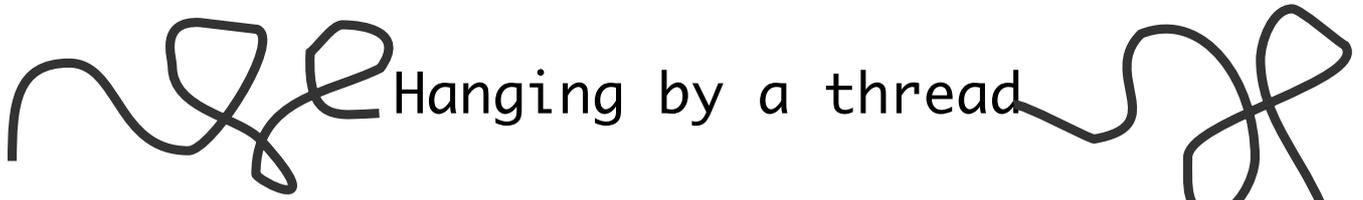
You are provided with :

1. **SPECIMEN A** : Threads found on the broken window
2. Various fabric samples from the suspects clothing.

Look through the microscope at specimen A and the other fabric samples. Fill in the table on the next page by drawing a picture of what each fibre looks like.

**Which fabric do you think specimen A looks most like?**



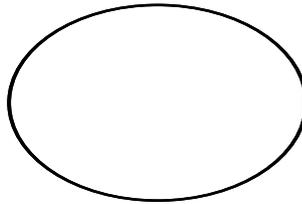


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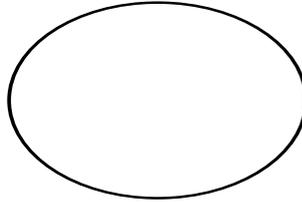
FABRIC

What do the fibres look like through the microscope ?

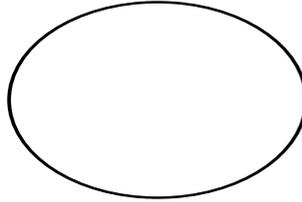
WOOL



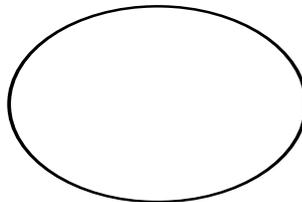
NYLON



COTTON

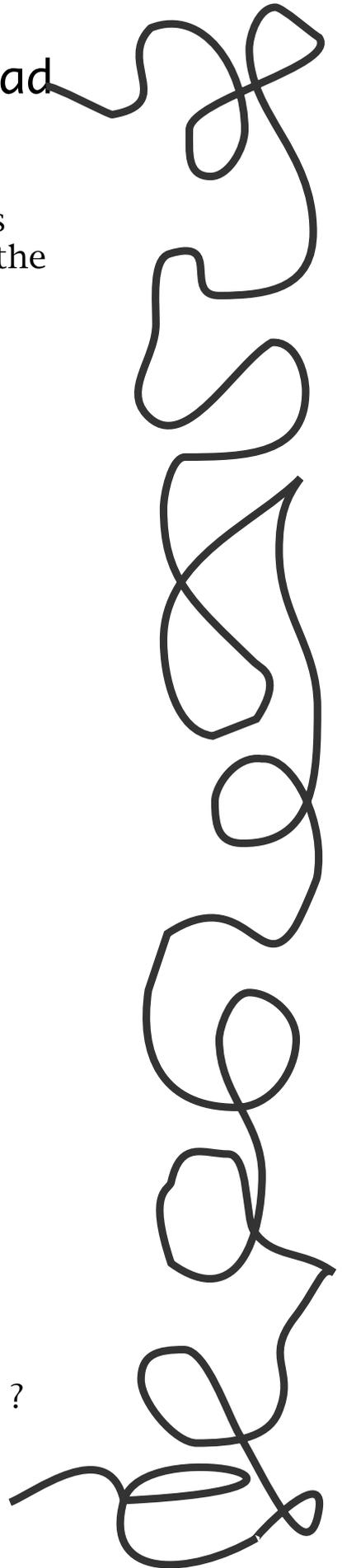


SPECIMEN A



Which fabric does SPECIMEN A **look** like ?

\_\_\_\_\_



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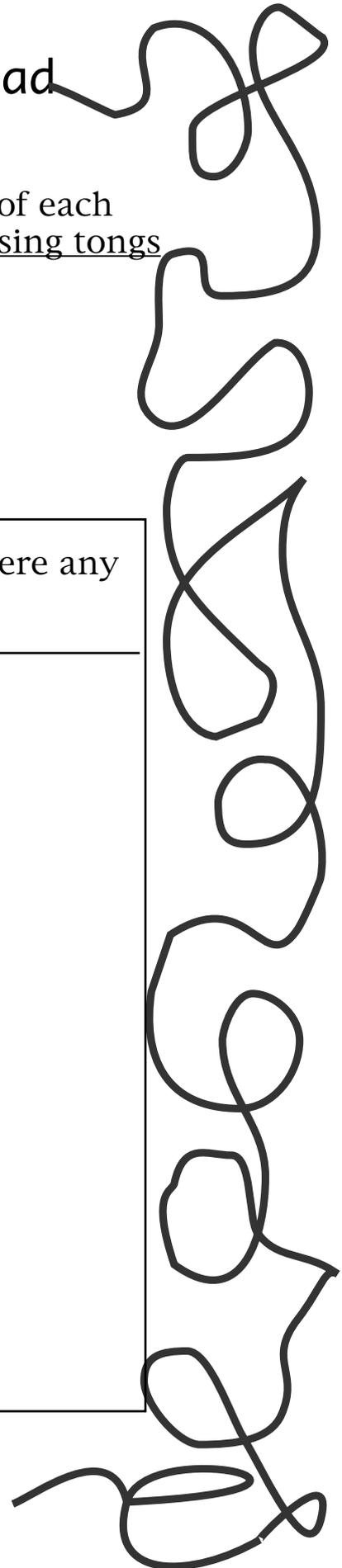
To confirm your findings take a small piece of each fabric and burn it in a small bunsen flame using tongs to hold the sample with.

MAKE SURE THAT YOU DO THIS IN A FUME CUPBOARD

Fill in your observations in the table below :

FABRIC	What colour is the flame ?	Is there any smoke?	Is there any ash?
WOOL			
NYLON			
COTTON			
SPECIMEN A			

Write the name of the fabric found at the scene of the crime on the Court Report for this clue



# Hanging by a thread

This clue involves an initial visual identification of fabrics through the microscope. This is followed by a burning test to confirm the identity of the sample.

The clue can be varied according to availability, but we suggest that **cotton** be assigned as Specimen A - the sample from the suspect's shirt.

## Requirements

Various fabric samples

Microscopes - these need to be set up beforehand

Bunsen burners and access to a fume cupboard

Crucible tongs

Safety goggles

## Hints and other areas for discussion

Choosing samples of fabric of a uniform colour should add to the “mystery” element.

This could lead to discussion with the children as to what the clothes that they are wearing are made. In particular, this highlights the difference between natural fabrics and man-made fibres.

The experiment may take slightly longer than 15 minutes and it may be better to split the group in two so that one half do the flame tests and the other half do the visual inspection.

*NB.* It is easier to see the results of the flame tests if you use reasonably sized samples.

