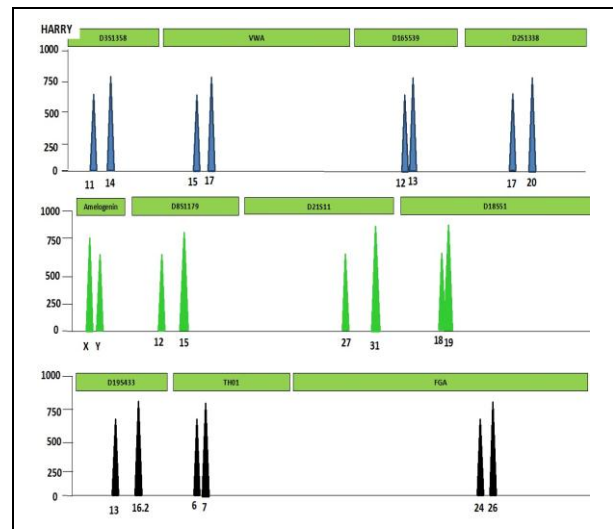


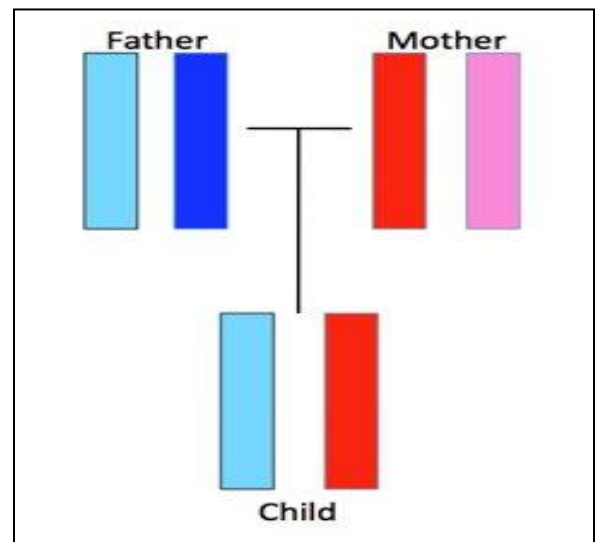
Is the DNA Annabelle and Harry found at the crime scene from Mr Baker's son?

In order to establish whether this is true scientists would compare the 'DNA profiles' from Mr Baker and his son. A 'DNA profile' is a pattern generated in the laboratory from someone's DNA. Like this one:

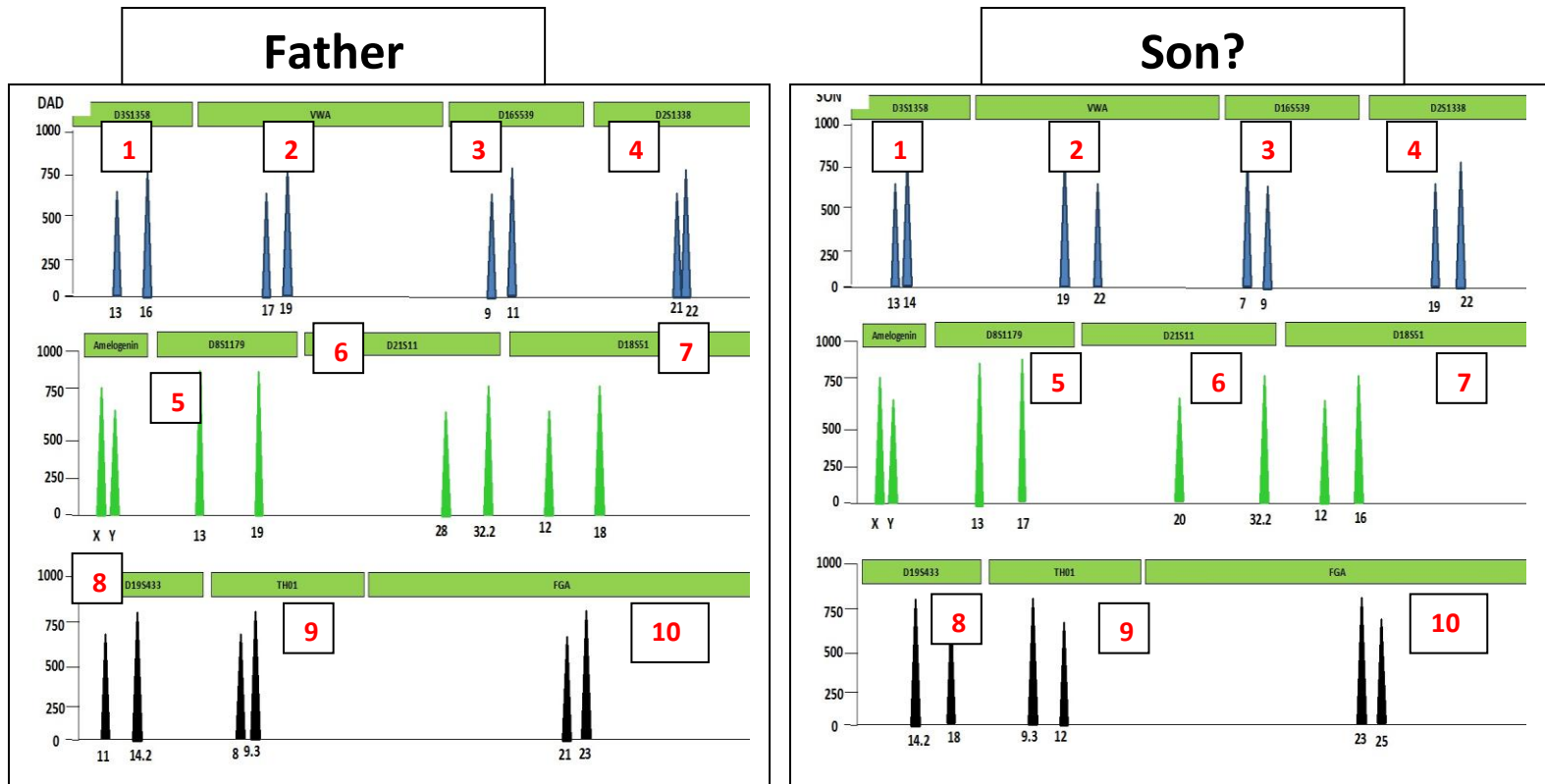
DNA Profile



We all have two copies of our DNA. We inherit half of our DNA from our mum and half of our DNA from our Dad. So if two people are related as father and son half the DNA from the son should match with the father. Have a look at the example on the next page to see what this means.



Let's have a look at the DNA profiles from two men who we are trying to identify whether they are related as father and son. Scientists call the coloured peaks with a number on them at positions 1 – 10 'markers'.



We are trying to find out whether these men really are related as father and son. For the father and the son we have filled the numbers for each coloured peak at each marker (1-10) into the table below. When we compare the numbers we can see for the father and son one of the numbers is the same, they 'match' at every marker (1-10).

MARKER	FATHER?	SON?	NUMBER SHARED BY FATHER & SON?	MATCH? YES OR NO
<b>1</b>	13, 16	13, 14	13	YES
<b>2</b>	17, 19	19, 22	19	YES
<b>3</b>	9, 11	7, 9	9	YES
<b>4</b>	21, 22	19, 22	22	YES
<b>5</b>	13, 19	13, 17	13	YES
<b>6</b>	28, 32.2	20, 32.2	32.2	YES
<b>7</b>	12, 18	12, 16	12	YES
<b>8</b>	11, 14.2	14.2, 18	14.2	YES
<b>9</b>	8, 9.3	9.3, 12	9.3	YES
<b>10</b>	21, 23	23, 25	23	YES

We can see the son has inherited 'half' his DNA from his father. To be related as 'father and son' the people being tested must match at **every** marker. If the markers don't match then the people being tested are not related. These results show there is very good evidence that the man in this case is the father and this is his son.

Now it is your turn to be a 'DNA Detective' - just like Annabelle and Harry! When they looked at the DNA profiles from the crime scene they saw that two people had been there. When they compared the DNA profiles they saw there were lots of similarities and thought the DNA could be from Mr Baker and his son.

Print out the next two pages. Your job is to compare the two different DNA profiles found at the crime scene and see if you think they are from a father and son.

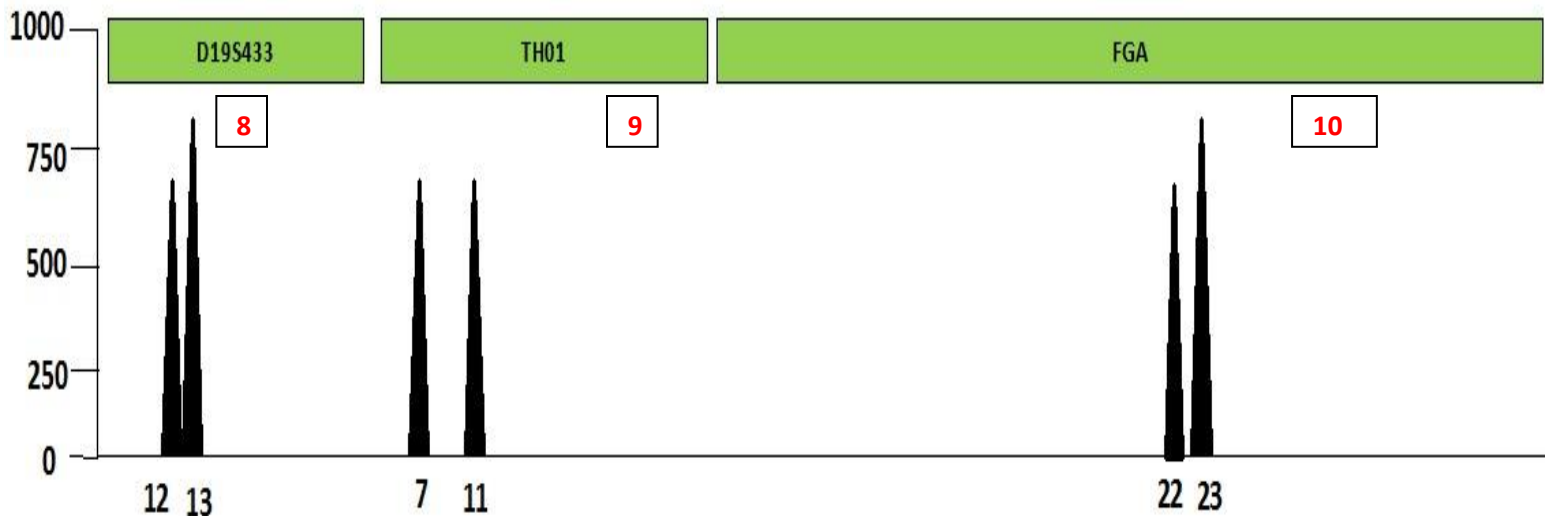
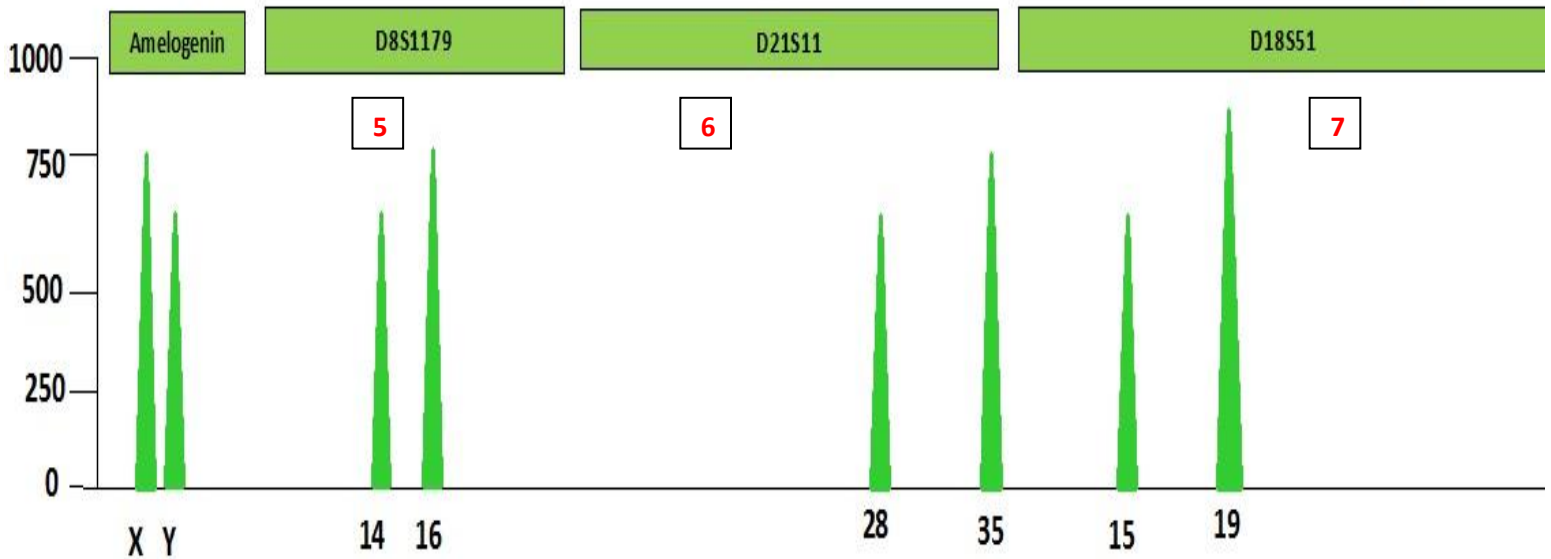
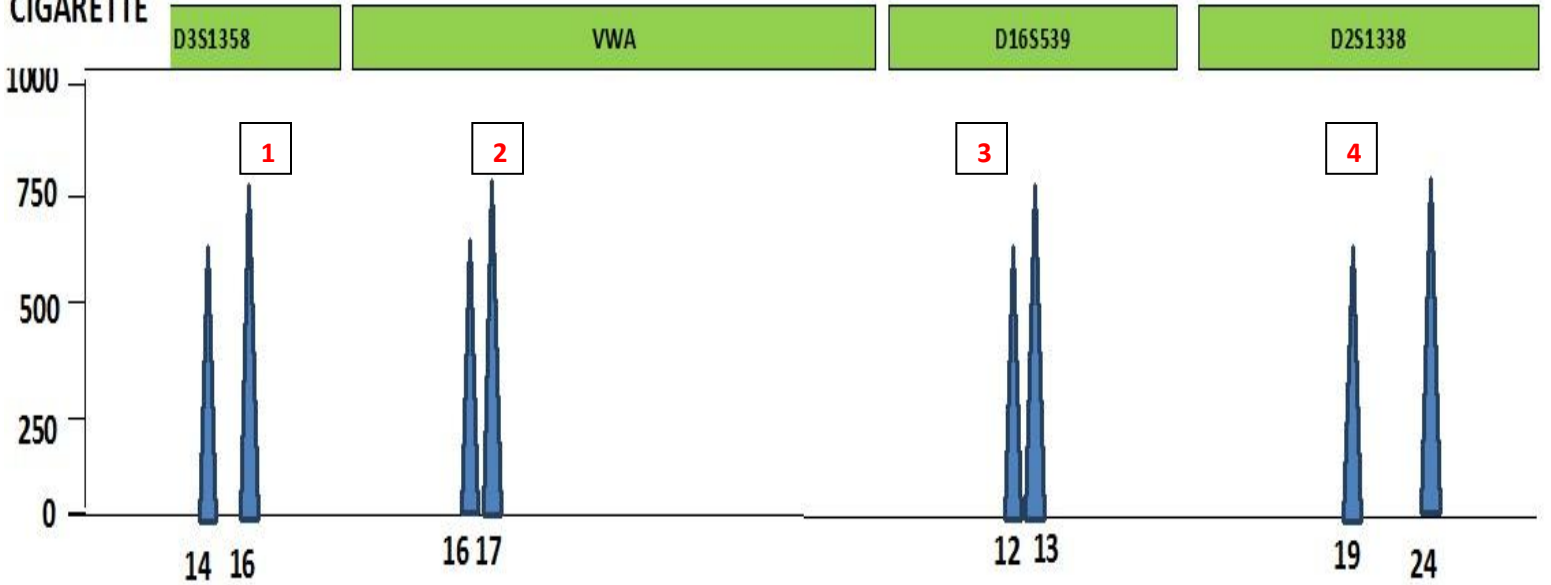
Just like in the previous example for the DNA profiles above fill the numbers for each coloured peak at each marker (1-10) into the table.

<b>MARKER</b>	<b>Cigarette – Mr Baker?</b>	<b>Hat – Son?</b>	<b>NUMBER SHARED BY Mr Baker &amp; SON?</b>	<b>MATCH? YES OR NO</b>
<b>1</b>				
<b>2</b>				
<b>3</b>				
<b>4</b>				
<b>5</b>				
<b>6</b>				
<b>7</b>				
<b>8</b>				
<b>9</b>				
<b>10</b>				

Fill in any numbers which Mr Baker and his son share for each marker. Is there are 'match' at each marker? Are these samples from a father and son? Go to the PDF "relationship testing results to see if you were right!

# DNA from cigarette – Mr Baker?

CIGARETTE



# DNA from hat – Son?

