Introduction to Fibers Practice

Use the words in the word box to complete the following sentences.

<table>
<thead>
<tr>
<th>plants</th>
<th>individual</th>
<th>length</th>
</tr>
</thead>
<tbody>
<tr>
<td>unique</td>
<td>fiber</td>
<td>sheep</td>
</tr>
<tr>
<td>man-made</td>
<td>animals</td>
<td>increases</td>
</tr>
<tr>
<td>cotton</td>
<td>common</td>
<td>yarn</td>
</tr>
<tr>
<td>diameter</td>
<td>wool</td>
<td>synthetic</td>
</tr>
</tbody>
</table>

1. The ___________________ is the smallest unit of textile material that has a ___________________ many times greater than its ___________________. A fiber can be spun with other fibers to form a ___________________ that can be woven or knitted to form a fabric.

2. Matching ___________________ fibers on the clothing of a victim to fibers on a suspect’s clothing can be very helpful to an investigation, whereas the matching of ___________________ fibers such as white cotton or blue denim fibers would be less helpful.

3. The discovery of ___________________ and multiple fiber transfers between the suspect’s clothing and the victim’s clothing dramatically ___________________ the likelihood that these two individuals had physical contact.

4. For centuries, humans were dependent on natural sources for textile fibers derived from ___________________ and ___________________.

5. ___________________ fibers are the plant fibers most commonly used in textile materials.

6. The animal fiber most frequently used in the production of textile materials is ___________________, and the most common of these originate from ___________________.

7. More than half of all fibers used in the production of textile materials are synthetic or ___________________ - ___________________.

8. Nylon, rayon, and polyester are all examples of ___________________ fibers.

Answer the following questions in complete sentences.

9. How would you be able to tell a natural fiber apart from a synthetic fiber when looking at it under the microscope?

10. Label the following fibers as natural or synthetic and give a brief explanation about why you identified it the way you did.

![Image 1](image1.png)  
![Image 2](image2.png)  
![Image 3](image3.png)
11. Identify the weave pattern in the following fabrics.

12. Where could fibers be found in a hit and run?

13. Where could fibers be found in a break-and-entering attempt?

14. Explain the usefulness of white cotton fiber found at a crime scene.

15. How would you be able to tell the difference between a hair and a fiber? What would you look for underneath the microscope?