

# Forensics of Fibers Worksheet

## Observations

### Part A. Burn Analysis

Fabric Type	Observations When Heated	Observations When Ignited
Wool		
Acrylic		
Polyester		
Nylon		
Cotton		
Acetate		

### Part B. Fabric Dyeing Analysis

Fabric Type	Wool	Acrylic	Polyester	Nylon	Cotton	Acetate
Color						

## Post-Lab Questions

1. Which of the fabric samples when burned produced an odor similar to burning hair in the flame test? Why would this occur?
2. Mrs. Nelson's house was robbed on the evening of Friday, May 13, 2011. The crime lab obtained a fiber from a broken screen where the suspect entered. The fiber was tested and found to twist and turn brown when heated but did not melt. When the fiber was ignited it burned extremely quickly with no smoke produced. When it was dyed with congo red it turned dark red. What type of fiber is it?
3. Which type of fabric would be an ideal material to make a blanket used to extinguish fires? Explain.
4. Which type of fabric would you be unlikely to find in firefighter uniforms? Why might this be the case?
5. Rank the six fabrics tested in order of their affinity for dyes, starting with the greatest affinity.