

Weave Pattern Analysis

Scenario

Help! Someone tried to burn down the school! It appears that a rag was lit on fire and then thrown into a waste basket full of papers. Luckily one of your quick thinking classmates was able to smother the fire and save the school. In a search to find who lit the fire three suspects were found in possession of white rags similar to the rag used to set the fire. Your task is to analyze the rags from each suspect and compare them to the recovered rag from the fire.

Materials

Bag of fabrics
Envelops for weaves
Ruler
Index card
Scissors

Magnifying glass.
Burnt rag
Rag from Suspect #1
Rag from Suspect #2
Rag from Suspect #3

Procedure

1. Spread out the bag of fabrics in front of you.
2. Identify the weave types and characteristics of each fabric square and record the number of each fabric in the data table.
3. Place the the squares of fabric back into the original envelop.
4. Use the ruler and the scissors to cut a 1 x 1 square out of the center of the index card.
5. Obtain evidence collected from the burnt rag and each suspect.
6. Place the index card on top of the burnt rag.
7. Use the magnifying glass to count the number of warp threads within the square inch
8. Record your data in the data table
9. Now use the magnifying glass to count the weft threads within the square inch.
10. Record your data.
11. List any other distinguishing characteristics
12. Repeat steps 6-11 with the rags from each suspect

Weave Types

	Numbers on Samples	Characteristics
Plain Weave		
Basket Weave		
Satin Weave		
Twill Weave		
Leno Weave		

Weave Types

	Warp Thread Count	Weft Thread Count	Characteristics
Burnt Rag			
Suspect 1			
Suspect 2			
Suspect 3			

Analysis

1. Did you successfully match the rag to one of the suspects?
2. If so what physical characteristics are most helpful? If not why not?
3. What type of fabric weave is commonly used in blue jeans? What are the characteristics that make this weave well suited for blue jeans?
4. What type of fabric weave is commonly used in leggings? What are the characteristics that make this weave well suited for leggings?