

## Fibers- Weave Note Guide

### Fabric Production

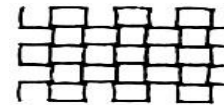
- Fabrics are composed of \_\_\_\_\_ threads or yarns, made of fibers that are knitted, woven, bonded, crocheted, felted, knotted or laminated. Most are either woven or knitted.
- The degree of \_\_\_\_\_, absorbency, water repellence, softness and durability are all individual qualities of the different fabrics.

### Weave Terminology

- \_\_\_\_\_ - a continuous strand of fibers or filaments, either twisted or not.
- \_\_\_\_\_ - lengthwise yarn
- \_\_\_\_\_ - crosswise yarn
- \_\_\_\_\_ - a fabric made up of two or more different types of fiber.

### Plain Weave

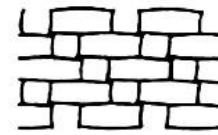
- The \_\_\_\_\_ and most \_\_\_\_\_ weave pattern.
- The warp and weft yarns pass under each other alternately
- Design resembles a checkerboard.



plain

### Twill Weave

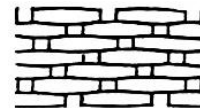
- The warp yarn is passed over \_\_\_\_\_ to \_\_\_\_\_ weft yarns before going under one.
- Makes a diagonal weave pattern.
- Design resembles stair steps.
- \_\_\_\_\_ is one of the most common examples.



twill

### Satin Weave

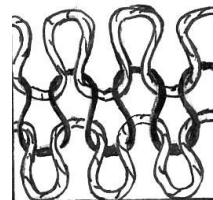
- The yarn interlacing is not uniform.
- Creates long floats.
- Interlacing weave passes over \_\_\_\_\_ or more yarns.
- \_\_\_\_\_ is the most obvious example.



satin

### Knitted Fabric

- Knitted fabrics are made by \_\_\_\_\_ loops into a specific arrangement. It may be on continuous thread or a combination. Either way, the yarn is formed into successive rows of loops and then drawn through another \_\_\_\_\_ of loops to make the fabric.



### Polymers

- \_\_\_\_\_ fibers are made of polymers which are long chains of repeating chemical units.
- The word \_\_\_\_\_ mean many (poly), units (mer).
- The repeating units of a polymer are called \_\_\_\_\_.

- By varying the chemical structure of the monomers or by varying the way they are joined together, polymers are created that have different properties.
- As a result of these difference, forensically they can be \_\_\_\_\_ from one another.

#### Filament Cross- Sections

- Synthetic \_\_\_\_\_ are forced out of a nozzle when they are hot, and then they are woven. The holes of the nozzle are not necessarily round; therefore, the fiber filament may have a unique cross-section.

#### Testing for Identification

- \_\_\_\_\_ observation
- \_\_\_\_\_ - observing of how a fiber burns, the odor, color of flame, smoke and the appearance of the residue.
- \_\_\_\_\_ - gently heating to break down the fiber to the basic monomers.
- \_\_\_\_\_ - solubility and decomposition

#### Dyes

- Components that make up dyes can be \_\_\_\_\_ and matched to an unknown.
- There are more than \_\_\_\_\_ different dye formulations.
- \_\_\_\_\_ is used to separate dyes for comparative analysis.
- The way a fabric accepts a particular dye may also be used to identify and compare samples.