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From Fibre to Fabric







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From Fibre to Fabric

A shirt starts much smaller



THE IDEA

Fibre, yarn and fabric are different stages. Cotton fibres are fine strands from around cotton seeds. Many fibres can be spun into yarn.

Yarns can then be woven or knitted into fabric. Fabric can be cut and stitched into clothing.

CHECK YOUR THINKING

What is the correct order?

A Fabric → cotton seeds → yarn

B Fibres → yarn → fabric

B. Spinning combines fibres into yarn. Weaving or knitting makes fabric from yarn.

A RELATED EXAMPLE

Why twist the fibres?

Spinning helps fibres hold together. Loose cotton fibres pull apart easily. Twisting many fibres into yarn helps them grip one another. A spinning wheel or machine can make yarn. Spinning is not the same as weaving the yarn into cloth.

From Fibre to Fabric

A loom helps control the pattern



THE IDEA

Tools help people use skill precisely. A loom holds one set of threads in place while the other passes across. Handloom weaving is guided by a weaver.

Machines can make large quantities too. A fabric carries materials, design, work and knowledge.

CHECK YOUR THINKING

What does a loom help do?

A Grow cotton directly from wood

B Hold and organise threads for weaving

B. A loom controls thread positions and tension so yarns can be interlaced accurately.

A RELATED EXAMPLE

Over, under, hold together

Weaving crosses two sets of yarn. In a plain weave, a yarn passes over one thread and under the next. The neighbouring row reverses the pattern. These crossings help hold the fabric together. The close-up shows the structure, not the whole garment.

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A silkworm changes form



THE IDEA

Egg, caterpillar, pupa, moth: different stages. An egg hatches into a caterpillar called a silkworm. It feeds, grows and spins a silk cocoon.

Inside the cocoon it becomes a pupa. An adult moth can later emerge and reproduce. The enlarged specimens are not to scale.

CHECK YOUR THINKING

What happens inside the cocoon?

A A cotton plant starts growing

B The insect develops as a pupa

B. The cocoon protects the developing pupa. It is made from silk produced by the caterpillar.

A RELATED EXAMPLE

Plants and animals supply fibres

Natural fibres have living sources. Cotton comes from cotton plants; linen comes from flax. Wool can come from sheep and some other animals. Silk is a fibre spun by silkworms to make cocoons. The sources differ even if the finished fabrics look similar.

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Cloth carries skilled knowledge



THE IDEA

A fabric can tell a story of a place. Kanjeevaram silk weaving is associated with Tamil Nadu; Pashmina shawls with Kashmir. Khadi is hand-spun and handwoven cloth.

Weaving and spinning support livelihoods. Recognising skilled work helps us understand more than a fabric's price.

CHECK YOUR THINKING

What makes khadi distinctive?

A It must be made from plastic

B It is hand-spun and handwoven

B. Khadi describes cloth made from hand-spun yarn and handwoven fabric, not one particular synthetic material.

A RELATED EXAMPLE

Choose for the job

A useful material matches a need. A raincoat needs to resist water; a towel needs to absorb it. One property cannot be 'best' for both jobs. Fabric structure and finishes matter as well as the fibre. A label gives clues that appearance may not.

From Fibre to Fabric

Stitching joins pieces



THE IDEA

A running stitch goes in and out. Thread passes through fabric at spaced points. It can join overlapping pieces or decorate a surface.

A seam and a woven structure do different jobs. We inspect the picture; students do not need needles in this lesson.

CHECK YOUR THINKING

What does a seam join?

A Cotton plants in a field

B Pieces of fabric

B. A seam holds fabric pieces together with stitches. Weaving forms the fabric from yarns.

A RELATED EXAMPLE

Decoration has a structure too

Embroidery adds patterns with stitches. Kantha is associated with eastern India and Phulkari with Punjab. Stitching can decorate cloth as well as join pieces. Bandhani makes patterns through tying and dyeing. Not every pattern in cloth is woven or embroidered.

ONE LAST CHALLENGE

What could you try before replacing it?

A cloth bag has one open seam. Its handles and the rest of the fabric are sound.



THE REVEAL

Repair the seam.

Restoring the part that failed can give the whole bag a longer life.

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