

Unit: Fibre to Fabric		Science Grade 4
ABOUT THE UNIT		
<p>Through this unit, students learn about</p> <ul style="list-style-type: none"> • the smallest unit of fibre • natural sources of fibre • man-made fibre(synthetic fibre) and their uses • different characteristics of various fibres– water absorption capacity, fire resistance, strength <p>Within this unit, there are opportunities for students to</p> <ul style="list-style-type: none"> • perform experiments • explore different types of fibres <p>This unit takes approximately 16-17 periods.</p>		
WHERE THE UNIT FITS IN	RESOURCES	
<p>The unit is designed in such a manner that students construct their knowledge through exploring their immediate surroundings. Fabric is one of the materials which has maximum existence in our surroundings. The theme deals with various kinds of fibre (natural and synthetic) and their characteristics such as strength, water and fire resistance. This theme provides enough opportunities for students to perform experiments with varied fibres.</p> <p><u>Links with:</u></p> <p>Previous Grade/Knowledge:</p> <ul style="list-style-type: none"> • Need of clothes • Different types of clothes • Different patterns and design on clothes <p>Later grades</p> <ul style="list-style-type: none"> • History of clothing • Animal fibres 	<ul style="list-style-type: none"> • TAIL modules • Different samples of fibre <p>SKILLS/KNOWLEDGE</p> <ul style="list-style-type: none"> • Experimenting • Observing • Recording • Analysing • Questioning • Classifying <p>VOCABULARY</p> <p>In this unit, students will have opportunities to use these new terms:</p> <ul style="list-style-type: none"> • Upholstery • Yarn • Spinning • Fibre • Flax 	
EXPECTATIONS		
<p>At the end of this unit <i>most students will be able to</i></p> <ul style="list-style-type: none"> • differentiate between the techniques used for making fabric • differentiate between different types of fibre • know about different characteristics of fibres • differentiate between natural and man-made fibres 		

PROPEL IMAPS 2020
SCIENCE I GRADE 4 | VOLUME 2 | UNIT -1 FIBRE TO FABRIC

SCI	G4	V2	Fibre to Fabric	CHAKRA 1	Smallest Unit of Fabric- Fibre	Sci 4211
BEGINNING DATE _____ COMPLETION DATE _____				PAGES FROM CURRICULUM BOOK: ESTIMATED # OF PERIODS: 4 ACTUAL # OF PERIODS: _____		
LEARNING OBJECTIVES				EVIDENCES OF LEARNING		
To understand that the smallest unit of fabric is fibre To develop observation skills To know about the making and structure of yarn				To differentiate between various techniques used to convert a yarn into fabric Students identify fibre as the smallest unit of fabric. They will be able to identify the different techniques used to make fabric from a yarn.		
<p>DO Ask the students to read the dialogues given in the concept cartoon. The concept cartoon serves as a trigger point for them to start a discussion and share their knowledge and understanding about the fabric mentioned in it. Ask them the question given to further build their understanding.</p> <p>I CONNECT; Page #6 Initiate a discussion on what clothes are made of.</p> <p>I ACT; Page #6 Give a piece of an old cloth to the students. Ask them to pull out a thread from that old piece of fabric and observe the fabric and the thread under a magnifying glass. Ask them to record their observations in the given table. This task helps them observe the smallest unit of fabric. Observing the cloth under a magnifying glass helps them understand how threads have been used to make it.</p> <p>NOTES Help the students to pull out the thread from the old fabric carefully. Ensure that they observe both the fabric and the thread under the magnifying glass.</p>						
<p>REFLECT Page #6 Ask questions given in I TALK</p> <ol style="list-style-type: none"> 1. What did you see after untwisting the thread? 2. Are these hair-like structures similar in all types of fabric? 3. Why do you think these fibres are different from or similar to each other? <p>Initiate a discussion based on these questions. Bring their focus on the process of untwisting the thread from the cloth. This will help them understand that the thread is the smallest unit of the fabric. Stating the similarities and differences between the fibres enhances their observational skills.</p>						
<p>THINK I Read Page #6 Introduce them to the term 'fibre'. Establish how these fibres are used to make different types of fabrics, which are used for different purposes.</p> <p>NOTES Bring their focus to the fact that a fabric has many uses and just not for clothes. Often, children may understand that a fabric is used only for stitching clothes as they are the most visible in their surroundings.</p>						
PRACTICE						

<p>Practice at home, Page #7 Ask them to find out about the different types of fabrics used at home and how they are used.</p>
<p>DO Page #7 Ask them what a yarn is and how it is made? TAIL. CHAKRA1. E.2.1. Show them the video on how wool fibre is converted into yarn. I Observe, Page #7 Talk to students about how fibres are spun together to make a yarn. It is important here that we talk about the process of spinning as it is a new term for the students. Spinning is the process by which a group of fibres is pulled, drawn and twisted together to make a yarn.</p>
<p>REFLECT I Reflect, Page #3 Ask: 1. What strikes you the most in the process of spinning? 2. What are the benefits of spinning? These questions will help them think why spinning as a process is critical for making a yarn. The procedure of how a yarn is made has been discussed with them. Try to build connections with the process of spinning that was discussed and the questions so that they understand the importance of spinning .</p>
<p>THINK Talk to them about what a yarn is? A yarn is a long, continuous length of interlocked fibres. Strands of fibres are brought closer to each other by twisting. Twists impart strength to the fibre strand, which is then termed as a yarn. It is suitable for the production of fabrics by weaving and is also used to make thread for sewing, crocheting, knitting, embroidery and/or rope making. A thread is a highly twisted and smooth strand made up of fibres.</p>
<p>APPLY I write, Page #8 Ask students why twisting is important for making a thread. Ask them to state reasons for the same. The process of twisting has already been discussed with the students. The question will help them to understand that twisting as a method will provide strength to the yarn.</p>
<p>PRACTICE Extension: Fun to know, Page #8 Talk about the 'Do You Know' fact about charkha. Share with them that it is a traditional tool that has been used to spin a yarn. The charkha was both a tool and a symbol of the Indian independence movement. The charkha, a small, portable, hand-cranked wheel, is ideal for spinning cotton and other fine, short-staple fibres, though it can be used to spin other fibers as well. Mahatma Gandhi brought the charkha into wider use with his teachings. He hoped the charkha would assist the people of India achieve self-sufficiency and independence; therefore, he used it as a symbol of the Indian independence movement and included it in the earlier versions of the Flag of India.</p>
<p>DO I Connect, Page #8 Ask them how yarn can be converted into fabric. This question is asked to trigger their thinking about the process of making a fabric. Students have already explored how fabric is made up of thread. This discussion helps them understand how yarn is converted into fabric. Read about Shikha and her experience from I Read, Page #8</p>

REFLECT

Students wear woollen clothes in winter. It is possible that they might have seen someone knitting. Talk to them about woollen clothes and how they are made.

Ask:

1. Have you ever seen someone knitting?
2. Can there be other ways to make woollen clothes?

Ask students to write answers for the questions in **I Reflect**, Pg #9.

1. Do a sweater and your t-shirt have the same pattern?
2. Is the arrangement of threads similar in these two patterns?

These questions are asked to make students observe the various patterns on clothes and differentiate between the two. The observation here helps them identify how threads are arranged to produce fibre. Weaving is interlacing two different sets of threads or yarns horizontally or vertically. Knitted fabric consists of consecutive rows of loops, called stitches. Each stitch is produced by pulling a new loop through an existing loop. The observation helps them build an understanding that clothes with different patterns are made using different techniques.

THINK

I Read, Page #9

Read **I TALK** Discuss the two techniques, weaving and knitting, used to make different types of fabrics. Weaving creates woven fabrics like khadi, muslin(mulmul), denim, rubia and tericot. Weaving gives the thread a form which we use for various purposes.

Knitting is a method by which yarn is used to create a fabric. It creates multiple loops of yarn called stitches, in a line or tube using a pair of knitting needles. Knitted fabric consists of a number of consecutive rows of interlocking loops. Knitting may be done by hand or using a pair of knitting needles by using a machine. It is also done on machines to make many types of sweaters, t-shirts and socks.

APPLY

Homework assignment: Choose any 10 different clothes. Classify them according to the technique used (weaving or knitting) to make them in the notebook.

ASSESS

OBSERVED EVIDENCES OF LEARNING