

Textiles



1.1 Textiles - an “umbrella” term



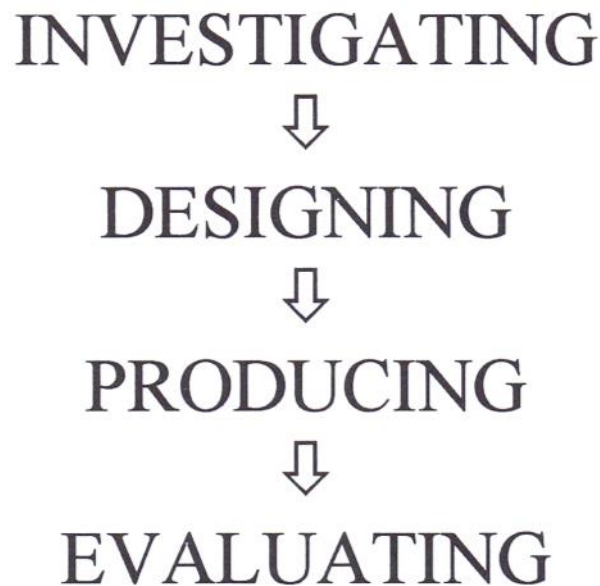
Textile fibres, yarns and fabrics are used to make.....

- Clothing ♦
- Luggage ♦
- Footwear ♦
- Upholstery ♦
- Manchester ♦
- Textile Crafts ♦
- Leather goods ♦
- Soft furnishings ♦
- Floor coverings ♦
- Medical dressings ♦

Textile fibres, yarns and fabrics are also used.....

- ♦ for sporting goods
- ♦ to make baby goods
- ♦ in space programmes
- ♦ for boating equipment
- ♦ for outdoor equipment
- ♦ for industrial applications
- ♦ in the automotive industry
- ♦ during surgical procedures
- ♦ for personal hygiene products
- ♦ in the building and construction industry

2.3 The Technology Process



The technology process is a simple way of working from here..... to here!

PR☹BLEM ⇒ SOLUTION☺

When a PR☹BLEM arises, you will need to think about the possible ways that you can SOLVE that problem.

The TECHNOLOGY PROCESS solves problems using **steps**:

1. Identify the problem
2. **INVESTIGATE** *why* there is a problem, then think of a variety of possible solutions, *plus* the consequences of each of these ideas
3. Come up with different **DESIGN** ideas, then explore which design is “best”
4. Use the skills you already have - or learn new ones - to **PRODUCE** your chosen design
5. **EVALUATE** the completed project by examining your design, the materials and processes used, as well as your skills, to determine whether you could have solved the initial problem in a better way. Ask yourself: does the completed item solve the problem? If not, why?

In simple terms, the

TECHNOLOGY PROCESS = PLAN + MAKE + EVALUATE

To help you understand the TECHNOLOGY PROCESS, consider this example:

PROBLEM: You have lots of Sports/Physical Education gear to take to school some days, but your clothing and runners do not fit into your school bag. Supermarket bags eventually tear, so these are only a temporary solution to the problem. Without spending too much money, what can you organize to carry your clothing and runners?

INVESTIGATE:

- * What **style or design** of *bag* will solve the problem?
- * What types of bags are **available** locally?
- * How much will it **cost to purchase** a suitable bag?
- * How much would it **cost to make** a bag?
- * Do you have the **time, materials, skills and equipment** necessary to make a bag?
- * If help is needed to make your own bag, can anyone assist you?

☺ **You decide to make your own bag**

DESIGNING:

- * What shapes and styles of bags do you like?
- * How **big** does the bag need to be?
- * Will you use zips, buttons or a draw-cord to close the bag?
- * What colour will your bag be?
- * Will you include any decorations on the bag?

☞ Draw different shapes and designs.

☞ Include measurements for the completed bag.

PRODUCING:

- * Collect materials & equipment needed to make the bag
- * learn and practise new skills necessary to make the bag
- * Cut out and sew the bag
- * Ask for help when needed

EVALUATING:

- * Assess the finished bag compared to the design - ask questions such as:
 - Is it the size and shape planned?
 - Does the bag solve the problem?
 - Is the bag well made, or could some skills be improved?
 - What skills have been learnt whilst completing this project?

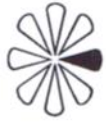
Important things to note for this class:

- Health and safety are very important—there are hot, sharp, toxic things associated with the processes we are about to encounter.
- Machinery and equipment is to be respected and items are not to be used without permission. Yes, things will go wrong—needles will break, threads will get jammed but if you have undertaken all precautions, these things will be minimal. Irresponsible behaviour and deliberate misuse of equipment will be recorded in your diary.
- You are to complete all components of all tasks set to demonstrate skills and techniques of the subject. Read carefully what is required both in your book and on the class website.
- You may need to share equipment—clearly there is not enough for one sewing machine each!
- Pins and needles as well as all other small items can be a hazard. Remember, these are shared classrooms and younger students have a habit of crawling on floors and putting things in their mouths so ensure everything remains accounted for when you use it.
- Pack up and setting up are to be a group effort—if you see something needs doing, just do it without waiting for someone else. Nobody leaves until the rooms are tidy.
- You are working between 2 classrooms. If you are told to move to one or the other, please do so without argument and take responsibility for your actions in either room. Follow instructions. Listen and watch when being shown something.
- There is **ONE** teacher and many students, please be patient and wait for help. Firstly, you should see if you can solve the problem yourself—in most cases you probably can!
- Fabric scissors are NOT to be used for paper—use your own scissors.
- There is to be efficient use of materials—keep waste to a minimum. We work with a very small budget. It is important to learn to work efficiently—it is called being sustainable!
- Come to class with your diary, pencil case and laptop. Your pencil case should contain the basic essentials of greyleads, fineliner, scissors, glue stick, eraser etc. Please be on time!
- All work is to be stored in your plastic pocket and put away neatly.
- NEVER throw anything out—even your 'failures' are valuable learning tools and justify your time in class.

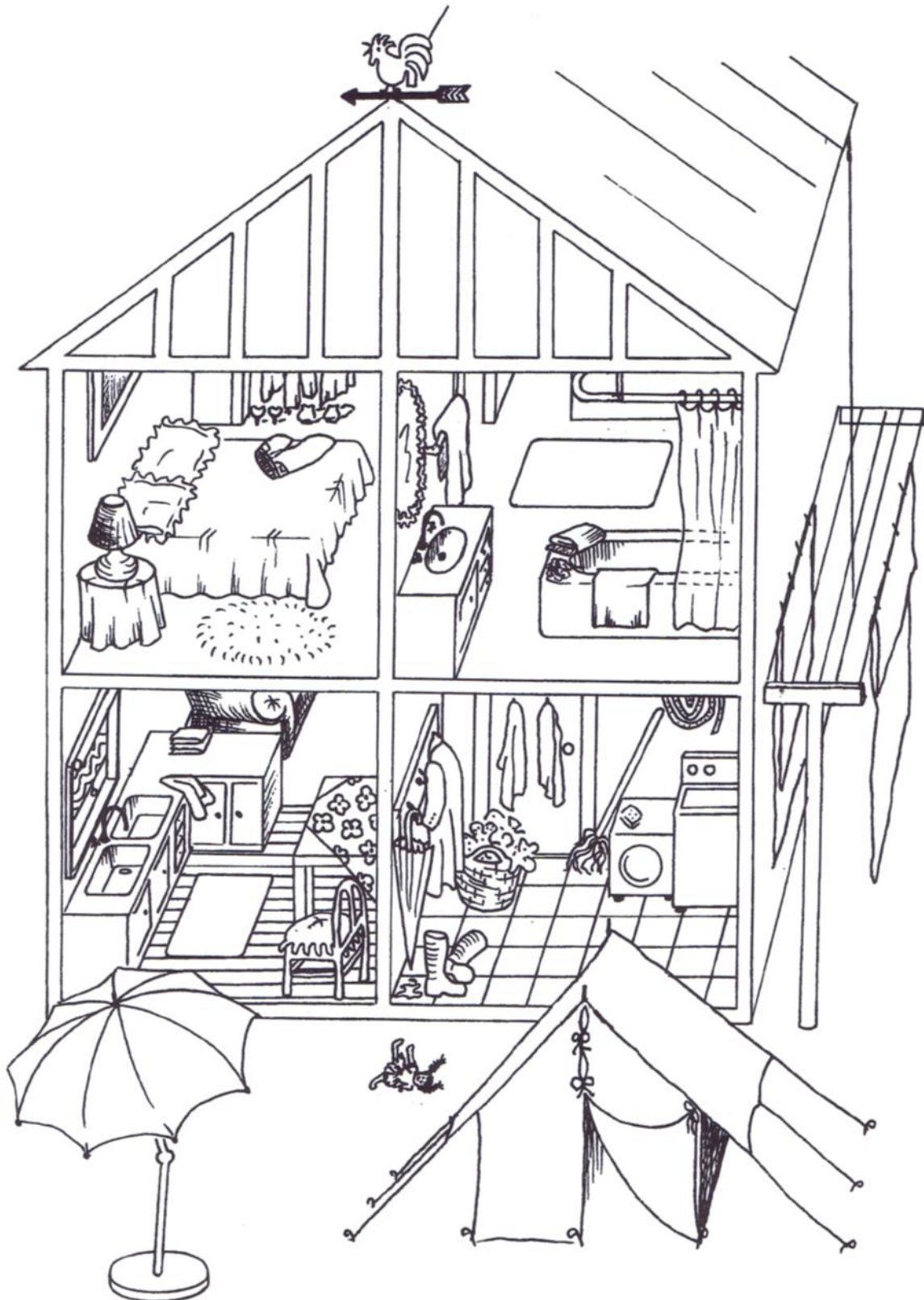
Textiles in Use

Collect pictures of textiles items as well as pictures of articles made from a combination of textiles and other materials. Carefully cut, arrange and then paste into the square below to illustrate "Textiles in use"

1.4 Textiles in Colour



Colour in all the Textiles items that are shown in this picture:











Health and Safety – The workplace

Objectives

- To understand the importance of adhering to health and safety guidelines at school and in the workplace.
- To understand the importance of producing products that are safe for the end user.

Match up the signs with their meaning: These are all workplace safety signs.

					
		<ul style="list-style-type: none"> • First aid • wear ear protection, • fire exit • wear eye protection, • fire hazard • danger solvents • wash your hands • danger electric shock 			



Circle the ten safety hazards you should be able to find in the picture.

What should you do if you have an accident?

What should you do if someone else has an accident?

MATCH THE RULES.....

Place all tripping hazards out of the way

Holding scissors

Always ask the teacher

Spills must be cleaned up so that

If you have an accident

Only one person at a time

Make sure you read instructions

Tape measures are made from material that will not

Fabric scissors should never be used to

Pinking shears cut with a serrated edge

face down by the blades.

before using the iron.

no one slips and hurts themselves.

before using the sewing machines.

so nobody trips while moving around the classroom.

cut paper as it will blunt them.






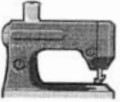



stretch so that measurements are always correct.

so that they stop the edges of material from fraying.

always tell the teacher straight away.

Equipment

Complete the table to show the names and uses of some frequently used equipment.

Picture	Name	Use
		
		
		
		
		
		
		
		
		

Sewing Fun

Label the following items with the words listed below:



thread
fabric

buttons
needles

sewing machine
scissors

pins

1.6 Textiles Puzzle



Numbers have been used to represent letters of the alphabet. Can you break the code to identify these Textiles items? What is the mystery item that everyone needs?

	3	15	18									
A	B	C	D	E	F	G	H	I	J	K	L	M

	7											
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Everyone needs.....

17	14	18	22	23	19	22	9	23
----	----	----	----	----	----	----	---	----

		5	9	13				1	9	25	24	
1		7					1				17	
15	9	20	1			3	9	14	18	9	4	22
9			22				18		7		4	
23			9		20		18	7	7	14	9	
26	7	7	13	3	9	24	24		23		4	
			3		23		22		5		22	
5			22		9			3	9	4		
9			24		15		11	9	13			
15	7	9	13		11			15				15
21					17			21				24
25		3	7	7	13	1		20		4		7
14		7			22			9		24		13
13	7	19	22	24	1			15	24	7	13	11
7						1		21		6		25
1	7	26	13	-	13	7	12	1		22		14
11			25			26				1		4
		22			14	9	20	20	12			

Textiles.....

Describe the possible OH&S hazards in the classroom. Then identify the hazards and possible injuries they might cause and lastly how to control those hazards.

Controls						
Possible Injuries						
Hazards						
Description						

6.7 Fabrics Puzzle

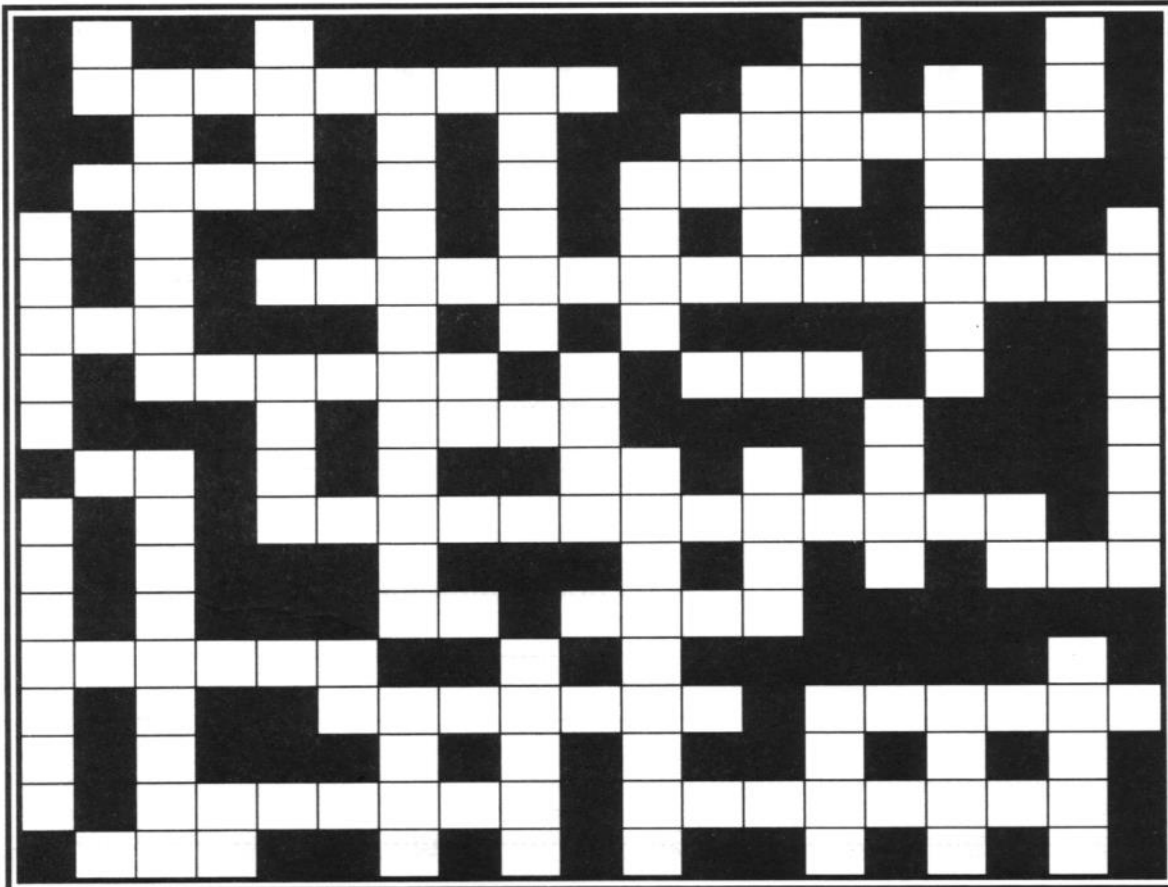


The puzzle below identifies *some* of the processes and equipment used when creating fabrics. Also listed are some of the types of fabrics available.

Count the number of letters required to complete each word, then use the list of given words below to fill in the blank spaces in the puzzle.

- Cross off each word as it is used.

2 LETTERS AM NS DI SO EI SO IS UP NA	4 LETTERS BIAS KNIT BINS KNOT BOLT LACE BOND PILE FACE REED FELT SASH HEAT WEFT	5 LETTERS DENIM FIBRE OTHER UNDER	7 LETTERS GINGHAM MACRAME SHUTTLE TANGLED TEXTURE WEAVING	8 LETTERS CIRCULAR SELVEDGE 9 LETTERS INTERLOCK PROGRAMME STONEWASH
3 LETTERS BAG DYE HEM ONE PIN	15 LETTERS KNITTING MACHINE	6 LETTERS DESIGN FABRIC SHAFTS TARTAN	12 LETTERS WEAVING LOOMS	13 LETTERS HOOKED NEEDLES

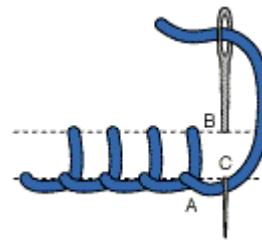


stitches

Blanket Stitch.....

Blanket stitch

A buttonhole stitch used on the edges of a blanket or other material too thick to be hemmed.



Chain stitch

An ornamental stitch in which loops are crocheted or embroidered in a chain.

Cross stitch

Two stitches forming a cross or X.



Running stitch

A simple needlework stitch consisting of a line of small even stitches that run back and forth through the cloth without overlapping.



Tasks.....

1. Complete a trial piece of sewing blanket stitch that shows the ability to start sewing, sew around the edge of the piece and finish off the thread. Threads should be started and finished so that they do not unravel. Must have some form of decoration—applied and sewn. Photograph your progress using the webcam for recording in your workbook.
2. Follow the instructions and make either an Ugly doll.
 Investigate: Find examples of the types of doll that appeals to you.
 Design: Draw up the pattern for the type of doll you are making. Avoid narrow areas and also consider decoration via the addition of elements. Write up a materials list. **Have your design approved by teacher.**
 Produce: Write up a materials list. Collect materials, cut out, pin together and sew. Stuff. Add decoration.
 Evaluate: Write a summary paragraph about what went well and what did not go so well with your project.

Trial Piece

This could be something like a small pouch for an iPod or phone.

Ugly Doll

Design and make an ugly doll. Research—DO NOT COPY—and draw some alternatives for your doll. Use colour.

Begin by drawing the pattern onto paper for transferring to felt for making.

Plan how to decorate the doll.

Use blanket stitch around the outside, leaving an opening for stuffing to

Record your progress.

Using the web cam, record stages of you doing your work. These images with descriptions will need to be presented for assessment.

Extension Activity:

Blanket stitch may be around a pencil case you make.

Textiles.....

Attach photos of your trial piece while you are doing it and when finished here.

Ugly Dolls



			
Little Jiker NEW! Item is available. USDS 10.00	Little Croudy NEW! Item is available. USDS 10.00	Little Brip Drip NEW! Item is available. USDS 10.00	Little Ikoy Yoki Item is available. USDS 10.00
			
Little Heu Googeuy Item is available. USDS 10.00	Little Ugly-Suddy Item can be placed on backorder. USDS 10.00	Little Ugly-Groody Item is available. USDS 10.00	Little Ugly-Brip Limited availability USDS 10.00
			



Ugly dolls

www.uglydolls.com

Shapes, decoration, blanket stitch

			
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Reference:

<http://www.uglydolls.com/products/category/Little+Uglys/322.0.1.1.102286.10257.0.0.0>

Attach your pattern to this page.

These pages are for you to present images of the progress of your work. Save at least 10 images taken with the web cam of you and your work and present neatly on these pages.

Evaluation:

Answer in sentences:

What went well?

**Complete on Computer. Include
reference pictures.**

What did not go so well?

What I will do differently next time?

2.8 Technology Find-the-Word



Find the following words hidden amongst the letters below.
Words may read horizontally [→] or vertically [↓].

This Unit is all about .E. .N. .O. .

Find the words describing the Technology Process:

- INVESTIGATE • DESIGN • PRODUCE
- EVALUATE

Find the words identifying key technological developments:

- MACHINERY • ELECTRICITY • COMPUTERS
- MICRO CHIPS • EXPERIMENTS • ROBOTICS
- SATELLITE COMMUNICATIONS
- SCIENTIFIC RESEARCH

Find the words describing benefits gained by technological advances:

- SPEED • EASE • VOLUMES
- DEVELOPMENT • NEW MATERIALS • EFFICIENCY
- CLEANLINESS

D	S	C	I	E	N	T	I	F	I	C	R	E	S	E	A	R	C	H	F
E	A	S	Y	A	S	O	T	Y	O	U	C	O	F	L	S	O	V	A	I
F	T	O	I	S	Y	T	E	X	P	E	R	I	M	E	N	T	S	I	N
G	E	X	A	E	F	A	D	T	I	F	I	N	S	C	A	L	P	O	V
P	L	I	A	S	E	L	S	L	O	C	K	I	A	T	P	V	E	A	E
K	L	P	N	F	E	N	C	O	M	P	U	T	E	R	S	A	E	T	S
S	I	L	G	E	T	R	O	U	H	O	P	S	C	I	U	S	D	U	T
C	T	O	N	S	I	O	P	K	J	L	E	A	Q	C	P	E	D	L	I
B	E	Y	E	T	L	K	M	I	C	R	O	C	H	I	P	S	A	O	G
T	C	A	W	G	L	O	A	P	S	T	R	A	E	T	E	R	I	L	A
Z	O	Y	M	E	T	E	C	H	N	O	L	O	G	Y	D	S	A	O	T
A	M	P	A	L	R	E	H	T	Y	E	A	B	S	K	T	L	P	A	E
O	M	N	T	C	Z	O	I	P	Y	T	R	A	C	N	A	V	A	I	C
Q	U	B	E	O	T	Y	N	I	O	S	T	I	L	X	N	B	R	I	R
K	N	I	R	A	P	L	E	F	F	I	C	I	E	N	C	Y	A	S	O
L	I	G	I	S	R	O	R	A	I	G	L	R	A	D	B	A	Z	O	B
P	C	O	A	B	O	S	Y	I	L	N	B	O	N	F	G	I	B	N	O
D	A	F	L	U	D	A	I	G	D	E	V	E	L	O	P	M	E	N	T
N	T	O	S	L	U	E	A	S	I	F	O	S	I	Z	A	L	B	A	I
C	I	P	S	O	C	R	A	D	E	S	I	G	N	L	N	A	E	T	C
V	O	L	U	M	E	S	E	O	S	F	G	R	E	N	S	I	L	P	S
S	N	E	S	C	V	A	L	S	I	L	G	F	S	O	E	N	S	T	A
N	S	R	E	V	A	L	U	A	T	E	F	N	S	I	Z	H	R	E	N

3.1 The Production Process

The production of textiles items begins with very small textile fibres. Fibres are gathered together and spun into long lengths of yarn, then woven, knitted or knotted into fabrics which are cut and sewn into useful articles.

FIBRES



FIBRES ARE
TWISTED OR SPUN
INTO



YARN



YARNS ARE
WOVEN, KNITTED OR KNOTTED
INTO

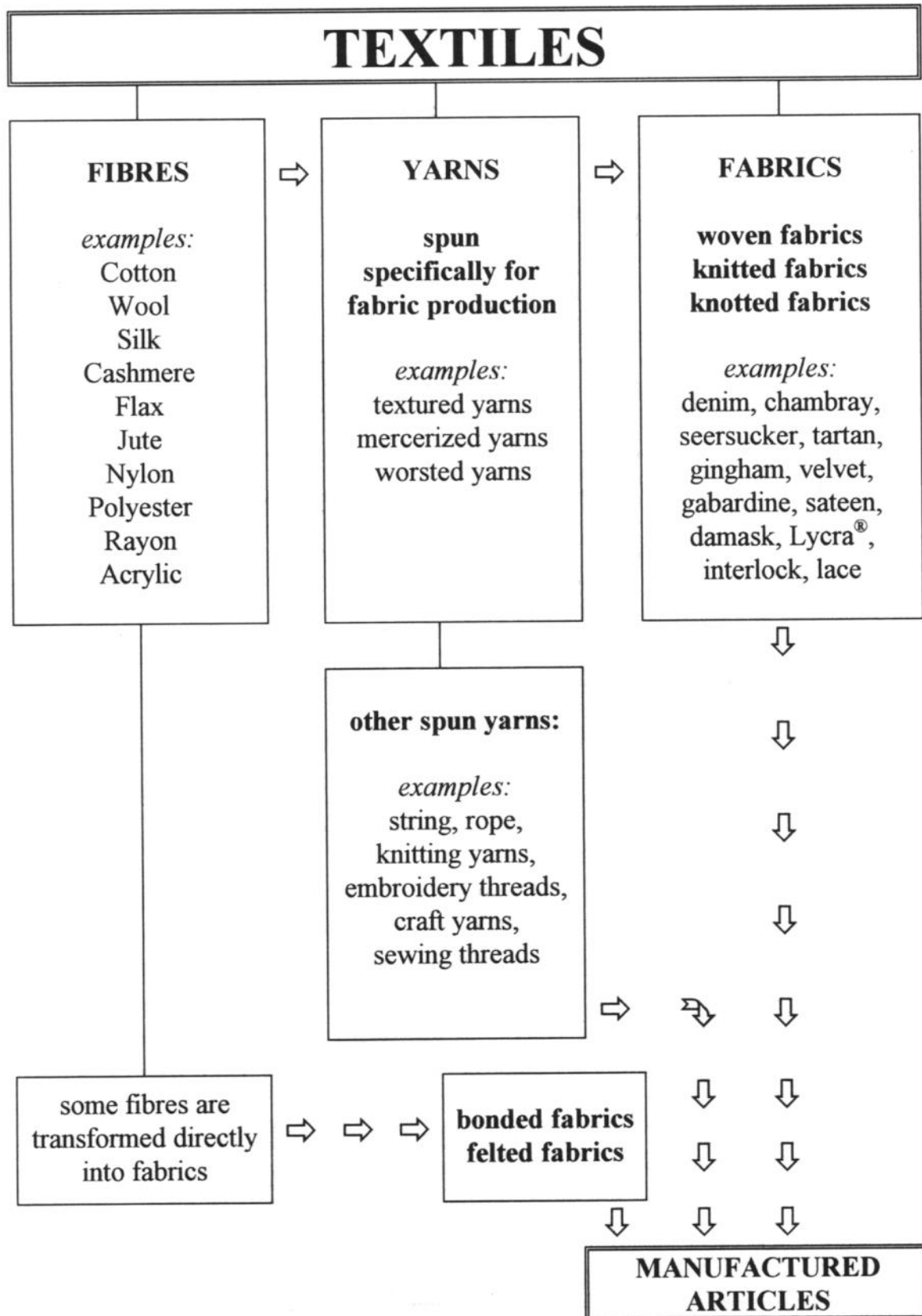


FABRIC



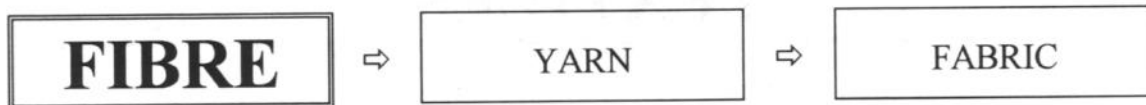
FABRICS ARE
CUT, SEWN AND PACKAGED
FOR SALE AS
TEXTILES ITEMS

3.3 Fibres, Yarns and Fabrics

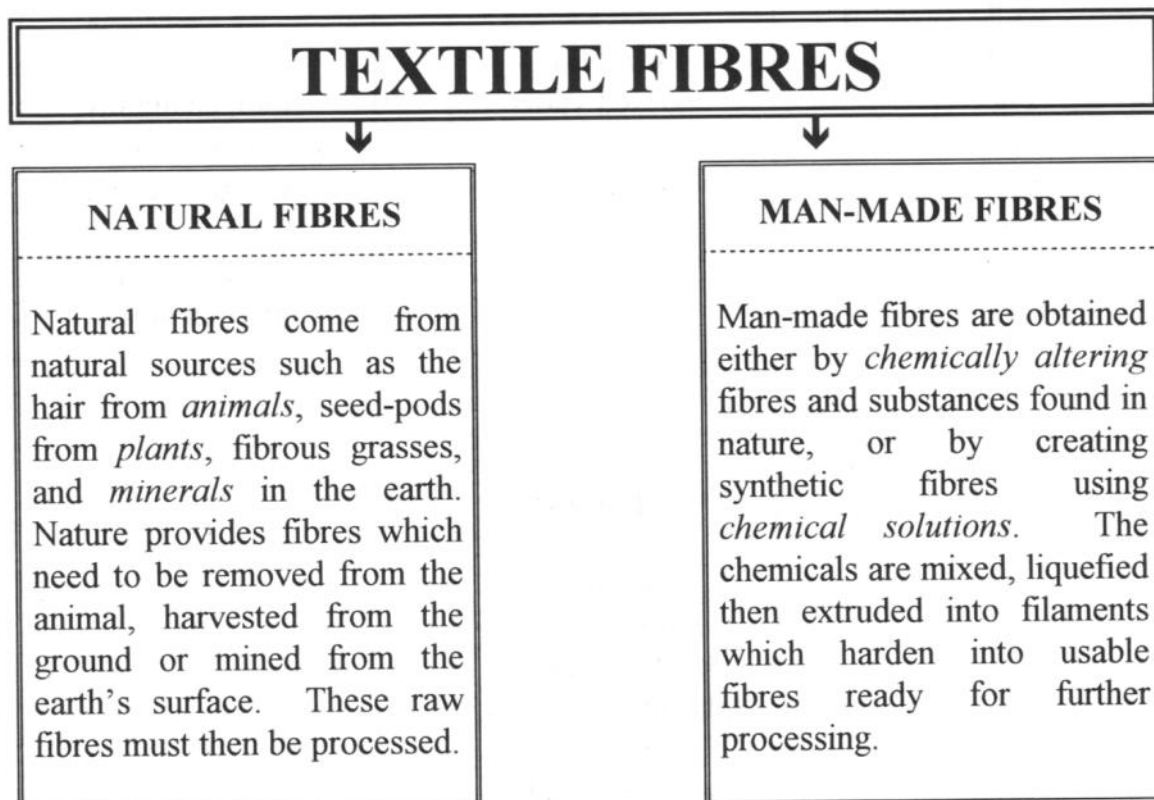


3.4 Textile Fibres

3.4.1 OBTAINING TEXTILE FIBRES:



Producing textile fibres is the **first step** in the production process for making textiles items. Textile fibres fall into two distinct categories: fibres are either products of nature (NATURAL FIBRES) or are produced by chemical means (MAN-MADE FIBRES).



Hair is a Natural fibre. To illustrate how fine one individual fibre can be, secure one or more strands of your hair into the space below.

Hair is an example of a Natural fibre.

Activity sheet - How fibres and fabrics are made

Natural and manufactured fibres

Fibres are the hairs that are put together to make a fabric.

Natural fibres come from animals or plants. **Manufactured** or **synthetic** fibres may come from coal or oil, or they can be waste fibres, which are bonded together with a chemical.







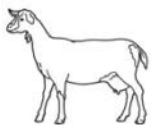

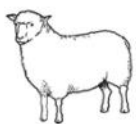







Complete the sources of fibre words.



Write **natural** or **synthetic** beside each fabric source.



Draw lines to join the source of the fibres to the finished product.


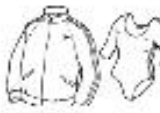














Source of fibre	Finished product
c _ t _ on 	
f _ _ _ x 	
ang _ _ _ 	
_ oo _ 	
poly _ _ _ _ 	
ny _ _ _ 	
poly _ _ opy _ ene 	

Activity sheet - Properties of fabrics

What's this fabric like?

Here is a list of properties of different materials.

Draw lines to match the properties to the products.

jumpers 	absorbent	sports clothes 
motor cycle leathers 	waterproof	towel 
t-shirt 	cool	shorts 
Kitchen towel 	breathable	fireman's coat 
cotton wool 	warm	umbrella 
pyjamas 	flame proof	gloves 
plastic sheet 	durable	silk tie 
out-door jackets 	soft	denim jeans 
	high visibility	
	reflective	

Textiles.....

Homework:

How many different fibres and fibre blends have been used to make the textiles in your home?

Read the labels on at least 10 articles at home and record your findings below:

Item	Fibres



Investigate one of the following topics, and present your findings as a large illustrated poster.

Topic 1:

Many History, Geography and “Studies of Society and Environment” books contain illustrations depicting people involved in hand-spinning. Spinners are shown transforming fibres into yarn using sticks, spindles, spinning wheels or just the hands. Draw and label each of these methods of hand-spinning.

Topic 2:

Research the steps involved in hand-spinning yarn using a spinning-wheel. Write brief instructions, and provide illustrations. *Attempt* hand-spinning using a spinning-wheel, and produce a length of spun yarn. Attach a sample of your spun yarn to your poster.

Topic 3:

Investigate the processes involved in the manufacture of a polyester/cotton blended yarn. Include brief notes describing each process and clear illustrations on your poster.

Avoid Wikipedia.

Quote all references used.

Do no copy and paste from internet - use your own words.

Include (referenced) visual material.

Assignment must be produced using a computer.

Save to a clearly named folder in your network folder when ready for printing.

3.7 Production Processes Puzzle



Find the following words hidden amongst the letters below.
 Words may read horizontally [→] or vertically [↓].

This Unit is all about O T ON O E .

Find the words describing each of the processes:

- FELTING • WEAVING • SPINNING • CARDING • KNITTING
- KNOTTING • TWISTING • BONDING • COMBED • WIND
- HARVEST • EXTRUDE • GROWN • SHEAR • CLEAN
- CUT • SEW • DRAW • STRETCH
- REDUCE THICKNESS • TEXTILES PRODUCTION

Find the words identifying the product of each process:

- FABRIC • FIBRES • YARNS • LACE • NET
- WARP • WEFT • LOOP • FIBRE BLENDS
- MANUFACTURED ARTICLES • FILAMENTS

Find the words identifying the equipment used for various processes:

- SPINNERET • BOBBINS

W	I	D	B	O	B	B	I	N	S	T	R	D	H	A	R	V	E	S	T
K	F	S	L	C	N	Z	A	Q	P	E	F	X	T	K	A	L	B	E	S
B	R	E	D	U	C	E	T	H	I	C	K	N	E	S	S	T	A	W	I
E	A	V	E	F	R	O	M	A	N	S	O	O	R	T	A	L	B	E	D
R	F	I	B	R	E	B	L	E	N	D	S	A	W	I	N	D	O	I	S
A	R	P	L	E	S	T	R	A	E	D	L	S	A	N	B	R	O	K	I
S	H	E	A	R	G	O	C	T	R	A	Z	O	R	K	Y	A	R	N	S
P	L	Q	U	E	F	I	B	R	E	S	C	U	P	T	A	W	R	O	P
O	F	F	A	P	A	R	V	A	T	S	O	C	A	L	K	N	L	T	N
B	E	L	R	A	B	O	C	G	Y	A	M	A	R	D	N	E	E	T	K
E	L	P	E	T	R	I	N	G	S	Z	O	R	V	E	I	N	N	I	C
B	T	E	X	T	I	L	E	S	P	R	O	D	U	C	T	I	O	N	A
D	I	X	T	A	C	S	T	Q	I	R	T	I	S	D	T	I	N	G	S
U	N	D	R	O	S	N	A	I	N	T	O	N	D	A	I	K	T	S	O
P	G	Q	U	E	G	R	O	W	N	E	R	G	A	I	N	D	W	O	F
S	U	I	D	S	S	A	K	L	I	N	E	R	P	O	G	R	I	V	I
S	T	R	E	T	C	H	D	U	N	V	E	R	Q	U	I	S	S	A	L
C	R	E	E	A	U	D	D	R	G	E	C	H	A	W	E	F	T	B	A
L	A	C	E	M	T	R	A	K	O	L	O	O	P	E	X	N	I	G	M
T	A	L	T	I	P	R	O	N	Z	Y	M	Y	N	O	G	R	N	A	E
S	W	E	A	V	I	N	G	I	N	T	B	O	N	D	I	N	G	O	N
U	F	A	D	S	H	O	O	B	R	I	E	T	S	R	K	R	E	E	T
M	A	N	U	F	A	C	T	U	R	E	D	A	R	T	I	C	L	E	S

3.8 Jeans Manufacture

At some point in time, most of you would probably have worn jeans. Have you ever thought about how they are made, or what they are made from? This activity explores the steps involved in manufacturing a pair of jeans.

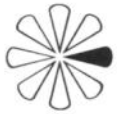
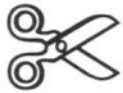
Each of the pictures on the next page illustrates a specific step in the manufacturing process for jeans. These jeans are stone-washed denim: that is, they have been made from 100% cotton denim fabric, and have been specially treated to obtain the fashionable “stone-wash” look.

Your teacher will describe what is occurring in each of the pictures, and the information on the preceding pages will help you to re-organize the pictures into the correct order.

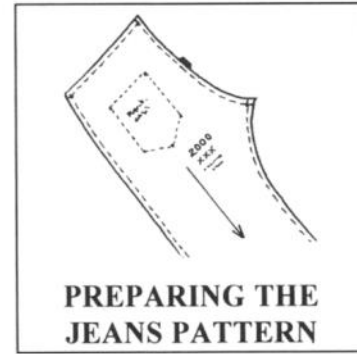


Use the chart below to explain each process *in the correct order* once you have completed re-arranging the pictures shown on the next page.

Step	Process	Explanation of Process
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		



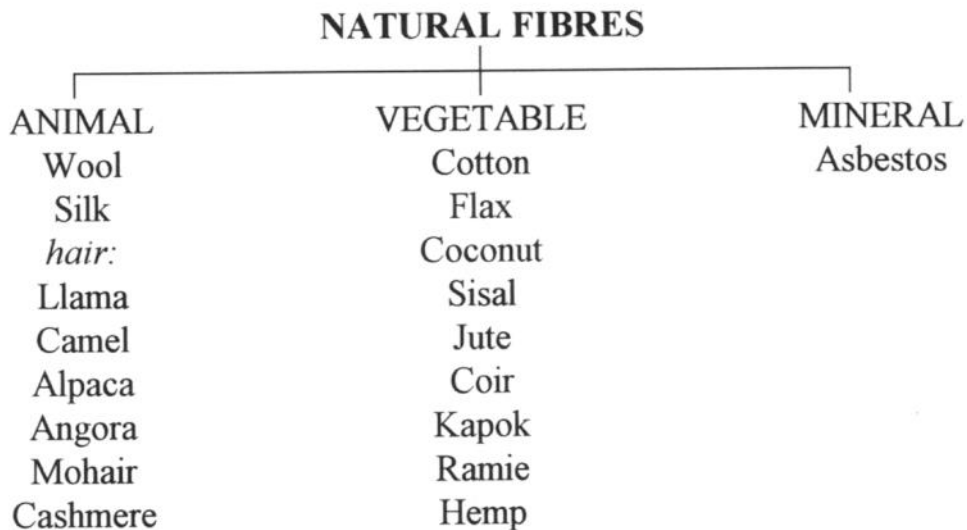
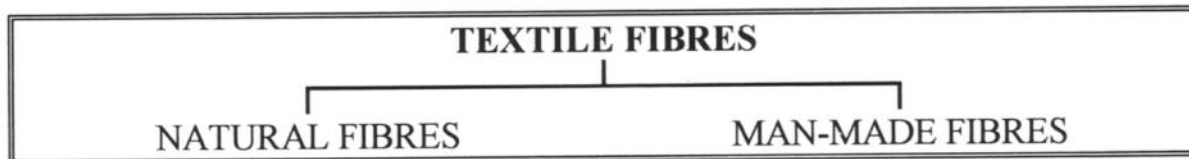
1. Think carefully, then number each step in the *correct order*.
2. Check with your teacher, then carefully cut out each picture.
3. Re-arrange the pictures in the correct order, then paste into the empty boxes provided
4. Allow to dry, then colour each picture.



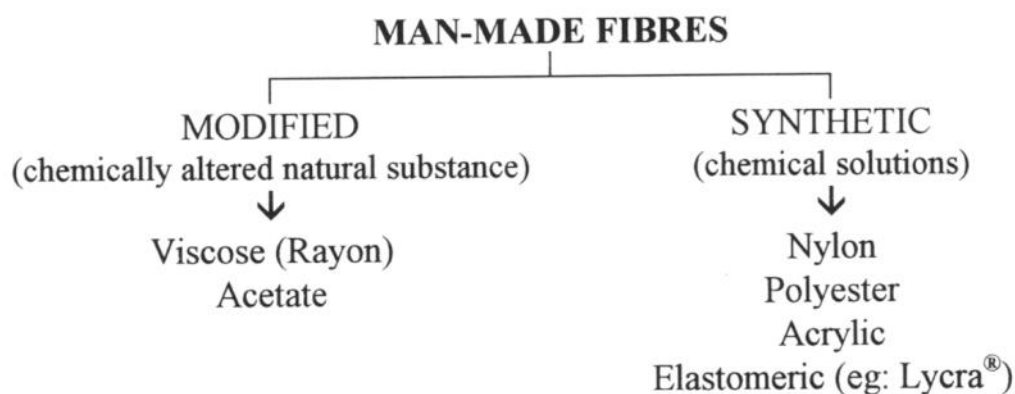
This page has been left blank as the reverse side will require cutting up.

4.1 Textiles Fibres

Textile fibres are either Natural fibres *or* Man-made fibres.



Until approximately 100 years ago, the only fibres available for use were those found in nature - in other words: **Natural fibres**. Over the years, scientific experiments and technological advances have resulted in the development of **Man-made fibres**. These artificial fibres are made by either chemically altering natural fibres and substances, or by mixtures of chemicals.



With the development of Man-made fibres, we have a wide variety of fibres to choose from. Natural fibres may be used on their own and Man-made fibres may be used on their own. Natural fibres and Man-made fibres may also be blended together in any combination to make yarns and fabrics.

4.2 Natural Fibres

Fibres obtained from natural sources are known as **Natural fibres**, and are usually divided into 3 categories according to the *source* of each fibre.



4.2.1 ANIMAL FIBRES:

Fibres obtained from animals are known as **animal fibres**. Animal fibres grow as hair, fleece or fur, and are usually removed from the animal by shaving, clipping or combing. Fibres may also be obtained from some insects - long, continuous filaments are extruded from special glands designed for spinning cocoons and webs.

The following chart lists many of the animal fibres available. The chart also indicates the animal source for each fibre as well as the usual method for removing or obtaining each of the fibres.

Fibre:	Source:	Obtaining the fibre:
WOOL	Sheep	fleece Annual shearing
CAMEL HAIR	Camel	hair Spring shedding of coat
CASHMERE	Kashmir goat	undercoat down and hair Hand-plucking before shedding <i>and</i> annual shearing (then separating down from hair)
MOHAIR	Angora goat	hair Shearing twice per year
ALPACA	Alpaca	hair Combing
ANGORA	Angora rabbit	hair Hand-combed every second day
RABBIT FUR	Common rabbit	hair De-hairing pelts
SILK	Silk moth larvae cocoon	glandular secretion Long filaments are unwound from cocoons de-gummed in boiling water
“BIOSTEEL”	Spider web	glandular secretion Reeling filaments from heat- softened webs

The **length** of animal fibres varies enormously - depending upon the fibre source. For example, Angora fibres may grow up to 7.5cm long, and Mohair fibres may grow up to 25 cm in length. By comparison, the continuous filament extruded by the silk moth larvae may be up to 1,000 metres in length. Short fibres *must* be spun together to produce a continuous yarn, whereas the longer filaments are usually spun together simply to create a thicker yarn.

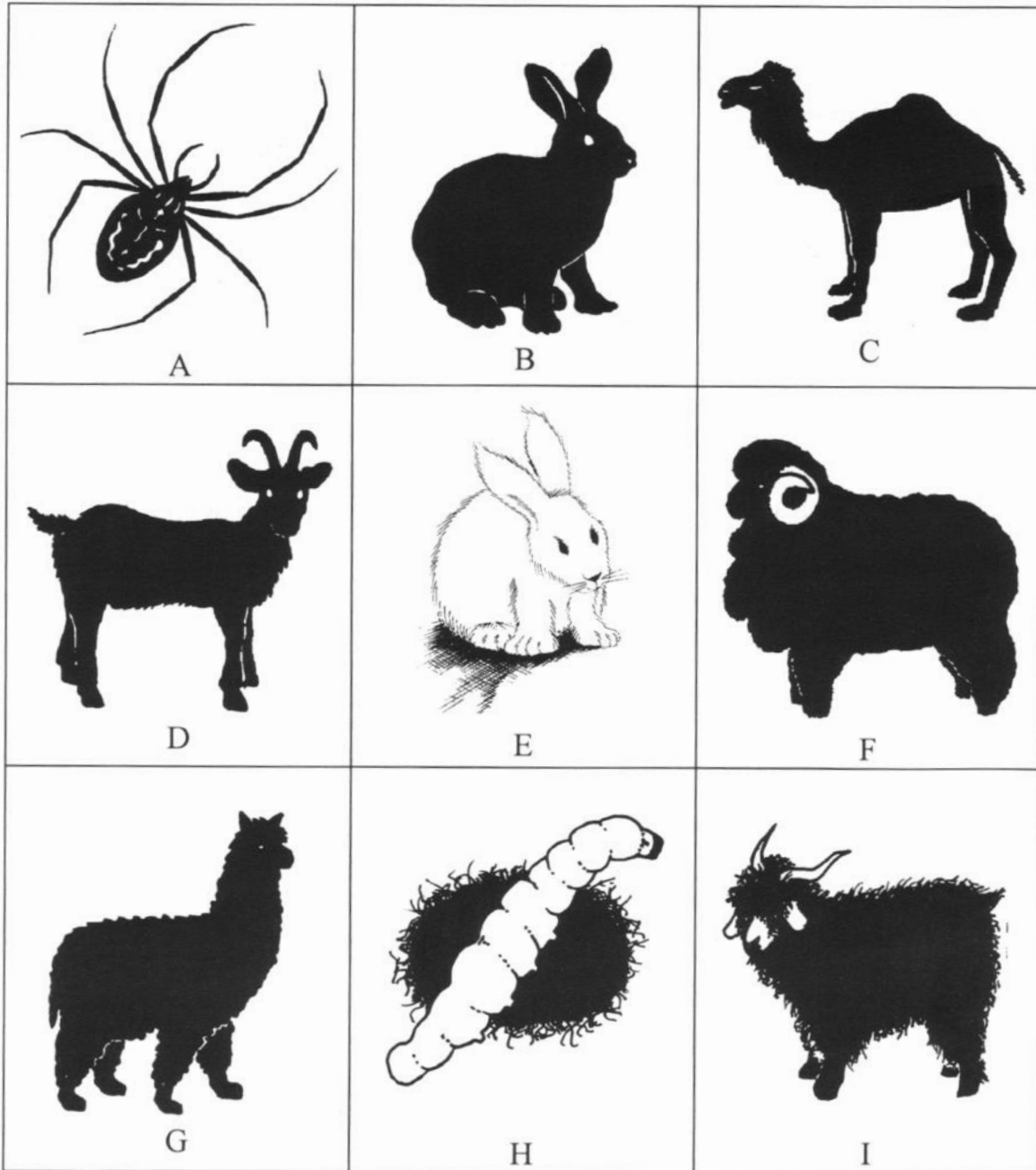


TABLE 1 lists the animal fibres detailed on the previous page. Can you match each of these fibres to the sources shown as silhouettes in TABLE 2?

TABLE 1: Animal Fibres

- | | | |
|-------------------------------------|-------------------------------------|-------------------------------------|
| <input type="checkbox"/> MOHAIR | <input type="checkbox"/> ALPACA | <input type="checkbox"/> CAMEL HAIR |
| <input type="checkbox"/> WOOL | <input type="checkbox"/> RABBIT FUR | <input type="checkbox"/> ANGORA |
| <input type="checkbox"/> "BIOSTEEL" | <input type="checkbox"/> SILK | <input type="checkbox"/> CASHMERE |

TABLE 2: Sources of Animal Fibres



4.2.2 VEGETABLE FIBRES:

Fibres obtained from plants are known as **vegetable fibres**. These fibres are obtained from the seed-pods of plants, from the stems of plants or grasses, from fruits and from the leaves of plants.

In the modern world, fibre producing crops are planted, nurtured then harvested, either by specialist machines or manually (ie: hand-picking or cutting). Mature crops are harvested by either: fully up-rooting plants, slashing, or picking the seeds and fruits only.

The following chart lists some of the vegetable fibres available. The chart also indicates the source of each fibre as well as the usual method for harvesting or obtaining each of the fibres.

Fibre:	Source:	Obtaining the Fibre:
COTTON	Cotton bush	fibres surrounding seeds in boll (seed pod)
FLAX	Flax plant	stem - up to 1m.
SISAL	Agave plant (cactus-like plant)	leaves - up to 1.5m.
JUTE	Indian plant (linden family)	stem -over 1m. long
COIR	Coconuts (coconut palms)	husk fibres on fruit kernel
KAPOK	Ceiba tree	Fibre surrounding seeds in seed pod
RAMIE	Ramie plant	stem - up to 2m.
RAFFIA	Raphia palm	stems of leaves - 9-15 metres long
HEMP	Industrial Hemp plant - tall annual herb	stem

The **length** of vegetable fibres varies enormously - depending upon the fibre source. For example, Flax and Jute fibres are obtained from plant stems which grow to approximately 1 metre long, and Raffia fibres may be up to 15 metres long! By comparison, Cotton is a short fibre - being approximately 5 centimetres long. It should be noted that whilst industrial Hemp is related to marijuana, it contains little of the same mind-altering substance.

4.2.3 MINERAL FIBRES:

The only natural **mineral fibre** is Asbestos, a crystalline substance extracted from rock by mining. As recent research has indicated that extended exposure to unsealed asbestos fibres may be linked to some incidences of lung cancer, the use of asbestos is now generally restricted to industrial applications only. Asbestos products are manufactured using stringent safety precautions.

4.2.4 COMMON USES FOR NATURAL FIBRES:

Fibre		Description	Common Uses
Alpaca	A	Fine, lustrous, white-brown-black, 20-30cm, expensive	Mid-season jackets
Angora	A	Soft, silky, white, 5-7.5cm	Quality knitwear, knitting yarn
Asbestos	M	Crystalline, grey-white, 2cm	Fire-proof materials & insulation
“Biosteel”	A	Lightweight, very strong	Potential: bullet-proof vests
Camel hair	A	Soft, fine, yellow-brown	Coats, blankets, rugs
Cashmere	A	Soft, lightweight, white-grey-tan, 3-9cm, expensive	Knitwear, coats, shawls
Coir	V	Stiff, red-brown	Doormats, pot-plant liners
Cotton	V	Fine, lightweight, off-white, up to 5cm	Fabrics, clothing, canvas, underwear, curtains, towels, medical dressings, nappies
Flax	V	Hard, lightweight, lustrous, average 50cm up to 1m	Curtains, tablecloths, clothing, tea-towels, strong threads
Hemp	V	Coarse, cream, over 2m	Twine, ropes, coarse fabrics
Jute	V	Light brown, over 1m, cheap	Bags, sacks, mats, underside of linoleum & carpets
Kapok	V	Soft, lightweight	Sound insulation, stuffing
Mohair	A	Soft, hairy, lustrous, lightweight, grey-white, 10-25cm	Knitting yarns, light-weight & warm winter clothes, jumpers
Rabbit fur	A	Grey - brown, 2.5cm	Felt hats
Raffia	V	Coarse, up to 2m	Craft items, sun-hats, basketry
Ramie	V	Stiff, up to 2m, cheap	Clothing, upholstery fabrics
Silk	A	Fine, smooth, uneven texture, lustrous, cream (cultivated) or brown (wild), expensive	Evening and wedding gowns, “fine” clothing, underwear, ties, stockings
Sisal	V	Coarse, up to 1.5m	Twine, rope, craft items, floor coverings
Wool	A	Fine or coarse, off-white - dark brown, 4-40cm	Carpets, fabrics, suits, thermal underwear, jumpers, hats, blankets, knitting yarns, felts



Use a dictionary to look up the meaning of each of the “Fibre Properties” words and terms listed below. Write the definition for each word or term in the space provided.

Fibre Properties	Definition
Absorbent	
Water repellent	
Soft	
Strong	
Cool	
Warm	
Wind-proof	
Easy to wash	

FIBRE PROPERTIES CHART								
PROPERTIES ↓	FIBRES							
	Cotton	Wool	Silk	Flax	Rayon	Polyester	Acrylic	Nylon
Absorbent	★★★★	★★★★	★★★★	★★★★	★★★		★★	
Water repellent					★★	★★★★	★★★	★★★★
Soft	★★★	★★★★	★★	*	★★★	★★★	★★★	★★★
Strong	★★★	*	★★★	★★★★		★★★★	★★★	★★★★
Cool	★★★★		★★★★	★★★★	★★	★★		★★★★
Warm	★★	★★★★	★★★	★★		*	★★★★	
Wind-proof					★★★★	★★★	★★★	★★★★
Easy to wash	★★★	*			★★	★★★	★★★	★★★

STAR RATING SYSTEM:

- ★★★★ = excellent
- ★★★ = good
- ★★ = not very good
- * = poor

Cost is also an important fibre property to consider:

Another important consideration for Textile designers and manufacturers is the *cost* of different fibres. As many people have limited budgets, they simply cannot afford to purchase items that have been manufactured using very expensive fibres. A cheaper alternative will often be chosen.

4.6 Fibre Selection

A cloth baby nappy **must** be *absorbent* and *easy to wash*. The “*STAR RATING SYSTEM*” on the “**FIBRE PROPERTIES CHART**” on Page 66 indicates that as Cotton rates highly for each of these important properties, it would be the most suitable fibre to use for the manufacture of cloth baby nappies. Can you decide which are the most suitable fibres to use for other textiles items?



Refer to the “**FIBRE PROPERTIES CHART**” on Page 66 to complete the activity below. An example is given.

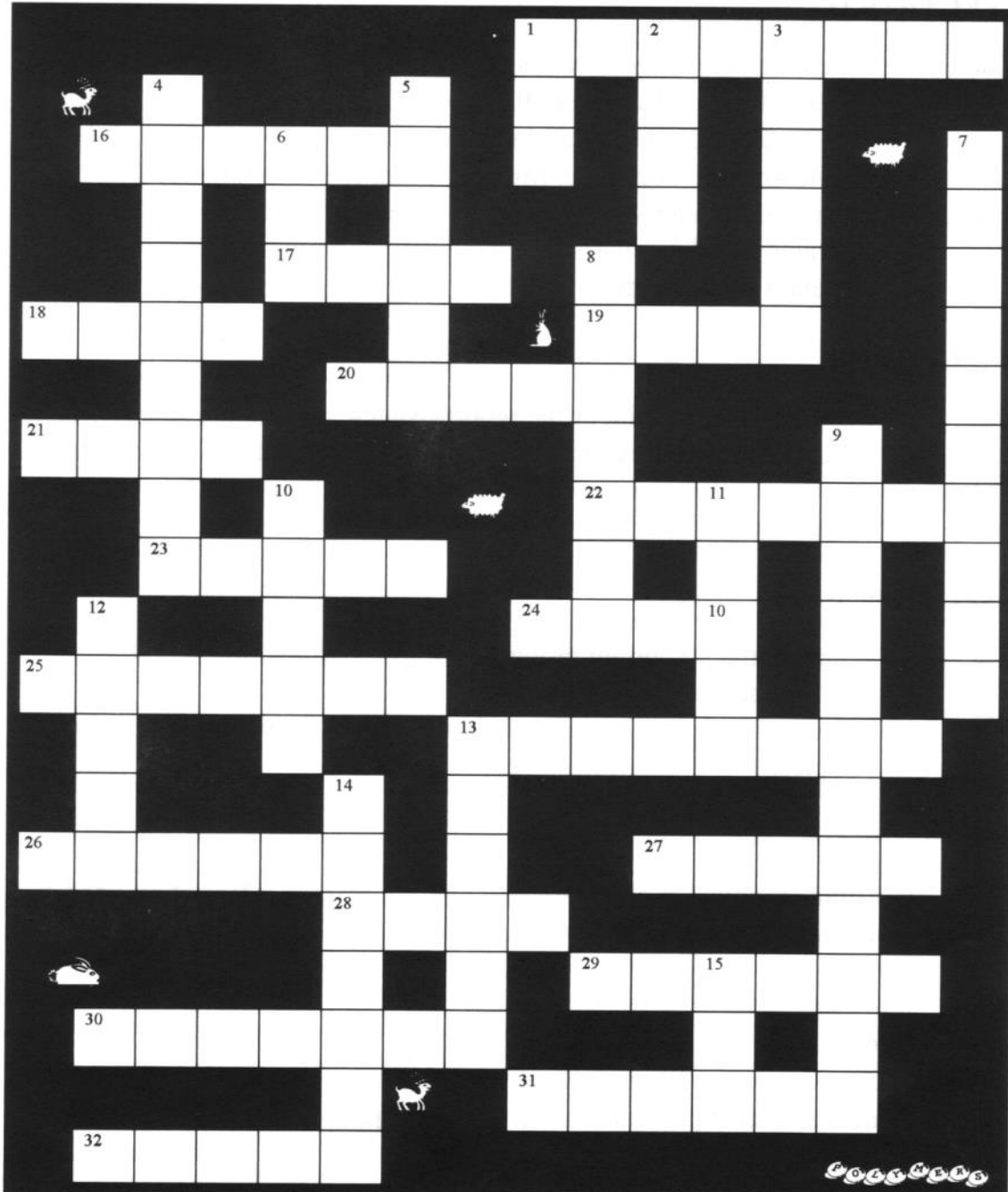
1. For each of the textiles items listed below, list all the Fibre Properties that you believe are important characteristics for that item to have.
2. Refer to the chart to decide which fibre or fibres would be the most suitable for manufacturing the item.

Textiles Item	Important Fibre Properties	Suitable Fibres
<i>Cloth baby nappy</i>	<i>absorbent, easy to wash</i>	<i>cotton</i>
Ski (snow) suit		
Tea towel		
Umbrella		
Jumper		
Summer shirt		
Blanket		
Socks		
“Beanie” hat		
Garden chair webbing		
Back-pack		

4.9 Fibres Puzzle



Can you complete this puzzle? All the missing words are Textiles fibres. Refer to information presented in this Unit to discover the answers to the clues given on the next page.



▪ PUZZLE CLUES ▪

▽ DOWN:

- 1 Filaments are --- into shorter lengths to create staple fibres.
- 2 The fibre formed by glandular secretions from an insect.
- 3 The Angora goat produces this fibre.
- 4 The fibre produced from the by-products of petroleum refining.
- 5 A soft, white, animal fibre used to manufacture quality knitwear.
- 6 Filaments are gathered together into a soft, rope-like --- before cutting.
- 7 Man-made fibres are sometimes known as ----- fibres.
- 8 This fibre is made by chemically modifying cotton waste.
- 9 The trademark for this fibre is more familiar to us than the word: -----
- 10 The first Man-made synthetic fibre created.
- 11 Hemp and Sisal are frequently used to make -----.
- 12 A coarse vegetable fibre used mainly for ropes and twine.
- 13 One of the Natural fibre categories.
- 14 Fibres occurring in nature are said to be ----- fibres.
- 15 This animal fibre is usually felted for hat-making.

▷ ACROSS:

- 1 An expensive fibre obtained from the Kashmir goat.
- 13 ----- is the only fibre obtained from mineral sources.
- 16 This Vegetable fibre is very absorbent.
- 17 Different breeds of sheep produce ---- fibres for a variety of uses.
- 18 Kapok fibres are obtained from ---- pods.
- 19 A Natural fibre which is commonly used to manufacture doormats.
- 20 ----- fibres are obtained from the stems of plants.
- 21 This inexpensive vegetable fibre is important for carpet manufacture.
- 22 This Man-made synthetic fibre is frequently used to manufacture knitwear and blankets.
- 23 Viscose is sometimes known by this name.
- 24 The ---- grown for the Textiles industry is different to its infamous relative!
- 25 ----- is the first fibre to be created as a result of scientific experiments.
- 26 These expensive fibres are obtained from an unusual looking animal.
- 27 The long fibres obtained from the flax plant are sometimes known as -----.
- 28 Natural fibres have been utilized by humans since the dawn of ----.
- 29 The fibre obtained from palm trees and frequently used to make sun-hats.
- 30 Asbestos is the only natural ----- fibre.
- 31 This unit explores -----.
- 32 You would not expect this animal to produce a soft fibre.

Producing Yarn



Twist together the fibres from a single ball of “cotton wool” to produce a long length of yarn.

Method:

1. Slowly draw out a small quantity of fibres from the ball of “cotton wool” and carefully twist the fibres together to begin creating yarn. Continue drawing out and twisting the fibres together until you have “spun” all of the “cotton wool” ball into one *continuous* piece of yarn.
2. Measure the length of your piece of yarn, and tape your sample into the box below. Record the length.

Arrange
and tape
your sample
here

Length = cm

The longest sample of yarn spun in your class = centimetres long.

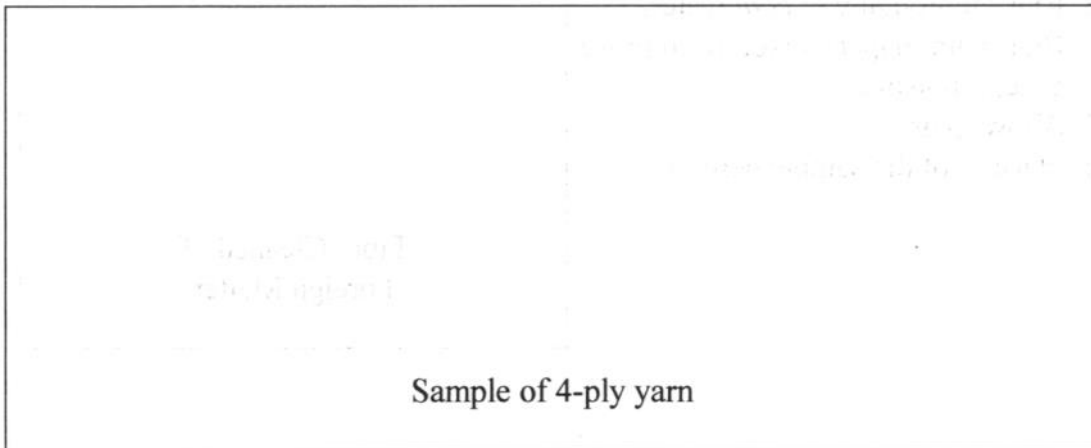
Creating Yarn



Working in pairs, create a length of 4-ply yarn.

Method:

1. Cut *two* lengths of spun yarn - approximately 1.5 metres long each.
2. Lay out the two lengths so that they are straight and parallel, then tie the lengths together with a knot in each end.
3. One person should stand at each end, holding the yarn taut between them. Place a pencil through each end to make the next step easier.
4. Person "A" will hold their end *still* whilst Person "B" turns their pencil clockwise, twisting the two lengths of yarn together.
5. When the yarn begins to over-twist and double-back upon itself, Person "B" will fold-and-hold the twisted yarns at the *centre point* and bring their end up to meet the other end. Person "A" holds *both* pencils whilst Person "B" slides their hands along the two twisted yarns (starting at the pencil end). The two sections of yarn will join together to form a cord-like 4-ply yarn.
6. Trim off knots to reveal the original four pieces of yarn.
7. Repeat the process so that each person has a sample to place in the space below.



5.4 Not-a-Clue!

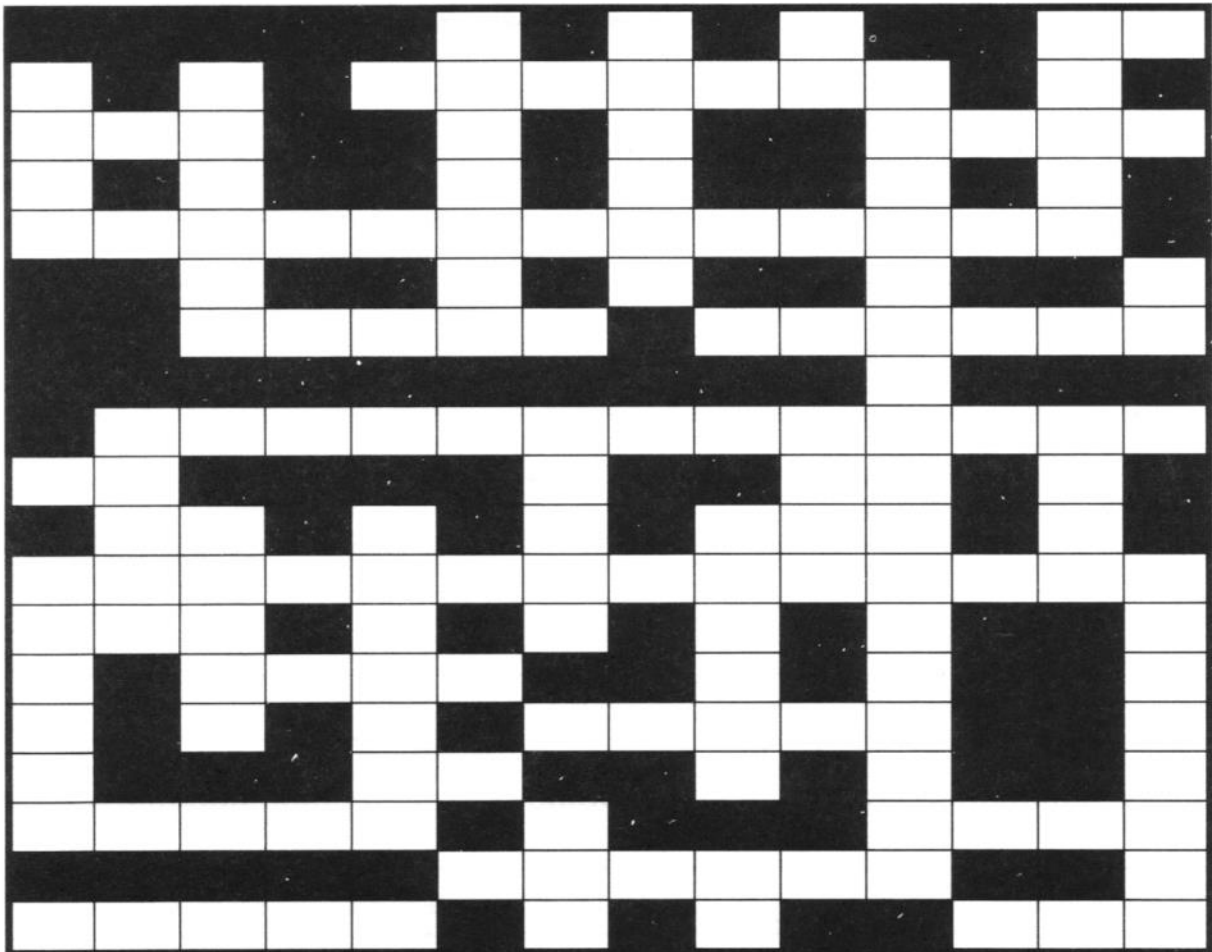


The puzzle below identifies *processes* and *equipment* used for creating yarns. Also listed are some of the many *uses* for yarns which are not manufactured into fabrics.

Count the number of letters required to complete each word, then use the list of given words below to fill in the blank spaces in the puzzle.

- Cross off each word as it is used.

- | | | | | | |
|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|
| 2 LETTERS: | 3 LETTERS: | 4 LETTERS: | 5 LETTERS: | 6 LETTERS: | 7 LETTERS: |
| AT | ART | DOWN | BALLS | BLENDS | CARDING |
| BY | BUY | DULL | CORDS | BOBBIN | MACHINE |
| DO | PLY | EVEN | GAUGE | CHANGE | THREADS |
| IS | REP | HANK | GIFTS | CRAFTS | |
| NO | WAS | MILL | ROPES | STRING | |
| ON | | ROUT | SPINS | TWISTS | |
| OR | | | STORE | | |
| OR | | | TWINE | | |
| | | | | | 8 LETTERS: |
| | | | | | SPINDLES |
| 13 LETTERS: | | 14 LETTERS: | | 17 LETTERS: | |
| KNITTING YARNS | | CROCHET COTTONS | | EMBROIDERY THREADS | |
| SEWING THREADS | | | | | |





Weaving with coloured strips of paper will enable you to understand the basic weaving process. Follow the instructions, then paste your weaving sample into the space provided on the next page.

Materials Required:

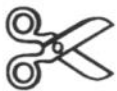
- * 2 x 12.5cm x 12.5cm squares of paper - choose 2 different colours
- * Adhesive

Equipment Required:

- * Ruler
- * Scissors
- * Pen or pencil

Method:

1. Collect materials and equipment.
2. Decide which coloured square will be used for the WARP, and which coloured square will be used for the WEFT.
3. WEFT: Measure, mark and rule 1cm wide columns on the *white* face of the coloured square selected for your “weft”. Carefully cut along the lines into individual strips.
4. WARP: on the *white* face of the coloured square selected for your “warp”, measure, mark and rule 1cm wide columns. Next, rule a 2cm wide border along one edge which is at *right angles* to the narrow columns. When you cut along these narrow lines, *do not* cut beyond the 2cm border line - as strips need to remain attached along this edge.
5. Paste the uncut “warp” border into the space provided on the next page.
6. Study the diagram on Page 89 to see how in each row the thread passes under-and-over a different set of warp threads. Each new row holds the previous row in place.
7. Weave the “weft” strips under-and-over the “warp” to create a checker-board effect.
8. Pack away equipment and dispose of rubbish.



To show which colours were used for the warp and weft in your weaving sample, paste a scrap of paper from each coloured square in the spaces below.

Colour used for Warp

Colour used for Weft

Paste your weaving sample here:

Paste a picture of your starburst or tree weaving here.



Weaving A Starburst

Task:

Weave either a starburst or a tree weaving. Photograph and include on the following page.

NOTE: This is NOT God's eye weaving!



Tree Weaving



Loom Weaving!!!

Use a frame or a shoebox.

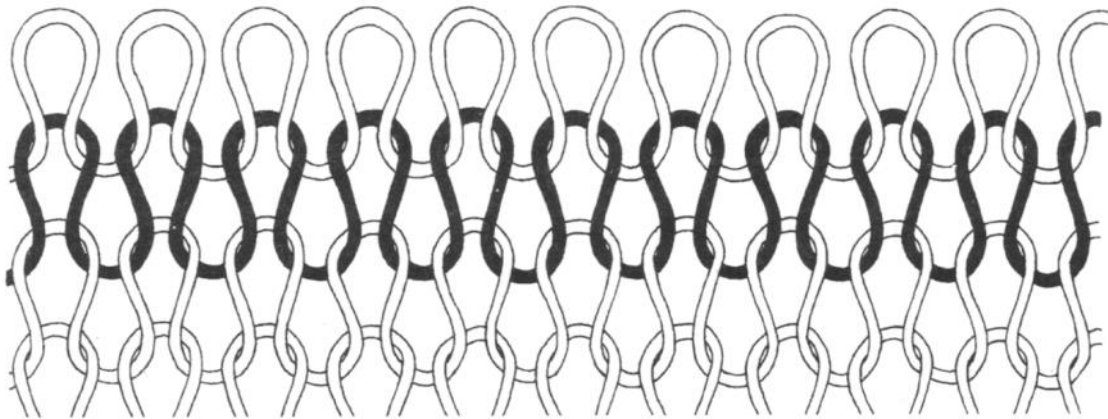


6.3 Knitting

6.3.1 THE KNITTING PROCESS:

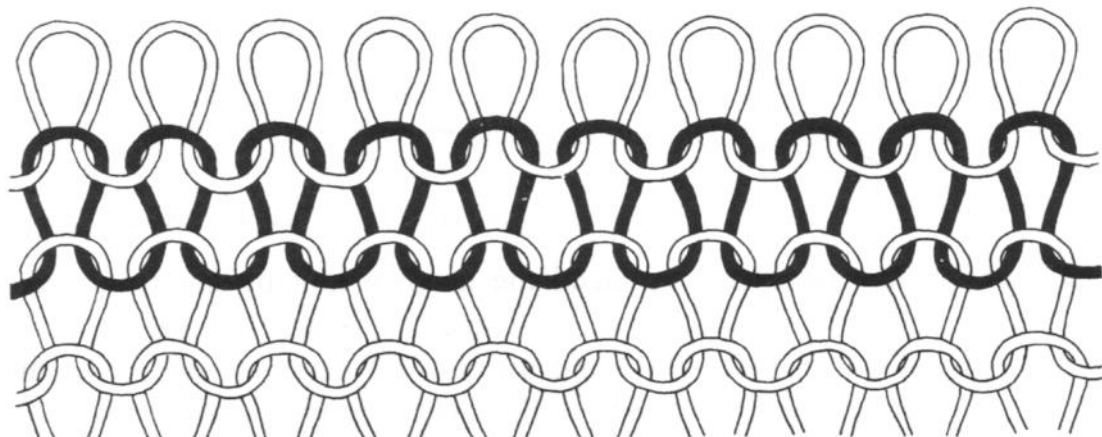
Knitting is the second most commonly used method for manufacturing fabrics from spun yarns. Knitting is the process of making fabrics by forming rows of inter-linked *loops* of yarn, with each loop dependent upon another to prevent it from coming undone.

To understand the concept of knitting, look closely at the diagram below to see the loop formation which is characteristic of plain knitted fabrics. One piece of yarn has been coloured so as to clearly show how an individual piece of yarn forms a horizontal row of loops. You may also notice that each loop is formed by pulling yarn through the loop below, and is held in place by the loop above.



PLAIN KNITTING - FRONT VIEW

When viewed from the *front*, the appearance of a plain knit fabric is very different compared to the *back* of the fabric. The back view shown below clearly illustrates how the knitted loops are connected to one another. Once again, a single piece of yarn has been coloured in black so that it is easier to follow.



PLAIN KNITTING - BACK VIEW

How to knit....

Casting On

"Casting on" is the name for the technique used to get the first row of stitches on the needle. There are several methods of casting on, but the one that we're going to learn here is called the "long-tail cast-on." It's a versatile and sturdy cast-on that you can use for most projects.

Making a Slipknot

This cast-on starts with a slip knot, which is a knot that tightens up easily once you place it on the needle.

1. With the tail end of the yarn in your palm, wrap the working yarn around your index and middle fingers, and lay the working yarn across the tail end, forming an X.
2. Spread your fingers slightly and push the working yarn through your fingers from the back of your hand.
3. Pull this loop up slightly while holding the tail end of the yarn to form a knot.
4. Place the loop onto the knitting needle and pull working yarn to adjust the tension.



For Practice

Make a bunch of slip knots, over and over and over!

The Long-Tail Cast-On

1. Leaving a long tail (about 2½" to 3" for each stitch to be cast on), make a slipknot and place on right needle.
2. Place thumb and index finger of left hand between yarn ends so that working yarn is around index finger and tail end is around thumb.
3. With your other fingers, secure the ends a few inches below the needles. Hold palm upwards, making a V of yarn (Figure 1).
4. Bring needle up through loop on thumb (Figure 2), grab first strand around index finger with needle, and go back down through loop on thumb (Figure 3).
5. Drop loop off thumb and, placing thumb back in V configuration, gently tighten resulting stitch on needle (Figure 4).



Figure 1



Figure 2



Figure 3



Figure 4

Be sure not to cast-on too tightly or loosely—stitches should easily slide back and forth on the needle without looking loose and "loopy."

For Practice

Cast on 20 stitches. Now pull all of the stitches off of the needle (I know, I know...) and cast on 20 stitches again. Repeat this process until you feel really comfortable with this cast-on. It takes awhile to get that muscle memory ingrained, so keep at it! It'll come, I promise.

The Knit Stitch

One of the objects of the knitting game is to move stitches from your left-hand needle to your right-hand needle, making new rows of stitches in the process.

Let's get started!

1. Cast on 20 stitches.
2. Hold the needle with the cast-on stitches in your left hand, the empty needle in your right hand. Hold the needles a few inches from the tips, between your thumb and first couple of fingers.
3. With the working yarn in back of the needle, insert the right needle into the front of the first stitch (the one closest to the tip) from left to right (Figure 1).
4. Now with your right index finger, bring the yarn between the needles from back to front. (Figure 2).
5. With your right hand, pull the right needle—which now has a loop of yarn around it—toward you and through the stitch (Figure 3).

You now have a stitch on the right needle. All you need to do to finish the stitch is to slip the old stitch off the left needle. Tug gently on the working yarn to secure the new stitch.

Repeat this process through the end of the row! When you have knitted every stitch on the row, you will have an empty needle in your left hand. Swap needles so that the "full" needle is in your left hand and the empty one is in your right hand, and do it all over again!



Figure 1



Figure 2



Figure 3

Knit a sampler of 20 stitches by 20 rows.

Knitting sample photos.

Use a web cam, take photos and save to clearly labelled network folder for printing.

1. Photo of you knitting.
2. Photo of the knitting piece in progress.
3. Photo of completed piece.

Reflection: Write a paragraph that outlines your experiences with knitting.

Print and present attached to this page.

6.4 Knotting

Tying knots in yarns to join them together is another method used to produce fabrics. Fabrics made in this way may be very thick and textured, or very “open” - with the holes being an important feature of the fabric.

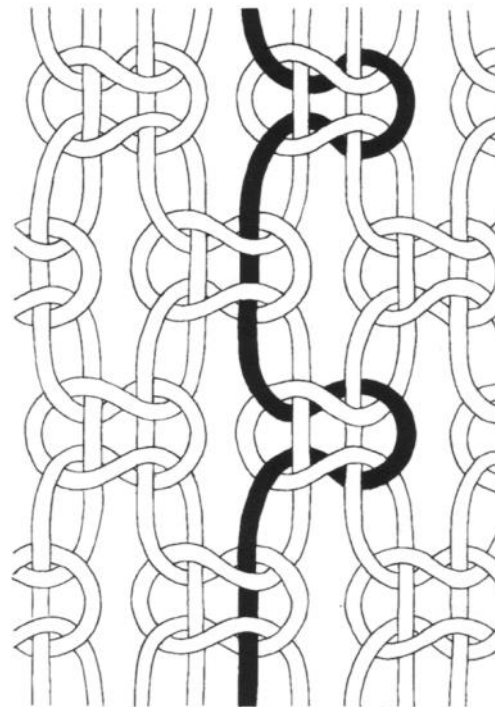
Remnants of fabrics made from knots have been found by archeologists in Egyptian tombs and in sites once populated by the ancient Greeks. Fishermen were believed to also have used knots to make their nets, and seafarers were known to have made decorative items by knotting ropes in the same manner as they used when securing rigging on their sailing vessels. Macramé is a craft form that developed from this early practice, and became very popular during the 1970's. The craft of joining very fine threads together to create decorative fabrics is now known as lace-making.

Macramé:

Macramé is an easy craft as it relies upon *simple yet repetitive knots* to join the individual lengths of yarn together. If you follow the path of the black thread in this diagram, you will observe how the yarns become entwined. In this example, only one knot has been used!

Lace-making:

Some lace fabrics are made by hand, using either a crochet hook, a needle or numerous small bobbins to enable the lace-maker to manipulate the fine yarns to create complex designs. Understandably, hand-made lace can be very expensive, so it is usually only made for special features such as fine collars. Until the first lace-making machine was invented in the early 1800's, *all* lace was made by hand.



SQUARE KNOTS

Today, many lace fabrics are made using specialist machinery that is capable of producing complex knotted patterns. These lace fabrics are usually much narrower than woven or knitted fabrics, and are more expensive by comparison.



Use basic macramé knots to create a personalized key tag. Follow the instructions and diagrams below to create a narrow band of knotted fabric.

Materials Requirements:

- 25mm split key ring
- Household string (cotton)

Completed:

Date:

Method:

1. Measure and cut 8 lengths of string, each piece 2 metres long.
2. Fold each piece of string in half, then individually attach to the split ring using a Larks Head Knot as shown below.
3. Using the Square Knots shown in the diagram on Page 103 as a guide, knot the lengths of yarn together to create a narrow fabric.
4. When your work is the desired length, tie the ends of the yarn into very secure Square Knots so that the knots will not come undone. Trim off the left-over yarns *no shorter than 2cm*.



KNOTTED WRIST BANDS:

Use a variation on macramé to create knotted wrist bands. These colourful bands make wonderful gifts for special friends!

Materials Requirements:

- thick cardboard approximately 30cm x 20cm
- perle cotton *or* embroidery thread (work all strands as one)



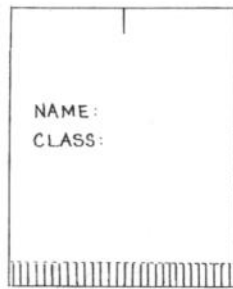
Equipment Requirements:

- Scissors

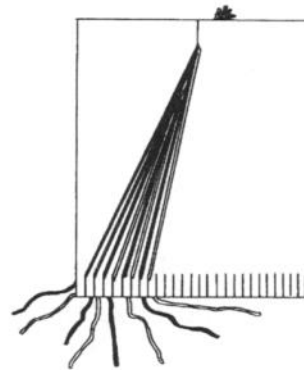
Method:

1. The wrist band will be made from coloured rows of knots, so select *at least* 2 different coloured yarns. You will need to measure and cut 8 pieces of yarn, each piece 1 metre long
2 colours = 4 lengths of colour A and 4 lengths of colour B
3 colours = 4 lengths of colour A, 2 lengths of B and 2 lengths of C
4 colours = 2 lengths of A, 2 lengths of B, 2 lengths of C and 2 lengths of D
2. Lay yarns out on table - parallel but together, and tie them together at one end in a loose knot (approximately 4cm from end)

3. Prepare cardboard as follows:
 - at the centre point on the top edge, cut down 3cm
 - rule a line parallel to the bottom edge, 2cm in from the edge
 - every 1cm along the bottom edge, cut up to the ruled line
 - write your name and class clearly on the cardboard
4. Hook the knotted lengths of yarn through the slit at the top of the cardboard
5. In the order that you wish the coloured rows to appear, spread the threads out and secure each one into a slit at the bottom.

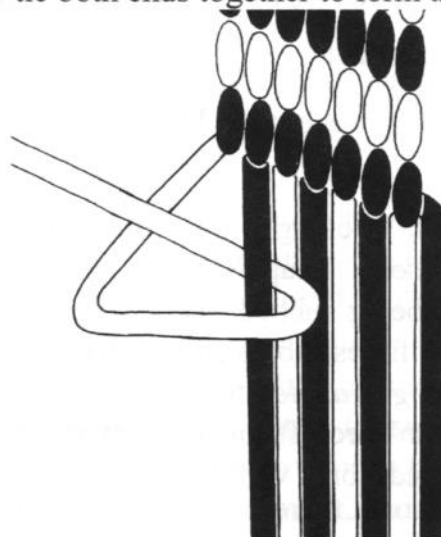


Step 3



Steps 4 & 5

6. Starting with the *left* piece of yarn - and continuing with it across all the other threads - follow the diagram below to complete two knots on each thread. At the end of the row, hook the yarn into the next empty slit.
7. Using the piece of yarn that is *now* on the left, work another row of knots across *all* the other threads in the same manner as above. Continue working in this manner until the wrist band is the required length.
8. Detach the knotted band from the cardboard, and undo the knot at the top. Securely tie both ends together to form the wristband. Trim ends.



Use the white thread to make a number "4".

Tuck the white thread under the black thread.

Bring the white thread up through the loop created, and carefully pull the knot into position.

Repeat these steps to form a second knot on the black thread.

Continue using the white thread to make 2 knots on each thread until until this row is completed.

How to Knot the Threads for the Wristband

Shamballa Bracelets



Research the technique of Macramé to make a macramé and bead bracelet. Have a look on the internet for Shamballa or knotted bracelets.



<http://smittenbyaknot.com/2011/01/01/easy-macrame-bracelet-tutorial/>



For centre 'core' piece - 40cm

For knot/bead section - 1m 20cm

For knot closure - 40cm

Use figure 8 knots at the ends—it looks better!

*It looks better if you use ODD numbers of knots before and between beads!

Plan your bracelet BEFORE you start!

Tasks.....

1. Create a trial of macramé with multi-coloured yarn.
2. Create a Shamballa bracelet—you MUST plan it first so it is symmetrical.
3. Create a friendship bracelet.
4. Photograph your progress using the webcam for recording in your workbook.

Take photographs of your knotting projects and save to a clearly labelled network folder for printing. Paste them onto this page.

(Use a web cam.)

Completed:
Date:

6.5 Felting

The process of tangling fibres together to make fabrics is an ancient craft. Felting requires *heat, friction and pressure*, so it is thought that felting was first introduced by a primitive ancestor after the accidental discovery that unspun Wool fibres tangled into a thick wad when rubbed together. The felt-making process has changed little over time, with many cultures continuing to make rugs, clothing and footwear from hand-made felt. Since the Industrial Revolution that mechanized so many tasks, machines are now used to produce much of the felt that is commercially available.

To make felt - either by hand or by machine - *unspun Wool fibres* are used. Wool fibres are characterised by tiny, barbed scales, so when the fibres are handled roughly they lock together. When making felt, other fibres may be blended with the Wool fibres, however the bigger the percentage of Wool the better the quality of felt.



WOOL FIBRES MAGNIFIED

Woollen fabrics and clothing are commonly made from spun yarns. To ensure that these items do not shrink and felt, careful handling when washing is always recommended. Technological advancements have resulted in modern production processes which minimize the likelihood of Woollen items felting and enables these items to be machine washed. For example, Wool fibres may be coated with special resins to prevent the scales from grabbing, or the scales may be chemically removed, or Wool fibres may be blended with other fibres.



Have any of your Woollen jumpers, socks or blankets been accidentally shrunk during washing? Most of us have at least one story to tell!

Making felted fabrics is an easy task. Felting occurs when Wool fibres are moistened, heated, rubbed and pressed. Soap is often used to soften and lubricate the fibres whilst they are being rubbed and pressed together. To make a strong and solid mat of felted fibres, fibres should first be carded, then placed in layers with the fibres at *right angles* to each other. Commercial manufacture of felt uses machinery to force steam through the fibres, create friction and apply pressure to the felted fibres with heavy rollers, and produce felts in a variety of thicknesses.

Felted Pizza

Materials:

- Wool and silk tops in a variety of colours
- Water
- Detergent.

Equipment:

- Towels and cloths.
- Tulle netting.
- Bubble wrap

Method:

1. Layer and place the wool onto the surface, overlapping and laying fibre layers across one another.
2. Continue to create layers across each other so that fibres run in different directions.
3. Add coloured 'toppings' to your pizza. Use small pieces of silk tops to contrast and decorate your pizza.
4. Cover with tulle netting.
5. Pour hot water into the centre of the pizza. Gently rub a few drops of detergent into the wet area. Rub in a circular motion, working out from the centre.
6. Continue working using more water but minimal detergent. Rub gently so you do not distort your design. Continue working the wet wool, slowly increasing pressure as the wool begins to felt. This will take a while!
7. Keep applying pressure and rubbing the surface.
8. Peel away the netting.
9. Lay the completed work onto a towel and roll up to squeeze out the moisture.
10. Unroll the towel and remove your felt, roll into an old cloth, roll backwards and forwards for several minutes (100 rolls).
11. Unroll and roll in the opposite direction (90 degree turn). Roll tightly and again roll for about 100 rolls. Unroll.
12. You may need to repeat above process a few more times!
13. Rinse in cold water and gently squeeze out excess moisture.
14. Lay flat to dry.

Felted Pods...



Materials:

- Wool and silk tops in a variety of colours
- Water
- Detergent.

Equipment:

- Towels and cloths.
- Balloon filled with water
- Tulle netting.

Method:

1. Layer and place the wool onto the surface, overlapping and laying fibre layers across one another.
2. Continue to create layers across each other so that fibres run in different directions.
3. Add coloured areas to your work—remember silk will not shrink like wool so will 'wrinkle'.
4. Cover with tulle netting.
5. Using hot water and a small amount of detergent, rub the fibre around the balloon until it felts.
6. Continue working using more water but minimal detergent. Rub gently so you do not distort your design. Continue working the wet wool, slowly increasing pressure as the wool begins to felt. This will take a while!
7. Keep applying pressure and rubbing the surface.
8. Peel away the netting.
9. Rinse in cold water and gently squeeze out excess moisture.
10. Hang the completed work to dry.
11. **Clean up your mess!**
12. Carefully pierce and remove the water and then the balloon—you do not want to wet your work again.
13. Trim and decorate the edges. Apply beading or other decoration as desired.

Textiles.....

Paste a picture of the finished felted pizza here.

Paste a picture of the finished felted pod here.

Dying



COLOUR MIXING SUMMARY:

Fill in the spaces below to create a quick reference for colour mixing.

<i>To mix this colour:</i>	<i>these colours must be mixed:</i>
ORANGE	
GREEN	
PURPLE	
BROWN	
PALE BLUE	
PINK	
LEMON	
FLESH TINT	
LIGHT GREEN	
MAUVE	
CRIMSON	
TANGERINE	
YELLOWY-ORANGE	
LIME GREEN	
TURQUOISE	
INDIGO	
GREY	



When mixing colours, the _____ colour is *gradually* mixed into the _____ colour.



Colours appear _____ when they are dry.

7.6 Colour Find-the-Word



Find the following words hidden amongst the letters below. Words may read horizontally [→] or vertically [↓].

Find the words associated with Dying Textiles:

- NATURAL
- MORDANT
- BATIK
- SUBMERGED
- ALUM
- REACTIVE
- DYE
- WAX
- DISPERSE
- AZOIC
- TIE AND DYE
- DIRECT
- ACID
- VEGETABLE DYE

Find the words associated with Printing Textiles:

- BLOT
- ROLLERS
- MARBELLING
- BLOCK
- STENCILLING
- FABRIC
- SCREEN PRINTING
- TRANSFER PRINT

Find the colour words:

- GREEN
- RED
- PRIMARY
- SAFFRON
- INDIGO
- SECONDARY
- TINT
- COLOUR
- PURPLE
- ORANGE
- YELLOW
- MAUVE
- BROWN
- WOAD
- MADDER

V	E	G	E	T	A	B	L	E	D	Y	E	R	B	L	O	C	K	B	R
S	A	D	B	L	L	A	T	I	Y	O	I	D	K	A	E	R	O	S	E
A	C	O	L	O	U	R	C	R	E	N	D	I	R	E	C	T	N	T	A
V	E	B	A	Y	M	P	R	E	P	I	O	S	A	E	B	O	S	S	C
O	F	R	E	N	B	R	O	W	N	U	S	P	L	A	L	S	T	A	T
R	E	S	A	B	O	I	R	O	B	A	C	E	M	A	U	V	E	R	I
A	C	I	D	I	H	M	E	A	S	H	O	R	A	I	E	T	N	O	V
N	A	S	Q	I	E	A	Y	D	R	B	N	S	R	E	A	T	C	S	E
G	R	E	E	N	I	R	C	B	N	M	Y	E	B	R	A	Z	I	K	T
E	L	C	O	D	R	Y	E	L	L	O	W	F	E	E	Q	B	L	O	T
G	O	O	X	I	E	N	K	D	A	R	R	S	L	O	N	F	L	A	I
E	P	N	J	G	R	O	A	X	I	D	O	E	L	P	R	A	I	B	E
R	E	D	H	O	Q	X	Y	A	W	A	X	E	I	R	E	S	N	T	A
I	B	A	F	J	P	R	U	V	U	N	Y	T	N	I	O	L	G	A	N
S	C	R	E	E	N	P	R	I	N	T	I	N	G	C	M	A	E	R	D
O	C	Y	P	N	X	I	O	K	T	R	I	E	E	D	A	C	S	I	D
R	I	G	E	P	R	I	L	T	Q	U	I	B	N	O	D	B	R	C	Y
E	N	A	T	U	R	A	L	S	V	E	E	K	R	A	D	A	G	R	E
Z	A	Z	I	R	B	A	E	T	Y	I	R	V	O	U	E	T	R	A	C
D	R	O	H	P	K	T	R	A	N	S	F	E	R	P	R	I	N	T	D
O	A	I	P	L	E	E	S	A	F	F	R	O	N	E	R	K	N	I	L
R	I	C	H	E	X	R	A	P	T	Y	U	I	S	T	S	R	O	N	O
S	U	B	M	E	R	G	E	D	A	F	A	B	R	I	C	A	S	T	Z

Parts of the Sewing Machine....



Parts of the Sewing Machine....



Threading the Sewing Machine....



THREADING TOP

1.

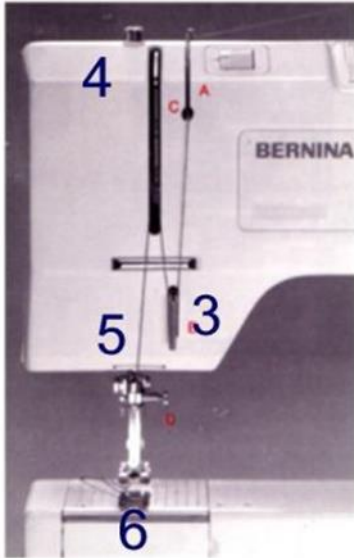
2

3

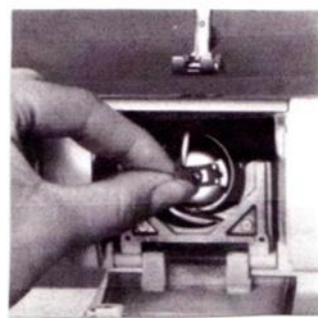
4

5

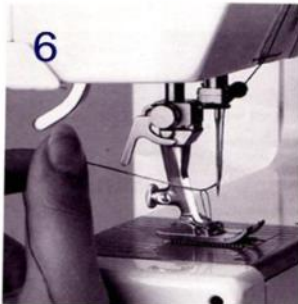
6



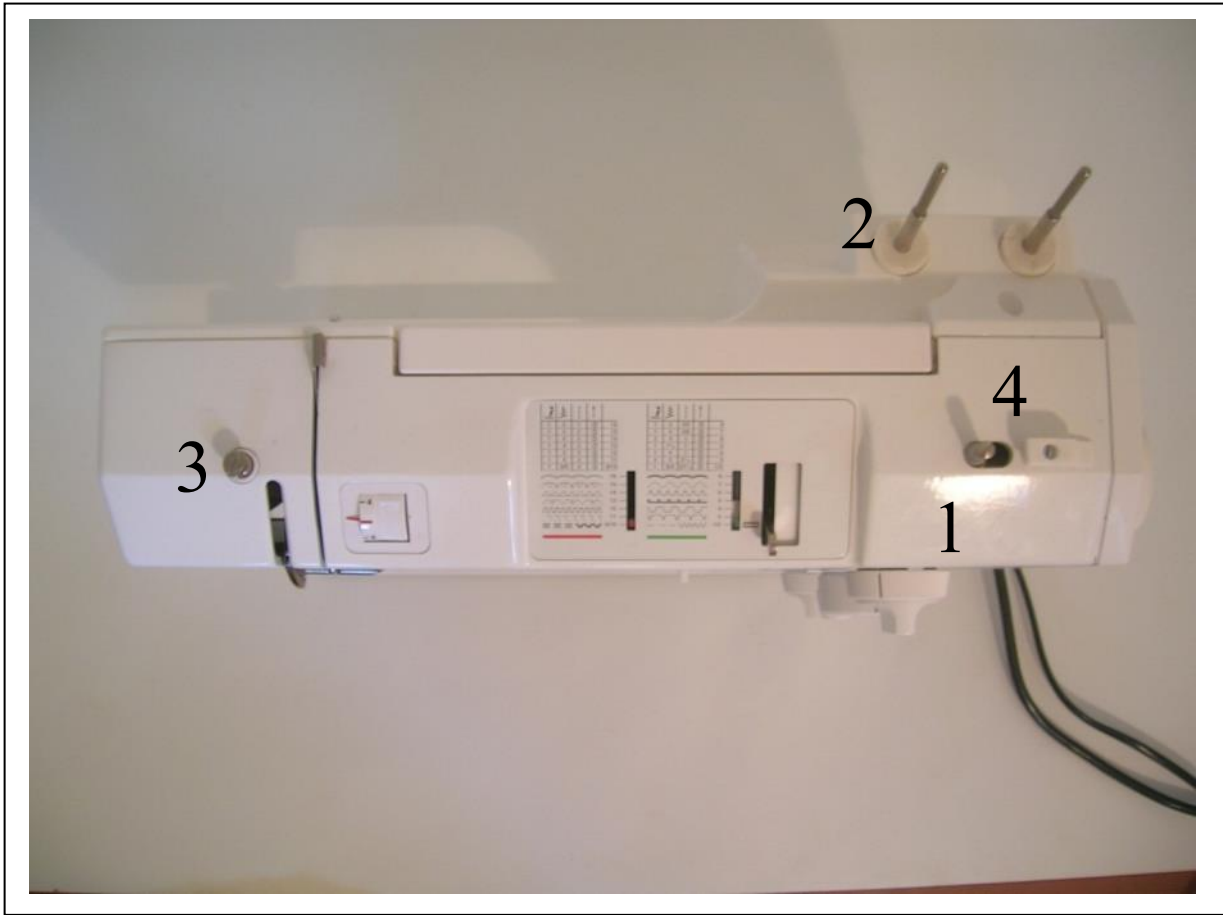
THREADING BOBBIN CASE



5



Threading the Bobbin....



1.

2.

3.

4.

Then load bobbin with thread.

<p>Stitch Length Selector Alter this setting to change the length of the stitch that you need on your work.</p>	<p>Needle This is a sharp piece of metal that punctures the fabric allowing us to sew.</p>	<p>Reverse Lever This changes the direction of the stitch and allows you to sew the opposite way.</p>
<p>Pick Up Lever This takes up the thread from the reel to get ready for the next stitch.</p>	<p>Feed Dog These are the small teeth under the presser foot that move the fabric along.</p>	<p>Light Power Switch This turns on a light at the side of the machine, reducing the strain on your eyes.</p>
<p>Needle Clamp You unscrew this component to replace the needle with a new one.</p>	<p>Thread Holder This is where you attach the thread to the machine so that it does not slip.</p>	<p>Bed Plate This is where you rest and manipulate the fabric when you are machining it.</p>
<p>Pressure Foot Holds the fabric in place when stitching so that it moves evenly and smoothly.</p>	<p>Hand Wheel Allows for more control for precise stitching.</p>	<p>Pattern Selector Allows you to switch between different types of stitches.</p>

Write each of the headings listed in the above table, on the diagram on pages 61 & 62.

Sewing Machine Skills.

Complete the worksheets demonstrating competent sewing skills using paper.

- Straight lines
- Curved lines
- Shapes
- Corners

Sewing Machine Skills – Fabric Exercises

Set sewing machine and practice sewing on fabric:

SW 0, SL 2.5

SW 0, SL 5

SW 2.5, SL 2.5

SW 5, SL 1.5

Red 10

Red 12

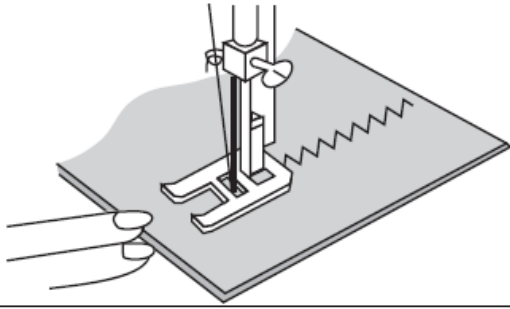
Green 4

Green 8

Edge Fabric – fold, iron, pin and sew edge

Pin Cushion – iron fabric, pin together, sew around three edges & part of opening (straight stitch & zig-zag), turn inside out, stuff cushion, hand sew opening

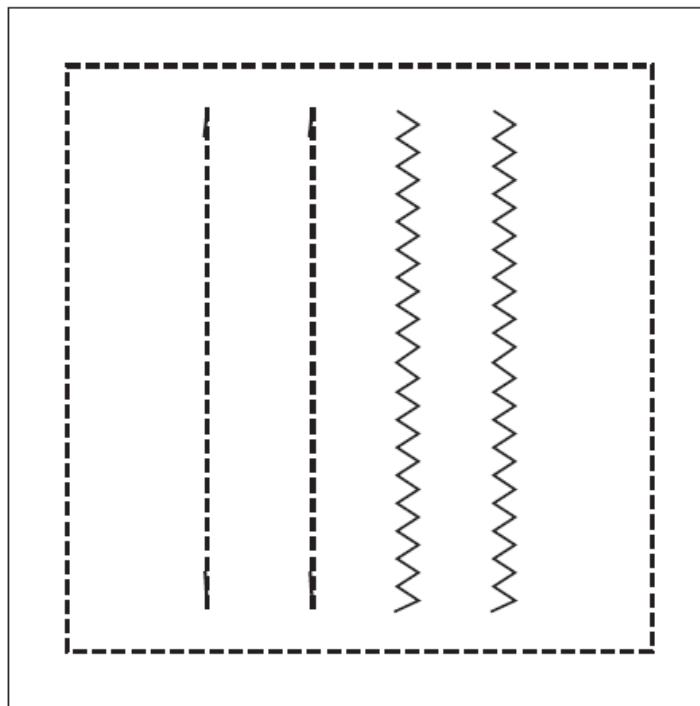
Sewing Machine Skills.



Machine Stitching

GOALS: ...demonstrate your ability to correctly thread the sewing machine.
...stitch straight lines with backstitching, stitch square corners, stitch 1/2" seam.
...set machine to ziz-zag stitch.

1. Get a 15cm square of fabric and thread machine with a colour that will show up on the fabric.
2. Begin in the middle of a side and stitch 2cm from the edge all the way around. Use the measuring guide on the sewing machine.
3. Inside the square, stitch 2 rows of straight stitching with back stitching when you begin and end.
4. Then stitch 2 rows of zig-zag stitching—again doing back stitching when you begin and end.
5. Be sure all threads are neatly trimmed.



Sewing Machine Licence

This is to certify that

has demonstrated an
ability to use a sewing
machine independently,
competently and safely.

Signed:

Date:

Hackie Sack

1. Cut a rectangle of dyed cotton fabric 20 x 12cm
2. Using procion reactive dyes, decorate your fabric.
3. When fabric is dry, recut to 18 x 10cm.
4. Fold a seam allowance of 1.2cm along one long edge. Press with the iron.
5. Bring short ends together, pin and stitch on the sewing machine using a 1cm seam allowance.
6. Press seam open.
7. Fold edge not pressed so the seam is in the middle. Pin and stitch.
8. Clip corner seam allowance off and turn through.
9. Fill with rice and hand stitch closed.

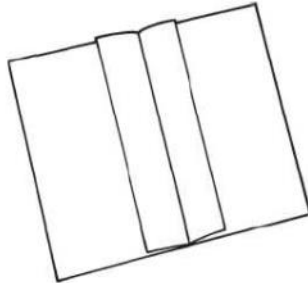
Paste a photo taken via your laptop here
of your completed project.

If time permits, I would really like you all to make a pair of Boxer Shorts—this should take about 3-4 weeks of class time. I will not order and collect material if/when the time is right!

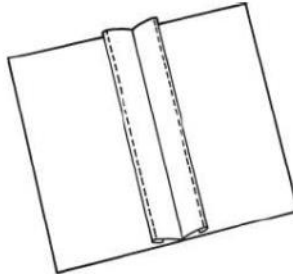
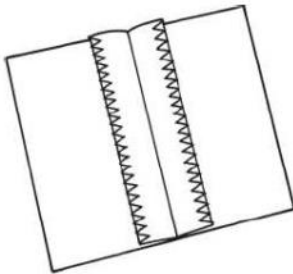
Resource sheet - Joining and finishing

Joining and finishing

Fabrics are joined together with seams. The most common seam is called a flat seam.



A flat seam can be neatened in different ways.

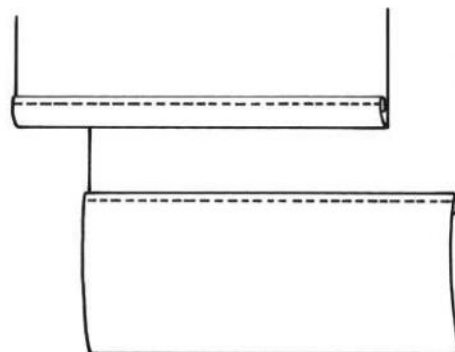
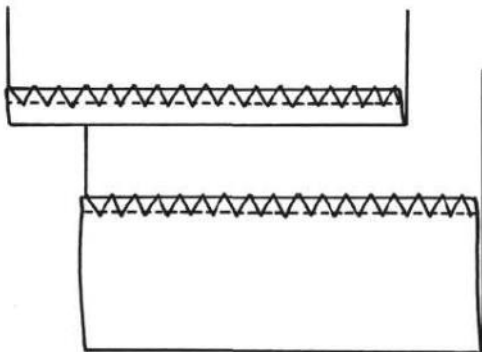


A seam can also be created using an overlocker machine. This machine will stitch, trim and neaten a seam in one process. This process is often used by industry.



Finishing fabrics

Fraying edges of fabric are often neatened with a hem.



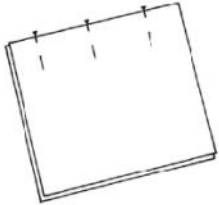
Activity sheet - Joining and finishing

Joining fabrics together

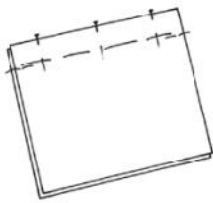
☞ These steps will show you how to make a flat seam.

☞ There are two ways of neatening the edges. Select one way to neaten the edges.

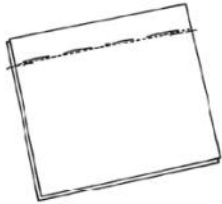
1. Pin the two edges together.



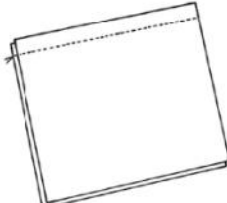
2. Tack the pieces of fabric together.



3. Remove the pins. Machine along the tacking line.

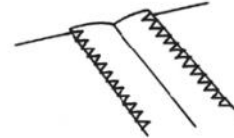


4. Remove the tacking stitches.

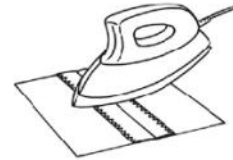


Method 1

1. Neaten each edge of the seam with a zig-zag stitch.

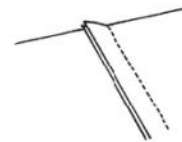


2. Press the seam flat.

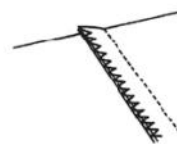


Method 2

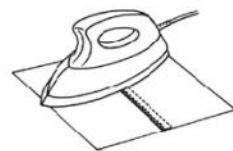
1. Trim the seam down to 7.5 mm.



2. Zig-zag both pieces of fabric together.



3. Press the seam to one side.

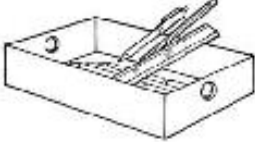
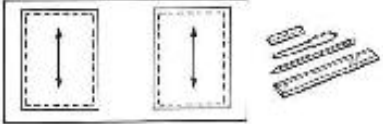

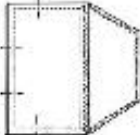

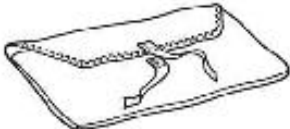



***Demonstrate both seam types. Attach to this page.**

Activity sheet - Patterns and planning work with textiles

Make and use a pattern 1: pencil case

☞ This pattern is for a pencil case. Read these steps and think about what you will need to consider to make a pencil case. Then, use the steps to make your pencil case.

<p>1. What do you want to put in your pencil case? Measure the sizes of the things that you want to put into the case. Decide what length and how wide the case should be.</p>	
<p>2. Make a pattern for your pencil case. Use squared paper to draw it. Remember to draw the cutting line 1.5cm outside the stitching line. Draw on a grain line.</p>	
<p>3. Decide how you will close the case. Do you need to add a flap to close it? Draw a pattern for this.</p>	
<p>4. How will you hold the case shut? Mark where the fastenings will go.</p>	
<p>5. Choose a suitable fabric for your pencil case. Pin the pattern on and cut out the pieces.</p>	
<p>6. Join the pieces together and add your fastener.</p>	
<p>7. Put your pens and pencils in and try it out!</p>	

Alternatively - make a cover for your diary or other book of your choice.



The **Fabric Flower Pins** by Melody Ferris and Jill Russell are a cinch to make, and you can use them on their own, or to decorate a headband, a lapel, a bag, or a hat.

Materials

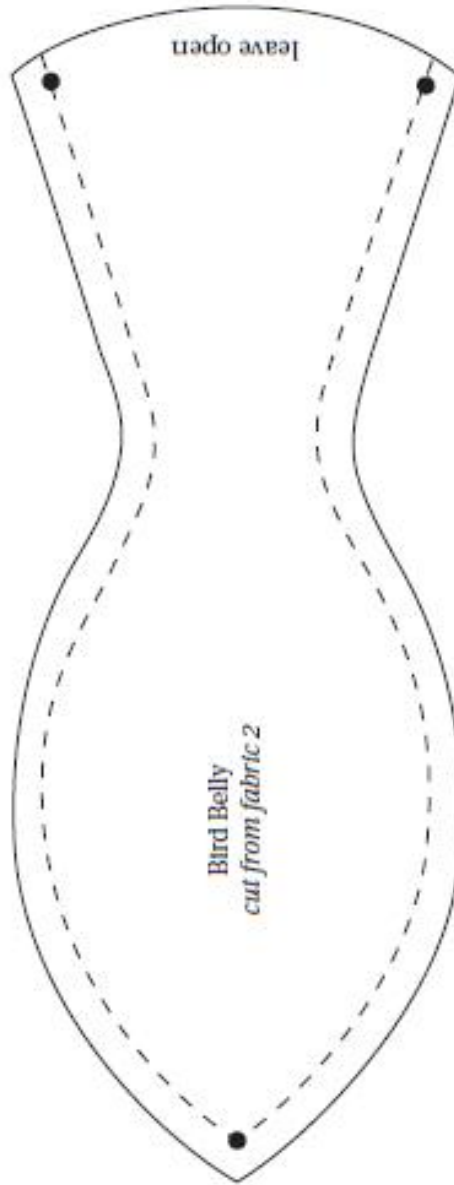
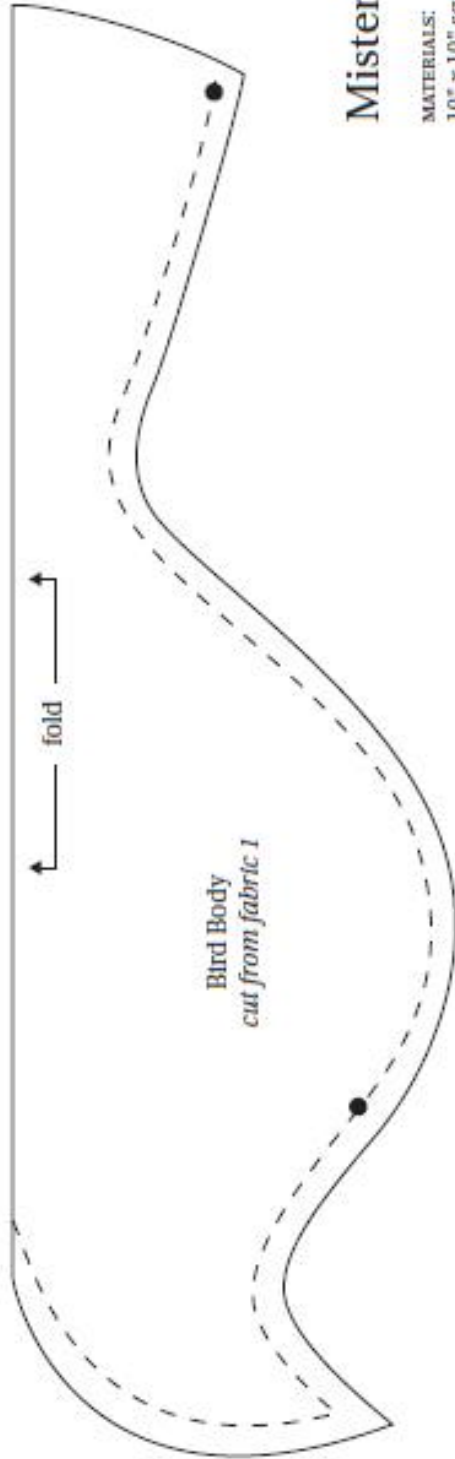
1. Heavy paper for circle templates
2. Scissors (fabric and paper)
3. Pencil or fabric marker
4. Assortment of fabrics (organza, tulle, lace, satin, etc.)
5. Sewing pins
6. Ribbon
7. Sewing needles and heavy-duty thread
8. Embellishments (beads, glitzy buttons, yarn)
9. Pin backs

Directions

1. Make paper templates by cutting the heavy paper into 1", 2", and 3" circles.
2. Trace the templates onto your fabric with a pencil or fabric marker and cut out 6-10 circles. **Tip:** Pin and cut multiple layers of fabric at a time to hasten the process.
3. Make a ruched (gathered) flower using a length of ribbon. To do this, hand stitch, beginning at one end of the ribbon, back and forth along the ribbon in a zigzag pattern. Pull the thread to gather the ribbon. Keep going until you have the size you want.
4. Using the largest fabric circle as the base for your flower, stack 6-10 increasingly smaller circles on top of each other until the arrangement suits your style. Experiment with a variety of fabric textures, weights, and colors to create a truly unique piece of art.
5. Pin the layers together and set aside.
6. Choose an embellishment for your flower's focal point and then stitch it to the center of the ruched flower. Add this embellished flower to the top of your stack of fabric circles, and use a needle and thread to stitch through all the layers. Alternately, you can use hot glue to attach the layers and embellishment.
7. Add more beads or buttons to the flower as desired.
8. Attach the pin back to the back of the largest circle with glue or stitch it in place.

<http://e1.interweave.com/dm?id=47A22360B044444C3953504AA...>





Mister Blue Bird

MATERIALS:

10" x 10" square (each) of 2 fabrics
 scissors, marking pencil, thread

DIRECTIONS:

1. Cut out your feathered friend from 2 contrasting pieces of fabric.
2. Pin 1 edge of the belly to the body, right sides together starting at the tail.
3. Using a 1/4" seam allowance, sew the 2 pieces together using a straight stitch from dot to dot. Be sure to leave the tail end open.
4. Pin other edge and sew together the same way.
5. Sew head seam together to dot.
6. Turn bird right side out and stuff.
7. Sew tail closed.

Textiles.....



Tick the boxes to show what you know or what you can do.

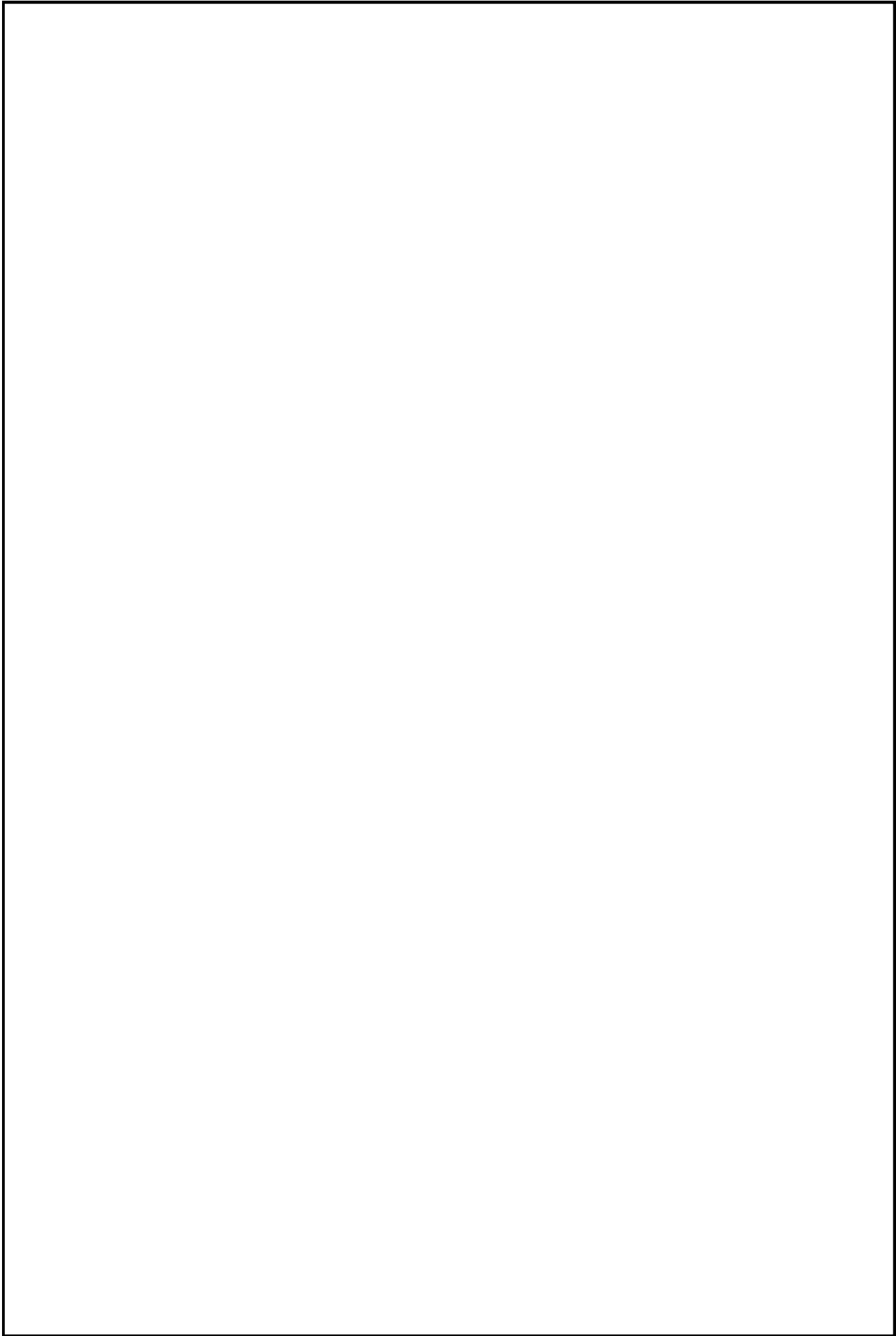
I know:	I know / yes	not sure/ sometimes	don't know / no
1 how to listen to the teacher.			
2 how to work well with a partner.			
3 how to work well in a group.			
4			
5			
6			
7			
8			
9			
10			

I know best / I can do best:

I need to: (Write no more than three targets.)

- ---
- ---
- ---

**Completed:
Date:**



Completed:
Date:

