

Design Technology – Year 8 Textiles Homework Booklet

Name: _____

Teacher: _____

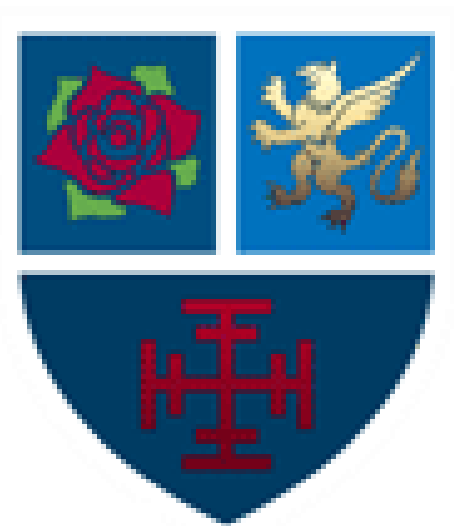
Form & Group: _____

- This book is your property, if you lose it you must buy a new one
- Bring it to each lesson

I will get my homework marked at the start of each lesson.

For my technical knowledge I need to know:

- How to spell the word correctly
- What the meaning is
- How and where it is used



Homework 1 – complete the names for each of the points



Read and highlight -A BRIEF HISTORY OF NATURAL DYES

- There are two types of dyes. Natural, those that come from animal or plant sources and synthetic, those that are manmade. If you were trying to dye clothing before synthetic dyes were discovered in 1856, you would have had to use natural dyes which were made from animals and plants. Some of the most common are the animal dyes tyrian purple and cochineal and the plant dyes madder and indigo.
- Tyrian purple was one of the most important natural dyes to have ever been found. As legend has it, a sheep dog belonging to Hercules was walking along the beach in Tyre. He bit into a small mollusk which turned his mouth the colour of coagulated blood. This became known as royal or tyrian purple. It brought great prosperity to Tyre around 1500 BC and for centuries it was the most expensive animal dye money could buy. It was the colour of high achievement, ostentatious wealth, symbolized sovereignty, and the highest offices in the legal system. Purple was the colour of Cleopatra's barge and Julius Caesar decreed that the colour could only be worn by the emperor and his household. It was also prohibitively expensive.
- Cochineal is a crimson dye made from cactus insects. It was introduced to Europe from Mexico by the Spanish. It was used as a cloth dye, artists' pigment, and much later as a food dye. This also required a huge seasonal harvest seeing as 17,000 dried insects produced a single ounce of dye.
- On the other hand, plant dyes are generally cheaper and in greater supply. The most common being madder, red, and indigo, blue. Madder came from the roots of 35 species of plants found in Europe and Asia. It has been found in the cloth of mummies and was the first dye to be used as camouflage.
- Indigo was mainly used as a dye and pigment. It was derived from a shrub-like plant that was soaked in water and then beaten with bamboo to quicken oxidation. During this process the liquid changes from green to dark blue. It is then heated, filtered, and formed into a paste. Although this form of indigo is still in use, there is a synthetic version that is used today primarily to dye blue jeans.
- There are other plant and animal dyes, but their range of colours is narrow and produce shades that have little colour value. This leaves the top natural dyes of tyrian purple, cochineal, madder, and indigo.

Homework 2 - Natural Dyes

Question	Answer	Mark
Name 2 colours of natural dyes and the source of the colour.		/4
What fibres historically would be used for natural dyes		/1
Which would be the cheapest natural dye?		/1

.....6 marks

Read and highlight

The birth of (synthetic) dyeing

Updated Friday, 30th August 2019

Today, the world's dyestuffs industry produces around 500,000 tonnes of synthetic dye each year. It's come a long way since William Henry Perkins discovered mauve.



As our castaway flag testifies, natural dyes offer a fairly limited range of colours. Until the discovery of synthetic alternatives, most natural dyes were derived from plants, and, to a much smaller extent, from shellfish or insects (if you're interested, visit ['Experiments with Natural Dyes'](#)).

They were only present in small amounts and their extraction was often inefficient, so they were usually expensive. The burgeoning textile industry of the 19th century created a need to manufacture larger quantities of cheaper and more versatile alternatives. The resulting synthetic dye industry became the 'high-tech' industry of Victorian times, and its acknowledged founder was an English chemist, William Henry Perkin.

In 1856, 18-year-old Perkin was experimenting in his home laboratory, trying to synthesise the anti-malarial drug quinine (found nowadays in tonic water). In an experiment with a compound called aniline, one of the simplest chemical components of coal tar,* he obtained a black precipitate. On testing its solubility, he serendipitously discovered that alcohol extracted a purple colour, which readily dyed silk, and was much more stable in sunlight than any other (natural) purple dye then in use. Amazingly, some of Perkin's original dyed samples still exist and remain purple to this day.

** The dyestuffs industry was largely based on chemicals obtained from coal tar, a black, viscous by-product of gas production from coal. Initially regarded as a useless and filthy nuisance, coal tar turned out to offer an unimaginably rich treasure trove of chemicals. It's astonishing that until about 30 years ago, nearly all synthetic dyes were ultimately derived from coal tar (and not only dyes, but chemicals like carbolic acid, TNT and saccharin).*

He patented this first synthetic dye in August 1856, and set about manufacturing it on an industrial scale. Perkin had to develop large-scale production methods for his starting materials, and to do this he built a factory at Greenford Green in Middlesex. At first he called the dye aniline purple, but, following its success in France, it was renamed mauve (or mauveine), after the French word for the purple mallow flower.



A technique was developed to apply the dye to cotton fabrics and soon everyone was using it. It was a sensation. French Empress Eugénie wore a dress dyed with mauve, and it became one of Queen Victoria's favourite colours. From 1881–1901, even British 'penny lilac' postage stamps were coloured mauve.

'penny lilac'

In 1874, Perkin sold his business and retired to enjoy private research and family life. Fifty years after his discovery of mauve, he was knighted for his contribution to the British chemical industry. His achievement was not just the discovery of the dye but its development and exploitation.

Perkin showed that:

- Chemical research can give rise to useful and valuable materials.
- It's possible to produce specialised chemicals on a large scale in processes that require several reactions to be carried out in succession.
- Co-operation between manufacturers and users is necessary for progress, and with the right product, chemical manufacture could be commercially viable.

The Industry

Despite Perkin's success, the next 50 years of the British synthetic dyestuffs industry were disappointing. Chemists and industrialists everywhere (except Britain it seemed) were quick to see the possibilities opened up by Perkin.

The discovery of mauve sparked an international race to produce other synthetic dyes from the myriad chemicals in coal tar. Research was directed towards determining the structures of natural dyes that could then be synthesised in the laboratory, and subsequently manufactured on an industrial scale.

Alizarin and Indigo

Like many 'natural' dyes, alizarin and indigo are simple molecules, but until 1868 their chemical structures were completely unknown. In that year, alizarin was shown chemically to be derived from the hydrocarbon anthracene, obtained, of course, from coal tar.

Although the structure of anthracene itself was not known at the time, a starting material for the laboratory synthesis of alizarin was now available. In June 1869, Perkin and the German dye company, BASF, filed patents for the same synthetic route to alizarin just one day apart.

As a result, the industry producing the natural dye was killed off almost overnight. Perkin's company alone was producing over 400 tonnes of synthetic alizarin a year and at less than half the price of the natural product. The demise of naturally derived |

Homework 3 - Synthetic Dyes

Question	Answer	Mark
Who invented synthetic dyes and what date		/2
What was the name of the dye?		/1
What colour was it?		/1
What was the name of the colour the French called it?		/1

.....5 marks

Homework 4 – Artists

/ 12 marks

In each box below you need to name the artist that created the following artwork?

You need to write the typical features of their work?

A name of their famous piece of art work?

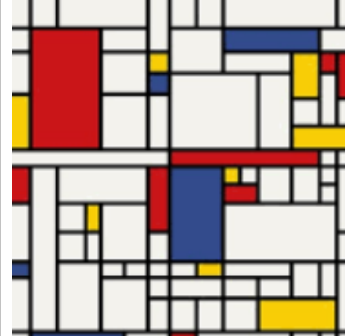


Artists name:

Typical features:

Famous Piece:

/ 3 marks

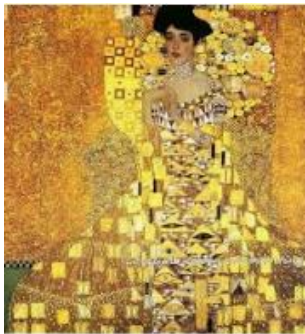


Artists name:

Typical features:

Famous Piece:

/ 3 marks



Artists name:

Typical features:

Famous Piece:

/ 3 marks



Artists name:

Typical features:

Famous Piece:

/ 3 marks

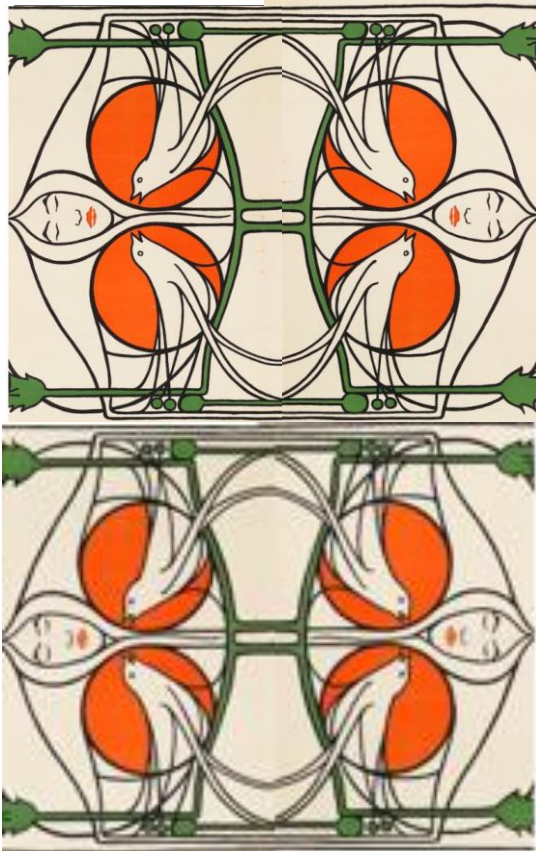
Homework 5: Repeat printing : Research what is a repeat print & learn the repeats

- Repeat patterns may run horizontal or vertical. Designers have many ways of taking a single figure and covering a textile with it. Now let's look at a few of the most basic types of repeats. For this discussion, the word 'figure' means a single design element. It's this element that will be used to create the repeat.
- A **block repeat** takes the figure and places it on a simple grid. The figure, always pointing in the same direction, appears over and over again in rows that line up vertically and horizontally.
- A **half-brick repeat** takes each horizontal row and staggers it so that it doesn't line up with the rows above and below it. This repeat pattern gets its name from the resemblance to how bricks are laid to form a brick wall. The figure is placed over and over again along a horizontal row. Then, when the next row is placed, instead of forming a simple grid, the pattern is offset so the figures don't line up vertically.
- Now, take that type of offset pattern and make it vertical instead of horizontal. A **half-drop repeat** places the figure over and over again in a vertical column. Then, in the next column, each figure is offset halfway from the ones in the neighboring column so the figures don't line up horizontally. Think of a brick wall placed on its side so that each row of bricks runs in long vertical columns. This kind of repeat, by the way, is one of the most popular in textile design.

Homework 5 –Repeat printing

/ 10 marks

- Which one is half drop and mirror repeat?
- Complete the repeat





/ 5 marks



/ 5 marks

Homework 6 – Colour application

Complete the missing sections by researching or use your knowledge from the classroom

Resit dyeing Name: /2 marks	Method & equipment /6 marks	Image and origin /2 marks
		
		

Total /10marks

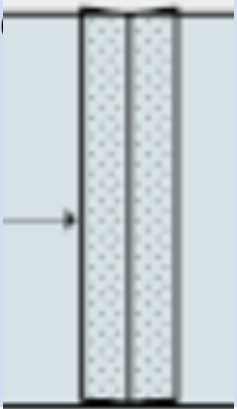

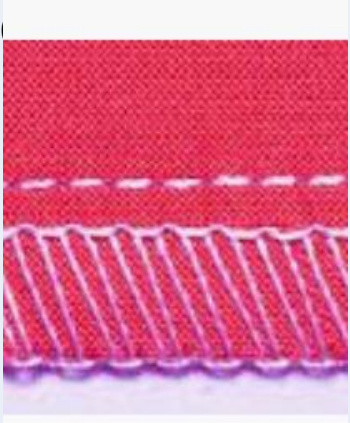

Homework 7: Key technical words: spelling, meaning & use

Research and fill in the meaning and learn

Word	Meaning	Use
Seam		
Overlocker		
Seam allowance		

Homework 8 - Seam Types

Research and fill in the questions and learn

Seam	Which seam is this? Where is it used?	Seam	Which seam is this?
			
			

Homework 9 - Maths

Complete the question:

The length of a seam is 120cms. The length of a stitch is 2mm.

What is the minimum number of stitches required to sew the seam?

Show your calculations

..... Marks/6

Homework 10 – Learn the symbols & answer the question

: Care of fabric

YOUR COMPLETE CARE LABEL GUIDE

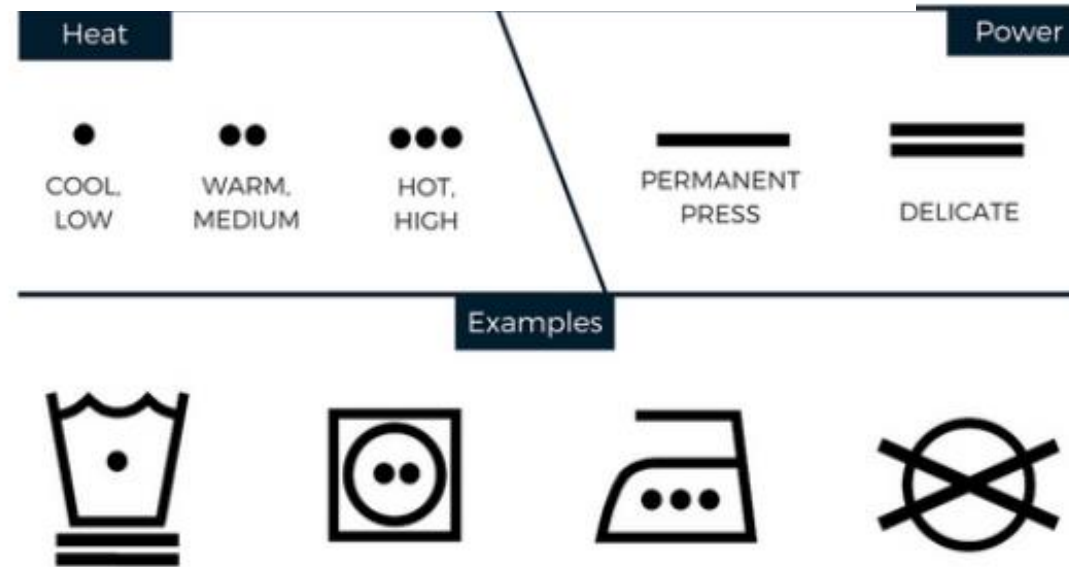
 Hand Wash Normal	 Machine Wash Normal	 Machine Wash, Permanent Press	 Machine Wash, Delicate	 Do Not Wash	 Wash at or below 30°C	 Wash at or below 40°C	 Wash at or below 50°C	 Wash at or below 60°C
 Wash at or below 95°C	 Wash at or below 30°C	 Wash at or below 40°C	 Wash at or below 50°C	 Wash at or below 60°C	 Wash at or below 70°C	 Wash at or below 95°C	 Do Not Wring	 Wring
 Bleach	 Do Not Bleach	 Non-Chlorine Bleach	 Chlorine Bleach	 Tumble Dry, Normal	 Tumble Dry, Low Temp	 Tumble Dry, Medium Temp	 Tumble Dry, High Temp	 Tumble Dry, No Heat
 Line Dry	 Shade Dry	 Line Dry in Shade	 Drip Dry	 Drip Dry in Shade	 Dry Flat	 Dry Flat in Shade	 Natural Dry	 Do Not Tumble Dry
 Do Not Dry	 Iron	 Iron, Low Temp	 Iron, Medium Temp	 Iron, High Temp	 Do Not Iron	 Steam	 Do Not Steam	 Wet Clean
 Wet Clean, Delicate	 Wet Clean, Very Delicate	 Dry Clean	 Dry Clean, Any Solvent	 Dry Clean, Petroleum Only	 Dry Clean, Petroleum Only Delicate	 Dry Clean, Petroleum Only Very Delicate	 Dry Clean, Any Solvent Except Trichloroethylene	 Dry Clean, Any Solvent Except Trichloroethylene, Delicate
 Dry Clean, Any Solvent Except Trichloroethylene, Very Delicate	 Do Not Dry Clean	 Do Not Wet Clean	 Dry Clean, Short Cycle	 Dry Clean, Reduced Moisture	 Dry Clean, No Steam	 Dry Clean, Low Heat		

Why is it important to use the correct wash care code for your textiles product?

Homework 10 – Care of fabric



What do the symbols mean?



Year 8 Revision

Key Words

Overlocker

Zigzag

Natural Dye

Cotton

Synthetic Fibre

Polyester

Resist Dyeing

Batik

Tjanting tool

Screen Printing

Squeegee

Block

Patchwork

Applique

Embroidery

Zip

Buttonhole

Year 8 Textiles Test

Colour Application techniques



Seams and Construction

Types of seams:

French seams are sewn twice, encasing the raw edge within the seam and creating a very neat, delicate seam that is ideal for sheer or lightweight fabrics.



A **plain seam** is the stitching made to join two fabric pieces together, leaving some seam allowance

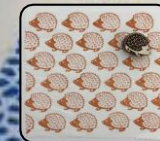


The plan is to sew a line of topstitching nice and straight along the edge of the folded line – an edge **stitch**.



Block Printing

Blocks have been created with the pattern design on, ink is applied to the block and then pressed onto the fabric to create a pattern



- Block
- Ink

Batik: A traditional technique from Indonesia, resist dyeing where the wax stops the dye reaching the fabric



- Tjanting tool
- Wax pot

Resist Dyeing

Tie dye: A traditional resist dyeing, where the fabric is folded and tied with string or elastic bands to stop the dye getting to the fabric. Used on natural fabrics.

- Elastic bands
- Dye

Resist Dyeing

Screen Printing

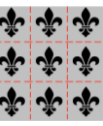
Ink is pushed through mesh using a template create an image. You can use several layers of colour

- Squeegee
- Screen

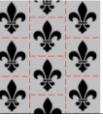


Pattern

Straight repeat: is produced by repeating your image at measured intervals, placing each image directly under the previous one.



Half-drop repeat: This is produced by repeating the image at the side as the straight repeat, but moving the image half along on the second row, like a brick pattern



Joined Up Half Drop: A half drop pattern which has details which connect the motifs

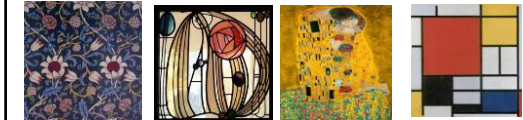


Mirror repeat: A mirror image reflects a pattern.



Artist Research

Mood board: is a physical or digital collage of ideas/images meant to inspire the design process at the start of a project



William Morris Mackintosh Gustav Klimt Mondrian

Environmental Considerations

Recycle- Return the product to raw materials and make something new with it

Rethink- When solving a problem try to think of a solution that does not harm the environment

Reduce -Cut down on the amount of material or energy you use

Refuse- Don't use or buy products and materials that are unnecessary or bad for the environment

Repair- Try to fix a product when it breaks or doesn't work properly

Reuse- Reprocess a material or product to make something else with all or parts of