

Name:

Teacher:

Form:

# Textiles Year 9 Homework Booklet 3 Summer term

My teacher is going to test me on all of my homework 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.

Date	Test number & total mark	My mark	%
	Test 1 - 4 marks		
	Test 2 - 12 marks		
	Test 3 - 8 marks		
	Test 4 – 12 marks		
	Test 5 – 9 marks		
	Test 6 – 8 marks		
	Test 7 – 8 marks		
	Test 8 – 10 marks		
	Test 9 – 8 marks		

Date	Test number & total mark	My mark	%
	Test 10 – 79 marks End of module test		
Learning towards excellence UPUR			
How I have performed			
What I need to do			

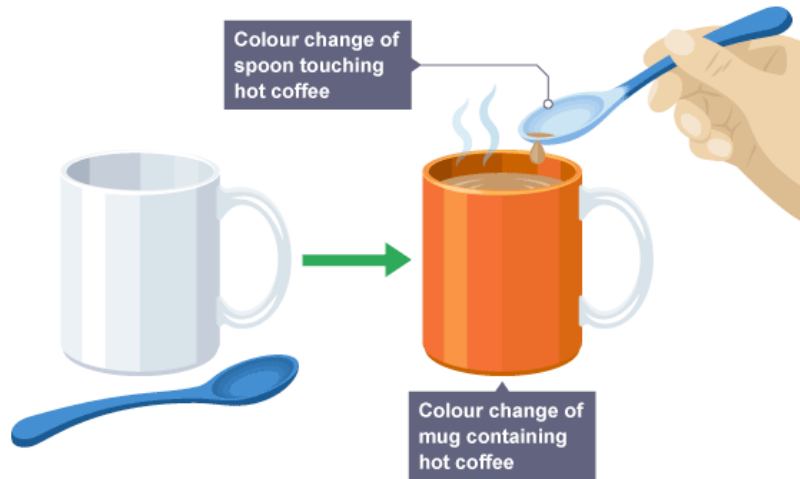
# Homework 1 – Smart materials Go on the link , learn below and read further

## Smart materials

Smart materials are materials that have **properties which change reversibly**, ie can change easily but can then easily change back, depending on **changes in their surroundings**. Here are some examples.

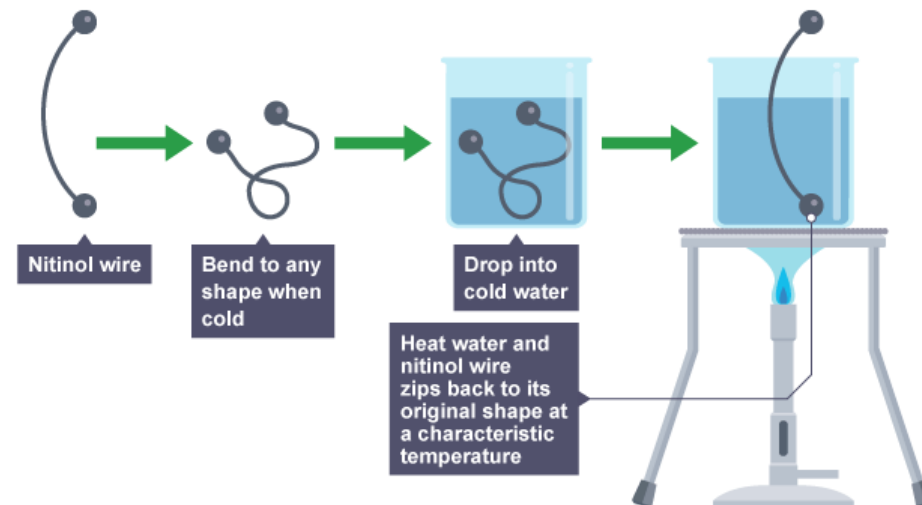
### Thermochromic pigments

Thermochromic pigments **change colour at specific temperatures**. Examples include colour-changing novelty mugs, colour-changing spoons, battery power indicators and forehead thermometers.



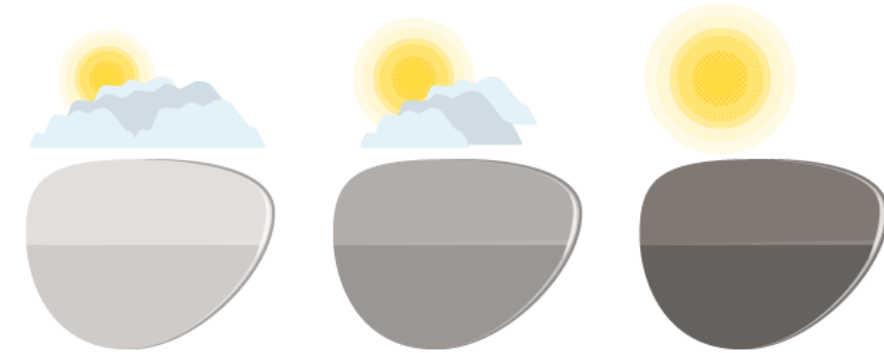
### Shape memory alloy

Shape memory alloys are mixtures of metals that **return to their original shape when heated**, similar to shape memory polymers. Again, this type of smart material could be used in sporting equipment and car bodies, as well as certain medical applications, such as surgical plates for joining bone fractures. As the alloy is warmed by the body, it applies a greater tension than normal plates, allowing for faster healing. For example, nitinol is a shape memory alloy of nickel and titanium.



### Photochromic pigments

Photochromic pigments **change colour when exposed to light**. This can be used in clothing but is most commonly found in photochromic lenses for glasses, which darken when exposed to ultraviolet light. This means that these glasses act as sunglasses on sunny days, but quickly change back to normal glasses when the lenses are no longer in sunlight.



# Homework 1 – Test Do not write on this page at home.

1

Which smart material would you find in the lenses of glasses that darken in bright sunlight?

- ☐ Photochromic pigment
- ☐ Shape memory alloy
- ☐ Thermochromic pigment

2

Silver nanoparticles can be used in wound dressing. What property of silver nanoparticles does this use?

- ☐ They are shiny
- ☐ They kill bacteria
- ☐ They block out ultraviolet light

3

What is the meaning of a smart material?

- ☐ Materials have properties that change when a change occurs in their environment, and this change is reversible
- ☐ Materials have properties that stay the same when a change occurs in their environment
- ☐ Materials have properties that change when a change occurs in their environment, and this change is not reversible

4

What change in the environment affects the smart material thermochromic pigment?

- ☐ pH
- ☐ Light
- ☐ Temperature

/4 marks

Homework 2 – research and add a picture of the appearance and a product for this treatment.  
Say why it is important

## Surface treatments and finishes

Surface treatments can add decoration, protection and function to a textile:

<https://www.bbc.com/bitesize/guides/zjc3rwx/revision/11>

<ul style="list-style-type: none"><li>■ <b>brushing</b> - fabric is sent through a series of fine wire-toothed rollers, which gives it a soft, fluffy surface</li></ul>	
<ul style="list-style-type: none"><li>■ <b>water repellent</b> - silicone-based chemicals can be sprayed onto provide a protective barrier</li></ul>	
<ul style="list-style-type: none"><li>■ <b>flame retardant</b> - chemical additives can be sprayed onto fabric to slow down its burn time</li></ul>	
<ul style="list-style-type: none"><li>■ <b>crease resistant</b> - a resin can be applied to stop creases setting</li></ul>	

# Homework 2 – Test    Fill in the gaps

## Surface treatments and finishes

Surface treatments can add decoration, protection and function to a textile:

research and add a picture of the appearance and a product for this treatment.  
Say why it is important

Total        /12 marks

Brushing		
■ <b>water repellent</b> - silicone-based chemicals can be sprayed onto provide a protective barrier		
Flame retardant		
■ <b>crease resistant</b> - a resin can be applied to stop creases setting		

# Homework 3 – Ethics

Watch the video link and make notes, read the overview below.  
<https://m.youtube.com/watch?v=A3xrXC9wcZg>

## **Social factors**

Some textiles products may not be made in good working conditions. There may be issues with child labour, poor working conditions and the use of hazardous chemicals. Selecting textiles from a fair trade background can help ensure that the producers have maintained standards of fair wages and conditions for the employees making the product.

## **Cultural factors**

When choosing fabrics, it is important to consider elements that might cause offence. The use of fur or animal skins may upset some people, while certain colours have different meanings around the world. The use of symbols and writing needs to be carefully checked for any mistranslation.

# Homework 3 – Ethics Test

Factors	Write about the factors from your reading and the video
Social factors	
Cultural factors	

Total	/8 marks
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# Homework 4 - Sustainable and recycling - Test

You were to watch the video link and make notes, read the overview.

- [https://m.youtube.com/watch?v=z\\_SaGLWJ8kE](https://m.youtube.com/watch?v=z_SaGLWJ8kE)

Factors	Write about the factors from your reading and the video
Up cycling	
Recycling	
Renewable	
Non - renewable	

## Ecological and social footprint

A growing population means that more raw products are needed to fulfil their textiles needs.

### Farming

Growing natural fibres such as cotton or bamboo can lead to the degradation of soil. This can lead farmers to expand into other areas, destroying natural habitats. The use of pesticides and water supplies also affects the wildlife in an area. Rearing animals for their wool, such as sheep or alpacas, also leads to expanding land requirements, which can cause deforestation and loss of habitat.

### Drilling

Drilling for oil to produce man-made synthetic textiles requires large storage areas and refining plants to change the oil into the materials needed for manufacturing. This process can be harmful to the environment. Oil is non-renewable and, when refined, produces fabrics that do not biodegrade easily.

Whenever environmental impact is to be reduced, 'the 6 Rs' can be addressed to ensure an in-depth analysis has been done. The 6 Rs can be considered by the designer, the manufacturer and the consumer to reduce that negative impact on the environment.

Total /12 marks

# Home work 5 – Revision for the end of year exam

## Year 9 Textiles Knowledge Organiser

### Key words

Research  
Utilitarian  
Silhouette  
Bustle  
Industrial revolution  
Emancipation  
Influence:  
Technology  
Moral  
Environmental

### Equipment:

Sewing machine  
Overlocker  
Buttonhole attachment.  
Computer aided design (CAD)  
embroidery machine.

### Moral Impact

Emancipation of women – Emily Pankhurst  
Unbecoming behaviour and dress  
Conflicting attitudes  
Music art & design influences  
Industrial revolution women working/child labour

### Social changes

More women entering professions,  
More women playing sports  
Liberal attitudes to life, reflected in dress.  
Loose clothing – flowing lines, not restricted - corseted  
Women get the vote;  
WW1 has a huge impact on women and the work place  
Trousers still not considered appropriate early 1900's.  
WW1 social classes mixed

### Technological developments

Pace of life speeding up, cars (automobiles) popular - 1905  
Industrial revolution  
Rayon developed followed by nylon  
Zip invented

### Environmental Impact

Industrial revolution – dirty towns , energy consumption.  
Mass production of cotton & wool fabrics (denim)  
Development synthetic fibres – non renewable resources/ easy care – emulates silk.

### Iconic designers:

Paul Poiret - 1900  
Coco Chanel  
Dior – late 1940's

### Influences:

The Great Gatsby  
Les Modes – magazine  
Art nouveau  
Charles Rennie Mackintosh

The silhouette changed from the S bend to the empire line by 1910



## History of fashion 1900 - 1930

### Key style changes

1914 – WW1: sensible clothing, tailored jackets,, trench coats, breeches.  
Military influence

1905  
Poiret.



Fabrics : natural silks, linen, cottons & wool.  
Artificial silk, - rayon  
Silk, satin:- evening wear  
Cotton/wool/linen – day wear

Organza (silk), chiffon (cotton/silk/rayon).  
Jersey & denim.

A practical, freeform feminine styles developed through women's fight for independence – belle Epoch ( beautiful era).

1920's fashion is less stern and rigid, gone are the S bend corsets 10 years earlier.

Two principals in women's dress – freedom and convenience

<http://glamourdaze.com/history-of-womens-fashion>

# Home work 5 – Revision for the end of year exam – Test

Total	/9 marks
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What were the key style changes in 1914	
What were the key style changes in 1920	
Discuss the social changes 1900-1930	

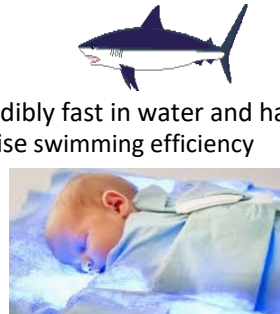
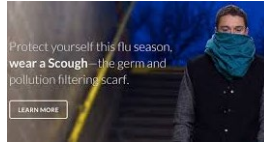
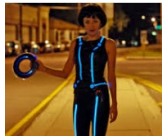
# Home work 6 – Revision for the end of year exam

## Key words:

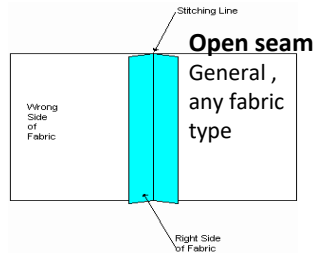
Smart fabrics  
Environment  
Encapsulated  
Seam  
6 R's  
Overlock  
Open seam  
Flat fell seam  
Absorbent  
Non- absorbent  
Durable  
Abrasion  
Resistant  
Bio degradable  
Pesticide  
Easy care  
Durable  
Organic

**Smart fabrics** : are defined as textiles that can sense and react to the environmental conditions or stimuli from mechanical, thermal, chemical, electrical or magnetic sources

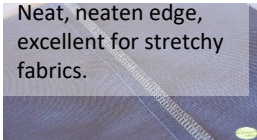
- Sun protecting fabrics such as T-shirts with built in SPF
- Encapsulated fabric: Moisturizing fabrics such as in moisturizing tights Odour control fabrics such as odour control socks
- Thermochromic: Colour and heat change fabrics such as shirts worn by soldiers that change colour to suit the environment - camouflage
- fabrics used in the construction of artificial limbs
- Speedo studied the shark, a creature which is incredibly fast in water and has a highly developed skin to minimise drag and maximise swimming efficiency



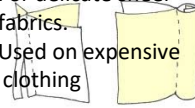
**Seams** : a line where two pieces of fabric are sewn together.



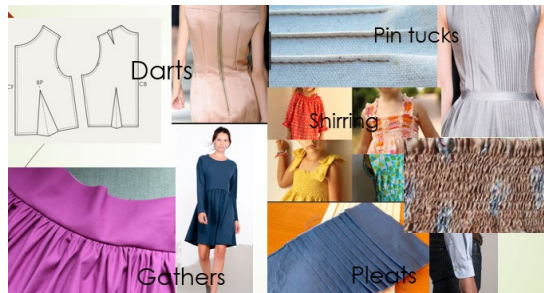
**Overlock seam**  
Neat, neaten edge,  
excellent for stretchy  
fabrics.



**French seam:**  
For delicate sheer  
fabrics.  
Used on expensive  
clothing

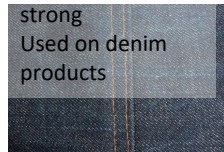


## Disposal of fullness



## Flat fell seam:

strong  
Used on denim  
products



## Patch pocket



## Natural Fibres:

Plants – cotton & linen,  
animals wool & silk . Short  
staple fibres except silk  
which is a continuous  
filament.

**Cotton:** Jeans & T-shirts

- Cool to wear
- Very absorbent, dries slowly
- Soft handle
- Creases easily

**Wool:** Jumpers, suits & blankets.

- Warm to wear
- Absorbent, dries slowly
- Breathable, repels rain
- Soft or coarse to handle
- Creases drop out
- Can shrink

## Environmental issues with: manmade fibres

- Non – renewable resource
- Not biodegradable
- Chemicals/dyes
- High water consumption

## 6 R's

- Reduce
- Rethink
- Refuse
- Recycle
- Reuse
- Repair

## Environmental issues: Cotton (Natural)

- Growing – pesticides and herbicides/large quantities of water/deforestation/energy consumption for picking/ Fairtrade (child labour – education /working conditions/fair pay/input of money to the village)/transportation – carbon foot print, use of non renewable resources/fossil fuels
- Fibre to fabric – chemicals/ bleaching/dyes/ water consumption/energy consumption- global warming /waste water & materials/transport – carbon foot print -use of non renewable resources/fossil fuels
- / chemicals for fabric finishes – disposing of
- Product – care of (washing drying, ironing) , high temperatures - energy consumption – global warming, large water consumption and disposal, chemicals & dyes bleed from washing, disposal of- 6 r's
- Cotton is biodegradable/recyclable
- Organic cotton

**Synthetic /manmade fibres:** Made from petro chemicals. Fibres are continuous filaments and can be cut to a staple (short fibre) Nylon, polyester, viscose

**Nylon** (polyamide): active sportswear, outdoor wear, tights

- Strong
- Non absorbent, dries quickly
- Very durable
- Crease resistant
- Easy care
- Abrasion resistant.

**Polyester:** medical textiles, fleece, children's nightwear

- Strong
- Non absorbent, dries quickly
- Very durable
- Crease resistant
- Easy care
- Flame resistant

# Home work 6 – Revision for the end of year exam : Test

Total /8 marks

What is the definition of smart fabrics?	
What type of seam is this? 	
List 5 environmental issue with regards to cotton	



# Homework 7 How recycling works; Go on the links, watch and read the article

**UK consumers ditch more than a million tonnes of clothing every year.**

The Western world's growing desire for fast, disposable fashion, fuelled by the ready supply of cheap goods manufactured in China and elsewhere, means we are consuming and then disposing of an ever greater quantity of garments.

And, encouraged by charities and recycling companies, we are handing more and more of these old clothes over - via shops, collection bags or clothing banks - for reuse by new owners.

Almost half of the garments we now throw out end up going to a new home rather than ending up in landfill or at an incineration plant, estimates **the Waste & Resources Action Programme (Wrap)**, a UK government and EU-backed agency tasked with reducing waste.

Few would dispute that diverting clothing away from landfill and giving it a new life is a good thing.

But Dr Andrew Brooks, **lecturer in development geography at King's College London**, argues in his book **Clothing Poverty** that many donors don't realise that the majority of the cast-offs they hand over to charity will be traded abroad for profit.

"The way most people encounter the second-hand clothing trade is their High Street second-hand store. I think there is a common presumption amongst the general public that if they give something to charity it's most likely to be sold in one of these shops," he says.

"And while many garments are sold in these shops, the demand is relatively low compared to the supply, and far more get exported overseas."



Wrap estimates that more than 70% of all UK reused clothing heads overseas - joining a global second-hand trade in which billions of old garments are bought and sold around the world every year.

According to the latest available **UN figures**, the UK is the second largest used clothing exporter after the US. It exported more than £380m (\$600m), or 351,000 tonnes, worth of our discarded fashion overseas in 2013. Top destinations were Poland, Ghana, Pakistan and Ukraine.

The US's key trade partners are Canada, Chile, Guatemala and India.

<https://www.bbc.co.uk/news/magazine-30227025>

- <https://m.youtube.com/watch?v=URokpcF4Nfo>

## Homework 7 : Test

Do not fill in this at home

How recycling works.

Total	/8 marks
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How much clothing does the UK throw away per year?	
What percentage of UK clothing goes oversea and what trade is it joining?	
Name two destinations for the clothing.	
Why are we consuming and disposing of a greater quantity of garment?	

# Homework 8 Recycling fibres

Watch the short video and make notes.

- <https://m.youtube.com/watch?v=CJka9tHkxjs>



# Homework 8: Test Recycling fibres

Do not fill this in at home

Total	/10 marks
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What % of recycled clothing goes to land fill 1 mark	
What are the three paths followed when donating clothes  3 marks	
What types of products come from recycled fibres. List two  2 marks	
What happens to the garments   4 marks	

## Homework Recycling – plastic bottles

### Test - Answers

- <https://m.youtube.com/watch?v=zyF9Mxlcltw>

What does shredding of the bottle do?	Release all the liquid
Why do they sort?	Separate clear from colour
What happened to stickers/labels and tops	Removed
What happens to the thread created?	It is baled and sent to be carded and then woven into fabric, clothes.

# Homework 11 – End of module test.

How to revise - strategies:

- Mind maps
- Q & A Cards
- Practice and repeat past questions