



Learn Skills – Waste Less

Get creative and redesign an old T shirt while exploring the impact our clothes have on the environment.

With <https://repairwhatyouwear.com/>

repairwhatyouwear.com aim is to encourage mending skills so that clothes are kept for longer and therefore waste is reduced. Also to provide understanding of the fibres and fabrics from which clothing is made, so individuals become informed consumers. This project develops practical hand sewing skills together with research on the impact that clothes have on the environment. It gives pupils the ability to make more informed choices about what they wear. It links well with Eco School, Rights Respecting Schools Awards (*) and Learning for Sustainability 2021.

Suitable for Upper primary, lower secondary Wales.

Skills (S) and knowledge (K) that the project will develop:

- S - Research and analysis.
- S - Thinking skills to analyse their response to research.
- S - Project concept development.
- S - Fine motor co-ordination skills.
- S/K - Hand sewing skills.
- K - Different fibres and fabric characteristics.
- K - How clothes are manufactured and their effects on the environment.
- K - Awareness of their personal clothing choices within the environmental sustainability curriculum.

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The Clothing problem - Fashion Statistics to share:

1. Fashion is responsible for 10% of global carbon emissions, more than all flights and maritime travel combined.
2. It is responsible for 17-20% of global water pollution.
3. Cotton production alone uses 16% of global pesticides and 73% of the land is irrigated in communities where water is a scarce resource.
4. Fast fashion is the growth area where prices are kept low through a combination of low quality materials and poor working conditions for those in the industry.
5. Polyester fibres now make up 60% of all clothing production. Derived from fossil fuels, they are made from a non renewable source and don't biodegrade.
6. Cellulosic fabrics, like viscose, modal, although 8% of fabric components fibres are now using 150 million trees per annum and expected to double in 10 years.
7. The UK consumes more clothing than any other country in Europe and twice that of Italy.
8. In a recent study, 98% of water samples taken from under the Arctic Ice and in the Polar region contained Micro plastics, 92% of which were fibres and 75% of which were polyester, the same width and colour as used in clothing.
9. High Street purchasing is in decline. Internet orders have a much higher rate of returned product, estimated at 30-40% and about 50% of the total returned product is not put back into stock - either burned or put in landfill as this is the cheapest way of dealing with it. This means clothes are manufactured, never worn and then pollute again.
10. Globally, 9% of fashion is recycled into other materials like insulation, wadding, cloths. It is estimated that 80% of discarded clothing ends up in landfill, if not in the country where it was originally bought, then in another country where it was exported for resale.

References to support these statements:

- 1 - 4. World Bank report overall fashion statistics: <https://www.worldbank.org/en/news/feature/2019/09/23/costo-moda-medio-ambiente>. <https://www.weforum.org/agenda/2020/01/fashion-industry-carbon-unsustainable-environment-pollution/>
5. Polyester and synthetic clothes information: <https://www.unep.org/news-and-stories/story/fashions-tiny-hidden-secret>
6. Report by campaign group: <https://canopyplanet.org/campaigns/canopystyle/>
7. Parliamentary report 2019, UK statistics: <https://publications.parliament.uk/pa/cm201719/cmselect/cmenvaud/1952/report-files/195207.htm>
8. Clothing Micro plastics under the Arctic Ice: <https://www.theguardian.com/environment/2021/jan/12/clothes-washing-linked-to-pervasive-plastic-pollution-in-the-arctic>
<https://www.nature.com/articles/s41467-020-20347-1>
9. <https://www.salecycle.com/blog/featured/ecommerce-returns-2018-stats-trends/>
10. <https://www.weforum.org/agenda/2020/01/fashion-industry-carbon-unsustainable-environment-pollution/>

Project brief.

Re-purpose an old t-shirt using hand sewing, dyeing and adding embellishments of polyester and buttons.

Learning Intentions.

- Give an old piece of clothing a new look whilst also learning new skills
- Finding out all about the impact clothes have on our world.

Before you create:

- It is important to have some background knowledge of the clothes manufacturing industry and the environment, so read the **fashion statistics** and discuss.
- You might like to watch some videos – there are some examples **in the start of the resources section.**
- Explore deeper by answering some **research questions.**

Students should think about the answers found to the questions, discuss and decide what message or image they would like to put on their t-shirt.

Research Questions:

Questions can be researched as a group task or Individual.

[If individual work assigned, suggest: Level 2 research cotton only; Level 3 cotton + another question; Level 4 cotton, sending clothes to charity shops + another question].

1. Cotton how does it grow and what is the difference between ordinary cotton and organic cotton production? Why might organic cotton be better for the environment and for the people who grow it?
 2. What is polyester made of? What other non-clothing products are similar? What makes people worry about the use of polyester in 50% of clothing?
 3. Industrial dyes are almost all chemical, what parts of the process of dyeing fabrics has the most damaging impact on the environment?
 4. When you send clothes to a charity shop, what percentage is actually sold? What happens to the rest?
 5. Create an instruction sheet/video on how to use a needle and thread. What benefits do you think that might these skills would have?
- **EXTENSION:** Create a resource to share exploring the history of slavery in cotton production and where slavery is still happening today. Historically slavery was connected to the cotton industry in the southern States of the USA. Today it is still present in Western China, Uzbekistan and Turkmenistan.

Now Get Going!

Brief:

Level 2: Redesign your T-shirt to make a statement about “Fashion and the Environment”.

Level 3: Redesign your T-shirt and use your research and skills to create a statement on “Fashion and the Environment”

Level 4: Using your research into cotton and polyester fibres and with knowledge of clothing manufacture’s impact on the environment, redesign your T-shirt to make a statement reflecting your response to “Fashion and the Environment”

Skills you should use:

- Using Running stitch, Backstitch and Hemming stitch (or Cross stitch).
- Adding buttons.

Skills you could use:

- Dying of cotton cloth.
- Polyester cloth manipulation.

Gather together your materials:

- A used 100% cotton T shirt.
- Used polyester Ribbon/fabric/garment. This should be woven and fairly lightweight.
- Natural and synthetic dyes that work with cotton cloth.
- Needle, thread, scissors for hand sewing (both fine and embroidery threads).
- Assorted buttons and other accessories from used clothing.
- An iron, ironing board and silicon paper or 2 Teflon sheets. Pins. For ironing polyester ribbon and small pieces of fabric.
- An electric vegetable steamer for polyester manipulation on larger pieces of cloth.

Optional:

- Masking tape, elastic bands, string for resist dying.
- Paint brushes for writing with the dye.
- Sewing machines for reshaping the item - although this can be done with a needle and thread and simple running stitch or backstitch.

TASK SHEET: Fashion and the Environment.

Activity	A	H	E	C
<p>Design challenge. Reflect on the research that you have done about the environmental impact of clothing. Think how you can use shape, texture, images and/or words to make your t-shirt a personal statement about this.</p> <p>Draw up your ideas and label.</p>	A1 A2 A3 A4	H1 H7	E1 E2 E3 E4	C1 C2 C4 C7
<p>Dying fabric. Experiment with vegetable dyes on your cotton T shirt. You can paint, dip, immerse, print, wrap. Use a variety of different dyes.</p>	A1 A6 A8 A9	H3 H8 H11	E1 E2 E3 E4 E5	C2 C7
<p>Manipulating Polyester. Experiment with samples of polyester fabric or polyester ribbon and reform them with heat. Either using the iron (ribbon) or a vegetable steamer (fabric samples) and following ideas from the tutorial in resources.</p>	A1 A6 A8 A9	H3 H8 H11	E1 E2 E3 E4 E5	C1 C2 C7
<p>Decoration details. Decide how you could use some polyester to decorate your garment and make a contrast to the cotton, thinking about why you are doing this and what it represents. Decorate your T shirt - include buttons, running stitch, backstitch and cross stitch (or herringbone). You could use stitches to put on your polyester decoration.</p>	A1 A2 A3 A6 A7 A8	H3 H8 H11 H12	E1 E2 E3 E4 E5	C1 C2 C7
<p>Activities to complete the project - after you've re-designed your t-shirt. What is your wish for this item when it is at the end of its life - what can be recycled and what would you keep for using again? Write up what you have learned about clothes and the environment and what we can do to keep wearing our clothes for longer.</p>	A2 A3 A4 A6 A7 A8 A9	H1 H2 H7 H8 H12	E1 E2 E4	C1 C2 C4 C5 C7

Experiences and Outcomes

Relating to the Purposes for the new curriculum for Wales:

This project can be assessed as fulfilling the following criteria within the Four learning purposes:

A	Ambitious, capable learners, who:	Area of application:
A1.	Are willing to take on new challenges.	Open to the practical and theoretical nature of the project, which includes new hand skills.
A2	Set themselves high standards in all areas of their lives	Encouragement to believe they can participate in the project and succeed.
A3	Can formulate and ask appropriate questions when they are trying to solve a problem.	Shown in a willingness to analyse the information provided, research further and develop possible solutions.
A4	Are articulate and express themselves well.	Visible in design work, practical outcome and final presentation.
A5	When listening are able to interpret body language and expression to understand how someone is feeling.	
A6	Understand and are able to use active listening skills.	Reflected in response to project brief, ability to carry out instructions and participation.
A7	When faced with a reasoning problem in any subject of topic, can work out the steps they need to take to solve it and which mathematical skills they need to do this.	Experimentation with Dyes, polyester materials, investigation of cotton and polyester requires observation and analysis.
A8	Can read any kind of text effectively, whether it is a continuous text, visual or a graph, chart or other data set.	Facts and associated research documents and findings require these skills.
A9	Have mastered a range of technology that support them to communicate and interpret the world.	Various technologies and practical visual tasks are necessary to finish the project and communicate the student's ideas, documented work and conclusions.
A10	Know how to carry out a fair test, or research a problem and can fully explain their results.	Applicable if the experimentation of differences between cotton and polyester are carried out.

H	Healthy, confident individuals who:	Area of application:
H1	Have a strong set of beliefs and clear values.	This project exposes students to information from which they are required to develop their own values and behavioural beliefs.

H2	Are confident and have strategies they understand and use to support their mental and emotional well-being.	Hand skills, including sewing, are recognised as useful in managing to calm the mind through focus and repetition. Mending clothes helps reduce financial pressures and develop personal achievement, therefore help mental well being.
H3	Are resilient in the face of failure and don't give up on something easily.	Practical projects are often hard and require resilience to complete satisfactorily.
H4	Know what action they need to take for diet and exercise to stay healthy.	
H5	Know what support and information is available to keep them safe in all walks of life.	
H6	Are physically active.	
H7	Have the right information to allow them to make appropriate decisions about lifestyle such as drugs, sex and their use of the internet.	Clothing is an under-recognised contributor to climate change and making lifestyle choices is, in fact, part of a required change of behaviour that is developed through knowledge on the subject.
H8	Recognise and know how to manage the risks they are faced with.	Many young people are experiencing climate change anxiety and need knowledge and proposed actions.
H9	Are confident enough to take part in performance	
H10	Get along well with and respect each other and the adults in their life, both inside and outside school.	Different ideas and outcomes will emerge from the same task brief. Opportunities for developing respect and encouraging engagement in different responses to facts.
H11	Are capable of overcoming challenges	To many, this project will represent challenges from what should appear small and less worthy tasks e.g. using a needle and thread.
H12	Have the skills and knowledge they need to be independent, as if appropriate for their age.	Learning about clothing, how to make clothing choices and how to mend are life skills.

E	Enterprising, creative contributors who:	Areas of application
E1	Can take the skills and knowledge they are learnt and apply to be innovative and entrepreneurial.	Complete fit.
E2	Are able to solve problems by thinking creatively.	This is a problem solving brief which requires creativity.

E	Enterprising, creative contributors who:	Areas of application
E3	Are able to identify and grasp opportunities.	Could fit depending on delivery.
E4	Have the opportunity and are willing and able to take measured risks.	Experimentation and the risk of failure is part of this project because it involves creativity, new skills and materials.
E5	Work well together as teams in a variety of different roles including leadership.	Teamwork is not central but can be devised.
E6	Understand their responsibilities and shoulder them well.	Students should be able to finish the brief, which may be challenging in a manner that they don't expect e.g. handling materials, hand skills, experimentation.
E7	Give up their time to help others and share their skills and knowledge with them.	Skills can be shared in analysis, discussion and help in practical tasks.

C	Ethical, informed citizens who:	Areas of application
C1	Know how to search for evidence in a variety of ways and then evaluate it's validity before using it to for their views.	Practical experimentation and investigation are essential to this project as well as researching writing and visual information. A personal response to this research underpins the design and conclusions.
C2	Are able to engage with contemporary issues based upon their knowledge and values.	This project is designed to engage students in the challenges of fashion on the environment, to embed knowledge and challenge thoughts and values. These are all current issues.
C3	Understand and exercise their human and democratic responsibilities and rights.	
C4	Understand and consider the impact of their actions when making choices and acting.	Knowledge of fibres, fabrics, fashion manufacture and the environmental impact of clothing will influence their behaviour and choices throughout their lives.
C5	Are knowledgeable about their culture, community society and the world, now and in the past.	The topic covers slave labour, employment rights and some cultural differences.
C6	Respect the needs and rights of others as a member of a diverse society.	Within this project, students can explore rights and responsibilities in the context of manufacturing and resale.
C7	Show their commitment to the sustainability of the planet.	Students are deliberately being engaged with statistics around fashion and the environment in order for them to evaluate how behaviour and choices can help the sustainability of the planet.

Rights of the Child.

The following could be connected to Fashion and the Environment project:

article 3 (best interests of the child)

The best interests of the child must be a top priority in all decisions and actions that affect children.

The future of the world resources and climate change affect children and fashion is an integral part of the increase in global Carbon Emissions. Children need to be educated in facts and learn the skills to cope with the future i.e. hand mending clothes skills, ability to understand and select best fabrics and sources for clothing.

article 5 (parental guidance and a child's evolving capacities)

Governments must respect the rights and responsibilities of parents and carers to provide guidance and direction to their child as they grow up, so that they fully enjoy their rights. This must be done in a way that recognises the child's increasing capacity to make their own choices.

This project educates children to understand the choices they make have environmental impacts. It presents facts and encourages investigation to form opinions and express these in both written and practical activities.

article 12 (respect for the views of the child)

Every child has the right to express their views, feelings and wishes in all matters affecting them, and to have their views considered and taken seriously. This right applies at all times, for example during immigration proceedings, housing decisions or the child's day-to-day home life.

This project is designed to encourage personal expression as a response to environmental facts and encourages expression of views and feelings in response. Clothing is integral to essential living and clothing choices not only affect the individual child but the future of their environment.

article 13 (freedom of expression)

Every child must be free to express their thoughts and opinions and to access all kinds of information, as long as it is within the law.

This project encourages experimentation, expression of opinion and development of thoughts in response to information.

article 17 (access to information from the media)

Every child has the right to reliable information from a variety of sources, and governments should encourage the media to provide information that children can understand. Governments must help protect children from materials that could harm them.

The references providing information for this project come from a wide range of reliable sources and are presented in ways in which children can learn and understand the context in which their clothing is produced and how this affects the environment of now and into the future. Safety and process are included in the activities, teaching safe working practices and introducing them to risk in a controlled environment.

article 28 (right to education)

Every child has the right to an education. Primary education must be free and different forms of secondary education must be available to every child. Discipline in schools must respect children's dignity and their rights. Richer countries must help poorer countries achieve this.

Children deserve to be educated in the production of fibres, fabrics and fashion to understand a global trade as well as the global environmental impact. Clothes are essential but lack of education and understanding is driving over consumption and increasing Global Carbon Output. Clothing has a social and environmental cost that impacts on the future of the next generation.

Resources for your project:

Facts, links, PDFs of polyester manipulation. PDF of core sewing instructions and sewing tutorials on <https://repairwhatyouwear.com>

BBC bitesize is good for textile information: <https://www.bbc.co.uk/bitesize/guides/z6t26yc/revision/1>

Benefits of organic cotton <https://www.soilassociation.org/organic-living/fashion-textiles/organic-cotton/>

Videos to watch:

A summary of the impact of fashion by MPs on the House of Commons Environmental Audit Select Committee. <https://houseofcommons.shorthandstories.com/sustainabilityinthefashionindustry/>

Cotton production and workers rights - a good all round video. Fairtrade foundation. <https://schools.fairtrade.org.uk/teaching-resources/unravelling-the-thread/>

Organic cotton production: What is GOTS certified <https://www.youtube.com/watch?v=kOCXpSLHFmU>

Where does cotton come from?

USA mechanised production. <https://www.youtube.com/watch?v=VkiUnV8qxsI>

Water and cotton: <https://www.worldwildlife.org/videos/how-your-t-shirt-can-make-a-difference>

Dying fabric

Natural Dyes: <https://www.fairtrade.org.uk/media-centre/blog/top-10-facts-about-fair-trade-cotton/>

Dylon Dyes (a dull video with instructions that are helpful): <https://www.youtube.com/watch?v=9017uB5jfE>

Lots of video tutorials for sewing, including threading a needle, how to sew on a button, backstitch and herringbone stitch

<https://repairwhatyouwear.com/core-mending-skills/>

If you add resources or have comments please email: repairwhatyouwear.com.