The Life of a t-shirt activity

Age range: 11 +   **Time: 20 - 30 minutes**

Outline

The clothing industry is the 3rd largest industry in the world, after cars and technology, and people in the UK **buy more clothes than any other country in Europe**.[1] However this comes at a price. The global textiles, clothing and footwear industries have a **greater impact on the environment than aviation and shipping combined**.[2]

The *Life of a t-shirt* game asks young people to identify and sequence the eight stages in producing a cotton t-shirt, from field to landfill, and rank the carbon emissions and use of water involved at each stage of production.

This activity is based on evidence in the Quantis (2018) report '**Measuring Fashion: Insights from the Environmental Impact of the Global Apparel and Footwear Industries**'[3]

Learning objectives

- Young people match the names of each stage in the *life of a t-shirt* with the industrial process(es) that each stage involves.
- Young people rank the environmental impact of each stage in terms of <u>carbon emissions</u> and <u>use of water</u>.

Outcomes

- Young people understand the different stages involved in making a cotton t-shirt.
- Young people appreciate that even a simple and inexpensive t-shirt has a long and complex supply chain with many environmental impacts.

Key questions

- Can you guess in advance how many separate stages are involved in making a t-shirt?
- Do you think making a t-shirt has a small, medium, or large environmental impact? Why?
- What conclusions can you make after doing this activity? Can you identify how the *life of a t-shirt* could have a lower environmental impact.

Resources

- 8 production stage <u>title</u> cards
- 8 production stage <u>description</u> cards
- 8 <u>carbon ranking</u> cards, from 1 to 8 (red)
- 8 <u>water ranking</u> cards, from 1 to 8 (blue)

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[1] https://publications.parliament.uk/pa/cm201719/cmselect/cmenvaud/1952/1952.pdf pg 5
[2] https://publications.parliament.uk/pa/cm201719/cmselect/cmenvaud/1952/1952.pdf pg 28
[3] https://quantis-intl.com/report/measuring-fashion-report/ pg 10

Instructions

- Cut out the Life of a t-shirt title cards and mix them up.

- Cut out the Life of a t-shirt description cards and mix them up.

- Cut out the carbon emission ranking cards and place them in a pile from 1 to 8.

- Cut out the use of water ranking cards and place them in a pile from 1 to 8.

- Young people match the title cards with the description cards. The correct answers are below.

- Young people take the carbon emission ranking cards. Using their judgement, they place the relevant card next to their selected stage; carbon emission card 1 next to the stage with the greatest carbon emissions, card 2 next to the stage with the second greatest emissions and so on until they reach card 8. The correct answers are below.

- Young people take the use of water ranking cards. Using their judgement, they place the relevant card next to their selected stage; use of water card 1 next to the stage with the greatest use of water, card 2 next to the stage with the second greatest use of water and so on until they reach card 8. The correct answers are below.

- The Cotton Clue cards provide several clues to the correct answers to ranking carbon emissions and water use. But ask young people to think carefully about these. They may not all be equally relevant and could lead young people to make inaccurate conclusions.

- When the activity is finished; check answers, ask whether there were any surprises or areas of disagreement. Draw conclusions.

Answers

Carbon Emissions (Ranked)	Life of a t-shirt <u>title cards</u>	Life of a t-shirt <u>description cards</u>	Water Use (Ranked)
3	**Growing cotton plants and removing the fibre from the plant**	Cotton plants take 5 or 6 months to grow. After harvest, the woolly fibre is removed from the plant and prepared for spinning.	1
2	**Making Cotton Thread**	Spinning occurs in factories. The fibre, which looks like cotton wool, is turned into thread, which is also called <u>yarn</u>	3
4	**Making Cotton Cloth**	There are two ways of turning cotton <u>yarn</u> into <u>fabric</u>, or cloth. The first is <u>weaving</u> and the second is <u>knitting.</u>	4
1	**Dyeing and Finishing Cotton Cloth**	Before fabric, or cloth, is cut and sewn to make clothes, it is <u>bleached</u>, <u>dyed</u> and then <u>finished</u>. This gives fabric its colour, pattern, and texture.	2
5	**Making clothes**	Fabric, or cloth, is <u>cut</u> and <u>sewn</u> according to patterns to make clothes. Buttons and zips are added. Clothes are packed ready for distribution	5
6	**Distributing clothes to shops**	Clothes are <u>distributed</u> to warehouses, shops, and online retailers. The journey from where clothes are made to where they are sold is usually long.	6
8	**Buying and Wearing Clothes**	People buy clothes, take them home or have them delivered, and wear them	7
7	**End of Clothes Life**	When people no longer want their clothes, they often throw them away. The main ways of disposing of unwanted clothing are <u>landfill</u> or <u>incineration</u> (burning)	8

Life of a t-shirt title cards (cut out)

Growing cotton plants and removing the fibre from the plant	**Making clothes**
Making Cotton thread	**Distributing clothes to shops**
Making Cotton cloth	**Buying and wearing Clothes**
Dyeing and Finishing Cotton cloth	**End of Clothes Life**

Life of a t-shirt description cards (cut out)

Cotton plants take 5 or 6 months to grow. After harvest, the woolly fibre is removed from the plant and prepared for spinning.	Fabric, or cloth, is cut and sewn according to patterns to make clothes. Buttons and zips are added. Clothes are packed ready for distribution
Spinning occurs in factories. The fibre, which looks like cotton wool, is turned into thread, which is also called yarn	Clothes are distributed to warehouses, shops, and online retailers. The journey from where clothes are made to where they are sold is usually long
There are two ways of turning cotton yarn into fabric, or cloth. The first is weaving and the second is knitting.	People buy clothes, take them home or have them delivered, and wear them
Before fabric, or cloth, is cut and sewn into clothes, it is bleached, dyed and then finished. This gives fabric its colour, pattern, and texture.	When people no longer want their clothes, they often throw them away. The main ways of disposing of unwanted clothing are landfill or incineration (burning)

Carbon emission ranking cards (cut out)

1	**2**
3	**4**
5	**6**
7	**8**

Use of Water ranking cards (cut out)

1	2
3	4
5	6
7	8

Cotton clue cards (cut out)

People in Britain send 11 million items of clothing a week to landfill. That's over 5,500 tonnes of clothing a week	The clothing industry accounts for 8% of the world's carbon emissions – that's more than international aviation and shipping combined
Most clothing is transported around the world by ship, which has much lower carbon emissions than air transport	Dyeing cotton fabric requires a lot of energy and water, and the water must be hot. Factories in China, India and Bangladesh use coal-based energy to heat water. It has high carbon emissions
Cotton is a very thirsty crop. It takes up to 2500 litres of water to grow enough cotton fibre to make a single t-shirt	Some methods for spinning yarn are 'wet'. This requires water for cleaning the fibre and spinning.
Water is not required to dispose of unwanted clothing. The main methods are landfill, and incineration (burning) to produce energy	The fertilizers and pesticides used to grow cotton have a high environmental impact. Many fertilizers are made from oil and their use emits carbon