

ECO DESIGN

CHOOSING RAW MATERIALS

Questions

1. At the beginning of the film we saw Tom, the creative director of a company called Finisterre. Describe the type of clothing that Finisterre make and include examples of specific activities that their clothing is used for.

2. Customers who buy this type of clothing want it to look good and perform well, but what is special about the Finisterre company and their products? Why do some customers choose to buy from Finisterre rather than from other 'performance wear' companies?

3. Tom is always looking for new fabrics to use in Finisterre clothing ranges. The fabrics have to perform well and have a low environmental impact. The film lists 5 different areas which need to be considered when choosing and developing new fibres and fabrics. Look at the list below and answer the questions.....
 - a) **Is the fibre from a sustainable source?** Give two or more examples of sustainable fibres and explain why they are sustainable. Name two or more fibres that are considered to be less sustainable and explain why?
 - b) **What chemicals, energy and other resources were needed to make or grow it and turn it into yarn?** The film refers to the use of Oil, Pesticides, and Irrigation; describe the possible impact on the environment of each of these in relation to the production or growth of fibres. What are organically- grown crops and why are they more beneficial to the environment?
 - c) **How far will it need to be transported?** We all realise that the finished goods must be transported from the factory to the retailer, but at what other stages in the manufacturing process are goods often transported? Explain why distance and methods of transport also need to be considered.
 - d) **Will it need extra finishes?** Name 2 or more types of special finishes which may be applied to fabrics to enhance their performance. How can applying a finish to a fabric have an impact on the environment?
 - e) **What will happen to it at the end of its life?** The film named two examples of how products can be disposed of responsibly. Can you name each of these and explain why they have less impact on the environment.

4. Who was Mildred and what was she doing?! Why was she doing this?

5. Another publicity stunt was the appearance of a flock of sheep in Saville Row in the centre of London. Finisterre had helped to organise both events, to promote wool as

an Eco-Friendly performance material; an alternative to using man-made fabrics and something they feel very strongly about.

- a) During her statement in Saville Row Lesley Prior gave lots of reasons for why wool has little impact on the environment and how it positively benefits the environment—how many can you remember? Make a list and explain each one.
 - b) Tom already uses wool as an alternative to polyester. What items of clothing does he make using wool?
 - c) Previously Tom could only find the right quality of wool for his products in Australia which meant that the yarns or fabrics would have to travel a long distance to reach his customers – not good for the environment! What is special about the Bowmont sheep in the film in terms of their wool quality and their location?
6. The farmers in Burkina Faso were growing a type of cotton which was the same quality as that which Tom uses in other products, but there are two reasons why Finisterre do not use cotton from this farm in their clothing. Can you explain why?
7. Tom visited the A Sampaio textile factory in Portugal which is one of his regular suppliers as they are constantly developing new fabrics. We learned from this that Tom will consider making products using some fabrics with man-made fibres. A good example of this is the Etobicoke jacket which must have maximum warmth and minimum weight.
- a) What type of fibre is the Etobicoke jacket made from in order for it to perform well? Don't forget to consider the outer shell and the lining.
 - b) Why do Finisterre consider that it is still eco-friendly to use this type of fibre even though it is a man-made fibre?
 - c) What does the fibre start off as before it is processed?
 - d) How is the fibre processed?

ECO DESIGN

LIFE-CYCLE DESIGN

Questions

1. Today's consumers are familiar with what we call 'disposable fashion'.
 - a) What does the term 'disposable fashion' mean?
 - b) Explain why 'disposable fashion' is not considered to be environmentally-friendly. Include in your answer 3 examples of ways in which this type of fashion can actually harm the environment.
2. Eco designers can reduce the impact on the environment by designing longer lasting clothes.

The film lists 4 ways in which designers can take action to reduce environmental impacts. Look at the list below and answer the questions.....

- a) **Better Quality Materials.** Designers can choose to work with better quality materials when designing and making their clothes.
 - How would this reduce the amount of harm to the environment?
 - Better quality materials will cost more – would you be prepared to pay more for your clothing?
 - Discuss the advantages and disadvantages to the customer of using better quality materials.
 - Discuss the advantages and disadvantages to the manufacturer of using better quality materials.
- b) **Improve Design.** Rather than design something completely new every season designers can decide to take a good design and continually improve it, as this is likely to result in less wastage of materials and resources. In the film we see how Debbie, the designer at Finisterre, receives feedback from customers on how to improve existing garments and makes the necessary improvements.
 - Why do you think that creating totally new products each season might be considered wasteful?
 - How does the process of receiving customer feedback benefit Finisterre?
 - How does it benefit the customer?
- c) **Rigorous Testing.** Products go through very rigorous testing before they are put on sale. What are the potential problems to the customer and the manufacturer if this process is not followed?
 - If these problems occur, how might this harm the environment?

- d) **Easy Repair.** Explain why is it less harmful to the environment, when customers buy products which are easy to repair, compared with buying products which cannot be repaired easily.
3. Pilling is one of the most common tests performed on fabrics. What is 'pilling'? How is fabric tested for pilling? On the same fabric base, do all colours 'pill' at the same rate and why?
4. Wash tests are also mentioned in the film. Debbie discusses the temperature of washing for Finisterre products.
- What is their recommended wash temperature for all of their products?
 - Why is this so important?
5. Besides testing in a factory using specialist machinery, how or where else are Finisterre products tested?
6. What were the 3 areas which needed to be improved on the Sastruga jacket?
7. Assuming that the jacket was well-designed and well-tested before being offered for sale to customers, why do you think it is the customers who have discovered that these improvements are required?
8. Why do you think Finisterre's customers bother to spend their time and effort providing this information? What does this tell us about the relationship that Finisterre have with their customers?

ECO DESIGN

DYEING AND FINISHING

Questions

1. What is meant by a 'green' consumer?
2. We're told that Eco designers look at the whole design and making process from the beginning, taking into consideration the effects of using chemicals for example. The film lists 3 ways in which designers can reduce the environmental impact of manufacturing their garments. Study the list and answer the questions below.....
 - a) **Waste Management.** Designers can choose only to work with factories which use the highest standards of waste management.
 - b) **Less chemicals and dyes.** Designers can minimise the amount of dyes and finishing chemicals used in their garments.
 - c) **Avoid harmful chemicals.** Designers can choose to avoid using the most harmful chemicals altogether.

Tom visits the dyeing factory in Portugal where he sees a range of dyeing machines, some of which can take up to a ton of fabric in one dyeing procedure. The volume of dyes and waste water used in these machines is enormous, illustrating the huge potential for damage to be done to the environment if waste water and dyes are not disposed of responsibly. As a member of the European Union, all Portuguese factories must meet what are called 'EU Regulations' which mean that they must meet some of the toughest environmental standards in the world. An EU regulation is equivalent to a law and applies in any country which is a member of the EU.

- a) What must happen to any waste water before it can be discharged into a sewer?
 - b) Factories also emit gases into the atmosphere during the dyeing process. What does the Portuguese company have to do when they emit gases?
 - c) How does this factory and the standards they have, compare with factories in some countries in other parts of the world?
3. The Portuguese dye factory is 'Okio tex' certified. What is special about the dyes used in an 'Okio tex' certified factory?
 4. Physical finishes, such as brushing to add warmth or softness, do not use any chemicals. However many special performance qualities can be added to fabrics by using chemical finishes and it is important to Finisterre to use chemicals which are less harmful than others. Tom discusses an example of an antibacterial finish containing silver ions, which is often used by manufacturers. Why did Tom choose not to use this particular type of finish containing silver ions?

ECO DESIGN

Activities

- **PRODUCT ANALYSIS/INVESTIGATION:** Choose a popular high street store (eg. Topshop) to visit and select an example of an item of clothing. Study the garment carefully and keep an image and description of the garment, with details of the fabric content, care details, construction, components and where the garment was made. There are several ways of doing this;
- Write the information in a notebook, but make sure you explain what you are doing to the shop assistant first as some shops do not allow people to take details like this. Most of them are quite understanding if you explain that this is for a school project.
- Go online first; you can obtain some of the information before going to look at the item in store. This is a good way to also get a clear image of the item.
- You may be able to record the information as a spoken message in your mobile phone.
- Remember, retailers do not normally allow photographs inside their stores, so you would need to take a photograph image from a website or photograph a garment in a shop window, or draw a picture!

Once you have collected this information, analyse your chosen garment to assess how Eco-Friendly it is. For example...

- How sustainable are the fibres used in garment? Could this have been made using any more eco-friendly fibres, what would you suggest?
- Has it been dyed or printed or had any other decoration added to the fabric and what sort of impact might this have on the environment? Could the decoration be reduced or added in a more eco-friendly way – how?
- How complicated is the garment to make – did it take a lot of energy to produce? Could the design be simplified in any way?
- What sort of components are on the garment? Do you have any suggestions for any better ways for fastening the garment which are more eco-friendly?
- Where was the garment made – what effect did this have?
- How does the garment need to be cared for? Is this good or bad for the environment?
- How well is the garment made? How long do you think it would last?
- Can it be disposed of responsibly? How would you dispose of it at the end of its life? Could you recycle it – how?

This exercise could also be conducted purely within the classroom by providing pupils with a range of ready-sourced examples of high street product images and information for them to analyse. Specific retailers and products could be selected and distributed to allow pupils to first analyse one item which is not eco-friendly and

a second item which is. Pupils could conclude the task by including their own summarised opinion when making a written comparison of the two examples.

- **DESIGN CHALLENGE:**

This could be an individual task or paired work. Design a simple sports bag to appeal to teenagers which has as little impact as possible on the environment.

- What sort of fabric and construction methods would you use?
- How many and what sort of components would be used?
- Where would it be made and sold?
- How would it be sold?
- How would it need to be cared for?
- How might it be recycled or disposed of?

Present your design in the form of an A3 poster with detailed, annotated drawings to demonstrate the style and construction of your bag. You could include appropriate fabric swatches and/or magazine images to enhance the presentation and to demonstrate your proposal. Add written notes to explain any other information referred to above – your poster should include all relevant information.

Display all of the posters, giving pupils time to study them. Alternatively pupils can give a presentation to the rest of the group by showing their poster and explaining their idea. Pupils can vote (giving reasons when questioned) for the bag which best meets the design brief ie. appealing to teenagers with least impact on the environment.

- **CARE LABELLING:** Caring for textile products during their life does have an impact on the environment. This can relate to how often an item needs to be washed, at what temperature it is washed, how it might need to be dried, whether it needs ironing or not and at what temperature it needs ironing.

The Textiles Products Regulations Act of 1986 means that it is compulsory for all textile products to be labelled with information about the care of a product. Study the care symbols for each process such as washing, drying, ironing etc..(you should be able to find these easily in your textbook or on the internet)and use this information to create your own label designs for:

- a) A delicate pink 100% silk mini-dress worn only for special occasions, which is embellished at the neckline with beads and sequins.
 - b) A navy blue 60% cotton, 35% polyester, 5% Lycra sports top which is worn three times a week by the owner but never needs ironing. It is recommended to be cool hand washed.
 - c) A white 100% cotton mens' shirt which is worn once a week. It can be machine washed on a cool wash.
- Design a care label for each item, containing details of the fibre content and as much information as possible in terms of care symbols.

- Compare the three items and the amount of resources and/or energy used in caring for them. In your view, which item has the least impact on the environment?

- **EDUCATING THE CUSTOMER:** Sportswool is a wool fabric with performance qualities which has been developed for sportswear. If you were the creative director of an eco-brand using Sportswool, what sort of sportswear would you choose to make? What sort of publicity stunt would you organise?
 - a) How could you involve sheep in publicity stunts to promote your Sportswool products? Imagine that you are presenting your idea to others - could you design a poster or a storyboard to explain your plans?
 - b) Design a swing ticket which could be attached to your products, to highlight the importance of wool in your product and to grab the customers' attention.