

Activity Title: E5 - Advanced Conversion with T-Shirts (Hack a T-shirt)

Total Time: 8 hours + T-Shirt Fair event

Student Age: 12-18 years.

Application Area: Waste management, recycling, advanced transformation, digital design and technology, material science, economy.

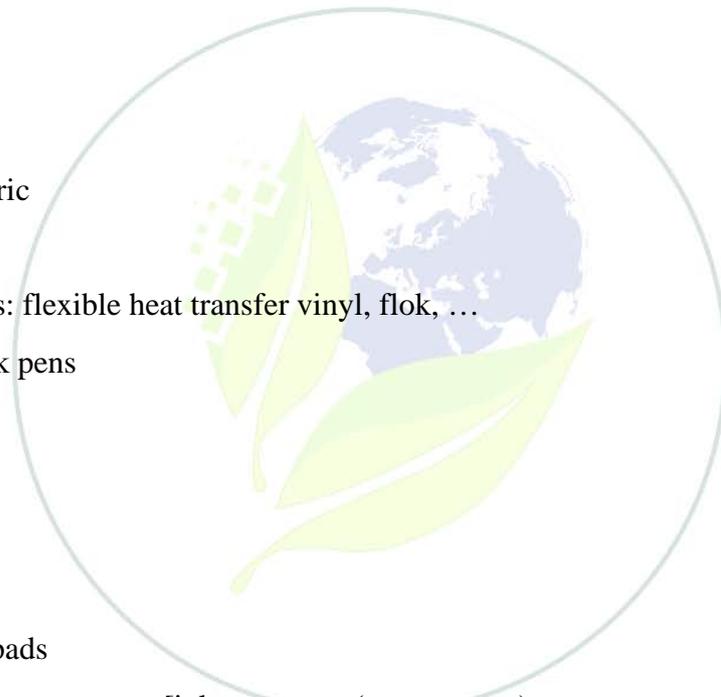
Key Words: Recycling, Advanced Transformation, waste, 2D Digital Design, Embroidery, Vinyl Cut, Awareness Campaign, Fast Fashion, Climate change, Global warming

Materials/Materials:

- Old clothes
- Now fabric
- Sewing machine
- Vinyl cutter
- Glue gun
- Scissors
- Scissors for fabric
- Needle yarn
- Textile transfers: flexible heat transfer vinyl, flock, ...
- Non-melting ink pens
- Hot press
- Stretch film
- Cologne band
- Oil paper
- Computers or ipads
- 2d vector drawing program, [inkscape.org (open source), www.vectornator.io (free application)]
- Digital embroidery program, [inkstitch.org (free application)]
- Infographic posters/flyer/booklet making program (www.canva.com)

Theme:

- Water and healthy Food
- Renewable Energy
- Environmental pollution



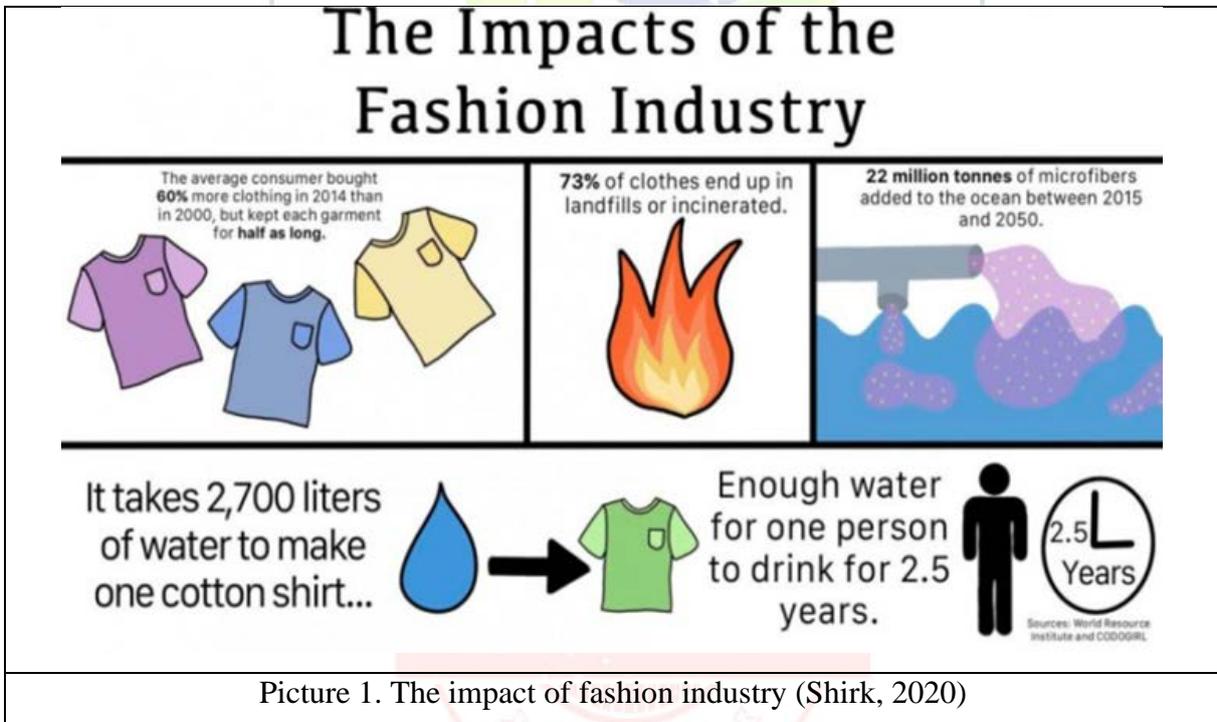
- Global Warming

Considerations:

- Safety precautions when using cutting and drilling tools.
- To act in accordance with the learning approach by living (DIY).
- Taking necessary safety precautions when applying a hot press.
- Taking necessary safety precautions in machine-used activities.

Introduction:

Nowadays people are interested in clothes they don't want anymore. Instead of giving them away, they throw them away. The average person in the European Union is buying 40% more clothes today than in 1996. This is because the price of clothing has been significantly reduced since then. At the same time, the life of the garments has been reduced. Europeans buy about 26 kg of textiles each year and throw away about 11 kg of textiles each year. Occasionally, the discarded clothing is exported to countries outside the EU, but most of it (87%) ends in incinerators or landfills (Picture 1). Globally, less than 1% of all clothing is recycled as clothing. This is partly due to insufficient technology.



Picture 1. The impact of fashion industry (Shirk, 2020)

Please answer the questions with your students:

1. Couldn't we do something with them instead of throwing clothes away?
2. What can we do with old clothes?
3. Can we use them again for another purpose?
4. Did you know that the textile industry has the most impact on the environment and climate change after food, shelter and mobility?
5. What simple actions can you take to help?

The term "advanced transformation" is a variation of "recycling". In recycling only, the product is completely processed and converted to raw material. For example, after grinding and dissolving, a new product is made. In the advanced transformation, you use a product as it is available to create another product in a creative way.

Re-fashion is an advanced form of transformation, because it involves transforming an existing dress into another. Think of a skirt-made jeans or a nice short dress or a long, very large soup dress that's overgrown (Picture 2).



Picture 1. Re-fashion

This activity aims to improve design skills by supporting advanced transformation. The design will be made up of several steps. The materials used by each student (T-shirts, pants, bags, sweaters, etc.) they will be asked to print images they have designed or found online. The importance of living and learning was noted during the activity.

Aim of The Activity:

In this activity, students explore the concept and impact of fast fashion. They learn some simple actions they can do to make a difference. They collect discarded clothing and re-

bring them to life with the help of digital production techniques such as vinyl cutting, digital embroidery. They sell and trade the products they produce at the School Clothing Fair. They also design a gift badge to distribute during the fair to remind people that the impact of fast fashion is important and that small action is important.

TEMPLATE

THE KEY TO GLOBAL LIFE,
DIGITAL CHANGE OF NATURE



Activity Process:

Preparation Phase:

- The area to be activity is organized.
- Students are prepared for group work or individual work.
- Materials required for the event are provided.

Design Steps:

STEP 1. Press a T-shirt:

1. Students are asked to collect the clothes thrown out for recycling. They are requested to group and classify these clothes (Picture 3)



Picture 3. Classify these clothes

Note: Among the collected clothing, it is requested to identify the shirts that are not too damaged to be designed.

2. Students buy T-shirt transfer paper. There are two types of transfer paper: One for white and pastel t-shirts and the other for darker colors.
 - Most transfer papers are the same size as regular printer paper (the size of A4 sheets). Make sure the printer is suitable for this before you receive any transfer paper that is not normal.
 - Light-colored transfer paper is used for light-colored or white T-shirts.
 - The dark transfer paper is used for t-shirts that are darker.

3. Pick a picture. You can use any picture that's on your computer. If the image is only physically present, scan it and save it as a jpeg file to your computer. Alternatively, take a picture of the picture and transfer it to your computer. At this stage, you can also design your images yourself in the application in the form of a 2D drawing. [inkscape.org (open source), www.vectornator.io (free application), (Picture 4).



4. Print your design on paper. Preview and check to verify that the image fits on the paper before printing. If it is too large to fit, select the "fit to page" option in the print options, or reduce its size in an image editing program.
 - When printing on a transfer paper, you need the right type of printer, such as an Inkjet printer.
 - If both sides of the transfer paper look different, print on the blank side. There may be a logo, design, or heat indication on one side.
 - If the width of the image is greater than the length, switch to "landscape mode".
5. Cut the picture. The paper you left around the picture comes out as a thin film on the shirt. Cut the picture to create a clean picture (Picture 5).





Picture 5. Cut picture and iron.

6. Set the iron and iron the T-shirt. Refer to the instructions on the transfer sheet to find out which setting is best for the product. Select "cotton" or high temperature setting, select "dry" or turn off steam and drain all water from the iron if no advice is specified. Wait a few minutes for the iron to heat up.
7. Iron the picture on the t-shirt. Press the iron firmly against the garment with great pressure with all your hands.
 - Iron in accordance with the instructions of the transfer paper for a few minutes from 30 seconds.
 - Be careful to move the iron to heat every part of the paper.
 - Some types of transfer paper have temperature indicators that change color when the region is sufficiently hot.

Note: Different applications can also be made in this activity.

STEP 2. Sell your re-fashions.

1. Ask students to create a marketing strategy for the clothes they rearranged (Picture 6).





Picture 6. Marketing strategy

2. Students are asked to sell clothes.
3. After sales, this money use for street animals to feed.

Example of outputs:

Students can produce other materials. You can see in the pictures (Picture 7).



COPYRIGHT

PROPERTY



Picture 7: Outputs

Assessment:

The design of students can be displayed within the school. Different products can be created by diversifying waste materials used.

Goals	Must be improved (1)	Medium (2)	Good (3)	Very good (4)
Expressing yourself				
Presenting idea				
Supply materials				
Taking necessary precautions				
Appearance of the design				
Ability of using equipment				
Total				

Links:

Shirk, O. (2020). *Sustainable styles: Taking a stand against fast fashion*.

<https://dgnomega.org/9939/opinion/sustainable-styles-taking-a-stand-against-fast-fashion/>

<https://www.mavikadin.com/galeri/kot-pantolondan-neler-vapilir-eski-kot-degerlendirme-projesi-2019/29>

<https://www.youtube.com/watch?v=K0OuKVPdQfw>

[Infographics on the impact of textile waste on the environment](#)

EEA report : [Progress towards waste prevention in Europe - textile example](#)

[waste prevention](#)

Technological trends in the textile industry: [Transforming the textile industry with digital technologies](#)

Facts and Actions in textile strategy: [Sustainable and Circular Textiles by 2030](#) ,

EU report, infographic : [Why is it difficult to recycle clothes?](#)

Sustainable and circular textile strategy: [summary of the report](#)

Fast fashion: definition and problems

Definition

What is fast fashion and why is it a problem?

The global environmental injustice of fast fashion

Documentary

Report: [The state of Fashion 2022](#)

Presentation: [History of Fashion - PowerPoint PPT](#)

Presentation: [Fashion Cycle - PowerPoint PPT Sunumu](#)

