CLIL

STEAM

MATERIALS • UDA 7:
Textile Fibers

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1. CREATE YOUR OWN MAP

Have a look at the mind map below, then sketch your own version in your exercise book.

TEXTILE FIBERS

ORIGIN AND COMPOSITION

Natural fibers
• Plant-based (cotton, linen, hemp)
• Animal-based (wool, silk)
• Mineral-based (glass fiber)
Technofibers:
• Artificial (acetate and viscose derived from cellulose)
• Synthetic (produced through chemical synthesis from petroleum)

CHARACTERISTICS AND PROPERTIES

- Fineness (denier)
- Flexibility
- Thermal insulation
- Tensile strength
- Dyeing and washing suitability

PRODUCTION AND PROCESSING

- Spinning
- Weaving
- Finishing

FASHION SYSTEM

- Haute couture
- Fast fashion
- Sustainable fashion

SUSTAINABILITY

- Organic cotton
- Fibers from plants and fruits
- Natural dyes
- Recycling and reuse
- Labeling

2. CREATE YOUR OWN TEST

a. Indicate whether the following statements are true (T) or false (F).

1. Textile fibers are usually short and rigid.

T F

2. Wool comes from the shearing of animals.

T F

3. Acetate is a synthetic fiber.

T F

4. Spinning transforms fibers into fabric.

T F

5. Textile fibers are generally easy to dye and wash.

T F

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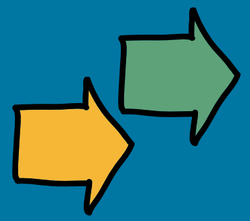
2. CREATE YOUR OWN TEST

b. Create Five New True/False Questions to Share with the Class



3.ANALYSIS OF GLOBAL COTTON PRODUCTION DATA

The table below shows the trends in cotton production in recent years for the main producing countries, expressed in thousands of tonnes.

Represent the Data in the Most Appropriate Graph/Chart. You can also consider focusing on a single producing country. You may draw the chart on graph paper or millimeter paper, or insert the data into an Excel sheet.

Country	2020	2021	2022	2023
India	430	550	300	400
China	450	570	320	420
United States	480	600	350	450
Brazil	500	620	370	470
Pakistan	560	490	530	1200

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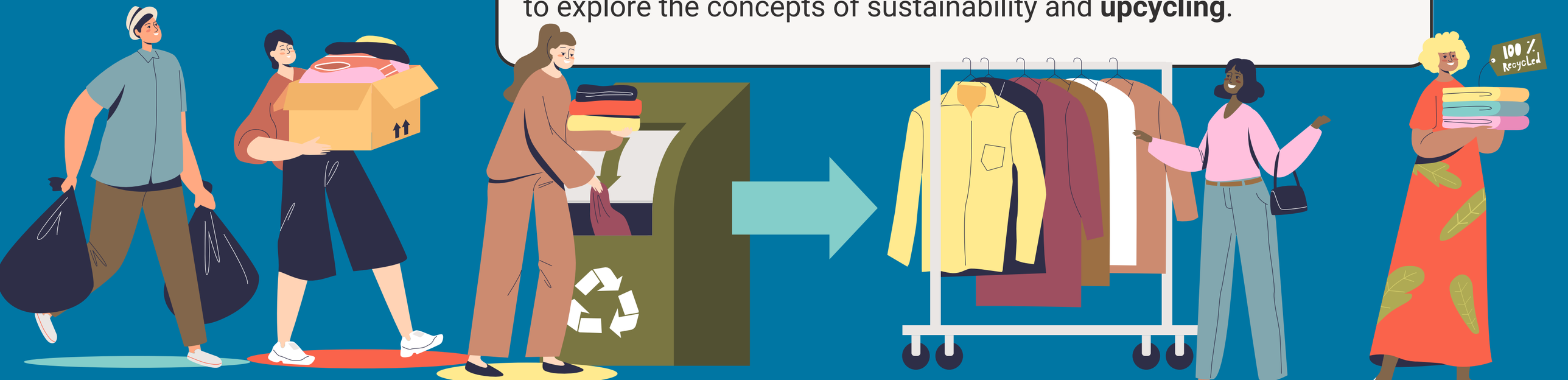
4. NATURAL DYES

Collect some scraps of white cotton fabric. Using plant-based materials such as onion skins, spinach, or beets, **try to create natural dyes and dye the fabric samples**. Then, analyze the resulting colors in class and **discuss the sustainability of natural dyes** compared to chemical dyes.

5. CREATIVE RECYCLING

In small groups, **gather old fabrics and clothes that are no longer usable** and, under the teacher's guidance, **transform them into new products** (bags, accessories, etc.). This project gives the opportunity to explore the concepts of sustainability and **upcycling**.



6. ANALYSIS OF CLOTHING LABELS

Regulation (EU) No. 1007/2011 requires that clothing labels display fiber composition, but there's no obligation to include other details like size, washing instructions, or country of origin. However, **clothing labels often contain much more information**!

Photograph the labels of three different pieces of clothing and compare them: What fibers are used, and in what percentage? Are there symbols for washing and care instructions? Are there any additional symbols or information (such as those specified by ISO Standard 3758:2023)? Could any of the information be considered greenwashing (vague or misleading claims about sustainability)? **Present your findings to the class.**

7. THE MAKING OF HIGH FASHION GARMENTS

Use the QR code in your textbook and **conduct a brief online research (maximum 150 words) on the process of designing and crafting a haute couture garment**. Look for images and videos that illustrate each step of the procedure. Once your research is complete, **present your findings and compare them** with those of your classmates.