UNIT 1. TECHNOLOGY. TECNOLOGICAL PROCESSES.
1º ESO BILINGUAL TECHNOLOGIES
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Think about...
- What is the purpose of technology?
- What are the technological processes?
- What are the different stages of technological processes?
- What are the healthy and safety rules in a workshop?
- What are the factor that we must consider when analysing a technological object?
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1. WHAT IS TECHNOLOGY?
2. THE TECHNOLOGY WORKSHOP
3. TECHNOLOGY, SOCIETY AND THE ENVIRONMENT

1. WHAT IS TECHNOLOGY?

- What do we need to apply technology?

- SKILLS

- SOLUTIONS
1. WHAT IS TECHNOLOGY?

Technology is the practical application of knowledge (science) and skills (techniques) to create solutions (technological objects or systems) which satisfy our needs or solve our problems.

LET´S TECHNOLOGIZE!!!

We have to have a plan. The process of planning a technological solution:

- NEED
- IDEA
- DEVELOP THE IDEA
- CONSTRUCTION
- CHECK

The solution then becomes the technique.
1. WHAT IS TECHNOLOGY?

The elements of technological processes:
1. Knowledge of physical and scientific concepts
2. Technical drawing to transmit the idea of an object
3. Materials and their properties
4. Working techniques (procedures or skills)
5. Economic considerations
6. Environment
7. Information technology (computers)

1.1. The stages of technological processes

**NEED**
- Analyse the need or problem and the possible constraints
- Study similar cases and their solutions (background)

Constraints: limit or restriction. Background: history or more detailed information

**IDEA**
- Propose one or several solutions
- Agree and choose the best solution

**DEVELOP THE IDEA**
- Prepare plans and measurements
- Choose the necessary tools, materials and labour. Prepare an estimate of costs
- Prepare a time frame and plan the construction

1.1. The stages of technological processes

**CONSTRUCTION**
- Construct and test

**CHECK**
- Evaluate
- Write the final report

**EXERCISE:**
In the notebook, applying the stages of technological processes, solve this problem:
2. THE TECHNOLOGY WORKSHOP

- The workshop is an area used for working with tools, with work benches, high stools, machines, etc.
2.1. Organisation of workshop activities

The coordinator:
- Responsible for organising the work of each group member to achieve efficient teamwork.
- Represent the group.

The person responsible for the material:
- Collects the material needed.
- In charge of recycling leftover material.

Leftover: a part of something that has not been used.

The person responsible for the tools:
- Looks after the tools assigned to the group.
- They can’t be lost or damaged.

The person responsible for the health and safety:
- Makes sure that the group members follow the health and safety rules in the workshop and when using tools.
2.1. Organisation of workshop activities

- The person **in charge of cleaning:**
  - Makes sure each *workstation* is left completely clean.

*Workstation: place or table where you work*

- The **secretary:**
  - Collects, checks and organises all written documents from each group member (plans, process reports, estimates, etc)

2.2. Health and safety rules

- To protect our health → follow rules
- Tools and machines can be dangerous if we don’t use them properly
- Safety rules prevent accidents and reduce the risk of hurting ourselves
- Follow the teacher’s instructions
2.2. Health and safety rules

1. **Health rules:**
   - Tell the teacher immediately if you have any kind of accident (cuts, burns, dust in your eyes...)
   
   *Dust: tiny particle of a material*
   - Keep your hands clean and dry.
   - Keep your table clean.
   - Put tools away when not using them.
   - Too much noise makes people irritable and aggressive → work quietly

2. **General Safety rules:**
   - Don’t work necklaces, rings or loose-fitting clothes → they might get caught in the machines.
   
   *Necklaces: a piece of jewellery such as a chain or a string of beads which someone, usually a woman, wears round their neck.*
   - Ask your teacher if you have any doubts.
   - Don’t waste materials and look after your tools
2.2. Health and safety rules

3. Safety rules in workshop
- Find out where everything is in the workshop.
- Obey sings.

4. Safety rules for tools
- Find out how to use each type of tool, equipment and machine correctly before you start.
- Use the right tools for the right task.
- Make sure tools are in perfect condition before use them.

3. TECHNOLOGY, SOCIETY AND THE ENVIRONMENT

Centuries ago, technology developed very slowly.

When the Industrial Revolution took place in the 19th century, scientific research became more important.

This research became more important.

Research: investigation, studies

→ Productivity and standards of living increased.

Technology and society works together→ technology responds to society’s needs and helps society to develop.
3. TECHNOLOGY, SOCIETY AND THE ENVIRONMENT

Nowadays technology is present in all areas of society and has made **major** changes to our lives.

*Major: important, principal.*

Can you imagine a world without...

- Phones
- Computers
- Planes
- Fridges
- Clocks...

3. 1. Sustainable development

Technological development has many advantages, but it also creates a series of problems:

- Resources (animal, mineral or vegetable) are **overexploited** – they can run out and natural habitats disappear.

  *Overexploited: use too much of something*

- Polluting gases are produced
- Toxic waste is produced
3. 1. Sustainable development

Technology has to find a sustainable development
So that the advantages are available to all human beings without damaging the environment

ANALYSIS OF TECHNICAL OBJECTS

a) Analysis of form
b) Technical analysis
c) Analysis of function
d) Socio-economic analysis
ANALYSIS OF TECHNICAL OBJECTS

a) Analysis of form

Analyze the shape or form. Describe it by:

1. Drawing the object
2. What shape is it: a sphere, a cone, a prism, circular, square, etc.
3. Exterior measurements: height, width and depth in mm.

**Height**: a measurement from the top to the bottom of an object.
**Width**: a horizontal measurement.
**Depth**: a measurement from the front to the back of an object.
4. Draw each of the separate pieces of the object.
ANALYSIS OF TECHNICAL OBJECTS

b) Technical analysis
We analyse the manufacture of the object

Manufacture: make an object

How many pieces make up the object?
Make up: combine to make a complete object

What material is each piece made of (wood, plastic, metal...)?

How are the pieces joined?

What are the physical principles that make it function?

What manufacturing process has been used?

Which dimensions should be standardised?

ANALYSIS OF TECHNICAL OBJECTS

Make the Technical analysis of this object:
ANALYSIS OF TECHNICAL OBJECTS

c) Analysis of function
We analyse the object’s use
- What is this object uses for?
- What are its different pieces for?
- How does it work?
- What are the instructions for use?
- What problems can occur when it’s being installed?
- What kind of maintenance does it require?
- What safety risk are there in using the object?
- What other objects have a similar function?

ANALYSIS OF TECHNICAL OBJECTS

Make the analysis of function of this object:
d) Socio-economic analysis
Social function of the object and its economic and environmental repercussions or effects
- The origin of the object and what need does it satisfy
- Did we use anything different in the past?
- How is this product sold?
- How much is it?
- Expensive or cheap relative to other objects with the same function?
- Could this object be made from cheaper materials? Explain

Make the socio-economic analysis of this object: