

DEPARTAMENT DE TECNOLOGIA.
TECNOLOGIES 2n ESO. FEINA D'ESTIU
Llinatges, Nom:

THE TECHNOLOGICAL PROCESS

1. What is Technology?
2. **Explain** the stages of the technological process.
3. **Write the family tools** studied and give two examples of each one.
4. **Draw** two signs of each type indicating their meaning.

MATERIALS. WOOD & METALS

1. **Classify** the following raw materials depending on their origin:

wool, marble, cotton, clay, silk, coal, feathers, resin

- Animal origin:

- Mineral origin:

- Vegetable origin:

2. **Define:**

- Density:

- Resistance:

- Toughness:

- Elasticity:

- Plasticity:

- Thermal conductivity:

- Electrical conductivity:

3. Explain, down to the last detail, how to obtain wood.

4. Define alloy and **write down** some examples.

5. Classify the following metals

pure iron, Sn, Cu, cast iron, Ti, zinc, bronze, magnesium, Pb, steel

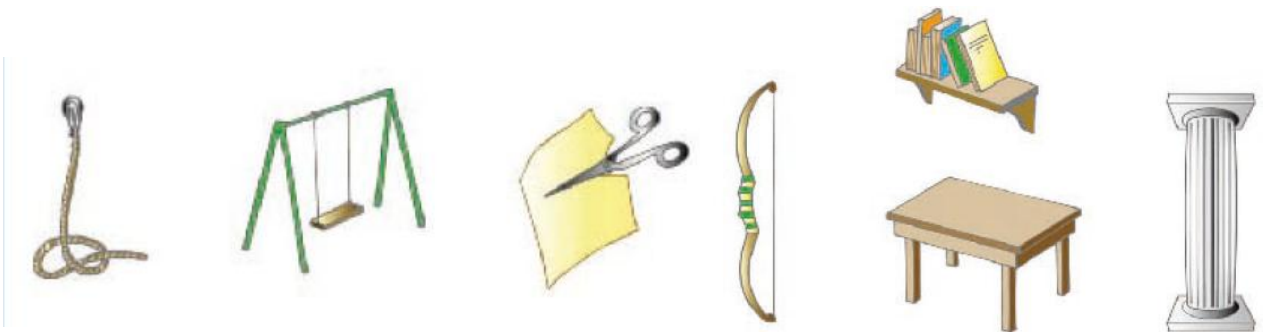
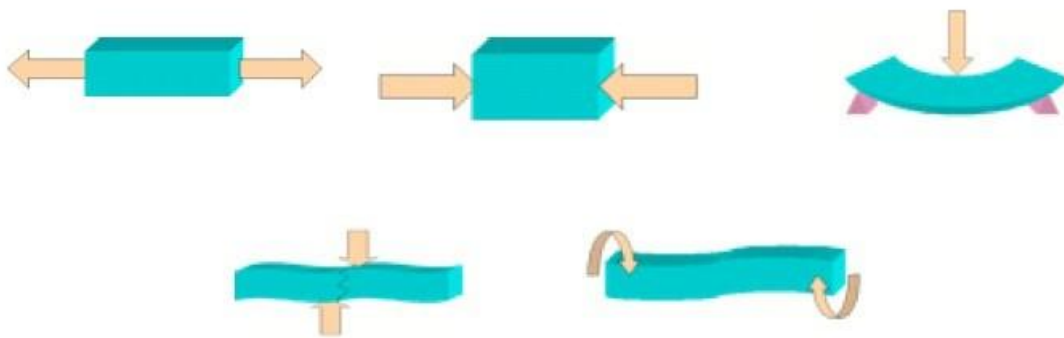
STRUCTURES

1. Define:

a. Force:

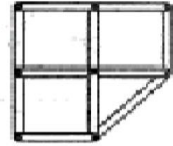
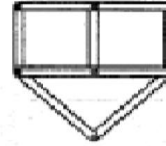
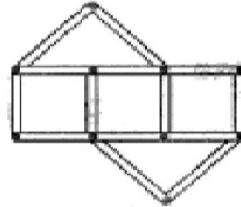
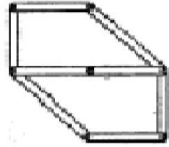
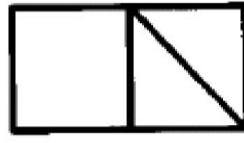
b. Structure:

2. Label the stresses each element bears:



3. Write down (with examples) the functions a structure is made for:

4. Draw the **minimum** beams in order to make these structures stable



MECHANISMS

1. Indicate the class of the following levers labeling the fulcrum, the force and the resistance.

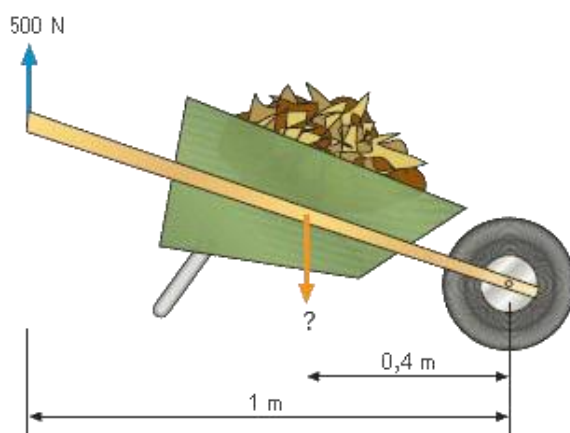


2. Calculate the force needed to raise freehand 500 kg.

b. And if we have an inclined plane that is 12 m long and we want to raise the load 3 m?

3. To raise 3 m a load of 10000 N on an inclined plane that is 15 m long, we need to apply a force of...

4. I can apply a force of 700 N, calculate the load I will be able to transport with the following wheelbarrow.



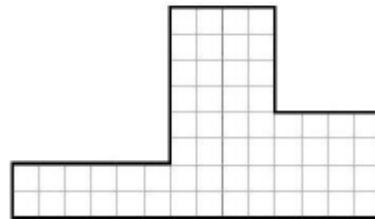
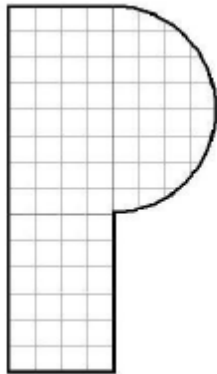
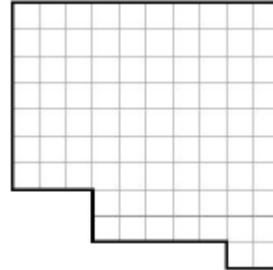
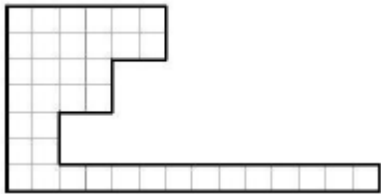
5. Calculate the force needed to move a stone of 500 kg with a first class lever. The distance between the resistance and the fulcrum is 10 cm and the distance between the force and the resistance is 2 m.

6. Calculate the force needed for moving a mass with a second class lever. The mass is 70 cm far from the fulcrum and the distance between the force and the fulcrum is 140 cm. The mass is 150 kg.

7. Using a 2 m bar as a second class lever, calculate the distance at we need to place a mass of 90 kg for moving it with a mass of 15 kg

TECHNICAL DRAWING

1. **Dimension** the following figures if each squares represents 10 mm



2. **With** wich **type of scale** wouldyou represent the following elements on an A4 sheet?

a. Europe:

b. A mobile phone:

c. A laptop:

d. An apple:

e. Your bedroom:

f. A dog:

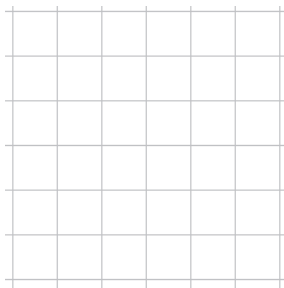
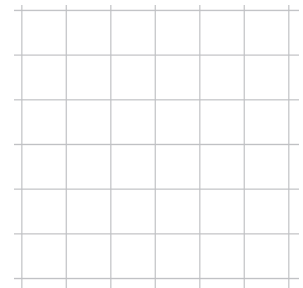
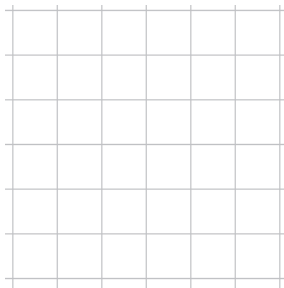
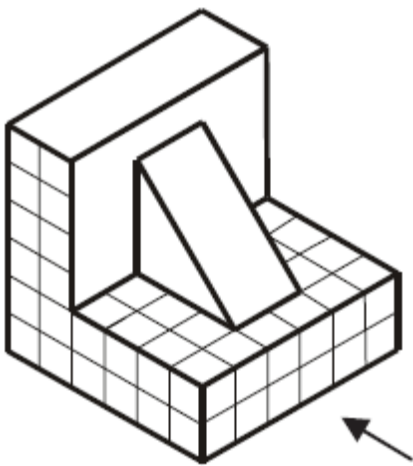
g. A fly:

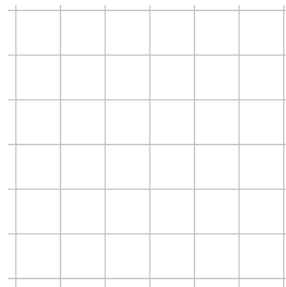
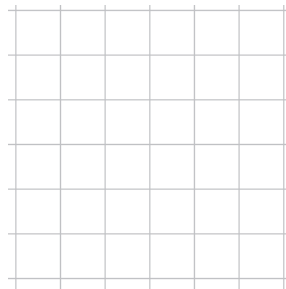
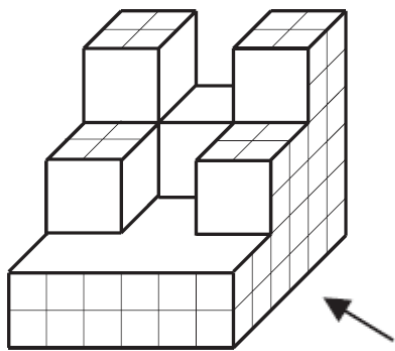
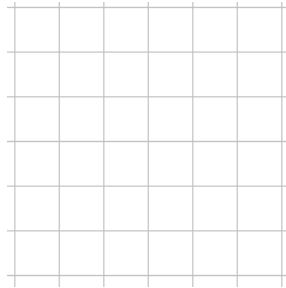
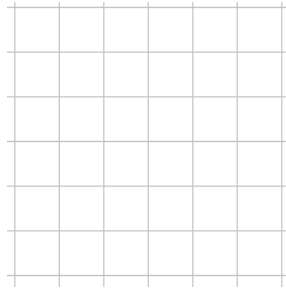
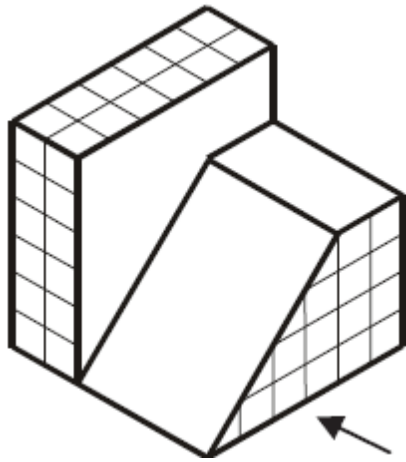
h. The Empire State
Building:

3. **Complete** the following table:

SCALE	DRAWING	REAL
1:20	5 cm	
1:100	35 cm	
2:1	7 cm	
1:2	2 cm	
1:5		40 cm
1:10		40 cm
1:50		5 m
2:1		10 cm
	4 mm	2 mm
	10 cm	40 cm

4. **Draw** the top view, front view and lateral view of the following objects





5. Draw a breakdown drawing of one of the project we have done during the last year. Remember that you need to download and print the A4 file you can find on the Technologies' Department website.