

TECHNOLOGY

2nd E.S.O.

PROJECT: 'A RECYCLING CONTAINER'.



At the end of this unit, the student will be able to:

- Produce a 3D prototype made with wood and other materials.
- To cut, shape and join materials.
- Produce a final product, which meets certain specifications.
- Know how people can improve our environment.

NAME

TUTOR

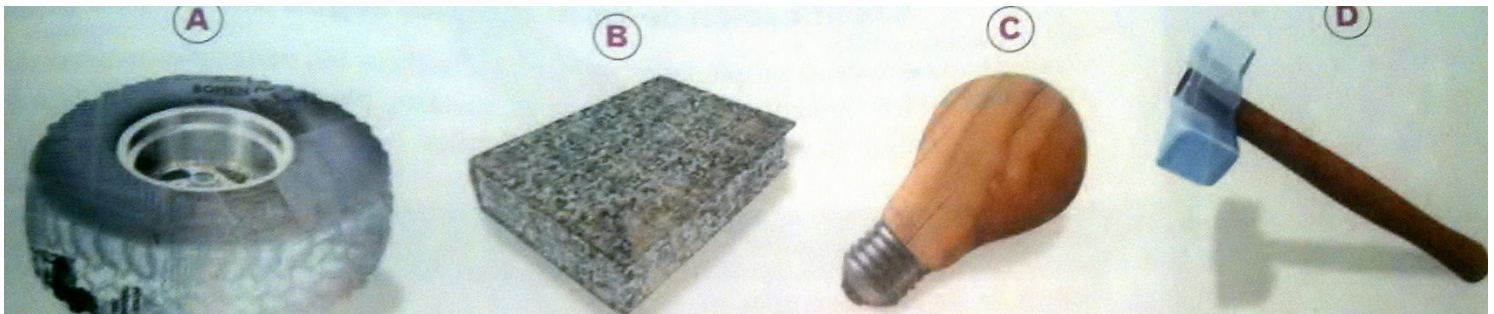
TEACHER

GROUP

INTRODUCTION.

1. Is it possible to make a tire with paper? Or a book made with granite? Or a bridge made with plastic? And a computer made with porcelain or a wooden bulb? And a glass hammer?
2. Why do you think that these products are not made with those materials? Discuss this answer with your parents and write down some reasons why.
3. Where do these materials come from? Are those eternal sources?
4. How can we save materials?

Discuss with your partner.



ANSWER:

- 1.
- 2.
- 3.
- 4.

RECYCLING CONTAINER

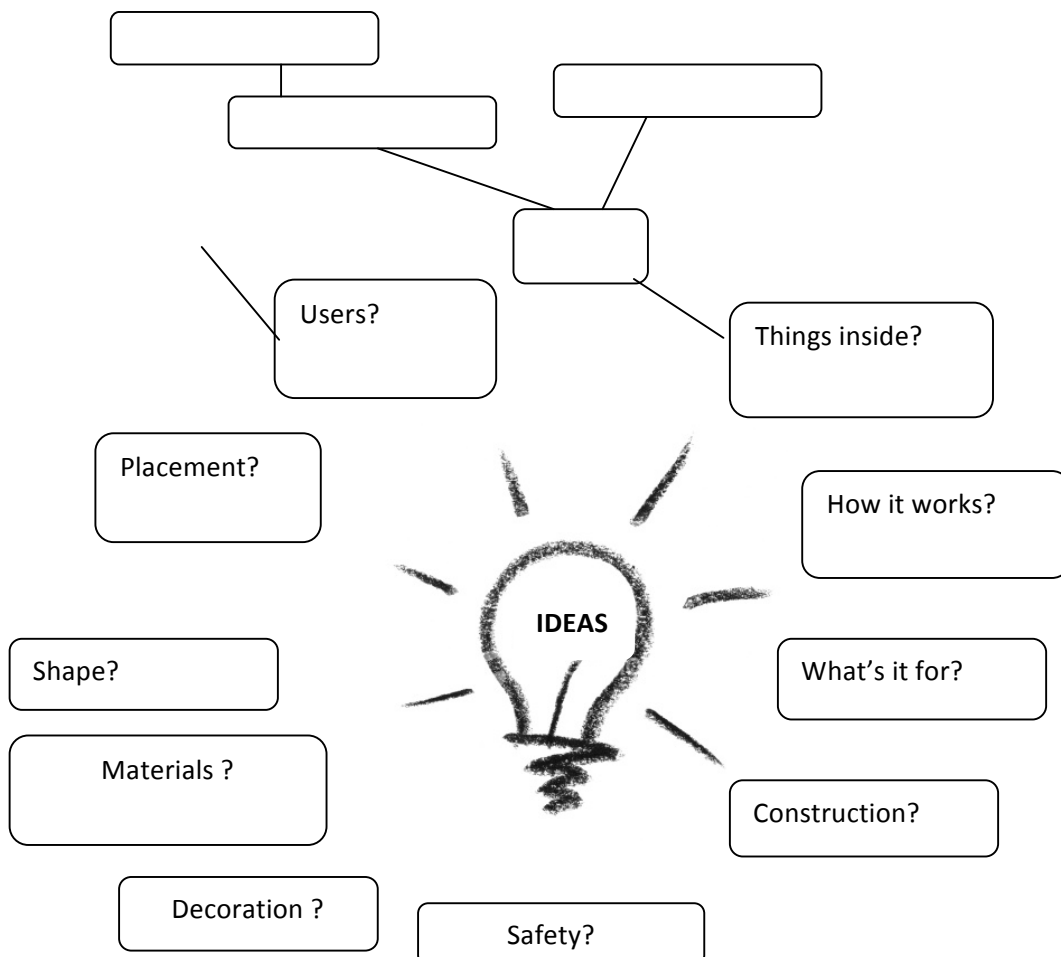
1. Problematic situation: In order to keep our classrooms clean and tidy and to improve our environmental and ecologist mentality...

Resume: A company proposes an open competition to recycle paper from schools in Huelva. Each group that takes part in this event could present a prototype made in real dimensions. The container will be 20 litres in volume, durable, portable and well decorated. Students will have to use a 1 cm thick ecological wood to construct the prototype. This product will be used easily and safely.

TASK: Write this problem's specifications.

2. DESIGN :

2.1 Analysing the problematic situation. TASK: complete the following map. You have to write some ideas that will help you to solve the problem.



2.2 Looking for some information: analyzing a real container

If you want to get some information that will help you to solve this problem, I suggest that you analyze a real container. To do it, you should have a look at it, finding out its parts, think about how this product was made. Ask yourself about materials or how you can use it. What can you say about decoration and safety of this product...

TASK: Analyse a real paper container. Answer the following questions:

1. Draw it and put it into real dimensions.
2. Materials
3. How can this container be used?
4. Is it portable? Why?
5. Is it durable? Why?
6. Pros and cons of this container?
7. What about decoration?
8. Is it safe to use?
9. How could you improve it?

Analyzing a container: ANSWERS.

Recycling Containers Research:

Draw or glue pictures or photos of some recycling containers you have found on the Internet. Study them so that you can get ideas for your product: shape, final result, decoration, dimensions...

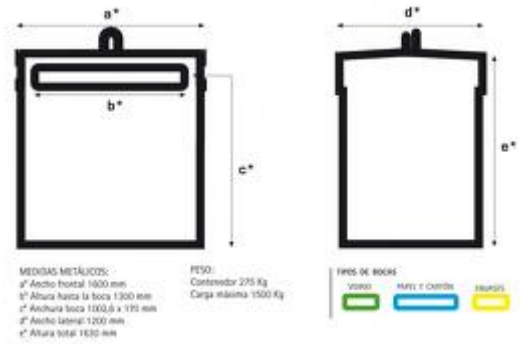


Complementary information: TASK

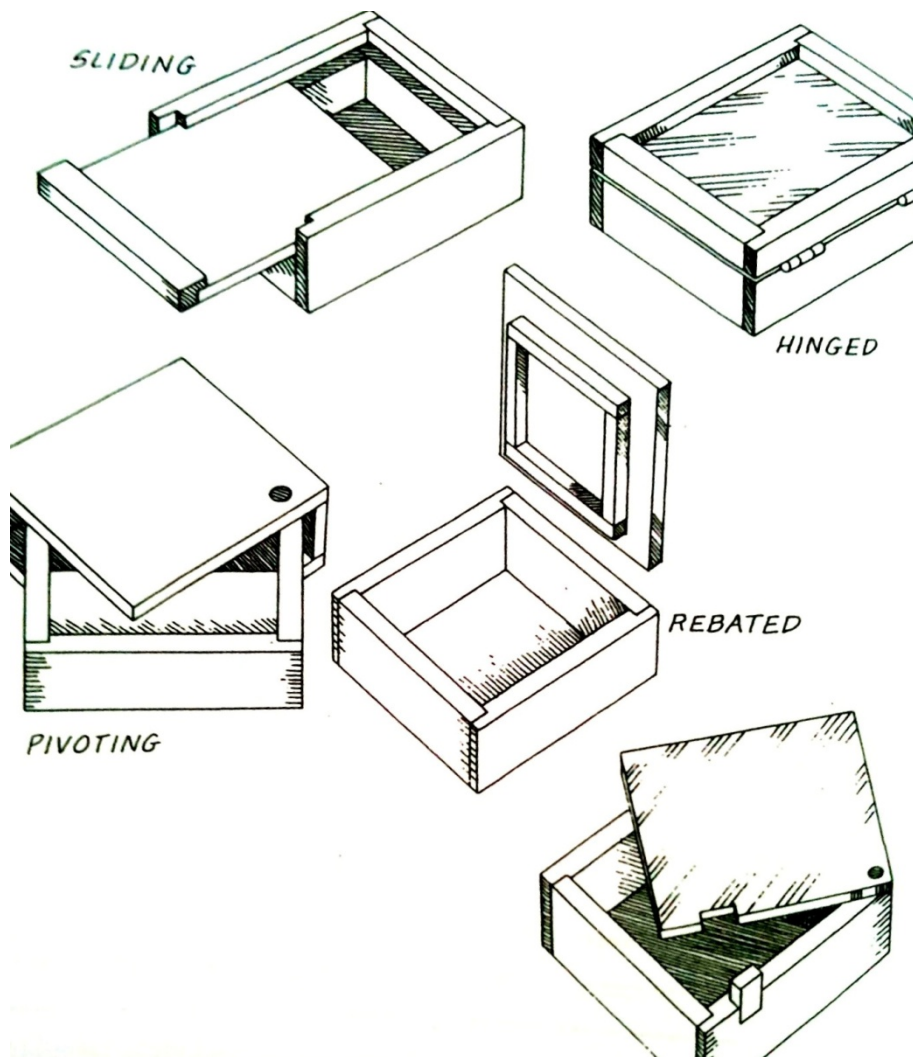
Answer the following questions about your product.

- Dimensions according to the problem specification.
- People you think will use this product.
- Decoration:
- Explain the different parts of your product.
- Durability
- Environmental impact:
- Product placement: draw a map
- Deadline.
- Test your product.

Look at this example and try to get some ideas for your Project. This design is for my home... I asked my parents last week how can we improve our recycling system at home. Newspapers and magazines can be in a container instead on the floor. I told them that I am going to design a solution for that situation. They looked at me smiling but I think they are not convinced that I can do it. I will show them that I am a clever student.



Here you are some ways you can close your container.



2.3 Select the best solution.

TASK: working in group, we have to chose the best solution. To do that, you all have to complete the table. Value each solutions according with the problem specification.

PUNCTUATION TABLE: example.

The best way to get the best solution is compare among them. Give points according with the specification to your parnets solutions and get the final arithmetic result. You can see this example

	Size	Cost	User	Stetic	Portable	Ecological	Safety	Easy use	Durability	Total puntuación
	P /10	P /10	P /10	P /10	P /10	P /10	P /10	P /10	P /10	P /10
Shakira's Solución	6	8	4	9	9	4	9	7	7	63
Ronaldo's Solution	9	6	9	5	8	8	9	7	6	67
Messi's Solución	5	8	7	8	7	6	6	9	8	64
<i>The solution number 2 is the best</i>										

Now you have to complete your table:

	Volume	Portable	User	Decoration	Materials	Ecological	Safety	Easy use	Durability	Total score
	P /10	P /10	P /10	P /10	P /10	P /10	P /10	P /10	P /10	P /10
Student 1										
Student 2										
Student 3										
<i>The solution number _____ is the best</i>										

PROS AND CONS YOU CAN SEE IN INDIVIDUAL SOLUTION

Write 3 pros and 3 cons of individual solution. At the end, your group have to get some conclusions about how improve the best solution you got before.

Solution 1:

Pros:

Cons:

Solution 2:

Pros:

Cons:

Solution 3:

Pros:

Cons:

Make a 3D drawing of your final solution. I recommend you to use a squared paper. Put dimensions and details.

3. CONSTRUCTION PLAN: Complete the following table. That is the process to construct your prototype.

TASK	TIME	MATERIALS AND TOOLS.	SAFETY RULES	MODIFICATIONS

TASK	TIME	MATERIALS AND TOOLS	SAFETY RULES	MODIFICATIONS

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TASK: GLUE SOME PHOTOS OF YOUR CONSTRUCTION.

4. EVALUATION: TASK

1. Check your prototype and compare it with your design. Do you find any modifications? Which one?
2. Why did you do those changes?
3. Does your prototype work properly? Why?
4. How would you improve your container?
5. Which tasks did you find difficult to do in this project?
6. Write your personal opinión about this project.

RESEARCH ACTIVITY (TWO PAGES, NO MORE)

OPCIÓN A:

Realiza un trabajo de investigación que muestre la fotografía de al menos siete objetos fabricados en plásticos diferentes, indicando el tipo de plástico en el que está fabricado cada uno de ellos. Averigua los símbolos usados en los en dichos objetos para indicar el tipo de plástico usado. Elije tres objetos e indica tres razones por las que se ha elegido el plástico como material de fabricación.

OPCIÓN B:

Realiza un trabajo de investigación que muestre la fotografía de al menos siete objetos fabricados empleando distintos tipos de metales. Indica el tipo de metal empleado en cada uno de ellos. Justifica dando algunas razones por las cuales se han empleado dichos metales en la fabricación de cada uno de los objetos.

OPCIÓN C:

Realiza un trabajo de investigación que muestre la fotografía de al menos siete objetos fabricados con materiales pétreos y cerámicos. Identifica el tipo de material que se ha empleado en cada uno de ellos y da algunas razones por las que se han elegido para fabricar dichos objetos.

OPCIÓN D:

Realiza un trabajo de investigación que muestre la fotografía de al menos siete objetos fabricados con materiales textiles. Identifica el tipo de material que se ha empleado en cada uno de ellos y da algunas razones por las que se han elegido para fabricar dichos objetos.

OPCIÓN E:

Realiza un trabajo de investigación que muestre la fotografía de al menos cinco objetos fabricados con maderas naturales y otros tres más fabricados con maderas artificiales. Identifica el tipo de madera empleada en cada uno de ellos y da algunas razones por las que se han elegido para fabricar dichos objetos.

TRABAJO DE INVESTIGACIÓN: (PEGA AQUÍ TU INVESTIGACIÓN) PÁGINA 1

TRABAJO DE INVESTIGACIÓN: (PEGA AQUÍ TU INVESTIGACIÓN) PÁGINA 2

CALIFICACIÓN DE LA UNIDAD.

TAREA	CALIFICACIÓN
IDEAS INICIALES Y DE DESARROLLO DEL PROYECTO. Si has desarrollado ideas usando diversas fuentes de información, evaluando la forma y función de productos existentes para ayudarte en tu diseño.	
ESPECIFICACIONES: si has escrito las especificaciones de manera clara y estas son usadas en el desarrollo del proyecto.	
IDEAS DE DISEÑO: si tus ideas de diseño son creativas y no solo copiadas. Si has propuestos nuevas ideas sobre los diseños que hay en uso.	
DIBUJOS: si estos expresan realmente lo que se quiere construir. Si hay detalles explicativos y si están bien presentados.	
CONSTRUCCIÓN: si el plan de trabajo está bien realizado y la construcción tiene una calidad adecuada.	
EVALUACIÓN: si la evaluación es llevada a cabo teniendo en cuenta las especificaciones y las ideas de diseño.	
INVESTIGACIÓN FINAL: si has usado las fuentes adecuadas y la información presentada ha sido seleccionada adecuadamente	

