

## TECHNOLOGY–2º ESO

# METALS

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### 1. General rules

1. The essay will be done individually.
2. The paper content corresponds to the unit “Metals” of your student’s book.
3. The deadline for delivering your work is **31 May 2019**. No essay will be collected after that date.
4. The essay must be delivered stapled or in some type of folder.

### 2. Format

1. The essay must be done using the Writer word processor included in the LibreOffice package.
2. All pages must include the heading “Metals”. The font for this text has to be italic and 10 points size.
3. All pages must include a footer showing the page number on the right side of it.
4. Justified alignment must be used for all the text.
5. The first page of the report must contain only the title, "Metals. Technology" and the full name and group of the author.
6. The second page of the paper must contain a table of contents showing clearly the page number in which each question is answered. This table of contents must be created automatically with Writer.
7. The report last page must include the bibliography used. If the materials used are books, you must give the title, authors and the publisher. With other materials (eg. Web sites) you must specify clearly what they are.

### 3. Contents

1. Importance of metals in our society. Write a composition talking about this topic. The composition must be at least six lines long.
2. Properties of metals. **Define** properly all the properties included on page 7 in the metals unit in your textbook.
3. Processes for obtaining metals.
  - a) Different types of mines. What are the main advantages and disadvantages of each kind of mine?
  - b) What is the meaning of ore? And the meaning of gangue?
  - c) Talking about mining....what is an ironworks?
4. What is the main difference between ferrous and non-ferrous materials?

5. Ferrous materials:

- a) What is the mineral most commonly used to obtain iron?
- b) What is the meaning of the word alloy?
- c) What are the main differences between pure iron, steel and cast iron?
- d) What are alloy steels? What are they used for?

6. Explain the process of Steelmaking.

7. Where are the following metals obtained from? If they are an alloy, what is its composition? What are they main uses?

Copper	Brass	Bronze	Lead	Tin	Zinc	Aluminium	Titanium
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8. Shaping techniques.

- a) What are we doing when we are shaping a metal?
- b) What is the difference between the methods of extrusion and casting?

9. Marking, cutting and finishing techniques:

- a) What is the purpose of each of these three types of techniques?
- b) Explain two different techniques included in this section.

10. Make a scheme showing the different kinds of joints systems that can be used with metals.

11. Which tool would you use for the tasks bellow?

- a) To round off the edges of a metal sheet.
- b) To make slight changes to the final dimensions of a nut.
- c) To polish and shine a metal surface.
- d) To shape a cylindrical object.

12. Why are some pieces of imitation jewelry covered in gold? What is this technique called?

13. What kind of welding or soldering would you use to join pieces together for the following objects: electronic components, the hull of a ship, a large bronze statue, a street lamp?

14. What types of finishing and joints are used in drinks cans?