



Technical analysis exercises

1st year of the first cycle



Name: _____

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in collaboration with the

Centre de développement pédagogique

Rules of diagramming

Complete the sentences using the words below:

proportion - elements - colour - links - view - simple lines - parts - symbols - forces - movement

- 1- Choosing the best _____ to represent the object.
- 2- Represent the object by _____.
- 3- Name the various _____ of the object.
- 4- Use _____ to represent the operating principles.
- 5- Represent the _____ using arrows.
- 6- Represent the _____ and the guidance.
- 7- Use _____ to represent the various parts of the object.
- 8- Represent the _____ of the parts using appropriate symbols.
- 9- Indicate the critical _____.
- 10- Retain a certain _____ between the various parts.

Principles study of the clothes pin

Global function of the object: _____



Analysis of the object

Observe the object and answer the following questions:

1- How are the clothes held by the pin?

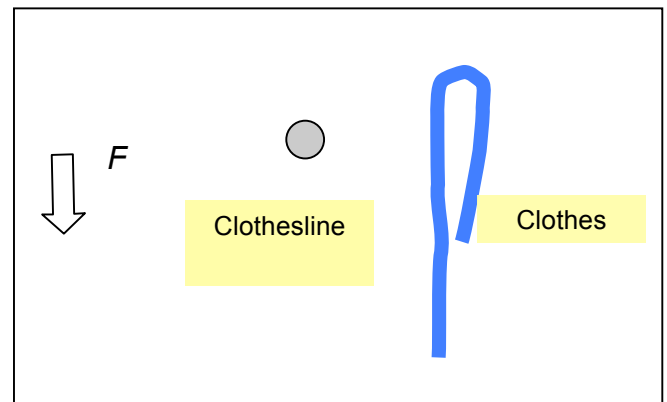
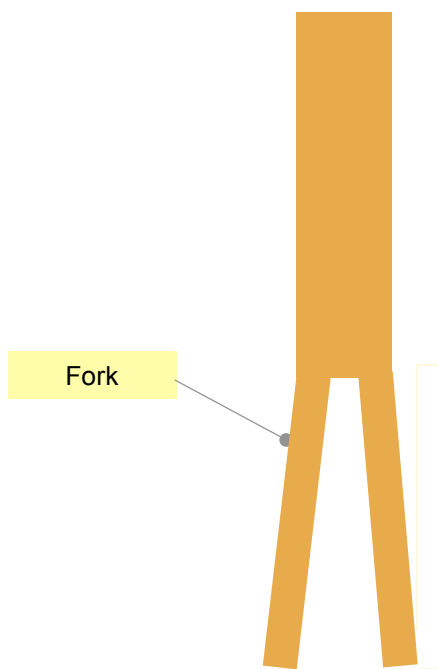
2- How many parts make up this object? Give the characteristics of the linkage.

3- What is the advantage of using wood in the fabrication of this object?

4- Name another object that operates on the same principle.

Complete the principles diagram of the clothes pin

1- Complete the principles diagram of the clothes pin using the elements in the inset.



PRINCIPLES DIAGRAM

Principles diagram of the pizza cutter

Global function of the object: _____



Analysis of the object

Observe the object and answer the following questions:

1- What type of linkage is found between the handle and the rod?

2- What type of linkage is found between the wheel and the rod?

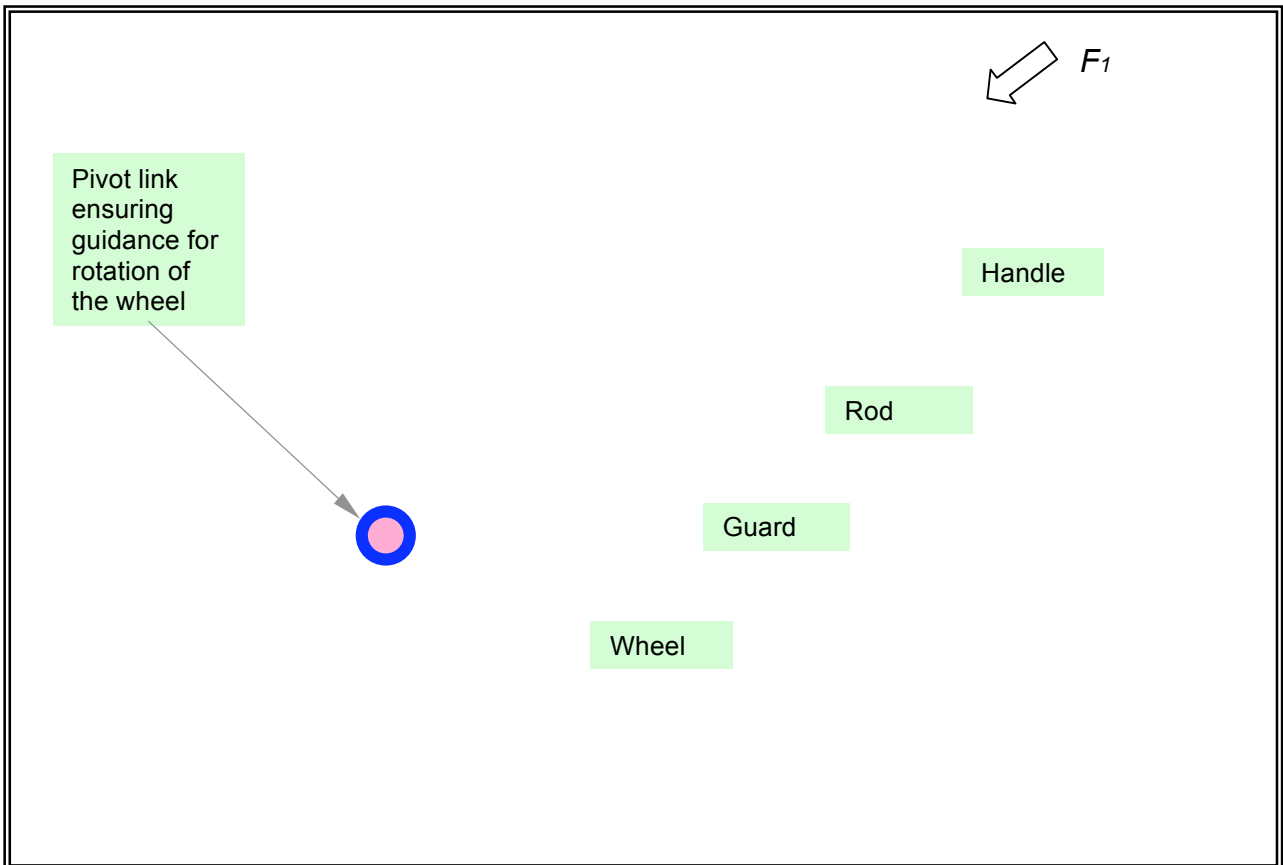
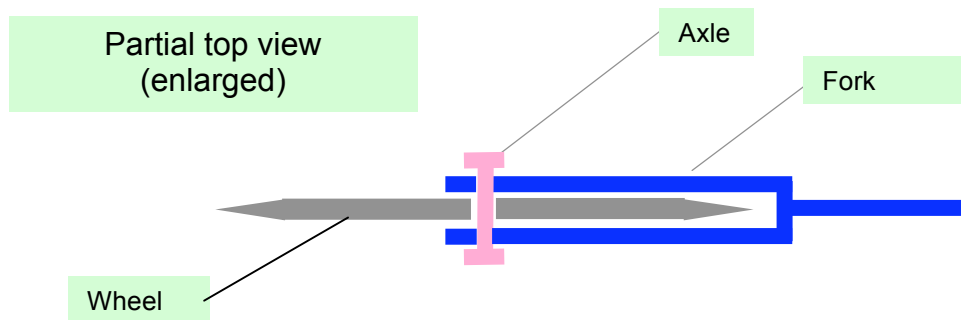
3- Is there a simple machine in this object? If so, locate it on the object and provide its use.

4- How is the wheel affixed to the rod?

5- What materials are used in this object?

Complete the principles diagram of the pizza cutter

- 1- Complete the principles diagram using a side view.
- 2- Link the parts of the object to the elements on the diagram.



Principles study of the match box

Global function of the object: _____



Analysis of the object

Observe the object and answer the following questions:

1- What type of movement does the drawer in the box carry out?

2- What role does the abrasive strip on the side of the box perform?

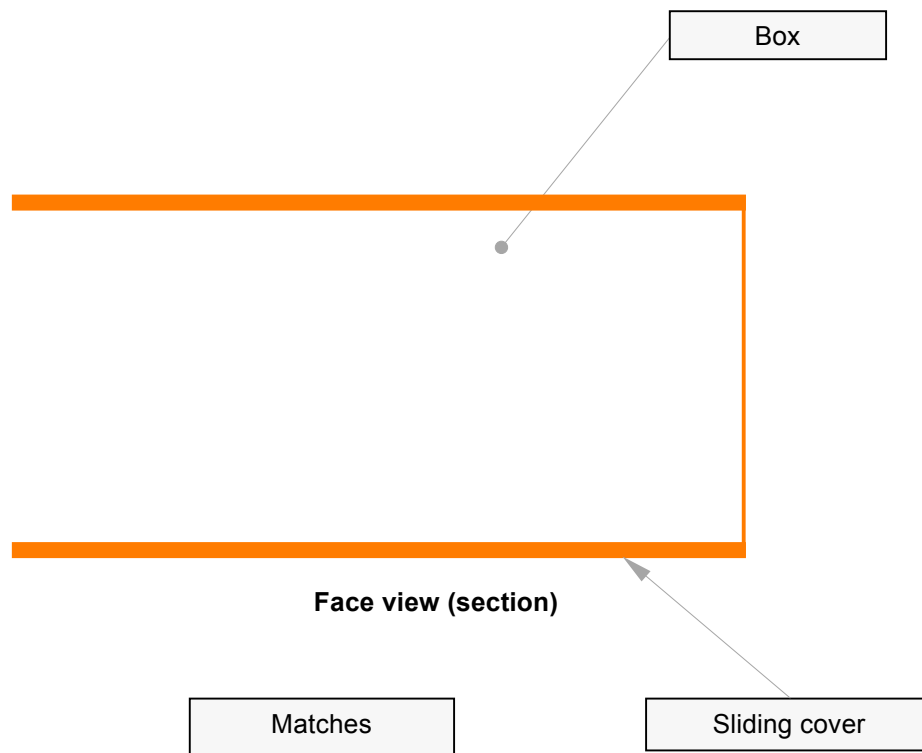
3- What substances make up the abrasive strip?

4- What are the series of events that allow the match to light?

5- What is this type of match called?

Complete the principles diagram of the match box

1- Complete the principles diagram of the match box using a face view. Draw the matches in the box.



Principles study of the binder clip

Global function of the object: _____



Analysis of the object

Observe the object and answer the following questions:

1- What type of lever is found in this object? What part of the object constitutes the lever pivot?

2- What type of link is found between the flexed leaf spring and the binder clip arms?

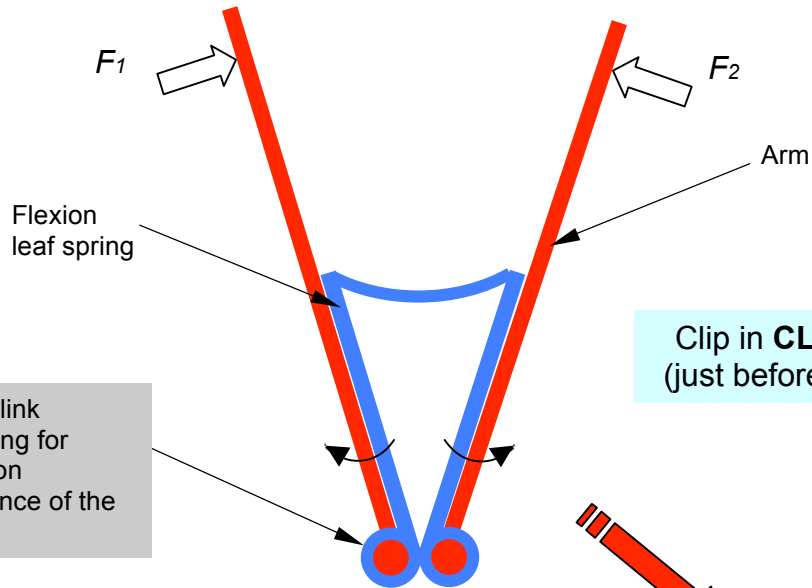
3- Where must the driving force be applied for the clip to open?

4- Where is the resistance force applied when the clip holds papers?

5- What materials were used in the fabrication of the clip?

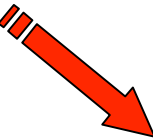
Complete the principles diagram of the binder clip

1- Complete the principles diagram of the binder clip in the open position, namely when paper is being held.



Clip in **CLOSED** position (just before being opened)

Pivot link allowing for rotation guidance of the arms



Class 1 lever

F_{drive} (finger)

Clip in **OPEN** position (squeezing)

Pivot

$F_{resistance}$ (spring)

Forces that act on the lever at the time the clip is opened

Paper



PRINCIPLES DIAGRAM

Principles study of the correction tape applicator

Global function of the object: _____



Analysis of the object

Observe the object and answer the following questions:

1- Which is the drive gear? _____

2- How many teeth does the drive gear have? _____

3- Which is the driven gear? _____

4- How many teeth does the driven gear have? _____

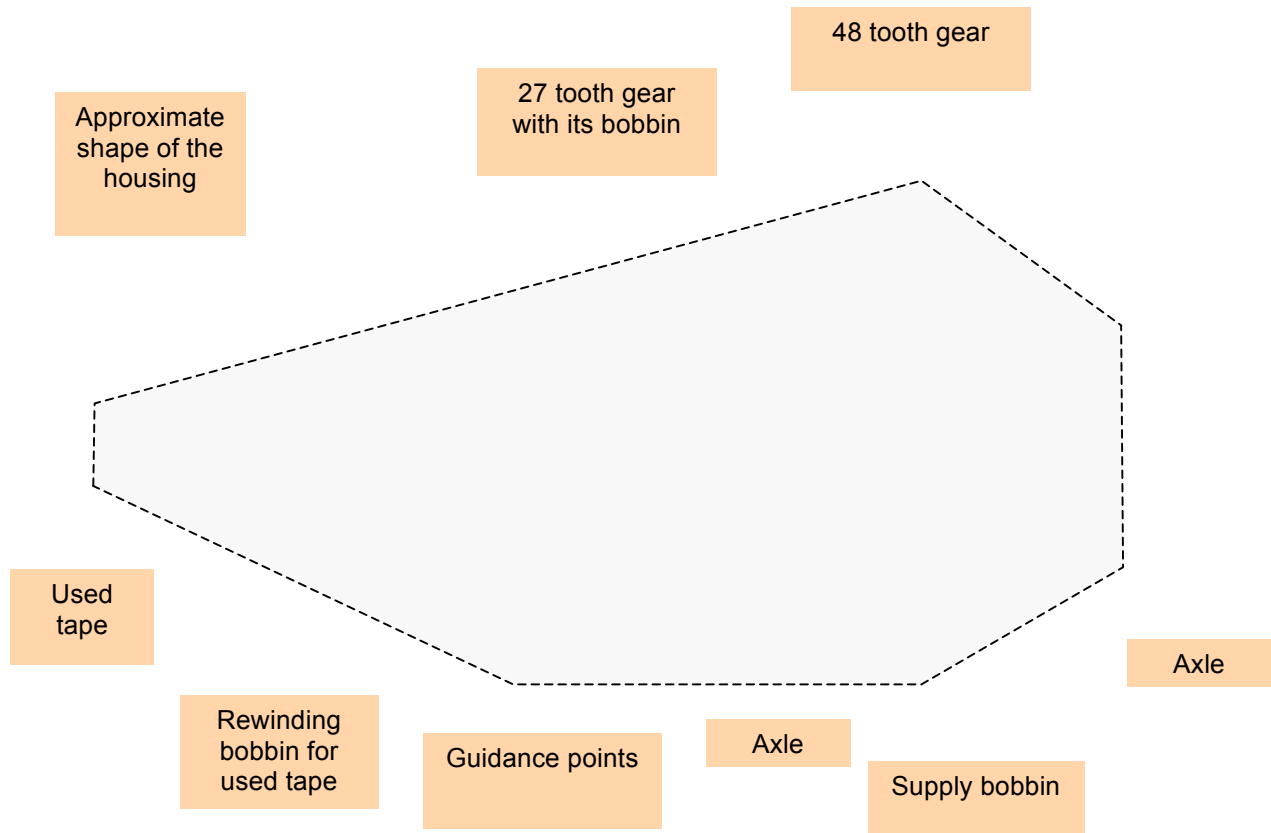
5- Which of these gears turns fastest? Slowest?

6- What is the advantage of using transparent plastic to make this object?

Complete the principles diagram of the correction tape applicator

1- Cut out the elements presented in Annex I, then glue them in such a way as to carry out the principles diagram of the applicator.

2- Connect the parts of the object to the elements on the diagram.



Principles study of the container with pressure lid

Global function of the object: _____



Analysis of the object

Observe the object and answer the following questions:

1- What is the use of the sealing joint on this container?

2- Describe the link between the lid and the container.

3- What material is used for this object?

Complete the principles diagram of the container with pressure lid

1- Carry out the principles diagram.

Principles study of the «C» clamp

Global function of the object: _____



Analysis of the object

Observe the object and answer the following questions:

1- What is the set formed by the nut and bolt called?

2- What do you call the movement carried out by the screw in the nut?

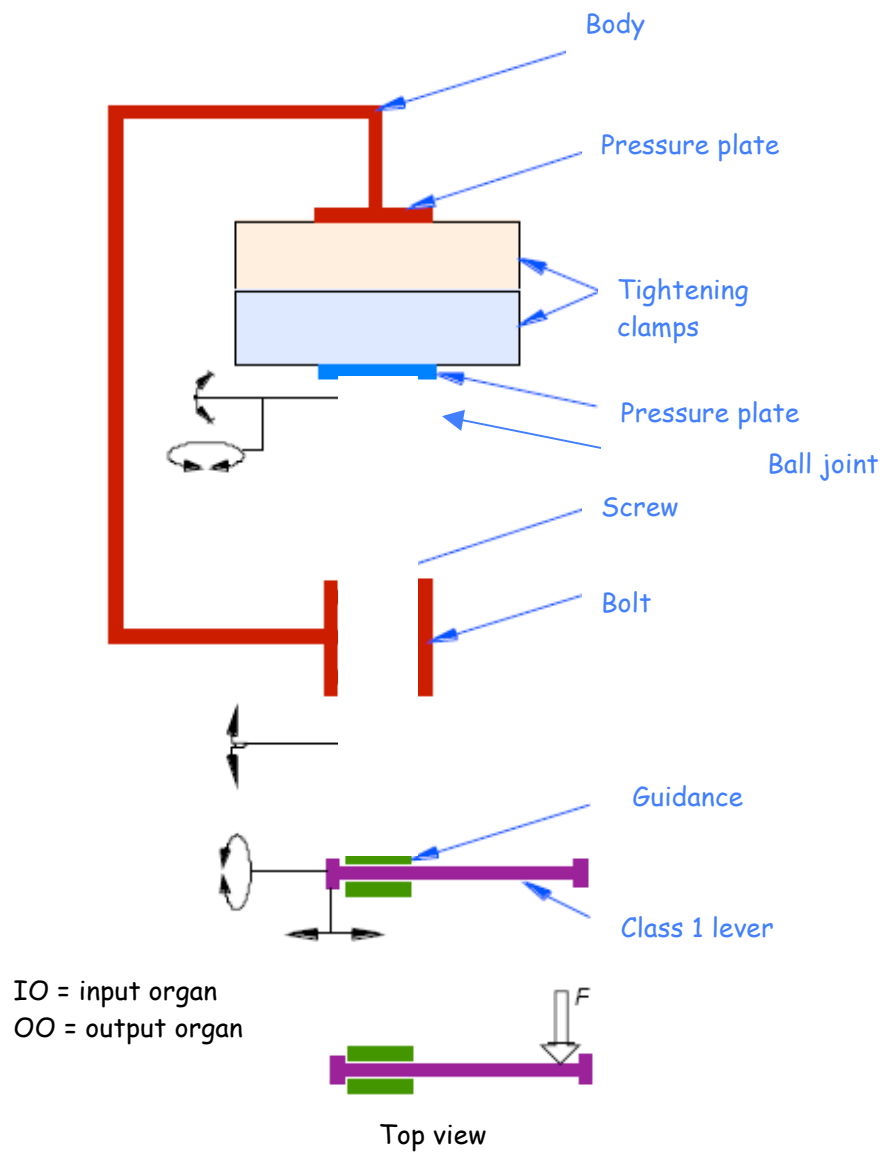
3- Is there a simple machine in this object? If so, specify where it is located.

4- What type of joint is there on the mobile pressure plate?

5- Where are the resistance forces applied? _____

Complete the principles diagram of the «C» clamp

1- Draw the nut-bolt system and the ball joint.



Principles study of the container with a flap lid

Global function of the object: _____



Analysis of the object

Observe the object and answer the following questions:

1- What is the type of link between the lid and the container?

2- What is the advantage to using this type of link in a plastic container?

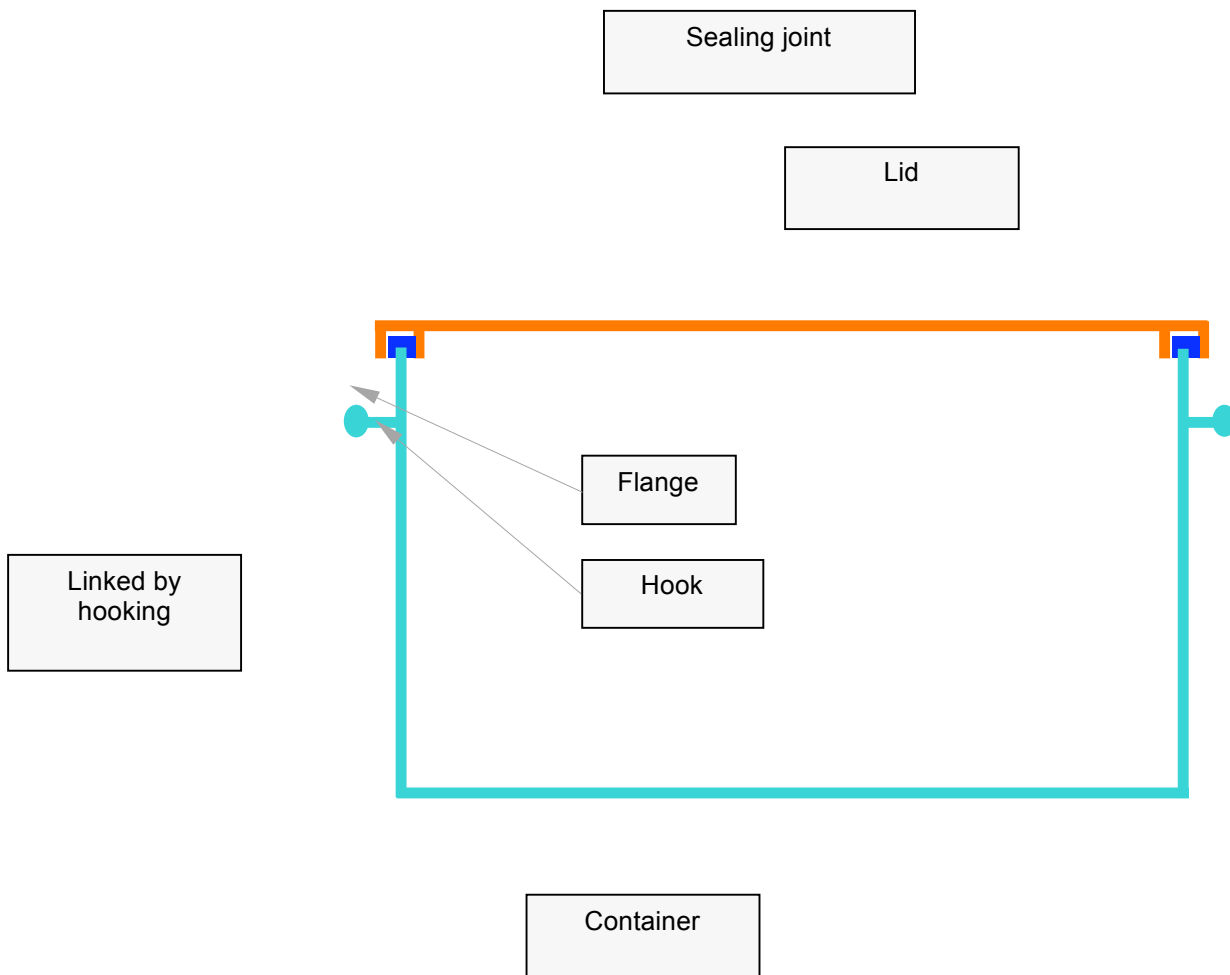
3- What is the advantage in using plastic as a material for this type of container?

4- What is the use of the sealing joint in this plastic container?

Complete the principles diagram of the container with a flap lid

1- Draw the flanges of the object.

2- Connect the parts of the object to the elements on the diagram.



PRINCIPLES DIAGRAM

Annex I

**COMPONENTS
OF THE APPLICATOR**

