

Name: _____

Technological analysis



Mouse Traps

The world of science and technology is also to **analyse** the objects around us in order to better understand them. What is this object? What is it used for? How does it work? How is it built?

Sometimes, objects are analysed to better compare them, to make an informed choice when comes the time to use them.

Today, the context of the analysis is **pest control**. Though many people choose mice as pets, generally the presence of mice in our homes is not desirable. In the first case, the mouse lives in a cage and is fed daily. In the second case, the mouse finds its way into a building (a house, apartment, factory, barn, etc.) when the outside temperature falls. Once inside and warm, it must also feed itself daily. Our supplies become attractive. In these cases, we will attempt to get rid of the visitor. This is called pest control.

There are several ways to trap mice. There is also poison that should be used with great caution. Some companies are specialised in the field of pest control. There are also a number of varieties of mouse traps available on the market.

Your mission

You will be presented two models of mouse traps. You will have to analyse them, concentrating on their technological, scientific and ergonomic aspects. You will have to describe them and explain their operation. Finally, you will have to choose the trap model that seems best to you and justify your choice.



Planning and production



Tentative explanation

You will be presented two models of mouse traps.

What is this object used for?

How does it work? (Common elements and differences)

Your initial explanation

In your opinion, which is the better mouse trap? Why?

Cr1 Appropriate interpretation of the problem	Formulation of a tentative explanation	
	Identifying operating principles	



This time, an analysis scenario is proposed. The plan is therefore already done for you.

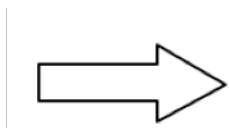
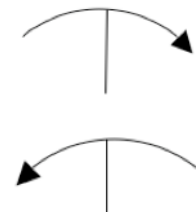

When a **technological analysis procedure** is undertaken, various aspects (different points of view) can be considered. In the case that interests us, we have limited the choice to the following aspects: *technological, scientific and ergonomic*. Nothing is preventing you from thinking about the *ethical* aspect of the object when making your final choice.

It's your turn to play!



1. On the following pages, on the draft diagrams of the two traps:

- a. **using the glossary provided**, identify the parts on the diagram of the armed mechanism;
- b. use **a different colour for each part** (the colours must be identical on both representations);
- c. indicate the **force of the action** on the diagram of the mechanism in action (see below);
- d. indicate **the motions** using the appropriate symbols on the diagram of the mechanism in action (see below).

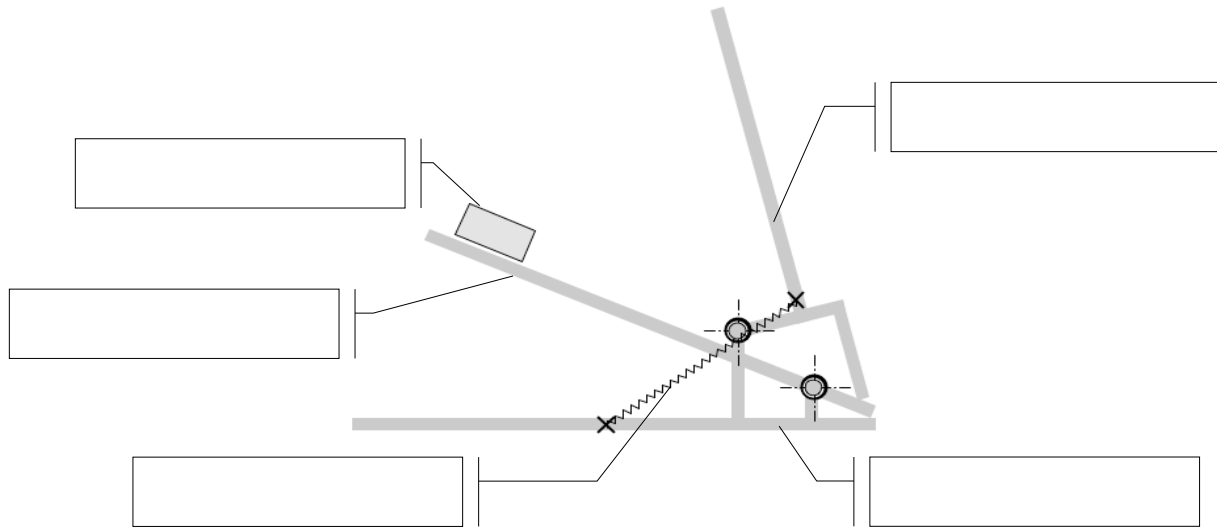
Force of the action	Unidirectional rotation	Bidirectional rotation
		

Execution

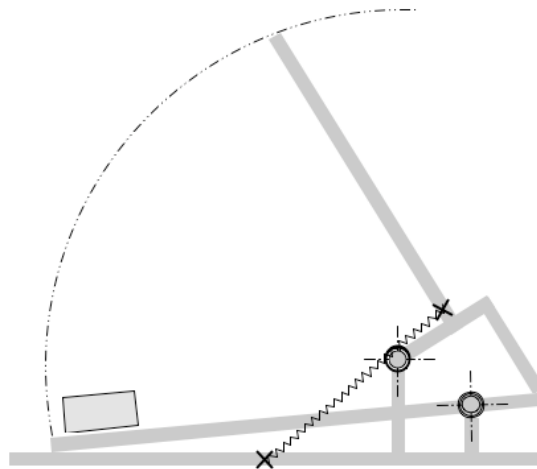
TRAP 1

Identification of the parts *Base - Bait - Trigger lever - Spring - Jaw of the trap*

ARMED MECHANISM



MECHANISM IN ACTION



Cr2 Relevant use of scientific and technological knowledge

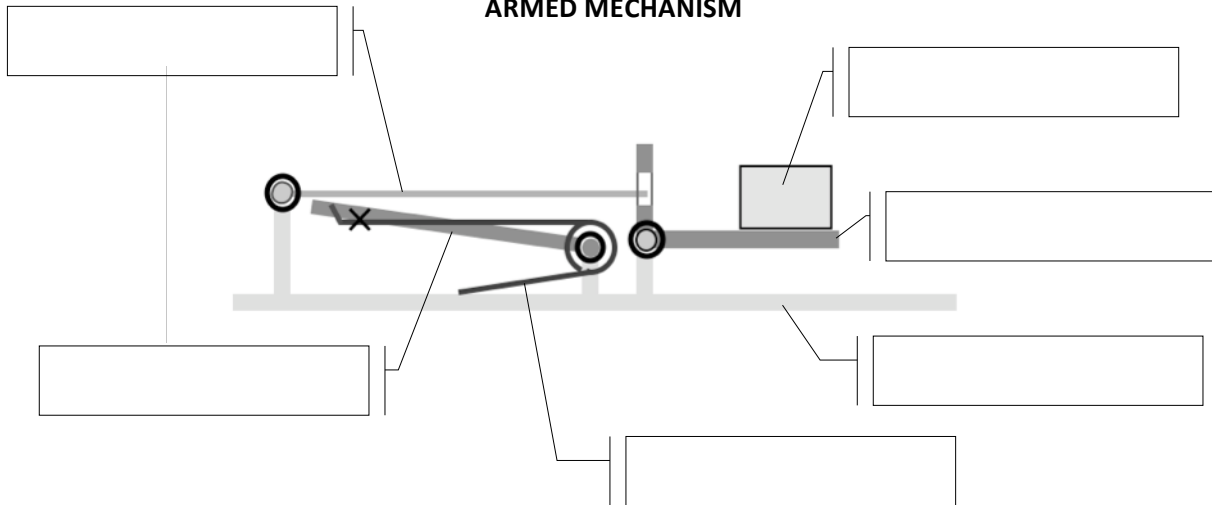
Selection and use: of concepts, laws, models and theories

Execution

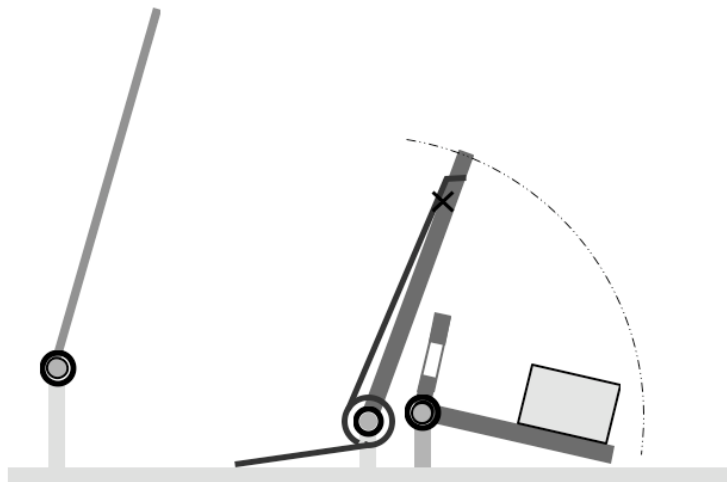
TRAP 2

Identification of the parts: *Base - Bait - Trigger lever - Spring - Jaw of the trap - Retaining rod*

ARMED MECHANISM



MECHANISM IN ACTION



Cr2 Relevant use of scientific and technological knowledge

Selection and use: of concepts, laws, and theories



Execution

2. Observe each of the traps and answer the following questions:

a. Name the **type of spring** involved in the mechanism.

Trap 1
traction - compression - torsion

Trap 2
traction - compression - torsion

b. Associate the type of lever present as **the trigger lever**. Justify your answer.

Trap 1
First-class, second-class, third-class

Justification

Trap 2
First-class, second-class, third-class

Justification

c. Associate the type of lever present as **the jaw of the trap**. Justify your answer.

Trap 1
First-class, second-class, third-class

Justification

Trap 2
First-class, second-class, third-class

Justification

Cr2 Relevant use of scientific and technological knowledge	Selection and use: of concepts, laws, models and theories	
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Execution

d. Find a **link** and identify the parts involved.

Trap 1

name of the part is linked to *name of the part*

by

Trap 2

name of the part is linked to *name of the part*

by

e. Find a **guidance control** and identify the parts involved.

Trap 1

name of the part is linked to *name of the part*

by

Trap 2

name of the part is linked to *name of the part*

by

f. Is one of the two models better suited to the user than the other? (Ease of use, safety, etc.)

Cr2 Relevant use of scientific and technological knowledge

Selection and use: of concepts, laws, models and theories



Report

You have observed and manipulated the 2 models of traps. Perhaps you also tested the 2 traps. In light of these observations, in your opinion, **which would the better model of trap be?**

Your choice:

Explanations:

Did your choice of traps change from the beginning to the end of your technological analysis? Explain your answer.

Cr3 Appropriate formulation of explanations or solutions	Formulation or explanation of explanations related to the problem	
	Use of appropriate terminology, rules and conventions	