

CITIZEN SCIENCE

MELANOGASTER

Catch The Fly.



USER MANUAL



#MelanogasterCTF
www.melanogaster.eu

Design: Irene González Navarro

With the collaboration of:

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MAGNI FLY



Introduction

Magni-Fly is a magnifying glass specifically designed for school students that allows them to participate in the same kind of research processes carried out by scientists using the model organism, *Drosophila melanogaster* (the fruit fly).

It is expected that this prototype will allow students to examine field-caught *Drosophila* samples and separate them according to both sex and species, before sending the relevant samples off to scientists in order to help them develop their studies.

Design

The design of the magnifying glass consists mainly of three well-defined parts:

- **Base:** a wooden support structure.
- **Slide:** consisting of three pieces, the slide is where the user places the collected samples for visualization and classification.
- **Phone holder:** a wooden structure that supports the lens and the mobile phone.

Pieces

Each of these pieces is outlined below, according to the procedure that needs to be followed for mounting the magnifying glass.

The base (**Fig. 1**) is made from a wooden board, which is painted white in order to help visualize the flies. It has a circular hole through which the stainless steel tube that holds the slide is inserted, which allows its height to be adjusted



Figure 1. An example image of the base designed for the magnifying glass.

The slide (**Fig. 2**) consists of different parts joined together, namely, the slide itself, the base and a knob attached to a nut that is used to adjust the height (**Fig. 3**).

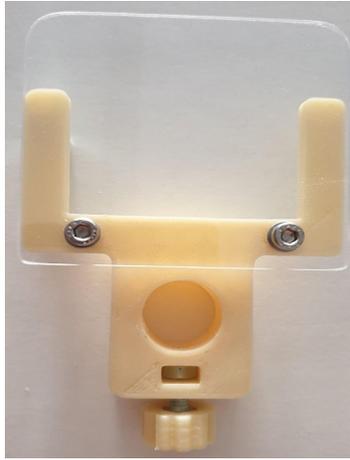


Figure 2. An example image of the slide.

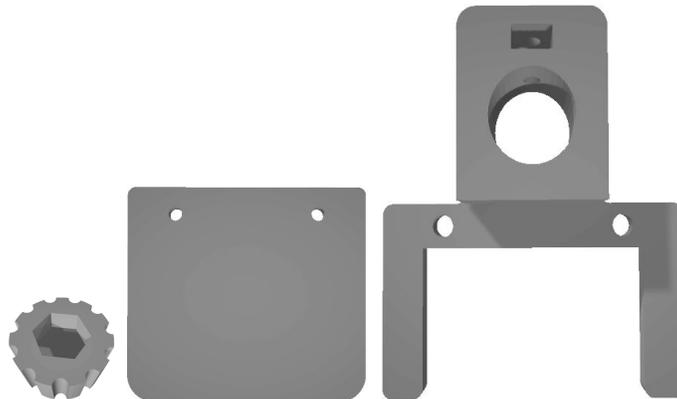


Figure 3. Parts making up the slide.

The mobile support consists of a wooden board cut and painted white. It incorporates a macro lens, as well as a ring of LED lights, together with the socket that connects the transformer to power them, in order to help view the collected samples (**Fig. 4**).

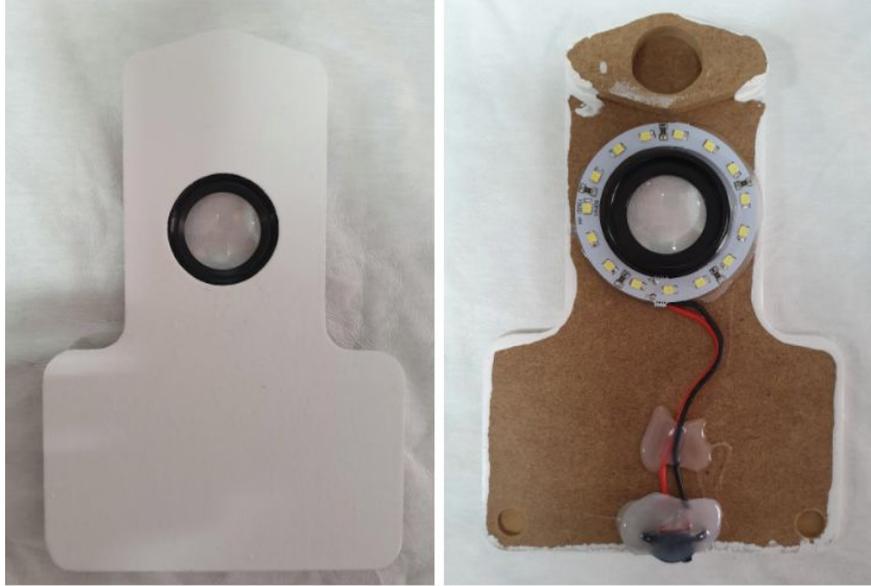


Figure 4. An example image of the mobile support.

Assembly (Figs. 5 to 11)



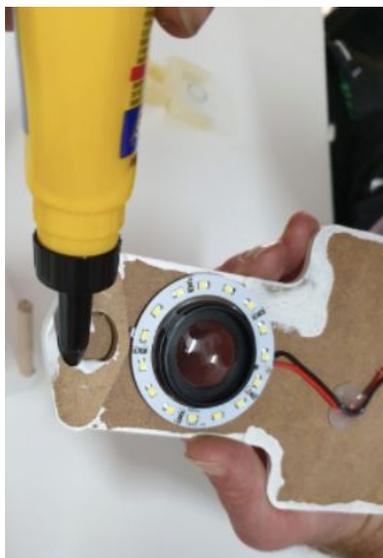
First, take the base of the magnifying glass and fill each and every one of the holes where the stainless steel tube and the wooden rods are to be fitted with white glue.



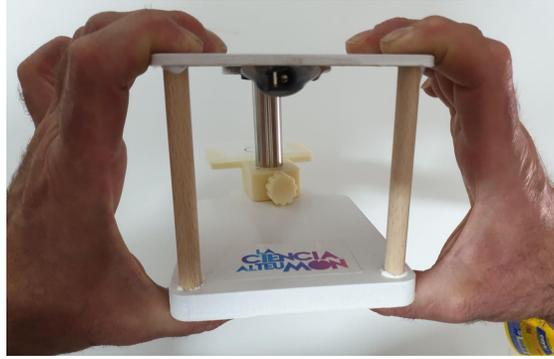
Next, insert both the wooden rods and the steel tube that supports the entire magnifying glass.



The object holder is then taken and fitted into the steel tube.



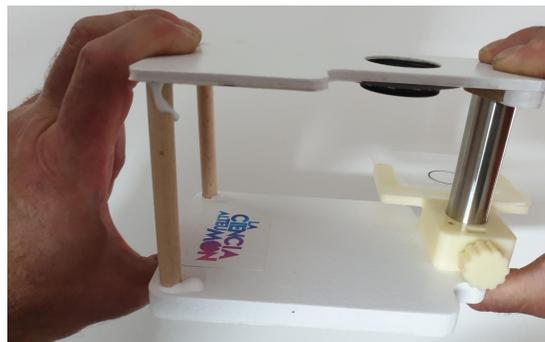
Then, fill the holes in the base with glue.



The support is then fitted with the steel tube and the wooden rods while pressing down so that the joint is consistent.



Excess glue from the holes in the base of the support should be carefully removed with either your finger or with a cloth.



Finally, the magnifying glass is left to dry for a period of 10 hours in order to ensure that all the pieces adhere well together.

Considerations

Certain aspects of the assembly must be taken into account during the procedure:

- In some of the bases, the hole for the slide support tube is a bit large, so it is recommended that you fill it with white glue first and then wait 10-15 mins for it to dry. Then insert the support tube and continue with the rest of the assembly; this way, the tube is prevented from moving around and will remain well attached.
- Before using the magnifying glass, make sure that both the lens and the camera of the mobile phone in question are completely clean in order to ensure the optimal visualization of the samples.
- In order to observe the samples, the phone's camera must be set to the maximum magnification possible first. The slide height should then be adjusted until you achieve a sharp image.
- The phone mustn't be moved once it has been placed on the support and the microscope has been focused. The *Drosophila* samples should be moved carefully on the slide instead, always keeping them within the black circle that defines the size of the lens.

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