

The construction of “ Camera obscura”

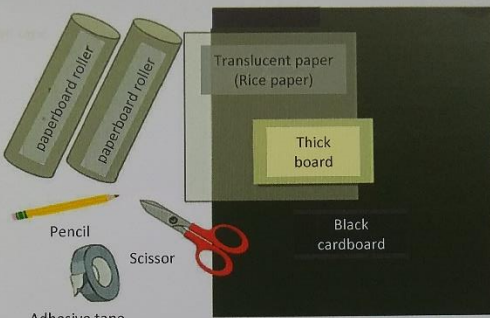
The students constructed optical devices used in painting and photography to help visualize the geometry of natural objects, with **material they find in their everyday life**. The construction took place under the guidance of the director of the center and his team at the Research center of Physics Education (EKFE Rethymno) <https://ekfe.reth.sch.gr/?p=1353>

Fase 1. The leaflet instructions

INSTRUCTIONS FOR DEVELOPING A CAMERA OSBCURA WITH SIMPLE MATERIALS


Materials needed

1. 2 paperboard roller
2. Black cardboard
3. Translucent paper (Rice paper)
4. A piece of thick board
5. Scisso
6. Pencil
7. Adhes




Step 1°

Cut a circular-shaped piece of the translucent paper (rice paper) and fit it on the circular-shaped aperture of the paperboard roller. Use the adhesive tape in order to stabilize the rice paper in a proper way so as to keep it well-stretched.



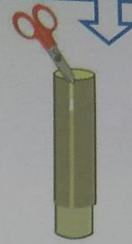
Step 2°

Cut a 20cm x 20cm piece of the black cardboard and shape a cylinder-shaped tube. Insert the black tube in the paperboard roller as shown in the figure.

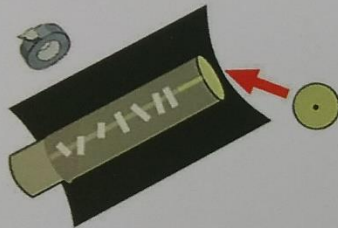


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Step 3°: Use a scissors to cut along the second paperboard roller and then fit in it's inner surface the roller that you have developed in the previous 2 steps.



Step 4°: Use the pencil to draw and then cut a circular-shaped piece of the thick board in a proper diameter in order to fully cover the aperture of the outer paperboard roller. Next, use a nail in order to open a pinhole in the center of the thick board. Afterwards, wrap up the outer roller with the black cardrboard.



Step 5°: Fit the circular-shaped piece of thick paper with the pinhole in the aperture of the outer paperboard roller.

Note: The aperture with the stretched rice paper fitted in the inner paperboard roller and the one with the pinhole fitted in the outer paperboard roller, should be in the same side

Attention ! Use the black cardboard to cover the slit between the thick pinhole board and the outer paperboard roller. Use the scissors to cut and properly fold the edges (as shown in the figure) in order to avoid light transmission in the inner of the paperboard roller.



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Fase 2 . The construction



Erasmus+ Programme – Strategic Partnership Project Nr:2019-1-ES01-KA229-063829 Project Title: Math is around us





Phase 3. Testing the final product



The final product





Co-funded by the
Erasmus+ Programme
of the European Union