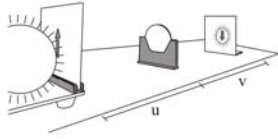


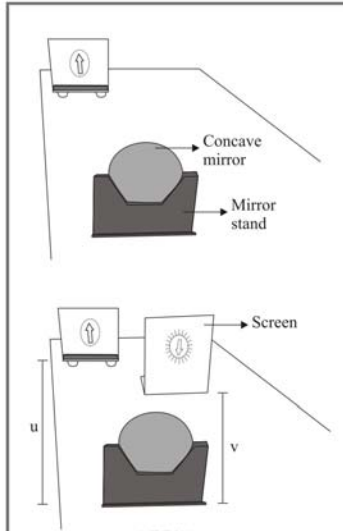
**Step 6 :** Now adjust the screen till you get sharp image of the arrow mark on it. Measure the distance between lens and ground glass with arrow mark. This is object distance ( $u$ ). Measure the distance between lens and screen. This is image distance ( $v$ ). Repeat the experiment for another 4 values of 'u' and note down the corresponding values of v. Then tabulate the reading as following.



Sl No.	Object distance u in cm	Image distance v in cm	Focal length $f = \frac{uv}{u+v}$ in cm
1			
2			
3			
4			
5			

**Step 7 :** Calculate the value of 'f' in each case using the above relation and take the mean value of all the five readings. This gives focal length of the lens.

**Step 8 :** Do the experiment with concave mirror and find out the focal length.



You need to tilt mirror by small angle to catch the image. Still it gives almost correct value of the focal length of the mirror.

THE WAY TOWARDS PRACTICAL SCIENCE

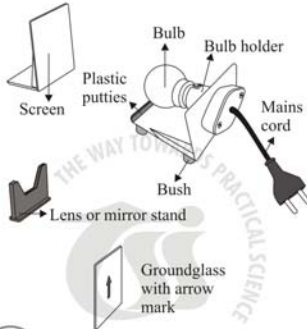
**OBJECT AND  
IMAGE DISTANCE  
(U & V) METHOD KIT**

**TARANG SCIENTIFIC INSTRUMENTS**  
DHARWAD  
Phone : 0836-2775204  
Cell : 94482 31960  
[www.tarangscientificinstruments.com](http://www.tarangscientificinstruments.com)

**OBJECT AND IMAGES DISTANCE  
(u and v) METHOD KIT**

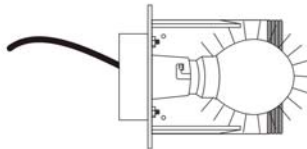
**Verifying the focal length of a convex lens and concave mirror by object and image distance method.**

**Assembly :** Consists of a 15 w filament bulb fixed to a holder with ac mains wire connected. The bulb holder return is fixed to a L shaped white plastic stand. This plastic stand is supported with 4 bushes. Two plastic putties are fixed with a gap between them, on the plastic stand in front of the bulb. This arrangement is for inserting arrow marked ground glass plate. Arrow serves as 'object'. One white screen, one blue coloured lens or mirror stand and a ground glass (75X65 mm) with an arrow marked sticker fixed to it are part of the kit.



**To do and observe :**

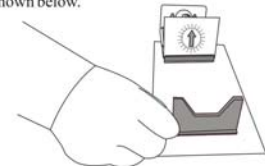
**Step 1 :** Place the bulb assembly on a table and switch on the bulb using the mains cord pin.



**Step 2 :** Insert the ground glass with arrow mark in the groove between putties as shown in the diagram.



**Step 3 :** Place the lens holder in front of the ground glass with arrow mark at a distance as shown below.



**Step 4 :** Place the white screen in front of the lens holder as shown in the diagram.



**Step 5 :** Place a convex lens in the lens holder as shown in the diagram.

