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## **Equipments**

- Panes of clear untinted glass
- Coins
- White paper
- Additional lighting might help
- Glass cutter if needed
- Ruler

**Group Work:** Divine Grace, Chersea, and Me (Josita)

## **Introduction**

Divine Grace, Chersea, and I worked in one group the relationship between the image depth  $i$  (cm) and object depth  $o$  (cm) in this laboratory. We measured the actual depth of an object and the apparent depth of an object seen below the glasses.

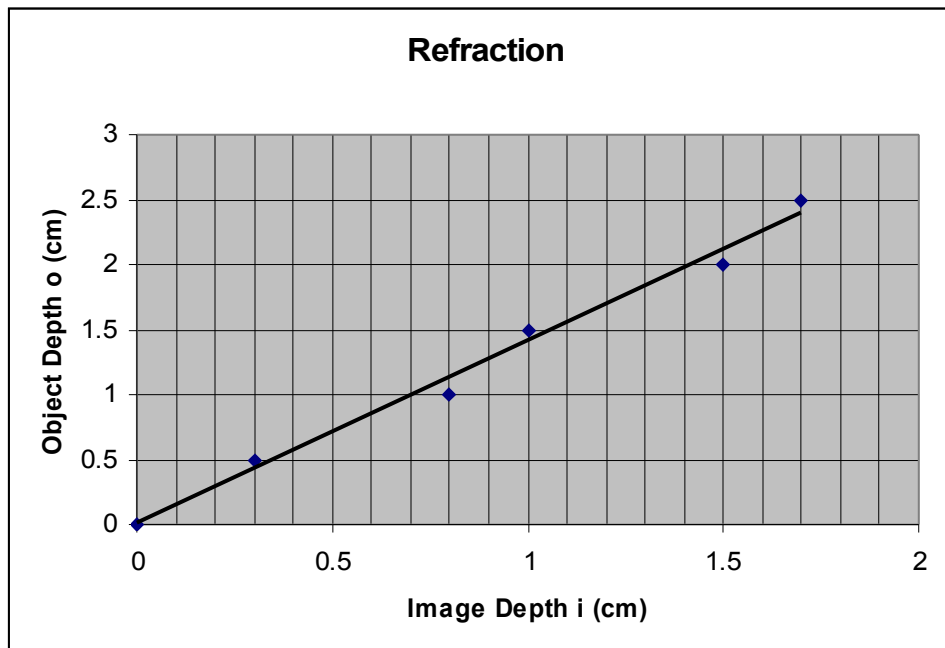
## **Procedure**

1. We placed a penny in the white plain paper. We putted one piece of glass over a penny.
2. We used the meter stick to measure the image depth  $i$  (cm) and object depth  $o$  (cm) of a penny.
3. We measured it five (5) times as we added the pieces of glasses.

## Table

Number of Glass	Image Depth (cm)	Object Depth (cm)
0	0	0
1	0.3	0.5
2	0.8	1
3	1	1.5
4	1.5	2
5	1.7	2.5

## Chart



## Analysis

1. This graph was linear. It showed that there was a relationship between the image depth  $i$  (cm) and object depth  $o$  (cm).
2. The slope and y-intercept given by the used of SLOPE and INTERCEPT functions. The given slope was 1.4. The given y-intercept was 0.

3. It has positive high/strong correlation of 0.99 by the used of CORRELATION function (=CORREL(data Y, data X))
4. The index of refraction for glass was 1.50.
5. The percentage error was 41% by the use of equation slope minus index of refraction for glass divided by index of refraction for glass (slope- 1.50/1.50).

## **Conclusion**

There was a mathematical relationship between the image depth  $i$  (cm) and object depth  $o$  (cm). The relationship was linear. The difficulty in this laboratory was the measurements of the image depth  $i$  (cm). According to Snell's law, index of refraction for glass was 1.50. I failed to disconfirm according to Snell's law. The percentage error was 41%.