DETERMINING SCALE

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GOAL

Determine the scale used to make technical drawings of objects by comparing actual measurements of the objects with measurements indicated on drawings of them.

OBSERVATION CRITERIA

1. What does the term "scale" mean in a technical drawing?

2. In a technical drawing, where is the scale usually shown?

3. Why is a scale often used in drafting?

4. How does the notation of scale indicate if a drawing is a scale reduction or a scale increase?

5. How can a scale value based on a real measurement be determined if the scale used to create a technical drawing is 1:30?

MATERIALS

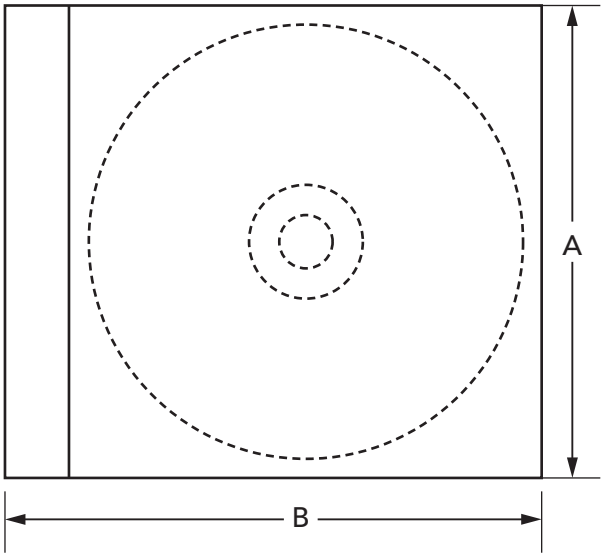
- ruler
- calculator
- CD case
- CD
- hex nut
- 9-V battery
- ring stand

Name: _____ Group: _____ Date: _____

PROCEDURE

1. Study the drawings below.
2. With the ruler, determine each measurement on the drawings marked by a letter.
3. Record each measurement in its appropriate table on page 35.
4. Determine the same measurements directly from the objects to be measured.
5. Record each real measurement in its appropriate table on page 35.

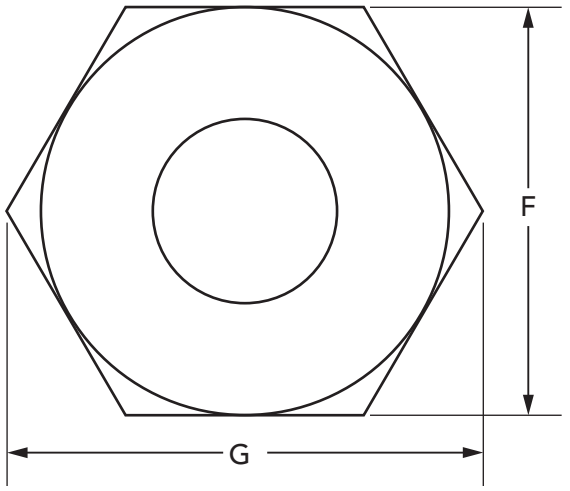
CD case



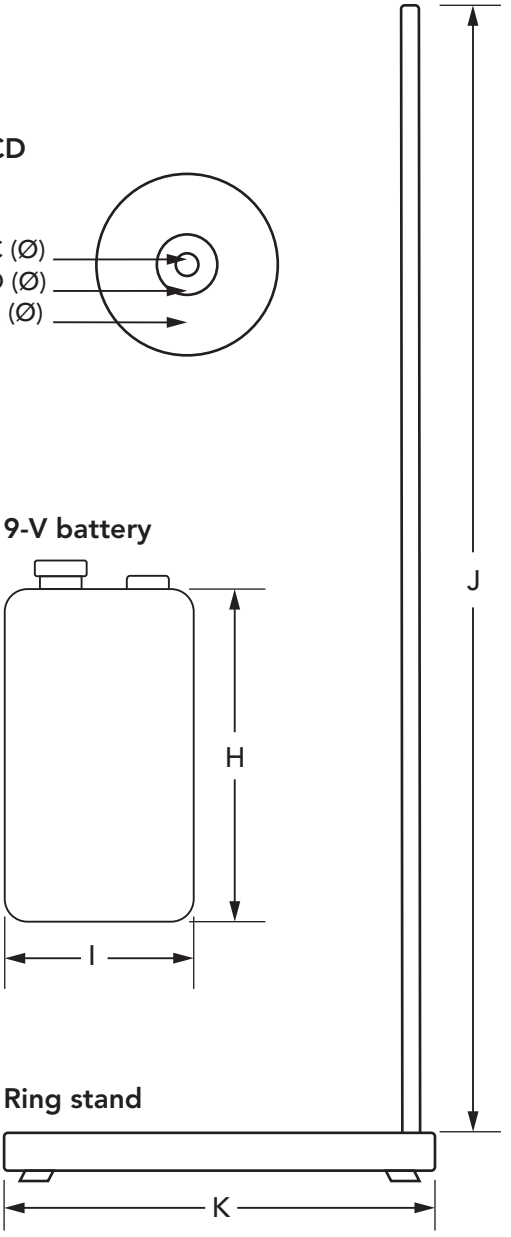
CD

9-V battery

Hex nut



Ring stand



Name: _____ Group: _____ Date: _____

OBSERVATIONS

CD case

	Measurement	Value on drawing (mm)	Value on object (mm)
A			
B			

CD

	Measurement	Value on drawing (mm)	Value on object (mm)
C			
D			
E			

Hex nut

	Measurement	Value on drawing (mm)	Value on object (mm)
F			
G			

9-V battery

	Measurement	Value on drawing (mm)	Value on object (mm)
H			
I			

Ring stand

	Measurement	Value on drawing (mm)	Value on object (mm)
J			
K			

Name: _____ Group: _____ Date: _____

REFLECTING ON YOUR OBSERVATIONS

1. In the table below, indicate whether a scale reduction, scale increase or full-size representation has been used for each object.

Object	Type of scale used
CD case	
CD	
Hex nut	
9-V battery	
Ring stand	

2. Fill in the table below. For each object:
- determine the scale of increase or reduction used for its technical drawing and give an example of the calculations required to arrive at this factor
- indicate the scale used to represent the object

Object	Determination of factor of increase or reduction	Scale
CD case		
CD		
Hex nut		
9-V battery		
Ring stand		

3. In this lab, why were you asked to take at least two different measurements of the objects and of the drawings made of them?

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