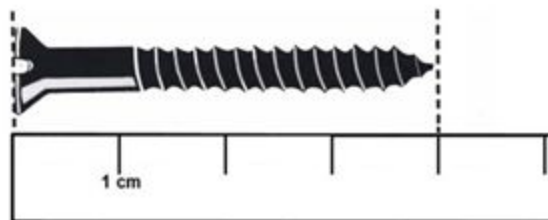|	106 Significant Figures
W	**Objectives** 1.Distinguish between measured and exact numbers 2.Explain what are significant figures 3.Identify the number of significant figures in a measurement 4.Perform calculations and express the answers to the correct significant figures 5.Round answers to the correct number of significant figures

106.1 Exact and Measured Numbers
1. Classify the following as measured (M) or exact (E) numbers.

630 cm		100 cm = 1 m	
2.0 g		25.00 mL	
4 beakers		1 mole = 6.02 x 10^{23} atoms	

106.2 Significant Figures
2. Record the length of the screw shown on the right and complete the statement below.

Significant figures are all the digits including the

_____

_____

_____

106.3 Significant Figures in Measurements
3. Identify and underline the number of significant figures in each measurement in the table below.

Measurement	Sig. Figs	Measurement	Sig. Figs	Measurement	Sig. Figs	Measurement	Sig. Figs
6000 cm		0.800 cm		560 cm		694.4 cm	
60.0 cm		0.640 cm		560. cm		604.0 cm	
60. cm		0.506 cm		560.0 cm		60.06 cm	
60 cm		0.070 cm		506 cm		3.1 x 10^2 g	
6 cm		0.00753 cm		5060 cm		2.0 x 10^{-2} g	

106.4 Significant Figures in Calculations

4. Perform the following calculations and record your answer to the correct number of significant digits.

56.24 cm + 2.1 cm	81.5 m 75.85 m + 48.776 m	22.17 m x 4.61 m	3.70 g x 0.94 g

106.5 Rounding

5. Round the following measurements to one decimal place.

65.62 cm		72.438 km	
84.37 g		74.96 m	

6. Perform the following calculations and round your answers to the correct significant figures.

Calculation	Unrounded Answer	Rounded Answer with Units
3.678 cm + 46.8 cm + 0.569 cm		
65.0 g + 0.0089 g		
0.0541 kg + 0.0508 kg + 0.088 kg		
78.45 mm + 97.1 mm		
68.24 cm – 5.4 cm		
96.0 g – 0.25 g		
6.0056 kg – 0.0059 kg		
27.26 kg x 1.2 kg		
98.11 m x 400 m		
687 cm x 300 cm		
230. g x 80 g		
6593 g ÷ 65 cm^3		
463.0 g ÷ 20 g		
6.00 g ÷ 600 mol		