

## Light Microscopes: Pollen

### Casper Forensic Laboratory: Notebook

Evidence logged out:

- Pollen (Jaimee's evidence bag)
- Pollen (Computer Laboratory 4 evidence bag)

### Casper Forensic Laboratory Investigation:

Aim: To compare the dimensions of pollen grains in order to identify if Jaimee left the pollen near the computer station occupied by the stolen computer.

### Equipment (in addition to the evidence):

Monocular microscope, 1mm graph paper (2cm × 2cm), blank slide, transparent tape,

### Procedure

Part 1: Identify the microscope's field of view for each objective lens.

1. Tape the graph paper to the middle of the blank slide.
2. Focus on the graph paper using the microscope's lowest magnification.
3. Estimate the diameter of the field of view for the lowest magnification (in mm), by counting the number of 1mm squares across the field of view.
4. Draw the lines of the graph paper, as seen through the microscope, in Circles A and C in the results section. Label the magnification and your estimation of the diameter.
5. Repeat steps 1-4 for one other magnification, but draw the lines of the graph paper in Circles B and D.

Part 2: Estimate the dimensions of the pollen grains.

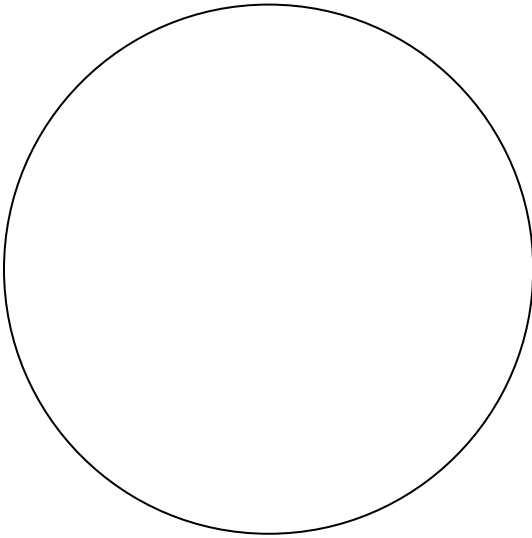
1. Focus on the pollen using the microscope's lowest magnification.
2. Sketch the pollen grain from Jaimee's evidence bag in the circle below (A or B) that corresponds to that magnification.
3. Estimate the length and width of the pollen grain.
4. Repeat steps 1 - 3 for the higher magnification.
5. Repeat steps 1 - 4 for the pollen grains from Computer Laboratory 4 evidence bag. Draw these pollen grains in Circles C and D.



Results

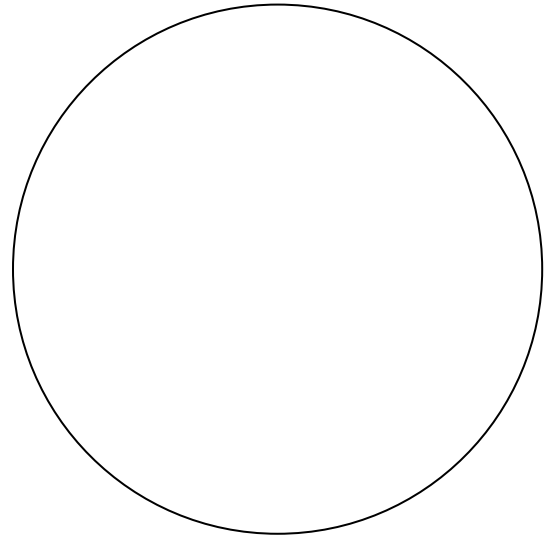
Pollen from Jaimee's evidence bag

Circle A



Magnification:  $\times$ \_\_\_\_\_  
Diameter of field of view: \_\_\_\_\_

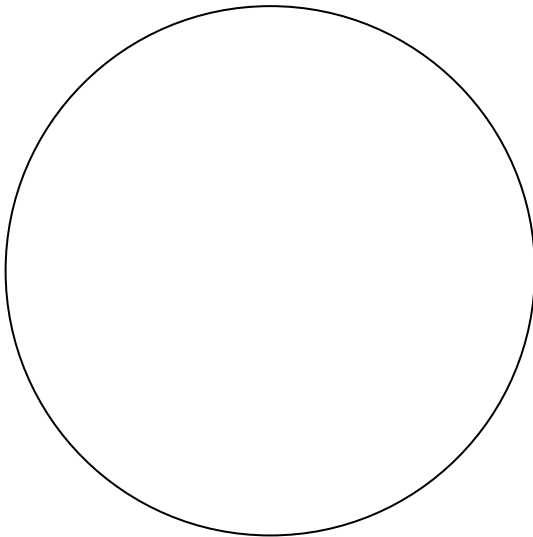
Circle B



Magnification:  $\times$ \_\_\_\_\_  
Diameter of field of view: \_\_\_\_\_

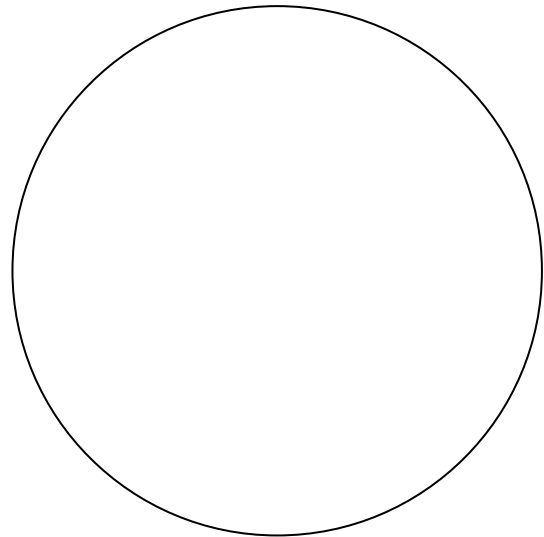
Pollen from Computer Laboratory 4 evidence bag

Circle C



Magnification:  $\times$ \_\_\_\_\_  
Diameter of field of view: \_\_\_\_\_

Circle D



Magnification:  $\times$ \_\_\_\_\_  
Diameter of field of view: \_\_\_\_\_



Table 1: Estimation of the dimensions of the pollen grains.

Dimensions	Pollen from Jaimee's evidence bag	Pollen from Computer Laboratory 4 evidence bag
Width (mm)		
Length (mm)		

Analysis of the results

Identify whether the pollen grains came from the same source.

Explain how this investigation has increased your understanding of events in Computer Laboratory 4 on the day of the crime.

Do you need to update your Evidence Summary?

## **Suggested Answers – Light Microscopes: Pollen**

### **Teachers' Notes**

Results will vary, however students should identify that the pollen grains do have the same dimensions, therefore Jaimee is likely to have left the pollen grains near the computer station occupied by the stolen computer.