

Equipment needed

1. 6-cm disposable Petri dishes (2-4)
Genesee Scientific, catalog #: 32-105, \$92.50 for 500. Note that the thickness of the plastic needs to be lower than the focal length of your microscope lenses. We had trouble with VWR plates whose thickness sometimes exceeded our microscopes focal lengths.
2. rectangular brass punches, 1 cm by 0.5 cm (1)
Available at ACE hardware stores. Made by Chicago Metal Rolled Products.
3. lab markers (at least 1)
4. pipettors: set of P20, P200, & P1000 (1)
5. tips for pipettors (many)
6. compound microscopes, student quality, (1)
Ours are American Optics brand from 1958 & 1959. With some cleaning and minor repairs, they work well for this lab. Though ours are conventional, inverted microscopes would be superior.
7. extra microscope eyepieces (1, handy but highly optional)
8. sample specimen slides for microscope familiarity (1 or more)
We have many that were donated by a biologist and alum. Many similar things could be made in house or are available from Carolina Biological Supply.
9. microscope phone adaptors
 - We have used ones from <http://www.skylightscope.com/> but these are currently unavailable. The SkyLight adaptors are highly versatile but a bit cumbersome.
 - We 3D printed an easier to use but less versatile alternative which we have used for 3 years. See other files supplied on the webpage that you found this on.
 - Another options: Du LabCam Microscope Adapter for iPhone 6/6S - With multi-fit 23/30mm 10X WF Lens.

Available at Amazon.com with good reviews
10. iPods, 4th generation or any such device and associated cables and chargers (1)
 - Not all phones have good cameras for microscopy, and sometimes this is not obvious.
 - We purchased ours refurbished from Apple for \$80 each many years ago.
 - We also use an app called Lapselt Pro, which was at the time \$2 for ten licenses. Since we started this lab, iOS now has a free time-lapse feature. Many reviewers like Lapselt Pro better, though I have not used the iOS version.
11. stage micrometers (1, though these could easily be shared)
Ward's Science: item number 949910, \$22.50 each
12. "disposable" hemocytometers (1)
Bulldog Bio: Item number DHC-N420, \$115 for 50 slides with 4 assays per slide. Note that we reuse these by shaking them slowly in distilled water for at least thirty minutes, replacing the water, repeating 5 or more times. We then dry them with Kim-wipes and compressed air. Fisher Scientific also sells a good product that is cheaper per assay but not reusable:
<https://www.fishersci.com/shop/products/kova-international-kova-glasstic-slide-10-slide-ii-slide-10-with-1mm-grids-etched-the-center-each-well/22270141>
13. coverslips, 22 mm by 40 cm (2-4)
VWR: catalog number 48393-172 , \$113 per case which is 10 oz of glass.
14. 3D-printed plate adaptors (1, handy but highly optional)
These were made in house and allow standard microscope slide micromanipulators to move a 6-cm Petri dish around. See other files supplied on the webpage that you found this on.
15. Laptops for data analysis. (1)
Usually the students provide these, though we have some they can borrow.

(OVER)

16. For use behind the scenes with frequent use not included in the list above:

15- & 50-mL tubes

Pipets, 10- & 25-mL

A centrifuge capable of spinning 50-mL tubes at 500 g.

A pipet aid/ pipet gun

A water bath

A heat plate

General glassware like bottles and flasks

A refrigerated incubator (or wine-cooler)

A shaker or a tube rotator for agitating dicty (preferably the latter if using a wine-cooler. The latter takes less energy so will put a lower load on the wine-cooler.)

Space at 4 C & -20 C.

Occasional use:

A heating incubator with a shaker (though in pinch, just a shaker could do).

A centrifuge capable of spinning 250-mL bottles at 6000 g, though obviously smaller tubes could be used with more tedium.

An autoclave

A vortex (handy, though not necessary).

Scale for weighing chemicals