Lab Set Up:

6 weeks prior, purchase vincas or marigolds. Use 2 plants per 4 students (2 pairs).

On half of plants, apply fungicide to “kill” mycorrhizae.

On other half of plants, apply mycorrhizal fungus.

Grow as usual, in pots.

Measure height at beginning. Record. Also, number of flowers, side shoots??

Treat all other issues as controls from this point forward.

Root analysis:

Pull out plants—1 of each variable for each group of 4 students. Put in cups.

Measure plant height and any other measurements to match set up data. Record in data tables.

Prepare in advance a 10% KOH wash—100 grams KOH for 1 liter water.

Prepare in advance aniline blue stain (will adhere to chitin in fungal cell walls). 1 gram per 100 ml water.

Snip a small root section from lower, outer root ball.

Wash in KOH solution.

Rinse in water bath.

Prepare glycerin wet mount slide. (2 drops glycerin—can be 50% glycerin)

Observe.

Repeat this preparation with a second slide. To this slide, add aniline blue stain. Stain should be left to set into roots for 10 minutes or so.

Four total slides should be prepared. Two with stain for comparison of chitin, two without for comparison of structure.

Results 2017:

Chitin will stain very dark blue as chitin attracts aniline. Roots with no fungus will actually shun the stain some and turn somewhat reddish.