

- **Lab Prices are shown with the lab.**
- **Answer keys are provided for all labs.**

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## Factors Affecting Mitosis \$9.99

*To investigate an environmental factor that affects the rate and quality of mitotic division. Specifically, to test the rate of growth of onion roots when exposed to an environmental chemical, caffeine, in the form of coffee.*

### **Equipment:**

|                           |                                       |                              |
|---------------------------|---------------------------------------|------------------------------|
| Onion bulbs (2)           | 0.5% Caffeine (coffee) – 0.5 g/100 mL |                              |
| 0.5% Toluidine Blue Stain | 0.1 M HCl (Hydrochloric acid)         |                              |
| Paper towels              | Toothpicks                            | Distilled water              |
| Glass canning jars        | Metric rulers (2)                     | Razor Blade w/ straight edge |
| Forceps                   | Light Bulb Heat source                | Digital scale                |
| Microscope                | Microscope slides (4)                 | Microscope coverslips (4)    |
| Stopwatch                 |                                       |                              |

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## Energy Transfer in Trophic Levels \$9.99

*To investigate energy transfer and productivity as demonstrated by yeast fermentation of corn sugar into ethanol and carbon dioxide.*

### **Equipment & Materials**

|                      |                              |
|----------------------|------------------------------|
| 4-5 ml syringe       | 10 ml pipet                  |
| Yeast packet         | 0.1 ml pipet (or thin straw) |
| 1 gram glucose       | 10 ml distilled water        |
| Timer (with seconds) | 2 - 50 ml beakers or flasks  |