

DEMO 1

What Are Yeast?

Procedure

- 1** Weigh about 1 gram of active dry yeast and place it in the 100 mL beaker with a magnetic stir bar.
- 2** Add 20 mL of warm water (about 37 °C) to the beaker with the yeast and set the beaker on the stir plate. Add a small pinch of sugar and stir gently for about 5 minutes.
- 3** (Answer questions about yeast/eukaryotes while they wait? Learn about microscopes?)
- 4** Place a small drop of the yeast mixture onto a microscope slide and cover it with a slide cover.
- 5** View the yeast with the lowest magnification first so that you can focus the microscope, then increase the magnification one step at a time, making sure to keep the yeast in focus. Record any observations.

DEMO 1 Bubbling Blue: Part 1

Procedure

- 1 Fill a 250 mL Erlenmeyer flask with approximately 125 mL of water.
- 2 Add about 30 drops of **bromophenol blue** to the Erlenmeyer flask and gently swirl until mixed.
- 3 Obtain two straws for you and your partner. Place both straws into the Erlenmeyer flask.
- 4 At the same time, blow air gently through the straws to create bubbles.
- 5 Blow air through the solution for at least a minute. Record your observations.

DEMO 2 Bubbling Blue: Part 2

Procedure

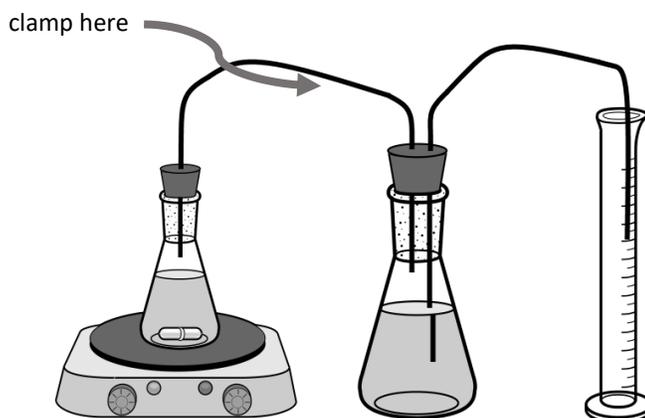
- 1 Fill a 150 mL Erlenmeyer flask with approximately 50 mL of water (37°C).
- 2 Weigh out 1.00 gram of sugar and add this to the 125 mL flask.
- 3 Add 30 drops of bromophenol blue to the Erlenmeyer flask and gently swirl until mixed.
- 4 Weigh out 1.00 gram of yeast and add this to the 125 mL flask containing the sugar and water.
- 5 Carefully swirl the flask and record your observations.

CONTROL Yeast Control Procedure

Materials List

- Erlenmeyer flasks (250 mL; 500 mL)
- Rubber stoppers with tubes
- Magnetic stir bar
- Stir plate
- Tube clamp
- Plastic weigh boat
- Active dry yeast
- Sugar

- 1** Weigh out 3 grams of dry yeast and add it to the 250 mL Erlenmeyer flask. Record the actual mass.
- 2** Add 100 mL of water (temperature approximately 37 °C) to the flask. Add the magnetic stirrer to the flask and set it on the stir plate. Set the spin speed to low and allow the flask to stir for about 3 minutes.
- 3** While the flask with the yeast is stirring, set up the water displacement apparatus:
 - Fill the large Erlenmeyer flask with 500 mL of tap water.
 - Carefully insert the rubber stopper with two connections into the flask. Make sure it is tight.
 - Use the tube clamp to pinch off the tube that is connected to the shorter of the two connections.
 - Use the pipettor bulb to create a siphon between the longer connection in the Erlenmeyer flask and the 100 mL graduated cylinder. Make sure there are no leaks!
 - Discard any water that gets into the graduated cylinder during the siphoning.



- 4** Weigh out 1 g of sugar. Quickly add it to the flask with the yeast and secure the rubber stopper. Remove the tube clamp and then begin timing. Record your observations.
- 5** After 10 minutes has passed, record the final volume of water that was transferred to the graduated cylinder.
- 6** Transfer the water from the graduated cylinder back into the middle Erlenmeyer flask and clean out the flask with the yeast (dump it down the drain; be sure to catch the magnetic stir bar!).
- 7** Set up each of your experiments during the week with the same apparatus.