Guided section (setup, using the devices):

1. Open the Arduino code environment and make sure your device is on and connected.
2. Using the example code, test that the BME680 is working and recording all four measurements
3. Make sure you can turn the VOC/gas sensor on and off in the code.
4. Make sure that you can modify the oversampling for the other sensors.

Unguided section (with a partner):

1. On your own: Measure the temperature and pressure of the room. Compare this to an independent measurement (thermostat, your phone). How close are the two?
2. Find the RMS noise of the temperature sensor. How does it compare to the stated value in the datasheet?
3. Change the oversampling of the sensor. How does this affect the average value of the measurement? How does it affect the noise?
4. With a partner, compare the pressure values from your two sensors. How close are they?
5. Over time, how does the difference between the two sensors vary? Is it more than, less than, or the same as the RMS noise?

6. Ask the instructor for some ethanol and a fan. Place your two sensors on the table and measure the distance between them. With proper PPE, take a small amount of ethanol and pipette it onto a tray to evaporate. Measure the output of the VOC sensor under different airflow conditions as a function of distance from the sensor and amount of ethanol evaporated.
7. Alternate activity: Humidity & VOC in human breath:
    a. The exhaled air from our lungs is often warmer, more humid, and has a higher VOC concentration than normal room air
    b. With your partner, investigate the effects of human breath on the humidity & VOC measurements from the BME680
    c. Suggested things to measure:
        i. Measure the change in humidity & VOCs as a function of distance from your partner.
        ii. Measure the effects of different kinds of breathing (talking, blowing, regular breathing, etc.)
        iii. Come up with a way to estimate the number of people in a room based on your results.