

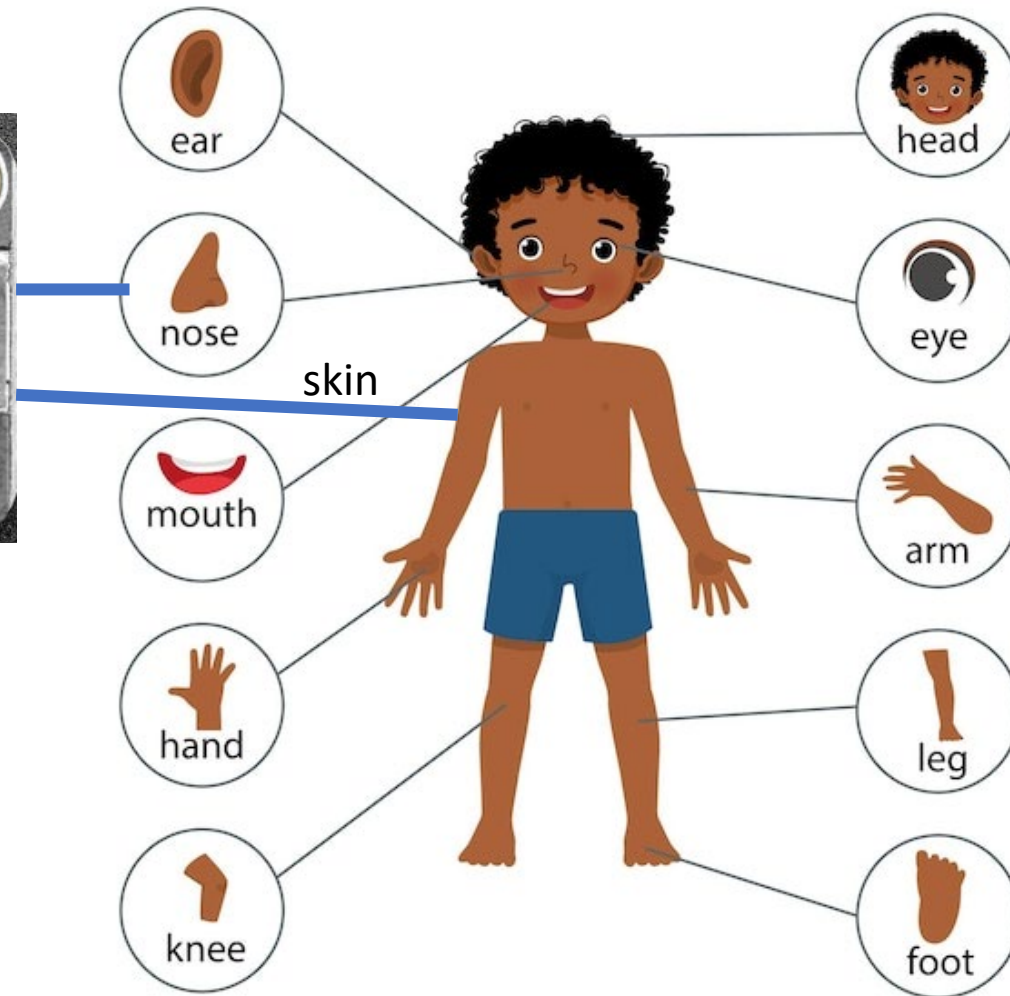
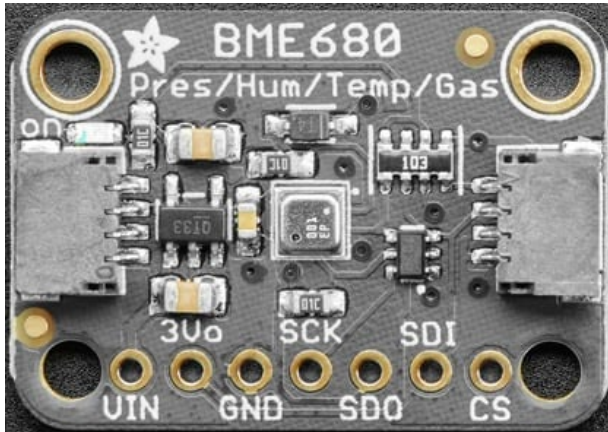
P524 Unit 1a - continued

BME680 sensor

Basic circuit schematic

Breadboard wiring

Adafruit (Bosch) BME680



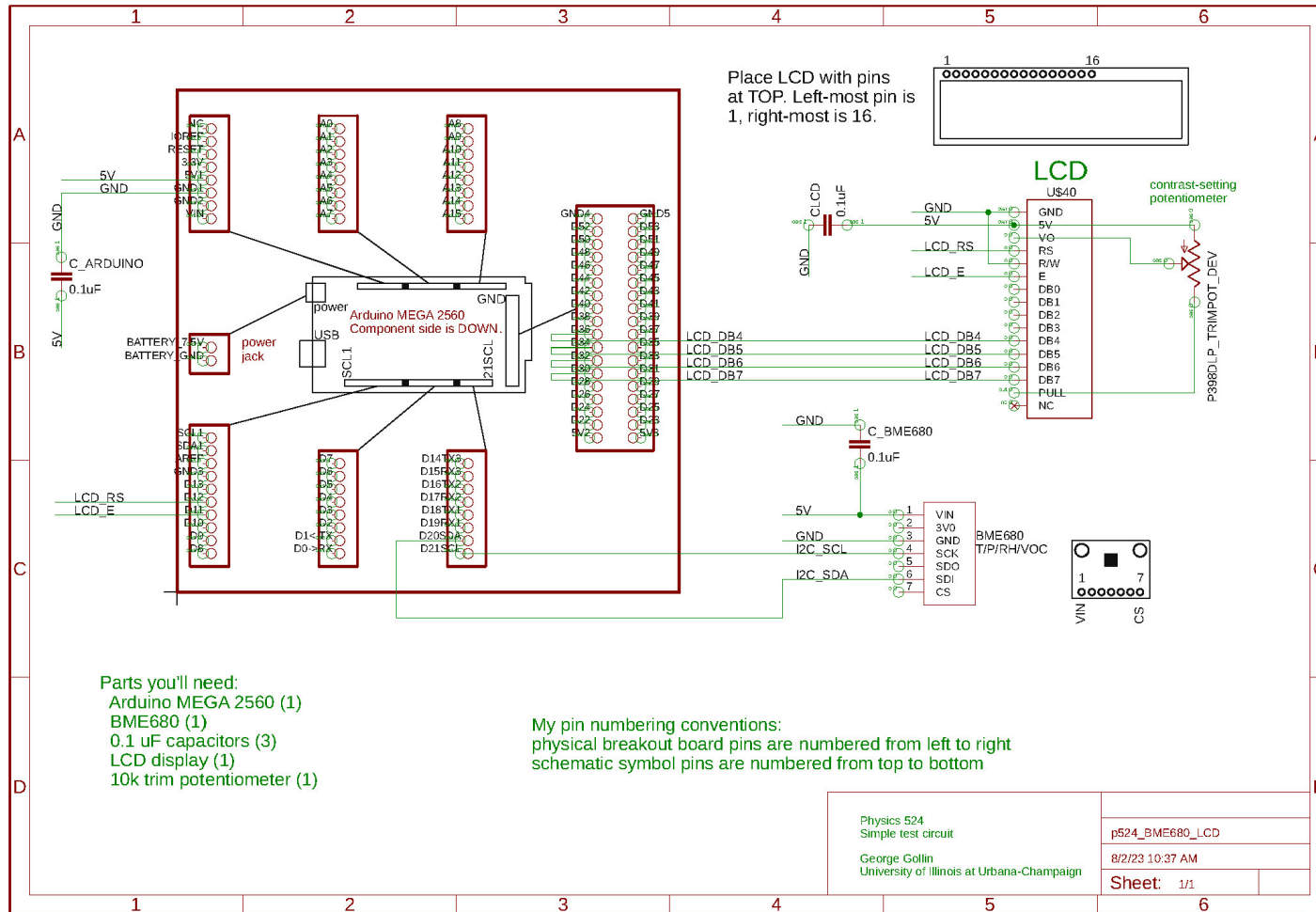
BME680 measures

- Pressure (+/- 100 Pa)
- Humidity (+/- 3%)
- Temperature (+/- 1.0 °C)
- Gas (Volatile Organic Compounds)
 - Resistance of metal oxide sensor
 - decreases when exposed to ions (pollution)

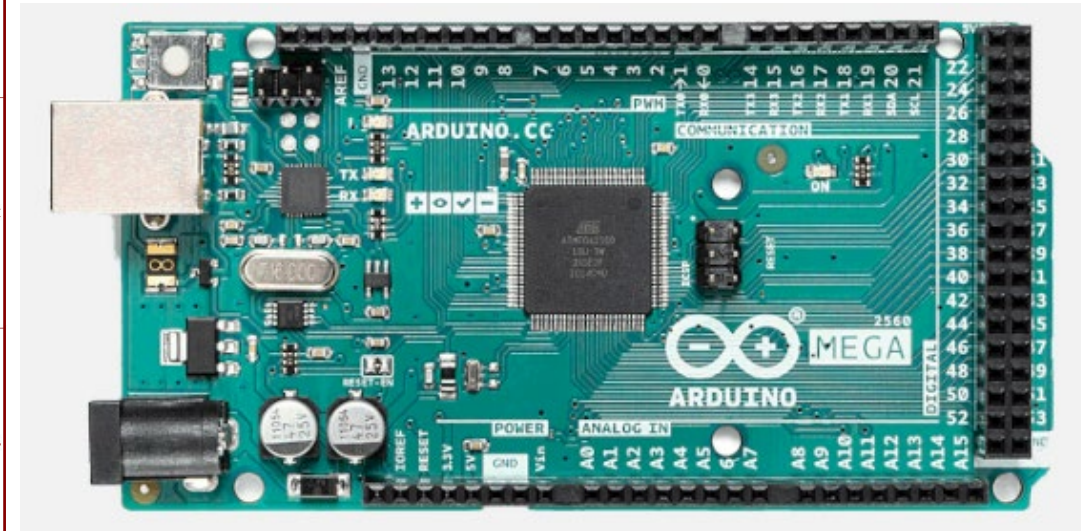
Task: read out with ARDUINO

ARDUINO – BME680 schematic

1a write-up, p. 13

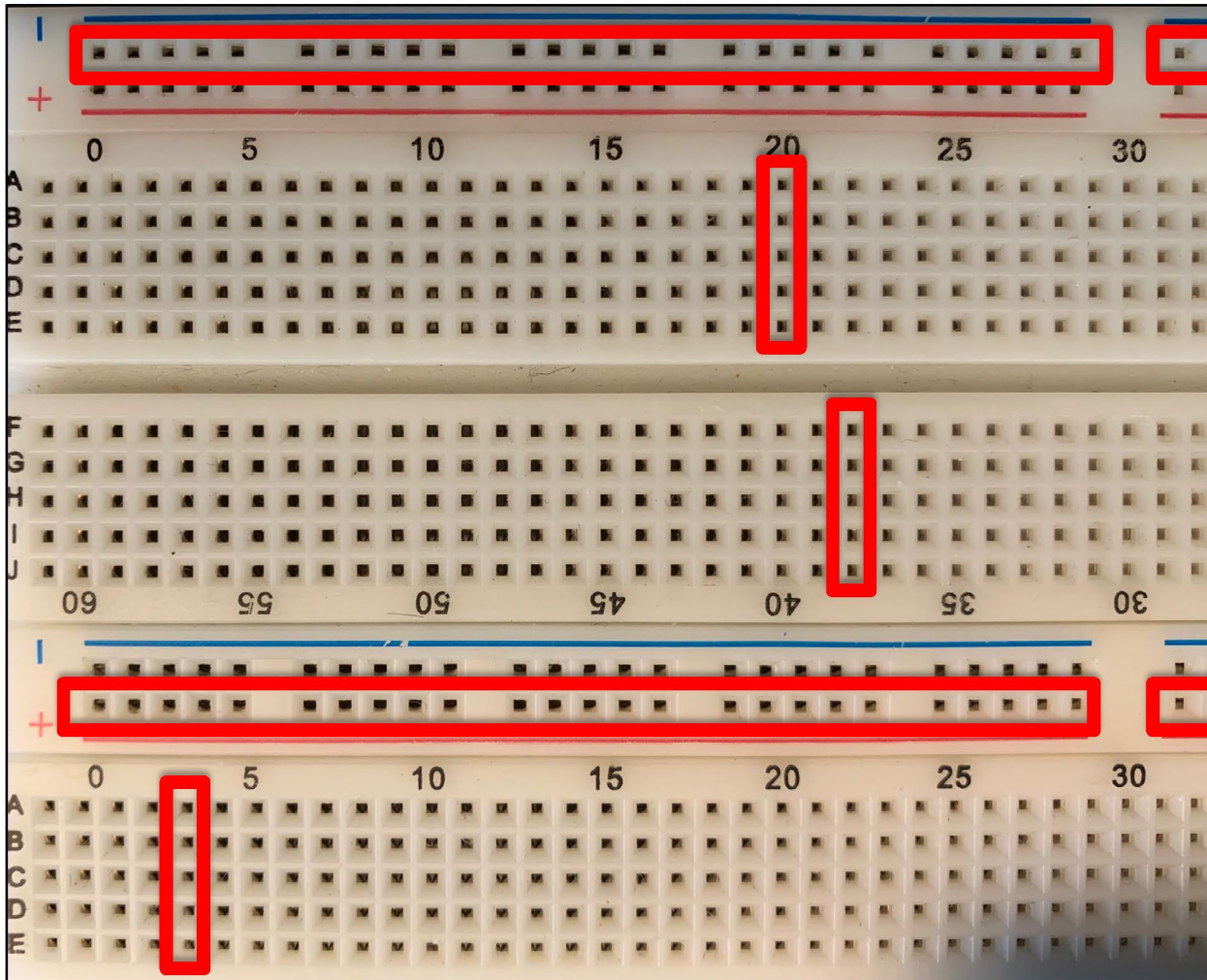


- Verify pin-outs
- Not all connections explicit (lines); watch labels
- Junctions (connected lines) = dots



Breadboard – internal connections

1a write-up, p. 10

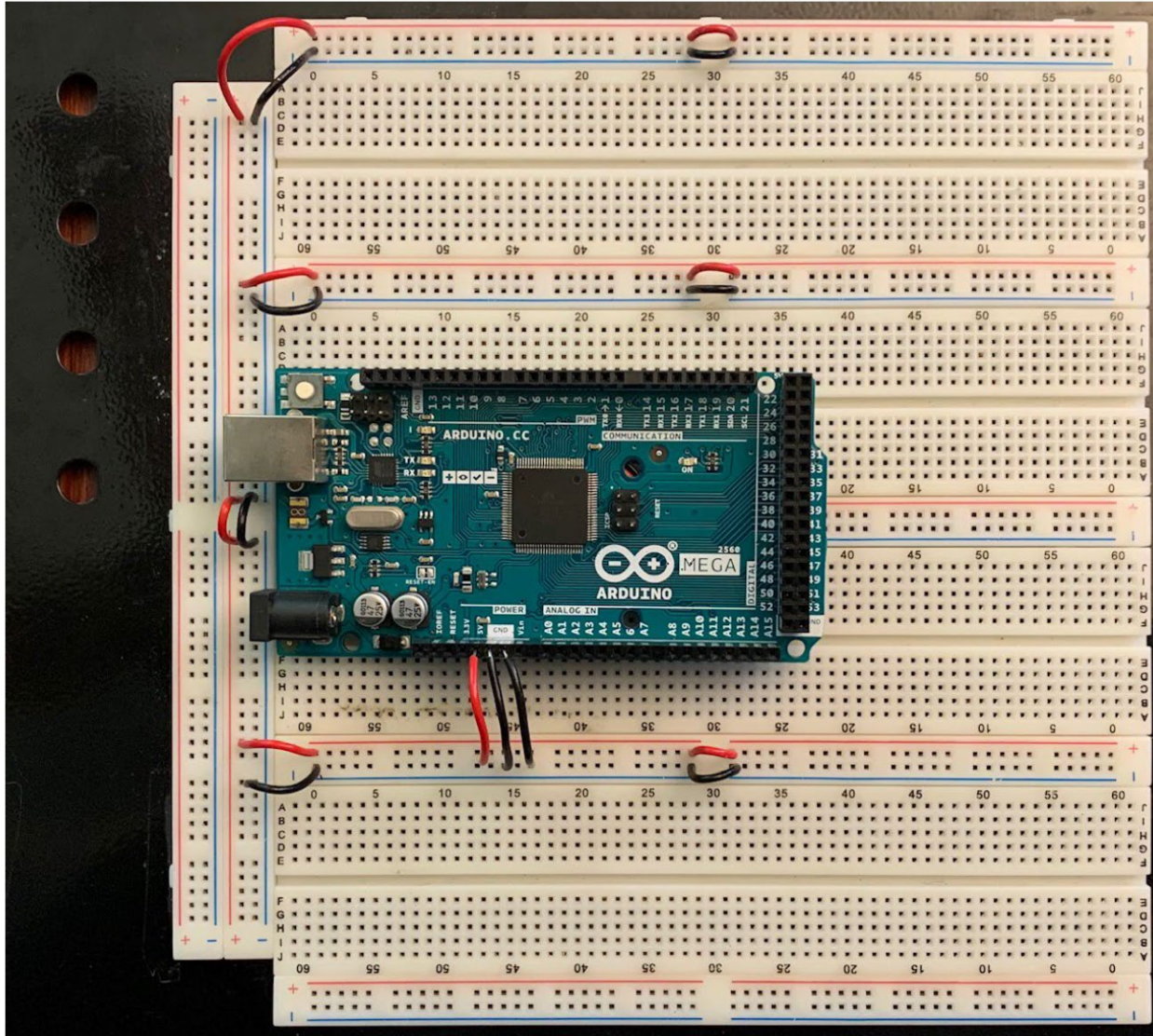


- 25 holes in each row connected

- 5 holes in each column connected

Recommended ARDUINO placement

1a write-up, p. 11



- Tape ARDUINO to board (optional)
- Strip 5 mm insulation from wire ends
- Color code: + 5V = red, GND = black
- Jumper the 25-hole rows (“+” and “-”)
- Double GND connection

In-class assignment and Homework (due 9/3)

- Connect the BME680 (see 1a write-up)
- Install BME680 Adafruit library (from menu in ARDUINO IDE: >Sketch>Include Library>Manage Libraries; search)
- Compile and run BME680 demo program (>File>Examples>Adafruit BME680 Library>BME680test)
- Wire the LCD (with 10 k trimpot), 3 x 4 keypad, and microSD card; run demo programs for each
 - Corresponding Adafruit libraries and P523 code repository will be useful
- (email finished programs [including Morse code on 9/1] to jcl11@illinois.edu)