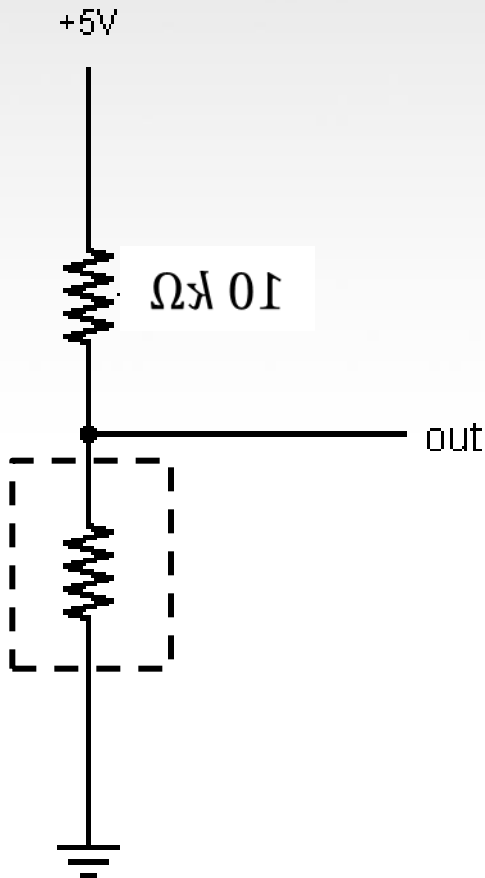# Analog Sensors
2 Pin Analog Sensors = var. resistor

+5V

10 kΩ

out

Take two sensors -- Use the Serial Monitor and find the range of input values you get for each sensor.

MaxAnalogRead = _____

MinAnalogRead = _____

Analog Sensors

Examples:

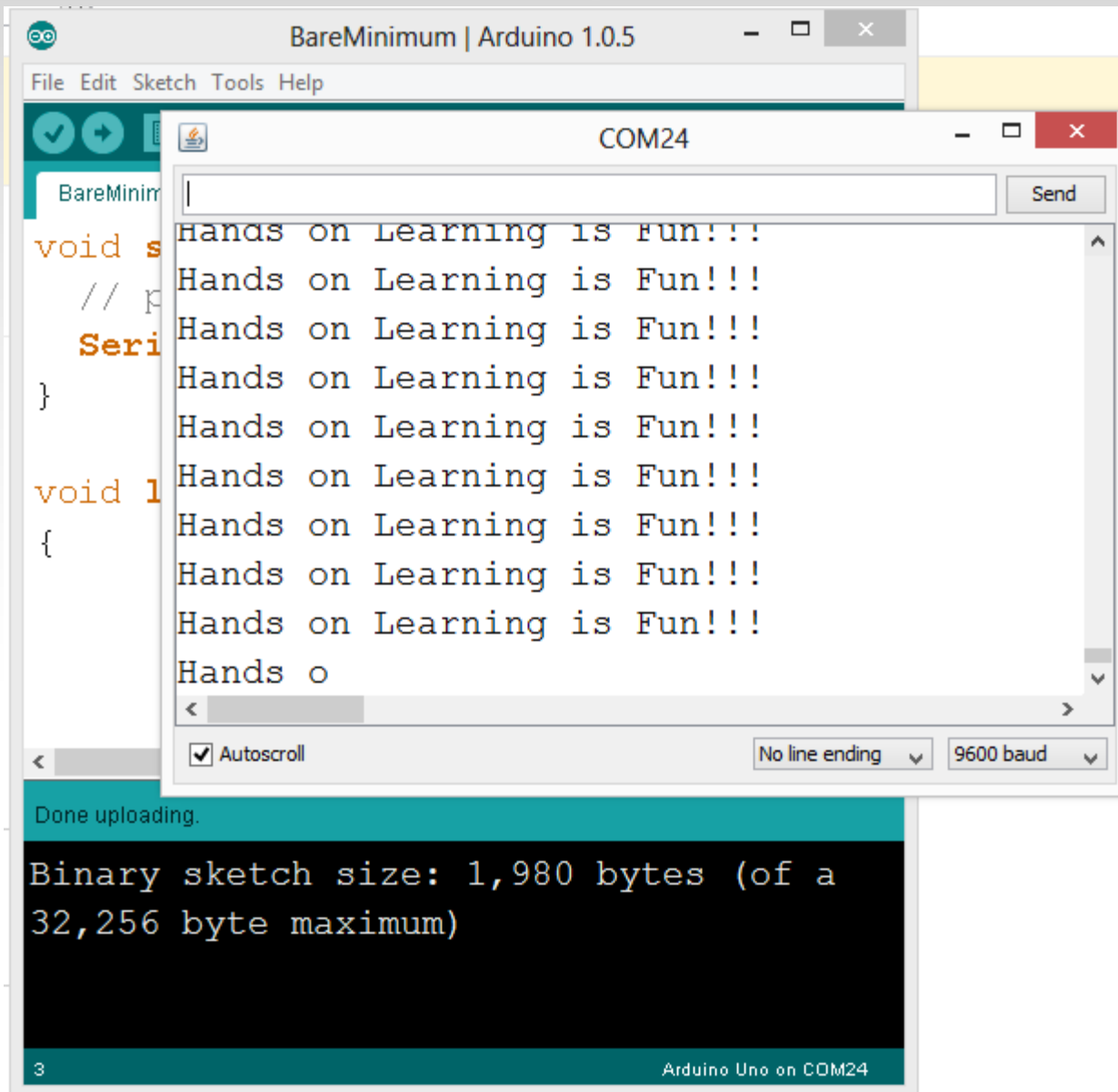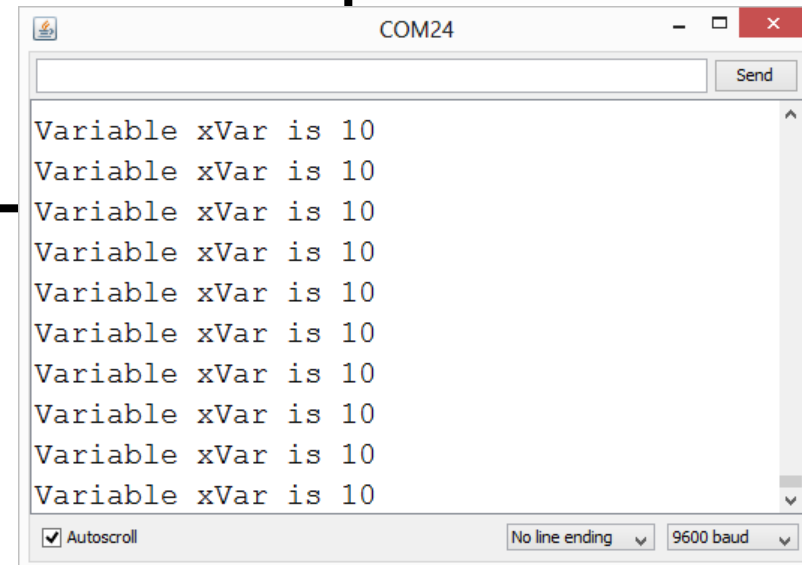| Sensors	Variables
Mic	soundVolume
Photoresistor	lightLevel
Potentiometer	dialPosition
Temp Sensor	temperature
Flex Sensor	bend
Accelerometer	tilt/acceleration

Additional Serial Communication
Sending a Message

```
void loop ( )
{
  Serial.print("Hands on ") ;
  Serial.print("Learning ") ;
  Serial.println("is Fun!!!") ;

}
```
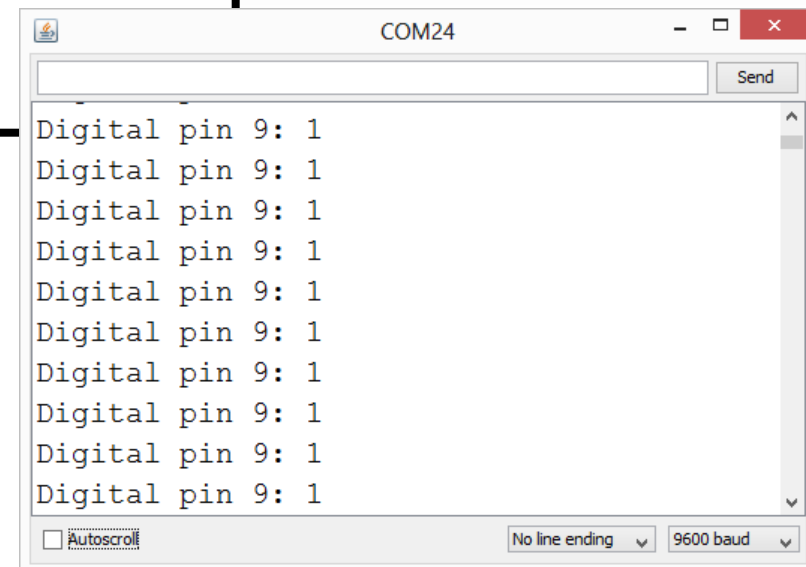
BareMinimum | Arduino 1.0.5

File Edit Sketch Tools Help

BareMinim

```
void s
    // p
    Seri
}

void l
{
```

COM24

Send

Hands on Learning is Fun!!!
Hands on Learning is Fun!!!
Hands on Learning is Fun!!!
Hands on Learning is Fun!!!
Hands on Learning is Fun!!!
Hands on Learning is Fun!!!
Hands on Learning is Fun!!!
Hands on Learning is Fun!!!
Hands on Learning is Fun!!!
Hands o

☑ Autoscroll   No line ending ⌄   9600 baud ⌄

Done uploading.

Binary sketch size: 1,980 bytes (of a
32,256 byte maximum)

3   Arduino Uno on COM24

Serial Communication: Serial Debugging

```
void loop()

{

    int xVar = 10;

    Serial.print ( "Variable xVar is " ) ;

    Serial.println ( xVar ) ;

}
```
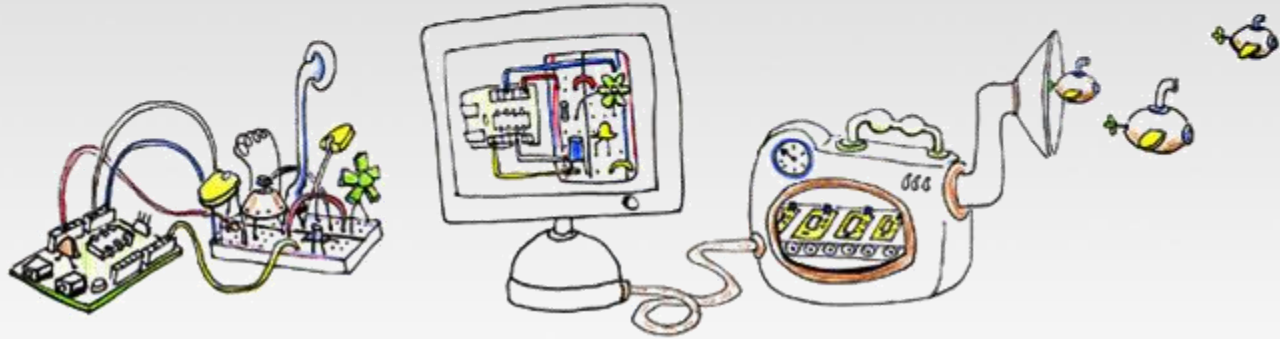
COM24

Variable xVar is 10
Variable xVar is 10
Variable xVar is 10
Variable xVar is 10
Variable xVar is 10
Variable xVar is 10
Variable xVar is 10
Variable xVar is 10
Variable xVar is 10
Variable xVar is 10

Send

☑ Autoscroll   No line ending   9600 baud

Serial Communication:
Serial Troubleshooting

```
void loop ( )

{

    Serial.print ("Digital pin 9: ");

    Serial.println (digitalRead(9));

}
```

COM24

Digital pin 9: 1
Digital pin 9: 1
Digital pin 9: 1
Digital pin 9: 1
Digital pin 9: 1
Digital pin 9: 1
Digital pin 9: 1
Digital pin 9: 1
Digital pin 9: 1
Digital pin 9: 1

Send

☐ Autoscroll   No line ending ⌄   9600 baud ⌄

Virtual Electrical Prototyping Project
started in 2007 by the Interaction Design Lab
at the University of Applied Science Potsdam, Germany

Open Source

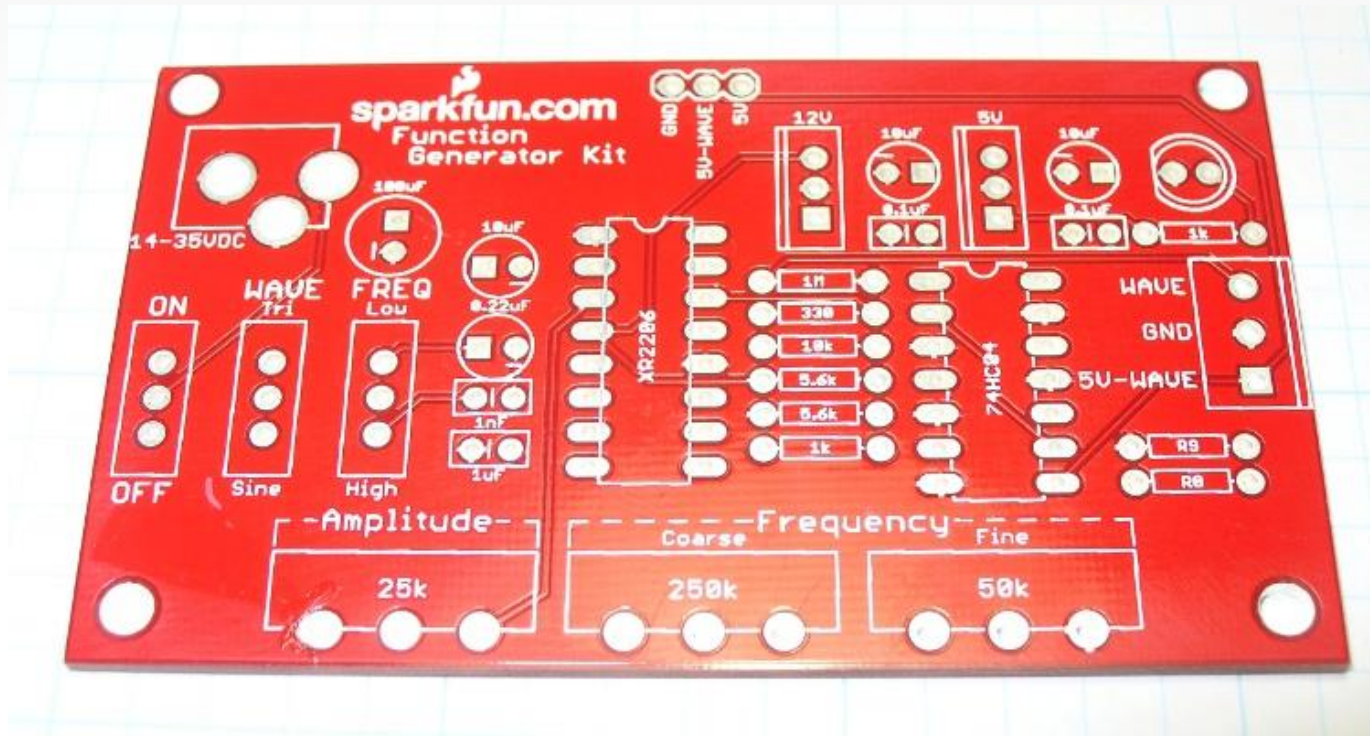Prototypes: Document, Share, Teach, Manufacture

Now that you feel comfortable putting together circuits with your breadboard let's talk about how to go from the breadboard to a PCB

Free Time

The rest of the class is dedicated to free pursuit

Experiment with the various circuits and lessons in the SIK.

Explore the additional tutorials available on
    learn.sparkfun.com

Thank you for attending our Intro to Arduino class

Questions?

www.sparkfun.com

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Boulder, Colorado 80301