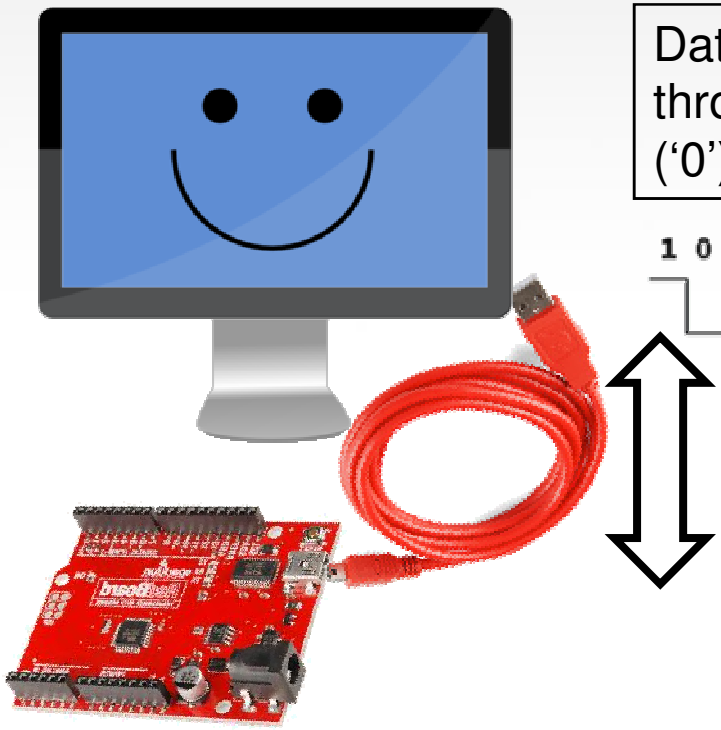
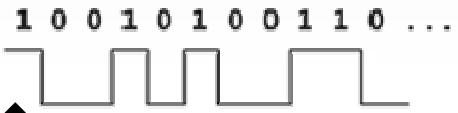
Using Serial Communication

Method used to transfer data between two devices.



Data passes between the computer and Arduino through the USB cable. Data is transmitted as zeros (‘0’) and ones (‘1’) sequentially.



Arduino dedicates Digital I/O pin # 0 to receiving and Digital I/O pin #1 to transmit.

Serial Monitor & analogRead()

Initializes the Serial Communication

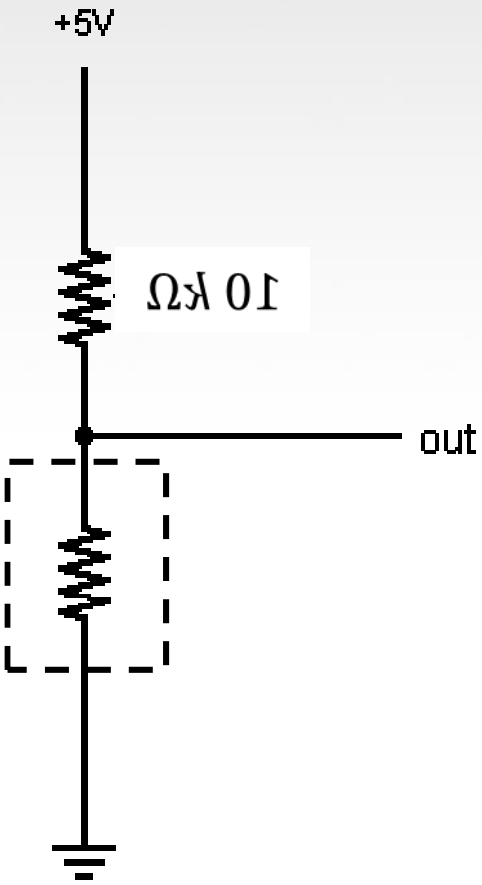
9600 baud data rate

prints data to serial bus

Serial Monitor & analogRead()

Opens up a Serial Terminal Window

Analog Sensors
2 Pin Analog Sensors = var. resistor



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

MaxAnalogRead = _____

MinAnalogRead = _____

Analog Sensors

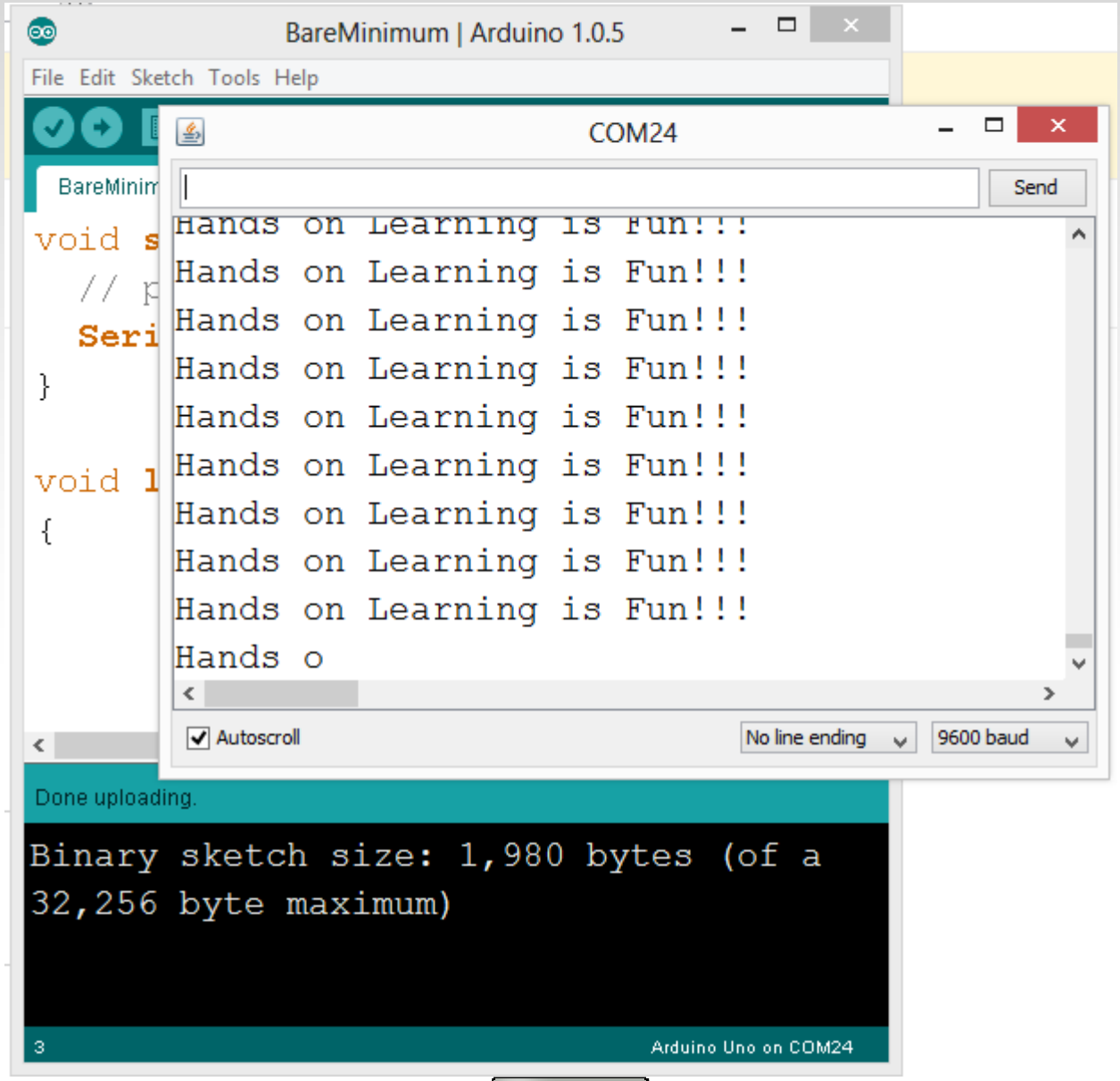
Examples:

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

Additional Serial Communication Sending a Message

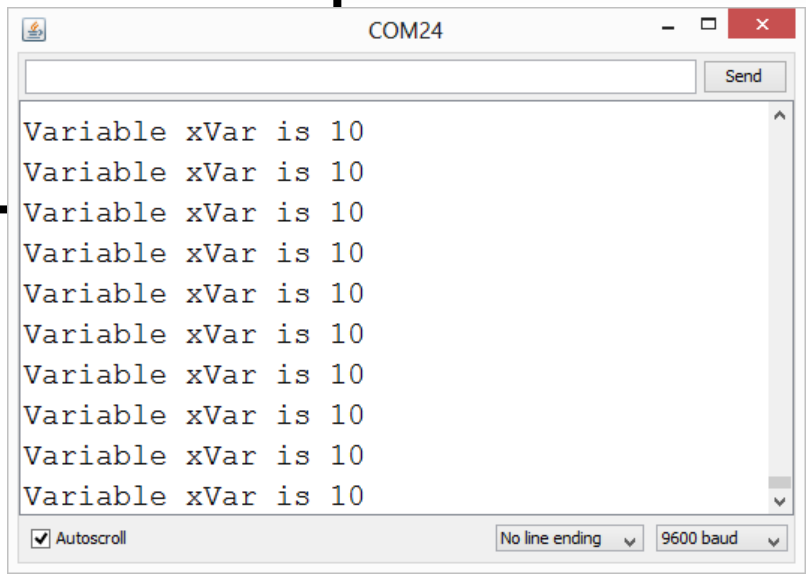
```
void loop ( )
{
  Serial.print(“Hands on “) ;
  Serial.print(“Learning ”) ;
  Serial.println(“is Fun!!!”) ;

}
```



Serial Communication: Serial Debugging

```
void loop()
{
   int xVar = 10;
   Serial.print ( "Variable xVar is " ) ;
   Serial.println ( xVar ) ;
}
```



Serial Communication: Serial Troubleshooting

```
void loop ( )
{
   Serial.print ("Digital pin 9: ");
   Serial.println (digitalRead(9));
}
```