# Hello Gabriel!  How are you doing???

**I'm watching you.**

**That's right.**

**I'm watching you…**

**I am in your computer** ☺

**I can change your font.**

**I am black font.**

**I am green.**

**I am blue.**

I am back to normal

Would you like to play a game?

Before you say "yes," have the instructor point out the various parts (sensors, electronics, components, etc), connected to me, and ask him what they do.

Can you identify the following?
1. Arduino Leonardo
2. Breadboard
3. Jumper cables
4. Ultrasonic rangefinder ("ping" sensor)
5. TMP36 analog temperature sensor (ie: a thermometer)
6. Photoresistor (light sensor)
7. Tri-color LED (RGB LED), and resistors

8. Piezo buzzer
9. Potentiometer (ie: a variable resistor, or user input knob)
10.    Servo motor/actuator
11.    Pushbutton

(When ready, press the button connected to the Arduino Leonardo to continue.)

I have a whole bunch of cool sensors and things I can do, and I'd like to show you throughout a series of interactive demonstrations!

[FYI: The code I am running contains Demo #2.  To change the Demo #, you will have to recompile and upload new code to me.]

First, let me show you how I can move your mouse.  You've seen me use your keyboard, so now watch this!

During the following mouse activities, feel free to try and move the mouse around during these events, to see how much control you still have over the mouse.  During some of the events, you can still guide the mouse around.

We will start with what I call "random_mouse_slide_around".  Again, feel free to try and move the mouse around during these activities, to see how much control you still have over the mouse.
(Press my pushbutton to continue; press and HOLD it to stop)

Pretty cool, huh!? Next mouse action: "random_mouse_jump_around".
(Press my pushbutton to continue; press it again to stop)

Next mouse action: "random_mouse_buzz_around".
(Press my pushbutton to continue; press it again to stop)

Next mouse action: "draw_squares_with_mouse_movements".
(Press my pushbutton to continue; press and HOLD it to stop)

Next mouse action: "mouse_move_to_lower_left_of_screen". During this demo, be sure to try and keep the mouse cursor in the center of the screen!
(Press my pushbutton to continue; press it again to stop)
Now, let's read some of my sensors! I think these are pretty neat too!

Skipping really cool ultrasonic rangefinder ("ping" sensor) demos since there are too many demos to fit on the Arduino all at one time. Compile & run the other main demo code to see any skipped demos!

Skipping light sensor (photoresistor) demos since there are too many demos to fit on the Arduino all at one time. Compile & run the other main demo code to see any skipped demos!

Skipping really cool RGB LED (multi-color light) demos since there are too many demos to fit on the Arduino all at one time. Compile & run the other main demo code to see any skipped demos!

Skipping TMP36 analog temperature sensor (thermometer) demo since there are too many demos to fit on the Arduino all at one time. Compile & run the other main demo code to see any skipped demos!

One of the really cool things about Arduino is how useful it is in robotics! For this demo, turn the blue potentiometer knob to control the servo.
(Press my pushbutton to continue; press it again to stop)

Servo control START.
Servo control STOP.

Skipping some really sweet tunes and melodies, played out of my piezo buzzer, demo since there are too many demos to fit on the Arduino all at one time.  Compile & run the other main demo code to see any skipped demos!

Before you go, let me give you a proper introduction:  I am an Arduino microcontroller development platform.  There are many types of Arduinos.  My type is called "Leonardo".  I am based on an Atmel ATmega32U4 microcontroller.  Today, in these demos, you have seen only a *tiny* sample of what I can do.  I can do ANYTHING you tell me to do.  ANYTHING you program me to do.  I can change the world.  I can change the way we live, but only if YOU make me do so.  Your students can change the world, they can learn and grow and CREATE, and make it a better place, but only if YOU help them learn to do so.  Let's all *strive* to improve ourselves, and remember that it is US who make up the world, and it is US who determine the destiny of the world.  Let us use our time wisely, share our talents with each other, and become THINKERS *AND* DOERS, not just HEARERS.  "Be a thinker, and be a doer."  That is my motto.

Sincerely,
Gabriel Staples

END OF DEMO.
Thanks for your time, Gabriel ☺.

This program was created by Gabriel Staples (http://ElectricRCAircraftGuy.blogspot.com/), June 2014.

**I'm still watching you…☺**

Saving file, please wait…
File Saved