Sled Measurement Plan

- Restore the trajectory of sled hockey movement with acceleration info.
- Measure the deformation of the bucket.
- Measure the pressure inside of the bucket exerted by the driver.

Micro-controller: teensy 3.2
- The Teensy is a complete USB-based microcontroller development system.
- Features a 32 bit ARM processor.
- Actual size is 1.4 by 0.7 inch.

IMU: Adafruit 9-DOF
- Absolute Orientation (Euler Vector, 100Hz) Three axis orientation data based on a 360° sphere
- Absolute Orientation (Quaterion, 100Hz) Four point quaternion output for more accurate data manipulation
- Angular Velocity Vector (100Hz) Three axis of 'rotation speed' in rad/s
- Acceleration Vector (100Hz) Three axis of acceleration (gravity + linear motion) in m/s^2
- Magnetic Field Strength Vector (20Hz) Three axis of magnetic field sensing in micro Tesla (uT)
- Linear Acceleration Vector (100Hz) Three axis of linear acceleration data (acceleration minus gravity) in m/s^2
- Gravity Vector (100Hz) Three axis of gravitational acceleration (minus any movement) in m/s^2
- Temperature (1Hz) Ambient temperature in degrees celsius

Strain gauge sensor

Pressure sensor: Flexiforce Pressure Sensor - 100lbs
- This is a piezoresistive force sensor from Tekscan.
- The harder you press, the lower the sensor’s resistance. Pressing hard, the resistance changes from infinite to ~300k. The sensor itself is thin and flexible, but the resistance does not change while being flexed. Resistance changes only when pressure is applied to the round area at the end of the sensor.
- Used as a presence sensor (someone standing), weight sensor, pressure sensor (impact testing), etc.
- The overall length is about 8.5". Sensor comes with 0.1" spaced, reinforced, breadboard friendly connector.