

## Earth's Magnetic Intensity vs. Altitude

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Purpose: To determine if altitude affects the intensity of Earth's magnetic field.

Research: We searched for the majority of our research through Google. There we found many sites that state Earth's magnetic field distributes over the Earth at an angle from true north and true south. This angle will be a factor when it comes to a direct reading of the magnetic field. We also referred to the instruction booklet of the magnetic intensity sensor we will be using.

Hypothesis A1: We can use a magnetic intensity sensor to accurately measure the altitude in correlation to the magnetic intensity.

-Test 1: The altitude graph should go up and down.

-Test 2: The starting and ending altitudes should be the same.

-Test 3: The altitude would match what is described in the experiment logs (i.e. start time, end time)

Hypothesis A2: The Earth's magnetic intensity is directly proportional to the altitude.

-Test 1: The graph of magnetic intensity should be a linear graph.

Proposed Experimental Method: We plan to measure the intensity of Earth's magnetic field and the altitude using a magnetic intensity sensor (with LabPro) and theodolites. We will make constant measurements of altitude in our experiment log while the sensor is in the air with the balloon taking measurements. It will be important to make sure we get the angle of the sensor where magnetic intensity is strongest, so we can get a distinct reading.