Wind Study is intended for grades 5-8 and 8-11 Questions posted on: Monday Answers posted on: Friday Find downloadable one pagers at www.oneenergy.com/one-energy-feed

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(ELECTRICTY, MAGNETIC FIELD)

Level 1: To calculate current, we will use one of the electrical equations:

$$V = IR$$

Where V is voltage in volts, I is current in amperes, and R is resistance in ohms (Ω). Rearrange to solve for current.

$$I(A) = \frac{V(V)}{R(\Omega)}$$
$$I = \frac{620 V}{24.76 \Omega} = 25.04 A$$

Level 2: The equation to calculate magnetic field is:

$$B(T) = \frac{\mu_0\left(\frac{T*m}{A}\right)*I(A)}{2\pi d(m)}$$

Substitute the given quantities and solve for B.

$$B = \frac{(4\pi * 10^{-7})\frac{T * m}{A} * 25.04 A}{2\pi * 1.83 m} = 9.6 * 10^{-6} T$$



A generator being flown during turbine erection.