



Abstract

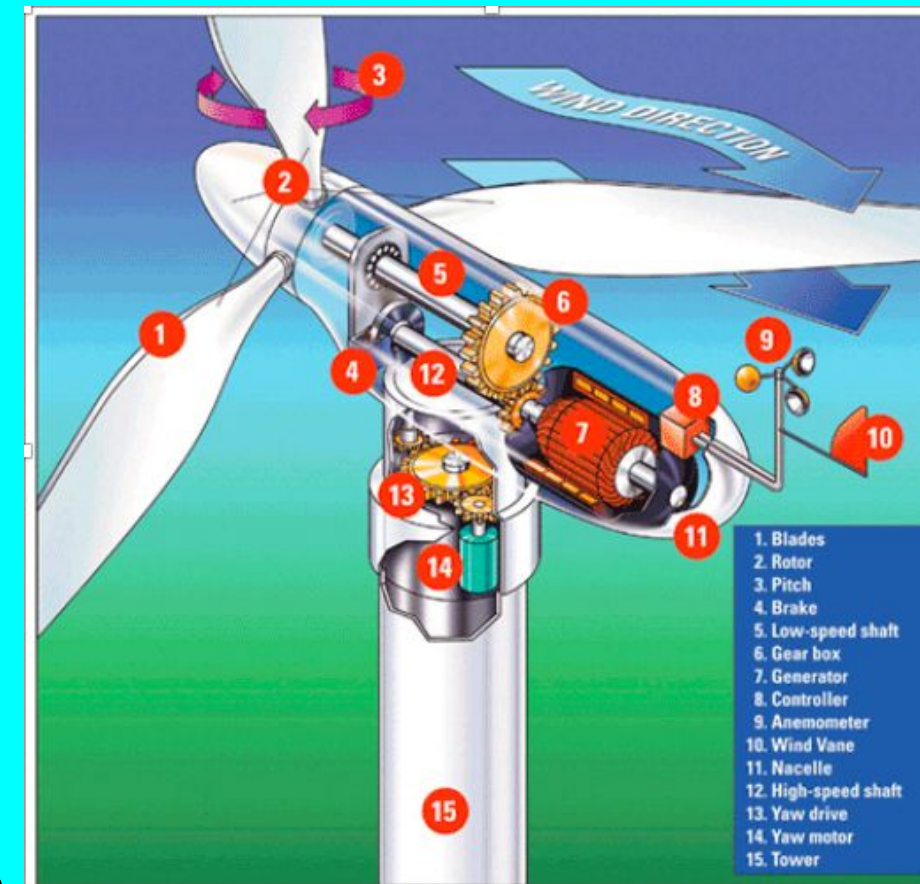
The purpose of this experiment is to determine how changing the angles of the blades and distances from the fan will produce more volts. The group did the experiment by angling the blades of the turbine to 20 and 35 degrees, measuring the two distances from the fan, and testing the wind turbine to see how many volts it would produce. The numbers on the graph show that the 35 degree angle produced more energy than the 20 degree angle. The angle of the blades matter because it determines the amount of air the wind turbine catches.

Introduction

Wind energy is important to the Earth because wind doesn't pollute the air, is a renewable resource, and has no emissions. Emissions means that there is not any pollution. Wind energy powers millions of homes and businesses everyday. Wind turbines offer electricity to rural areas. The purpose of this experiment is to figure out how many volts of energy a wind turbine can produce at 30 cm and 50 cm away from the fan. The independent variable was the distance from the fan and the angles of the blades. The dependent variable was the amount of energy produced in volts. The hypothesis is that when the wind turbine blades are at an angle of 35 degrees the wind turbine will produce more energy at 30 cm than at 50 cm away from the fan.

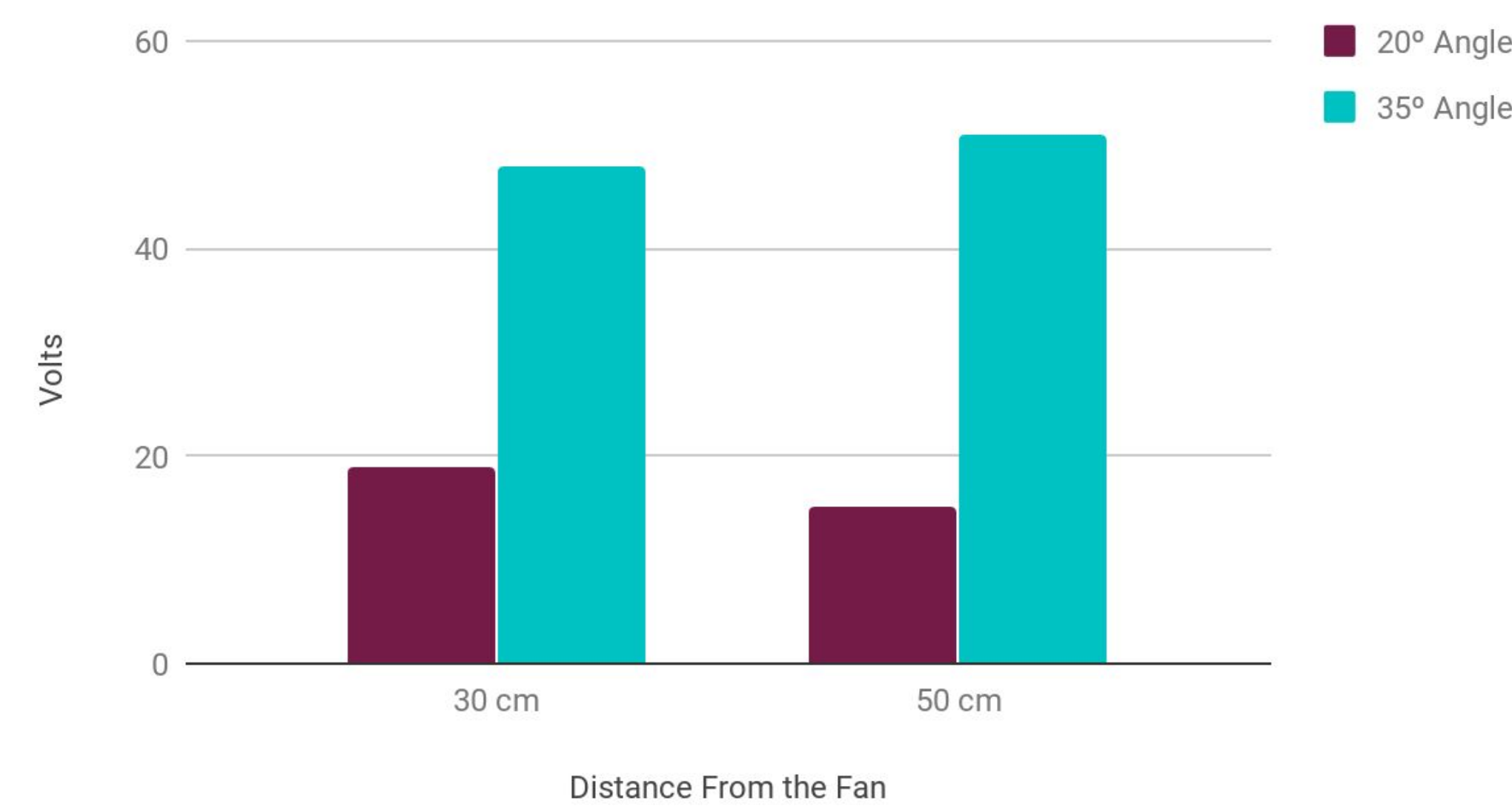
Materials and Methods

The experiment spanned over three days. The following materials were used: a meter stick, box fan, wind turbine, and a voltmeter. The group first measured 50 cm and 30 cm away from the box fan to place the wind turbine. The angle of the turbine blades were set at 20 degrees for the first trial and changed to 35 degrees for the second trial. Then, the alligator clips were connected to the voltmeter, the fan was turned on, and the group measured the volt's produced using the voltmeter. The information was recorded on a data sheet.



Results

Volts Measured from Wind Turbines



TEKS

Science: 5.1A, 5.2A,B,C,D,F,G, 5.3A, 5.4A, 5.7C Math: 5.1A,D, 5.3A,G,K, 5.9A,C ELAR: 110.10(b)(D), 110.16 (b)15A,B,C,D,E, 18A, 24A, 26A,C 11A

Conclusion

The hypothesis was if the blades are at an angle of 35 degrees the wind turbine will produce more energy at 30 cm than 50 cm away from the fan. The experiment proved the hypothesis wrong. More volts were produced at 50 cm than at 30 cm away from the fan. In this experiment angle of the blades are changed as well as the distances from the fan. When the blades are changed to different angles more volts of energy were produced from the wind turbine. Therefore, the most important factor in this experiment was the blade angle.

References

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