CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)

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Project Number

22513

Project Title

How Does Exposure to Magnetism Affect Recorded Media Such as CDROMs, Videotapes, Zip Discs, Audiotapes and Floppy Disks?

Abstract

Objectives/Goals

I wanted to find out how magnets affected recorded media such as CDs, videotapes, Zip discs, audiotapes and floppy disks.

Methods/Materials

A weak magnet (1 pound pull), a medium magnet (5-8 pound pull), a strong magnet (35 pound pull), an audiocassette, VHS videotape, a CD-ROM, a Zip disc, a floppy disk, a tape recorder, a video cassette recorder, and television and computer with floppy and Zip and CD drives.

Results

The weak magnet had no effect on any of the media at any distance. The medium magnet only affected the cassette tape at a distance of ¼ inch and the videotape at a ¼ inch. The medium magnet had no effect on the floppy disk, zip disc and CD. The strong magnet affected the cassette tape at a distance of ½ inch and the floppy disc and the videotape at ¼ inch. The CD-ROM and the Zip disc were not affected by the strong magnet, or any magnet, at any distance.

Conclusions/Discussion

Electronic products are not as vulnerable to magnets as I thought. The CD-ROM is unaffected by magnetism. This was expected because it does not use magnetic recording to store information. I was wrong in my hypothesis about the Zip disc. Although it uses magnetic particles to store data, the Zip disc somehow was unaffected by even the strongest magnet when touching it. As I hypothesized, the other magnetic media can be completely erased by a magnet if it is strong enough and close enough to the media. However, they did not lose data until the magnets were very close i.e. ½ to ¼ inch away. So perhaps magnets aren't as dangerous to electronic products as people commonly think.

Summary Statement

The durability of magnetic media when exposed to magnetism at varying strengths.

Help Received

My dad took digital photos of me performing my tests. I could not find wooden blocks, so I asked my dad if he could obtain them for me.

Preliminary