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Subject: Magnets

Posted by [SonicSound](#) on Mon, 18 Feb 2013 03:59:04 GMT

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When I was a kid, my father would always dissect broken things and save some of the parts. One thing that I remember is how he would always save the magnets in speakers. I never thought to ask, until now when I am making a homemade compass, why are there magnets in speakers? What purpose do magnets have in sound?

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Subject: Re: Magnets

Posted by [Kenwoody](#) on Wed, 20 Feb 2013 02:12:57 GMT

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Magnets are used to create alternating current within the speaker. The positive ions in one magnet are attracted to the negative polarity in the other magnet and vice-versa. When the ions move back and forth between the magnets, it creates electricity. There's a HowStuffWorks on it that might explain it a little better than I can.

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Subject: Re: Magnets

Posted by [Wayne Parham](#) on Wed, 20 Feb 2013 15:33:32 GMT

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Actually, a speaker transforms electrical energy to kinetic energy using the interaction of two magnets. One is a fixed magnet and the other is an electromagnet. Back several years ago, they used to make speakers with two electromagnets, one that was energized with a stable direct current, and the other fed the audio signal, which is an alternating current waveform. In either case - field or fixed magnet - the result is the same, which is that the audio signal causes movement of the cone because of the interaction of the fixed magnet with the one fed with the audio signal. Your "HowStuffWorks" link shows this pretty well.

What you described is the reverse, and that's pretty much how microphones work. The sound moves the diaphragm, and that in turn moves the coil. The magnet flux cuts across the moving coil and this creates a current, which is the audio signal.

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Subject: Re: Magnets

Posted by [Kenwoody](#) on Sat, 23 Feb 2013 02:43:56 GMT

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Well I knew I was describing something that had to do with sound, ha ha! I remember my dad explaining speakers and mics to me as a kid and I guess I got the two mixed up! That was also the same conversation where he explained the purpose of magnets in generators and alternators

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in cars... (I was absolutely fascinated by magnets as a kid.)

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Subject: Re: Magnets

Posted by [SonicSound](#) on Mon, 25 Feb 2013 11:33:44 GMT

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I'm learning I probably should have paid more attention in physical science class! I totally forgot about a lot of the stuff you are talking about, but I will experiment with these things somehow and in some way. I just need to find a project I can do using two magnets.

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Subject: Re: Magnets

Posted by [Chicken](#) on Mon, 25 Feb 2013 13:18:38 GMT

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SonicSound, they never touched much on the practical applications of moving magnets (like mics and speakers) when I took physics in high school. It's a shame; I would've paid more attention if they had.

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Subject: Re: Magnets

Posted by [Kenwoody](#) on Mon, 25 Feb 2013 23:16:54 GMT

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Chicken wrote on Mon, 25 February 2013 07:18 SonicSound, they never touched much on the practical applications of moving magnets (like mics and speakers) when I took physics in high school. It's a shame; I would've paid more attention if they had.

I know, right!! I would have paid a lot more attention, too. I didn't learn about magnets and electromagnetism until I took up an interest in cars and my dad explained their role in making cars run...

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