



Black

8-29-99 You Can CMYK  
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by jok church

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With **beakman & jax**

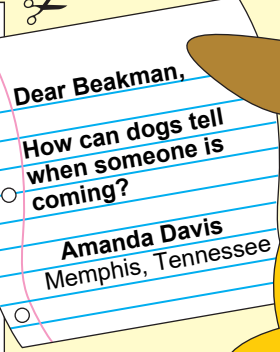
### experiment #1

**WHAT YOU NEED:** Musical keyboard, even a toy piano - any other musical instrument

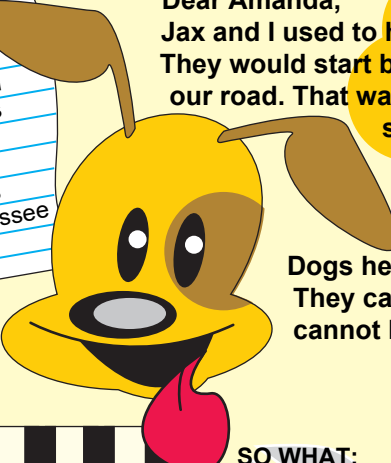
**WHAT TO DO:**

The note with the finger on it is named C. Find the one that's closest to the middle of the keyboard and play the note. If you're using another instrument, ask the person playing it to play the note middle-C. If your keyboard is long, play all the other C's down the scale, to the left, then up the keyboard to the right.

Amanda wins a membership to JuniorNet for today's question. [www.JuniorNet.com](http://www.JuniorNet.com)



Beakman or Jax  
P.O. Box 30177  
Kansas City, MO 64112  
Question, name & address

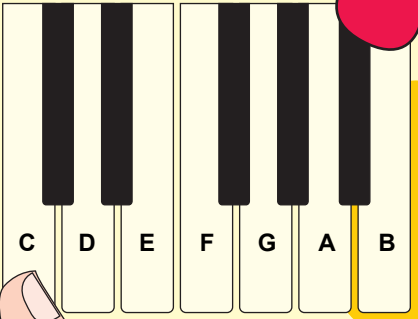


Dear Amanda,  
Jax and I used to have 2 dogs named Karma and Dogma. They would start barking as soon as someone turned onto our road. That was a long time before we could hear the same cars coming.

Karma and Dogma let us know what was coming down the road. You must have a dog that lets you know stuff, too.

Dogs hear different sounds than humans hear. They can even hear some sounds that humans cannot hear at all.

*Beakman*  
Beakman Place



**SO WHAT:**  
Sound waves are like little pushes of air that start when something vibrates. How often the pushes come is called the frequency (FREE-kwen-see) of the sound. Middle-C is made when a piano string or a reed vibrates at 256 times a second, and makes 256 tiny little pushes of air a second. Humans can hear sound when something vibrates as slowly as 20 times a second and as quickly as about 20,000 times a second. Dogs can hear sounds up to 35,000 times a second.

Mirror Message: .bnoceē s eāmit 000,4 eāstīdiv eton onsiq tērlgīrl ērT .bnoceē s eāmi TS eāstīdiv onsiq s no eton tēwol ērT

### experiment #2

**WHAT YOU NEED:**

This newspaper - tape - good set of lungs - friend

**WHAT TO DO:**

Roll up the paper into a cone and tape it. Cut off the small end of the cone. You've just made a megaphone. Make one for your friend, too. Go outside with your friend and walk in opposite directions from each other. Talk through your megaphones. As you get farther apart, yell through them. Listen to your friend yelling with and without the megaphone. Then you do the yelling.

**WHAT IS GOING ON:**

The frequency of sound pushes is only 1 part of sound. The energy that's doing the pushing is another part. That is called the sound's *intensity* (in-TEN-sa-tee).

A megaphone helps sounds travel farther by aiming the pushes together. Without it, the pushes spread out, and we can't hear the sounds as well.

Dogs can hear sounds of much less intensity than humans. A sound that you or I can barely hear from 75 feet away can be heard by a dog if the sound is 750 feet away. Dogs hear a wider range of sound frequencies, and they heard sounds of much less energy.

P.S. from Jax: The flaps on a dog's ears are called leathers. They work like a megaphone in reverse. The dog can move them to collect and aim the sound vibrations into the insides of their ears.



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