

WE LEARN ABOUT THE TELEPHONE

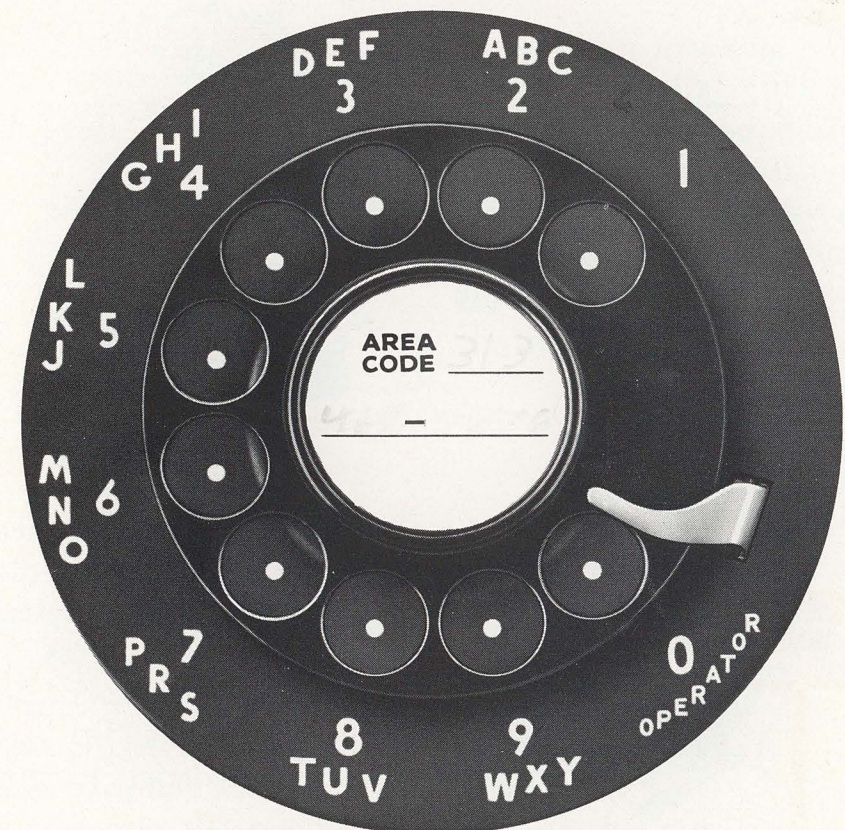


WE LEARN ABOUT THE TELEPHONE

A STORY OF COMMUNICATIONS

My Name Is Lucas Schuman

Our Telephone Number Is:



TELEZONIA

NOTE TO THE TEACHER AND PARENTS: This booklet is associated with "Telezonia," a communications and telephone program for the lower elementary grades which has been prepared with the guidance of elementary educators. The booklet's aim is to teach children how to use the telephone effectively, and something of the science, history and social significance of communications.

FIRST, LET'S SEE HOW



One way to send a message to your friend is to run and tell him. That's what everyone had to do in early times. After a big battle, a Greek soldier ran for two days to bring news of the victory.

Men also sent messages by beating drums. One man would beat his drum and his friend in the distance would hear it and beat his drum, and so on. Each man passed the message a little farther.



Riders on horses carried messages, too. In the old West, Pony Express riders used the fastest horses. It was dangerous work because of the bandits and Indians who tried to stop them.



MAN SENT MESSAGES (BEFORE THE TELEPHONE)

Indians sent messages by smoke signals. They would build a fire on top of a hill. By using a blanket, they could let out puffs of smoke. These puffs could be seen from far away.

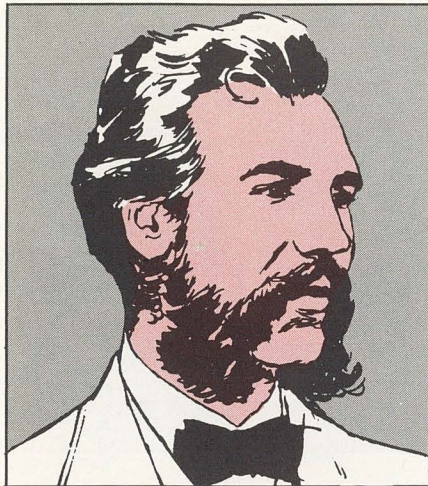


Some pigeons, called homing pigeons, always fly back to where they came from. This gave man the idea of using them to carry messages, which were tied to the bird's leg.

Ships used to send messages by flashing the sun's rays from a mirror. How times have changed. Now we have the telegraph, radio, television—and the telephone.



AND THEN CAME THE TELEPHONE



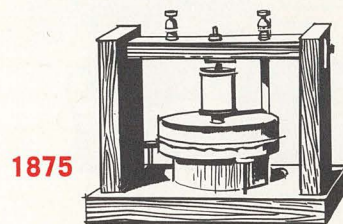
MR. BELL

EVEN when men could send code messages by telegraph, they still dreamed of sending the human voice over long distances. Alexander Graham Bell made that dream come true.

He was born in Scotland in 1847. When he was a young man he came to the United States. Here he met Thomas Watson, who became his friend and worked with him on ways to send the sound of the human voice over electric wires.

One night, Mr. Bell and Mr. Watson attached two strange looking devices to

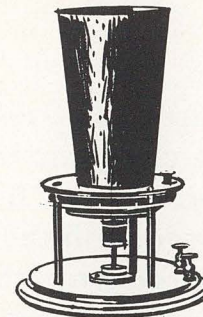
the ends of a long electric wire. They then strung the wire from Mr. Bell's workroom to his bedroom. The rooms were far enough away from each other so they couldn't hear each other's voices in the usual way. By accident, Mr. Bell spilled some dangerous acid on himself, and said almost without thinking, "Mr. Watson, come here, I want you!" A few moments later, Watson ran into the room and told Mr. Bell he had heard every word—very clearly.



1875

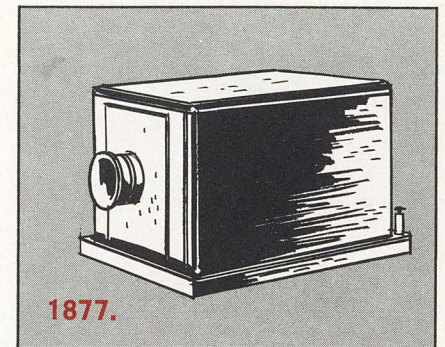
THE FIRST TELEPHONE

Soon after the telephone was invented, Mr. Bell said that one day all parts of the country would be connected by telephone. He was right. Today, in fact, you can telephone around the world.



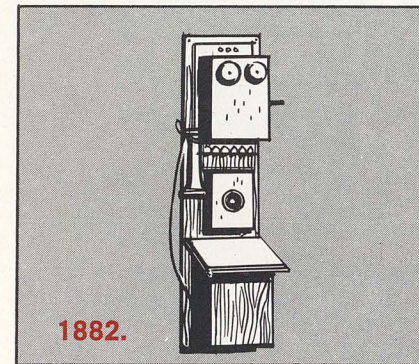
1876.

SECOND TELEPHONE. Mr. Bell used this one when he spoke the famous sentence, "Mr. Watson, come here; I want you!"



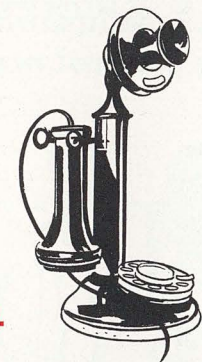
1877.

BOX TELEPHONE. The first one used by the public. The round opening in the front served both as transmitter and receiver.



1882.

WALL SET. You turned the crank, upper right, to get the operator.



1919.

EARLY DIAL TELEPHONE. Tall desk sets, some without dials, were long in use.



1964.

TOUCH-TONE TELEPHONE, with push buttons. It saves time and makes it easier to call.



1964.

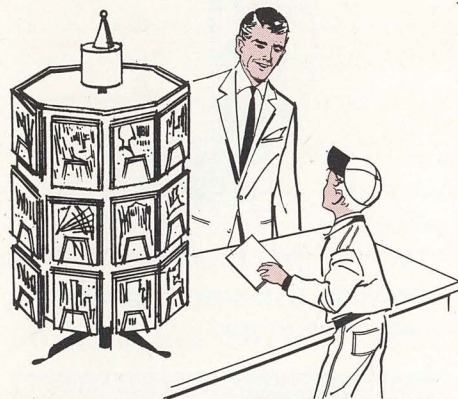
PICTUREPHONE, the newest one. It lets you see the person to whom you are talking.

HOW WE COMMUNICATE



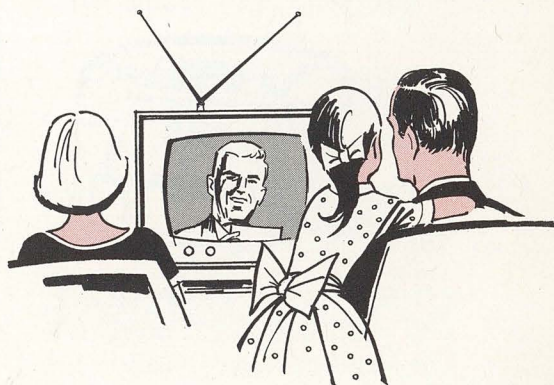
There are many different ways we can communicate with each other. But the oldest way is still the best—people talking together.

Everyone loves to get a letter. It's always exciting when the mailman comes, bringing personal news.



Reading books opens whole new worlds of fun and learning. And we get news of today's world from newspapers.

There's television and the radio, to bring you news and entertainment as it happens, and to tell you about new things.



The Telephone Brings Everybody Together



You can call home...



The repairman...



Storekeepers...



The fireman...



The policeman...

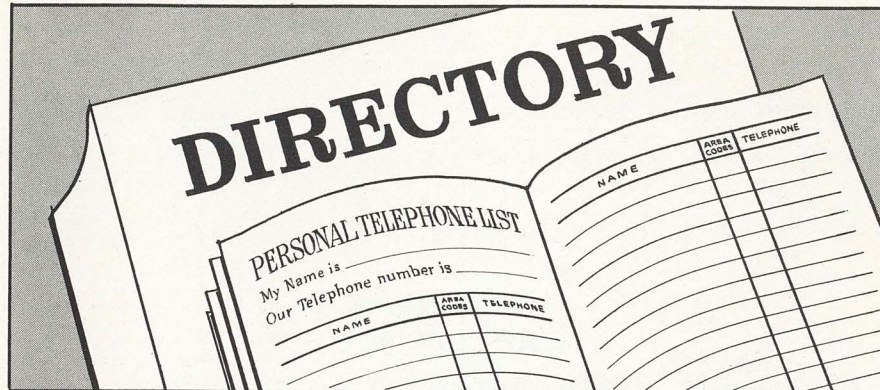


The doctor...

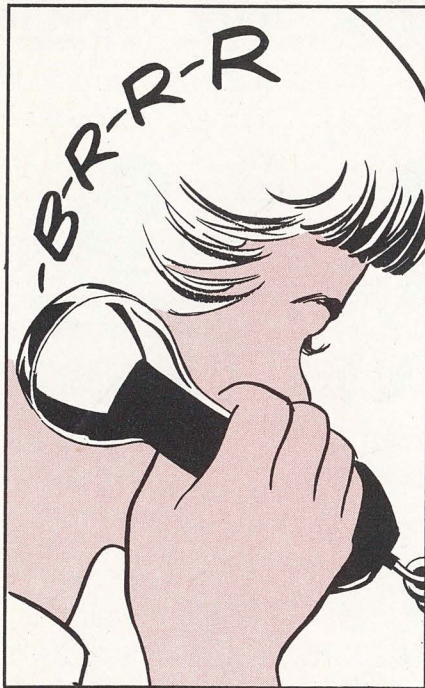
HOW WE USE

THE TELEPHONE

MAKING THE CALL



1. FIND THE CORRECT NUMBER. Look up the number if you're not sure. Write it down if you call it often.



2. LISTEN FOR DIAL TONE. Before you dial the number, listen until you hear a steady hum. This is the dial tone.



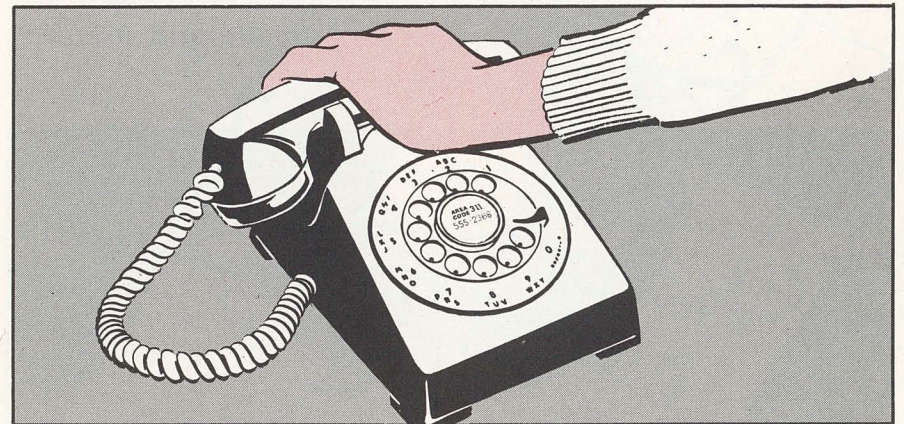
3. DIAL CORRECTLY. With your finger firmly in the hole, pull the dial around to the finger stop. Remove your finger and let the dial spin back. Do this until you have dialed the number. If you get a wrong number, say you're sorry, hang up. Check the number and dial again.



4. HOLD TELEPHONE CORRECTLY. Hold the transmitter in front of your mouth, about an inch away. Hold the receiver against your ear.



5. TELL WHO YOU ARE. When the telephone is answered, say right away who you are and to whom you want to talk. Speak clearly.



6. HANG UP GENTLY after both you and your friend have said "goodbye."

RECEIVING THE CALL



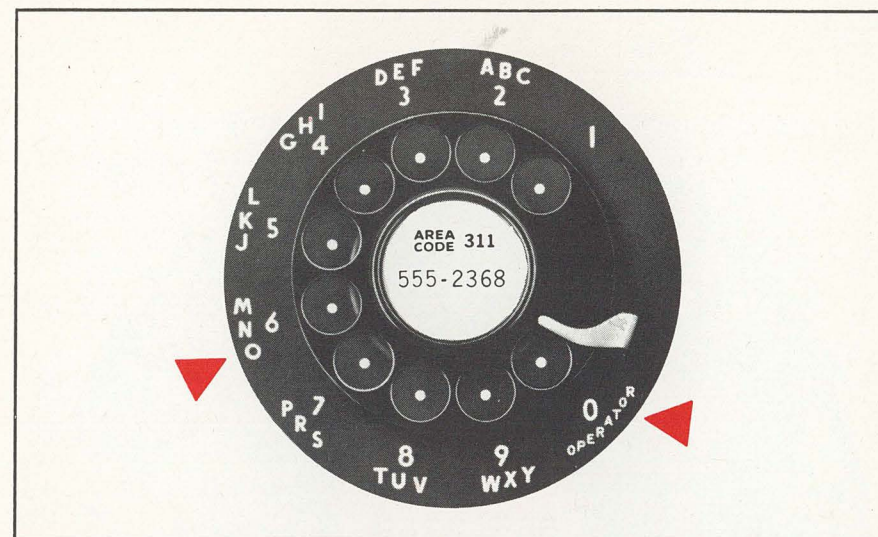
1. ANSWER PROMPTLY. When the telephone rings, answer it by saying, "Hello."

2. SPEAK COURTEOUSLY and listen carefully.

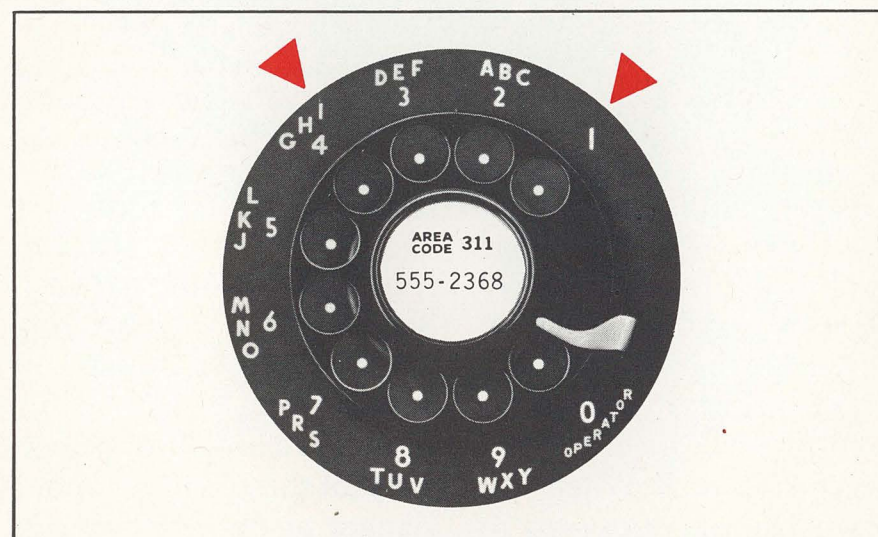
3. IF THERE'S A MESSAGE, write down the caller's name and number.



TWO THINGS TO WATCH WHEN WE DIAL

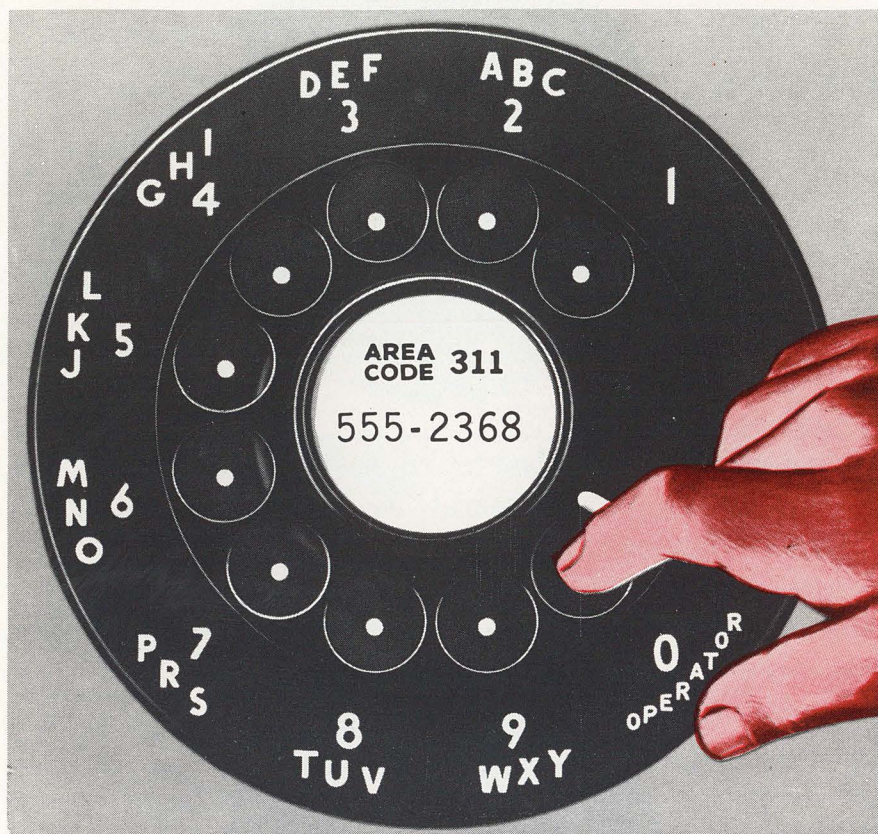


Watch your "O" The letter "O" is with "MNO". The numeral "0" (Zero) is right after "9".



Watch your "I" Be careful about those other two look-alikes, letter "I" and numeral "1".

HOW WE GET HELP IN AN EMERGENCY



Dial "0" (operator) if you need the police, hospital, or fire department, and don't know the number.

The pictures on these two pages show how. When you reach the operator, try to answer any questions she may ask. She will connect

you to the people who can send help, and she will stay on the telephone when you talk to them.

If there's a fire, the most important thing is to get out of danger at once. Then call the operator or the firemen from a nearby telephone.



listen for dial tone



dial "0" (operator)
bring finger all the way around to the finger stop



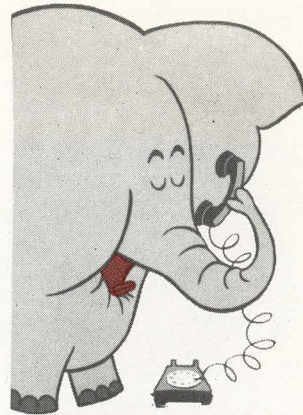
release finger and let dial return by itself



tell operator who you are,
where you are and
why you need help

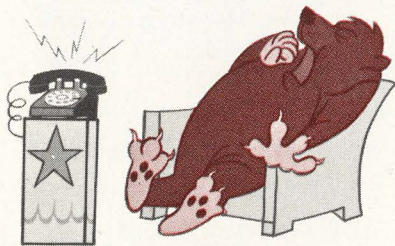
TELEPHONE MANNERS

If you talk with something in your mouth, you won't make much more sense than an elephant with his mouth full of peanuts. Always speak clearly.



Look who is monkeying around with the telephone. No boy or girl would do that. You know you might put it out of order. Then you couldn't call anyone.

Don't hog the phone. Somebody else might need to use it. Also, somebody might be trying to call you.



Don't be slow to answer, like this sleepy bear. Whoever is calling will think you are not home. If you're calling someone, let the telephone ring 8 or 10 times, to give him time to answer.

MANNERS

The lion may be the king of the beasts, but he wouldn't be much good on the telephone. You don't roar into the transmitter. You just speak with your normal voice.



Good manners are good habits to have. They make life a lot nicer. It's especially important to have good telephone manners because people can't see you. They only hear your voice. (Unless you're using a Picturephone.)



HOW TO USE THE TELEPHONE BOOK



AAAAAAAAAAAA
BBBBBBBBBBBB
CCCCCCCCCCCC
DDDDDDDDDDDD
EEEEEEEEEEEE
FFFFFFFFFFFF

Let's think of the letters in the alphabet as soldiers, marching to form names for the telephone book.

First we make them line up for a name just the way we say it. For example, "Robert Martin".

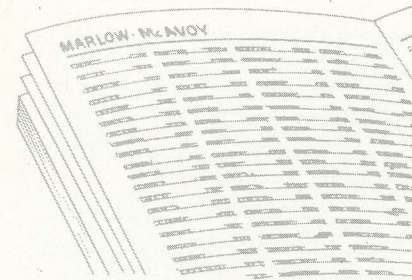
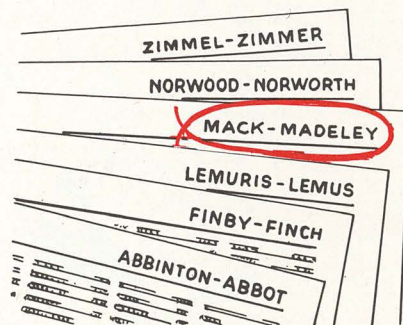
Robert Martin



Martin, Robert



When you want to find Robert Martin in the telephone book, first turn the pages to the "M's".



Then look on the upper corner of each page for "Martin" or another name with the first few letters the same. Go down the list until you find "Martin".

If there's more than one "Martin", you'll find "Robert" in the correct alphabetical order among them.

MARTIN, PAUL R
MARTIN, RAYMOND
MARTIN, ROBERT
MARTIN, ROGER



MARLOW - McAVOY

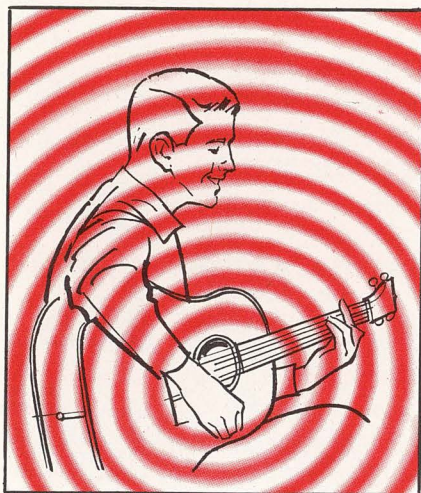
Marlow A C 1416 S Hardy	555-2334
Marmoy Saml Jr 1111 Allen Rd	555-2324
Marolf Roy J 1314 W Walnut	555-4836
Marota Angelo 3116 Blue Ridge Blvd	555-4049
Marowell Earl H 3807 Greenwich Ln	555-6809
Marqua Arline Mrs 616 N Union	555-7421
Marqua M T 3315 S Willis	555-6550
Marquard Leon P 129 Montrose	555-0440
Marquis Albert S 48 La Grange	555-7845
Marr Humbert A 809 Belmont Av	KL 5-6426
Marr Joseph P 2161 Laurel Dr	555-2961
Marron Bertrand 621 Devoe Blvd	555-3871
Marsh Richard 195 Lasalle	555-2662
Marshall Charles M 421 Barry	555-1962
Marshall Ruth R 1496 Argyle	555-4456
Martel Vincent 721 Belmont Av	555-3965
Martin Paul R 98 Empire Blvd	555-4191
Martin Raymond 311 Belvedere	555-8724
Martin Robert 22 Montrose	555-2368
Martin Roger 155 Claremont	555-7904
Martine Claude R 75 Barry	555-6759
Martine Rose R 411 Belmont Av	555-0920
Martinez Manuel 809 Laval	555-5819
Martino Joseph P 217 Argyle	555-9643
Marton David S 981 Laurel Dr	KL 5-4298
Marty Catherine 246 Verdun	555-6556
Marty Max R 1221 Boyer	555-8227
Marvin Thomas 310 Rosemont	KL 5-2843
Marx Louis P 146 Montrose	KL 5-3994
Marx Joseph 217 Laurel Dr	555-1432
	555-5691
	555-2289

Matranga Marco 16304 Indep Av	555-6911
Matschke Wm H 10512 E 28 Ter	555-6339
Matson C A 1901 N Kiger Rd	555-0289
Matson C L 12407 E 33 St Terr	KL 5-0763
Matson Thos M 2509 Norwood	555-4787
Matson Walter 906 S Northern Blvd	555-4731
Matson Wm Chester 107 S Huttig	555-3476
Matteson R W 10516 E 27	555-1153
Matteson Viola Mrs 902 W Maple	555-1523
Matteson John A 1830 S Arlingtn	555-6533
Matteson Mary RN 1830 S Arlingtn	555-1383
Matteson Robt H 1802 Harvard	555-0944
Mattews Edw D 2347 S Blue Ridge	555-6590
Mattews Geo W 2132 S Norwood	555-1640
Mattews John 518 S Osage	555-2293
Mattews Mary Olah 2132 S Spring	555-9883
Mattews Nolan E 1406 S Spring	555-7207
Mattews Vernon 1512 N Main	555-3966
Mattings J Harold 1609 S Claremont	555-6633
Mattings Hazel 2720 Glendale	555-0087
Mattings M G 2720 Glendale	555-3271
Mattison Wesley I 15300 E 43 Ter	555-280
Mattison Julia B 1501 S Pleasant	555-694
Mattison Marjory E 1419 N Liberty	555-251
Mattison Elsie L 1918 1/2 S Vermont	555-609
Mattson Geo 121 N Evanston	555-733
Mayhew Ida 1526 E Salisbry Rd	KL 5-611
Mayhew Lawrence 16205 E Salisbry Rd	555-791
Mayhew Thos G 2802 McComas Ln	555-06
Mayhugh Marilyn D 1104 Redwood Dr	555-17
Mayhugh O LeRoy 3504 S Osage	555-03
Mayhugh O LeRoy 11318 Park Av	555-68
	KL 5-74
	555-36

WHAT MR. BELL KNEW ABOUT SOUND WAVES

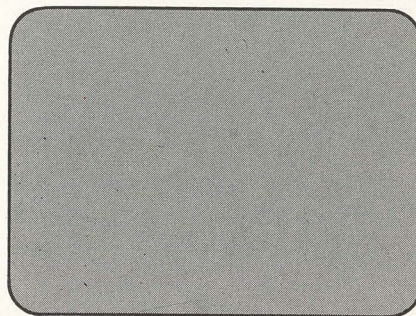
(AND VIBRATIONS)

You can't see sound waves any more than you can see a picture in this space. That is because sound waves affect your ears—not your eyes!



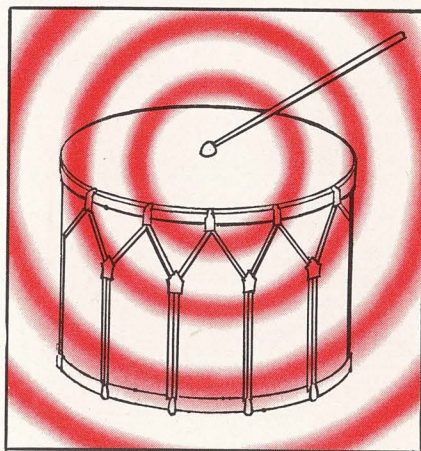
Sound happens only when there is a rapid shaking or back-and-forth motion which we call vibrations.

When you pluck a guitar string, it vibrates and makes waves in the air. The strings that vibrate faster than



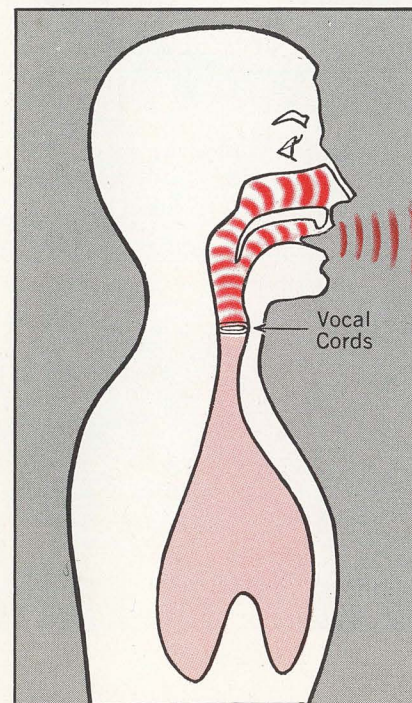
others make a higher sound. Strings that produce lower sounds vibrate slower.

Beat a drum and the drum-head vibrates. Inside each of your ears is a tiny drum that vibrates, too. It is a thin sheet of tightly stretched, rubbery flesh called the



“eardrum”. Sound waves make the eardrum vibrate. Mr. Bell marveled over the way this tiny, little drum in your head could send the pattern of sounds and words through the bones and nerves to your brain.

Mr. Bell knew that we all have two vocal cords—little flaps of flesh—in our throats.



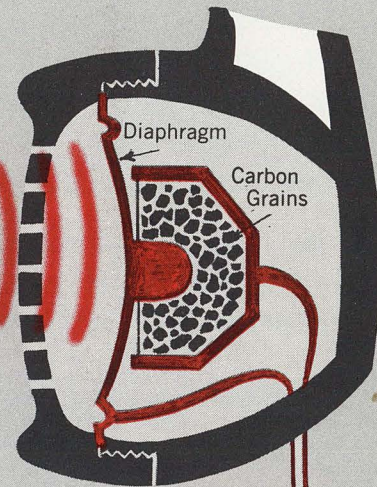
If you place your fingers on or near your Adam's Apple and say “A-a-h!” you can feel the vibration of these cords. That is because you're forcing air between them, upward from your lungs. The vibrating cords make a sort of “buzz”. You shape these sound waves with your lips and tongue to form words.

Mr. Bell realized that even if a man yelled with the voice of a giant, his words would die away over a short distance. He thought it might be possible to send words over a wire by means of an electric current. The trick would be, Mr. Bell figured, to take the sound waves, change them into electrical waves, send them over a wire, then change the electrical waves back into sound waves so we can hear them. On the next pages you will see how this works.

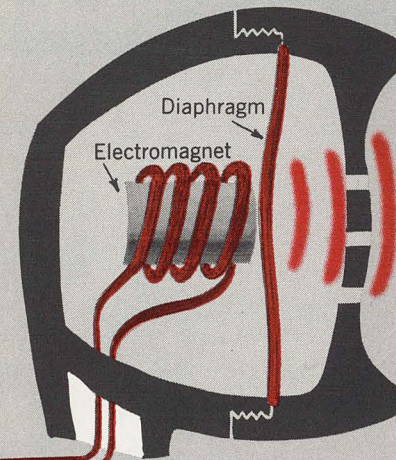
THIS IS HOW THE TELEPHONE WORKS

Electricity helps to make the telephone work. 1) The sound waves of your voice go into the transmitter. 2) They are changed into matching electri-

cal waves. 3) They are then carried over wires to the receiver at the other end. 4) The receiver changes the electrical waves to the sound waves you hear.



TRANSMITTER



RECEIVER

TELEPHONE BUILDING

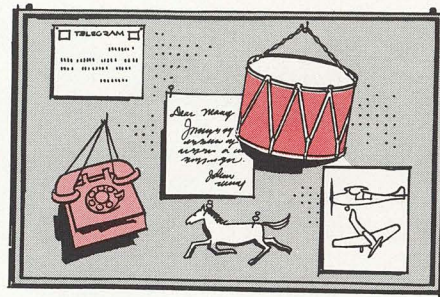


Your spoken message goes to the telephone building. There it

is strengthened and sent to the listener's telephone.

THINGS TO DO

Make your own museum of communications. Include such things as a letter, drum, mirror, toy telephone, telegram, book, pictures of planes, and other ways of carrying messages.



Write a short play or story about using the telephone in an emergency. Describe how you dial "zero" to get the operator.

Make two tin can telephones by punching a hole in the bottom of two cans. Put a long, heavy cord through both holes. Knot both ends so the cord connects the cans but doesn't pull through the holes.



Pulling the string tight, talk into one can while a friend listens with the other. Though this is not the way a real telephone works, it shows how sound can travel through a solid material, the string.



When talking with a friend on the telephone, show him how hard it is to hear if the transmitter is not right in front of your mouth. Do this by counting "1,2,3,4" again and again while slowly lowering the transmitter down toward your chin. Then let him show you. See how hard it is to hear?



PERSONAL TELEPHONE LIST

My Name Is

Our Telephone Number Is AREA CODE.....

AREA CODE

—

[illegible][illegible]





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