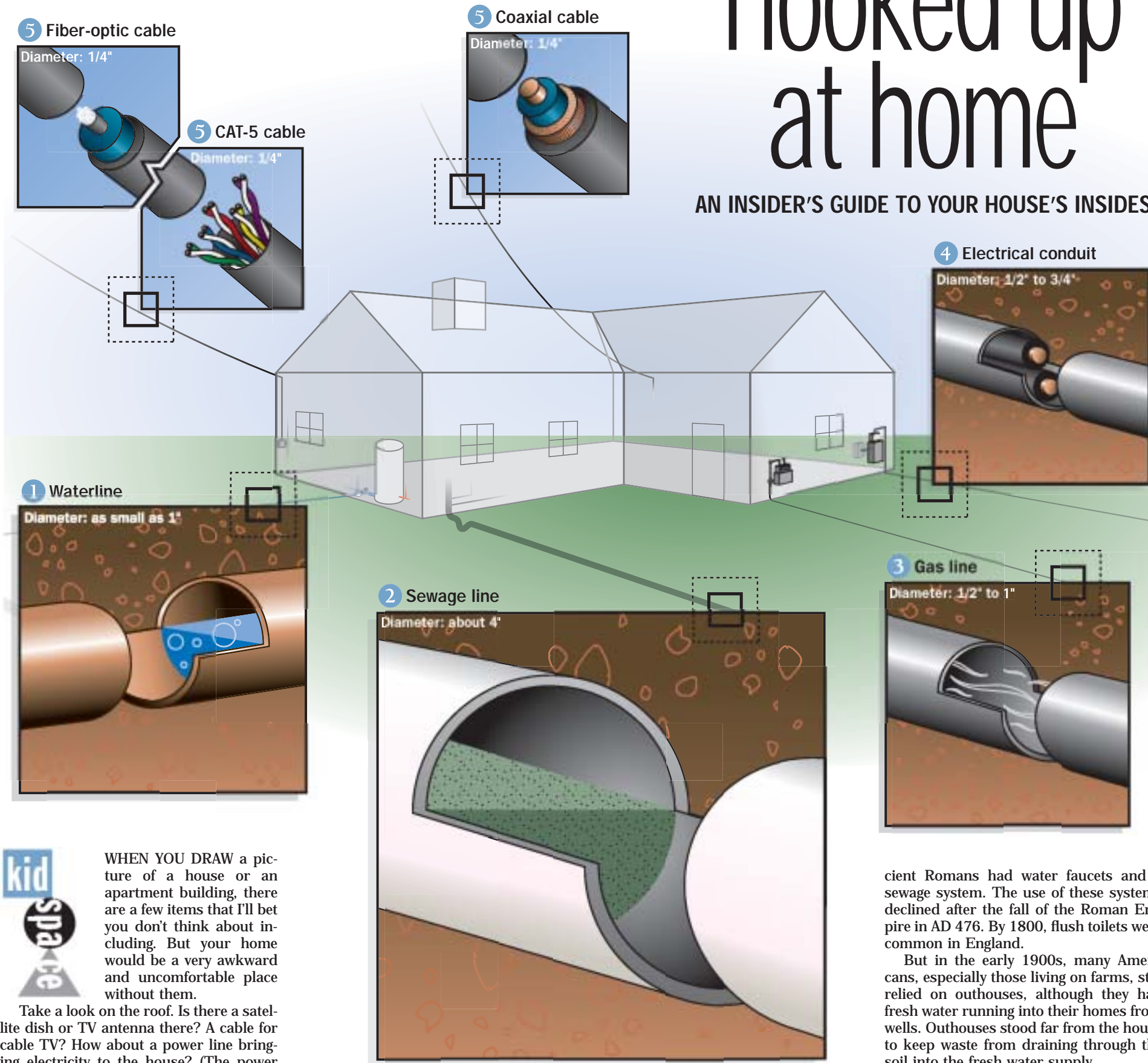


The Home Forum®

Hooked up at home

AN INSIDER'S GUIDE TO YOUR HOUSE'S INSIDES



WHEN YOU DRAW a picture of a house or an apartment building, there are a few items that I'll bet you don't think about including. But your home would be a very awkward and uncomfortable place without them.

Take a look on the roof. Is there a satellite dish or TV antenna there? A cable for cable TV? How about a power line bringing electricity to the house? (The power line and cable TV probably connect to the side of the house somewhere.) There are also pipes underground bringing in natural gas and water. Another pipe carries away sewage.

Here are a few of the most important ways in which your home is connected:

1 & 2 Water flows in and out

Large underground pipes carry water from reservoirs or storage tanks into cities and neighborhoods. (A new underground tunnel being built to increase New York City's supply of fresh water is 20 feet in diameter - and 400 feet deep.) Big pipes branch into smaller pipes to bring water into each building. A shut-off valve in the house can stop the water supply from the

street. A water meter measures water use in cubic feet. (A cubic foot of water is about 7-1/2 gallons.) Pipes inside the house carry water to kitchens, bathrooms, and laundry rooms.

Copper pipes are common, but the newest interior pipes are made of plastic and colored red for hot water and blue for cold. Drains in sinks, showers, washing machines, and toilets are attached to large plastic pipes about four inches in diameter. These pipes carry wastewater out of the house and into sewers or septic tanks.

The main line carrying cold water to the house can be as small as one inch in diameter. Its first stop may be a water softener, where the mineral content of the

water is reduced to make it taste better or work better with soaps and detergents. One branch of the main waterline supplies the water heater. If steam or water is used to heat the home, the furnace or boiler must be supplied with water. The heated water or steam is sent through the house by other pipes.

Some new homes now have a type of "circuit breaker" box for the plumbing. At this box, water for each part of the house can be shut off without shutting off water to the whole house.

The first plumbing was used in what is now Pakistan and western India in about 2500 BC. It carried human wastes away from dwellings through drains. The an-

cient Romans had water faucets and a sewage system. The use of these systems declined after the fall of the Roman Empire in AD 476. By 1800, flush toilets were common in England.

But in the early 1900s, many Americans, especially those living on farms, still relied on outhouses, although they had fresh water running into their homes from wells. Outhouses stood far from the house to keep waste from draining through the soil into the fresh water supply.

3 Fuel can be piped in, too

Natural gas is found in deposits under the earth. It is carried thousands of miles through underground pipes to buildings around the country. The gas line first goes to a shut-off valve and a gas meter outside your house. (Gas usage is measured in units called "therms." One therm is produced by about 100 cubic feet of natural gas.) Inside the house, pipes carry gas to the stove, clothes dryer, furnace, or water heater.

The ancient Chinese burned natural gas to evaporate seawater to get salt. About 200 years ago, people in Italy burned natural gas to light the streets.

The Chinese used bamboo for gas pipes. Early Americans used hollow logs.

ADAM WEISKIND - STAFF

Now gas pipes are made of steel or plastic. Natural gas can ignite or explode if it leaks into the air. Since it has no smell of its own, a smell is added to the gas before it is sent out to houses, so that you can smell if there is gas in the air.

4 **Electricity gives your home zip**
Electricity for your home is created far away at a power plant, and then conducted through wires to towns and cities. It comes to your house or apartment through a wire that may come down from a power pole or come up from the ground through a pipe called a conduit. Before the power goes into the house, it also runs through a meter. (See story below.)

Then the wire runs into a box with circuit breakers or fuses. From this spot you can flip circuit breakers (switches) to cut off the power to different areas of the house. The breakers are a safety feature. They cut off the power automatically if there is an overload. The electricity to operate lights and power outlets then runs through wires in the walls.

Thomas Edison built the first electric power plant in New York City in 1882. It supplied power to 800 of his newly invented light bulbs. It used steam to generate power. Later that year, a hydroelectric plant began operating in Appleton, Wis. It used moving water to generate electric power. Large dams were eventually built to block rivers and use the water flow to

For more information

THESE BOOKS will help you learn more about how buildings are made and what runs them:

Look Inside a House (A Poke & Look Learning Book), by Denice Patrick (Grosset & Dunlap, 1988).
For ages 4-8.

What's Inside Buildings? by Steve Parker (Peter Bedrick Books, 1995).
For ages 9-12.

make electricity. Today, natural gas, nuclear energy, wind, and sunlight are among the resources used to generate electricity.

5 **Watching, listening, talking**
Phone lines are common in most homes. A single line going into the house is divided and connected to phone jacks in different rooms. Newer homes now carry cables such as CAT5 (Category 5) for phone and computer connections. Digital cable can be used for computers as well as cable and satellite TV.

Depending on your type of modem, your computer may use a telephone line (analog) or a digital cable. Where an older home might have a phone jack, a new home might have a row of ports for phone, computer, and TV connections.

Sharon J. Huntington

■ To view recent Kidspace features, go to: www.csmonitor.com/kidspace

Watch your energy use

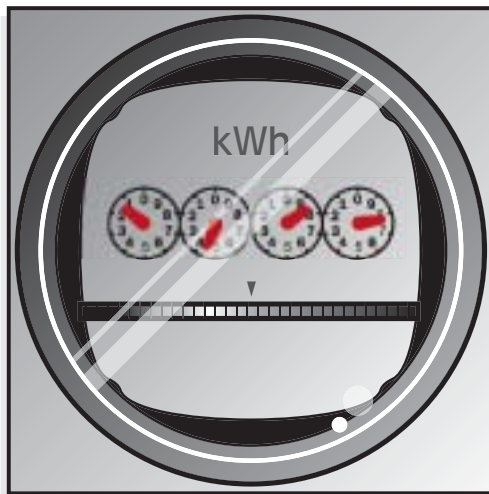
BEFORE electricity enters your home, it goes through a device that measures how much power you are using. The dials on an electricity meter show how many kilowatt hours of electricity have been used. (A kilowatt hour is the amount of electricity it takes to light 10 100-watt light bulbs for one hour.)

Below the small dials is a larger dial lying flat that spins around. (See image at right.) The speed at which it turns depends on how much power is being used. Find the electricity meter in your house, and see how fast it's moving. Now turn off all unnecessary power in your house. (Check with grownups first.) Go back to the meter and see how much more slowly the large dial is turning. Turn on a few lights and watch it speed up. Finally, turn on the TV and check the dial. It will be turning a lot faster - TVs use a lot of power. What about a home computer?

You can measure how much electricity you have used by reading the small dials. Your meter has four or five dials. From right to left, the dials measure kilowatt hours, tens of kilowatt hours, hundreds, thousands, and ten thousands of kilowatt hours.

Every time the "kilowatt hours" dial goes around once, the "tens" dial will go up one number, and so on.

Look at the drawing of the electricity meter here. Can you "read" the number of kilowatt hours it shows? (Note: If the pointer on a dial is be-



tween two numbers, use the lower number as your reading.) The correct answer is 1,487 kilowatt hours.

Now, to see how much power your home is using, try this: Write down the numbers shown on your electricity meter at a specific time of day. Take a new reading at the same time the next day. Subtract the old number from the new number. How many kilowatt hours did you use in a day?

Take another reading a week later and you'll know how much electricity you used that week. Now see if you can find ways to use less power for a day or a week. Take another meter reading. Did your energy-saving steps make a difference?

S.J.H.

TODAY'S ARTICLE ON CHRISTIAN SCIENCE

Bringing a spiritual perspective to daily life

Fearless giving

LEMON FRAGRANCE FILLED my kitchen as I gently shook the hot pan, releasing a half-dozen miniature bundt cakes. Quickly, while they were still hot, I glazed them with lemon juice and sugar so that when they cooled they would be slightly crunchy and tart.

Playing with my new computer program, I made certificates announcing my annual You Take the Cake awards. Each recipient was thanked for his or her patience, good humor, or great service rendered during the year.

I picked the people who least expected it. The copy-shop lady who never sighed or rolled her eyes as she helped me sort, collate, laminate my many projects. The postal clerk who always waited on me and bore with patience and good humor the long lines of fidgety people at holiday and tax seasons. You get the picture. I wanted each one to know I noticed, appreciated, and felt they deserved to take the cake. Thus the award. With as little ceremony as I could, I left the awards and cakes about my community.

How we behold one another can go further than cakes and kind gestures. Every day provides

opportunities to encourage and nurture one another as we go about our busy days. Songwriter Christine described it as not letting "the moment slip away." Sometimes that moment is lost when we could have said or done something kind because we were waiting for the right moment. Or we doubt our ability to be God-inspired in expressing love and are concerned about how it will be received. If you get entangled with these concerns, you may never venture forth to become a spontaneous giver, generous in acknowledging your love of others.

The Bible is full of examples of people caring for the needs of others. We have a great example in the story of Christ Jesus and the loaves and the fishes. A crowd of people had been following him, learning from his teaching. At some point it became obvious that they needed to eat something but they were far from any marketplace where they could obtain it.

But Christ Jesus was not limited in his thinking as to how to feed these people. His disciples were worried; all they had were five loaves of bread and

two fishes. Christ Jesus asked that they all sit down, and then he blessed that food and instructed his disciples to distribute it. "And they did all eat, and were filled: and they took up of the fragments that remained twelve baskets full. And they that had eaten were about five thousand men, beside women and children" (Matt. 14:14-21). An abundance of love supplied the need abundantly.

Two things about that story stand out to me. The first is the motive of Jesus. The Bible tells us he was "moved with compassion toward them [the crowd]." That nurturing love met every need. His ministry was practical as well as inspirational. The second is the obedience of the disciples, which enabled them to trust that there would be enough food to go around.

The disciples didn't have time to worry about the reaction to the meal (you don't hear of anyone saying the loaves weren't up to par or the fishes

fresh enough). They weren't asked to prepare the food, just to distribute it.

We are also asked to trust that our offerings are always enough, just right, nourishing others.

I try to distribute Love's abundance without feeling self-conscious or fearful about the consequences.

We may feel moved to give a tangible symbol of love - food or an inspirational book or magazine. Or perhaps we'll give a kind word, noticing something about another. We may be asked to pray for someone who is struggling with sorrow, sickness, or pain.

The woman who founded this newspaper, Mary Baker Eddy, wrote, "Millions of unprejudiced minds - simple seekers for Truth, weary wanderers, athirst in the desert - are waiting and watching for rest and drink. Give them a cup of cold water in Christ's name, and never fear the consequences" ("Science and Health with Key to the Scriptures," pg. 570).

This admonishing has helped me release concern about my loving gestures or prayers being appreciated or appropriate. I just love, trying to be like the disciples and to distribute Love's abundance that I have in my heart, without feeling self-conscious or fearful about the consequences.

We give and take each day as we experience the same hillside meal of Christly love.

Finding certainty in uncertain times

Pick up a copy of *Science and Health* at a bookstore or Christian Science Reading Room near you, visit www.spirituality.com, or call 1-800-933-9179.

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