

HOT and **COLD** **in the Kitchen**

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Keeping Food **COLD**

Food is made of matter. Matter is anything that takes up space. Carrots and chairs are matter. So are water and air. Matter exists in different states. Some matter is solid, like a chair. Other matter is liquid, like water. Still other matter is gas, like air.

Matter can also be cold or hot. Scientists measure hot and cold matter by its temperature.

Scientists measure temperature by using a thermometer. This thermometer shows that the temperature is cold. ►

Everything in this photo is made of matter.

Changing Matter

Temperature can change matter. For example, cold temperatures can turn a liquid into a solid. This process is called freezing. Hot temperatures can turn a solid into a liquid. This process is called melting. Hot temperatures can also turn a liquid into a gas. This process is called evaporation.

Cold in the Kitchen

Temperature is important in the kitchen. Many kitchen appliances help make food hot or cold. The refrigerator is a kitchen appliance that makes—and keeps—food cold.

Keeping food cold is important for two reasons. First, it keeps food safe. If food gets too warm, bad germs can grow and spoil the food. Spoiled food is unsafe to eat. It can make people sick.

▼ Refrigerators help keep bad germs away from food.


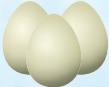





Second, cold temperatures keep food fresher for a longer period of time. Fresh food tastes better. For instance, lettuce will wilt in hot temperatures. In the fridge, it stays crisp for days.

Freezers are useful, too. Because they are so cold, they can keep food safe for even longer than fridges can.

How Long Does Food Last?

Even in the fridge or freezer, food doesn't stay fresh and safe forever. The government gives advice about how long foods can be kept before they spoil, or go bad. Here is what the government advises about some popular foods.

FOOD	IN THE REFRIGERATOR	IN THE FREEZER
 Chicken	1–2 days	1 year
 Eggs	3–5 weeks	Don't freeze
 Milk	1 week	3 months
 Carrots	2 weeks	10–12 months
 Frozen Dinners	Keep in the freezer	3–4 months



▲ Ice was delivered to people's homes for their iceboxes.

Early Ways to Keep Food Cold

The earliest people stored food in caves. The cool air inside the cave helped food stay fresh. Then, thousands of years ago in China, people began cooling their food with blocks of ice. But the ice melted when the weather got hot.



In early America, people built snow cellars. Snow cellars were deep basements lined with wood and straw. People placed ice inside the snow cellars. The wood and straw acted as

▲ Iceboxes had separate places for ice and food.

insulation. They kept heat from coming in and melting the ice. The cellar stayed cool. Food was stored there.

Later, iceboxes became popular. An icebox looked like a cabinet. Instead of being lined with wood and straw, the box used metal for insulation. A large block of ice kept the inside of the icebox cool. An iceman delivered the ice to people's homes.

The Ice King

A man named Frederic Tudor, from Massachusetts, found a way to bring ice to warmer parts of the world. His company took ice from frozen lakes and ponds. The ice was cut into very large blocks. That way, it would melt very slowly. Then the ice was sent to faraway locations by boat and train.



▼ Even people in India received ice from Frederic Tudor. The ice traveled thousands of miles from Massachusetts all the way to India.

