



1. Two piece can making
2. Ends for cans
3. Three piece can making

CANS IN THE CLASSROOM

THE LIFECYCLE OF A CAN

1. RAW MATERIALS

1. Iron ore, limestone and coke
2. Blast furnace
3. Hot air
4. Slag
5. Molten iron

2. IRONMAKING

3. STEELMAKING

4. STEEL SLABS INTO COIL

5. CAN MAKING

6. FILLING CANS

7. PRESSURE COOKING

8. TRANSPORT TO SHOPS

9. USING CANS AT HOME

10. RECYCLING

1. RAW MATERIALS

Steel is made from the earth's most common natural resources, iron ore, limestone and coal. Another important ingredient is scrap steel recycled from such things as cars, refrigerators and cans.

2. IRONMAKING

Blended coal is heated in coke ovens to produce coke. The coke, iron ore and limestone are tipped into the blast furnace. Hot air is blasted through the furnace to increase the temperature and to convert the ingredients into molten iron. A hole is made in the bottom of the furnace and the molten iron is poured into ladles which are then taken to the steel furnace.

3. STEELMAKING

At the steelmaking plant the Basic Oxygen Steelmaking (BOS) vessel is tilted to allow scrap (recycled steel) and liquid iron from the blast furnace to be tipped into it. Oxygen at high temperature is then blown through the vessel. The oxygen combines with the carbon and other unwanted elements and separates them from the metal, leaving steel.

4. STEEL SLABS INTO COIL

Molten steel is tapped from the furnace and converted into slabs of solid steel. The slabs are passed through a series of rollers which squeeze the steel to make it thinner and longer. The long strip of steel is rolled into a 10 tonne coil and allowed to cool.

The coils are then finely coated with either tin or chromium oxide (for tin free steel) to protect from rusting, before delivery to the can making factory.

5. CAN MAKING

There are two ways to produce cans. The latest and more modern way to make food cans is two piece can making. Here the 10 tonne coils are fed through a machine to form small metal cups which are stretched into taller cans all in one piece. This is called the "draw and wall iron" (DWI) process.

The sheets are then cut into smaller rectangular pieces (or blanks) which are formed into cylinders and electronically welded together. Lids are fixed to the

bottom of the can and cans above a certain height are "beaded" in the centre with rings to strengthen them for filling, cooking and transportation.

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All cans are tested to make sure they will not leak and are then layered onto pallets ready to deliver to the food filling factory that fills and closes the cans with the other lid.

6. FILLING CANS

All types of food arriving at the canning factory are cleaned and prepared ready for the canning process.

Seasonal produce like fruit and vegetables are harvested at their peak condition, then peeled, trimmed, cored or sliced, as necessary. The produce is then quickly packed into the empty cans moving along a conveyor belt - this ensures no nutrients are lost.

The appropriate liquid (brine, syrup, fruit juice or sauce) depending on the product, is poured in to fill the can, the

lid is closed to make the can airtight and the filled can proceeds to the most important stage - the cooking process.

7. PRESSURE COOKING

The sealed cans are stacked and heated in large pressure cookers called retorts and cooked for carefully selected temperatures and times depending on the product. Cooking the food in the can makes the food safe and gives it a long shelf life to ensure the food remains "fresh" until the can is opened.

8. TRANSPORT TO SHOPS

After the cans cool down they are labelled and loaded into trays or boxes for delivery to shops and stores for sale.

9. USING CANS AT HOME

Canned foods may be eaten alongside fresh, frozen and chilled as part of a balanced nutritional healthy diet. Some cans even contribute to your 5-a-day. They can be stored in the cupboard and used for snacks or to help cook quick, easy and versatile meals - and cans are easy to recycle. What could be more CAN-venient?

10. RECYCLING

Food cans are made from steel or aluminium produced with 50% recycled material. They are also 100% and infinitely recyclable.

To recycle cans at home, it is helpful to rinse them first before being collected or taking them to the local can recycling bank.

All steel containers are magnetic and therefore easily separated from the other recyclables when they go to the recycling centre for sorting. All the different types of steel packaging are then crushed and baled, and transported to the steel plant.

In the steel plant, the bales are put into the furnace with other recyclable steel and the whole process starts over again. So your food cans could end up as a car, bike, fridge, bridge, paper clip or - another food can.

