



## School Sheet 4

### How Salt is made.

**Main subjects covered:** Science, History

**Note:**

*The Open Pan Process folder contains a photographic record of the process so children can see how salt was made on an industrial level.*

**Resources include:** Photographs, Booklet.

**You will need:** Rock Salt (Can obtain some from Middlewich Vision or Salt Museum), test tubes, small glass jar, filter paper, spatula, pipette, metal plate or tray, camping stove or similar / oven if you prefer, protective gloves.

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### Where does Salt come from?

What do we use salt for? Ask the children what products they think salt is used in and explore how the uses changed over the years? Answers may have to be prompted, children will be surprised at the various ways it can be used. Here are some examples: Chemical industry (esp. chlorine), soap, bacon, ham curing, butter, cheese, confectionery, leather goods, pottery, dyes, water softening plants, agricultural and vegetable preserving, ice cream makers, removing snow; it preserves foodstuffs but kills plant life.

In the booklet you will find geology information about how salt is formed. A slide is in the open pan folder.

### **Changing state - evaporation**

- Start with small amounts of Rock Salt
- Place at the bottom of a test tube, fill the tube just over half-way with water, place your thumb firmly over the top and shake.
- Explain that you are adding water to the rock layer and flushing out the salt to make brine, in the same way as the old traditions. A brine pump would then bring the salt to the surface for the next stage.
- Let everyone have a shake, the rock salt should dissolve, they can taste the brine on their thumbs when they've finished.
- Now we have to purify / filter it, to separate the other elements from the salt.
- For this experiment we need to have another jar with a small funnel and filter paper. Pour the contents of the test tube in. After it has drained through, show the class the separated particles on the filter paper and the clean brine in the jar. Various mixtures in industry were used to separate the salt including eggs, cattle blood, ash and lime.
- On a hot plate, place a metal container or tray, keep the children at a safe distance. If you have an accessible oven in school you can use that. The idea is that the children understand that by heating up the brine, the process of evaporation takes place, making salt. The faster you heat it the bigger the crystals form, so you might want to do the heating twice or present some finer salt crystals you did earlier to compare.



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### Food preserving experiment

To illustrate that over time food can go rotten; preserving allows us to keep food for a lot longer.

Choose a food item that would need preserving – Highlight the fact that they have marvellous inventions in their house such as freezers and refrigerators – what do they know about them? They only started appearing in households from 1915, but became popular between: 1930-1970.

Before that households had to find a way to preserve their food.

One of the many methods was to use brine (or salting meat) as a preservative.

Put a food item in each jar, pour brine in one and tap water in the other, put the lid on tightly and monitor.

Can they see how the brine works? They can record their results as a graph or chart; the experiment can be extended by using other preservatives such as vinegar or oil.