

A dark, industrial workshop with a brick wall, various tools, and a furnace. The scene is dimly lit, highlighting the textures of the brick and the metallic surfaces of the tools. A large brick structure, likely a furnace, dominates the right side of the frame. On top of it, several long-handled tools and a long rod are scattered. To the left, a complex arrangement of metal parts, including what looks like a large vise or a part of a machine, is visible. The overall atmosphere is one of a well-used, historical craft space.

NORTHFIELD
Revealed

Nail-Making Maths

KS2

In 1831 there were 122 men recorded as nail-makers in the village of Northfield. In many cases all family members were employed in the nail-making trade including very young children.

Nail-making Facts

Nail-makers' workshops were small, no more than 10-12ft² or about 3.5 m².

An 8 year old child could make 4 nails every minute or about 240 an hour - all by hand.

A standard unit of nails was called a 'tale'. 1 'tale' = 1,000 nails. In 1860 a 'tale' of 3 inch nails cost 4s 10d to buy.

Workers in Northfield had to walk 8 miles to Halesowen to collect 60lbs weight of iron nail rods to make the nails.

12lbs of iron rods made 10lbs of nails. The remaining 2 lbs was waste material.

They worked sometimes for 14 hours a day and were paid 12 shillings a week.



Many of the measurements in the facts are old, Imperial measurements. Today we mostly use Metric measurements. Here are some useful conversions:

1 mile = 1.6 kilometres

1 inch = 2.5 centimetres (cm)

1 foot (ft) = 30 cm

To find out how many kilograms are in a pound (lb), divide the pound number by 2.25. For example 4 lbs (pounds) = 1.8 kg (kilograms).

Until 1970 money was Pounds (£), Shillings (S) and Pence (d). 12d = 1 shilling. 20 shilling = 1 pound.

*From morn till night, from early light, we
toil for little pay*

This line, from a popular nail-making song, provides clues about the working conditions of nail-makers in the 1800s.

Read the Nail-making Facts about this hand-made industry in Birmingham and the Black Country and answer the questions below. Use the maths conversions to help.

1. How many nails could a child make in 3 hours?
2. How much money, in shillings and pence, would it cost to buy 3 'tales' of 3 inch nails.
3. How many kilograms does 60lbs weigh?
4. How much waste (in lbs) would there be from 36lbs of iron rods?
5. Using a tape measure, measure a space 3.5m x 3.5m. Imagine filling this space with a hot forge, tools and people. Is there enough space to work in?

Answers
1. 720 nails, 2. 14s 6d for 3 'tales',
3. 27kg approx, 4. 6lbs waste

