

# Making oat flour

How good are you at grinding flour?

One way is to find out how much flour you can make from a certain amount of oats.

1. Weigh out an amount of oats that you want to grind into flour.
2. Place a small amount of the oats on a flat stone and grind it up by placing a second flat stone on top of it. Move the second flat stone around on the oats and press down. Make sure oats do not spill off the lower stone onto the table.
3. When you think you have ground the oats as much as you can, remove the top stone and scrape the ground oats into a sieve over a cup. The oat flour will pass through into the cup while the unground but squashed remains will stay in the sieve.
4. Repeat steps 2 and 3 with other small amounts of oats until the whole weighed amount has been ground up.
5. Weigh the amount of flour produced by grinding up the oats.
6. How does the weight of the white flour compare with the weight of oats.



.....

7. Why do you think the flour used by Vikings was coarse and had pieces of unground and squashed remains in it?



.....



.....



.....

Do not use your flour to make any food as the stones are not clean.

# Making oat flour

## Age range

- Years 3/4 (SP4/5).
- Years 5/6 (SP6/7).

## Resources

Copies of the worksheets, flat stones, oats, a balance for weighing the oats, a sieve, a cup, a spoon (optional).

## Using the worksheet

You may like to look at flour making in the context of a scientific investigation. This involves the use of a sieve in separating particles of materials of different sizes. Students enjoy grinding flour and sometimes compare how much flour they can make. This can be investigated scientifically to see if some people are really better at grinding flour than others. You may link this work with flour production today and reflect on the lack of machinery in Viking times and the lack of huge quantities of cereals to produce white flour leading to coarse flour being used.

## Younger students

The younger students may need help in weighing out the amounts of flour and keeping all the flour under the stones. They may enjoy having a competition to see who can make most white flour.

## Outcomes

The students:

- Know how to make flour by grinding a cereal.
- Can carry out an investigation safely.
- Can weigh materials with care and compare their numerical results.

## Older students

The older students may like to try the investigation and then think of ways of making it fairer. For example, should they grind the stone in a circular fashion a certain number of times? Should they sweep the surface of the lower stone a certain number of times to remove the flour into the sieve? Should they shake the sieve a certain number of times to let as much white flour pass through or should they stir up the flour in the sieve with a spoon a certain number of times to make sure as much flour as possible passes through.

## Outcomes

The students can:

- Perform a fair test.
- Make suggestions to improve an investigation.
- Make accurate measurements.