

Stones for querns

1. Collect a stone with a flat surface and write down its name on the line in column 1 of the table.
2. Collect the pebbles and look at each one in turn. Give it a letter and in the second column of the table write a description of each pebble.
3. Take a certain number of grains and lay them on the flat stone.
4. Take pebble A and use it to grind the grains a certain number of times. Remove the grains and place them in a small dish.
5. Repeat steps 1–3 with each pebble.
6. When you have finished use a magnifying glass to examine each sample of ground up grains and arrange them in order from the most to the least broken up. Enter the results in the third column of the table.

| Saddle stone name | Rubbing stone | Grinding performance |
|--------------------------|----------------------|-----------------------------|
| | Description | |
| | A – | |
| | B – | |
| | C – | |
| | D – | |
| | E – | |

You may like to stick a few grains from each dish in the appropriate place in column 3 on the table.

Stones for querns

Objectives

- To compare the properties of stones.

Cross-curricular links

Science

Sc1

2d Make a fair test or comparison by changing one factor and observing or measuring the effect while keeping other factors the same.

2j Use observations to draw conclusions.

Resources

You will need some wheat grains and flour.

Each child or group will need a copy of worksheet 4 (page 38), a piece of sandstone, limestone or granite with a flat surface, pebbles made of sandstone, limestone and granite, or any collection of different coloured pebbles that will fit comfortably in a child's hand, grains of wheat, oats and barley, small tin foil dishes (one for each pebble used), magnifying glass.

Starter

Show the children some wheat grains and say that it is ground up to make flour. Ask the children what flour is used for and look for answers about making bread and cakes. Tell the children that Stone Age people ground up the grains of wild wheat between stones to make flour and used it to make a kind of bread. Ask the children if they thought the people would use any stones they found and look for answers that indicate that stones have different properties and the people might look for the hardest stones which crumbled the least when they were ground.

Main activities

1. Show the children a picture of a quern and point out the lower stone is called the saddle stone and the upper stone is called the rubbing stone or rubber.
2. Issue the worksheet and read through it with the children and discuss how to name each pebble, decide on the number of grains and the number of grinds or let the children decide for themselves.
3. Let the children work through the sheet and record their results.

Plenary

Let the children compare their results and decide on the best combination of saddle stone and rubbing stone. The children may have noticed that pieces of stone became mixed up with the flour. If they have ask how this may affect the teeth of the people eating the bread and look for an answer about the bread wearing down the teeth.

Outcomes

The children can:

- Make a fair test.
- Record data and draw conclusions from it.