The aim of this activity is simple: **How many grains of rice will fill this classroom**?

It is useful to have a mug full of rice before the problem is posed, and then to invite some estimates as to the answer. Experience shows that answers can range from 1 million to several billion, which invites some further questions straight away. If you were counting grains of rice at the rate of one per second (and ignoring food, rest and toilet stops) how long would it take to count 1 million grains (11.5 days), or even 1 billion grains (about 32 years) This gives an indication of the real size of such large numbers before anyone even attempts the classroom dilemma.

This over and done with, a discussion will be essential as to a method for answering the initial problem. It is a good idea to write down everything that is mentioned in brainstorm fashion, then select items for discussion in greater depth. Outlined below is the most common approach.

* Everyone makes an accurate net of a one centimetre cube (remember the effects that flaps will have).
* Fill the cube with rice, and count the number of grains that fill your cube.
* Find the average for the class.
* Measure the room, to the nearest centimetre, and find the volume in cm3.
* Hence find the number of grains of rice that would fill this space.

Note that the size of the cube to be used tends to provoke disagreement. Some think that the smaller the cube the easier the counting process, while others prefer a larger cube so that fewer of them will fill the room.

This being the basic method used, the activity allows a fair degree of flexibility utilising many mathematical concepts. In particular:

1. Accurate construction of nets.
2. Using the mean. (Discuss why)
3. Accurate measurement.
4. Scale drawing (a plan of the room) & 3D drawing.
5. Compound volume problems. (dependent on the room used)
6. Proportion.

Learners are likely to be familiar with this type of process, especially as a method used in science. In particular, counting daisies on the school field by using a metre square seems to be a popular activity!

Finished so soon?

Fact: 1 ounce of rice will feed a person for a day. How many people could be fed for a day with the same amount of rice that fills this room?

Fact: China produces 178,250,000 tonnes of rice each year. How many classrooms would this fill?

Fact: Rice is about 8.5% protein. How many grams of protein would be in the filled classroom?

Useless fact: When burned, rice husks produce an ash that, when mixed with lime, makes an excellent cement