# Avalanche!

Mathematicians and scientists use experiments to model what happens in avalanches, so they can understand them better. You probably don't have snow available (and even if you do, it will melt indoors), so we are going to model an avalanche using something which has small particles, like sand or small seeds or similar.

Read carefully through these instructions first, so you know what you have to do and how you are going to record what happens in your experiment before you start.

## You need:

- enough of the substance you are going to investigate to make a decent sized heap
- a funnel and a clamp-stand
- a sheet of squared paper
- a set of measuring spoons or weighing scales

## The basic experiment:

1. Put the funnel in the clamp so the funnel points vertically downwards.
2. Put the piece of squared paper on the table so the funnel is pointing down at the middle of the paper.
3. Pour 1 tablespoon or 20g of your avalanche substance through the funnel.
4. Draw carefully round the area it covers on your piece of paper, and put a '1' next to it, to show that it represents the first fall of your substance.
5. Measure the height of the heap as accurately as you can - you will need to make sure your ruler is vertical - and record it.
6. Measure the angle between the piece of paper and the slope of the heap as accurately as you can and record it.
7. Repeat steps 3-6 until an avalanche occurs, recording the area, height and angle data at each stage. Describe the avalanche (see below).
8. Continue with the experiment until you run out of the substance you are using.
9. Make a note of any problems in your experiment, or anything which you think may have made it less accurate than you would have liked.

## Describing the avalanche:

1. First make a note on your area, height and angle results that an avalanche occurred at this point.
2. Describe what you saw:
   - was it just a small trickle or a large fall or somewhere in between?
   - how far down the slope did the avalanche go?
   - is there anything else you observed?