Problem Solving in Mathematics

# Shape, Space, Measures

# Catching Sunlight

## Solution

Provide pupils with a box of resources that contains tracing paper, cm square paper, blank paper and pencils.

The pupils may choose to place the cm square paper on top to see if they can see the leaf through it. If so, they may draw both leaves onto the square paper. They may also choose to trace the leaves onto the tracing paper and superimpose onto the square paper.

The pupils begin by counting the full squares in the first leaf. They may then use one of a number of strategies, for example:

- They may take half a square or more to be an additional $cm^2$ and ignore less than half a square.
- They may choose to make additional squares by adding two halves, two-thirds and one third and so forth where appropriate.
- They may consider if either leaf has a line of symmetry and if so may estimate the area of half the leaf using either of the above, doubling their answer.

Pupils should arrive at a sensible estimate for the first leaf before repeating the process for the second leaf.

Pupils should discern that Leaf A has an approximate area of 50 $cm^2$ (±2) and Leaf B has an approximate area of 55 $cm^2$ (±2). Pupils may give the response including/excluding the $cm^2$.

**The pupil compares their findings and correctly concludes that Leaf B has the biggest area and therefore will absorb the most sunlight.**