

Protractors without numbers

On the next page are six 360° protractors which can be photocopied onto OHT film and cut out for student use.

The protractors are unusual in not having any numbers. I made the protractors using Word and putting numbers on them was going to be a laborious job. But then it occurred to me that there are some advantages in using unnumbered protractors.

Firstly, it requires students, when measuring or constructing an angle, to count the degrees from one arm to the other (in nineties, tens and ones). This does not take long, but it does do more to ensure that students have a thorough concept of angles and what it means to measure and construct them than just finding a number on a scale.

Secondly, it makes it very unlikely that students will measure a 60° angle as 120° (there are not two scales to confuse). Just making this mistake indicates that the students do not have a thorough concept of what they are doing when they measure angles.

Thirdly, it removes the complications associated with measuring and constructing angles greater than 180° (especially when carried out with a 180° protractor). Such measuring and constructing is still just a case of counting round.

I believe that students master the numberless protractor more quickly than numbered ones because there is a lot less to master in the way of technical complexities. Furthermore, once they have mastered them, they should be able to adapt without further learning to numbered protractors – whether this is achieved simply by ignoring the numbers or by seeing them as a short cut to counting.



