Metric playground

Pat Naughtin

One of the projects that I have considered for use in schools is the idea of a metric playground that might include:

◊ a metric chess board with squares 1 metre x 1 metre for graphing games with real people as graph points (Oh, and for playing chess – after suitable research and dressing-up – as well as finding out how many kids you can stand on a square metre).

◊ some cubic metres made from stout pipe (for climbing on) and stacked in various formats

◊ some cubic metres with solid sides for filling games (How many kids can you fit into a cubic metre)

◊ some 3 m - 4 m - 5 m triangles painted on the ground and maybe some 5 m – 12 m – 13 m or even 8 m – 15 m – 17 m triangles to provide comparisons.

◊ a true north-south line for measuring shadows from a gnomon (vertical stick in this case) that is one metre high Other vertical sticks 2 m, 3 m, and 4 m are also handy for height comparisons. If possible you can use these heights for sighting the horizon and estimating its distance. A handy mnemonic for the distance to the horizon uses the first four odd numbers (1, 3, 5, 7) – from a height of 1 metre it is 3.57 kilometres to the horizon. It's a bit more complicated for other heights. For an observation from 4 metres high, you take the square root of 4 (= 2) and then multiply by the constant 3.57 (= 7.14 kilometres).

◊ various marked and labelled distances for pacing out your steps and checking your speeds when walking, jogging, running, cycling, or wheeling your wheelchair. Five, ten, twenty, fifty, and one hundred metre marks are good. You could couple with this some marked but 'unknown' distances for guessing, estimating, and measuring.

◊ a human measuring stick for measuring heights marked in 0.1 metre intervals (say by black and white bands like a surveyors stick) all the way to 2.5 metres, which is the height of the tallest person who ever lived.

◊ set of scales (with flat pans large enough to hold one or two children) to determine masses of children by comparison with some known masses – 2 x 1 kg, 2 x 2 kg, 2 x 5 kg, 2 x 10 kg, 2 x 20 kg, and 50 kg, should do.

◊ a (fine free-running) sand pit with measured and clearly labelled cups, jugs, saucepans, buckets, and various cubes and funnels (1 L, 2 L, 5 L, and 10 L are good sizes).

◊ some π circles with a labelled diameter of 1000 millimetres and a circumference labelled as 3142 millimetres plus similar 2 m and 3 m circles painted on the ground. I rather fancy that these circles might be laid out and colored in the shape of flowers.

◊ a hectare marked out in the shape of a square 100 metres long by 100 metres wide. For this you only need to mark four points on the ground at the four corners of your square. You could use posts or even just (relatively permanent) marks on the ground. You could use your hectare for races along a side (100 metres) or all the way round (400 metres).

◊ for the advanced player (this is a playground remember) some metric polyhedra with one metre edges, but I suggest that you don't start with an icosahedron.

I have to be honest and tell you that to build a complete metric playground has been a long held – but never completed – project. The nearest I got was building parts in various locations. Like when I constructed a model of the solar system that had the same scale vertically as it had horizontally – it included the now deprecated Pluto and it was just under 600 metres long!

Pat Naughtin is a Lifetime Certified Advanced Metrication Specialist and a Life Member of the United States Metric Association.