

MATH RESOURCES

Manipulatives Can Be Made Locally

By Sandy Dawson

The best resource for effective mathematics instruction is the teacher's own knowledge, experience, creativity, and inventiveness. In the hands of an effective teacher, resources like those described in the table below can be very effective to support teaching and enhance students' learning.

The left-hand column lists some of the more useful commercial mathematics manipulatives, while the right-hand column explains how teachers and parents can construct these items using local materials. To build up your resources for teaching mathematics, begin by acquiring the materials in the right-hand column of the table. Enlist the assistance of parents to construct these resources for the classroom. The activity will also provide an opportunity for parents to communicate and work with teachers in ways that support the education of their children.

Another local resource is traditional methods of counting, measuring, and calculation. This is an excellent opportunity to involve parents and grandparents, as well as community elders. Introducing learners to traditional methods of counting and measuring not only develops understanding, but fosters the preservation of cultural activities and skills.

Above all, see yourself as your greatest resource. Use your cultural knowledge and creativity, as well as your teacher training and experience, as you cultivate parent and community assistance to support the teaching and learning of mathematics in your classroom.

Sandy Dawson is the Director of the MENTOR Project and an Associate Professor of the College of Education at the University of Hawai'i at Mānoa. ★

Constructing Classroom Resources	
Commercial Materials	Alternatives Using Local Resources
Cuisenaire rods	Palm leaf spines
Base 10 blocks	Palm leaf spines can be cut to represent 1s and 10s, flats woven from leaves serve as 100s, and woven cubes as 1000s
Plastic counters, color tiles	Small stones, shells, or pieces of coral rubble
Geoboards	Geoboards can be easily made using small pieces of plywood and short nails
Tangrams	Use templates to make shapes on paper or other locally available materials
Dice	Small boxes can serve as dice or they can be constructed from heavy paper or woven coconut fronds
Calculators	Traditional counting and calculation systems including counting stones
Rulers, yard sticks, and measuring tapes	Traditional measurements and measuring devices, such as hand span, arm span, palm leaves, and fishing line
Attribute blocks and materials	Could be constructed from local materials
Geometry measurement tools, such as protractor and compass	Traditional tools for making canoes, building structures, and other items