Digital manipulatives for teaching and learning Mathematics

Digital manipulatives are useful learning and teaching tools that allow students to visualise and explore mathematical relationships, properties and facts across all strands of the mathematics specification. They can be used to support, challenge and extend student learning through the use of open-ended tasks and investigations.

Geogebra

GeoGebra is dynamic mathematics software for all levels of education that brings together geometry, algebra, spreadsheets, graphing, and statistics. GeoGebra is available on multiple platforms, with apps for desktops, tablets and a web browser.

Desmos

Desmos is a free suite of mathematics software tools that include in-class calculators, graphing software and digital mathematics activities.

CODAP

CODAP is a versatile programme that allows users to create and/or import data sets and investigate relationships with ease. CODAP provides some sample sets to get started and introduces users to the type of investigations that are possible.

Tinkercad

Tinkercad is a free online computer-aided design (CAD) program within which users can design, modify, and manipulate 2D and 3D objects.

Autograph

Autograph can be used to draw, analyse, manipulate and transform graphs and functions. Graphs and objects (2D and 3D) can be animated and statistics and probability can be explored also.

Scratch

Scratch can provide students with opportunities to think creatively, reason systematically, and work collaboratively. Some pupils have explored Scratch in primary school to program their own interactive stories, games, and animations.