Low-Cost Experiments in STEM Education

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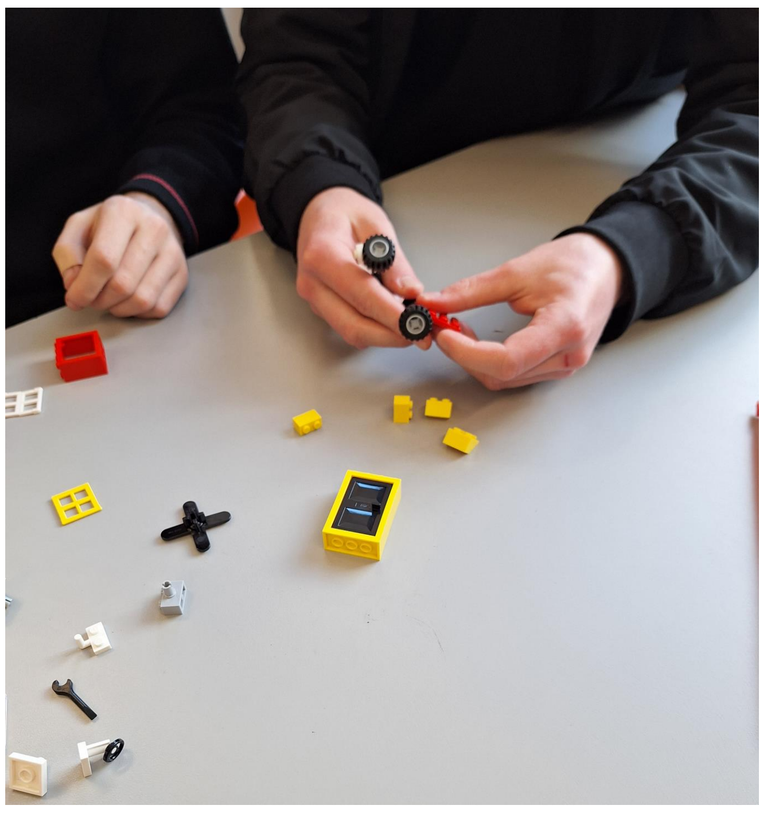
Building Stem Connections

Play well, Inquire well

Building bricks are often used to model ideas, like the atomic theory. There is also huge potential to exploit their adaptability in carrying out experiments, and graphing data in the STEM area.

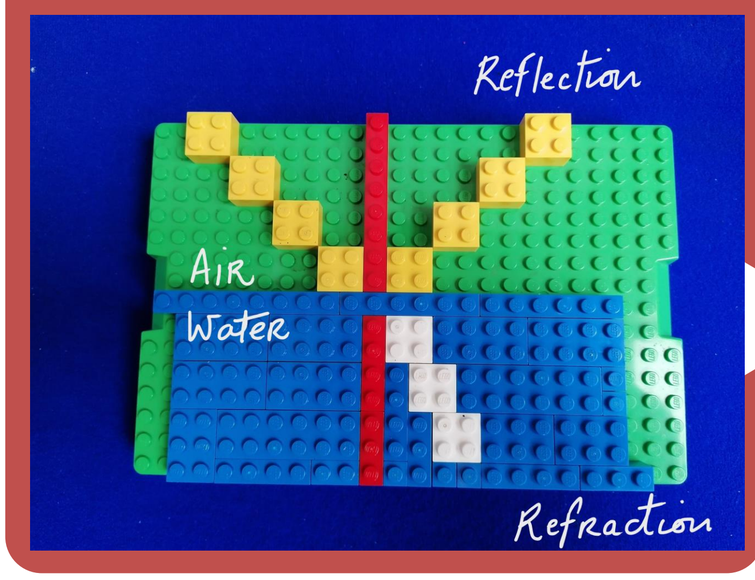
Students tend to be more comfortable expressing ideas using physical models. This allows for common misconceptions to be identified and teased out at a very early stage in the learning process. The therapeutic element of manipulating building bricks cannot be underestimated. Students with additional educational needs show greater levels of motivation.



Light ….

Model

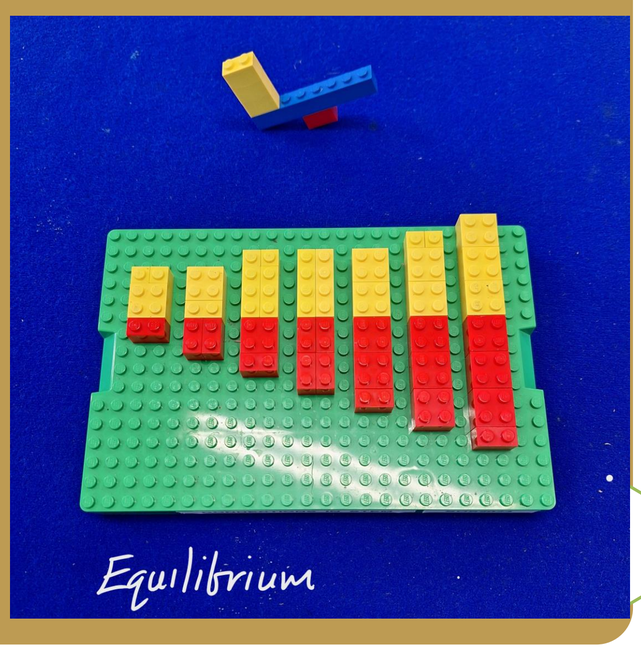
Expressing ideas, misconceptions



Equilibrium….

Experiment

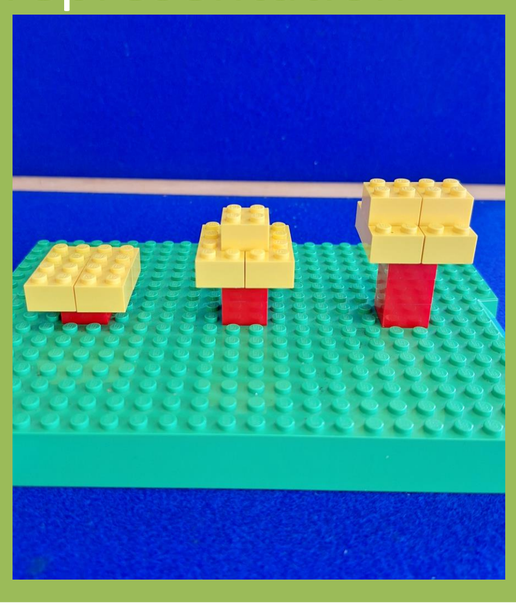
Variety of variables



Patterns……

Represent

Choice of 2D, 3D representation



Graphing experimental or other data often represents the least stimulating part of the investigation process for students in the STEM subjects. Even with the aid of the technology, there can be a challenge to draw a conclusion or find patterns. Building bricks allow for a more personal, relevant method of presenting results. Modelling chemical reactions adds greatly to the understanding of chemical equations.

Conclusion: Using physical models gives greater opportunities for inquiry in topics not ideally suited to conventional experiments. The chance to return to a box of building bricks, abandoned years earlier, can be nostalgic and bring a playful, creative feeling sometimes absent in STEM classrooms.