

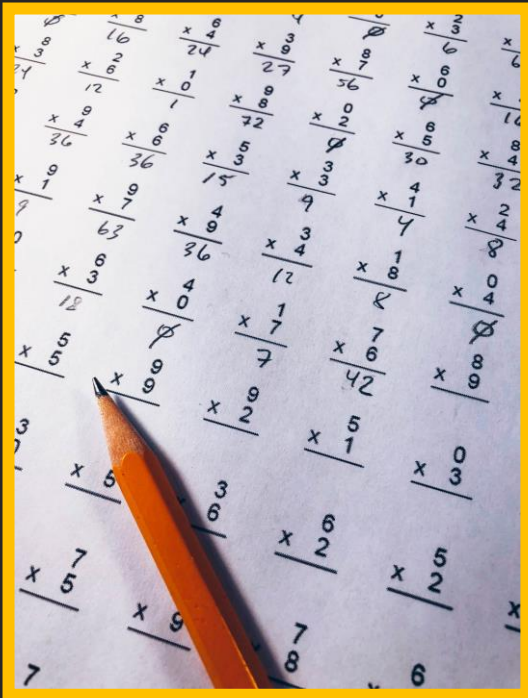


# Mathematics Insights

THIS IS TAKEN FROM EDU-COVID SERIES. THIS IS A SERIES SENT MONTHLY VIA O.R.B.I.T.S. NEWSLETTER TO PROVIDE A FRAMEWORK FOR POST COVID SCHOOLS.

THIS DOCUMENT IS UPDATED MONTHLY AS PER EDU-COVID MONTHLY EDITIONS.

# mathematics



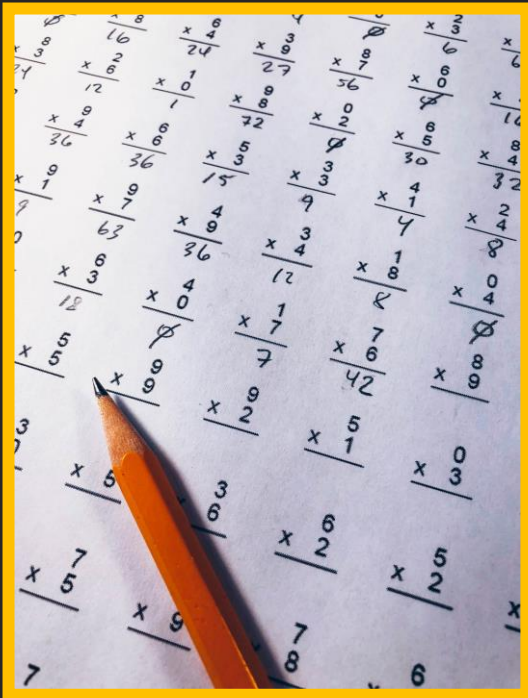
Integrate as much **real-world mathematics** as possible. Relate to the outside world and to what learners can see in their homes. According to the most education departments, doing problem-solving involves modeling – the structure of the model and the parameters in that model. Knowing the assigned values in that model comes from the understanding of the math “situation” or also known as data. That’s how learners start to relate to the real-world problem-solving.

The data or description mentioned above is essential in being relevant. This is one of the main challenges in teaching mathematics. Adhering to this concept assists in formulating one of the basic skills that a learner needs-how these functions start and develop to best relate to real-world. This is a core concept that teachers can direct their learning to attain as much as possible in this limited class time.

Involve as many visual patterns as possible, especially with kindergartners and elementary learners.

Using different types of representations for all mathematical concepts. This is essential in mathematics, mainly because representations display concepts in concrete terms so that learners can easily see patterns and consequently,

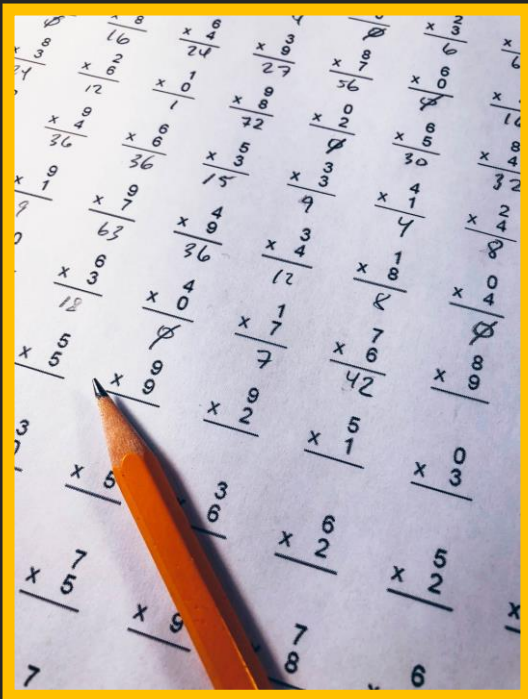
# mathematics



Conduct **math talks**. Start discourse about math in general – feelings (for example, anxiety the most common feeling in math classes), strategies, steps, which help in unfolding ideas and thoughts. This helps in:

1. releasing feelings of anxiety
2. solidifying prior action or background
3. unveiling other ways that can lead to better outcomes
4. exploring new perspectives
5. understanding mathematics at a deeper level
6. engaging all learners (learning through dialogue)

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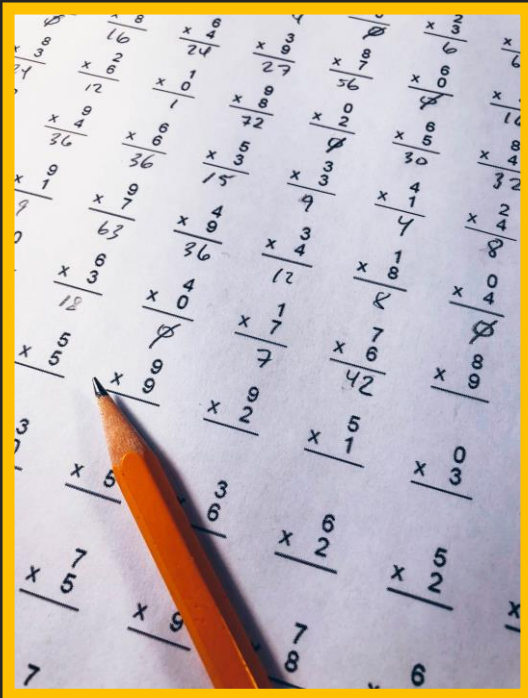


Math instruction needs to be **personalized** so that all learners can have their grade-level requirements fulfilled or gap reduced or closed, especially with serious learning losses. Schools can provide resources within their budgets. The following are useful platforms to assist schools, that have not developed their own:

1. (American system ) Edulastic Spark Math <https://edulastic.com/spark-math/> and Maths Space <https://mathspace.co/us>
2. (British system) 123 Maths <https://www.123maths.co.uk/> and Blutick (11-16) <https://blutick.com/about-us/>
3. (Multi-curricula/adaptable) Mathletics <https://www.mathletics.com/en/for-schools/curriculum/>

These are only few examples of mathematics programs. The need for such programs, in case they were not self-designed by school networks or public systems, is to provide instruction and assessment checkpoints in alignment with certain standards. They also serve to encourage mathematics learning and release fear and anxiety, especially during this time of different form of schooling.

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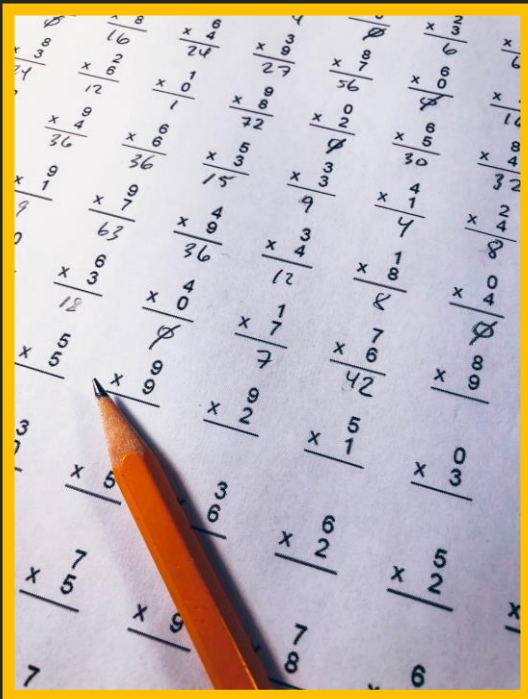
Giving learners time to experience challenges during math problem-solving is very helpful. Mathematics is mainly thinking. It is exploring children's thinking capacity throughout the process, and through that is real learning.

While developing lesson plans, it is better to ensure there is more **questioning** than instruction or guiding information.

Ensuring that questions revolve around setting the lesson, stirring curiosity and investigation, assessing the process each child conducted to reach answers, and wrapping up the lesson by leaving open-ended questions.

Varying the level of depth and differentiation is also crucial in mathematics. Bloom's Taxonomy and Webb's DoK can be strategic models to help in the process of questioning.

# mathematics



Using visuals is powerful in math teaching because it gives learners better understanding of problems that they are expected to solve.

By breaking the problems down and moving forward step-by-step, visually, learners will be moving from conceptual to procedural in a simple way.

One of the highly recommended methods of using visuals in mathematics is the **Bar Modelling**, the Asian, and particularly Singapore's, most renowned method in mathematics teaching. This method is based on Concrete-pictorial-Abstract (CPA) sequence, that makes learners, mainly in primary stages, progress towards understanding the abstract by deploying visuals or pictorial objects to enhance understanding. This is about spatial sense and the ability of mathematical representation.

Bar modeling can be applied in all grade levels and online.

<http://www.conceptuamath.com/bar-models/>

**Manal Zeineddine**

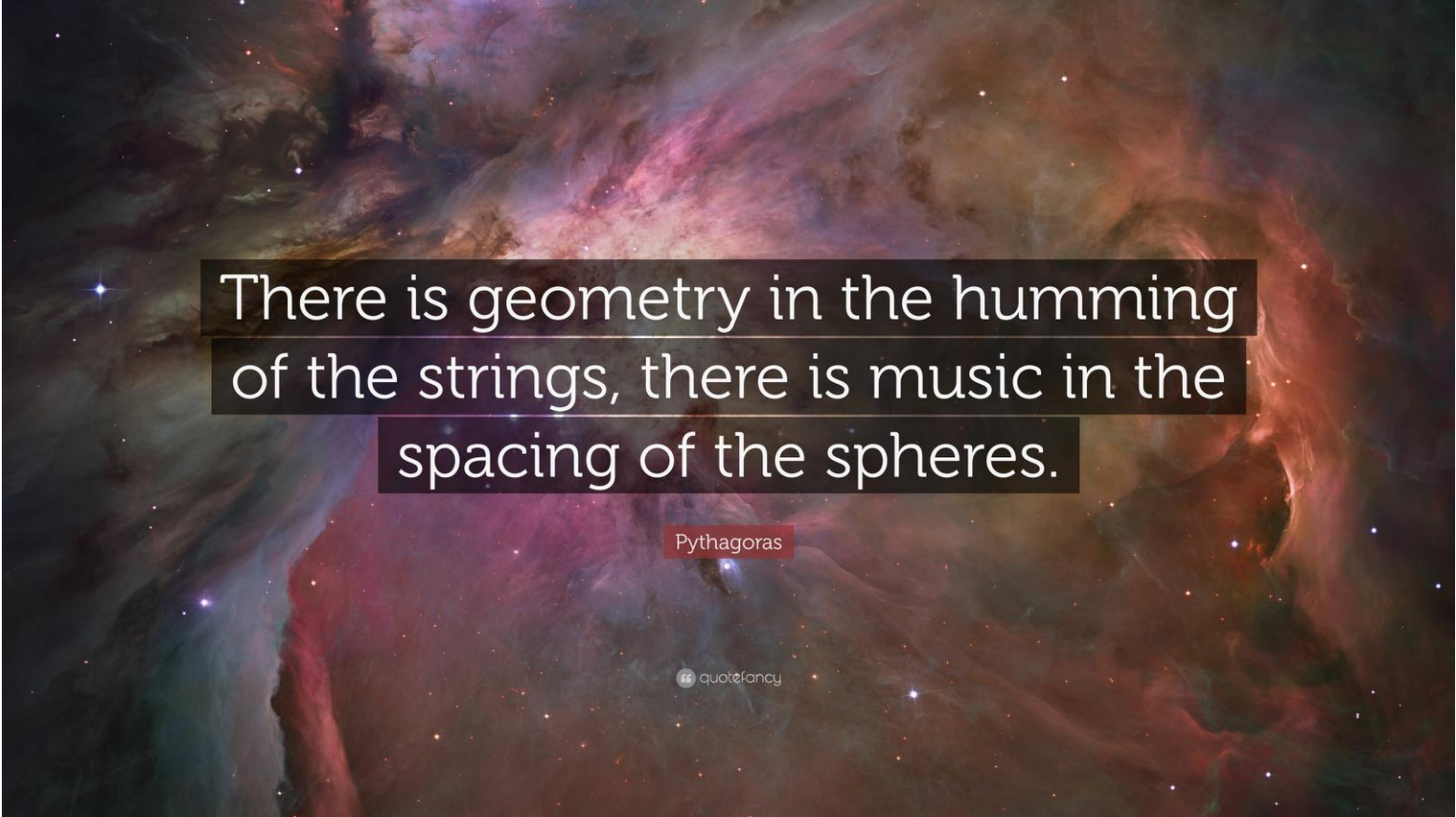
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There is geometry in the humming  
of the strings, there is music in the  
spacing of the spheres.

Pythagoras

quote&fancy