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Ten top tips for teaching maths through the performing arts



KS1 & KS2

By Stuart Barter (Chime), Artis Mentor Leader

Each academic year we are reminded of the importance of maths in the primary curriculum.

Finding practical applications for maths, is key to understanding the importance and relevance of the subject, and enthusing your students. In fact, when you start looking for Maths in everyday life, and in other subjects, you find it everywhere. As an experienced performing arts educator, I love to find the links from maths to music, drama and movement, and this cross-curricular approach greatly helps to deepen children's understanding, and strengthen their learning. Additionally, it gives the children's confidence and enthusiasm for maths a huge lift, as it gives those who don't excel in more traditional lessons a real opportunity to shine, which in turn yields better test results.

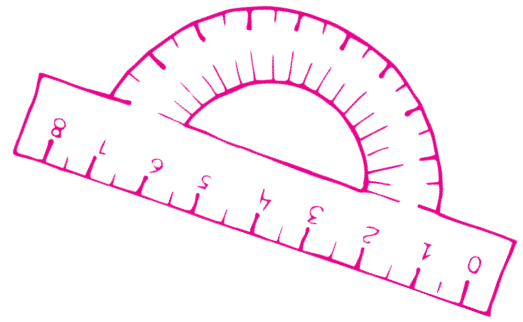
These ten tips for teaching Maths through the arts at primary level are designed to give teachers a boost, and help ensure that the pressure of SATs doesn't suck the life out of the subject. You don't have to be a trained performer to use the ideas below, and with any luck, they may help push your results graph a little further up the y-axis!

1. Put some glitz into mental maths

Solving maths problems in your head is a vital skill, but can sometimes seem dry and purposeless. Try setting a context for such activities. Find a sparkly jacket, some backing music, and turn it into a game show, with real or imagined prizes. Perhaps you are the head of 'secret services' and your class must solve 10 problems in 5 minutes to diffuse a bomb!

2. Maths role-play

A good whole-school approach is to spend a half-term with a bespoke maths topic provided by the children. Ask the children what interests them (without making any link to maths at this stage) then find the maths within that topic. Something is bound to come up with real potential; if your class is keen on football, the transfer market could be a good model; if they love Harry Potter, you could look at the budget and how the film was financed. This is where the arts come in, as this approach yields some fantastic role play opportunities; haggling on the transfer market, or pitching a film budget to producers.

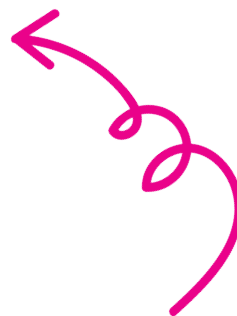


3. Using songs to make it stick

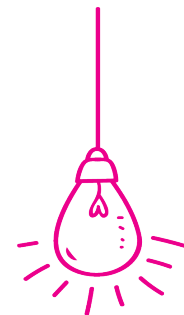
Songs and chants not only aid the children's core music skills, but they stick in the memory and can help children remember maths facts. The times tables are often taught in this way, but you could change the words to any song to incorporate other maths facts, or methods of solving maths problems. Singing also helps build a lovely group dynamic. There are plenty of examples online you could try, from very simple counting songs, to more ambitious pieces highlighting the rules of transformations around an axis! Take a look at YouTube or SingUp for fantastic resources.

4. Use the physical as well as the visual

Visual representations greatly help children's understanding of quantity, shape, measures, and a host of other mathematical concepts, but don't forget the physical, kinaesthetic element. Can the children create angles or shapes in the body? Standing children up side by side to represent place and value in longer numbers can greatly help illustrate the concept, and is also a dynamic, enjoyable experience for the children.



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5. Dancing maths

Continuing the kinaesthetic theme, perhaps try asking the children to use the geometric principles they have learnt concerning angles, mirroring, rotation, as the basis of a dance. Try taping the x and y axis to the hall floor, and give the children co-ordinates as a starting point for their dance. Perhaps they then create three gestures, recreating specific angles or shapes, before rotating clockwise as a group to the corresponding co-ordinate the other side of the axis. Again, this gives an enjoyable, practical application to their knowledge, which will reinforce the learning, and make everything easier to remember. A [good backing track](#) also helps!

6. Acting and Maths Week

A whole-school themed week can greatly raise the status and profile of any topic, or subject area. This can permeate outside the classroom too. I have visited schools where, for one week, all children wear a sticker with a different maths problem, which can lead to all sorts of games; maybe you can only speak to somebody if you can solve the problem, maybe each child's name becomes the answer to that problem, and they are known as "7", for the day! The children could devise plays for assembly under the title "Maths in Action", illustrating the practical uses of maths. A themed week of this kind, infused with the performing arts, becomes a huge talking point right across the school community, and puts maths on the front page.

7. Using the power of music

Rhythm and pulse provide a great backdrop for counting, and number games. Younger children can count round the circle, keeping with the pulse, perhaps going up to ten then back. For older children this can become more demanding, maybe they count in prime numbers, or replace all multiples of 3 with a clap. Use a backing track to make this even more lively and enjoyable. The children could even sing the numbers in the sequence



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8. Geometry is everywhere

Can the children identify the different shapes and angles in objects found in and outside the classroom? Perhaps they can measure and record the shapes and angles they find in nature, and use them to create a piece of abstract art, or a “still life”. This will help make the link between the mathematical principles of shape, and the aesthetic principles of composition.

9. Finding maths in stories

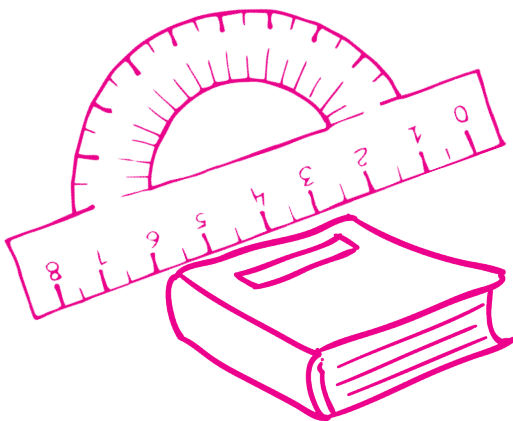
There are bound to be opportunities for maths in most books you read together as a class. Find these opportunities, and the narrative context will give the work added purpose and relevance. Could the children attempt to re-build Ted Hughes’ Iron Man? Give the children a number of pieces of metal of different weights to assemble The Iron Man. Then stipulate the Iron Man’s weight. The children may have to cut down (divide) some of the pieces to make the final weight. This could be a problem on paper, or a real arts and crafts challenge!

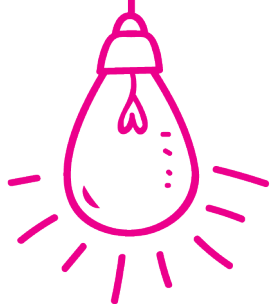
10. Maths adventures

Take your maths lessons out of the classroom and send your children on a maths-based treasure hunt around the school. Hide clues in various locations that require maths to find the next clue, for example; “Turn 90° to the right, take $10 \div 2$ steps forward, and look in the bush!”. Bring this to life yet further by setting up the game in role, perhaps you are a Pirate King, challenging your crew to see who can find the treasure first! Again, the drama context helps motivate the children, and improves their confidence.

Schools are hugely pressured by the need to attain the right results in SATs; this makes it more important than ever to emphasise the wide applications of maths, and the enjoyment inherent in it. Sometimes drawing attention away from the test can help children understand why these core concepts are useful and relevant.

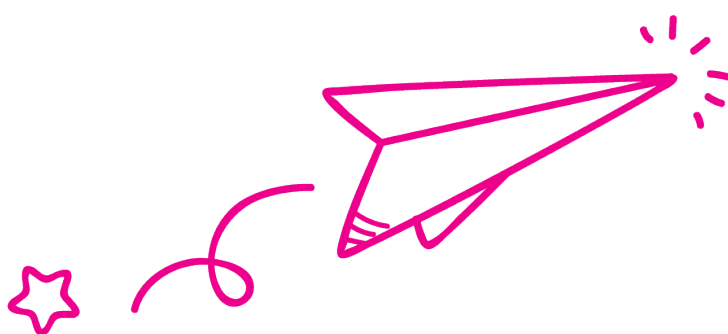
Try these tips in your school and use the arts to breathe new life into your maths lessons, improving your children’s confidence in maths, and your own pleasure and joy in teaching.





Artis is a creative learning charity that exists to ensure every child reaps the benefits of a creative education at primary school. Artis firmly believes in the transformative power of the performing arts to change lives. We help thousands of children every week by integrating the arts throughout their learning. We believe that the most effective way to tackle cultural deprivation is through schools. Performing arts can deliver all aspects of the curriculum in a way that is inclusive of all children, regardless of their physical, mental, emotional or behavioural challenges.

Find out more at artisfoundation.org.uk



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