## The power of pattern

The activities on these pages are taken from *The power of pattern* by Alison Borthwick, Sue Gifford and Helen Thouless, recently published by the ATM.

Initially, we suggested that action and sound patterns came before object patterns, thinking them easier and more suitable for younger children. In fact, we found they were harder to copy and continue: on reflection, this is obvious, since the unit of repeat cannot be seen and keeps disappearing.



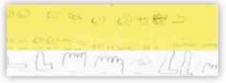
Children making action pattern sequences



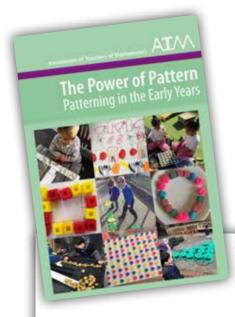
Making a pattern sequence with musical instruments

At a higher level, action patterns also offer children the creative challenge of representing them with pictures or symbols, which may then be read and acted out by other children. This involves generalising by 'translating' patterns between active, pictorial and symbolic modes.





MT278 September 2021 www.atm.org.uk





Children's pictorial symbols for action and music patterns

Music is another mode which offers opportunities for pattern, by simply alternating musical instruments, or creating more complex patterns involving rhythm and pitch. Movement and music can link with a range of cultures, including dance or drumming patterns from around the world. What is clear from children's responses to these activities is the way patterning can involve problem solving in a range of contexts, with children using a variety of strategies to continue patterns and to identify errors. Children also show creative solutions by making their own patterns in different modes and recording these. In the next chapter we show how young children can develop high levels of reasoning with cyclical patterns.







Examples of children's patterns - indoors and out

You can place an advance order at https://www.atm.org.uk/news/the-power-of-pattern

MT278 September 2021 www.atm.org.uk



The attached document has been downloaded or otherwise acquired from the website of the Association of Teachers of Mathematics (ATM) at www.atm.org.uk

Legitimate uses of this document include printing of one copy for personal use, reasonable duplication for academic and educational purposes. It may not be used for any other purpose in any way that may be deleterious to the work, aims, principles or ends of ATM. Neither the original electronic or digital version nor this paper version, no matter by whom or in what form it is reproduced, may be re-published, transmitted electronically or digitally, projected or otherwise used outside the above standard copyright permissions. The electronic or digital version may not be uploaded to a website or other server.

Any copies of this document MUST be accompanied by a copy of this page in its entirety. If you want to reproduce this document beyond the restricted permissions here, then application must be made for express permission to copyright@atm.org.uk.The exception to the above is for the original author(s) who retain individual copyright.

ATM is a not for profit professional teaching association. The majority of funding used to produce and prepare the MT journal is procured through our membership subscriptions.



Mathematics Teaching does not seek to conform to an 'official' view on the teaching of mathematics, whatever that may be. The editorial board wishes to encourage contributors to express their personal views on the teaching and learning of mathematics.

ATM is an association of teachers in which everyone has a contribution to make, experiences and insights to share. Whether practical, political, philosophical or speculative, we are looking for articles which reflect on the practice of teaching mathematics. We aim to publish articles that will be of interest to the breadth of our membership, from the Foundation Stage to Higher and Further Education; as well as a balance between those derived from research and from practical experience. Submitted articles are accepted for publication based on their clarity, topicality, the extent to which they reflect upon knowledge and understanding of mathematics teaching and learning, and their contribution to inspiring further development and research.



Join ATM at any time and receive twelve months of membership, including instant access to member discounts and resources. Spread the cost and pay in ten monthly instalments.

## Membership Includes:

- Five copies of the ATM journal Mathematics Teaching (MT)
- A 25% discount on all shop items
- Considerable discounts at the hugely popular annual ATM conference
- Electronic access to thousands of online MT journal articles
- Access to all online member-only resources
- Professional support and enrichment being part of a community where ideas are generated and shared
- Regular ATM e-newsletters, containing current news and activities
- A network of local branches offering regular meetings
- Accreditation ATM is proud to offer members the opportunity to apply for the CMathTeach Designation, making ATM membership the route to Charted Mathematics Teaching status
- Influence and having a voice eligibility to vote on resolutions that shape the direction of ATM

## **Join ATM Today**