## Area of Learning: Shape, Space and Measures

Concept: Pattern
Seeking and exploring patterns is at the heart of mathematics (Schoenfeld, 1992). Developing an awareness of pattern helps young children to notice and understand mathematical relationships. Clements and Sarama (2007) identify that patterns may provide the foundations of algebraic thinking, since they provide the opportunity for young children to observe and verbalise generalisations.
The focus in this section is on repeating patterns, progressing from children copying simple alternating AB patterns to identifying different structures in the 'unit of repeat', such as $A B B$ or ABBC. Patterns can be made with objects like coloured cubes, small toys, buttons and keys, and with outdoor materials like pine cones, leaves or large blocks, as well as with movements and sounds, linking with music, dance, phonics and rhymes. Children can also spot and create patterns in a range of other contexts, such as printed patterns, timetables, numbers and stories.

| Typical progression within this concept |  | Continuing an AB pattern Copying an AB pattern Make their own AB pattern Spotting an error in an $A B$ pattern | Identifying the unit of repeat | Continuing an ABC pattern Continuing a pattern which ends mid-unit | Make their own ABB, ABBC patterns Spotting an error in an ABB pattern | Symbolising the unit structure | Generalising structures to another context or mode | Making a pattern which repeats around a circle Making a pattern around a border with a fixed number of spaces | Pattern-spotting around us |
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| Progression steps to enable typical progression within this concept | $\begin{aligned} & m \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | I can notice simple patterns e.g. a spotty pattern on a jumper <br> I can arrange things in patterns e.g. I can place a pompom inside the holes of an egg tray <br> I can join in with the actions to nursery rhymes. |  |  |  |  |  |  |  |
|  |  | I can talk about patterns around me (e.g. the stripy pattern on a cloth) |  |  |  |  |  |  |  |
|  |  | I can copy ABAB patterns. |  |  |  |  |  |  |  |
|  |  | I can continue $A B A B$ patterns. |  |  |  |  |  |  |  |
|  |  | I can create ABABs pattern of my own. |  |  |  |  |  |  |  |


|  | I can spot an error in an ABAB pattern and correct it. |  |  |  |  |  |  |  |
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|  |  | I can say which part of an $A B A B$ pattern is repeating. | I can continue ABC patterns. | I can create $A B C$ pattern of my own. | I can symbolise $A B$, $A B C, A B B, A B B C$ patterns in simple ways. | I can use a symbolised pattern to create a pattern in a different media. | I can investigate whether a pattern will or will not fir around a circle. | I can identify the unit of repeat in patterns in the environment. |
|  |  |  | I can spot an error in an ABC pattern and correct it. | I can create ABB pattern of my own. |  |  | I can investigate whether a pattern will or will not fit around a boarder with a fixed number of spaces. | I know butterflies have a symmetrical pattern on their wings. |
|  |  |  | I can continue an ABC pattern that ends mid unit. | I can create ABBC pattern of my own. |  |  |  | I can explore creating symmetrical patterns. |
|  |  |  |  | I can spot errors in $A B, A B C, A B B$ and $A B B C$ patterns. |  |  |  |  |
| Guidance from |  |  |  |  |  |  |  |  |
| NCETM progression document |  |  |  |  |  |  |  |  |

