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| **Drop Down Day** |  **Mathematics Lesson (year 7)** | **Topic: Djenne Magic Squares** |
| **Key Learning Objective(s):****(Non- calculator lesson)*** Identify magic squares
* Identify patterns in magic squares
* Solve magic square problems
* Create magic squares using algebra
* Rotate and reflect magic squares
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| Resources:Djenne magic squares presentation:https://1drv.ms/p/s!AsYwSwoGOxWzoU4xIZrM1INsFio4?e=m8U75BMagic squares worksheet: https://1drv.ms/w/s!AsYwSwoGOxWzoUAEFF-qKAmNeysA?e=Su0zpSMagic square order 4 worksheet: https://1drv.ms/w/s!AsYwSwoGOxWzoUQwMZqkjz1inrsO?e=RMi8OoMaking magic squares worksheet 1 & 2: https://1drv.ms/w/s!AsYwSwoGOxWzoUnR9rbLBqro-eKC?e=L0UQUAMagic squares development:https://1drv.ms/b/s!AsYwSwoGOxWzoVbxHiWeDk0x6WAnMaking magic squares (Teacher solutions): https://1drv.ms/w/s!AsYwSwoGOxWzoU2l-9rwTO1wz3pR?e=OJzl1c |
| **Suggested timings:**10 mins10 mins5 mins15 – 20 mins5 mins | Lesson sequence:Present magic square in slides and discuss question responses as a class. Present and discuss historical context and introduce Djenne in West Africa.Student activity 1: Calculate magic numbers for order 3, order 4 and order 5 magic square.Review and discuss patterns noticed.Student activity 2:Complete Magic squares worksheet. Ext: Magic square order 4 worksheetTeacher led activity:Use order 3 magic square formula to create a magic square. Ext: Magic square challenge of next slide (negatives and decimals). Guide class through solution. Review and discuss.Student activity 4:Complete Making a magic square 1 or Making a magic square 2 worksheet. (Sheet 2 contains reflections and rotations of magic squares). Teacher solutions available.Students not ready for algebraic representation could try Magic squares development activity.Play video ‘Meet Muhammad ibn Muhammad’ about 18th century pioneering West African mathematicianEnd of lesson |