



Mathematics Policy



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*subject to any relevant changes in legislation or other appropriate guidelines

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Statement of intent

Vantage Academy Trust recognises that Maths is both a key skill within school, and a life skill to be utilised through everyday experiences. A high-quality Maths education provides a firm foundation for understanding how Maths is used in everyday life and activities, developing pupils' ability to reason mathematically.

Through the teaching of Maths, we aim to develop:

- A positive attitude towards Maths and an awareness of the relevance of Maths in the real world.
- A process of enquiry and experiment.
- An ability to solve problems and think logically in order to work systematically and accurately.
- An ability to work both independently and in cooperation with others.
- Competence and confidence in pupils' Maths knowledge, concepts and skills.
- An appreciation of the creative aspects of Maths and an awareness of its aesthetic appeal.

Signed

Principal:

Date:

Chair of LAB:

Date:

1. Legal framework

1.1. This policy has due regard to statutory guidance including, but not limited to, the following:

- DfE (2013) 'National curriculum in England: Mathematics programmes of study'
- DfE (2017) 'Statutory framework for the early years foundation stage'

2. Curriculum

2.1. The Power Maths Approach:

- **Everyone can!** Founded on the conviction that every child can achieve. Power Maths enables pupils to build number fluency, confidence and understanding.
- **Child-centred learning.** Pupils master concepts one step at a time in lessons that embrace a Concrete-Pictorial-Abstract (CPA) approach, build on prior learning and help them see patterns and connections. Same day intervention ensures sustained progress.
- **Whole-class teaching.** An interactive, whole-class teaching model encourages thinking and precise mathematical language and allows pupils to deepen their understanding as far as they can. Keeping the class together is a key value of the Power Maths approach. It involves all children learning the same concept in small, cumulative steps, each finding and mastering challenge at their own level. The whole class therefore moves through the curriculum at broadly the same pace.
- **Continuing professional development.** Embedded teacher support and development offer every teacher the opportunity to continually improve their subject knowledge and manage whole-class teaching for mastery.

2.2. Power Maths and Mastery:

- Builds every concept in small, progressive steps.
- Is built with interactive, whole-class teaching in mind.
- Provides the tools pupils need to develop growth mind-set.
- Helps teachers and subject leaders check understanding and ensure that every pupil is keeping up.
- Establishes core elements such as intelligent practice and reflection.

2.3. The Power Maths Teaching Model:

- At the heart of Power Maths is a clearly structured teaching and learning process. For each year group, the curriculum is broken down into core concepts, taught in units.
- **Unit Starter.** This introduces the learning context along with key mathematical vocabulary, structures and representations. Unit specific videos develop teaching staff subject knowledge and ensure that they are fully equipped to teach the new unit.
- **Lesson.** Each lesson is scaffolded with textbook and practice book activities. Power Maths identifies lesson by lesson what concepts are to be taught.
- **Same day intervention.** This is vital in order to keep the class progressing together. Intervention is focussed on keeping up now, rather than catching up later. Practice questions are designed to bring misconceptions to the surface. Child friendly assessment questions in the Teacher Guide help staff to identify easily which pupils need to strengthen their understanding.
- **End of unit check and journal.** Summative assessment tasks reveal essential information on each pupil's understanding. The end of unit check enables teachers to see which pupils have mastered the key concepts, which pupils have not and where their misconceptions lie.

2.4. Power Maths Lesson Sequence:

- Flexibility is built into the Power Maths programme, meaning that staff can pace their teaching according to the needs of the class.
- **Power Up.** A 5 minute activity which supports the fluency in key number facts and reinforces skills such as times-tables, number bonds and working with place value.
- **Discover.** A 10 minute session based on a practical, real-life problem.
- **Share.** A 10 minute teacher-led session following on from the Discover activity to facilitate pupil discussion on the methods/strategies used.
- **Think Together.** A 10 minute activity initially promoting group work, leading to independent learning. The openness of the tasks helps teachers to check depth of understanding.
- **Practice.** 15 minutes dedicated to pupils using their practice books independently, whilst staff circulate and check on progress.

- **Reflect.** A 5 minute activity to check how deeply pupils understood the target concept.
- 2.5. Mindset in Power Maths:
- A growth mindset needs to be actively nurtured and developed. Power Maths offers some key strategies for fostering healthy growth mindsets, which are promoted through 5 key characters.
 1. It is okay to get it wrong.
 2. Praise hard work.
 3. Mind your language!
 4. Build in opportunities for success.
- 2.6. Mathematical Language:
- Explanation and discussion are integral to the Power Maths structure. The following strategies are key to building children's mathematical vocabulary, understanding and confidence:
 1. Key vocabulary highlighted at the beginning of each unit.
 2. Precise and consistent use of correct mathematical terms.
 3. Full sentences to explain and respond.
 4. Stem sentences to express mathematical concepts.
 5. Think first – then talk.
 6. Working collaboratively to support Maths talk.
 7. Giving every child a voice to encourage participation from all.
- 2.7. Mathematical Structure and Representations:
- Power Maths allows pupils, in all year groups, to tackle concepts in a tangible way through the Concrete-Pictorial-Abstract (CPA) approach.
 - The CPA approach is not linear, and pupils may need different types of models at different stages in their learning journey.
 - Each Share session of the lesson sequence uses various methods to explain an answer, helping pupils to access abstract concepts by using concrete tools.

3. Roles and responsibilities

- 3.1. The **subject leader** is responsible for:
- Reviewing changes to the national curriculum and advising on their implementation.

- Monitoring the learning and teaching of Maths, providing support for staff where necessary.
- Ensuring the continuity and progression from year group to year group.
- Encouraging staff to provide effective learning opportunities for pupils.
- Helping to develop colleagues' expertise in the subject.
- Organising the deployment of resources and carrying out an annual audit of all Maths-related resources.
- Liaising with teachers across all phases.
- Communicating developments in the subject to all teaching staff.
- Leading staff meetings and providing staff members with the appropriate training.
- Organising, providing and monitoring CPD opportunities in the subject.
- Ensuring common standards are met for recording and assessing pupil performance.
- Advising on the contribution of Maths to other curriculum areas, including cross-curricular and extra-curricular activities.
- Collating assessment data and setting new priorities for the development of Maths in subsequent years.

3.2. The **classroom teacher** is responsible for:

- Acting in accordance with this policy.
- Ensuring progression of pupils' mathematical skills, with due regard to the national curriculum.
- Planning lessons effectively, ensuring a range of teaching methods are used to cover the content of the national curriculum.
- Liaising with the subject leader about key topics, resources and support for individual pupils.
- Monitoring the progress of pupils in their class and reporting this on an annual basis to parents.

- Reporting any concerns regarding the teaching of the subject to the subject leader or a member of the senior leadership team (SLT).
 - Undertaking any training that is necessary in order to effectively teach the subject.
- 3.3. The **special educational needs coordinator (SENDCO)** is responsible for:
- Liaising with the subject leader in order to implement and develop Maths throughout the school.
 - Organising and providing training for staff regarding the Maths curriculum for pupils with special educational needs and disabilities (SEND).
 - Advising staff how best to support pupils' needs.
 - Advising staff on the inclusion of mathematical objectives in pupils' individual education plans.
 - Advising staff on the use of teaching assistants in order to meet pupils' needs.

4. Early Years provision

- 4.1. Activities and experiences for pupils will be based on the seven areas of learning and development, as outlined in the DfE's 'Statutory framework for the early years foundation stage'.
- 4.2. Provision for early years pupils focusses on four specific areas:
- Literacy
 - Maths
 - Understanding the world
 - Expressive arts and design
- 4.3. Activities will provide pupils with the opportunity to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems, and describing shapes, spaces and measurements.
- 4.4. All activities will adhere to the objectives set out in the framework.
- 4.5. During the early years foundation stage, pupils will be taught to:

- Count with numbers from 1 to 20, placing them in order and naming the number that is one more or less than a given number.
- Use quantities and objects to add and subtract two single-digit numbers, and count forwards or backwards to find the answer.
- Solve problems, including doubling, halving and sharing.
- Use everyday language to talk about size, weight, capacity, position, distance, time and money in order to compare quantities and objects, and solve problems.
- Recognise, create and describe patterns.
- Use mathematical language to describe everyday objects and shapes.

5. Resources

- 5.1. The **subject leader** is responsible for the management and maintenance of Maths resources, as well as for liaising with the school's senior leaders in order to purchase further resources.
- 5.2. Maths resources needed for each term will be stored in each classroom, including calculators, rules and protractors.
- 5.3. Resources which are not required regularly, and those in relation to key whole-school topics, will be stored in the central maths resource area.
- 5.4. Display walls will be utilised and updated regularly, in accordance with the area of Maths being taught at the time.
- 5.5. Maths equipment and resources will be easily accessible to pupils during lessons.
- 5.6. The subject leader will undertake an audit of Maths equipment and resources on an annual basis.

6. Equal opportunities

- 6.1. All pupils will have equal access to the Maths curriculum.
- 6.2. Gender, learning ability, physical ability, ethnicity, linguistic ability and/or cultural circumstances will not impede pupils from accessing all Maths lessons.
- 6.3. Where it is inappropriate for a pupil to participate in a lesson because of reasons related to any of the factors outlined above, the lessons will

be adapted to meet the pupil's needs and alternative arrangements involving extra support will be provided where necessary.

- 6.4. All efforts will be made to ensure that cultural and gender differences will be positively reflected in all lessons and teaching materials used.
- 6.5. Vantage Academy Trust aims to provide more academically-able pupils with the opportunity to extend their mathematic thinking through deeper learning activities such as problem solving, investigative work and research of a mathematic nature.

7. Monitoring and review

- 7.1. This policy will be reviewed on an annual basis by the subject leader.
- 7.2. The senior leadership team (SLT) and the subject leader will monitor teaching and learning in the subject in each of Vantage Academy Trust's schools, ensuring that the content of the national curriculum is covered across all phases of pupils' education.
- 7.3. The subject leader will be required to provide the Local Advisory Board (LAB) of each school within Vantage Academy Trust an overview, detailing the Mathematics curriculum, standards within the subject and CPD opportunities facilitated for teaching staff.
- 7.4. Any changes made to this policy will be communicated to all teaching staff.

Appendices