



# Hidelow Grange School

## Numeracy Framework

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|------------------------------------|---|
|                                    | <b>Reviewed: September 2023 CJ</b><br><b>Updated:</b> |
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| <b>Author:</b> Charlotte James     |   |
| <b>Role:</b> Mathematics Teacher   |   |
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*CareTech's children's education services provide a safe and stimulating learning environment in which young people are always offered a fresh start, and empowered to achieve and fulfil their unique potential*

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## Description and Ethos of Hidelow Grange School

Hidelow Grange is an Independent School operating within the Branas Isaf Company, a subsidiary of CareTech Community Services Ltd., who are the proprietors.

Hidelow Grange is an independent school providing specialist education to boys aged 11 to 18 years with social, emotional and mental health (SEMH) needs, and who are Looked After Children. The school specifically caters for boys who present with a range of complex interpersonal, emotional and behavioural issues.

**For a more detailed description of what the school offers see “Statement of Independence” and School Prospectus.**

## OUR PUPILS

All young people at Hidelow Grange School have a history of harmful behaviours, including harmful sexualised behaviours and social, emotional and mental health needs often accompanied by a range of additional learning needs.

Most of the pupils have had interrupted histories in education and care. There are a wide variety of attainments on admission. All have fragile self-esteem and demonstrate difficulties with authority and a lack of trust in adults. Many have experienced loss and trauma, leading to attachment difficulties. As a result, many experience difficulties in forming and maintaining appropriate, positive relationships with others and have a limited ability to work cooperatively.

Pupils are:

- aged 11 to 18;
- boys only;
- placed within the residential setting of Branas Isaf;
- residents from placing authorities throughout the United Kingdom;
- all present a range of harmful behaviours;
- most are in receipt of an EHC plan.

## THE VISION

Our school aspires to become a centre of excellence renowned for making outstanding educational provision for the very special pupils we teach.

This vision drives everything we do and will be achieved through...

- A rich, deep and personalised education designed to meet the needs of each pupil;
- A pupil centred, skills focused curriculum that is relevant to the 21st century and inclusive of all;
- Encouraging all members of the school community to strive beyond expectations and develop a lifelong love of learning;
- Offering a broad range of learning experiences within a curriculum that values academic attainment as well as social, moral, spiritual and cultural aspects of education;

- Providing personalised careers education and guidance, with aspirational next steps planning, preparing pupils for their future;
- Recognising that time is precious: working quickly to turn around pupils' attitudes towards education so they enjoy their time at school and make the most of the opportunities on offer;
- Working collaboratively with our professional partners to support the needs of each individual pupil.

Pupils will:

1. Be challenged to engage in learning and achieve meaningful qualifications that will enable them to take their next steps in education, employment or training;
2. Develop into healthy, resilient and confident individuals who are ready to lead fulfilling lives as valued members of society;
3. Create, nurture and maintain healthy positive relationships with others;
4. Experience success, whatever form it takes;
5. Become enterprising, creative contributors ready to play a full part in life and work;
6. Celebrate diversity and develop into ethical, informed young people who are ready to be citizens of the world.

## OUR MISSION

Our mission statement is:

We provide a safe and inclusive learning environment that nurtures mutual respect and encourages reflection so that our pupils develop the knowledge skills and confidence to enable them to achieve their potential in all aspects of their lives.

## OUR VALUES AND INTENT

**Our values**

- **Aspiration** : We encourage each other to be the best we can be
- **Curiosity**: We never stop learning and wondering about the world
- **Independence**: We think for ourselves and determine our own future
- **Innovation**: We look for new and creative solutions to problems
- **Reflection**: We learn from our experiences
- **Tolerance**: We value difference and respect other people's opinions
- **Trust**: We believe in the honesty and reliability of others

**Our Curriculum Intent**

For our staff: Everyone at Hidelow supports and challenges pupils to invest in education as a priority for a successful placement

**For all learners:**

- To undergo an initial 6-week assessment so we fully understand their needs for effective learning;
- To achieve at least 95% attendance in school;
- To engage in creative learning experiences appropriate to their needs, supported by an accurate individual learning plan;

- To achieve nationally recognised academic awards in core subjects;
- To achieve accreditation in a wide range of subject areas;
- To become independent learners;
- To learn how to keep themselves safe, and build positive relationships with those around them;
- To take part in decisions that shape their lives, the school and the community in which they live;
- To demonstrate the behaviours needed to stretch themselves and cope with the challenges of learning;
- To attend and participate in regular therapy sessions;
- To learn strategies to manage their feelings and know where to go for help when things are difficult;
- To have the opportunity to participate in work experience and work related learning opportunities;
- To develop the Literacy skills they need for adult life;
- To learn the skills to apply mathematical concepts;
- To learn the skills to use digital technologies creatively and safely in preparation for the world in which they will live;
- To lead healthy, active lifestyles;
- To develop as social, moral, spiritual and culturally aware individuals who are ready to make a positive contribution to society as adults.

## Framework for Numeracy

### Rationale

Being Numerate means having the ability to understand and work with numbers. It means being able to: reason with numbers and other mathematical concepts; communicate these effectively; apply these in a range of contexts and solve a variety of problems in the world around us. The mastery of mathematical skills is a cornerstone to success in adult life. It opens opportunities in terms of employment but also enhances the ability to negotiate everyday life.

Through their growing knowledge and understanding, students learn to appreciate the contribution made by many cultures to the development and application of mathematics. Pupils are encouraged to use creative thinking when met with challenging and unfamiliar situations. They are provided with the tools and language to communicate their ideas accurately.

Mathematics provides opportunities for our pupils to add to their educational experiences and become well-rounded adults by:

- A. Engaging with their faculty for thinking, through;
  - i. Increasing self-esteem & self-resourcefulness through the natural rewards of intellectual progress
  - ii. Working on topics, which build on simple yet significant concepts - Number, Measurement, Geometry (Shape & Space), Ratio, Data Handling, Algebra, Probability & Statistics.
  - iii. Developing skills that they will use in their further education or careers
  - iv. Finding strategies to answer challenging questions by breaking them down into simpler steps
- B. Engaging with their artistic faculty through;
  - i. Playing with pattern making, sequencing (& similar topics)
  - ii. Helping them to understand the common, daily use of mathematical language.
- C. Engaging their effort through accessing & practising key skills that employers consider essential for potential employees.

Many of our pupils have had a disrupted education with time spent out of lessons and away from education for a variety of reasons. Consequently, many of them come to us with poor numerical skills and a lack of attainment in this core subject area. This compounds the low opinion they may have of themselves as learners and may serve to have switched them off education all together.

Therefore, our primary goal at Hidelow Grange School is to give our pupils the education they need and deserve to give them the best chance of success in the future. Mathematics is a key part of the curriculum we offer. We teach it through formal Mathematics lessons and across the curriculum in other subject areas.

## **The Delivery of Numeracy and Mathematics**

### **Our Intent: what we aim to achieve**

All students to be enabled to:

- Follow realistic but challenging pathways to accredited outcomes in KS4;
- Feel comfortable and secure in their learning environment;
- Gain the confidence and resilience they need to make mistakes and move their learning forward;
- Make sustained progress or better from their starting points;
- Develop their functional maths skills to prepare them for the future;
- Achieve meaningful qualifications specifically tailored to their needs and aspirations;
- Use a systematic but flexible and creative approach to solve problems, to reason, to think logically and to carry out investigations;
- Use and apply mathematics across the curriculum and in real life contexts;
- Develop a self-critical, reflective approach to learning;
- Show initiative and an ability to work independently and in co-operation with others where possible
- Develop their mental and oral mathematical skills
- Communicate their ideas both written and orally using the correct mathematical language
- Develop an understanding of the relationships within Maths through enquiry, discussion and experiment;
- Develop a positive attitude to Maths realising its creative, aesthetic aspects and its relevance to real life situations.

### **Implementation: how we do it**

At Hidelow Grange School, we deliver a Maths curriculum that provides lively, interactive learning experiences fostering enjoyment of, confidence in, and enthusiasm for mathematics. As a core subject, our Mathematics syllabus follows the National Curriculum and is allocated a significant amount of curriculum time at all key stages.

We use assessment accurately to find students' starting points, highlight strengths and areas to develop. Based on this, we create an individual pathway through the curriculum to match needs and fill gaps.

We provide exciting, motivational and engaging experiences for students that enable rapid and sustained engagement. Address behaviour that effects learning and develop young people who are ready to learn. Ensure realistic learning situations whenever possible which are early preparation for future life situations, as well as making our curriculum as practical as possible where we can. Build confidence, self-esteem and resilience and engender a love of learning for life.

Teaching will build links between the different areas of Number, Algebra, Probability, Statistics, Geometry and Ratio. Maths is taught using a range of approaches and work is differentiated to meet the different capabilities of individuals and groups. We identify and provide individual support for any student as they need it. We offer whole class, group and individual teaching incorporating opportunities for discussion, practical work, consolidation and practice, problem solving and investigations.

We teach a range of strategies for finding a solution. A range of approaches are used to deliver the curriculum including:

- Problem solving and investigations
- Practical activities and mathematical games
- Whole class and group discussions and activities
- Independent working through questions
- Self/peer assess of work
- Mental and Oral Maths
- A range of methods of calculating e.g. mental, paper and pencil and using a calculator or other equipment
- Use of mathematical resources on the internet for demonstration, consolidation and revision
- Use of resources including protractors, mirrors and learning aids such as revision cards, posters, worksheets etc.
- Exposition by the teacher
- Working with computers as a mathematical tool and to develop logical thinking and reasoning
- Consolidation and practice

Students are encouraged to progress as far as their abilities allow by exposing them to work of increasing difficulty and challenge. When students master the basic work of a topic, they are encouraged to progress to work that consolidates and extends their skills.

### **Use of calculators**

Some pupils can be overly dependent on using calculators for simple calculations. Generally, pupils are encouraged to use mental or pencil and paper methods in the first instance when solving problems. However, some tasks require a calculator to be used for accuracy. Therefore the teacher will use their discretion as to whether or not a student can use a calculator, taking into account the needs of the student and the task in hand.

### **Numeracy Intervention**

Each week pupils receive a 30-minute numeracy intervention session. These sessions identify misconceptions or provide opportunity to fill gaps in learning. These sessions are determined by the teacher based on the need of the pupils.

## Homework

Daily Numeracy Tasks: Once learners have mastered and consistently demonstrated their understanding of multiplications, they progress onto targeted numeracy and/or GCSE designed tasks on each learners MyMaths Portal. Pupils are assigned 14 tasks per week.

These tailored tasks provide support for either the functional skills or GCSE pathway and allow pupils to apply learnt knowledge in different contexts. The tasks have mixed word and number problems, which further supports pupils in developing their mathematical ability and confidence.

## Feedback and Marking

Feedback to learners about their work is an essential part of the learning process.

This can take different forms, such as verbal discussion with a student or constructive written feedback in their exercise book. The feedback recognises learner achievement, highlights strengths and shortcomings, and provides clear guidance for improvements to be made and follows the Hidelow Grange School 'Whole School Literacy Marking Code' and 'D.I.R.T'(see Annex A).

Teachers share the learning objectives with learners during every lesson. These are referred to during the lesson and plenary to gauge understanding and evidence progress made. This forms part of the feedback process.

Self and peer assessment opportunities promotes students understanding of their own learning. It provides opportunities for critical analysis of their own efforts which encourages them to become more autonomous learners.

Teachers will mark work using a green pen. They will use a single tick '✓' if the answer is correct and a single dot '•' if the answer is incorrect. The teacher will then mark the page using a sticky tab to help learners quickly find it and know where they need to correct their work.

Pupils will have at least one D.I.R.T opportunity each week to correct their work. This allows teachers to assess pupils understanding and implement 1:1 support when necessary. At this time, pupils use a purple pen to correct any mistakes identified by the teacher. These corrections are checked by the teacher. Pupils may need advice and support from the teacher to do this.

## Assessment

Assessment for Learning is an integral part of the teaching and learning process. Assessment is used to match learners to appropriate types of intervention, and to monitor the impact of interventions. It is a partnership between student and teacher with the common goal of improving the student's understanding and skills. Throughout this process, it is critical that students are involved in discussing and appraising their own work and are aware of the progress they are making. Through discussion with their teacher students will know what steps to take to improve their work.

Teachers use a combination of formative and summative techniques such as:

- Marking written work
- One to one discussion with students
- Observation of the student/s
- A mixture of open and closed questioning
- Self/peer assessment to show understanding of knowledge learnt
- End of unit assessment



- Exam style questions
- End of Year formal testing and teacher assessments

Diagnostic tools are routinely used to identify the best next step for teaching. E.g.

- WRAT5
- MyMaths assessment tool

In addition, baseline and end of unit assessments are scheduled throughout the school year. The assessment data is used to identify gaps in learning and inform planning and teaching.

## Numeracy across the Curriculum

Good numeracy can be a key to success in subjects across the school, and is considered to be a whole school priority. Therefore all staff are expected to promote and model good numeracy as part of their practice and to look for opportunities to use and apply numeracy in their subject area. **Every teacher in the school is a teacher of numeracy** and help to develop learners' mathematical skills.

Our aim is to develop consistent approaches to teaching and learning in numeracy across the different departments of the school.

### Numeracy Targets

Each term individual numeracy targets are set and reviewed as part of the IEP for every student. All subject teachers support the learners in meeting these targets in their lessons whenever relevant and should refer to them in their instructions and marking.

### Specialised Vocabulary

Teachers in every subject provide explicit vocabulary instruction to help learners access the academic language for that subject. Academic studies show that improved vocabulary helps them to access the curriculum and communicate their thoughts more effectively, therefore, helps them to learn.

Vocabulary: We must be consistent using the correct mathematical language at all times. For example;

- When referring to decimals say "three point one four" rather than "three point fourteen".
- Units of area and volume:  $0 \text{ cm}^2$  is read as 'square centimetres' (not 'centimetres squared' or 'squared centimetres')  $0 \text{ m}^3$  is read as 'cubic metres' (not 'metres cubed')
- Read numbers out in full, so for 3400 say "three thousand, four hundred" rather than "three, four, zero, zero".
- It is important to use the correct mathematical term for the types of average being used, i.e. mean, mode or median.
- When referring to a number rather than an operation, use the terminology negative 7, not minus 7, unless talking about temperature.
- Encourage pupils to be less dependent on simple words e.g exposing them to the word "multiplied by" as a replacement for "times".

- Highlighting word sources e.g. quad means 4, lateral means side so that pupils can use them to help remember meanings. This applies to both prefixes and suffixes.
- Discussion about words that have different meanings in Mathematics from everyday life e.g. take away, product, similar etc.

### Specific mathematical links with other subjects

| Department                   | Mathematical Concept   |
|------------------------------|--|
| English                      | Identifying important information in a text will help them to better understand problem solving questions (comprehension)  |
| Science                      | Balancing equations, algebra (formulae, substitution), measurement; timing; calculating means and percentages; calculating with positive, negative, decimals; collecting and representing data; drawing graphs; comparing data; key concepts; SI units; standard form; converting units; significant figures |
| Art                          | Symmetry; other transformations, paint mixtures as a ratio, tessellation, identifying shapes (2D and 3D)   |
| Geography ( <i>Project</i> ) | Representing data; finding averages  |
| History ( <i>Project</i> )   | Timelines; sequencing events   |
| ICT                          | Collecting and representing data; use of spreadsheets; drawing graphs  |
| MFL                          | Dates; rote counting in other languages  |
| Life Skills ( <i>PSHE</i> )  | Personal finance education; measuring ( <i>BMI, Portion size</i> )   |
| PE<br>Sports Science         | Collecting and comparing real data; timing; measuring; distance; time concepts; measuring ( <i>BMI, Portion size</i> ); Identifying and making 2D shapes ( <i>gymnastics</i> ); averages   |
| DT                           | Measurement; properties of shape; scaling and ratio  |
| Home Cooking                 | Measurement, unit conversion (metric-imperial); scaling and ratio; reading scales  |
| Music                        | Sequencing; note duration; halving; rote counting  |

### Resources

In Mathematics we use the following Schemes of work:

- Edexcel (9-1) Scheme of work and texts book at higher and foundation levels – ActiveLearn Package
- Edexcel Pearson Functional Skills Scheme of Work and texts book

In Mathematics we use ICT to help deliver the subject using,

- MyMaths
- Cool Maths website.
- GCSE bitesize website.

We also use maths based games to aid interaction and understanding such as;

- Multiplication Bingo
- Maths Cube
- Shut the box
- IQ Puzzle
- Sudoku
- Puzzle Wars
- Rummikub
- Fraction snap
- David Walliams Mental Maths
- David Walliams Multiplication Game

A numeracy folder can be found on the shared drive which has many useful links and worksheets that subject teachers can use.

### Support for Staff

Numeracy is the responsibility of all staff so it is important that staff feel confident in using and applying numeracy in their own subject areas. CPD sessions on numeracy across the curriculum are scheduled as part of the CPD and staff meeting timetable to support teachers with embedding numeracy in their planning. The training is intended to enable staff to become more confident in teaching and assessing for numeracy, as well as introducing consistent approaches to numeracy across the school. In addition, staff are encouraged to approach the Maths teacher for advice and support whenever they need it.

### Careers

The vital importance of mathematics to students' future career prospects is emphasised through the curriculum at Hidelow Grange School. Maths helps students to develop key skills such as logic and methodical reasoning, problem-solving and analytical thinking – all highly valued assets on the part of employers. In recognition of the shortage of prospective employees entering professions that utilise mathematics, students are encouraged to consider a range of careers based on the subject. This includes accountancy, banking, finance, economics, engineering, architecture, data analysis and investment.

## Review and References

### Review

This policy will be reviewed on an annual basis by the Headteacher and Numeracy Coordinator. It is due for review in **September 2024**.

### References

This policy should be read in conjunction with the policies and documents listed below:

- Curriculum Policy
- Pupil Assessment Policy

- Teaching and Learning Policy

## Roles & Responsibilities

| Teaching Staff   | Qualifications   |
|--|--|
| <b>Sam Goodchild</b><br>Headteacher; DSL;<br>LAC; Teacher: PE                        | BSc (Hons) in Sports Studies;<br>PGCE: Secondary Education   |
| <b>Charlotte James</b><br>DDSL; SENCO; Exams<br>Officer; Teacher:<br>Maths, ICT, Art | BA (Hons) in Primary Education specialising in SEND  |
| <b>Mark Maddock</b><br>0.6 FTE<br>Teacher: Science, DT                               | B.Sc. (Hons): Applied Zoology (with Agriculture);<br>PGCE in Biology and Science (Distinction in Teaching<br>Practice)<br>Post-Graduate Certificate of SEN |
| <b>Victoria Cooper</b><br>Teacher: English;<br>Enrichment                            | BA (Hons) English Literature and minor Religious<br>Studies; Dip (HE) Diploma in Community, Youth and<br>Play Work; PGCE Secondary English                 |
| <b>Juliet Smith</b><br>Teacher: PSHE;<br>Humanities; Art;<br>Enrichment              | BA (Hons) in Humanities with History; PGCE<br>Secondary Geography  |

### D.I.R.T. Time – Track Your Progress



I need more work on this (emerging)



I'm almost there (developing)



I got it (secure)



Green is for your teacher's thoughts and comments

Purple is for your thoughts and comments

### Whole School Literacy Marking Code

**C** = Either you need to add a capital letter or take one away

**P** = You either need to add a piece of punctuation or take a piece out

**SP** = There's a word that you have spelt incorrectly

**W/Ch** = You need to change a word, either with a homophone or to improve your vocabulary

**VF** = Verbal feedback given

**GR** = Check your grammar

**//** = You need to start a new paragraph or you've started a new paragraph unnecessarily

*Spellings to be written correctly three times at the bottom of the piece of work*

