MULTIPLICATION TABLES POLICY

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Introduction

At our school, we believe that secure knowledge of multiplication and division facts is fundamental to mathematical fluency and success across the wider curriculum. Rapid recall of times tables enables pupils to access more complex areas of mathematics, including fractions, algebra, ratio, percentages and problem solving with confidence.

This policy outlines our whole-school approach to the teaching, learning and assessment of multiplication and division facts from the Early Years Foundation Stage (EYFS) to Year 6. It reflects current educational research, the aims of the National Curriculum and best practice in mathematics pedagogy.

Our approach balances:

- conceptual understanding;
- mathematical reasoning;
- procedural fluency;
- retrieval practice;
- adaptive teaching;
- regular rehearsal;
- use of digital technology;
- and positive attitudes towards mathematics.

We use a mastery approach to mathematics teaching, ensuring that pupils develop deep understanding before moving to greater complexity.

Times Tables Rock Stars (TTRS) forms a central part of our strategy from Year 2 to Year 6 to support fluency, motivation, retrieval and home-school engagement.

Aims

The aims of this policy are:

1. To ensure progression in multiplication and division knowledge from EYFS to Year 6.
2. To develop fluent recall of multiplication and related division facts.
3. To secure conceptual understanding before rapid recall.
4. To promote confidence, resilience and enjoyment in mathematics.
5. To provide consistency in teaching approaches across the school.
6. To ensure all pupils, including disadvantaged pupils and pupils with SEND, can achieve success.
7. To support pupils in achieving automaticity in multiplication facts by the end of Year 4.
8. To ensure pupils can apply multiplication knowledge flexibly in varied mathematical contexts.
9. To prepare pupils effectively for the Multiplication Tables Check (MTC).

10. To foster strong home-school partnerships through regular practice and digital learning platforms.

Rationale and Pedagogy

Research demonstrates that pupils learn multiplication most effectively when conceptual understanding and fluency are developed together.

Our teaching is informed by current pedagogy including the principles underpinning the White Rose Maths approach and NCETM mastery materials. This ensures that pupils develop secure conceptual understanding, fluency, reasoning and problem-solving skills through carefully sequenced small steps. Teaching also reflects the DfE Ready-to-Progress Criteria to ensure pupils secure the most important multiplicative concepts before moving to more complex content.

Our approach reflects key White Rose principles including:

- small step progression;
- representation and structure;
- variation;
- mathematical talk;
- fluency built through understanding;
- reasoning and problem solving;
- revisiting prior learning.

Our teaching is informed by current pedagogy including:

- the CPA approach (Concrete, Pictorial, Abstract);
- retrieval practice and spaced repetition;
- explicit teaching of mathematical vocabulary;
- use of representations and structures;
- low-stakes quizzing;
- overlearning for automaticity;
- adaptive teaching;
- mathematical talk and reasoning;
- variation theory;
- and deliberate practice.

Pupils are first taught to understand multiplication as:

- equal groups;
- repeated addition;
- arrays;
- scaling;
- commutativity;
- and inverse relationships with division.

Only when conceptual understanding is secure do pupils move towards rapid recall and automaticity. Automatic recall reduces cognitive load, enabling pupils to focus on reasoning and problem solving."

Teaching emphasises:

- understanding patterns and relationships;
- efficient mental strategies;
- flexibility of thinking;
- accurate mathematical language;
- and application in problem-solving contexts.

National Curriculum Expectations

EYFS	Children in EYFS develop early mathematical understanding through: ● counting objects accurately; ● recognising patterns; ● comparing quantities; ● subitising; ● exploring doubles; ● grouping and sharing; ● practical experiences involving equal groups; ● rhythmic counting and repeated patterns. Children build the foundations for multiplication through rich mathematical play and discussion.
Year 1	Pupils should: ● count in multiples of 2, 5 and 10; ● solve one-step problems involving multiplication through practical contexts and arrays; ● develop understanding of equal groups; ● use mathematical vocabulary linked to multiplication.
Year 2	Pupils should: ● recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables; ● recognise odd and even numbers; ● use arrays and grouping structures; ● begin to recall facts fluently.
Year 3	Pupils should: ● recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables;

	• apply known facts to solve problems; • develop increasing fluency and accuracy.
Year 4	Pupils should: • recall multiplication and division facts up to 12 × 12; • develop rapid recall and automaticity; • prepare for the statutory Multiplication Tables Check.
Year 5 and Year 6	Pupils should: • maintain fluency in all multiplication facts; • apply multiplication knowledge in increasingly complex contexts; • use multiplication fluently in mental and written calculation; • understand square and cube numbers; • use efficient strategies with larger numbers.

Whole-School Approach

EYFS	Children will:
	
	• explore equal groups through play and practical activities;
	• count objects reliably;
	• recognise and create repeating patterns;
	• begin to double quantities;
	• use language such as:
	  ○ more;
	  ○ same;
	  ○ equal;
	  ○ groups;
	  ○ altogether;
	  ○ double.

Year 1	Children will: • count in 2s, 5s and 10s; • recognise equal groups; • use arrays practically; • solve simple multiplication problems; • begin to understand repeated addition. Key vocabulary includes: groups of, lots of, equal, array, multiply, times, repeated addition.
Year 2	Children will: • recall multiplication and division facts for 2, 5 and 10;

	● understand inverse relationships; ● identify odd and even numbers; ● use multiplication in practical contexts. Key vocabulary includes: times, times-table, twice, multiply, lots of, even, divide, half.
Year 3	Children will: ● secure and apply 2, 5 and 10 facts; ● learn and recall 3, 4 and 8 multiplication facts; ● derive related division facts; ● use known facts to derive unknown facts. Key vocabulary includes: commutative, inverse, multiple, product, remainder, scaling.
Year 4	Children will: ● secure all multiplication tables to 12 × 12; ● recall facts rapidly and accurately; ● apply multiplication knowledge efficiently; ● complete regular MTC practice. Key vocabulary includes: factor, factor pair, inverse, triple, efficient.
Year 5	Children will: ● maintain fluency in all tables; ● apply multiplication in fractions, percentages and algebra; ● recognise square and cube numbers; ● use multiplication flexibly. Key vocabulary includes: common multiple, common factor, cube number, prime number, square number.
Year 6	Children will: ● maintain automatic recall; ● apply multiplication knowledge confidently across all areas of mathematics; ● use multiplication efficiently in reasoning and problem solving. Key vocabulary includes: composite number, order of operations, powers of.

Requirements to satisfy age group expectations are;

- To be able to count on in steps, the children can count on in quick succession - if a child has to count on in 1's to reach the next step, they are unable to count on successfully

- To be able to recall, the child must be able to recall the multiplication table or division fact instantly – if they are using fingers or counting up, they have got achieved instant recall

Teaching and Learning Approaches

Daily Practice

Consistent with White Rose and mastery approaches, multiplication fluency is developed through short, frequent and purposeful practice which prioritises understanding alongside automatic recall.

Multiplication fluency is developed through:

- daily retrieval practice;
- chanting and rhythmic rehearsal;
- active maths activities;
- quick-fire questioning;
- partner quizzes;
- counting activities;
- low-stakes testing;
- online practice;
- games and investigations;
- oral rehearsal;
- reasoning tasks.

Practice sessions are short, regular and purposeful.

White Rose Maths Alignment

Multiplication teaching is aligned to the White Rose Maths schemes of learning and progression documents where appropriate.

Teachers ensure that:

- multiplication concepts are taught through carefully sequenced small steps;
- pupils are exposed to varied representations and structures;
- fluency is developed alongside reasoning and problem solving;
- mathematical discussion is prioritised;
- key multiplication concepts are revisited regularly;
- misconceptions are identified and addressed promptly.

White Rose representations used across school may include:

- arrays;
- part-whole models;
- bar models;
- grouping models;
- number lines;
- place value counters;
- stem sentences;
- manipulatives.

Teachers use White Rose guidance to support consistency and progression whilst adapting lessons responsively to meet pupils' needs.

CPA Approach

Teachers use concrete, pictorial and abstract representations to develop understanding.

Examples include:

- counters;
- arrays;
- bead strings;
- Numicon;
- grouping equipment;
- bar models;
- number lines;
- pictorial representations.

Mathematical Vocabulary

Explicit teaching of mathematical vocabulary is embedded throughout lessons.

Vocabulary progression includes:

- groups of;
- equal groups;
- multiply;
- times;
- factor;
- product;
- array;
- commutative;
- inverse;
- quotient;
- square number;
- cube number.

Teachers model accurate mathematical language consistently.

Reasoning and Problem Solving

Pupils are encouraged to:

- explain patterns;
- justify answers;
- spot relationships;
- compare strategies;
- apply multiplication facts in unfamiliar contexts.

Reasoning opportunities are planned into lessons regularly.

Times Tables Rock Stars (TTRS)

Purpose of TTRS

Times Tables Rock Stars is used from Year 2 to Year 6 to:

- increase fluency and automatic recall;
- motivate pupils through engagement and gamification;
- support retrieval practice;
- provide adaptive rehearsal opportunities;
- strengthen home-school learning links;
- enable teachers to monitor progress.

Expectations for Use

Year 2

- Introduced during the spring term where appropriate.
- Focus on developing confidence with 2, 5 and 10 tables.
- Short, supervised sessions used alongside practical teaching.

Year 3

- Regular weekly use in school and at home.
- Focus on 3, 4 and 8 multiplication facts alongside revision of prior learning.
- Teachers monitor heatmaps and accuracy.

Year 4

- Daily or near-daily use.
- Used to support preparation for the Multiplication Tables Check.
- Timed practice balanced with conceptual teaching.
- Targeted interventions identified through data.

Year 5 and Year 6

- Used to maintain fluency and speed of recall.
- Supports retention and application.
- Used selectively for intervention and consolidation.

Pedagogical Principles for TTRS

TTRS supplements high-quality classroom teaching and does not replace conceptual understanding.

Teachers ensure:

- pupils understand multiplication before speed is prioritised;
- practice is regular and manageable;
- competition remains positive and inclusive;
- progress and effort is celebrated appropriately;
- pupils with additional needs are supported adaptively.

Teachers use TTRS data to:

- identify gaps;
- inform interventions;
- track progress;
- support adaptive teaching.

Home Learning

Home learning supports retention and fluency.

From Year 2 onwards, pupils are expected to engage regularly with multiplication practice at home through:

- Times Tables Rock Stars;
- practical games;
- oral rehearsal;
- teacher-provided practice materials.

Suggested practice:

- little and often;
- approximately 5–10 minutes;
- several times weekly.

Parents are encouraged to:

- rehearse facts orally;
- celebrate effort and progress;

- avoid over-reliance on rote memorisation without understanding;
- communicate concerns with teachers.

Guidance may be shared with parents to support effective multiplication practice at home.

Assessment

Assessment is ongoing and informs teaching.

Formative Assessment

Teachers use:

- questioning;
- observation;
- oral rehearsal;
- mini whiteboards;
- retrieval activities;
- TTRS analytics;
- low-stakes quizzes.

Summative Assessment

Pupils may complete:

- timed recall activities;
- multiplication checks;
- arithmetic assessments;
- fluency reviews.

Assessment focuses on:

- accuracy;
- fluency;
- automaticity;
- application;
- conceptual understanding.

Multiplication Tables Check (MTC)

Year 4 pupils will complete the Multiplication Tables Check (MTC) in June of each year.

Preparation includes:

- regular exposure to online formats;
- retrieval practice;

- fluency rehearsal;
- confidence-building strategies;
- targeted support where needed.

The MTC is viewed as one measure of fluency and not the sole indicator of mathematical understanding.

Adaptive Teaching and Inclusion

All pupils are entitled to high-quality multiplication teaching.

We recognise that some disadvantaged pupils may have had reduced exposure to mathematical language, rehearsal opportunities or mathematical experiences outside school. Teachers therefore prioritise:

- explicit vocabulary instruction;
- regular retrieval opportunities;
- pre-teaching and overlearning where appropriate;
- access to technology and online platforms;
- targeted intervention;
- scaffolded support;
- parental engagement;
- positive mathematical experiences that build confidence and participation.

Teachers monitor the attainment and progress of disadvantaged pupils carefully to ensure that gaps are identified early and addressed promptly.

Teaching is adapted through:

- scaffolding;
- targeted intervention;
- pre-teaching vocabulary;
- additional retrieval opportunities;
- concrete resources;
- visual supports;
- overlearning;
- flexible grouping.

Pupils with SEND may:

- work on smaller steps;
- revisit prior learning regularly;
- access adapted TTRS settings where appropriate;
- use manipulatives for longer.

High-attaining pupils are challenged through:

- reasoning tasks;

- investigations;
- derived facts;
- algebraic thinking;
- application in complex contexts.

All pupils should experience success and develop confidence.

Classroom Environment

Classrooms should promote mathematical thinking through:

- working walls;
- vocabulary displays;
- multiplication representations;
- visual models;
- celebration of effort and progress.

Displays should:

- support understanding;
- reflect current learning;
- encourage independence.

Where multiplication facts are displayed, teachers should consider when resources should be removed to support retrieval practice.

Monitoring and Evaluation

The mathematics subject leader will monitor the effectiveness of this policy through:

- lesson visits;
- pupil voice;
- book looks;
- assessment analysis;
- TTRS data reviews;
- staff discussions;
- monitoring of intervention impact.

The policy will be reviewed annually to reflect:

- current pedagogy;
- statutory guidance;
- school priorities;
- assessment outcomes.

Impact

The impact of this policy will be seen through pupils who:

- recall multiplication facts fluently;
- apply multiplication knowledge confidently;
- demonstrate mathematical reasoning;
- show resilience and positive attitudes;
- achieve well in mathematics;
- are prepared for the next stage of learning.

Pupils will leave primary school with secure multiplicative understanding that supports success in secondary mathematics and beyond.