



# **Buckstones Community Primary School**

## **Policy for Mathematics**

**Written and agreed by staff: Thursday 25<sup>th</sup>. November 2021**

**Adopted by Governors:**

**Signed by Chair:**

## THE NATURE OF MATHEMATICS

### Aims

The aim of the policy is to ensure that all our children leave school as numerate individuals equipped with the skills and concepts to be successful both in their education and in everyday life itself.

Mathematics is a tool for everyday life. It is a whole network of concepts and relationships which provide a way of viewing and making sense of the world. It is used to analyse and communicate information and ideas and to tackle a range of practical tasks and real life problems. It also provides the materials and means for creating new imaginative worlds to explore.

Using the Programmes of Study from the National Curriculum 2014, it is our aim to develop:

- ✓ a positive attitude towards mathematics;
- ✓ competence and confidence in mathematical knowledge, concepts and skills;
- ✓ an ability to solve problems, to reason, to think logically and to work systematically and accurately;
- ✓ initiative and an ability to work both independently and in cooperation with others;
- ✓ an ability to communicate mathematics;
- ✓ an ability to use and apply mathematics across the curriculum and in real life;
- ✓ an understanding of mathematics through a process of enquiry and experiment.

## **SCHOOL POLICY AND THE NATIONAL CURRICULUM**

### **Curriculum Intent**

The maths curriculum is ambitious - as are all curriculum areas- and allows our children to become independent and resilient. The maths curriculum provides challenges which enables children's understanding of mathematical concepts to go deeper.

We want to equip our pupils with all the statutory requirements of the Maths National Curriculum and also prepare them for the opportunities, responsibilities and experiences in the next stage of their education and beyond.

We want our children to learn from other cultures, respect diversity, co-operate with one another and appreciate what they have. We achieve this by providing a strong SMSC curriculum, with British Values and our core values placed at the heart of everything we do. This often feeds into the maths curriculum.

We celebrate innovation and the freedom of choice that British Society represents and as a result our pupils are encouraged to become free thinkers, with ambitious ideas. The children know that in maths there may be more than one strategy that can be used to solve a problem. They are encouraged to approach and solve problems, choosing their own efficient method and are given opportunities to share their thinking with others. We encourage children's individuality, belief in their ideas and the understanding that they can learn from mistakes.

We enrich their time in our school with memorable, unforgettable experiences and opportunities to engage and intrigue our children.

### **Curriculum Implementation**

#### **Knowledge Skills and Understanding**

At KS1 and KS2 teachers use the Curriculum for Mathematics 2014.

This aims to implement the statutory requirements for teaching mathematics in primary schools. Teachers utilise a range of resources and differentiation to meet the preferred learning needs and styles of the children in their classes. We use Buckstones' Big Maths Lessons where the class work together on more open ended aspects of the subject in order to enrich the curriculum.

#### **Breadth of Study**

Opportunities are offered to children to develop their mathematical knowledge and skills through tackling problems and through purely mathematical activities e.g. Buckstones' Big Maths.

These activities are balanced between those which are short in duration and those which can be developed over a longer period. We encourage them to work accurately by applying their mathematics to a variety of problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Children are given opportunities to be involved in individual and group work, experience open-ended as well as closed tasks. We also aim to help children to improve their ability in developing an argument, justification or proof using mathematical language.

They are encouraged to develop a range of methods of calculation, e.g. mental, pencil and paper procedures and using a calculator (in cross-curricular activities e.g. science). This will enable them to become fluent in the fundamentals of mathematics, through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

Children develop skills using a wide range of mathematical tools through practical work (including computers).

Children are enabled to develop their personal qualities and a positive attitude to mathematics through the experiences offered to them.

## **SCHEME OF WORK**

Our school long term plan is a working document and as such is composed of ongoing plans produced on a week by week basis. This is developed from the Curriculum for Mathematics 2014 and takes into consideration the needs of our children. Buckstones long term plan does not follow 1 particular scheme instead teachers use elements from a range of different sources which best fit the objectives.

## **CROSS-CURRICULAR LINKS**

Throughout the whole curriculum opportunities exist to extend and promote mathematics. Teachers seek to take advantage of all opportunities. Mathematics also underpins learning in virtually every other subject in the curriculum. Where possibilities exist, links are made

to and from other subjects in teachers' planning and delivery.

## TEACHERS' PLANNING AND ORGANISATION

The school uses a variety of teaching and learning skills in Mathematics lessons in order to meet the needs and learning styles of all children. At the heart of this is an emphasis on practical experiences as well as mathematical skills, developing the feel for number as well as a knowledge base and increasing confidence to make use of mathematics both in problem solving, reasoning and in other areas in life.

Every week the planning and children's work should reflect the following proportions: approximately 1/3 Arithmetic (inc. mental)/1/3 problem solving/ 1/3 reasoning. Within every lesson there is an expectation for children to be engaged with the following:

**Negotiation of vocabulary-** Using the vocabulary they know to explain and describe what they are doing. This includes general mathematical vocabulary (using the correct, appropriate terminology when describing mathematical operations or concepts) and the vocabulary of reasoning (often led by the teacher using diagnostic talk prompts)

**What if...?** - Questions by the teacher should use a what if questioning approach where children don't stop when they find an answer but explore further with a what if question.

**Finding all possibilities-** To ensure that pupils are able to find a range of answers and are able to extend their thinking, rather than settling for one correct answer.

Reasoning is a daily expectation within Maths lessons to allow children regular opportunities to explore numbers, make conjectures, investigate patterns, explain possibilities and represent findings.

There is a 5 step progression to reasoning which shows the stage within reasoning that children are working at, taken from NRICH.

- 🌀 Step 1: Describing-Simply saying what they did, say what they see
- 🌀 Step 2: Explaining-Offering a reason for what they did.
- 🌀 Step 3: Convincing-Convincing themselves or a friend that they have a solution or case.
- 🌀 Step 4: Justifying- say why they are convinced
- 🌀 Step 5: Proving: provide an argument that is mathematically sound, often based on generalisations. Making a watertight case, proving with resources if necessary. At a higher level, developing an algebraic proof.

Teachers of the Reception class base their teaching on objectives in the Framework for

Reception; this ensures that they are working towards the 'Early Learning Goals for Mathematical Development'. Towards the end of Reception teachers aim to draw the elements of a mathematics lesson together so that the children are prepared for the move into Year 1.

## **INCLUSION**

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

## **Differentiation and support, including support for SEND.**

This is incorporated into all mathematics lessons and is done in various ways, for all pupils including those who are lower and higher achieving:

- ❖ Setting appropriately challenging tasks based on systematic, accurate assessment of pupils' prior skills, knowledge and understanding.
- ❖ Timely support and intervention; systematically and effectively checking pupils' understanding throughout lessons.
- ❖ Open ended activities/investigations where differentiation is by outcome.
- ❖ Providing a variety of resources depending on abilities eg: Counters, cubes, 100 squares, number lines, mirrors, NUMICON.
- ❖ Support from teacher or TA in class, annotated on planning.
- ❖ Setting appropriate and regular homework.
- ❖ Individual targets are set for those pupils who need them.

Where a child's needs are significantly different from their peers, the teacher will liaise with parents and the SENCO to determine how best to meet the child's requirements. If the needs are very specific the children will have individual targets to meet their needs.

Some children may not have such specific needs and where this is the case, pupils' needs are met through quality first teaching.

When additional support staff are available to support groups or individual children they work collaboratively with the class teacher.

## **EQUAL OPPORTUNITIES**

In line with our Equal Opportunities Policy we are committed to providing a teaching environment conducive to learning. Each child is valued, respected and challenged regardless of race, gender, religion, social background, culture or disability.

Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our Mathematics teaching we provide learning opportunities that enable all pupils to make progress.

## **PUPILS' RECORDS OF THEIR WORK**

Children are encouraged to discuss their Mathematics and then to record and communicate their Mathematics in a variety of ways e.g. in books, on whiteboards, orally, photographs of practical activities, Computing.

All children are encouraged to work tidily and neatly when recording their work. When using squares one square should be used for each digit.

## **Curriculum Impact**

### **ASSESSMENT AND RECORD KEEPING**

Children are assessed regularly in class in both formal and informal settings as part of daily classroom life.

In the foundation stage, Baseline assessment is carried out on entry to Reception Class. Progress is then mapped using the Foundation Stage Profile.

On a more formal basis, our Year 6 children are assessed in May using the National Key Stage 2 Standard Assessment Tests (SATs). In Year 2 the children are formally assessed and levels reported for national usage.

Assessments are carried out and are based on evidence and observations from children's independent learning in a range of activities. As such this evidence is recorded for groups of children to assess progress, make a judgement about levels of attainment and inform future target setting.

- ❖ Target setting: at the start of the academic year the Headteacher analyses each learner's current attainment, and where appropriate Foundation Stage profile and end of Key Stage one results. From this data individual challenging targets are set in writing, reading, SPaG, numeracy. Staff have the opportunity during the Autumn and Spring terms to consult with the headteacher about targets they have set.

Parents are informed about their child's progress and targets at Parents' Evening in the Autumn and Spring terms.

All these assessments are collated to make a final judgement about pupil progress at the end of the academic year which is then reported on to parents and passed to the next school year group.

## **MONITORING AND EVALUATION**

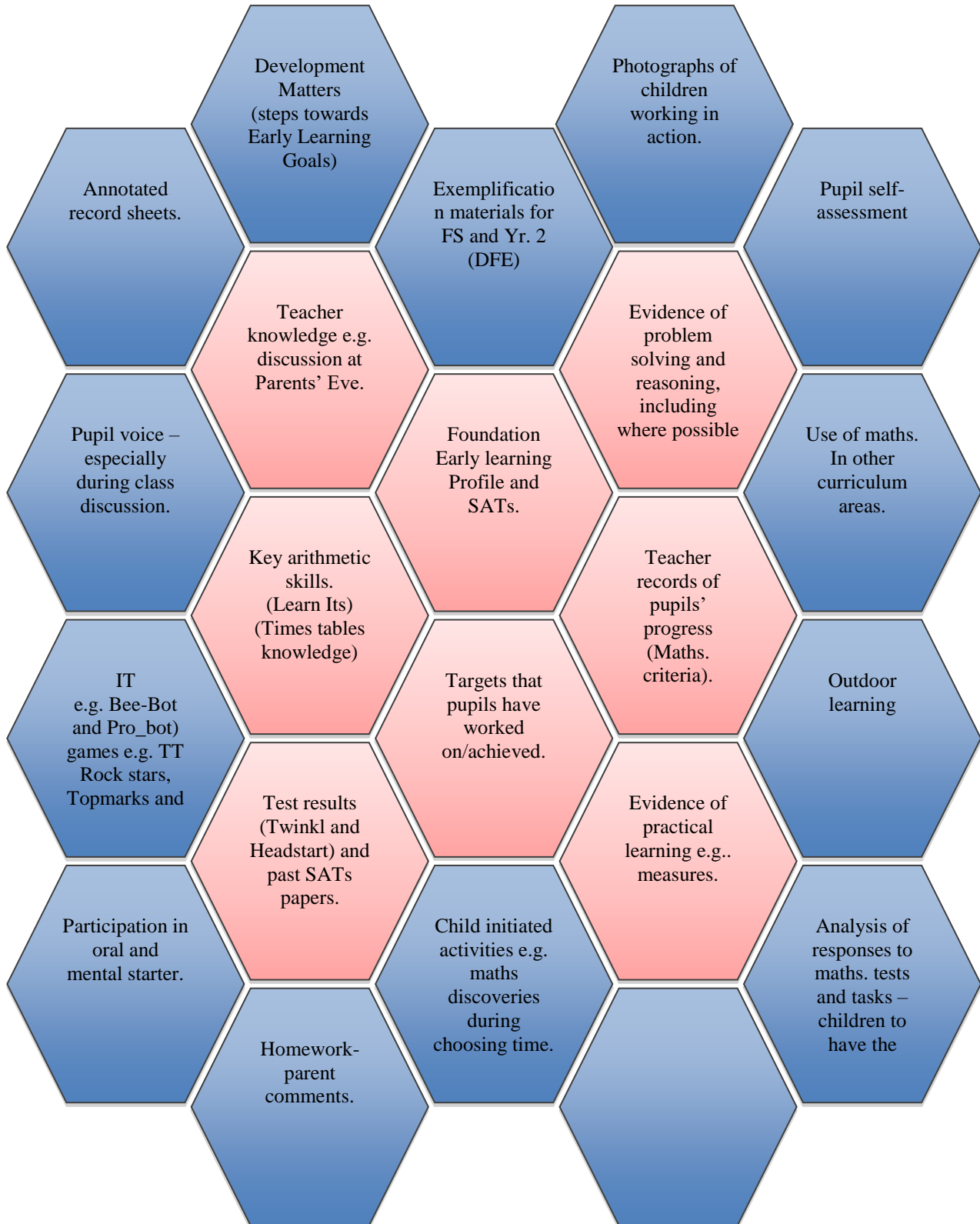
The teaching and learning of Mathematics is monitored and evaluated regularly.

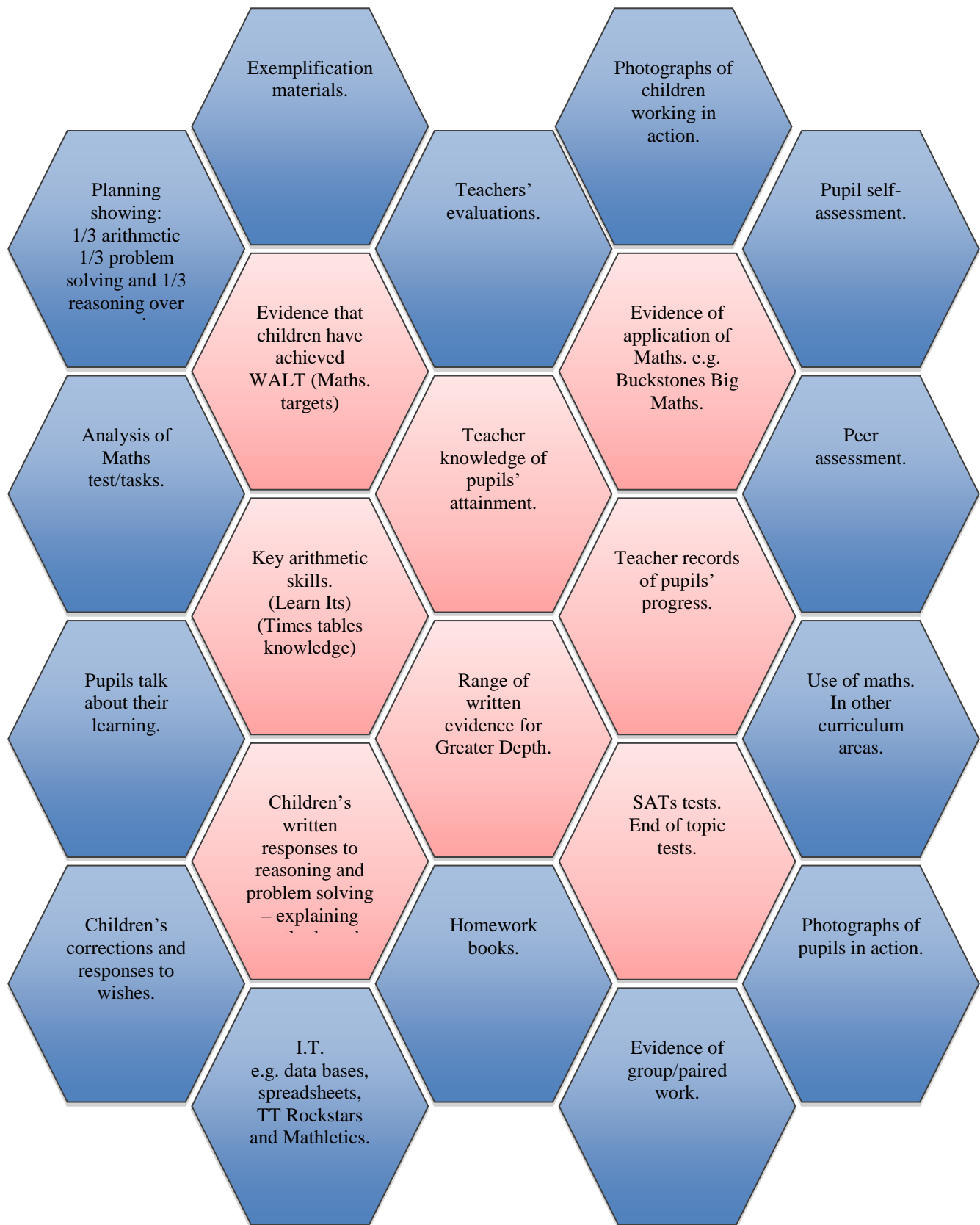
The role of the Mathematics co-ordinator is to:

1. Support colleagues in teaching the subject content in each unit.
2. Renew, update and complement resources needed to deliver the curriculum, within budget restraints.
3. Audit planning and current practice.
4. Develop assessment and record keeping to ensure progression and continuity.
5. Keep up-to-date with developments in Mathematics education.



# FS and KS 1 Maths. Evidence





Evidence in red is considered to be essential. Evidence in blue is considered desirable.