

# BSquared

## Progression Steps core subject pack 2018

an observation-based, teacher assessment framework  
for subject-specific learning



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# Progression Steps (core)

an observation-based, teacher assessment framework  
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## An Introduction to Progression Steps

The Department for Education (DfE) responded to the findings of their consultation on '*Primary School Pupil Assessment: Rochford Review Recommendations*' on 14 September 2017. This consultation sought views on the recommendations made by the Rochford Review Group regarding the assessment of pupils working below the standard of the National Curriculum tests and assessments. This response was released in conjunction with a response to the '*Primary assessment in England*' consultation, within which the DfE sought views on the future of assessment in primary schools and the subsequent implications on the accountability system. Following these responses, the Standards and Testing Agency (STA) released the 'permanent and extended' pre-key stage standards and the teacher assessment frameworks.

In response to this range of documents, B Squared have designed Progressions Steps, an observation-based, teacher assessment framework for use with pupils who are engaged in subject-specific learning. This framework has been designed to help teachers to identify and record the ongoing achievements of pupils who are working moderately or severely beneath age-related expectations, in some or all areas of their development. It can be used with pupils who are either studying elements from the formal curriculum or those who are still engaged in a semi-formal approach to learning.

The Progression Steps assessment framework helps schools and teachers to monitor their provision for Cognition and Learning by enabling staff to record the academic knowledge and abilities achieved by their pupils.

Some of the assessment points in Progression Steps are similar to assessment points in our other frameworks; however, we have spent a long time analysing and refining the content and we believe that we have reduced the workload for teachers whilst ensuring that pupil progress milestones are still recognised.

an observation-based, teacher assessment framework  
for subject-specific learning

# Progression Steps (core)

an observation-based, teacher assessment framework  
for subject-specific learning

## The Content of Progression Steps

Progression Steps breaks down the 2014 National Curriculum programmes of study for Key Stages 1–3. These smaller, more manageable, assessment points can be used to evaluate the performance of pupils who make atypical rates of progress in some or all aspects of their academic development. As there is no curriculum guidance available for teachers of pupils working beneath the level of the National Curriculum, we have identified prerequisite skills for entry to the Key Stage 1 programmes.

Progression Steps provides you with frameworks for the teacher assessment of all National Curriculum subjects. However, because every school has its own priorities, B Squared are providing these frameworks in three packs. This allows you to choose the areas which best help you and your school to meet the needs of the students with whom you work.

This is the **Core Pack**. As our most popular pack, this will provide you with teacher assessment frameworks which cover the programmes of study for the core subjects: English, Maths, and Science. Additionally, it will identify the prerequisite skills for entry to these programmes.

There are two other Progression Steps packs available for purchase. These are:

### Core+ Pack

This pack covers the second most frequently purchased group of subjects and will provide you with teacher assessment frameworks which cover the programmes of study for Citizenship, Computing, and PE as well as providing frameworks which cover the government guidance for PSHE and SRE. Additionally, this pack will identify prerequisite skills for entry to these programmes.

### Foundation Pack

This pack is for schools who need a comprehensive assessment system. It will provide you with teacher assessment frameworks which cover the programmes of study for all the rest of the foundation subjects: Art & Design, DT, Geography, History, Languages, and Music as well as providing frameworks which cover the government guidance for Religious Education. This pack gives you a much higher level of detail than the national curriculum programmes and also identifies prerequisite skills for entry to these programmes.

The following page identifies the subjects areas within this pack.

### Core pack

	Progression Step 1	Progression Step 2	Progression Step 3	Progression Step 4	Progression Step 5	Progression Step 6	Progression Step 7	Progression Step 8	Progression Step 9	Progression Step 10
English; Reading	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
English; Writing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
English; Spoken Language	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
English Appendix; Spelling	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
English Appendix; Vocabulary, Grammar & Punctuation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mathematics; Number	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mathematics; Measurement & Geometry	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mathematics; Statistics & Probability	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Science; Biology	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Science; Chemistry	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Science; Physics	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

### Core+ pack

	Progression Step 1	Progression Step 2	Progression Step 3	Progression Step 4	Progression Step 5	Progression Step 6	Progression Step 7	Progression Step 8	Progression Step 9	Progression Step 10
Citizenship	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Computing/E-Safety; Computing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Computing/E-Safety; E-Safety	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Personal, Social, Health & Economic Education	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Physical Education/Swimming & Water Safety; PE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Physical Education/Swimming & Water Safety; S&WS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sex & Relationships Education	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

### Foundation pack

	Progression Step 1	Progression Step 2	Progression Step 3	Progression Step 4	Progression Step 5	Progression Step 6	Progression Step 7	Progression Step 8	Progression Step 9	Progression Step 10
Art & Design	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design & Technology/Cooking & Nutrition; D&T	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design & Technology/Cooking & Nutrition; Cooking	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Geography	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
History	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Languages	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Music	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Religious Education	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

# Progression Steps (core)

## the assessment of English

### English

This area of Progression Steps is based on the 2014 National Curriculum programme of study for English, which is a compulsory subject for pupils studying in all key stages (KS1–KS4). We have supplemented the programmes of study with the pre-key stage standards and the teacher-assessment standards to identify crucial pupil assessment milestones.

English has a pre-eminent place in education and in society. A high-quality education in English will teach pupils to speak and write fluently so that they can communicate their ideas and emotions to others, and through their reading and listening, others can communicate with them. Through reading in particular, pupils have a chance to develop culturally, emotionally, intellectually, socially and spiritually. Literature, especially, plays a key role in such development. Reading also enables pupils both to acquire knowledge and to build on what they already know. All the skills of language are essential to participating fully as a member of society; pupils who do not learn to speak, read, and write fluently and confidently are effectively disenfranchised.

The overarching aim for English in the National Curriculum is to promote high standards of language and literacy by equipping pupils with a strong command of the spoken and written language, and to develop their love of literature through widespread reading for enjoyment. The National Curriculum programme of study for English aims to ensure that all pupils:

- read easily, fluently and with good understanding;
- develop the habit of reading widely and often, for both pleasure and information;
- acquire a wide vocabulary, an understanding of grammar and knowledge of linguistic conventions for reading, writing and spoken language;
- appreciate our rich and varied literary heritage;
- write clearly, accurately and coherently, adapting their language and style in and for a range of contexts, purposes and audiences;
- use discussion in order to learn; they should be able to elaborate and explain clearly their understanding and ideas; and
- are competent in the arts of speaking and listening, making formal presentations, demonstrating to others and participating in debate.



# Progression Steps (core)

## the assessment of English

The programme of study identified three specific areas of study.

- Reading
- Writing
- Spoken Language

Using the programme of study as a starting point we designed three profiles to help identify important skills and knowledge.

The following pages describe how the Progression Steps 2018 framework compares to B Squared's previous assessment framework for English (Core P Steps 2014 and Core NC Steps 2014).

### English; Reading

This profile comprises two strands: 'Word Reading', and 'Comprehension'.

The earlier 'Word Reading' steps reflect the pre-key stage standards and identify the skills required to produce individual and blended sounds. These help children to access the written word by building fluency and developing the skills required to decode words. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programmes of study. By the time pupils reach the later steps, the content is derived from the Key Stage 3 programmes of study. It is assumed that specific word reading skills are embedded; therefore, this strand does not appear in these steps.

The earlier 'Comprehension' steps reflect the pre-key stage standards and identify the skills required to engage with the activity of reading. These help children to show a basic understanding of the meaning of simple texts. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programmes of study. By the time pupils reach the later steps, the content is derived from the Key Stage 3 programmes of study. At this point, pupils are assessed on their ability to pinpoint information, justify their opinions, summarise, and present complex information which they have read in a range of different formats.

# Progression Steps (core)

## the assessment of English

### English; Writing

This profile comprises four strands: 'Composition', 'Vocabulary, Grammar & Punctuation', 'Transcription: Spelling', and 'Transcription: Handwriting & Presentation'.

The earlier 'Composition' steps reflect the pre-key stage standards and identify the skills required to sequence events, verbally complete clauses, and make marks with meaning. These help children to devise their own creative ideas and to identify some purposes of writing. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programme of study and teacher assessment frameworks. By the time pupils reach the later steps, the content is derived from the Key Stage 3 programmes of study. In these steps, the pupils are expected to evaluate their own work and decide whether or not their text has achieved the purpose they intended. Pupils will also focus on the structure and style of their writing; making changes to enhance the effect of their text.

The earlier 'Vocabulary, Grammar & Punctuation' steps reflect the pre-key stage standards and identify the pupil's use of different parts of speech alongside their initial attempts to imitate the conventions of writing. These help children to develop an understanding of how the English language works and how we use it. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programme of study and teacher assessment frameworks. By the time pupils reach the later steps, the content is derived from the Key Stage 3 programmes of study. At this point, pupils are assessed on their ability to command an extensive vocabulary, accurately use a wide range of punctuation whilst consistently demonstrating the appropriate conventions of grammar. Specific elements of this area are linked with the English Appendix; Vocabulary, Grammar & Punctuation.

The earlier 'Transcription: Spelling' steps reflect the pre-key stage standards and cover phoneme-grapheme correspondences, early mark-making and letter formation. These help children to develop an initial understanding of word structure. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programme of study and teacher assessment frameworks. By the time pupils reach the later steps, the content is derived from the Key Stage 3 programmes of study. In these steps, the pupils are expected to build upon their earlier spelling skills in order to accurately and consistently spell word from their extensive vocabulary. Pupils are expected to recognise prefixes, suffixes and roots in unfamiliar words and distinguish less commonly used homophones. Specific elements of this area are linked with the English Appendix; Spelling.

# Progression Steps (core)

## the assessment of English

The earlier 'Transcription: Handwriting & Presentation' steps reflect the pre-key stage standards and identify the fine motor and line-making skills. These help children to develop an understanding of mark-making. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programme of study and teacher assessment frameworks. By the time pupils reach the later steps, the content is derived from the Key Stage 3 programmes of study. At this point, pupils are assessed on their ability to write quickly and neatly in a cursive style, arranging text for visual effect and considering the layout of their work.

### English; Spoken Language

This profile comprises one strand: 'Spoken Language'.

The earlier steps reflect the pre-key stage standards and identify the skills required to imitate words (or sign and symbol usage), join in with songs or rhymes, and engage with small groups. These help children to develop the communication skills necessary for them to transmit and receive information about their own or others' needs, thoughts, ideas and feelings. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programme of study and teacher assessment frameworks. By the time pupils reach the later steps, the content is derived from the Key Stage 3 programmes of study. These steps define the skills required to present a wide variety of information or undertake theatrical performances confidently to large groups. It also identifies skills involved in spontaneously analysing information received from others.

# Progression Steps (core)

## the assessment of English

### English Appendix; Spelling

This profile comprises one strand: 'Spelling'.

The earlier 'Spelling' steps reflect the pre-key stage standards and cover phonic knowledge, rhyme, and CVC words. These help children to develop an initial understanding of word structure. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programme of study and teacher assessment frameworks. By the time pupils reach the later steps, the content is derived from the Key Stage 3 programmes of study. In these steps, the pupils are expected to build upon their earlier spelling skills in order to accurately and consistently spell word from their extensive vocabulary. Pupils are expected to recognise prefixes, suffixes and roots in unfamiliar words, and distinguish less commonly used homophones.

### English Appendix; Vocabulary, Grammar & Punctuation

This profile comprises four strands: 'Sentence', 'Text', 'Punctuation', and 'Terminology'.

The earlier 'Sentence' steps reflect the pre-key stage standards and identify the pupil's ability to combine verbs and nouns, dictate sentences for recorded purposes, and write phrases that convey meaning. These help children to link words which are understood by members of staff. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programme of study and teacher assessment frameworks. By the time pupils reach the later steps, they are assessed on their ability to select vocabulary reflecting the formality of the piece and apply varied sentence writing techniques to keep the interest of the audience. Pupils are expected to extend and apply the grammatical knowledge previously learnt.

# Progression Steps (core)

## the assessment of English

The earlier 'Text' steps reflect the pre-key stage standards and identify the pupil's use of writing in play, sequencing of events, and storytelling techniques. These help children to develop an understanding of recorded expression and its purposes. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programme of study and teacher assessment frameworks. By the time pupils reach the later steps, they are assessed on their ability to use a variety of cohesive devices within and across paragraphs and use appropriate vocabulary and structure for formal or informal pieces. Pupils are expected to demonstrate an understanding of the differences between spoken and written language and use it consciously in their writing to achieve particular effects.

The earlier 'Punctuation' steps reflect the pre-key stage standards and identify the pupil's use of spaces between self-made marks, verbal questioning, and lower- and upper-case letters. These help children to develop an understanding of the conventions of writing. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programme of study and teacher assessment frameworks. By the time pupils reach the later steps, they are assessed on their ability to accurately use a wide range of punctuation to separate clauses, vary pace, indicate, subdivide and create atmosphere. Pupils are expected to pay attention to accurate punctuation and apply their previous learning.

The earlier 'Terminology' steps reflect the pre-key stage standards and record the pupil's identification of simple grammatical features, and verbal use of pronouns and prepositions. These help children to develop an understanding of the functions of different parts of speech. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programme of study and teacher assessment frameworks. By the time pupils reach the later steps, they are assessed on their ability to understand a wide variety of grammatical terms and comments on the impact of the techniques they have included in their work. Pupils are expected to discuss writing with precise and confident use of linguistic and literary terminology.

# Progression Steps (core)

## the assessment of English

### Differences between Progression Steps and our Previous Framework for English

The Core P Steps 2014 and Core NC Steps 2014 assessment package for Reading and Spoken Language comprised more strands. By reducing the number of strands, we hope to make the assessment of these areas more manageable for teachers. The previous assessment package for Writing comprised the same strand headings; however, we have worked hard to make explicit the value of each assessment point by refining our use of language and identifying crucial skills.

We included a Spelling Appendix in our Primary Core 2014 assessment package (based on end of years outcomes) but we did not include it in the Core P Steps 2014 and Core NC Years assessment packages. Therefore, this aspect of Progression Steps will be new to some schools. The Vocabulary, Grammar & Punctuation appendix will be new to all schools.

Within all areas, we have also integrated the content from the pre-key stage standards and the new teacher assessment frameworks in order to bring our Progression Steps in line with current expectations.

# Progression Steps (core)

## the assessment of mathematics

### Mathematics

This area of Progression Steps is based on the 2014 National Curriculum programme of study for Mathematics, which is a compulsory subject for pupils studying in all key stages (KS1–KS4). We have supported the programmes of study with the pre-key stage standards and the teacher-assessment standards to identify crucial pupil assessment milestones.

Mathematics is a creative and highly interconnected discipline that has been developed over centuries, providing the solution to some of History's most intriguing problems. It is essential to everyday life, critical to Science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality Mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of Mathematics, and a sense of enjoyment and curiosity about the subject.

The National Curriculum for Mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including 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;
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language; and
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning, and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to Science and other subjects.

# Progression Steps (core)

## the assessment of mathematics

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.

The programme of study identified 18 distinct areas across Key Stages 1 to 3.

We grouped these areas on three profiles (Number, Measurement & Geometry, and Statistics & Probability) and designed a developmental framework to help identify the skills listed within the National Curriculum programme of study.

The following pages describe how the Progression Steps 2018 framework compares to B Squared's previous assessment framework for Mathematics (Core P Steps 2014 and Core NC Steps 2014).

### Mathematics; Number

This profile comprises six strands: 'Number & Place Value', 'Addition, Subtraction, Multiplication and Division', 'Fractions (including Decimals & Percentages)', 'Ratio, Proportion & Rates of Change', 'Algebra', and 'Working Mathematically'—some of which (respective of their position within the curriculum) do not appear until later in the framework.

The earlier 'Number and Place Value' steps identify the skills required to contrast quantities, count up to five objects, and begin to write numerals. These help children to form a basic understanding of quantities and form a relationship with number. Steps 5, 6, and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8, and 9, seek to expand upon the content contained within the Key Stage 2 National Curriculum programmes of study. The higher steps cover content from the Key Stage 3 programmes of study and aim to identify higher level number skills including working with fractions, decimals, and negative numbers.



# Progression Steps (core)

## the assessment of mathematics

The earlier 'Addition, Subtraction, Multiplication and Division' steps identify the skills required respond to questions involving the word 'more', make groups, remove objects, and count the remaining ones. These help children to form a basic understanding of mathematical operations. Steps 5, 6, and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8, and 9, seek to expand upon the content contained within the Key Stage 2 National Curriculum programmes of study. The higher steps cover content from the Key Stage 3 programmes of study and aim to identify higher level number skills including working with fractions, decimals, and negative numbers.

The earlier 'Fractions (including Decimals & Percentages)' steps identify the skills required to bend pliable materials, share concrete objects so that everyone has equal amounts, and use the term 'half'. These help children to form a basic understanding of parts of a whole. Steps 5, 6, and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8, and 9, seek to expand upon the content contained within the Key Stage 2 National Curriculum programmes of study. The higher steps cover content from the Key Stage 3 programmes of study and aim to identify higher level number skills including working with fractions, decimals, and negative numbers.

The 'Ratio and Proportion', and 'Algebra' strands do not come into the curriculum until Year 6. At this point we seek to expand upon the content contained within the programme of study.

The 'Working Mathematically' strand does not come into the curriculum until KS3. At this point we seek to expand upon the content contained within the programme of study and link this across all areas of maths.

### Mathematics; Measurement & Geometry

This profile comprises four strands: 'Measurement', 'Properties of Shape', 'Position & Direction', and 'Working Mathematically'.

The earlier 'Measurement' steps reflect the pre-key stage standards and identify the skills required to explore measures in practical situations. This maybe through use of language, motor skills or sensory exploration. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programme of study and teacher assessment frameworks. The strands are combined in the later steps and pupils are expected to accurately measure angles, lengths, perimeters, areas, and volumes of objects.

# Progression Steps (core)

## the assessment of mathematics

The earlier 'Properties of Shape' steps reflect the pre-key stage standards and identify the skills required to place objects in a line, recreate a linear pattern on a pegboard, and assemble puzzles. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programme of study and teacher assessment frameworks. The strands are combined in the later steps and pupils are expected to use formula to accurately work out angles, areas, and volumes of a wide range of shapes.

The earlier 'Position & Direction' steps reflect the pre-key stage standards and identify the skills required to place objects in a line, recreate a linear pattern on a pegboard, and assemble puzzles. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programme of study and teacher assessment frameworks. The strands are combined in the later steps and pupils are expected to accurately describe and translate shapes.

The 'Working Mathematically' strand does not come into the curriculum until KS3. At this point we seek to expand upon the content contained within the programme of study and link this across all areas of maths.

### Mathematics; Statistics & Probability

This profile comprises three strands: 'Statistics', 'Probability', and 'Working Mathematically'.

The earlier 'Statistics' steps reflect the pre-key stage standards and identify the skills required to create and read basic pictograms, classify items by set criteria, and record data with tally charts. These help children to form a basic understanding of data and to use similarities and differences to identify groups. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programme of study and teacher assessment frameworks. By the time pupils reach the later steps, the content is derived from the Key Stage 3 programmes of study. In these steps, the pupils are expected to construct and interpret appropriate tables, charts, and diagrams as well as describing simple mathematical relationships between two variables.

Probability does not feature in the earlier steps. By the time pupils reach the later steps, the content is derived from the Key Stage 3 programmes of study. In these steps, the pupils are expected to focus on developing an understanding of probability.

# Progression Steps (core)

## the assessment of mathematics

The 'Working Mathematically' strand does not come into the curriculum until KS3. At this point we seek to expand upon the content contained within the programme of study and link this across all areas of maths.

### Differences between Progression Steps and our Previous Framework for Mathematics

Our Core P Steps 2014 and Core NC Steps 2014 assessment package used a range of different strand headings. Allowing teachers to look at students' progress through 'Number' as its own discipline should help to simplify this process. We have also worked hard to make explicit the value of each assessment point by refining our use of language and identifying crucial skills.

Our previous assessment package separated Measurement from Geometry but this became increasingly more complex at the higher levels. We still use headings to identify areas of distinct study by you will now be able to track pupil development within the area throughout their whole educational journey. We have also worked to make explicit the value of each assessment point by refining our use of language and identifying crucial skills.

Our previous assessment package for 'Statistics' was similarly arranged; however, we have now included 'Probability' for learners working at the higher levels.

Within all areas, we have also integrated the content from the pre-key stage standards and the new end of key stage teacher assessment frameworks in order to bring our Progression Steps in line with current expectations.

# Progression Steps (core)

## the assessment of science

### Science

This area of Progression Steps is based on the 2014 National Curriculum programme of study for Science, which is a compulsory subject for pupils studying in all key stages (KS1–KS4). We have supported the programmes of study with the teacher-assessment standards to identify crucial pupil assessment milestones.

A high-quality Science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry, and physics. Science has changed our lives, is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes, and uses of Science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how Science can be used to explain what is occurring, predict how things will behave, and analyse causes.

The National Curriculum for Science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics;
- develop understanding of the nature, processes and methods of Science through different types of Science enquiries that help them to answer scientific questions about the world around them; and
- are equipped with the scientific knowledge required to understand the uses and implications of Science, today and for the future.

The programme of study identified 57 distinct areas across Key Stages 1 to 3.

We grouped these areas on three profiles (Biology, Chemistry, and Physics) and included a strand called 'Working Scientifically' on each. We then designed a developmental framework to help identify the skills listed within the National Curriculum programme of study.

The following pages describe how the Progression Steps 2018 framework compares to B Squared's previous assessment framework for Science (Core P Steps 2014 and Core NC Steps 2014).

# Progression Steps (core)

## the assessment of science

### Science; Biology

This profile comprises one strand: 'Biology'.

The earlier steps identify the skills required to work scientifically to explore, discuss and experiment with 'Animals including Humans'; 'Plants'; 'Living Things & their Habitats'; and 'Evolution & Inheritance'. This helps children to identify similarities and differences between different groups and encourages them to think about the needs of living things. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programme of study and teacher assessment frameworks. By the time pupils reach the later steps, the content is derived from the Key Stage 3 programmes of study. In these steps, the pupils are expected to develop scientific attitudes, undertake accurate measurements, plan experiments and investigations and demonstrate insightful analysis and evaluation when learning about 'Genetics & Evolution'; 'Interactions & Interdependencies'; 'Material Cycles & Energy'; and 'Structure & Function of Living Organisms'.

The assessment points within the 'Working Scientifically' strand are linked across each discipline. This means that scientific skills that have been marked as 'Mastered' in this area, will also be 'Mastered' in Chemistry and Physics.

### Science; Chemistry

This profile comprises one strand: 'Chemistry'.

The earlier steps reflect the pre-key stage standards and identify the skills required to work scientifically to explore, discuss and experiment with 'Rocks'; 'Everyday Materials and Uses of Everyday Materials'; 'Properties and Changes of Materials'; and 'States of Matter'. This helps children to identify similarities and differences between different materials and encourages them to think about how they can be used. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programme of study and teacher assessment frameworks. By the time pupils reach the later steps, the content is derived from the Key Stage 3 programmes of study. In these steps, the pupils are expected to develop scientific attitudes, undertake accurate measurements, plan experiments and investigations and demonstrate insightful analysis and evaluation when learning about 'Atoms, Elements & Compounds'; 'Chemical Reactions'; 'Earth & Atmosphere'; 'Energetics'; 'Materials'; 'Pure & Impure Substances'; 'the Particulate Nature of Matter'; and 'the Periodic Table'.

# Progression Steps (core)

## the assessment of science

The assessment points within the 'Working Scientifically' strand are linked across each discipline. This means that scientific skills that have been marked as 'Mastered' in this area, will also be 'Mastered' in Biology and Physics.

### Science; Physics

This profile comprises one strand: 'Physics'.

The earlier steps reflect the pre-key stage standards and identify the skills required to work scientifically to explore, discuss and experiment with 'Forces & magnets'; 'Seasonal changes'; 'Earth & space'; 'Light'; 'Sound'; and 'Electricity'. This helps children to identify and describe physical process and how these affect the world around them. Steps 5, 6 and 7 seek to expand upon the content contained within the Key Stage 1 National Curriculum programmes of study and teacher assessment frameworks. Steps 7, 8 and 9 seek to expand upon the content contained within the Key Stage 2 National Curriculum programme of study and teacher assessment frameworks. By the time pupils reach the later steps, the content is derived from the Key Stage 3 programmes of study. In these steps, the pupils are expected to develop scientific attitudes, undertake accurate measurements, plan experiments and investigations and demonstrate insightful analysis and evaluation when learning about 'Electricity & electromagnetism'; 'Energy'; 'Matter'; 'Motion & forces'; and 'Waves'.

The assessment points within the 'Working Scientifically' strand are linked across each discipline. This means that scientific skills that have been marked as 'Mastered' in this area, will also be 'Mastered' in Biology and Chemistry.

### Differences between Progression Steps and our Previous Framework for Science

Our Core P Steps 2014 and Core NC Steps 2014 assessment package displayed each of the 16 Science areas (from Key Stage 1 and 2) under a different profile. This meant that tracking whole subject progression could often be quite complex. Arranging science content in this new format should help to simplify this process. We have also included all Key Stage 3 content and integrated the new end of key stage teacher-assessment frameworks to bring Progression Steps in line with national expectations.



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