



Assessing the Cross-Curricular Skills



Rewarding Learning

Assessment Arrangements

In relation to pupils in the final years of Key Stages 1 and 2

for **COMMUNICATION**
and **USING MATHEMATICS**

2012–2013

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Introduction

Purpose of this Booklet

This booklet provides information on the arrangements for statutory assessment of Communication (English – and/or Irish as appropriate in Irish-medium schools and units) and Using Mathematics at Key Stages 1 and 2.

Assessment Order

The Education (Northern Ireland) Order (2006), in operation from 1 August 2006, provides the statutory base for the assessment arrangements.

This booklet is the Assessment Document in relation to pupils in the final years of Key Stages 1 and 2 referred to in the Education (Levels of Progression for Key Stages 1, 2 and 3) Order (Northern Ireland) 2012. It provides detailed information on the arrangements; explains the various components and timing of the arrangements; and indicates the action schools need to take.

The arrangements set out in this Assessment Document relate to Key Stages 1 and 2 and apply to Communication and Using Mathematics from the 2012/13 school year onwards. The arrangements for the assessment of Using ICT from the 2013/14 school year onwards will be issued in due course.

Section 1

Overview of Statutory Assessment Arrangements

1.1 Introduction

Statutory assessment of the Cross-Curricular Skills (Communication and Using Mathematics) at Key Stages 1 and 2 will take the form of teacher assessment, with moderation.

In Irish-medium schools and units, pupils at the end of Key Stage 1 will be assigned levels in Communication in Irish only. Pupils at the end of Key Stage 2 will be assigned levels in both Irish and English.

Teacher assessments will be carried out using the statutory Levels of Progression provided for the purpose.

The main elements of the arrangements are summarised in 1.4 below and are set out in more detail in Section 2.

As previously, assessment results for pupils at the end of Key Stages 1 and 2 must be sent to CCEA each year.

1.2 Pupils with Special Educational Needs

Pupils who have statements of special educational needs and who have been assessed as having severe learning difficulties are exempted from statutory assessment.

Other pupils with statements of special educational needs will be assessed by teacher assessment in the same way as the majority of pupils. In exceptional cases, a pupil may be exempted from all or part of the assessment arrangements, if this is specifically provided for in the pupil's statement of special educational needs.

1.3 Other Exemptions

There may be other occasional and exceptional circumstances where the principal considers that it would be inappropriate to undertake teacher assessment. In such circumstances the pupil may be exempted on a temporary basis from the statutory arrangements. Details of the circumstances and procedures for making temporary exceptions are set out in Circular 1990/45 issued by the Department of Education in August 1990 (available at www.deni.gov.uk/circular_1990_45.pdf).

1.4 Summary of the Main Components of Statutory Assessment

Teacher assessment of pupils' work

Teachers will assess each pupil in each component part of Communication (Talking and Listening, Reading, and Writing) and Using Mathematics (the Requirements for the skill as well as the related Knowledge and Understanding). Pupils in Irish-medium primary schools and units will be assessed in Communication in Irish (Listening, Understanding and Talking, Reading, and Writing), Using Mathematics and Communication in English. (Assessment of Communication in English in Irish-medium settings will take place in Key Stage 2 only.)

Having assessed the pupils in these component parts of the Cross-Curricular Skills, teachers will use this information to decide the level that has been achieved by each pupil in each skill at the end of the Key Stage.

Recording teacher assessment

Teachers' assessments of their pupils will be transferred electronically from schools to CCEA by EDI (Electronic Data Interchange) as specified on the Assessment Timetable (issued separately).

Information in relation to this process will be issued by C2K in due course. Relevant mark sheets will be made available in Assessment Manager to record outcomes during the 2012/13 school year.

Support for the assessment arrangements

Substitute cover will be available for each Year 4 and Year 7 teacher to support the assessment process. Details will be issued by DE by means of a Circular.

Section 2

Teacher Assessment

2.1 Record-Keeping

The type and range of record-keeping to assist with teacher assessment is a matter for schools to decide. Schools are reminded that elaborate arrangements for recording assessments and retaining evidence are neither required by CCEA nor necessary to satisfy DE inspection requirements.

Teachers should assess each pupil as described in 2.5 below and should record the teacher-assessed levels for each pupil in the Assessment Manager module within SIMS.net.

2.2 Assessment Tasks

The use of Assessment Tasks within the assessment arrangements for end of Key Stage pupils (Years 4 and 7) is a key element in CCEA's support of teachers' assessment judgements and in facilitating effective moderation. Tasks should not be regarded as 'tests'; nor should they be used by teachers to determine their summative judgements. They should be regarded as one element of ongoing teacher assessment, alongside samples of work from across the curriculum, to support the summative judgements made. The use of tasks will also assist whole school internal standardisation processes.

2.3 Assessment of Pupils in the Final Years of Key Stages 1 and 2 (Years 4 and 7)

In relation to the Cross-Curricular Skills, teachers should assess both Communication (English – and/or Irish as appropriate in Irish-medium schools and units) and Using Mathematics by the date specified in the Assessment Timetable (issued separately).

Making summative assessment judgements

Teachers should continue to use a variety of sources of assessment information to inform their judgements about the standard attained by their pupils. Once a teacher has considered the range of assessment information available to him/her, a level-based summative judgement is required for Communication and Using Mathematics for pupils in Years 4 and 7.

(The level outcomes should also be reported to parents/guardians of pupils in Years 4 and 7 by the end of June each year.)

a. Communication

One level will be required for each Year 4 and each Year 7 pupil for Communication based on the outcomes for the three modes. At least two of the modes of Communication need to be assessed at or above the level to be awarded.

For example:

Reading: Level 4

Writing: Level 3

Talking and Listening: Level 3

Overall Communication Level: Level 3

b. Using Mathematics

One level will also be required for each Year 4 and each Year 7 pupil for Using Mathematics – this should be the outcome of a holistic assessment of pupil performance in Using Mathematics based on evidence from the two components (i.e. the 'Requirements' and 'Knowledge and Understanding'). Both components will need to be assessed as at or above the level for an overall level to be awarded.

For example:

Using Mathematics Requirements: Level 2

Knowledge and Understanding: Level 3

Overall Using Mathematics Level: Level 2

2.4 Recording Outcomes

The outcomes of these assessments should be recorded in the Assessment Manager module within SIMS.net.

Assessment at both Key Stages is linked to the relevant statutory requirements. Assessment of pupils should be recorded as one of the following:

Key Stage 1	Key Stage 2
E1–6 (for various exemptions)	E1–6 (for various exemptions)
QQ (working towards Level 1)	QQ (working towards Level 1)
Level 1	Level 1
Level 2	Level 2
Level 3*	Level 3
	Level 4
	Level 5**

- * If an exceptionally able pupil has begun work associated with the statutory curricular requirements for Key Stage 2, and is showing some characteristics of working at Level 4 in some components, then teachers are free to report this to parents alongside the information that the pupil has been statutorily assessed as having achieved Level 3.
- ** If an exceptionally able pupil has begun work associated with the statutory curricular requirements for Key Stage 3, and is showing some characteristics of working at Level 6 in some components, then teachers are free to report this to parents alongside the information that the pupil has been statutorily assessed as having achieved Level 5.

2.5 Making Judgements about Levels Achieved

In order to make a summative judgement that a pupil has achieved a level, the teacher must establish that the pupil has demonstrated competence across the breadth of requirements for the Cross-Curricular Skill and in most of the criteria relating to the level at which he/she is judged to be working.

When judging the level achieved by a pupil at the end of a Key Stage, teachers are advised to select the level that best describes the pupil's work, based on the pupil's knowledge, understanding and skills. To arrive at a rounded judgement about the level that a pupil has attained, teachers should form judgements, based on the pupil's performance as a whole, across a range of work.

The level selected should be carefully compared with those immediately above and below. Teachers should note that levels of progression are intended to build progressively on the knowledge, understanding and skills of lower levels. Skills outlined at a lower level should, therefore, be considered to have been subsumed within the higher level.

Note for Guidance:

When a teacher judges that a pupil has achieved Level 5, for example, the word 'achieve' means that in the teacher's judgement that pupil has solid achievement in Level 5 because:

- *he/she has demonstrated competence across the breadth of requirements for the Cross-Curricular Skill and in most of the criteria relating to the level across the range of work;*
- *he/she is demonstrating the ability to work consistently and independently in most aspects of the level; and*
- *he/she can apply what has been learned in new and/or unfamiliar situations as appropriate.*

2.6 Internal Standardisation

The internal standardisation process can add significantly to the effectiveness and reliability of the overall assessment system. Schools should engage in the process of internal standardisation.

Feedback suggests that many schools consider internal standardisation to be a worthwhile process for its own sake, irrespective of its contribution to end of Key Stage assessment. Internal standardisation can be undertaken at any time during the school year and need not necessarily be linked to the timetable for end of Key Stage assessment.

Some of the benefits of teachers coming together in a school to agree on standards of assessment based on levels of progression include:

- common agreement on standards of the work of pupils in the school;
- professional development of teachers in all year groups through collective discussion of standards and progression across the school; and
- common agreement on the pieces of work to make up the portfolios for moderation, if required.

CCEA will provide support for internal standardisation through:

- guidance materials; and
- direct assistance from the CCEA Moderation Team, depending on demand and the time available.

A Declaration of Internal Standardisation (EMA1)

will be required as part of the evidence for moderation. One form should be completed for each Cross-Curricular Skill in which the school is being moderated and should be submitted with the pupil portfolios for moderation.

Section 3

Moderation

3.1 Moderation Process

The purpose of moderation is to provide confirmation to schools and other partners in education that the standards which schools are applying in assessing their pupils' work are appropriate. Portfolios of pupils' work will be used for moderation and should contain samples of work that are representative of the standards indicated.

Schools will participate in a three-year rolling programme of moderation. It will, however, take two to three years to establish the rolling programme, and during that period schools will be required to participate more frequently in moderation for one or more of the Cross-Curricular Skills. CCEA will inform schools on a yearly basis of their position in relation to moderation.

In March of each school year, schools will be required to submit a complete list of their Years 4 and 7 pupils and the levels that they intend to award to each of them in each of the Cross-Curricular Skills. Using this list, CCEA will randomly select those Years 4 and 7 pupils for whom portfolios must be submitted. Schools will then be informed as to:

- the pupils whose work must be submitted; and
- the date by which the pupil portfolios must be available for collection.

Each pupil portfolio should illustrate work at a specific level and should contain pieces of work which are typical of the pupil working at that level. Each school will be informed of the number of pupil portfolios to be submitted by that school. The number of portfolios will be based on a random stratified sample. Schools are likely to be asked to submit between 10 and 17 pupil portfolios, depending on the number of end of Key Stage pupils being assessed.

Further guidance on the process of moderation will be available and will be issued separately.

3.2 Pupil Portfolios for Communication (English – and/or Irish as Appropriate in Irish-Medium Schools and Units) at Key Stages 1 and 2

In order to allow CCEA to verify the standards applied, the selection of work for the Key Stages 1 and 2 pupil portfolios in Communication (English – and/or Irish as appropriate in Irish-medium schools and units) should:

- include normal day-to-day pupil work;
- include one response to an Assessment Task;
- contain four pieces of work (including the above Assessment Task) evenly balanced between Reading and Writing; and
- cover a variety of contexts in Reading and Writing.

The **Portfolio Cover Sheet (EMA2C)** submitted with each pupil portfolio should provide a brief description of the assessment activity and an explanation of why the level was awarded. (Please note that for Communication this form requests a statement of the levels awarded in each of the three modes.) This form will be available electronically.

3.3 Pupil Portfolios for Using Mathematics at Key Stages 1 and 2

In order to allow CCEA to verify the standards applied, the selection of work for the Key Stages 1 and 2 pupil portfolios in Using Mathematics should illustrate a range of work addressing the two main components of the Cross-Curricular Skill – the Requirements for Using Mathematics and the related Knowledge and Understanding. The samples of work should:

- include normal pupil work;
- include one response to an Assessment Task;
- contain three pieces of work (including the above Assessment Task); and
- cover a variety of aspects of the Cross-Curricular Skill.

As far as possible, aspects covered by the other pieces of work should be different to those covered in the Assessment Task.

The **Portfolio Cover Sheet (EMA2M)** submitted with each pupil portfolio should provide a brief description of the assessment activity and an explanation of why the level was awarded. This form will be available electronically.

Teachers are encouraged to annotate pupil work included in portfolios to help ensure clarity in moderation. Pupil work that teachers have previously annotated for ongoing assessment purposes can be included.

3.4 Collection and Moderation of Portfolios

CCEA will issue envelopes and labels as specified in the Assessment Timetable for the return of portfolios by those schools required to provide them in that school year (see 3.1).

All of the portfolios will be reviewed by moderators, and feedback will be sent to each school. Feedback will normally be written and will indicate either that the work in the portfolio illustrates a standard which is in line with other schools or that some adjustment of outcomes is needed. If it is considered that the feedback would be more effectively given through a moderator's visit, a visit will be arranged.

3.5 Adjustments to Outcomes

Where a school's standards are not verified by CCEA, the school will be responsible for making adjustments to outcomes based on written feedback from CCEA. Schools will be expected to take account of the feedback given, to amend standards within the school accordingly and to submit adjusted outcomes to CCEA by the end of the school year. CCEA will confirm that the school has submitted adjusted outcomes and will keep a record of adjustments made. Schools will be subject to re-moderation in that skill in the following year. Further action will be taken where a school's standards continue to be unverified.

Appendices

Appendix 1:

Levels of Progression in
COMMUNICATION
across the curriculum:

Primary (Levels 1–5)

The colours used in the following Levels of Progression in Communication provide a means by which progression in the Requirements may be tracked across the levels.

Requirements for Communication

Across the curriculum, at a level appropriate to their ability, pupils should be enabled to develop skills in:

Talking and Listening

Pupils should be enabled to:

- listen to and take part in discussions, explanations, role-plays and presentations;
- contribute comments, ask questions and respond to others' points of view;
- communicate information, ideas, opinions, feelings and imaginings, using an expanding vocabulary;
- structure talk so that ideas can be understood by others;
- speak clearly and adapt ways of speaking to audience and situation;
- use non-verbal methods to express ideas and engage with the listener.

Reading

Pupils should be enabled to:

- read a range of texts* for information, ideas and enjoyment;
- use a range of strategies to read with increasing independence;
- find, select and use information from a range of sources;
- understand and explore ideas, events and features in texts*;
- use evidence from texts* to explain opinions.

Writing

Pupils should be enabled to:

- talk about, plan and edit work;
- communicate information, meaning, feelings, imaginings and ideas in a clear and organised way;
- develop, express and present ideas in a variety of forms and formats, using traditional and digital resources, for different audiences and purposes;
- write with increasing accuracy and proficiency.

Level 1

In familiar situations, when listening to and responding to a range of stimuli, pupils can:

- listen for information;
- take on the role of someone else;
- understand short explanations and simple discussions;
- follow short, straightforward instructions;
- ask and answer questions for specific information;
- use vocabulary from within their experience to describe thoughts and feelings;
- talk about their experiences;
- speak audibly to be heard and understood;
- make eye contact and take turns whilst engaging in conversation.

Pupils can:

- show understanding of the meaning carried by print, pictures and images;
- understand that words are made up of sounds and syllables and that sounds are represented by letters;
- use reading strategies;
- read and understand familiar words, signs and symbols in the environment;
- use visual clues to locate information;
- use language associated with texts*;
- talk about what they read and answer questions.

Pupils can:

- talk about what they are going to write;
- express thoughts, feelings and ideas, from within their experience, using symbols, pictures, words, phrases and simple sentences;
- write words using sound-symbol correspondence;
- write personal and familiar words;
- form lower and upper-case letters.

* Texts refer to ideas that are organised to communicate and present

Level 2

In familiar situations, when listening to and responding to a range of stimuli, pupils can:

- identify the main points of conversations and explanations;
- take part in role-play, interacting with others;
- listen to and carry out a sequence of instructions;
- follow discussions, make contributions and observe conventions of conversation;
- ask and answer questions to develop understanding;
- use a general vocabulary to express thoughts, imaginings and opinions;
- talk about events in sequence with supporting detail;
- speak clearly to be heard and understood;
- use body language to show engagement.

Engaging with a range of short, simple texts*, both reading aloud and silently, pupils can:

- understand, recount and sequence events and information;
- use a range of reading strategies;
- select information for a purpose;
- use basic alphabetical knowledge and visual clues to locate information;
- recognise some forms and features of texts*;
- ask questions to seek clarification that develops understanding;
- express opinions and make predictions.

In a limited and specified range of forms, pupils can:

- talk about what they are going to write and how they will present their writing;
- make changes in relation to agreed criteria;
- express thoughts, feelings and ideas, from within their experience, using a general vocabulary;
- show a sense of structure and organisation;
- write using a given form;
- use basic punctuation;
- spell and write common and familiar words recognisably;
- produce legible handwriting.

Level 3

In a range of situations and for a variety of audiences and purposes, pupils can:

- listen for specific information;
- maintain a role;
- follow the main points of discussions and make contributions which show understanding;
- ask and respond to questions to extend understanding;
- explain their views/thinking;
- use an expanding vocabulary;
- sequence events and plan what to say;
- vary their voice and intonation;
- understand that body language may influence the listener.

Engaging with a range of longer texts* for a variety of purposes, both reading aloud and silently, pupils can:

- recognise, understand and sequence main points;
- paraphrase with general accuracy;
- choose and use reading strategies independently;
- use organisational features, including alphabetical order, to locate and obtain information;
- understand that there are different forms and features of texts*;
- make deductions using information from the text*;
- ask and respond to questions to extend understanding;
- express opinions and give reasons.

In a range of specified forms and for specified audiences and purposes, pupils can:

- talk about and plan their writing;
- make improvements to their writing;
- express thoughts, feelings, ideas and opinions;
- structure and sequence their writing;
- provide supporting detail using an expanding vocabulary;
- use the form appropriately;
- start sentences in different ways;
- use basic punctuation and grammar accurately;
- spell and write frequently used and topic words correctly;
- produce handwriting which is accurately formed and consistent in size.

Requirements for Communication

Across the curriculum, at a level appropriate to their ability, pupils should be enabled to develop skills in:

Talking and Listening

Pupils should be enabled to:

- listen to and take part in discussions, explanations, role-plays and presentations;
- contribute comments, ask questions and respond to others' points of view;
- communicate information, ideas, opinions, feelings and imaginings, using an expanding vocabulary;
- structure talk so that ideas can be understood by others;
- speak clearly and adapt ways of speaking to audience and situation;
- use non-verbal methods to express ideas and engage with the listener.

Reading

Pupils should be enabled to:

- read a range of texts* for information, ideas and enjoyment;
- use a range of strategies to read with increasing independence;
- find, select and use information from a range of sources;
- understand and explore ideas, events and features in texts*;
- use evidence from texts* to explain opinions.

Writing

Pupils should be enabled to:

- talk about, plan and edit work;
- communicate information, meaning, feelings, imaginings and ideas in a clear and organised way;
- develop, express and present ideas in a variety of forms and formats, using traditional and digital resources, for different audiences and purposes;
- write with increasing accuracy and proficiency.

Level 4

In a range of contexts, with different audiences and taking account of a variety of purposes, pupils can:

- listen attentively;
- develop a role;
- make relevant contributions to discussions;
- ask questions about others' points of view and respond appropriately;
- explain information, ideas and opinions clearly;
- use an appropriate vocabulary;
- plan an approach to talking;
- use language techniques and register to engage the listener;
- use non-verbal methods to engage the listener.

Engaging with a range of texts* of varying lengths for a variety of purposes, pupils can:

- show understanding by identifying and summarising information;
- paraphrase;
- read independently;
- locate relevant information and use it appropriately;
- recognise main features and understand how these are linked to form and purpose;
- understand explicit meanings and recognise some implicit meanings;
- explain opinions about what they read.

In a range of forms, for different audiences and purposes, pupils can:

- plan and make use of planning;
- check writing to make improvements in accuracy and meaning;
- express thoughts, feelings, ideas and opinions, giving reasons when appropriate;
- structure writing, including using paragraphs;
- express meaning clearly, using an appropriate vocabulary and level of detail;
- choose from and use a range of forms, as appropriate;
- vary word order and use linking words within sentences;
- use a range of punctuation accurately;
- use accurate grammar and spelling on most occasions.

* Texts refer to ideas that are organised to communicate and present

Level 5

In a range of formal and informal contexts, with different audiences and for a variety of purposes, pupils can:

- listen to and identify relevant information and ideas;
- make relevant contributions in different roles;
- discuss their own and others' ideas;
- ask questions to explore and develop ideas;
- justify ideas and opinions;
- communicate detailed information clearly, using precise vocabulary;
- structure their talk logically and coherently;
- use language techniques and register to maintain the interest of the listener;
- use non-verbal methods to maintain the interest of the listener.

Engaging with a range of texts* of varying lengths for a variety of purposes, including texts* written for a wider audience, pupils can:

- show understanding by identifying and summarising information, ideas and details;
- select and manage information from a range of sources;
- describe language, structure and presentation;
- understand some implicit meanings and attitudes;
- differentiate between fact and opinion;
- make reference to text* to support opinions and draw conclusions.

In a range of forms, for different audiences and purposes, including in formal situations, pupils can:

- redraft to improve accuracy and meaning;
- use precise vocabulary to convey thoughts, ideas, relevant information and to justify opinions;
- structure writing logically and coherently;
- match writing to purpose and audience;
- present information effectively, using a formal style where appropriate;
- create sentence structures which help to convey meaning;
- use a range of punctuation consistently and accurately;
- use accurate grammar and spelling.

a message in written, spoken, visual and symbolic forms.

Appendix 2:

Levels of Progression in
USING MATHEMATICS
across the curriculum:

Primary (Levels 1–5)

The colours used in the following Levels of Progression in Using Mathematics provide a means by which progression in the Requirements may be tracked across the levels.

Requirements for Using Mathematics

Across the curriculum, at a level appropriate to their ability, pupils should be enabled to:

- choose the appropriate materials, equipment and mathematics to use in a particular situation;
- use mathematical knowledge and concepts accurately;
- work systematically and check their work;
- use mathematics to solve problems and make decisions;
- develop methods and strategies, including mental mathematics;
- explore ideas, make and test predictions and think creatively;
- identify and collect information;
- read, interpret, organise and present information in mathematical formats;
- use mathematical understanding and language to ask and answer questions, talk about and discuss ideas and explain ways of working;
- develop financial capability;
- use ICT to solve problems and/or present their work;

using their **Knowledge and Understanding** of:

Number

Measures

Shape and Space

Handling Data

Level 1

In structured activities, in familiar and accessible contexts, pupils can:

- talk about and use the materials and equipment provided to carry out an activity;
- use some mathematical notation;
- show some organisation in their practical work;
- talk about ways to solve simple everyday problems;
- use counting strategies when carrying out activities;
- look for and talk about patterns;
- talk about and collect information required;
- represent their work using pictures and objects;
- use appropriate mathematical language to respond to questions about their work;

- use, estimate, add and subtract numbers up to at least 10;
- understand conservation of number;
- create and describe repeating patterns using objects, numbers or pictures;
- recognise and use coins;

- use everyday language associated with length, 'weight', capacity and area to describe, compare and order three objects;
- sequence familiar events;
- know the days of the week and their sequence;
- recognise 'special' times on the clock;

- sort 2-D and 3-D shapes and make and describe 2-D and 3-D constructions;
- use language and follow instructions, in practical situations, for position and movement;

- sort and classify real objects for one criterion and re-sort for a different criterion, using Venn, Carroll and Tree diagrams;
- collect information and record using real objects or drawings.

Level 2

In structured activities, in familiar and accessible contexts, pupils can:

- talk about how to approach an activity;
- select and use the materials, equipment and mathematics required;
- use appropriate mathematical notation;
- organise their practical work and check what they have done;
- use mental strategies to carry out calculations when solving problems/carrying out activities;
- recognise patterns and relationships and make predictions;
- discuss the information required and how it can be collected;
- present the information appropriately and talk about their findings;
- use appropriate mathematical language to talk about their work and respond to questions;

- read, write and order whole numbers up to at least 100;
- understand that the place of the digit indicates its value;
- use quick recall of number facts up to 10;
- add and subtract mentally within 20 and in written form;
- use addition and subtraction patterns within 20 to explore the relationship between addition and subtraction;
- understand that addition is commutative and subtraction is not;
- add and subtract within 100;
- understand the use of a symbol to stand for an unknown number;
- understand and use halves and quarters;
- understand relationships between all coins up to £1 and use this knowledge to carry out shopping activities;

- identify and use non-standard units to measure length, 'weight', capacity and area;
- understand the need for standard units and know the most commonly used units in length, 'weight', capacity and time;
- name and order days of the week, months of the year and seasons;
- read simple digital and analogue clock displays;

- recognise and name common 2-D and 3-D shapes;
- sort 2-D and 3-D shapes, giving reasons for sorting;
- use language and follow instructions, in practical situations, for turning movements;

- sort and classify objects for two criteria using Venn, Carroll and Tree diagrams;
- collect information and record results using simple tables, block graphs, simple pictograms and diagrams;
- discuss and interpret information.

Level 3

In structured activities, in familiar and accessible contexts, pupils can:

- suggest different ways an activity might be approached;
- select and use the appropriate materials, equipment and mathematics required;
- use a range of appropriate mathematical notation;
- organise their work and know how to check its accuracy;
- use mathematics to solve simple two-stage problems;
- use a range of mental calculation strategies;
- identify and explain patterns and relationships and make predictions;
- identify, collect and record the information required;
- present their findings clearly using a range of appropriate mathematical formats;
- explain their findings;
- use appropriate mathematical language to discuss and describe their way of working and respond to questions;

- understand, use, add and subtract whole numbers up to at least 1000;
- understand and use the concept of place value in whole numbers;
- use quick recall of number facts up to 20;
- add and subtract mentally two 2-digit numbers within 100;
- approximate to the nearest 10 or 100;
- identify and describe simple number patterns within the 100 square;
- know 2, 3, 4, 5 and 10 multiplication facts;
- understand that multiplication is commutative;
- explore and use division in practical situations;
- understand and use simple fractions in context;
- use number skills in the context of money up to £10;

- choose and use appropriate standard units to estimate, measure and record length, capacity, volume, 'weight', time and temperature;
- read simple measuring instruments with an appropriate degree of accuracy;
- find the area of shapes by counting whole and half squares;
- read and interpret a calendar;
- read digital and analogue clock displays;

- recognise, name and describe common 2-D and 3-D shapes;
- recognise one line of symmetry in common 2-D shapes;
- recognise tessellations through practical activities;
- recognise right angles in the environment and understand angle as a measurement of turn;
- use grid references in practical situations;

- collect and record relevant data for a given activity;
- draw and label pictograms and bar charts;
- read and interpret information from tables, pictograms, diagrams, lists, bar charts, simple pie charts and databases.

Requirements for Using Mathematics

Across the curriculum, at a level appropriate to their ability, pupils should be enabled to:

- choose the appropriate materials, equipment and mathematics to use in a particular situation;
- use mathematical knowledge and concepts accurately;
- work systematically and check their work;
- use mathematics to solve problems and make decisions;
- develop methods and strategies, including mental mathematics;
- explore ideas, make and test predictions and think creatively;
- identify and collect information;
- read, interpret, organise and present information in mathematical formats;
- use mathematical understanding and language to ask and answer questions, talk about and discuss ideas and explain ways of working;
- develop financial capability;
- use ICT to solve problems and/or present their work;

using their **Knowledge and Understanding of:**

Number

Measures

Shape and Space

Handling Data

Level 4

In activities with some structure, in familiar and some unfamiliar contexts and situations, pupils can:

- decide how an activity might be approached and compare their approaches with others;
- identify and use appropriately the materials, equipment and mathematics required;
- use a range of appropriate mathematical techniques and notation;
- organise their own work and work systematically;
- review their work and check for accuracy;
- use a range of problem-solving strategies;
- use a range of efficient mental calculation strategies;
- investigate patterns and relationships, using their findings to make predictions;
- investigate general statements to see if they are true;
- find, organise and interpret relevant information;
- present information clearly;
- compare methods of presentation;
- use appropriate mathematical language to discuss their work and explain their thinking;

- read, write and order whole numbers within 10 000;
- use knowledge of place value to multiply and divide whole numbers by 10 and 100;
- understand place value to two decimal places;
- approximate within 10 000 to the nearest 10, 100 and 1000;
- estimate answers to calculations and approximate by rounding;
- add, subtract, multiply and divide whole numbers using a range of mental, written and calculator methods;
- add and subtract numbers with up to two decimal places;
- use the relationship between addition and subtraction to check calculations;
- know multiplication facts up to 10×10 and derive associated division facts;
- understand and use multiples and factors;
- use fractions to describe quantities;
- perform simple calculations involving unitary fractions;
- understand equivalence of fractions;
- understand and use simple percentages;
- interpret and apply simple rules expressed in words;
- interpret a calculator display when solving money problems;
- make choices about spending and value for money;
- know different ways in which payments for goods can be made;

- estimate and measure length, 'weight'/mass, time and temperature, working to an appropriate degree of accuracy;
- understand the relationship between metric units;
- add and subtract common measures;
- estimate area and volume of shapes by counting squares/cubes;
- work out perimeters of simple shapes;
- understand and use digital and analogue clock displays, using am, pm and 24-hour notation;

- explore the properties of common 2-D and 3-D shapes;
- explore the relationship between 2-D and 3-D shapes;
- recognise and draw lines of symmetry in a variety of 2-D shapes;
- know the eight points of the compass;
- understand and use the language of line, angle and location;
- use coordinates in the first quadrant;

- collect, group, record and present data with given class intervals;
- present and interpret data using a range of graphs, tables, diagrams, spreadsheets and databases;
- understand and use the language of probability.

Level 5

In activities with some structure, in familiar and some unfamiliar contexts and situations, pupils can:

- plan and decide how an activity might be approached;
- identify and use efficiently the materials, equipment, mathematics and strategies required;

- use a range of appropriate mathematical techniques and notation;
- plan and work systematically and efficiently;
- review their work, considering if their findings are reasonable and making changes where appropriate;

- use a range of problem-solving strategies, suggesting and trying out different approaches when difficulties arise;

- make and test predictions;
- make general statements based on findings and test using new examples;
- summarise their findings;

- identify, obtain, process and interpret information appropriate and sufficient for the activity;
- present information accurately and appropriately including the use of mathematical language, symbols and diagrams;

- use appropriate mathematical language to express and communicate ideas accurately;

- read, write and order whole numbers of any size;
- use knowledge of place value to multiply and divide numbers by 10, 100 and 1000;
- understand place value to three decimal places;
- round decimals to the nearest whole number;
- multiply and divide numbers with up to two decimal places by a whole number;
- check calculations by applying inverse operations;
- understand and use negative numbers in practical contexts;
- understand and use square, cube and prime numbers;
- understand the relationship between common fractions, decimals and percentages;
- calculate fractions and percentages of quantities, including money;
- use understanding of equivalence to add and subtract fractions;
- devise and use rules for generating sequences in words and/or symbolic form;
- express and use formulae in words and/or symbolic form;
- make informed choices about personal budgeting and spending;

- convert from one metric unit to another;
- use the four operations to solve problems related to measures;
- calculate areas of squares, rectangles and right-angled triangles and volumes of cubes and cuboids;
- calculate perimeters of a range of shapes;
- understand and use scale in the context of simple maps and drawings;
- read and interpret timetables;

- describe the properties of regular and irregular 2-D shapes in terms of sides, angles, symmetry and tessellations;
- reflect 2-D shapes in a line;
- describe the properties of 3-D shapes in terms of faces, edges and vertices;
- draw nets of 3-D shapes;
- estimate, measure, draw and label angles up to 360 degrees;

- collect, organise, record and represent data;
- design and use a data collection sheet;
- construct, label and interpret a range of graphs, tables, diagrams, spreadsheets and databases;
- understand, calculate and use mean and range;
- place events in order of likelihood.

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Rewarding Learning