

Leonardo V. Academy



Leonardo
V. Academy

**Curriculum Leonardo V. Academy
(Grade 5, Year 6)**

Framework for the Leonardo V. Academy Curriculum

Grade 5/Year 6 (Key Stage 2)

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Disclaimer

To ensure the very best standards of learning and a quality education for our students, Leonardo V. Academy, aims to offer an up-to-date, comprehensive, unique, as well as a thoroughly modern curriculum. Combining the high level of British academic standards with a forward-thinking, international outlook, our curriculum intends to be innovative and challenging, whilst also being accessible in addition to making a challenging learning environment enjoyable for any student that is already enrolled or is thinking of joining our school.

In keeping with these high academic standards, the Leonardo V. Academy curriculum for Grade 5 has been developed from the following national government and private educational authorities:

- ❖ Her Majesty's Government Department for Education
 - <https://www.gov.uk/government/organisations/department-for-education>
- ❖ National Curriculum in England (Primary Education)
 - <https://www.gov.uk/government/publications/national-curriculum-in-england-primary-curriculum>
- ❖ Cambridge International Examinations (Primary)
 - <http://www.cie.org.uk/programmes-and-qualifications/cambridge-primary/cambridge-primary/curriculum/>
- ❖ Czech Republic Ministry of Education, Youth and Sports – Framework Educational Programme for Basic Education
 - <http://www.msmt.cz/areas-of-work/basic-education-1>

Subjects of Study

During Grade 5, students at Leonardo V. Academy focus on the following subjects of study.

* English	(5 hours)
* Mathematics	(5 hours)
* Science	(4 hours)
* Geography	(2 hours)
* History	(2 hours)
* Information Technology	(2 hours)
* Art and Design	(2 hours)
* Design Technology	(1 hour)
* Music	(2 hours)
* Modern Languages	(3 hours)
* Physical Education	(2 hours)

Each subject is taught in full compliance with the National Curriculum of England.

English (Course Description)

By the beginning of Grade 5, pupils should be able to read aloud a wider range of poetry and books written at an age-appropriate interest level with accuracy and at a reasonable speaking pace. They should be able to read most words effortlessly and to work out how to pronounce unfamiliar written words with increasing automaticity. If the pronunciation sounds unfamiliar, they should ask for help in determining both the meaning of the word and how to pronounce it correctly.

They should be able to prepare readings, with appropriate intonation to show their understanding, and should be able to summarise and present a familiar story in their own words. They should be reading widely and frequently, outside as well as in school, for pleasure and information. They should be able to read silently, with good understanding, inferring the meanings of unfamiliar words, and then discuss what they have read.

Pupils should be able to write down their ideas quickly. Their grammar and punctuation should be broadly accurate. Pupils' spelling of most words taught so far should be accurate and they should be able to spell words that they have not yet been taught by using what they have learnt about how spelling works in English.

During Grades 4 and 5, teachers should continue to emphasise pupils' enjoyment and understanding of language, especially vocabulary, to support their reading and writing. Pupils' knowledge of language, gained from stories, plays, poetry, non-fiction and textbooks, will support their increasing fluency as readers, their facility as writers, and their comprehension. As in Grades 2 and 3, pupils should be taught to enhance the effectiveness of their writing as well as their competence.

It is essential that pupils whose decoding skills are poor are taught through a rigorous and systematic phonics programme so that they catch up rapidly with their peers in terms of their decoding and spelling. However, as far as possible, these pupils should follow the upper key stage 2 programme of study in terms of listening to books and other writing that they have not come across before, hearing and learning new vocabulary and grammatical structures, and having a chance to talk about all of these.

By the end of Grade 5, pupils' reading and writing should be sufficiently fluent and effortless for them to manage the general demands of the curriculum in Grade 6, across all subjects and not just in English, but there will continue to be a need for pupils to learn subject-specific vocabulary. They should be able to

reflect their understanding of the audience for and purpose of their writing by selecting appropriate vocabulary and grammar. Teachers should prepare pupils for secondary education by ensuring that they can consciously control sentence structure in their writing and understand why sentences are constructed as they are. Pupils should understand nuances in vocabulary choice and age-appropriate, academic vocabulary. This involves consolidation, practice and discussion of language. **English – key stages 1 and 2.**

Specific requirements for pupils to discuss what they are learning and to develop their wider skills in spoken language form part of this programme of study. In Grades 4 and 5, pupils' confidence, enjoyment and mastery of language should be extended through public speaking, performance and debate.

English (Course Objectives)

i) Reading – Word Reading:

- Apply their growing knowledge of root words, prefixes and suffixes (morphology and etymology) as listed in English Appendix 1, both to read and to understand the meaning of new words that they meet.

ii) Reading – Comprehension:

- Maintain positive attitudes to reading and understanding of what they read by:
 - Continuing to read and discuss an increasingly wide range of fiction, poetry, plays, non-fiction and reference books or textbooks
 - Reading books that are structured in different ways and reading for a range of purposes
 - Increasing their familiarity with a wide range of books, including myths, legends and traditional stories, modern fiction, fiction from our literary heritage, and books from other cultures and traditions
 - Recommending books that they have read to their peers, giving reasons for their choices
 - Identifying and discussing themes and conventions in and across a wide range of writing
 - Make comparisons within and across books
 - Learn a wider range of poetry by heart
 - Preparing poems and plays to read aloud and to perform, showing understanding through intonation, tone and volume so that the meaning is clear to an audience
- Understand what they read by:
 - Checking that the book makes sense to them, discussing their understanding and exploring the meaning of words in context
 - Asking questions to improve their understanding

- Drawing inferences such as inferring characters' feelings, thoughts and motives from their actions, and justifying inferences with evidence
 - Predicting what might happen from details stated and implied
 - Summarizing the main ideas drawn from more than one paragraph, identifying key details that support the main ideas
 - Identifying how language, structure and presentation contribute to meaning
- Discuss and evaluate how authors use language, including figurative language, considering the impact on the reader
 - Distinguish between statements of fact and opinion
 - Retrieve, record and present information from non-fiction
 - Participate in discussions about books that are read to them and those they can read for themselves, building on their own and others' ideas and challenging views courteously
 - Explain and discuss their understanding of what they have read, including through formal presentations and debates, maintaining a focus on the topic and using notes where necessary
 - Provide reasoned justifications for their views.

iii) Writing – transcription:

a) Spelling (see English Appendix 1):

- Use further prefixes and suffixes and understand the guidance for adding them
- Spell some words with “silent” letters [for example, knight, psalm, solemn]
- Continue to distinguish between homophones and other words which are often confused

- Use knowledge of morphology and etymology in spelling and understanding that the spelling of some words needs to be learnt specifically, as listed in English Appendix 1
- Use dictionaries to check the spelling and meaning of words
- Use the first three or four letters of a word to check spelling, meaning or both of these in a dictionary
- Use a thesaurus

B. Handwriting and presentation:

- Write legibly, fluently and with increasing speed by:
 - Choosing which shape of a letter to use when given choices and deciding whether or not to join specific letters
 - Choosing the writing implement that is best suited for a task.

C. Composition:

- Plan their writing by:
 - Identifying the audience for and purpose of the writing, selecting the appropriate form and using other similar writing as models for their own
 - Noting and developing initial ideas, drawing on reading and research where necessary
 - In writing narratives, considering how authors have developed characters and settings in what pupils have read, listened to or seen performed
- Draft and write by:
 - Selecting appropriate grammar and vocabulary, understanding how such choices can change and enhance meaning
 - In narratives, describing settings, characters and atmosphere and integrating dialogue to convey character and advance the action
 - Précising longer passages

- Using a wide range of devices to build cohesion within and across paragraphs
- Using further organizational and presentational devices to structure text and to guide the reader {for example, headings, bullet points, underlining]

➤ Evaluating and edit by:

- Assessing the effectiveness of their own and others' writing
- Proposing changes to vocabulary, grammar and punctuation to enhance effects and clarify meaning
- Ensuring the consistent and correct use of tense throughout a piece of writing
- Ensuring correct subject and verb agreement when using singular and plural, distinguishing between the language of speech and writing and choosing the appropriate register

➤ Proof-read for spelling and punctuation errors.

➤ Perform their own compositions, using appropriate intonation, volume, and movement so that meaning is clear.

iv) Writing – Vocabulary, Grammar and Punctuation:

➤ Develop their understanding of the concepts set out in English Appendix 2 by:

- Recognizing vocabulary and structures that are appropriate for formal speech and writing, including using subjunctive forms
- Using passive verbs to affect the presentation of information in a sentence
- Using the perfect form of verbs to mark relationships of time and cause
- Using expanded noun phrases to convey complicated information concisely
- Using modal verbs or adverbs to indicate degrees of possibility

- Using relative clauses beginning with **who, which, where, when, whose, that** or with an implied (i.e. omitted) relative pronoun
 - Learning the grammar for Grades 4 and 5 in English Appendix 2.
- Indicate grammatically and other features by:
- Using commas to clarify meanings and avoid ambiguity in writing
 - Using hyphens to avoid ambiguity
 - Using brackets, dashes or commas to indicate parenthesis
 - Using semi-colons, colons or dashes to mark boundaries between independent clauses
 - Using a colon to introduce a list
 - Punctuating bullet points consistently
- Use and understand the grammatical terminology in English Appendix 2 accurately and appropriately in discussing their writing and reading.

Appendix 1

Spelling

Most people read words more accurately than they spell them. The younger pupils are, the truer this is.

By the end of Pre-school, pupils should be able to read a large number of different words containing the GPCs that they have learnt, whether or not they have seen these words before. Spelling, however, is a very different matter. Once pupils have learnt more than one way of spelling particular sounds, choosing the right letter or letters depends on their either having made a conscious effort to learn the words or having absorbed them less consciously through their reading. Younger pupils have not had enough time to learn or absorb the accurate spelling of all the words that they may want to write.

This appendix provides examples of words embodying each pattern which is taught. Many of the words listed as ‘example words’ for Pre-school and Grade 1, including almost all those listed as ‘exception words’, are used frequently in pupils’ writing, and therefore it is worth pupils learning the correct spelling. The ‘exception words’ contain GPCs which have not yet been taught as widely applicable, but this may be because they are applicable in very few age-appropriate words rather than because they are rare in English words in general.

The word-lists for Grades 2 and 3 and Grades 4 and 5 are statutory. The lists are a mixture of words pupils frequently use in their writing and those which they often misspell. Some of the listed words may be thought of as quite challenging, but the 100 words in each list can easily be taught within the four years of key stage 2 alongside other words that teachers consider appropriate.

The rules and guidance are intended to support the teaching of spelling. Phonic knowledge should continue to underpin spelling after key stage 1 (grade 1); teachers should still draw pupils’ attention to GPCs that do and do not fit in with what has been taught so far. Increasingly, however, pupils also need to understand the role of morphology and etymology. Although particular GPCs in root words simply have to be learnt, teachers can help pupils to understand relationships between meaning and spelling where these are relevant. For example, understanding the relationship between *medical* and *medicine* may help pupils to spell the /s/ sound in *medicine* with the letter ‘c’. Pupils can also be helped to spell words with prefixes and suffixes correctly if they understand some general principles for adding them. Teachers should be familiar with what pupils have been taught about spelling in earlier years, such as which rules pupils have been taught for adding prefixes and suffixes.

In this spelling appendix, the left-hand column is statutory; the middle and right-hand columns are non-statutory guidance.

The International Phonetic Alphabet (IPA) is used to represent sounds (phonemes). A table showing the IPA is provided in this document.

Spelling: Work for Grade 5

➤ Revision of Grade 4 Work

➤ New Work for Grade 5

Statutory requirements	Rules and guidance (non-statutory)	Example words (non-statutory)
Endings which sound like /ʃəs/ spelt -cious or -tious	Not many common words end like this. If the root word ends in -ce , the /ʃ/ sound is usually spelt as c – e.g. <i>vice</i> – <i>vicious</i> , <i>grace</i> – <i>gracious</i> , <i>space</i> – <i>spacious</i> , <i>malice</i> – <i>malicious</i> . Exception: <i>anxious</i> .	vicious, precious, conscious, delicious, malicious, suspicious ambitious, cautious, fictitious, infectious, nutritious
Endings which sound like /ʃəl/	-cial is common after a vowel letter and -tial after a consonant letter, but there are some exceptions. Exceptions: initial, financial, commercial, provincial (the spelling of the last three is clearly related to <i>finance</i> , <i>commerce</i> and <i>province</i>).	official, special, artificial, partial, confidential, essential
Words ending in -ant, -ance/-ancy, -ent, -ence/-ency	Use -ant and -ance/-ancy if there is a related word with a /æ/ or /eɪ/ sound in the right position; -ation endings are often a clue. Use -ent and -ence/-ency after soft c (/s/ sound), soft g (/dʒ/ sound) and qu , or if there is a related word with a clear /ɛ/ sound in the right position.	observant, observance, (observation), expectant (expectation), hesitant, hesitancy (hesitation), tolerant, tolerance (toleration), substance (substantial) innocent, innocence, decent, decency, frequent, frequency, confident, confidence (confidential)

	There are many words, however, where the above guidance does not help. These words just have to be learnt.	assistant, assistance, obedient, obedience, independent, independence
Words ending in -able and -ible Words ending in -ably and -ibly	The -able/-ably endings are far more common than the -ible/-ibly endings. As with -ant and -ance/-ancy, the -able ending is used if there is a related word ending in -ation. If the -able ending is added to a word ending in -ce or -ge, the e after the c or g must be kept as those letters would otherwise have their 'hard' sounds (as in <i>cap</i> and <i>gap</i>) before the a of the -able ending. The -able ending is usually but not always used if a complete root word can be heard before it, even if there is no related word ending in -ation. The first five examples opposite are obvious; in <i>reliable</i>, the complete word <i>rely</i> is heard, but the y changes to i in accordance with the rule. The -ible ending is common if a complete root word can't be heard before it but it also sometimes occurs when a complete word <i>can</i> be heard (e.g. <i>sensible</i>).	adorable/adorably (adoration), applicable/applicably (application), considerable/considerably (consideration), tolerable/tolerably (toleration) changeable, noticeable, forcible, legible dependable, comfortable, understandable, reasonable, enjoyable, reliable possible/possibly, horrible/horribly, terrible/terribly, visible/visibly, incredible/incredibly, sensible/sensibly
Adding suffixes beginning with vowel letters to words ending in -fer	The r is doubled if the -fer is still stressed when the ending is added. The r is not doubled if the -fer is no longer stressed.	referring, referred, referral, preferring, preferred, transferring, transferred reference, referee, preference, transference
Use of the hyphen	Hyphens can be used to join a prefix to a root word, especially if the prefix ends in a vowel	co-ordinate, re-enter, co-operate, co-own

	letter and the root word also begins with one.	
Words with the /i:/ sound spelt ei after c	The 'i before e except after c' rule applies to words where the sound spelt by ei is /i:/. Exceptions: <i>protein, caffeine, seize</i> (and <i>either</i> and <i>neither</i> if pronounced with an initial /i:/ sound).	deceive, conceive, receive, perceive, ceiling
Words containing the letter-string ough	ough is one of the trickiest spellings in English – it can be used to spell a number of different sounds.	ought, bought, thought, nought, brought, fought rough, tough, enough cough though, although, dough through thorough, borough plough, bough
Words with 'silent' letters (i.e. letters whose presence cannot be predicted from the pronunciation of the word)	Some letters which are no longer sounded used to be sounded hundreds of years ago: e.g. in <i>knight</i> , there was a /k/ sound before the /n/, and the gh used to represent the sound that 'ch' now represents in the Scottish word <i>loch</i> .	doubt, island, lamb, solemn, thistle, knight
Homophones and other words that are often confused	In the pairs of words opposite, nouns end -ce and verbs end -se. <i>Advice</i> and <i>advise</i> provide a useful clue as the word <i>advise</i> (verb) is pronounced with a /z/ sound – which could not be spelt c. More examples: aisle: a gangway between seats (in a church, train, plane). isle: an island. aloud: out loud. allowed: permitted.	advice/advise device/devise licence/license practice/practice prophecy/prophesy farther: further father: a male parent guessed: past tense of the verb <i>guess</i> guest: a visitor heard: past tense of the verb <i>hear</i>

	affect: usually a verb (e.g. <i>This weather may affect our plants</i>). effect: usually a noun (e.g. <i>It may have an effect on our plants</i>). If a verb, it means “bring about” (e.g. <i>He will effect changes in the running of the business</i>). altar: a table-like piece of furniture in a church. alter: to change. ascent: the act of ascending (going up). assent: to agree/agreement (verb and noun). bridal: to do with a bride at a wedding. bridle: reins etc. for controlling a horse. cereal: made from grain (e.g. breakfast cereal). serial: adjective from the noun <i>series</i> – a succession of things one after the other. compliment: to make nice remarks about someone (verb) or the remark that is made (noun). complement: related to the word <i>complete</i> – to make something complete or more complete (e.g. <i>her scarf complemented her outfit</i>).	herd: a group of animals led: past tense of the verb <i>lead</i> lead: present tense of that verb, or else the metal which is very heavy (<i>as heavy as lead</i>) morning: before noon mourning: grieving for someone who has died past: noun or adjective referring to a previous time (e.g. <i>in the past</i>) or preposition or adverb showing place (e.g. <i>he walked past me</i>) passed: past tense of the verb “pass” (e.g. <i>I passed him on the road</i>) precede: go in front of or before proceed: go on
Homophones and other words that are often confused (continued)	descent: the act of descending (going down). dissent: to disagree/disagreement (verb and noun). desert: as a noun – a barren place (stress on first syllable); as a verb – to abandon (stress on second syllable) dessert: (stress on second syllable) a sweet course after the main course of a meal. draft: noun – a first attempt at writing something; verb – to make the first attempt; also, to draw in someone (e.g. <i>to draft in extra help</i>) draught: a current of	principal: adjective – most important (e.g. <i>principal ballerina</i>) noun – important person (e.g. <i>principal of a college</i>) principle: basic truth or belief profit: money that is made in selling things prophet: someone who foretells the future stationary: not moving stationery: paper, envelopes etc. steal: take something that does not belong to you steel: metal wary: cautious

	air.	weary: tired who's: contraction of <i>who is</i> or <i>who has</i> whose: belonging to someone (e.g. <i>Whose jacket is that?</i>)
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Appendix 2: Vocabulary, grammar and punctuation

Word	Converting nouns or adjectives into verbs using suffixes [for example, <i>-ate</i>; <i>-ise</i>; <i>-ify</i>] Verb prefixes [for example, <i>dis-</i>, <i>de-</i>, <i>mis-</i>, <i>over-</i> and <i>re-</i>]
Sentence	Relative clauses beginning with <i>who</i>, <i>which</i>, <i>where</i>, <i>when</i>, <i>whose</i>, <i>that</i>, or an omitted relative pronoun Indicating degrees of possibility using adverbs [for example, <i>perhaps</i>, <i>surely</i>] or modal verbs [for example, <i>might</i>, <i>should</i>, <i>will</i>, <i>must</i>]
Text	Devices to build cohesion within a paragraph [for example, <i>then</i>, <i>after that</i>, <i>this</i>, <i>firstly</i>] Linking ideas across paragraphs using adverbials of time [for example, <i>later</i>], place [for example, <i>nearby</i>] and number [for example, <i>secondly</i>] or tense choices [for example, he <i>had</i> seen her before]
Punctuation	Brackets, dashes or commas to indicate parenthesis Use of commas to clarify meaning or avoid ambiguity
Terminology for pupils	modal verb, relative pronoun relative clause parenthesis, bracket, dash cohesion, ambiguity

➤ Grade 5: Word List

accommodate

accompany

according

achieve

aggressive

amateur

ancient

apparent

appreciate

attached

available

average
awkward
bargain
bruise
category
cemetery
committee
communicate
community
competition
conscience
conscious
controversy
convenience
correspond
criticise
curiosity
definite
desperate
determined
develop
dictionary
disastrous
embarrass
environment
equip (-ped, -ment)
especially
exaggerate
excellent

existence
explanation
familiar
foreign
forty
frequently
government
guarantee
harass
hindrance
identity
immediate(ly)
individual
interfere
interrupt
language
leisure
lightning
marvelous
mischievous
muscle
necessary
neighbour
nuisance
occupy
occur
opportunity
parliament
persuade

physical
prejudice
privilege
profession
programme
pronunciation
queue
recognise
recommend
relevant
restaurant
rhyme
rhythm
sacrifice
secretary
shoulder
signature
sincere(ly)
soldier
stomach
sufficient
suggest
symbol
system
temperature
thorough
twelfth
variety
vegetable

vehicle

yacht

Mathematics (Course Description)

Learners solve complex problems by breaking them down into smaller tasks, and give some mathematical justifications to support their methods, arguments or conclusions. They interpret, discuss and synthesize information presented in a variety of mathematical forms. They use trial-and-improvement methods involving approximating and ordering decimals. They calculate one number as a fraction or percentage of another. They use the equivalences between fractions, decimals and percentages and calculate using ratios in appropriate situations. They find and describe in words the rule for the next term or n th term of a sequence where the rule is linear, and they formulate and solve a variety of simple linear equations. They represent mappings expressed algebraically. They use common 2D representations of 3D objects, and the properties of quadrilaterals to classify different types of quadrilateral. They solve problems using angle and symmetry properties of polygons and properties of intersecting and parallel lines. They use formulae for finding circumferences and areas of circles, areas of plane rectilinear figures and volumes of cuboids, and enlarge shapes by a positive whole-number scale factor. They collect and record continuous data, and construct and interpret frequency diagrams, pie charts and scatter diagrams. They use their knowledge that the total probability of all the mutually exclusive outcomes of an experiment is 1, and find and justify probabilities. They identify all the outcomes when dealing with a combination of two experiments.

Mathematics (Course Objectives)

i) Operations and Algebraic Thinking

Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5.

- Multiply by 19 or 21 by multiplying by 20 and adjusting.

Represent verbal statements of multiplicative comparisons as multiplication equations.

- Multiply by 25 by multiplying by 100 and dividing by 4.

Multiply or divide to solve word problems involving multiplicative comparison.

- Use drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
- Solve a larger problem by breaking it down into sub-problems or represent it using diagrams.
- Consider whether an answer is reasonable in the context of a problem.

Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted.

- Choose an appropriate strategy for a calculation and explain how they worked out the answer.

Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

- Solve a larger problem by breaking it down into sub-problems or represent it using diagrams.

Find all factor pairs for a whole number in the range 1–100.

- Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number.
- Determine whether a given whole number in the range 1–100 is prime or composite.

Recognize that a whole number is a multiple of each of its factors.

- Determine whether a given whole number in the range 1–100 is prime or composite.
- Recognise odd and even numbers and multiples of 5, 10, 25, 50 and 100 up to 1000.
- Recognise multiples of 6, 7, 8 and 9 up to the 10th multiple.
- Find factors of two-digit numbers.

Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

- Example: Given the rule “Add 3” & the starting number 1, generate terms in the resulting sequence & observe that the terms appear to alternate between odd & even numbers. Explain informally why the numbers will continue to alternate in this way.
- Count on and back in steps of constant size, extending beyond zero.
- Recognise and extend number sequences.

ii) **Number and Operations in Base 10**

Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.

- Example: Recognize that $700 \div 70 = 10$ by applying concepts of place value & division.
- Multiply and divide any number from 1 to 10,000 by 10 or 100 and understand the effect.

Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.

- Partition any number up to one million into thousands, hundreds, tens and units.
- Know what each digit represents in five- and six-digit numbers.

Use place value understanding to round multi-digit whole numbers to any place.

- Round four-digit numbers to the nearest 10, 100 or 1000.
- Round a number with one or two decimal places to the nearest whole number.

Fluently add and subtract multi-digit whole numbers using the standard algorithm.

- Add or subtract any pair of three- and/or four-digit numbers, with the same number of decimal places, including amounts of money.
- Find the total of more than three two- or three-digit numbers using a written method.

Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

- Multiply or divide three-digit numbers by single-digit numbers.
- Multiply two-digit numbers by two-digit numbers.

Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.

- Divide three-digit numbers by single-digit numbers, including those with a remainder (answers no greater than 30).
- Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

iii) Fractions

Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

- Recognise equivalence between: $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{8}$; $\frac{1}{3}$ and $\frac{1}{6}$; $\frac{1}{5}$ and $\frac{1}{10}$.

Compare two fractions with different numerators and different denominators.

- Create common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$.

Recognize that comparisons are valid only when the two fractions refer to the same whole.

- Record the results of comparisons with symbols $>$, $=$, or $<$ and justify the conclusions, e.g. by using a visual fraction model.
- Order and compare numbers up to a million using the $>$ and $<$ signs.

Understand a fraction a/b with $a > 1$ as a sum of fractions $\frac{1}{b}$.

- Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
- Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: $\frac{3}{8} = \frac{1}{8} + \frac{1}{8}$

$+ 1/8$; $3/8 = 1/8 + 2/8$; $2 \frac{1}{8} = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8$.

- Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
- Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.
- Relate finding fractions to division and use to find simple fractions and quantities.

Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

- Understand a fraction a/b as a multiple of $1/b$. For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.
- Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as $6/5$. (In general, $n \times (a/b) = (n \times a)/b$.)
- Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat $3/8$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?

Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.

- Example: Express $\frac{3}{10}$ as $\frac{30}{100}$, and add $\frac{3}{10} + \frac{4}{100} = \frac{34}{100}$.
- Understand the equivalence between one-place decimals and fractions in tenths.
- Recognise equivalence between the decimal and fraction forms of halves, tenths and hundredths and use this to help order fractions, e.g. 0.6 is more than 50% and less than $\frac{7}{10}$.

Use decimal notation for fractions with denominators 10 or 100.

- Example: Rewrite 0.62 as $\frac{62}{100}$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.
- Understand the equivalence between one-place decimals and fractions in tenths.
- Recognise equivalence between the decimal and fraction forms of halves, tenths and hundredths and use this to help order fractions, e.g. 0.6 is more than 50% and less than $\frac{7}{10}$.

Compare two decimals to hundredths by reasoning about their size.

- Order numbers with one or two decimal places and compare using the $>$ and $<$ signs.
- Recognize that comparisons are valid only when the two decimals refer to the same whole.
- Record the results of comparisons with the symbols $>$, $=$, or

iv) Measurement and Data

Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit.

- Example:

- Know that 1 ft. is 12 times as long as 1 in.
- Express the length of a 4 ft. snake as 48 in.
- Generate a conversion table for feet & inches listing the number pairs (1, 12), (2, 24), (3, 36) ...

Record measurement equivalents in a two column table.

- Read, choose, use and record standard units to estimate and measure length, mass and capacity to a suitable degree of accuracy.
- Convert larger to smaller metric units (decimals to one place), e.g. change 2.6 kg to 2600 g.

Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit.

- Understand everyday systems of measurement in length, weight, capacity, temperature and time and use these to perform simple calculations.
- Solve single and multi-step word problems (all four operations); represent them, e.g. with diagrams or a number line.

Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

➤ Example:

- Find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.

- Use the formula for the area of a rectangle to calculate the rectangle's area.

Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots.

- Example:



- From a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.

- Find and interpret the mode of a set of data.

Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.

- Example:

- An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle.

- An angle that turns through $\frac{1}{360}$ of a circle is called a "one-degree angle," and can be used to measure angles.

- An angle that turns through one- degree angles is said to have an angle measure of n degrees.

- Understand and use angle measure in degrees; measure angles to the nearest 5 degrees; identify, describe and estimate the size of angles and classify them as acute, right or obtuse.

Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

- Calculate angles in a straight line.

Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts.

- Use an equation with a symbol for the unknown angle measure.

Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems.

- Understand and use angle measure in degrees; measure angles to the nearest 5 degrees; identify, describe and estimate the size of angles and classify them as acute, right or obtuse.

v) Geometry

Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two dimensional figures.

- Recognise perpendicular and parallel lines in 2D shapes, drawings and the environment.
- Understand and use angle measure in degrees; measure angles to the nearest 5 degrees; identify, describe and estimate the size of angles and classify them as acute, right or obtuse.

Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size.

- Recognise perpendicular and parallel lines in 2D shapes, drawings and the environment.

Recognize right triangles as a category, and identify right triangles.

Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts.

Identify line-symmetric figures and draw lines of symmetry.

- Create patterns with two lines of symmetry, e.g. on a pegboard or squared paper.

Science (Course Description)

During the final year of the Key Stage 2 programme of learning, Grade 5 pupils will build upon and expand their knowledge of past topics through advanced scientific enquiry techniques.

Grade 5 pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary; taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate; recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs; using test results to make predictions to set up further comparative and fair tests; reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations; and via identifying scientific evidence that has been used to support or refute ideas or arguments

Additionally, working with their teacher, pupils will describe evidence for some accepted scientific ideas and explain how the interpretation of evidence by scientists leads to the development and acceptance of new ideas. In their own investigative work, they use scientific knowledge and understanding to identify an appropriate approach. They select and use sources of information effectively. They make enough measurements, comparisons and observations for the task. They measure a variety of quantities with precision, using instruments with fine-scale divisions. They choose scales for graphs and diagrams that enable them to show data and features effectively. They identify measurements and observations that do not fit the main pattern shown. They draw conclusions that are consistent with the evidence and use scientific knowledge and understanding to explain them. They make reasoned suggestions about how their working methods could be improved. They select and use appropriate methods for communicating qualitative and quantitative data using scientific language and conventions.

Science (Course Objectives)

i) Living Things and Their Habitats

Pupils should build on their learning about grouping living things in Grade3/4 by looking at the classification system in more detail. They should be introduced to the idea that broad groupings, such as micro-organisms, plants and animals can be subdivided. Through direct observations where possible, they should classify animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals). They should discuss reasons why living things are placed in one group and not another. Pupils might find out about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification.

Pupils should be taught to:

- Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences
- Give reasons for classifying plants and animals based on specific characteristics

ii) Animals and Humans

Pupils should build on their learning from Grades 2 and 3 about the main body parts and internal organs (skeletal, muscular and digestive system) to explore and answer questions that help them to understand how the circulatory system enables the body to function.

Pupils should be taught to:

- Identify and name the main parts of human circulatory system and describe their functions
- Recognize the impact of diet, exercise, drugs and lifestyle on the way their bodies function
- Describe the ways in which nutrients and water are transported within animals, including humans

- Learn how to keep their bodies healthy and how their bodies might be damaged – including how some drugs and other substances can be harmful to the human body

iii) Evolution and Inheritance

Building on what they learned about fossils in the topic on rocks in Grade 2, pupils should find out more about how living things on earth have changed over time. They should be introduced to the idea that characteristics are passed from parents to their offspring, for instance by considering different breeds of dogs, and what happens when, for example, labradors are crossed with poodles. They should also appreciate that variation in offspring over time can make animals more or less able to survive in particular environments, for example, by exploring how giraffes' necks got longer, or the development of insulating fur on the arctic fox. Pupils might find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution.

Pupils should be taught to:

- Recognize that living things have changed over time
- Learn that fossils provide information about living things that inhabited the Earth millions of years ago
- Recognize that living things produce offspring of the same kind and that normally offspring vary and are not identical to their parents
- Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution

iv) Light

Pupils should build on the work on light in Grade 2, exploring the way that light behaves, including light sources, reflection and shadows. They should talk about what happens and make predictions. Pupils might work scientifically by: deciding where to place rear-view mirrors on cars; designing and making a periscope and using the idea that light appears to travel in straight lines to explain how it works. They might investigate the relationship between light sources, objects and shadows by using shadow puppets. They could extend their

experience of light by looking a range of phenomena including rainbows, colours on soap bubbles, objects looking bent in water, and coloured filters (they do not need to explain why these phenomena occur).

Pupils should be taught to:

- Recognise that light appears to travel in straight lines
- Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye
- Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes
- Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them

v) Electricity

Building on their work in Grade 3, pupils should construct simple series circuits, to help them to answer questions about what happens when they try different components, for example, switches, bulbs, buzzers and motors. They should learn how to represent a simple circuit in a diagram using recognised symbols.

Pupils should be taught to:

- Construct simple series circuit
- Use recognized symbols when representing a simple circuit in a diagram
- Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
- Compare and give reasons for variations in how components function

Geography (Course Description)

During Grade 5, the key topics of study are: rivers; mountains; coasts; cities; and food and famine.

In Grade 5, a high-quality geography education should inspire in pupils a curiosity and fascination about the world and its people that will remain with them for the rest of their lives. Teaching should equip pupils with knowledge about diverse places, people, resources and natural and human environments, together with a deep understanding of the Earth's key physical and human processes. As pupils progress, their growing knowledge about the world should help them to deepen their understanding of the interaction between physical and human processes, and of the formation and use of landscapes and environments. Geographical knowledge, understanding and skills provide the frameworks and approaches that explain how the Earth's features at different scales are shaped, interconnected and change over time.

The national curriculum for geography aims to ensure that all pupils:

- Develop contextual knowledge of the location of globally significant places – both terrestrial and marine – including their defining physical and human characteristics and how these provide a geographical context for understanding the actions of processes
- Understand the processes that give rise to key physical and human geographical features of the world, how these are interdependent and how they bring about spatial variation and change over time
- Are competent in the geographical skills needed to: collect, analyse and communicate with a range of data gathered through experiences of fieldwork that deepen their understanding of geographical processes
- Interpret a range of sources of geographical information, including maps, diagrams, globes, aerial photographs and Geographical Information Systems (GIS)
- Communicate geographical information in a variety of ways, including through maps, numerical and quantitative skills and writing at length.

Geography (Course Objectives)

i) Rivers

- Where does water come from?
- Source of rivers
- Rivers meeting the coast
- Living by rivers
- River Nile
- River Amazon
- Murray River
- Polluted rivers

ii) Mountains

- Hills and maps
- Formation of mountains
- Mountains and weather
- Himalayas

iii) Coasts

- Changing coastlines
- Sand dunes
- Building on the coast
- Using the coast
- Holding back the sea
- Threats to coastlines

iv) Cities

- Growth of cities
- City zones
- Nairobi
- Kenya
- Rio de Janeiro
- Brazil
- Tokyo
- Japan

v) Food and Famine

- Food and people
- How does hunger affect people?
- Famines caused by nature
- Famines caused by people

History (Course Description)

During Grade 5, the topics of study are: Mesopotamia and the Fertile Crescent; Ancient Sumer; Ancient Greece (geography); Athens and Sparta; and the Roman Empire.

A high-quality history education will help pupils gain a coherent knowledge and understanding of Britain's past and that of the wider world. It should inspire pupils' curiosity to know more about the past. Teaching should equip pupils to ask perceptive questions, think critically, weigh evidence, sift arguments, and develop perspective and judgement. History helps pupils to understand the complexity of people's lives, the process of change, the diversity of societies and relationships between different groups, as well as their own identity and the challenges of their time.

Pupils should continue to develop a chronologically secure knowledge and understanding of British, local and world history, establishing clear narratives within and across the periods they study. They should note connections, contrasts and trends over time and develop the appropriate use of historical terms. They should regularly address and sometimes devise historically valid questions about change, cause, similarity and difference, and significance. They should construct informed responses that involve thoughtful selection and organisation of relevant historical information. They should understand how our knowledge of the past is constructed from a range of sources. In planning to ensure the progression described above through teaching the British, local and world history outlined below, teachers should combine overview and depth studies to help pupils understand both the long arc of development and the complexity of specific aspects of the content.

History (Course Objectives)

i) Mesopotamia and the Fertile Crescent

- Mesopotamian geography
- Mesopotamian environment
- Food shortages in Mesopotamia
- Advantages/disadvantages of life in Mesopotamia
- Mesopotamian villages
- Mesopotamian conflicts

ii) Ancient Sumer

- Civilization characteristics
- Governmental structure
- Sumerian arts and sports
- Ancient Sumerian technology
- Ancient Sumerian pictographs

iii) Ancient Greece (geography)

- European geography
- Ancient Greek geography
- Origins of Ancient Greece
- Travel in Ancient Greece
- Farming in Ancient Greece
- Colonies of Ancient Greece

iv) Athens and Sparta

- Athens vs. Sparta
- Comparing the city-states
- Athens and Sparta government

v) Roman Empire

- Origins of Ancient Rome
- Influence of the Etruscans on Ancient Rome
- Roman Republic Development
- Europe after the fall of Rome

Information Technology (Course Description)

Information and Communication Technology (ICT) for Grades 5 strengthens student's responsible use of the technological knowledge and skills by means of exploring and utilizing various online and offline resources as tools and data for collaboration, problem solving, creative and critical thinking related to their level.

Learners should learn to extend the range of ICT tools they use for communication, investigation and control; they should use ICT to select information, sources and media that are suitable for their purpose and assess the value of ICT in their work.

Information Technology (Course Objectives)

In Grade 5 ICT, the students are expected to:

1. Develop digital literacy skills that will enable them to function as discerning students in an increasingly digital society
2. Access various tools and applications for learning and skill development
3. Operate a variety of hardware and software independently and troubleshoot common problems
4. Use the ICT facility with care, ensuring the safety of themselves, others and the equipment
5. Create a variety of digital products using appropriate tools and applications and saving, storing and managing digital resources
6. Practice safe, legal and ethical means of using ICT

Skills developed

Learners should learn to:

1. use hardware and develop knowledge of ICT
 - use ICT to explore and solve problems in the context of work across a variety of subjects
 - use ICT to further their understanding of information that they have retrieved and processed
 - discuss their experience of using ICT and assess its value in their work
 - investigate parallels with the use of ICT in the wider world, consider the effects of such uses and compare them with other methods
2. communicate using ICT
 - use ICT hardware and software to communicate ideas and information in a variety of forms, incorporating text, graphs, pictures and sound, as appropriate, showing sensitivity to the needs of their audience in choice of layout, typeface or graphics as well as considering the most appropriate use of such tools to present their ideas or argument

- use hardware and software to organise, re-organise and analyse ideas and information
3. handle information using ICT
- interrogate information that has been stored, developing the need to take care in framing questions when collecting, accessing or interrogating information
 - interpret, begin to analyse and check the plausibility of information held on ICT systems, and select the elements required for particular purposes
 - select suitable information and media, and classify and prepare information for processing with ICT, checking for accuracy
4. control and monitor using ICT
- use simple commands to control a device
 - understand the difference between inputs and outputs and develop commands to control them
 - use a sequence of commands to control a device including inputs and outputs
 - use sensors to gather data, record the data for a purpose and be able to give simple interpretations of the data gathered.

1. EXPLORING DOCUMENTS (Microsoft Office Word)

- Create and edit a text document
- Edit text for a specific audience
 - ✓ Change font size
 - ✓ Change font color
 - ✓ Change font style
- Add images or other objects to a document
- Refine and organize the layout of a document for a specific audience
- Refine and organize the layout of a document for a specific wall (where the screen is displayed)

Prior knowledge	New words	
• Type simple sentences • Use full stops and capital letters • Complements and extends 'Starting with Text'	• audience • insert • proofread	• format • save as

2. EXPLORING IMAGES (Paint)

- Create repeating patterns, using stamps and/or copy tools
- Use the flip/rotate tools
- Create pictures, using a variety of tools and effects
 - ✓ Brush tools
 - ✓ Fill tool
 - ✓ Text tool to add some text.
- Select appropriate objects, copy and resize them
- Save drafts showing the development of the design

Prior knowledge	New words	
• Complements and extends 'Starting Images'	• crop • resize • scale • brush • import • import/export • scanner • digital camera • horizontal • vertical	If used: • mobile phone • tablet • digital microscope

3. EXPLORING SPREADSHEETS (Microsoft Office Excel)

- Enter labels and numbers into a spreadsheet
- Enter and copy simple formulas
 - ✓ SUM
 - ✓ AutoSum
- Create a graph
 - ✓ Line chart
 - ✓ Pie chart
 - ✓ Column chart
 - ✓ Bar chart
- Modify data
- Use a spreadsheet to answer a modelled scenario ('what if')

Prior knowledge	New words	
• Basic mathematical knowledge for formulas • Ability to copy and paste • Ability to use the keyboard to enter text and • data efficiently • Ability to retrieve stored work • Complements and extends 'Starting Graphs	• crop • resize • scale • brush • import • import/export • scanner • digital camera • horizontal • vertical	If used: • mobile phone • tablet • digital microscope

4. EXPLORING DATABASES (Microsoft Office Access)

- Add new records to a data file
- Identify field types
 - ✓ Yes/No field
 - ✓ Text field
- Use 'equals', 'more than' and 'less than' in searches
- Rephrase a given question in terms of search criteria
- Interpret data

Prior knowledge	New words	
• Search using keywords	• database • field • record • file • sort • order	• query • INCLUDES • AND • OR • NOT • subset

Art & Design (Course Description)

During Grade 5, students enhance on the topics that were studied and learning during Grade 4. During Grade 5, the topics of study are: solving problems in art; modelling sea animals; textile design; independent art project; tessellation; alphabets; sculpture; and pop art structures.

Art, craft and design embody some of the highest forms of human creativity. A high-quality art and design education should engage, inspire and challenge pupils, equipping them with the knowledge and skills to experiment, invent and create their own works of art, craft and design.

Building on what was taught during the Key Stage 1 years, and in Grade 3, Grade 4 students should pursue and be taught how to develop their techniques, including their control and their use of materials, with creativity, experimentation and an increasing awareness of different kinds of art, craft and design. Pupils should also be taught to: create sketch books to record their observations and use them to review and revisit ideas; to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]; and about great artists, architects and designers in history.

Art & Design (Course Objectives)

i) Solving problems in art

- Choosing concepts
- Selecting own materials

ii) Modelling Sea Animals

- Clay structures
- Design
- Ceramic modelling

iii) Textile Design

- Fashion show
- Costume design
- Fabric decoration

iv) Tessellation Design

- M.C. Escher
- Biography project on M.C. Escher
- Create own work

v) Alphabets

- Ancient Egyptian hieroglyphs
- Brail alphabet
- Personal project

vi) Sculpture

- Creating original sculpture from cardboard

vii) Pop Art

- Studying different movements

Design Technology (Course Description)

During Grade 5, the topics of study will be: book binding; textile design; Roman tile and geometric patterns.

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

Design Technology (Course Objectives)

i) Specific Content and Topics

- Booking binding
- Simple techniques
- Mosaic techniques
- Roman tiling
- Geometric patterns
- Textile design
- Fashion show project dress design and manufacture

ii) Design

- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

iii) Make

- Select from and use a wider range of tools and equipment to perform practical tasks accurately
- Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

iv) Evaluate

- Investigate and analyse a range of existing products

- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- Understand how key events and individuals in design and technology have helped shape the world

v) Technological Knowledge

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- Understand and use mechanical systems in their products
- Understand and use electrical systems in their products
- Apply their understanding of computing to programme, monitor and control their products.

Music (Course Description)

Students will perform, listen to and evaluate music, learn to sing and to use their voices. They will be developing important skills, which build from regular access to singing and playing instruments.

Pupils will learn to identify and explore the different processes and contexts of selected musical genres and styles. They will select and make expressive use of tempo, dynamics, phrasing and timbre. They will make subtle adjustments to fit their own part within a group performance. They improvise and compose in different genres and styles, using harmonic and nonharmonic devices where relevant, sustaining and developing musical ideas and achieving different intended effects. They use relevant notations to plan, revise and refine material. They analyse, compare and evaluate how music reflects the contexts in which it is created, performed and heard. They make improvements to their own and others' work in the light of the chosen style.

Students will be taught to sing and play musically with increasing confidence and control.

Students will work more in detail with the rhythm and sound, play different percussion instruments, body percussion, homemade instruments as a part of yearly topic about musical instruments.

Music (Course Objectives)

i) Elements of Music

a) Elements

Through participation become familiar with basic elements of music (rhythm, melody, harmony, form, timbre, etc.).

- Recognise a steady beat, accents, downbeat, play a steady beat, a simple rhythm pattern, and syncopation patterns.
- Discriminate between fast and slow, gradually slowing down and getting faster, accelerando and ritardando.
- Discriminate between differences in pitch: high and low.
- Discriminate between loud and soft, gradually increasing and decreasing volume, crescendo and decrescendo.
- Echo short rhythms and melodic patterns.
- Sing unaccompanied, accompanied, and in unison.
- Recognise verse and refrain.
- Play simple rhythms and melodies.
- Recognise harmony, sing rounds, songs in two or more voices.
- Work with timbre and phrasing.

b) Notation

Review the following notation:

- Whole, dotted half note, half, quarter note, eighth notes, sixteenth notes, dotted rhythm.
- Whole, half, quarter rest.

- Staff, treble clef (G clef), bass clef (understand that different instruments use different clef (why).
- Names of the notes.
- Sharps and flats.
- Understand the dividing the staff into measures, bar lines.
- Time signatures 4/4 time, 2/4 time, 3/4 time.
- Dynamics: piano, forte, crescendo, decrescendo.
- Legato, staccato.

ii) Listening, Exploring and Performing

Children will be exposed to a wide range of music, including children's music, instrumental music, and music from various cultures.

a) The Recorder, How to Play a Song

- Learn the rules of ensemble playing, control the sound, play simple tunes following the notation.
- Range D1 – D2 (left hand).
- Recorder drills, practice in group, perform solo with accompaniment.
- Control of the breath.

b) Rhythm Work with Percussion Instruments

- Play different instruments (Orff's instruments, xylophone, drumbens, handbells...).
- Games, patterns, performing with different types of the notation.
- Improvisation.

c) Listening and Describing Music

- Listen different styles of music, description (instruments, mood, dynamics, interpretation, comparison, become familiar with famous tunes)

d) Musical Instruments in Detail

- Woodwind, brass, string, percussion, keyboard instruments.
- Description, how the instruments are made, how to play them.

Modern Language (Course Description)

In Grade 5, students will study the following example topics: 'Hi, how are you?' -; history of the country of study; the alphabet; at a restaurant; personal items; What is it? -; my family; my tastes; my hobbies; my city; my schedule; my portrait; sensations; and meals.

At Meridian International School, our students have the option of studying a choice of modern languages. For Czech citizens, Grade 4 students will follow a curriculum that closely follows the Czech national curriculum, whereas non-native Czech speakers will follow a curriculum that is based on methodologies that closely follow a standard European framework.

Additionally, our students have the option of studying French, following a curriculum that adheres strictly to the standards of the National Curriculum of England.

Teaching should build on the foundations of language learning laid at Key Stage 1, whether pupils continue with the same language or take up a new one. Teaching may be of any modern or ancient foreign language and should focus on enabling pupils to make substantial progress in one language. The teaching should provide an appropriate balance of spoken and written language and should lay the foundations for further foreign language teaching at Key Stage 3. It should enable pupils to understand and communicate ideas, facts and feelings in speech and writing, focused on familiar and routine matters, using their knowledge of phonology, grammatical structures and vocabulary. The focus of study in modern languages will be on practical communication. If an ancient language is chosen, the focus will be to provide a linguistic foundation for reading comprehension and an appreciation of classical civilisation. Pupils studying ancient languages may take part in simple oral exchanges, while discussion of what they read will be conducted in English. A linguistic foundation in ancient languages may support the study of modern languages at Key Stage 3.

Modern Language (Course Objectives)

i) Specific Content and Topics

- 'Hi, how are you?'
- History of the country of study
- The alphabet
- At a restaurant
- Personal items
- What is it?
- My family
- My tastes
- My hobbies
- My city
- My schedule
- My portrait
- Sensations
- Meals

ii) Listening & Comprehension

- Listen attentively to spoken language and show understanding by joining in and responding
- Explore the patterns and sounds of language through songs and rhymes and link the spelling, sound and meaning of words

iii) Speaking

- Engage in conversations; ask and answer questions; express opinions and respond to those of others; seek clarification and help
- Speak in sentences, using familiar vocabulary, phrases and basic language structures
- Develop accurate pronunciation and intonation so that others understand when they are reading aloud or using familiar words and phrases
- Present ideas and information orally to a range of audiences

iv) Reading & Comprehension

- Read carefully and show understanding of words, phrases and simple writing
- Appreciate stories, songs, poems and rhymes in the language
- Broaden their vocabulary and develop their ability to understand new words that are introduced into familiar written material, including through using a dictionary

v) Writing

- Write phrases from memory, and adapt these to create new sentences, to express ideas clearly
- Describe people, places, things and actions orally* and in writing
- Understand basic grammar appropriate to the language being studied, including (where relevant): feminine, masculine and neuter forms and the conjugation of high-frequency verbs; key features and patterns of the language; how to apply these, for instance, to build sentences; and how these differ from or are similar to English.

Physical Education (Course Description)

A high-quality physical education curriculum inspires all pupils to succeed and excel in competitive sport and other physically-demanding activities. It should provide opportunities for pupils to become physically confident in a way which supports their health and fitness. Opportunities to compete in sport and other activities build character and help to embed values such as fairness and respect.

During Grade 4 students should continue to apply and develop a broader range of skills, learning how to use them in different ways and to link them to make actions and sequences of movement. They should enjoy communicating, collaborating and competing with each other. They should develop an understanding of how to improve in different physical activities and sports and learn how to evaluate and recognise their own success.

Physical Education (Course Objectives)

i) Sport & Games

- use running, jumping, throwing and catching in isolation and in combination
- play competitive games, modified where appropriate, and apply basic principles suitable for attacking and defending
- develop flexibility, strength, technique, control and balance
- perform dances using a range of movement patterns
- take part in outdoor and adventurous activity challenges both individually and within a team
- compare their performances with previous ones and demonstrate improvement to achieve their personal best.

ii) Swimming and water safety

In particular, pupils should be taught to:

- swim competently, confidently and proficiently over a distance of at least 25 metres
- use a range of strokes effectively
- perform safe self-rescue in different water-based situations.

References

English:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/335186/PRIMARY_national_curriculum_-_English_220714.pdf

Mathematics:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/335158/PRIMARY_national_curriculum_-_Mathematics_220714.pdf

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https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/239042/PRIMARY_national_curriculum_-_Languages.pdf

Physical Education

<https://www.gov.uk/government/publications/national-curriculum-in-england-physical-education-programmes-of-study>

