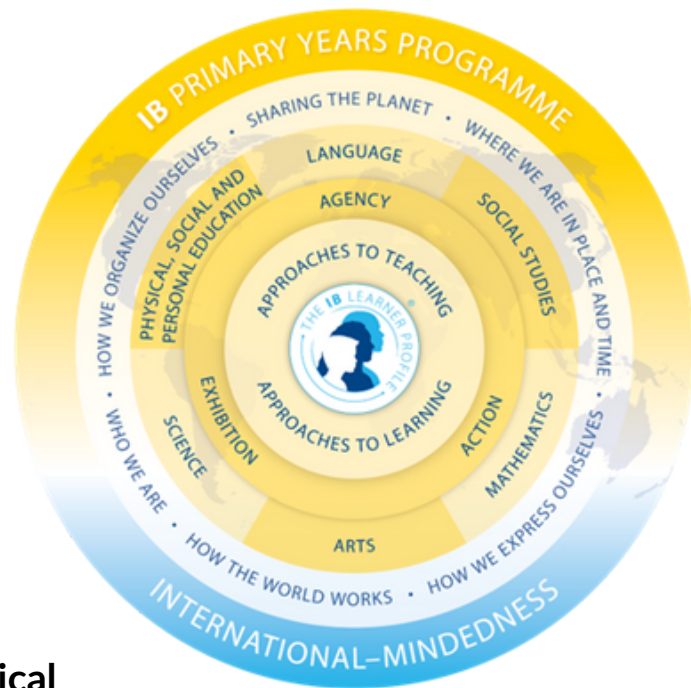


Year 5 Parent Curriculum Guide



The Primary Years Programme (PYP): preparing students to be active participants in a lifelong journey of learning. The PYP is designed for students aged 3 to 12. It focuses on the development of the whole child as an inquirer, both in the classroom and in the world outside. It is a framework guided by six transdisciplinary themes of global significance, explored using knowledge and skills derived from six subject areas, as well as transdisciplinary skills, with a powerful emphasis on inquiry.



Philosophical and pedagogical underpinnings of the PYP

- **International mindedness:** At the core of the IB is the mission of developing international mindedness in the learning community, which comes alive through the learner profile. The learner profile aims to instill traits that cover a range of cognitive, social, emotional, and personal attributes. From early years, students learn to be open-minded, considerate of different perspectives and cultures and to actively engage with global issues.
- **Agency:** Students are at the centre of the learning process- with agency through voice, choice, and ownership. Their opinions about what and how they learn, are valued, making them the co-constructors and co-designers of their learning.
- **Transdisciplinary learning:** Through its trans-disciplinary approach to learning, PYP weaves in knowledge, skills, and understandings from different subjects, seamlessly and organically. Students are invited to explore these through the lens of six significant transdisciplinary themes providing a context for real-world issues, making education relevant and engaging.
- **Conceptual understanding:** The PYP emphasizes the development of conceptual understanding, which enables students to delve deeper, beyond knowledge to make connections. They can, thus, engage with global issues and take affirmative action to effect change.
- **Personalized learning:** PYP aims to create self-directed learners, who set their own goals and create their own pathways to becoming lifelong learners. This personalized approach to education helps make learning meaningful and creates balance.
- **Approaches to learning skills (ATL):** Linking all programmes of the IB, a goal of IB education is to arm all learners with skills that will help them negotiate the rapidly changing world. This includes a focused approach to developing social, thinking, research, communication, and self-management skills in the day-to-day life of young PYP learners.



The Learner Profile

The aim of all IB programmes is to develop internationally minded people who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world.

Inquirers

We nurture our curiosity, developing skills for inquiry and research. We know how to learn independently and with others. We learn with enthusiasm and sustain our love of learning throughout life.

Knowledgeable

We develop and use conceptual understanding, exploring knowledge across a range of disciplines. We engage with issues and ideas that have local and global significance.

Thinkers

We use critical and creative thinking skills to analyse and take responsible action on complex problems. We exercise initiative in making reasoned, ethical decisions.

Communicators

We express ourselves confidently and creatively in more than one language and in many ways. We collaborate effectively, listening carefully to the perspectives of other individuals and groups.

Principled

We act with integrity and honesty, with a strong sense of fairness and justice, and with respect for the dignity and rights of people everywhere. We take responsibility for our actions and their consequences.

Open-minded

We critically appreciate our own cultures and personal histories, as well as the values and traditions of others. We seek and evaluate a range of points of view, and we are willing to grow from the experience.

Caring

We show empathy, compassion and respect. We have a commitment to service, and we act to make a positive difference in the lives of others and in the world around us.

Risk-takers

We approach uncertainty with forethought and determination; we work independently and cooperatively to explore new ideas and innovative strategies. We are resourceful and resilient in the face of challenges and change.

Balanced

We understand the importance of balancing different aspects of our lives—intellectual, physical, and emotional—to achieve well-being for ourselves and others. We recognize our interdependence with other people and with the world in which we live.

Reflective

We thoughtfully consider the world and our own ideas and experience. We work to understand our strengths and weaknesses in order to support our learning and personal development.

Transdisciplinary learning

Transdisciplinary learning is not confined within the boundaries of traditional subjects but is supported and enriched by them. The PYP transdisciplinary learning is organized under 6 themes of “human commonalities”. Framing the programme of inquiry, these globally and socially driven themes provide a starting point from which students can examine issues and opportunities as they are being experienced in the real world.

Transdisciplinary themes	Descriptions
Who we are	An inquiry into the nature of the self; beliefs and values; personal, physical, mental, social and spiritual health; human relationships including families, friends, communities and cultures; rights and responsibilities; what it means to be human.
Where we are in place and time	An inquiry into orientation in place and time; personal histories; homes and journeys; the discoveries, explorations and migrations of humankind; the relationships between, and the interconnectedness of, individuals and civilizations from local and global perspectives.
How we express ourselves	An inquiry into the ways in which we discover and express ideas, feelings, nature, culture, beliefs and values; the ways in which we reflect on, extend and enjoy our creativity; our appreciation of the aesthetic.
How the world works	An inquiry into the natural world and its laws; the interaction between the natural world (physical and biological) and human societies; how humans use their understanding of scientific principles; the impact of scientific and technological advances on society and on the environment.
How we organize ourselves	An inquiry into the interconnectedness of human-made systems and communities; the structure and function of organizations; societal decision-making; economic activities and their impact on humankind and the environment.
Sharing the planet	An inquiry into rights and responsibilities in the struggle to share finite resources with other people and with other living things; communities and the relationships within and between them; access to equal opportunities; peace and conflict resolution.

Transdisciplinary Programme of Inquiry (POI)

- A transdisciplinary POI offers students a broad, balanced, conceptual and connected learning experience.
- Six transdisciplinary themes form the structure of the POI.
- The themes capture human commonalities that are significant and relevant across cultures, geographic regions and student learning stages.
- The POI ensures students gain a balance of subject-specific knowledge, conceptual understandings and skills, alongside opportunities to develop the attributes of the IB learner profile and to take action.
- Units of inquiry are collaboratively planned, developed and continually modified based on reflection with students.

When learning is organized around transdisciplinary themes, authentic and meaningful connections are made across, between and beyond subjects. The iterative relationship between the learner, the learning community, and learning and teaching bring to life this transdisciplinary learning experience.

- **The programme of inquiry consists of transdisciplinary units of inquiry that include:**
- **a central idea**— the primary conceptual lens that frames the transdisciplinary unit of inquiry and support students' conceptual understandings of the transdisciplinary theme under which it is situated.
- **concepts**—key and related concepts that support higher-order thinking and provide lenses for considering knowledge related to the central idea in a range of ways.
- **lines of inquiry**—statements that define the potential scope of an inquiry.

[Click here for the DIA Program Of Inquiry](#)

Agency and Action



The learner

The PYP curriculum recognizes learners' innate potential to inquire, question, wonder and theorize about themselves, others, and the world around them.

Learning and teaching

The PYP ensures that learning is engaging, relevant, challenging and significant. A transdisciplinary and conceptual inquiry approach encapsulates these aspects of learning, underpinned by authentic integrated assessment.

The learning community

Everyone involved in the life of the school is recognized: students and their families, all school staff members, other important adults in the students' lives and the community at large.

Through taking individual and collective action, students come to understand the responsibilities associated with being internationally minded and to appreciate the benefits of working with others for a shared purpose.

Action can be taken at many levels, as indicated in the diagram, and does not always have to be big to be significant. Students take action in response to their inquiry.



**A
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Participation

Advocacy

Social Justice

Social Entrepreneurship

Lifestyle Choices

Action can take any of these forms, either as personal initiative or collective endeavour.

Concepts

Concepts are powerful, broad and abstract organizing ideas that may be transdisciplinary or subject-based.

Concept-based inquiry is a powerful vehicle for learning that promotes meaning and understanding, and challenges students to engage with significant ideas.

- Concepts help to:
- explore the essence of a subject
- add coherence to the curriculum
- deepen disciplinary understanding
- build the capacity to engage with complex ideas
- build understandings across, between and beyond subjects
- integrate and transfer learning to new contexts.

The IB identifies the following Seven Concepts that drive the units of inquiry

Concept	Key question	definition
Form	What is it like?	The understanding that everything has a form with recognizable features that can be observed, identified, described and categorized.
Function	How does it work?	The understanding that everything has a purpose, a role or a way of behaving that can be investigated.
Causation	Why is it as it is?	The understanding that things do not just happen; there are causal relationships at work, and that actions have consequences.
Change	How is it transforming?	The understanding that change is the process of movement from one state to another. It is universal and inevitable.
Connection	How is it linked to other things?	The understanding that we live in a world of interacting systems in which the actions of any individual element affect others.
Perspective	What are the points of view?	The understanding that knowledge is moderated by different points of view which lead to different interpretations, understandings and findings; perspectives may be individual, group, cultural or subject-specific.
Responsibility	What are our obligations?	The understanding that people make choices based on their understandings, beliefs and values, and the actions they take as a result do make a difference

Approaches to Learning (ATL) Skills

Approaches to learning (ATL) are grounded in the belief that learning how to learn is fundamental to a student's education.

Five categories of interrelated skills and associated sub-skills support students of all ages to become self-regulated learners.

Through a variety of strategies, teachers collaboratively plan for implicit and explicit opportunities to develop ATL both inside and outside the programme of inquiry.

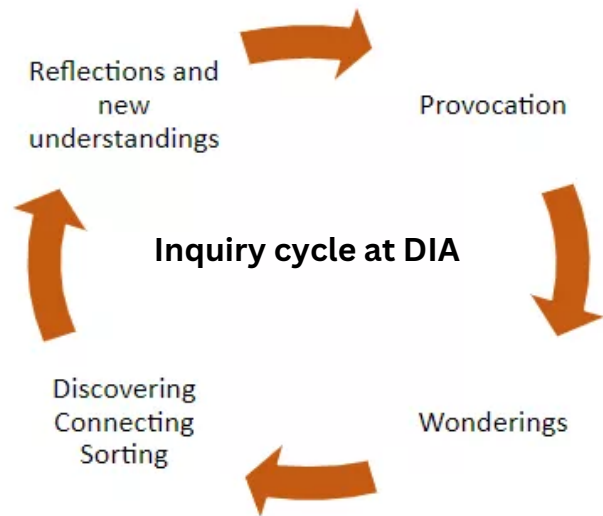
Categories	Sub-skills
Thinking skills	<ul style="list-style-type: none"> • Critical-thinking skills (analysing and evaluating issues and ideas) • Creative-thinking skills (generating novel ideas and considering new perspectives) • Transfer skills (using skills and knowledge in multiple contexts) • Reflection/metacognitive skills ((re)considering the process of learning).
Research skills	<ul style="list-style-type: none"> • Information-literacy skills (formulating and planning, data gathering and recording, synthesizing and interpreting, evaluating and communicating) • Media-literacy skills (interacting with media to use and create ideas and information) • Ethical use of media/information (understanding and applying social and ethical technology)
Communication skills	<ul style="list-style-type: none"> • Exchanging-information skills (listening, interpreting, speaking) • Literacy skills (reading, writing and using language to gather and communicate information) • ICT skills (using technology to gather, investigate and communicate information)
Social skills	<ul style="list-style-type: none"> • Developing positive interpersonal relationships and collaboration skills (using self-control, managing setbacks, supporting peers) • Developing social-emotional intelligence
Self-management skills	<ul style="list-style-type: none"> • Organization skills (managing time and tasks effectively) • States of mind (mindfulness, perseverance, emotional management, self-motivation, resilience).

Inquiry-based learning

- Inquiry recognizes students as being responsible for their own learning and is connected to the idea of Agency- where students take ownership of that learning.
- It creates opportunities for transferring the learning into authentic, real-life contexts, where students become problem solvers, through questioning, exploring, investigating, analyzing, and concluding.
- Inquiry nurtures curiosity and instills a life-long love for learning.

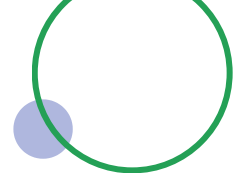
The inquiry process involves:

- exploring, wondering and questioning
- experimenting and playing with possibilities
- making connections between previous learning and current learning
- making predictions and acting purposefully to see what happens
- collecting data and reporting findings
- clarifying existing ideas and reappraising perceptions of events
- applying concepts to deepen conceptual understandings
- researching and seeking information
- establishing and testing theories
- solving problems in a variety of ways
- taking and defending a position.



Are curious and engage in learning	Are resourceful and resilient	Learn independently and collaborate with others	Pose and pursue open-ended questions	Use the learning community as a resource	Reflect on learning
Select materials to support investigations	Collect and analyse data as a result of inquiry questions	Inquiry students		Use observation as a vital tool in learning	Build, communicate, test, and adapt theories
Engage in critical and creative thinking	Develop skills for inquiry and research			Consider opportunities to develop learner profile attributes	Make deliberate links between knowledge discovered and conceptual understandings
Transfer understandings across contexts and subjects	Represent and share understandings in meaningful and significant ways	Seek new perspectives	Take action	See learning as joyful and learn with enthusiasm	Sustain love for lifelong learning.

Reading



Reading in Year 5

As with Years 3 and 4, children use Accelerated Reader in order to cultivate positive reading habits. They select books from within their ZPD giving them autonomy over their reading choices whilst choosing texts at an appropriate reading level.

Every week, children visit the school library where they have the choice of any books that suit their interest levels.

We also share whole class texts, meaning we can enjoy the suspense, the excitement and the lessons it teaches us together.

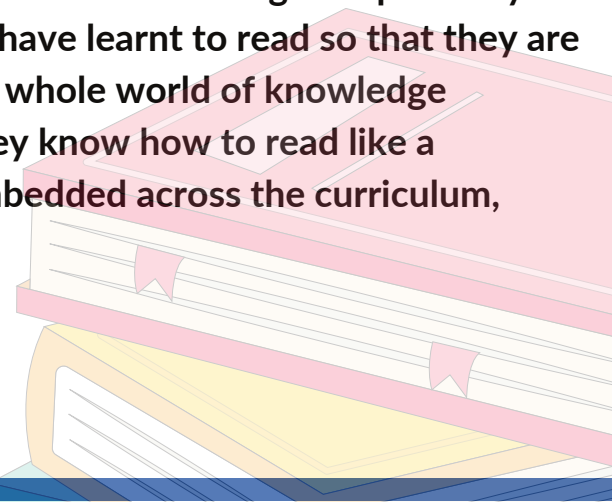
The objectives we teach in Year 5 build on the work done in Years 3 and 4. The objectives remain the same for Years 5 and 6 however the level of independence and mastery will increase over the two years.

Reading skills in Year 5

Reading is very important as we believe it equips all children for life. It is a skill we use every day, everywhere. In year 5 we do lots of reading activities across the curriculum to develop a passion and love for reading. Our reading activities are fun and exciting. The children are encouraged to read parts of the class novel in whole class reading, which are linked to the Units of Inquiry. To further improve our reading skills, Year 5 complete reading comprehension activities regularly. This allows the children to continue to improve their reading and have a better understanding of reading comprehension. Each lesson focuses on a strand which develops the children's reading skills.

Disciplinary Literacy

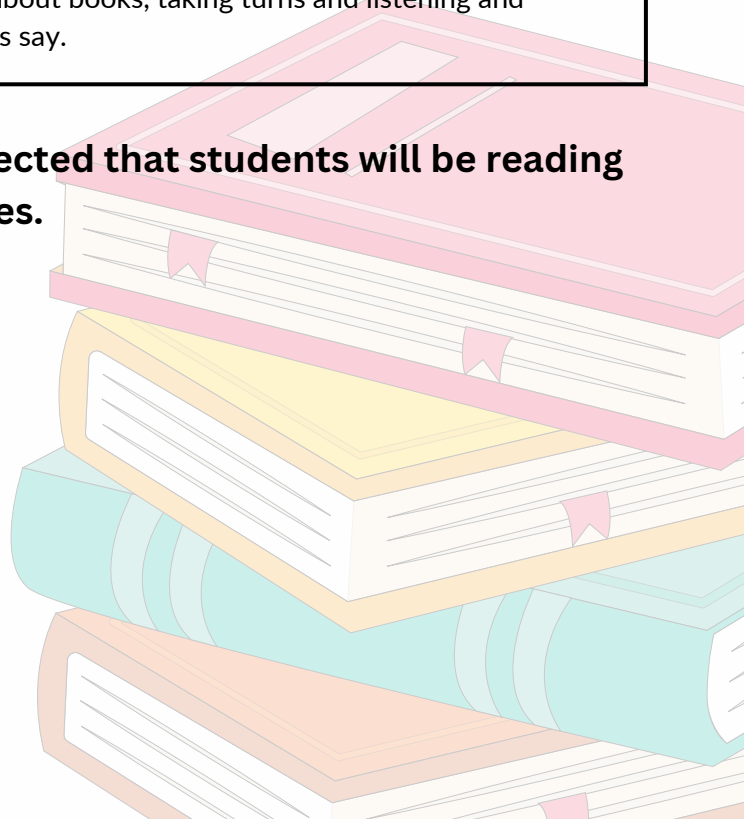
High quality texts are available for children to develop their understanding of topics they are currently learning about – they understand that they have learnt to read so that they are able to read to learn. This skill allows children to access a whole world of knowledge because they can find out anything they want to once they know how to read like a scientist or read as a historian for example. Reading is embedded across the curriculum, whether it is Arabic, Art, MSCS or UOI.



Year 5 and 6 Reading Objectives

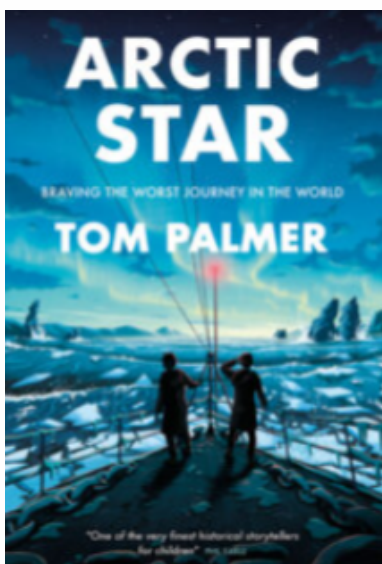
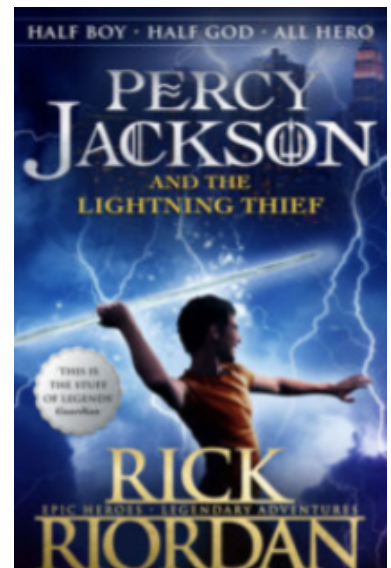
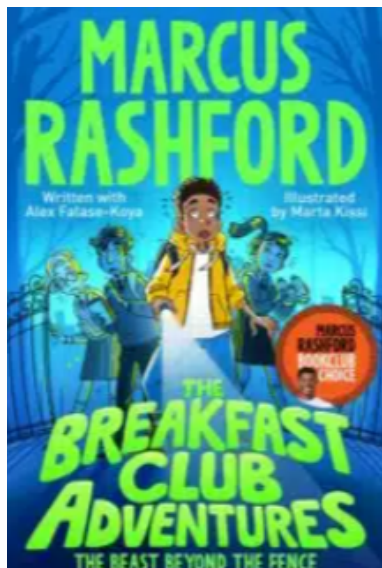
	Year 5 and 6
To read words accurately	Apply knowledge of root words, prefixes and suffixes. (Note: this should be through normal reading rather than direct teaching.)
To understand texts	<p>Recommend books to peers, giving reasons for choices.</p> <p>Identify and discuss themes and conventions in and across a wide range of writing.</p> <p>Make comparisons within and across books.</p> <p>Learn a wide range of poetry by heart.</p> <p>Prepare 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.</p> <p>Check that the book makes sense, discussing understanding and exploring the meaning of words in context.</p> <p>Ask questions to improve understanding.</p> <p>Draw inferences such as inferring characters' feelings, thoughts and motives from their actions, and justifying inferences with evidence.</p> <p>Predict what might happen from details stated and implied.</p> <p>Summarise the main ideas drawn from more than one paragraph, identifying key details that support the main ideas.</p> <p>Identify how language, structure and presentation contribute to meaning.</p> <p>Discuss and evaluate how authors use language, including figurative language, considering the impact on the reader.</p> <p>Retrieve and record information from non-fiction.</p> <p>Participate in discussion about books, taking turns and listening and responding to what others say.</p>

As well as reading in school, it is still expected that students will be reading at home every night for at least 20 minutes.



Books, books, books...

Here is a selection of books that may be suitable for Year 5 readers. Please use your parental discretion as we have not read all books on the list. Click on each image to find out more about it.



Writing

Writing in Year 5

Writing in Year 5 builds on the learning from Year 4. Students are taught to write in a range of genres using a varied range of stimuli linked to our Units of Inquiry. Certain genres are repeated from previous years however the expectations of students in terms of sentence construction, consideration of audience and purpose, and variety of punctuation, increases.

Embedding writing throughout the curriculum

As the PYP is transdisciplinary, we integrate writing across all subjects. This develops their understanding of disciplinary literacy as well as giving regular writing practice in order to develop students skills.

Some examples are how we write might across the curriculum include:

- Researching and writing a biography of a scientist they are studying in science
- Creating an information text based on Biomes in UOI
- Explaining, justifying and reasoning in mathematics using mathematical vocabulary



Year 5 Writing Objectives

	Year 5 and 6
To write with purpose	Identify the audience for writing. Choose the appropriate form of writing using the main features identified in reading. Note, develop and research ideas. Plan, draft, write, edit and improve.
To use imaginative description	Use the techniques that authors use to create characters, settings and plots. Create vivid images by using alliteration, similes, metaphors and personification. Interweave descriptions of characters, settings and atmosphere with dialogue.
To organise writing appropriately	Guide the reader by using a range of organisational devices, including a range of connectives. Choose effective grammar and punctuation and propose changes to improve clarity. Ensure correct use of tenses throughout a piece of writing
To use paragraphs	Write paragraphs that give the reader a sense of clarity. Write paragraphs that make sense if read alone. Write cohesively at length.
To use sentences appropriately	Write sentences that include: <ul style="list-style-type: none">- <i>relative clauses</i>- <i>modal verbs</i>- <i>relative pronouns</i>- <i>brackets</i>- <i>parenthesis</i>- <i>a mixture of active and passive voice</i>- <i>a clear subject and object</i>- <i>hyphens, colons and semi colons</i>- <i>bullet points</i>
To present neatly	Write fluently and legibly with a personal style.

	Year 5 and 6
To spell correctly	<p>Use prefixes, applying guidelines for adding them. Spell some words with silent letters (knight, psalm solemn). Distinguish between homophones and other words that are often confused. Use knowledge of morphology and etymology in spelling and understand that some words need to be learned specifically. Use dictionaries to check spelling and meaning of words. Use the first three or four letters of a word to look up the meaning or spelling of words in a dictionary</p> <p>See Year 5 and 6 Spelling List on page below.</p>
To punctuate accurately	<p>Develop understanding of writing concepts by: Recognising vocabulary and structures that are appropriate for formal speech and writing, including 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. Indicate grammatical and other features by: Using commas to clarify meaning or 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.</p>
To analyse writing	<p>Use and understand grammatical terminology when discussing writing and reading:</p> <p>relative clause, modal verb, relative pronoun, parenthesis, bracket, dash, determiner, cohesion, ambiguity</p>
To present writing	<p>Perform compositions, using appropriate intonation and volume</p>

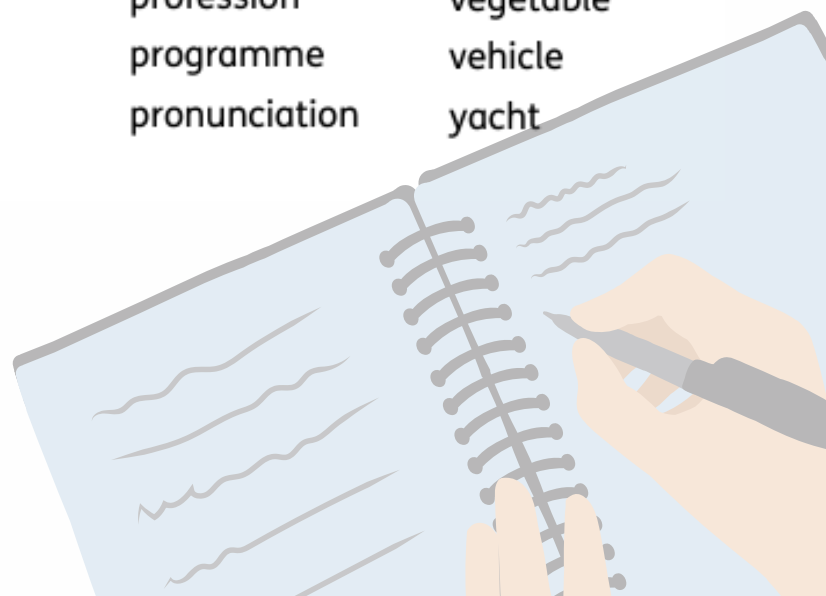
100 common exception words that Year 5 and 6 pupils are expected to spell. Please practice these at home with your child.

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 (critic + ise)
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
marvellous
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



This is an example of student writing that is working at the expected standard for a Year 5 child.

2. fronted adverbial prepares the reader for familiarity, which is quickly overturned by the events

Dear Diary today was horrible! The worst ever! and I mean it.

2. choice of verb sets the casual tone

As usual I got home from school at 3:50 and checked my bags on the floor.

5/6. non-finite subordinate clause adds detail: expecting to see Goji

I then looked through the door, expecting to see Goji but no. He wasn't there. I didn't

2. comma splice

5/6. short clauses for effect: but no, He wasn't there

5/6. unnecessary adjectives that add little to the narrative

panic because Goji is sometimes curled on my bed. Slowly I walked up the creaky wooden stairs. // Excellent description

I went into my room and looked at my bed and under my bed but no Goji. My eyes scanned the room and there in front of me was Goji.

4. paragraph divisions are organized thematically:
1. narrator gets home
2. searches for Goji
3. discovers Goji's predicament

5/6. strong use of repetition to create emotional impact

He was curled on the golden pillow, with ~~meat~~ ~~it~~ preserved in 2.6 carat gold.

Every whisker, every claw, every hair all of it was preserved. I started into the ^{unseeing} eyes

5/6. comments capture the sense of a lost friend supported by well-chosen adverbs and adjectives: only, always, now

of Goji my only friend ^{she} was always there for me and now she was gone. I couldn't believe she was a lifeless gold statue.

5/6. noun phrase succinctly captures the situation

I could taste the salty tears trickling down my face. I picked up Goji and ran outside.

5/6 unnecessary adjective: all tears are salty

5/6. non-finite subordinate clause adds characterisation: the salty tears trickling down my face

2. comma splice

5/6. precise choice of verbs: curled, preserved, stared, trickling

4. direct speech occasionally not punctuated with an initial capital letter

"Chimichanga!" I yelled, still cradling Goji in my arms and in the blink of an eye he came

"what's happen... oh" his eyes fell on Goji.

"you can turn him back, can't you?" I asked

"well yes" but... "answered Chimichanga

"Then do it!" I demanded.

"It's not as easy as that, you have to lose all your gold and the gold mask to get Goji back" said Chimichanga

"Fine" I answered "but promise not to tell anyone"

4. non-finite subordinate clause adds detail about the action

4. the dialogue, ellipsis and accompanying description succinctly capture the moment of realisation

4. use of exclamation marks and ellipsis adds character to the direct speech

2. comma splicing

4. appropriate choice of reporting verbs: yelled, asked, answered, demanded, said

THE END //

Maths

Maths in Year 5

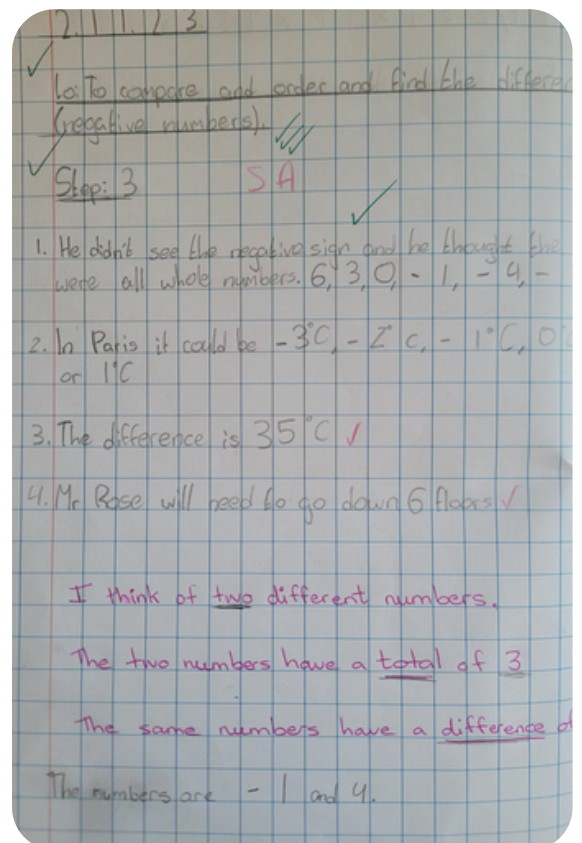
Students in Year 5 build on their learning from the previous years and get a good grounding in the basic skills ready for Year 6 and heading towards secondary school. We teach through a mastery approach which aims to deepen knowledge and skills and practice applying them to a range of contexts.

We base the structure of our year on the White Rose Maths scheme, which is a spiral curriculum which revisits topics regularly and builds on them to promote a more in-depth understanding as well as ensuring skills are embedded into long term memory.

Maths is divided into four key areas:

- Number and Place Value
- Measurement
- Shape and Space
- Statistics/Data Handling

We use a variety of methods to teach mathematical understanding and there is an emphasis on students using mathematical language in order to reason and justify their answers.



Year 5 Maths Objectives

Year 5

Number - number and place value

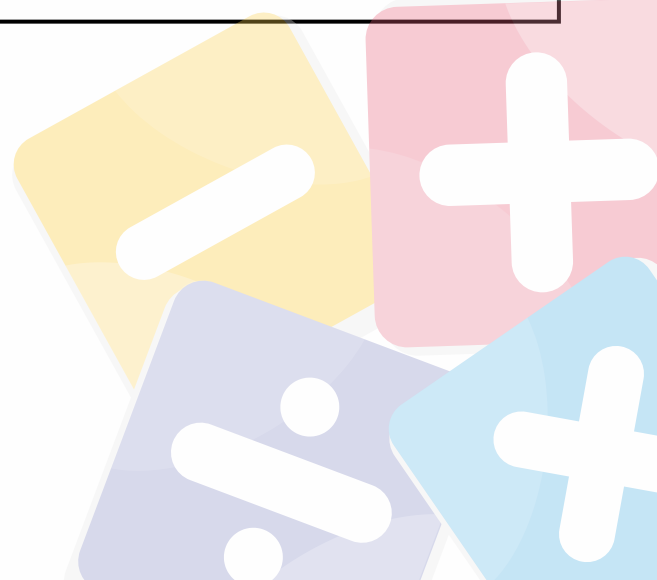
- Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000
- Read, write, order and compare numbers to at least 1,000,000
- Determine the value of each digit in numbers up to 1,000,000
- Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals
- Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000
- Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero
- Solve number problems and practical problems that involve the above

Number - addition and subtraction

- Add and subtract numbers mentally with increasingly large numbers
- Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
- Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Number - multiplication and division

- Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
- Establish whether a number up to 100 is prime and recall prime numbers up to 19
- Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)
- Multiply and divide numbers mentally drawing upon known facts
- Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000
- Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
- Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
- Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes
- Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
- Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates



Year 5

Number - fractions (including decimals and percentages)

- Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $2/5 + 4/5 = 6/5 = 1 \frac{1}{5}$]
- Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
- Compare and order fractions whose denominators are all multiples of the same number
- Add and subtract fractions with the same denominator and denominators that are multiples of the same number
- Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
- Read and write decimal numbers as fractions [for example, $0.71 = 71/100$]
- Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- Round decimals with two decimal places to the nearest whole number and to one decimal place
- Read, write, order and compare numbers with up to three decimal places
- Solve problems involving number up to three decimal places
- Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal
- Solve problems which require knowing percentage and decimal equivalents of $1/2$, $1/4$, $1/5$, $2/5$, $4/5$ and those fractions with a denominator of a multiple of 10 or 25
-

Measurement

- Solve problems involving converting between units of time
- Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
- Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
- Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
- Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes
- Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]
- Use all four operations to solve problems involving measure [for example, money] using decimal notation, including scaling
- Use all four operations to solve problems involving measure [for example, length] using decimal notation, including scaling
- Use all four operations to solve problems involving measure [for example, mass] using decimal notation, including scaling
- Use all four operations to solve problems involving measure [for example, volume] using decimal notation, including scaling

Year 5

Geometry - properties of shapes

- Use the properties of rectangles to deduce related facts and find missing lengths and angles
- Distinguish between regular and irregular polygons based on reasoning about equal sides and angles
- Identify 3-D shapes, including cubes and other cuboids, from 2-D representations
- Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
- Identify angles at a point and one whole turn (total 360), angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180) and other multiples of 90
- Draw given angles, and measure them in degrees

Geometry - position and direction

- Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed

Statistics

- Complete, read and interpret information in tables, including timetables
- Solve comparison, sum and difference problems using information presented in a line graph

It is expected that pupils will know times tables to 12 x 12 and the related division facts by the end of Year 4. These must be practiced regularly at home so that children become fluent and can recall any fact within 3 seconds.



Addition Strategies from Y5-6

Skill: Add numbers with more than 4 digits	Year: 5/6
<p style="text-align: center;">$104,328 + 61,731 = 166,059$</p>	<p>Place value counters or plain counters on a place value grid are the most effective concrete resources when adding numbers with more than 4 digits.</p> <p>At this stage, children should be encouraged to work in the abstract, using the column method to add larger numbers efficiently.</p>


Skill: Add with up to 3 decimal places	Year: 5
<p style="text-align: center;">$3.65 + 2.41 = 6.06$</p>	<p>Place value counters and plain counters on a place value grid are the most effective manipulatives when adding decimals with 1, 2 and then 3 decimal places.</p> <p>Ensure children have experience of adding decimals with a variety of decimal places. This includes putting this into context when adding money and other measures.</p>

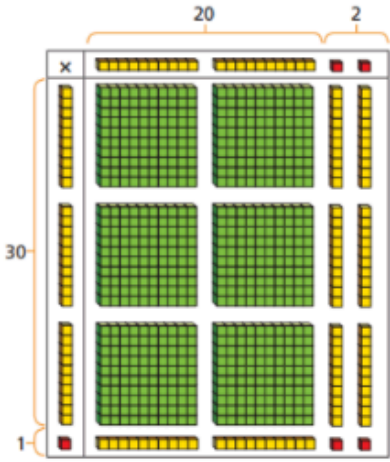
Subtraction Strategies from Y5-6

Skill: Subtract with up to 3 decimal places	Year: 5
<p>$5.43 - 2.7 = 2.73$</p>	<p>Place value counters and plain counters on a place value grid are the most effective manipulative when subtracting decimals with 1, 2 and then 3 decimal places.</p> <p>Ensure children have experience of subtracting decimals with a variety of decimal places. This includes putting this into context when subtracting money and other measures.</p>

Skill: Subtract numbers with more than 4 digits	Year: 5/6
<p>$294,382 - 182,501 = 111,881$</p>	<p>Place value counters or plain counters on a place value grid are the most effective concrete resource when subtracting numbers with more than 4 digits.</p> <p>At this stage, children should be encouraged to work in the abstract, using column method to subtract larger numbers efficiently.</p>

Multiplication Strategies from Y5-6

Skill: Multiply 4-digit numbers by 1-digit numbers	Year: 5																									
 <p data-bbox="494 627 893 694">$1,826 \times 3 = 5,478$</p> <table border="1" data-bbox="558 728 826 974"> <tr> <td></td> <td>Th</td> <td>H</td> <td>T</td> <td>O</td> </tr> <tr> <td></td> <td>1</td> <td>8</td> <td>2</td> <td>6</td> </tr> <tr> <td>x</td> <td></td> <td></td> <td></td> <td>3</td> </tr> <tr> <td></td> <td>5</td> <td>4</td> <td>7</td> <td>8</td> </tr> <tr> <td></td> <td></td> <td>2</td> <td>1</td> <td></td> </tr> </table>		Th	H	T	O		1	8	2	6	x				3		5	4	7	8			2	1		<p data-bbox="1133 336 1396 985">When multiplying 4-digit numbers, place value counters are the best manipulative to use to support children in their understanding of the formal written method. If children are multiplying larger numbers and struggling with their times tables, encourage the use of multiplication grids so children can focus on the use of the written method.</p>
	Th	H	T	O																						
	1	8	2	6																						
x				3																						
	5	4	7	8																						
		2	1																							

Skill: Multiply 2-digit numbers by 2-digit numbers	Year: 5																																																										
 <table border="1" data-bbox="718 1276 1037 1556"> <tr> <td></td> <td>10</td> <td>10</td> <td>1</td> <td>1</td> </tr> <tr> <td>10</td> <td>100</td> <td>100</td> <td>10</td> <td>10</td> </tr> <tr> <td>10</td> <td>100</td> <td>100</td> <td>10</td> <td>10</td> </tr> <tr> <td>10</td> <td>100</td> <td>100</td> <td>10</td> <td>10</td> </tr> <tr> <td>1</td> <td>10</td> <td>10</td> <td>1</td> <td>1</td> </tr> </table> <table border="1" data-bbox="630 1612 877 1780"> <tr> <td>x</td> <td>20</td> <td>2</td> </tr> <tr> <td>30</td> <td>600</td> <td>60</td> </tr> <tr> <td>1</td> <td>20</td> <td>2</td> </tr> </table> <table border="1" data-bbox="901 1579 1109 1892"> <tr> <td></td> <td>H</td> <td>T</td> <td>O</td> </tr> <tr> <td></td> <td></td> <td>2</td> <td>2</td> </tr> <tr> <td>x</td> <td></td> <td>3</td> <td>1</td> </tr> <tr> <td></td> <td></td> <td>2</td> <td>2</td> </tr> <tr> <td></td> <td>6</td> <td>6</td> <td>0</td> </tr> <tr> <td></td> <td>6</td> <td>8</td> <td>2</td> </tr> </table> <p data-bbox="247 1836 646 1904">$22 \times 31 = 682$</p>		10	10	1	1	10	100	100	10	10	10	100	100	10	10	10	100	100	10	10	1	10	10	1	1	x	20	2	30	600	60	1	20	2		H	T	O			2	2	x		3	1			2	2		6	6	0		6	8	2	<p data-bbox="1149 1243 1412 1926">When multiplying a multi-digit number by 2-digits, use the area model to help children understand the size of the numbers they are using. This links to finding the area of a rectangle by finding the space covered by the Base 10. The grid method matches the area model as an initial written method before moving on to the formal written multiplication method.</p>
	10	10	1	1																																																							
10	100	100	10	10																																																							
10	100	100	10	10																																																							
10	100	100	10	10																																																							
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x		3	1																																																								
		2	2																																																								
	6	6	0																																																								
	6	8	2																																																								

Multiplication Strategies from Y5-6

Skill: Multiply 3-digit numbers by 2-digit numbers		Year: 5																												
	<table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Th</th> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td></td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>x</td> <td></td> <td>3</td> <td>2</td> </tr> <tr> <td colspan="4" style="border-top: 1px solid black;"></td> </tr> <tr> <td></td> <td>4</td> <td>6</td> <td>8</td> </tr> <tr> <td>1</td> <td>7</td> <td>1</td> <td>0</td> </tr> <tr> <td>7</td> <td>4</td> <td>8</td> <td>8</td> </tr> </tbody> </table>	Th	H	T	O		2	3	4	x		3	2						4	6	8	1	7	1	0	7	4	8	8	<p>Children can continue to use the area model when multiplying 3-digits by 2-digits. Place value counters become more efficient to use but Base 10 can be used to highlight the size of numbers.</p> <p>Encourage children to move towards the formal written method, seeing the links with the grid method.</p>
Th	H	T	O																											
	2	3	4																											
x		3	2																											
	4	6	8																											
1	7	1	0																											
7	4	8	8																											
<div style="border: 1px solid black; border-radius: 10px; padding: 5px; display: inline-block;"> $234 \times 32 = 7,488$ </div>	<table border="1" style="border-collapse: collapse; text-align: center;"> <tbody> <tr> <td>x</td> <td>200</td> <td>30</td> <td>4</td> </tr> <tr> <td>30</td> <td>6,000</td> <td>900</td> <td>120</td> </tr> <tr> <td>2</td> <td>400</td> <td>60</td> <td>8</td> </tr> </tbody> </table>	x	200	30	4	30	6,000	900	120	2	400	60	8																	
x	200	30	4																											
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2	400	60	8																											

Skill: Multiply 4-digit numbers by 2-digit numbers		Year: 5/6																																													
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TTh	Th	H	T	O																																											
	2	7	3	9																																											
x			2	8																																											
2	1	9	1	2																																											
<small>2</small>	<small>5</small>	<small>3</small>	<small>7</small>																																												
5	4	7	8	0																																											
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7	6	6	9	2																																											

Division Strategies from Y5- 6

Skill: Divide 3-digits by 1-digit (grouping)	Year: 5																																								
<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <table border="1" style="border-collapse: collapse; width: 150px;"> <thead> <tr style="background-color: #d9ead3;"> <th style="padding: 2px;">Hundreds</th> <th style="padding: 2px;">Tens</th> <th style="padding: 2px;">Ones</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">100 100 100 100</td> <td style="text-align: center;">10 10 10 10</td> <td style="text-align: center;">1 1 1 1</td> </tr> <tr> <td style="text-align: center;">100 100 100 100</td> <td style="text-align: center;">10</td> <td style="text-align: center;">1 1 1 1</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;">1 1 1 1</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;">1 1</td> </tr> </tbody> </table> </div> <div style="text-align: center;"> <table border="1" style="border-collapse: collapse; width: 80px;"> <tr><td> </td><td> </td><td>2</td><td>1</td><td>4</td></tr> <tr><td> </td><td>4</td><td style="border-left: 1px solid black;">8</td><td>5</td><td>¹6</td></tr> </table> </div> </div> <div style="text-align: center; margin-top: 20px;"> <table border="1" style="border-collapse: collapse; width: 150px;"> <thead> <tr style="background-color: #d9ead3;"> <th style="padding: 2px;">Hundreds</th> <th style="padding: 2px;">Tens</th> <th style="padding: 2px;">Ones</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">● ● ● ●</td><td style="text-align: center;">● ● ● ●</td><td style="text-align: center;">● ● ● ●</td></tr> <tr><td style="text-align: center;">● ● ● ●</td><td style="text-align: center;">●</td><td style="text-align: center;">● ● ● ●</td></tr> <tr><td style="text-align: center;"> </td><td style="text-align: center;"> </td><td style="text-align: center;">● ● ● ●</td></tr> <tr><td style="text-align: center;"> </td><td style="text-align: center;"> </td><td style="text-align: center;">● ● ● ●</td></tr> </tbody> </table> </div> <div style="margin-top: 20px; border: 1px solid black; border-radius: 10px; padding: 5px; display: inline-block;"> $856 \div 4 = 214$ </div>	Hundreds	Tens	Ones	100 100 100 100	10 10 10 10	1 1 1 1	100 100 100 100	10	1 1 1 1			1 1 1 1			1 1			2	1	4		4	8	5	¹ 6	Hundreds	Tens	Ones	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●	●	● ● ● ●			● ● ● ●			● ● ● ●	<p>Children can continue to use grouping to support their understanding of short division when dividing a 3-digit number by a 1-digit number.</p> <p>Place value counters or plain counters can be used on a place value grid to support this understanding. Children can also draw their own counters and group them through a more pictorial method.</p>
Hundreds	Tens	Ones																																							
100 100 100 100	10 10 10 10	1 1 1 1																																							
100 100 100 100	10	1 1 1 1																																							
		1 1 1 1																																							
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		2	1	4																																					
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Skill: Divide 4-digits by 1-digit (grouping)	Year: 5																																						
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Th	H	T	O																																				
1,000 1,000	100 100	10 10	1 1																																				
1,000 1,000	100 100	10	1 1																																				
1,000 1,000	100	10 10	1 1																																				
1,000 1,000		10 10	1 1																																				
		10 10	1 1																																				
		10 10	1 1																																				
	4	2	6	6																																			
2	8	5	¹ 3	¹ 2																																			

Division Strategies from Y5- 6

Skill: Divide multi digits by 2-digits (short division)	Year: 6																																
<table border="1" style="margin-bottom: 20px; border-collapse: collapse; text-align: center;"> <tr><td></td><td></td><td>0</td><td>3</td><td>6</td></tr> <tr><td></td><td>12</td><td>4</td><td>⁴3</td><td>⁷2</td></tr> </table> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; display: inline-block; margin-bottom: 20px;">$432 \div 12 = 36$</div> <table border="1" style="margin-bottom: 20px; border-collapse: collapse; text-align: center;"> <tr><td></td><td></td><td>0</td><td>4</td><td>8</td><td>9</td></tr> <tr><td>15</td><td></td><td>7</td><td>⁷3</td><td>¹³3</td><td>¹³5</td></tr> </table> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; display: inline-block;">$7,335 \div 15 = 489$</div> <table border="1" style="margin-top: 20px; border-collapse: collapse; text-align: center;"> <tr> <td>15</td><td>30</td><td>45</td><td>60</td><td>75</td><td>90</td><td>105</td><td>120</td><td>135</td><td>150</td> </tr> </table>			0	3	6		12	4	⁴ 3	⁷ 2			0	4	8	9	15		7	⁷ 3	¹³ 3	¹³ 5	15	30	45	60	75	90	105	120	135	150	<p>When children begin to divide up to 4-digits by 2-digits, written methods become the most accurate as concrete and pictorial representations become less effective. Children can write out multiples to support their calculations with larger remainders. Children will also solve problems with remainders where the quotient can be rounded as appropriate.</p>
		0	3	6																													
	12	4	⁴ 3	⁷ 2																													
		0	4	8	9																												
15		7	⁷ 3	¹³ 3	¹³ 5																												
15	30	45	60	75	90	105	120	135	150																								

Skill: Divide multi-digits by 2-digits (long division)	Year: 6																																																																																	
<table border="1" style="margin-bottom: 20px; border-collapse: collapse; text-align: center;"> <tr><td></td><td></td><td>0</td><td>3</td><td>6</td></tr> <tr><td>1</td><td>2</td><td>4</td><td>3</td><td>2</td></tr> <tr><td></td><td>-</td><td>3</td><td>6</td><td>0</td></tr> <tr><td></td><td></td><td></td><td>7</td><td>2</td></tr> <tr><td></td><td></td><td>-</td><td>7</td><td>2</td></tr> <tr><td></td><td></td><td></td><td></td><td>0</td></tr> </table> <div style="display: flex; align-items: flex-start; margin-left: 10px;"> <div style="margin-right: 5px;">(x30)</div> <div style="font-size: small;"> $12 \times 1 = 12$ $12 \times 2 = 24$ $12 \times 3 = 36$ $12 \times 4 = 48$ $12 \times 5 = 60$ $12 \times 6 = 72$ $12 \times 7 = 84$ $12 \times 8 = 96$ $12 \times 7 = 108$ $12 \times 10 = 120$ </div> </div> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; display: inline-block; margin-bottom: 20px;">$432 \div 12 = 36$</div> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; display: inline-block;">$7,335 \div 15 = 489$</div> <table border="1" style="margin-top: 20px; border-collapse: collapse; text-align: center;"> <tr><td></td><td></td><td>0</td><td>4</td><td>8</td><td>9</td></tr> <tr><td>15</td><td></td><td>7</td><td>3</td><td>3</td><td>5</td></tr> <tr><td></td><td>-</td><td>6</td><td>0</td><td>0</td><td>0</td></tr> <tr><td></td><td></td><td></td><td>1</td><td>3</td><td>5</td></tr> <tr><td></td><td>-</td><td>1</td><td>2</td><td>0</td><td>0</td></tr> <tr><td></td><td></td><td></td><td></td><td>1</td><td>3</td><td>5</td></tr> <tr><td></td><td></td><td>-</td><td></td><td>1</td><td>3</td><td>5</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td>0</td></tr> </table> <div style="margin-left: 10px; font-size: small;"> $1 \times 15 = 15$ $2 \times 15 = 30$ $3 \times 15 = 45$ $4 \times 15 = 60$ $5 \times 15 = 75$ $10 \times 15 = 150$ </div>			0	3	6	1	2	4	3	2		-	3	6	0				7	2			-	7	2					0			0	4	8	9	15		7	3	3	5		-	6	0	0	0				1	3	5		-	1	2	0	0					1	3	5			-		1	3	5							0	<p>Children can also divide by 2-digit numbers using long division.</p> <p>Children can write out multiples to support their calculations with larger remainders.</p> <p>Children will also solve problems with remainders where the quotient can be rounded as appropriate.</p>
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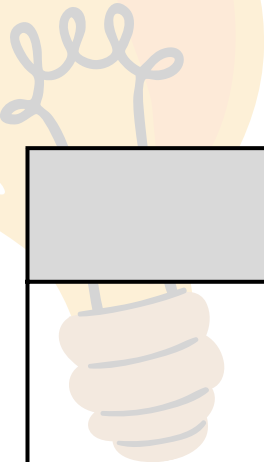
Science

In the Primary Years Programme (PYP), science is viewed as the exploration of the biological, chemical and physical aspects of the natural world, and the relationships between them. Our understanding of science is constantly changing and evolving. The inclusion of science within the PYP leads learners to an appreciation and awareness of the world as it is viewed from a scientific perspective. It encourages curiosity and ingenuity and enables the student to develop an understanding of the world. Reflection on scientific knowledge also helps students to develop a sense of responsibility regarding the impact of their actions on themselves, others and their world. 'Working scientifically' is taught through all substantive science content in order to make it meaningful and to develop the skills required at each age group.

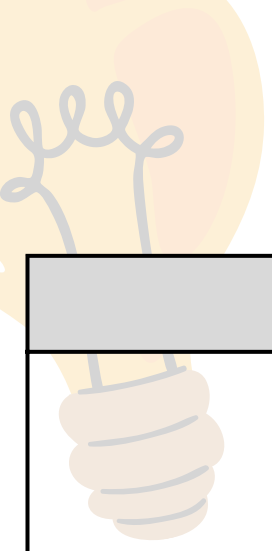
Where appropriate, science is taught as part of the Unit of Inquiry however it is supplemented with standalone lessons as recommended by IB.



Year 5 Science Objectives

	Year 5
 Working Scientifically	<p>Planning Investigations - Recognise and control variables</p> <p>Conducting experiments - Take precise readings with appropriate equipment</p> <p>Recording evidence - Use line graphs to record data</p> <p>Reporting findings - Identify anomalies and untrustworthy data</p> <p>Conclusions and predictions - Suggest further fair or comparative tests - Suggest how evidence can support conclusion</p>
Big Ideas and Key Objectives	<p>Life exists in a variety of forms and goes through cycles – Animals</p> <ul style="list-style-type: none">• To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird• To describe the life process of reproduction in some plants and animals. <p>The human body has a number of systems, each with its own function</p> <ul style="list-style-type: none">• To describe the changes as humans develop to old age. <p>Materials have physical properties which can be investigated and compared The physical properties of materials determine their uses</p> <ul style="list-style-type: none">• To compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets• To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution• To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating• To give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic• To demonstrate that dissolving, mixing and changes of state are reversible changes• To explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.

Year 5 Science Objectives

	Year 5
 <p>Big Ideas and Key Objectives</p>	<p>There are contact and non-contact forces; these affect the motion of objects</p> <ul style="list-style-type: none">• To explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object• To identify the effects of air resistance, water resistance and friction, that act between moving surfaces• To recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. <p>Day, night, month, seasonal change & year are caused by the position and movement of the Earth</p> <ul style="list-style-type: none">• To describe the movement of the Earth, and other planets, relative to the Sun in the solar system• To describe the movement of the Moon relative to the Earth• To describe the Sun, Earth and Moon as approximately spherical bodies• To use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.



Resources

Below are websites that may support your child's learning at home.

Maths

<https://whiteroseeducation.com/parent-pupil-resources/maths/free-downloads>

<https://www.maths4mumsanddads.co.uk/everyday-maths/>

<https://home.oxfordowl.co.uk/maths/>

<https://www.topmarks.co.uk>

<https://mathszone.co.uk>

English

<https://home.oxfordowl.co.uk>

https://www.spellingcity.com/spelling_games-vocabulary_games.html

<https://www.storynory.com>

Science

<https://www.billnye.com>

<https://www.natgeokids.com/uk/parents/easy-science-experiments-to-do-at-home/>

<https://www.natgeokids.com/uk/teacher-category/science/>