Cambridge Assessment
International Education

Implementing the Curriculum with Cambridge

A guide for school leaders

Last updated in
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Contents

Foreword

At Cambridge International, we are committed to providing a high level of support for school leaders and teachers delivering Cambridge programmes. The *Implementing the Curriculum with Cambridge* guide is one of the cornerstones of this support and sets out our approach to teaching Cambridge at your school.

It provides a rich resource for school leaders to design, develop and implement the curriculum using Cambridge programmes and qualifications. It sets out some of the principles that underpin an effective curriculum and highlights considerations for school leaders, drawing on case studies and examples.

Nevertheless, at Cambridge, we recognise that the most important work in designing and implementing a school's curriculum is done by its leaders and teachers. It is you who ensure that any programme is adapted to your context, culture and ethos, and is tailored to your students' needs.

This flexibility is a fundamental principle of a Cambridge education. We do not believe that a common prescription is suitable for all countries and contexts. The result of a successful education is so much more than qualifications. It is well-rounded, curious and independent young people, ready to go out and make a difference to the world. We hope our learner attributes can contribute to this by encouraging teachers to focus on the strategies and habits needed for life-long learning within and beyond the taught curriculum.

At the time of writing this foreword, in July 2020, the education world has undergone tremendous disruption as a result of the Covid-19 pandemic. From school closures, to the cancelling of examinations worldwide, no part of our profession has been untouched. When the outbreak struck, the education community adapted swiftly. Schools around the world immediately began teaching and learning remotely, and Cambridge International developed a new system for awarding grades in the June 2020 series. Throughout this process, I've been struck by the strength of collaboration between ourselves and the global community of Cambridge schools, all equally determined to minimise the disruption to learners and allow them to continue their educational journeys.

The consequences of the pandemic are likely to be felt for many years to come. However, the essential building blocks to providing a well-designed and supported curriculum will remain the same.

Notwithstanding the disruption to education in 2020, the world of international education continues to evolve, and we are evolving our support to schools, reflecting our approach to education. The Cambridge family of organisations, including Cambridge University Press and Cambridge English, are working closer than ever together to ensure that we can offer our schools the best possible range of resources and guidance. We have also welcomed CEM into the Cambridge family, to offer formative baseline assessments to support every stage of the Cambridge Pathway.

Whether teaching in school or remotely, this guide is intended to help you make sense of your curriculum and plan for its development.

It should serve as a guide to the wide range of resources – subject syllabuses, learner and teacher support – from which schools can draw in building and delivering a curriculum appropriate to their learners' needs. At the same time, it sets out and explains the principles which we believe should underpin an effective school curriculum – principles based not on ideology but on our own research and that of others – and discusses how these principles can be applied in practice.

Christine Özden
Chief Executive, Cambridge Assessment International Education

Introduction

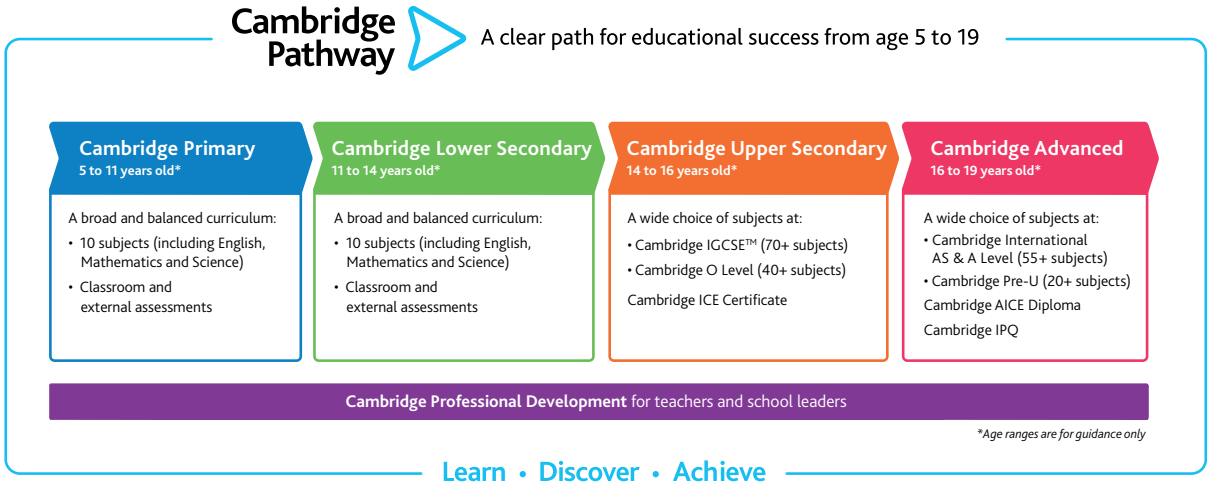
This guide will help school principals, school leaders, and others responsible for the educational programme in a school to design, develop, implement and evaluate the curriculum where Cambridge programmes and qualifications are followed.

Schools require well-designed and well-supported curricula to achieve their educational vision and aims. These aims usually include academic excellence, fulfilling the potential of every learner and nurturing the competencies learners need to succeed in higher education, the world of work and to lead fulfilled lives.

The guide focuses on the curriculum as a whole. It:

- identifies fundamental principles that we believe schools need to engage with while they design, implement and evaluate their curriculum
- considers practices that support these principles
- explains our programmes and the support we offer in detail
- highlights where to find more specific information

Schools are responsible for their own curriculum; our role at Cambridge is to support school leaders make informed decisions. The Cambridge pathway provides a coherent curriculum structure made up of four stages – from Primary to Advanced. Each stage builds on the previous one in a carefully aligned instructional system. Some schools choose to adopt the whole Cambridge continuum, others choose to offer one or two stages, while many schools combine Cambridge with other national and international programmes. This guide is relevant to all of these approaches.



The principles and practices outlined in this guide are based on our experience of listening to what schools want to achieve through their curriculum, and are informed by research-based best practice.

Every school is a unique community with its own identity and will be at a different stage in its evolution; some will be starting up while others will be evaluating where they are with a view to improving provision and practice. This guide is written with this fact in mind.

Curriculum, pedagogy and assessment are inherently linked. Hence, this guide focuses on curriculum within the context of the broader school policies and practices in which it is embedded. Developing the curriculum involves building school capacity, structure and operations to support it. This guide relates to all of these facets of effective schools.

Cambridge has produced two other guides and a series of resources that complement and further develop many of the points made in this guide.

1. Developing your school with Cambridge
2. Developing the Cambridge learner attributes
3. Other resources in our teaching and learning area including education briefs and getting started with guides.

1. Curriculum planning: An overview

This chapter considers what the curriculum is and how it should be derived from the school's educational vision. It highlights the fact that qualifications form only part of the curriculum. Every school is unique and school leaders must consider how to support its implementation, which may necessitate changes to a school's structure and operations. We introduce some fundamental principles that need to be considered in the curriculum design process. **Chapter 2** of the learner attributes guide provides further guidance.

1.1 What is curriculum?

Across the world, the term curriculum is used in several different ways.

In some countries, 'curriculum' has a holistic meaning encompassing not only subjects, but also the connections between subjects, teaching methods and all aspects of schooling that define the learner's experience. In other countries, a narrower interpretation is used, referring either to a prescribed range of courses (the curriculum in Year 6 contains eight different subjects) or a specific learning programme across different years (the chemistry curriculum at secondary level). This guide uses the following definitions:

- A **school curriculum** refers to the combination of subjects studied within a school year and in sequential years as the learner moves through the educational system provided by the school.
- A **subject curriculum** refers to the content and skills contained within a syllabus applied across sequential stages of student learning. These stages normally refer to school year levels, and therefore a particular age of learner.
- **Co-curricular curriculum** refers to valued educational activities that support learning beyond the school curriculum, which the school encourages and supports.
- The **experienced curriculum** refers to the learning students actually receive as a result of the whole educational experience the school provides. This includes the impact of the school curriculum, teaching approaches, the co-curricular curriculum and the learning environment. It includes both the planned and unplanned or unintended outcomes of the curriculum.

The wider learning experience:

Planning the school curriculum in terms of subjects and qualifications is only part of the process. The experienced curriculum in an excellent school provides a learning experience that is more than the sum of the qualifications, subjects and activities that are visible on the school schedule. This is because careful attention in curriculum design and implementation is given to learning within, across and between the subjects and activities. All teachers and school staff support the development of the learner attributes and other qualities identified in the school's vision. Breadth, balance and coherence need to be built in by design. The school's vision and aims will include personal and social outcomes as well as academic ones. Learning does not begin or end in classrooms, but permeates the school environment and broader community.

What learners actually experience may not be the same as the written objectives of the curriculum – it will be the consequence of a complex web of interdependent parts including:

- the school's vision and values
- teaching quality
- learner motivation and prior knowledge
- school leadership, environment and culture
- the school's curriculum and subject curricula
- assessment practices and expectations
- the school's internal structures and operations.

Therefore, the experienced curriculum is necessarily unique to each school, and designing or re-evaluating a curriculum is a complex and challenging task. Schools should regularly evaluate their outcomes against intentions, ensuring that they are optimising learners' educational experiences in line with the school's vision and mission.

School vision, mission and plan:

The school vision is a compelling sense of the future direction of the school. It should inspire commitment from the whole school community and be widely shared.

Most schools also have a mission statement, which is a written declaration defining the school's educational purpose. Educational aims might be included in the mission statement or listed separately. Together with the vision and mission, they provide focus and guidance on what the priorities are.

The school strategic plan gives practical direction to the vision, mission statement and aims. This should include a statement headlining longer-term priorities/ objectives of up to five years ahead, and a detailed one-year implementation plan.

Curriculum planning:

Table 1 below outlines some of the many questions that schools need to address when planning the school curriculum. It shows that these decisions must be based on the school's vision, mission and educational aims, taking into consideration school structures and building school capacity.

> "The school vision is a compelling sense of the future direction of the school. It should inspire commitment from the whole school community and be widely shared."

Table 1: Curriculum planning within a school context: Some critical questions

School Vision and Strategic Planning – achieving the desired learning outcomes	
Building school capacity	**Structure and operation**
Learners What are the expected academic, personal and social outcomes? Which skills and competencies should learners acquire through the curriculum? How will the curriculum motivate, engage and challenge learners? Is the curriculum relevant to the needs of learners – now and in the future? What attributes are being modelled for learners across the school?	Designing a curriculum Which Cambridge programmes and subjects will be included and how will these complement other educational programmes and qualifications offered by the school? Does the curriculum reflect the school's vision and context? How will learning within local or national contexts be developed in the curriculum? How will the school support learners who do not have English as a first language? Which subjects will be taught in English? (In bi-lingual schools)

Continued

School Vision and Strategic Planning – achieving the desired learning outcomes	
Building school capacity	**Structure and operation**
Teachers Which pedagogical and assessment practices should lie at the centre of teaching and learning? What teacher professional development is required to ensure effective planning and delivery of the curriculum? How will teachers be encouraged to self-reflect on their current teaching practices and the learning achievement of their students based on meaningful evidence? Is there provision for teachers to undertake relevant professional qualification courses to enhance their professional learning and the quality of student learning experiences? How will teacher professional development remain relevant and targeted?	Qualifications Will the school offer national as well as Cambridge qualifications? Is progression from one level to the next coherent? Will there be any scheduling or organisational difficulties if dual qualifications are offered? Will these combinations of qualifications support learners applying to higher education (in secondary schools)?
Leadership and Management Does the school have an effective governance structure with clear roles and responsibilities? What role do school administrators have in the delivery of the curriculum and in supporting teachers? How do leaders know that effective teaching and real learning are taking place in classrooms? How is the school measuring the impact of the curriculum? And what are they doing with this information? Are effective collegial and collaborative team structures and dynamics operating school-wide and within subject/learning areas? Are inter-school networking opportunities available for teachers and school leaders to support the implementation and development of the curriculum? How will the school engage with/use professional learning networks? Has the leadership team communicated the school vision to all stakeholders appropriately and effectively?	Timetabling How many subjects will be studied and for how many hours in each subject? How will this vary from one year to the next as learners progress through the school? Will the curriculum be fixed (compulsory) or provide a measure of learner subject choice? How will such flexibility be balanced against the school's current resourcing and staffing provisions?

Continued

School Vision and Strategic Planning – achieving the desired learning outcomes	
Building school capacity	**Structure and operation**
School and the community What involvement will school support groups and other community groups have? What contributions can these groups make in the development of the curriculum? How can the resources of the local community be linked into the school curriculum?	Facilities What facilities will be required to accommodate the requirements of specialist subjects? Does the school provide appropriate learning environments for studying all subjects in the curriculum?
	Resourcing What financial provision is available for delivering the curriculum, in terms of teaching resources, teacher support and administrative requirements? Does the school have effective communication and co-ordination systems and structures for implementing, managing and refining the curriculum?

1.2 Principles fundamental to successful curriculum design and implementation

Cambridge schools operate in a wide range of contexts with differing demands and expectations. The curriculum is at the heart of schools' strategies to raise achievement and improve outcomes for all learners. While some schools will prefer to offer a curriculum made up entirely of combinations of Cambridge courses, combining these to form a programme of study, other schools will select individual subject syllabuses and combine them with qualifications and educational programmes from other national or international providers.

We believe that certain principles are fundamental to successful curriculum design and implementation in all situations:

1. The school curriculum should deliver a broad, balanced and consistent programme of learning with clear and smooth progression routes designed for the needs of all learners.

When planning the school curriculum, the school leadership must choose both the subjects to be studied for each year, as well as a sequential programme from one year to the next. Time and resource limitations mean that school leaders must carefully prioritise and make choices when planning a curriculum. Different societal or cultural norms will influence this process of prioritisation and there is no one-size-fits-all solution.

Certain considerations are, however, universally significant:

- The **values and educational aims** of the school must guide all decisions about the curriculum. Normally this results in a balance of subjects and activities covering different educational processes, objectives and content, developing a holistic set of skills and knowledge.
- **Quality** is more important than quantity. It can be tempting to add more subjects and/or content to the curriculum, with the noble intention of maximising learning. Too much content, however, does not allow time to support depth of understanding and the practice students need for deep learning. Less can actually be more.
- **Progression** through the curriculum must be consistent. The curriculum should give learners the understanding, knowledge and skills they need to allow them to progress to the next educational stage.

- A **spiral approach** to skill development is supported. Each successive stage revisits critical learning areas and builds on them, respecting the learners' developmental stage.

In addition to these universal considerations, other aspects for a school to consider include:

- **Consistency** – This is concerned with progression in knowledge and skills from one stage to the next. Do the different stages align? Are learners appropriately prepared and challenged at each stage? It is reasonable to expect changes in emphasis and approach as learners become more mature. Consistency does not mean that the curriculum will stay the same, but it is important for changes to be planned rather than unintentional.
- **Balance** – The concept of breadth and balance will be illuminated by the school's vision and educational aims. A balanced curriculum normally includes mathematics, languages, sciences, technology, humanities, creative arts and physical education. A broad curriculum allows learners to experience, acquire and develop essential and valued learning from a variety of contexts. It may be that some disciplines, for example information technology, are infused in the teaching of other subjects rather than being taught as a discrete subject. There is still the need for a clear identification of these activities, supported by a written curriculum that helps define precisely who is responsible for their development. It is also important that literacy and numeracy are supported by teachers of all subjects, not just in languages and mathematics.
- **Preparation for higher education** – In the senior years of schooling, some narrowing of the curriculum may be expected as learners prepare for specific qualifications required for progression to higher education. Learners should still be expected to take part in activities and programmes that are complementary to the academic qualifications they are preparing for, and the school should provide a breadth of activity and engagement in support of the school's mission.

- **Combining curricula** – The school is combining Cambridge qualifications with others, it is important to consider compatibility issues. It may be that other qualifications or programmes of study incorporate different approaches to teaching, learning and assessment from those described in this guide. This will require careful planning and coordination to ensure that any differences are clearly understood and accommodated.
- **Effectiveness** – Cambridge's syllabuses, teacher support material, teacher professional development and assessments are designed by subject experts to support a smooth progression from primary to upper secondary, but it is up to the school to make it happen. It is essential that schools create their own schemes of work and lessons plans to make the Cambridge syllabuses locally relevant and make sure teachers are teaching these effectively. The curriculum is locally constructed in the school.

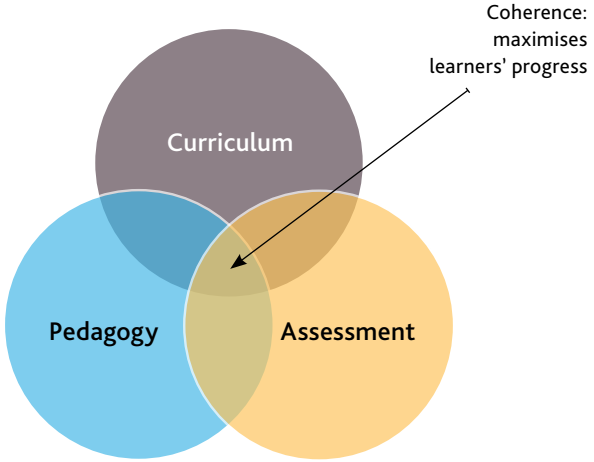
2. The instructional system is well aligned and coherent

A well-designed instructional system is more than the sum of its parts. A curriculum is coherent when the prescribed content, textbooks, resources, and approaches to teaching and assessment are aligned and reinforce one another.

The learning experiences should be thoughtfully sequenced to respect students' developmental stages. The content of the curriculum, the pedagogical approach and the assessment approach must also be aligned in order to maximise learner development and achievement.

Cambridge syllabuses, teacher support material, endorsed textbooks and Cambridge professional development opportunities are designed to ensure alignment of the curriculum and pedagogy. Cambridge assessments are designed to ensure that they are valid, only assessing what is clearly defined in the syllabus assessment objectives.

Figure 1: An aligned instructional system



3. The curriculum supports the development of learners and teachers who are confident, responsible, reflective, innovative and engaged.

To help schools develop good learning habits, Cambridge has developed the learner and teacher attributes (see table 8 in chapter 3). Learning habits describe how students and teachers approach a given situation, environment or challenge. They include a combination of values, attitudes, knowledge, skills and strategies and assume competence – the skilled and appropriate application of the attribute.

Many schools have additional learner attributes, reflecting their school mission, and the way that the attributes are used varies widely. The ● **Developing the Cambridge learner attributes** guide provides a comprehensive resource for schools to consult.

4. Each subject curriculum should provide learners and teachers with inspiring and relevant content and an appropriate breadth and depth of subject knowledge.

Subject curricula should be formulated chronologically in a learning spiral so they provide appropriate progression from one stage of education to the next. The knowledge, understanding and skills acquired at each year level forms the foundation for learning at the next. In order to develop a deep level of understanding, while building a solid foundation for future progression, learners need to revisit and practice important knowledge and skills repeatedly in a number of different contexts. In planning the curriculum, time for this needs to be allowed so that depth of coverage is supported, reinforcing prior learning and creating links to new learning.

Cambridge offers subject curricula that are based on specified educational standards appropriate to the learners' development stage across the years of schooling. We work closely with universities and other higher education providers around the world to ensure they recognise our qualifications and that our qualifications provide the best possible preparation for students to do well in their studies once they get into University.

5. The school curriculum should recognise the language background of learners and provide them with the support they need to access the curriculum.

Schools almost always have learners with a range of exposure to and competence in different languages. This reality must be reflected in curriculum planning and in a coherent language policy reflecting the school's situation.

Language needs to be prioritised in the curriculum. Learners need to have excellent skills in their native or first language as this will directly influence their cognitive development in all subject areas. They also need to have excellent English language skills in order to access the curriculum if it is taught through the medium of English.

Students attending international schools are often learning the curriculum through the medium of English, so developing a high level of English language competence will help them learn. It is also critical that students continue to develop their first or best language. Language development helps develop student identity, international understanding and the Cambridge learner attributes.

All Cambridge qualifications are assessed in English. Learners must therefore develop sufficient skills in reading and writing in English to be able to take Cambridge assessments. However, they also need English speaking and listening skills to be able to learn effectively. Learning through English becomes an integral component of study. Schools develop a range of strategies that allow learners to progressively advance these skills prior to taking examinations. One such strategy is for all teachers to be 'language aware' - planning language support in their classes, and enabling them to be language teachers as well as teachers of their own subject disciplines.

Cambridge supports schools who want to use bilingual education programmes. This is where two or more languages are used as the medium of instruction for non-language subjects. Learners study some non-language school subjects, such as maths or geography, mainly through a second or third language, and some subjects through their first language. The understanding of bilingual education is linked to other educational concepts such as content and language integrated learning (CLIL). Here, in content classes, learners develop subject knowledge and new language skills at the same time. If dual national and international qualifications are being offered, the curriculum may specify subjects that will be taught through either English or the first language, that is, in a bilingual curriculum design. To find out more about our approach to bilingual education visit www.cambridgeinternational.org/bilingual

> "We are aware that most learners completing our programmes and qualifications are operating in a language that which is not their first language. Examiners apply a positive marking approach, looking to award marks when a learner has demonstrated understanding."

We are aware that most learners completing our programmes and qualifications are operating in a language that which is not their first language. Examiners apply a positive marking approach, looking to award marks when a learner has demonstrated understanding. Learners are not penalised for spelling and grammatical errors except in the assessment of languages which are testing language skills.

6. Assessment has a number of purposes that are essential to the educational process.

These purposes include assessment for learning (providing feedback in support of the learning process), and summative assessment (determining a learner's level of performance).

Assessment is an integral component of each subject's curriculum. Pedagogy and assessment are inseparable in the teaching and learning process, as development in one reciprocates change in the other. Assessment for learning practices are essential teaching strategies that inform teachers and learners about the current level of understanding and skill acquisition during the actual teaching phase, providing guidance and feedback for subsequent teaching. Summative assessment is carried out at the end of a period of learning and its

purpose is to judge what standard the learner has reached. The final assessments in many Cambridge qualifications are high stakes because results influence progression onto the next stage of education or higher education, and can be used to make external judgements (for example by a university) of the learner's level of performance.

7. Clear and meaningful educational standards are essential to ensure accurate measurement of progress and achievement and allow for international benchmarking and comparability.

Clear standards are necessary for defining learning expectations, measuring progress, setting targets, comparing performance and certifying attainment. They are also critical to help teachers understand learners' strengths and weaknesses and to help learners understand their own learning progression. Assessment of specific and transparent educational standards enables the benchmarking of learner achievement on a local (school), national and international scale. Cambridge uses a number of different standards in relation to our syllabuses and assessments that are considered in detail in our code of practice document. Our teaching resources and endorsed textbooks exemplify these. For information on our school leader and school teacher standards see here and on our school self-evaluation standards see here. Cambridge ensures that all its high-stakes summative assessments are valid, reliable and fair, while adhering to the highest technical standards.

8. Teachers are the most powerful influence on student learning.

Reflective practice supported by professional development is an essential and continuous part of a teacher's life.

Curriculum is intertwined with pedagogy and effective teaching practice is a necessary condition for effective curriculum implementation. Teachers make the curriculum real by translating learning and assessment objectives, syllabus aims, subject content and school policy into meaningful learning experiences. The learner attributes apply to both teachers and learners, as teachers are required to exemplify the processes and practices expected of learners.

Systematic teacher professional development (PD) is therefore a critical tool to enhance both student learning and school performance. Cambridge provides a range of PD opportunities and resources aligned to the different backgrounds and levels of experience of teachers.

These support the teaching of Cambridge programmes and qualifications and the development of pedagogical skills. They help teachers to become confident, responsible, reflective, innovative and engaged. There are also numerous other excellent PD options that teachers can follow. Professional development should not be confined to Cambridge offerings, but does need to be consistent with the principles described in this guide.

One purpose of PD is supporting evidence-based reflective practice in day-to-day teaching. One of the best ways of achieving this is through teachers working collaboratively in professional learning communities and networks of local schools, but they can also draw on the wider international Cambridge community. Digital communications such as the internet let us easily, efficiently and economically share experiences, ideas and initiatives across the community, with our common goal of improving the quality of teaching and learning for all.

Experienced teachers are encouraged to become Cambridge teacher trainers and examiners. Being an examiner or trainer is a most effective way of developing teachers' own practice, helping to improve professional practice within their school as well as contributing to the wider Cambridge International community.

9. The pedagogy required to optimise learning using Cambridge curricula requires the active engagement of the learner.

Good teaching practice is not something that can be easily prescribed, and there are important cultural and local influences that will help to define what 'good' means. One universal principle fundamental to all effective approaches is that the learner must be actively engaged in their own learning.

Knowledge and understanding cannot be transmitted from the teacher to the learner. The learner's existing mental models must be challenged and extended. Teachers have to constantly listen to the voice of the learner, both in the classroom and in the work they produce, and engage with it to support learning

and understanding. This process helps learners become independent, as they start to model the teacher's approach.

Active learning requires teachers to lead learning, not just be facilitators of learning. This involves constantly monitoring the impact of their instructional approaches and adjusting what they do based on feedback. They need to build meaningful links in learners' minds between prior and newly acquired knowledge and understanding, while providing appropriate challenge.

10. Strong leadership is a necessary condition for sustained school improvement and curriculum development.

School leaders contribute in a variety of ways to the design and successful implementation of the school curriculum. Schools are a complex web of interdependent parts, and responsibilities of school leadership include getting the best out of both individuals and the system, and developing the system to better achieve the school's mission.

Excellent school leaders create the conditions to realise teachers' potential. Teachers should themselves be viewed as leaders. They lead in the classroom by making the curriculum real to learners and creating opportunities for student learning. Teachers, as reflective practitioners, can also play an important role in school improvement and become positive agents of institutional change.

11. Curriculum development involves an ongoing process of evidence gathering and evaluation.

Schools are in a constant state of development, evolving as they respond to changing internal needs and externally imposed requirements. Conducting regular reviews of the school curriculum, and the effectiveness of its implementation and delivery, should be a priority. School leaders and teachers need to be concerned with measuring the impact of the curriculum. Is it actually delivering what it intends? How do we know? What are the perceptions of students? Such reviews are fundamental elements of the annual school management cycle – a process of goal setting, monitoring, evidence collecting and evaluation leading to affirmation or refinement of the school's strategic plan.

12. The curriculum needs to ensure all learners fulfil their potential.

Effective schools can be defined as those that successfully progress the learning and development of all of their students, regardless of intake characteristics, beyond the normal development curve. Schools support all learners to fulfil their potential and overcome any barriers to learning they encounter.

> “Effective schools can be defined as those that successfully progress the learning and development of all of their students.”

2. Designing the school curriculum

This chapter provides guidance to those who are responsible for designing the school curriculum using Cambridge programmes and qualifications. The chapter describes the Cambridge pathway, giving an overview of the structure of Cambridge programmes from Primary to Advanced. It discusses the practical implications of introducing a curriculum, including timetabling and adapting to different local requirements for the formal years of schooling. Finally, this chapter shows how Cambridge programmes can be used to support the development of bilingualism.

Flexibility is a key feature of Cambridge programmes. Educational needs are not the same everywhere. Cambridge offers a rich menu from which to select, not a total package which schools have to adopt. Schools can use Cambridge alongside local educational programmes and qualifications to meet their needs and requirements.

2.1 The Cambridge Pathway

The Cambridge Pathway is made up of four stages and is characterised as follows:

- Each subject programme builds on the previous stage, providing a coherent curriculum progression. This staged approach helps learners develop knowledge, conceptual understanding, skills and attitudes.
- It is important to distinguish between the written Cambridge programmes, as defined in the documentation and syllabuses, and the taught curriculum in the school, representing the local expression of the programmes. Each subject programme is intended to be adapted to the local context and teachers are able to create a programme of study that includes local content and case studies. This enhances the quality of teaching and learning, and ensures the curriculum reflects national culture and heritage.
- Cambridge's international qualifications are pitched at three levels. The end of upper secondary (IGCSE or O Level) provides an international standard that allows students to access Cambridge AS and A Levels or alternative university preparation courses. In some contexts, students can enter university foundation programmes directly with IGCSE qualifications. At advanced level, the AS standard represents the entrance standard for universities in many countries, with A Level offering advanced placement or credit. In other countries, A Level is preferred or required for direct university entry.

Table 2: An overview of the Cambridge Pathway and Cambridge Programmes

Cambridge programme	Subjects	Assessment
Cambridge Primary		
Typically for 5–11 year olds. The curriculum frameworks provide comprehensive learning objectives. These provide a structure for teaching and learning and a reference against which learners' progress and understanding can be checked. No part of the curriculum is compulsory, so schools can select the elements that are right for their learners. Develops the skills, knowledge and understanding that will prepare learners for a smooth transition to Cambridge Lower Secondary.	A six-stage programme that provides curriculum frameworks and support materials for each of the following subjects: • Art & Design • Digital literacy • English • English as a second language • Cambridge Global Perspectives • Computing • Mathematics • Music • Physical education • Science Each stage reflects the teaching targets for a school year. The curriculum frameworks are divided into content areas called 'strands'. For English, for example, the strands include reading, writing and speaking and listening.	An optional testing structure, with assessments that provide an international benchmark enabling teachers to: • identify learner strengths and weaknesses, both for individual learners and class groups, and use the information to help inform teaching • provide learners with a statement of achievement if they choose to do Cambridge Primary Checkpoint at the end of their primary schooling. Cambridge Primary Progression tests From stage 3 to stage 6 of the curriculum in English, English as a second language, mathematics and science. Can be given when the teacher feels the class is ready. Marked by teachers in school. Cambridge Primary Checkpoint Cambridge provides diagnostic tests for the end of the Primary programme for English, English as a second language, mathematics and science. Cambridge marks the tests and provides feeback on the strengths and weaknesses of each learner. Cambridge Primary Global Perspectives is assessed through a Team Project. This is marked by teachers and moderated by Cambridge. We provide assessment guidance for art & design, computing, digital literacy, music and physical education.

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Cambridge programme	Subjects	Assessment
Cambridge Lower Secondary		
Typically for 11 to 14 year-olds. The curriculum frameworks provide comprehensive learning objectives. These build on the foundations of Cambridge Primary and help learners to progress smoothly to Cambridge Upper Secondary. No part of the curriculum is compulsory, so schools can select the elements that are right for their learners.	A three-stage programme that provides curriculum frameworks and support materials for each of the following subjects: • Art & Design • Digital literacy • English • English as a second language • Cambridge Global Perspectives • Computing • Mathematics • Music • Physical education • Science Each stage reflects the teaching targets for a school year. The curriculum frameworks are divided into content areas called 'strands'. For English, for example, the strands include reading, writing and speaking and listening.	An optional testing structure, with assessments that provide an international benchmark enabling teachers to: • identify learner strengths and weaknesses, both for individual learners and class groups, and use the information to help inform teaching • provide learners with a statement of achievement if they choose to do Cambridge Lower Secondary Checkpoint at the end of their Lower Secondary schooling. Cambridge Lower Secondary Progression Tests are available for each stage of the curriculum in English, English as a second language, mathematics and science. Can be given when the teacher feels the class is ready. Marked by teachers in school. Cambridge Lower Secondary Checkpoint Cambridge provides diagnostic tests for the end of the Lower Secondary programme for English, English as a second language, mathematics and science. Cambridge marks the tests and provides feeback on the strengths and weaknesses of each learner. Cambridge Lower Secondary Global Perspectives is assessed through a Research Report. This is marked by teachers and moderated by Cambridge. We provide assessment guidance for art & design, computing, digital literacy, music and physical education.

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Cambridge programme	Subjects	Assessment
Cambridge Upper Secondary		
Typically for 14-16 year-olds, the syllabuses for qualifications within this programme describe the knowledge, understanding and skils learners will develop and explain how these will be assessed. Cambridge Upper Secondary provides excellent preparation for the next stage of a Cambridge International education, Cambridge Advanced, as well as other progression routes.	Designed as a two-year programme but can be taken in one year or over three years. Offers over 70 IGCSE courses and over 40 O Level courses. Schools can offer almost any combination of subjects (with a few restrictions known as 'barred combinations'). Learners receive a certificated grade for each subject they take.	**Cambridge IGCSE** assessment takes place at the end of the course. There is a range of types of assessment, including written, oral, coursework and practical assessment. In mathematics, science and English as a second language there is a tiered structure with the option to enter candidates for Core or for Extended tier, [see page 22 on tiering]. Grades are awarded from A*–G (or from 9–1 if available in the administrative zone/subject). The grade set is capped at Grade C (Grade 5 for 9–1 grading) for Core candidates. **Cambridge O Level** assessment takes place at the end of the course. There is a range of types of assessment, including written, oral, a limited amount of coursework and practical assessment. Grades are awarded from A*–E. Cambridge O Levels are no longer available to schools in administrative zones 1, 2 and 6. There is more information on administrative zones at www.cambridgeinternational.org/help

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Cambridge programme	Subjects	Assessment
Cambridge Advanced		
Typically for 16–19 year olds, Cambridge Advanced builds on the foundations of Cambridge Upper Secondary and leads to entry to universities worldwide. The focus is on helping learners to develop deep understanding and independent learning and critical thinking skills, which universities value highly. The syllabuses for qualifications within this progarmme describe the knowledge, understanding and skils learners will develop and explain how these will be assessed.	Offers a choice of 50 different subjects and schools can offer almost any combination. A staged approach is available in almost all subjects. An AS Level contains half the content of the corresponding A Level and is normally completed in one year. This allows for flexibility, as learners can complete AS Levels as qualifications in their own right or as the first half of an A Level. The Pre-U programme is available to schools in the United Kingdom. Schools outside the UK need special approval before they can offer Cambridge Pre-U subjects.	Cambridge International AS & A Levels use a range of assessment types, including formal written examinations, orals, practicals and coursework. A level grades range from A* to E. They are directly comparable in standard to A levels awarded in the United Kingdom. Assessment of Pre-U Principal Subjects is at the end of a two-year course. There is a range of nine grades, D1–P3.

There is much more specific information, including details of all the courses available at each stage, in the *Cambridge Prospectus*, available here.

2.2 Cambridge Primary

Designed for 5–11 year olds, Cambridge Primary is structured through curriculum frameworks in 10 subjects including English, English as a second language, mathematics, science and Cambridge Global Perspectives. Each framework is divided into six stages, normally taught over one year each, but they can be covered over shorter or longer time periods depending on the school's circumstances. No subject in the Cambridge Primary programme is compulsory, so schools can select the elements that are right for their learners. Cambridge provides a wide range of support for teachers to help them deliver each curriculum in their context.

The curriculum frameworks are structured by the key 'strands' of learning in each subject. The learning objectives in each strand then clearly show the teaching targets for each stage. Cambridge regularly and systematically reviews each curriculum framework to make sure that primary learners develop a solid foundation in each subject and are well prepared to progress to Cambridge Lower Secondary.

Cambridge Primary English is intended for first language learners who have well-developed oral language skills before they begin school. Therefore, learners are expected to produce language orally and in writing from the earliest stages. This curriculum provides a foundation in language and literacy on which later stages of education can be built. With its emphasis and early focus on literary analysis and critical reading skills, it promotes an understanding of how different language features are used and the impact these have on the reader. It fosters literary appreciation and prepares learners to become skilled users of the language in many contexts.

Primary English as a second language is designed to prepare learners to become skilled users of English as a second language for practical purposes, including

using English for functional communication and learning other curriculum subjects. It is designed for speakers of other first languages who are learning English as a second (or additional) language. It has been developed in conjunction with Cambridge Assessment English and is based on the Council of Europe's Common European Framework of Reference for Languages (CEFR), used across the world to map learners' progress in English (see page 28). The curriculum can be used to support the implementation of bilingual and multilingual education programmes, where subjects are taught through two or more languages.

The **mathematics** curriculum framework explores principles, patterns, systems, functions and relationships, so that learners can apply their mathematical knowledge and develop a holistic understanding of the subject. It is structured in three content areas: Number, Geometry and Measure, Statistics and Probability. Thinking and Working Mathematically underpins all of the other areas of learning to assist learners in considering the processes involved when solving problems.

Our Computing curriculum introduces learners to block-based programming and how to write clear instructions that computers can use. This helps them to understand how software drives what happens inside each piece of computer hardware.

Computing has five content areas: Computational thinking, Programming, Managing Data, Networks and Digital Communication, and Computer Systems.

The **science** curriculum framework has six strands: A skills strand Thinking and Working Scientifically, Four content strands - Biology, Chemistry, Physics and, Earth and Space, A context strand - Science in Context. In every part of the programme learners think and work scientifically and do hands-on science using everyday equipment. This helps learners to develop an understanding of scientific investigations including considering ideas, evaluating evidence, planning, investigating, recording and analysing data. The content in the Biology, Chemistry, Physics and, Earth and Space strands introduce learners to the main areas of science, while the Science in Context strand also places these in a broader cultural and historical context.

Cambridge Primary Global Perspectives develops the skills of research, analysis, evaluation, reflection, collaboration and communication. The skills are taught

through a wide range of topics using personal, local and global perspectives. It strengthens the links across the other subjects in the primary programme and provides an interdisciplinary approach to learning. Flexible delivery options are a key characteristic of the programme and it can be taught as a weekly lesson, integrated into other subjects or through occasional full days of activities.

Find out more about how the Cambridge Global Perspectives primary programme is taught and assessed.

The art, digital literacy, music and physical education curricula have unique features. The art curriculum has learning objectives that describe the concepts and approaches that apply to artists of all ages and levels of expertise. For this reason, the same learning objectives are used to structure learning from Stage 1 to Stage 6. The digital literacy curriculum covers digital skills that students need today but they will also acquire knowledge and understanding about safety and wellbeing online that will equip them for the future. The music curriculum emphasises musical exploration with opportunities for learners to perform and present their music at every stage of development. The focus is on play and on

responding to music which leads to an increasing awareness of self and personal musicality. The physical education curriculum is a vital part of a balanced Cambridge school curriculum. Regular exercise improves both physical and mental health and there is growing evidence that it improves academic performance across the curriculum. Establishing good patterns of exercise in primary schools also provides learners with the foundation of an active and healthy lifestyle for life.

Cambridge Primary testing:

Cambridge Primary includes two voluntary testing options: Progression Tests and Primary Checkpoint. These are used by schools globally to monitor their learners' progress and attainment against an international benchmark.

Cambridge Primary Progression Tests can be used whenever a class is ready to be assessed on their learning from a stage of the curriculum framework. Once teachers have marked the tests, they can use the unique analysis tools provided by Cambridge to produce detailed reports from the results. These highlight the strengths and weaknesses of learners so teachers can make targeted improvements to teaching and learning. Learners' results can be compared against their class, school or other schools around the world, and on a year-by-year basis.

Primary Checkpoint is for learners at the end of the final year of Cambridge Primary. It provides evidence of readiness for the next stage of education, assessing skills, knowledge and understanding. English, English as a second language, mathematics and science are all assessed through written tests provided and marked by Cambridge. Cambridge Primary Global Perspectives is assessed through a Team Project which is marked by teachers and moderated by Cambridge.

For more information see **here**.

2.3 Cambridge Lower Secondary

Designed for 11–14 year olds, Cambridge Lower Secondary builds on the learning from Cambridge Primary and prepares learners for Cambridge Upper Secondary study. As with the primary programme, no part is compulsory and schools can select which elements will be most useful for their learners. There are three stages in the curriculum framework for each subject. These are commonly taught over one year for each stage, but they can be taught over shorter or longer time periods, depending on the school's circumstances.

Cambridge regularly and systematically reviews each curriculum framework to make sure that lower secondary learners build on their learning in primary and are effectively prepared for Cambridge Upper Secondary qualifications.

Cambridge Lower Secondary English is intended for first language learners, or those with an equivalent competence in English. Learners build on their understanding and use of language features and become more sophisticated in using language effectively in a range of oral and written contexts. They also continue to develop their literary analysis and critical reading skills. This programme provides learners with the language and literacy skills they need for further study and life. In addition it prepares them for Cambridge Upper Secondary qualifications in English literature, language and drama.

Cambridge Lower Secondary English as a Second Language continues seamlessly from the primary curriculum, developing independent users of English (B1 and B2 on the CEFR see page 28). This programme provides learners with the English language skills they need to access Cambridge Upper Secondary qualifications through English. In addition, learners can continue their studies to Cambridge IGCSE English as a second language.

The **mathematics** curriculum continues to emphasise Thinking and Working Mathematically. Algebra is formally introduced, building on concepts from the Number strand in the Primary programme, alongside Number, Geometry and Measure and Statistics and Probability. This programme leads to upper secondary qualifications in mathematics. It also provides learners with the numeracy and statistical literacy needed for life as well as further study in a wide range of subjects (such as sciences and social sciences).

Our computing curriculum furthers learners knowledge of programming languages by introducing text-based software. Learners will explore algorithms using flowcharts and pseudocode, spreadsheets and databases, data transfer across networks and new technologies such as Artificial Intelligence.

The **science** curriculum framework builds further understanding of Biology, Chemistry, Physics, Earth and Space and, Thinking and Working Scientifically. All of the science disciplines are taught in each stage so that learners develop an integrated view of science. The emphasis on scientific investigations continues from primary with learners being introduced to specialist scientific equipment, where available. This programme prepares learners for all of the scientific qualifications available at upper secondary level.

Cambridge Lower Secondary Global Perspectives continues to use a range of topics to develop the skills of research, analysis, evaluation, reflection, collaboration and communication. Learners identify a wider range of personal, local and global perspectives and begin to evaluate why these may be different. As with the primary programme, it is designed to be delivered flexibly through specific lessons, existing subjects or full days of activities. The skills developed prepare learners for all upper secondary subjects and they can continue to study Cambridge Global Perspectives at Upper Secondary. For more information, see **here**.

The art, digital literacy, music and physical education have a smooth transition from the Primary programme. The art curriculum continues to include the same learning objectives as primary cross Stages 7 to 9. The digital literacy curriculum emphasises that staying safe is an important aspect of all digital activity. Learners develop online skills that enable them to protect themselves and their devices, and to demonstrate concern and respect for others. The music curriculum allows learners to experiment with a wide variety of possible musical paths. This will help each learner to develop a personal affinity to music as well as find ways to express their unique musical personality. The physical education curriculum develops a wide variety of age-appropriate physical activities, including games, team sports, gymnastics and dance. Through these activities learners develop a foundation of an active and healthy lifestyle for life.

Cambridge Lower secondary testing:

Cambridge Progression Tests and Cambridge Lower Secondary Checkpoint allow schools using Cambridge Lower Secondary to monitor their learners' progress and attainment against an international benchmark.

Cambridge Lower Secondary Progression Tests are available as paper or onscreen tests which can be taken when a class has completed a stage of the curriculum framework. Once the tests are marked (by teachers, with some auto-marking for the onscreen version) the unique analysis tools provided by Cambridge will use the results to provide detailed reports. These highlight the strengths and weaknesses of learners so teachers can make targeted improvements to teaching and learning. Learners' results can be compared against their class, school or other schools around the world, and on a year-by-year basis.

Lower Secondary Checkpoint is for learners who have completed the Cambridge Lower Secondary curricula. It provides evidence of readiness for the next stage of education, assessing skills, knowledge and understanding. English, English as a second language, mathematics and science are all assessed through written tests provided and marked by Cambridge. Cambridge Lower Secondary Global Perspectives is assessed through an individual Research Report which is marked by teachers and moderated by Cambridge. For more information see **here**.

2.4 Cambridge Upper Secondary

The Cambridge Upper Secondary programme has an extensive range of subjects available at Cambridge IGCSE or Cambridge O Level. This diverse range allows teachers to design either a broad and balanced curriculum, or a more specialised one, depending on their educational aims. Some schools opt for a specialised programme with a number of compulsory subjects (including English language, mathematics and science) and only a few, if any, learner electives. Others give learners more choice. It is recommended that learners are offered some choice, to allow them to follow their interests and talents, but there may be higher costs for staff, and perhaps specialist rooms and equipment, as more subjects are offered.

What is a Cambridge IGCSE?

IGCSE stands for International General Certificate of Secondary Education. Over 70 subjects are available. Schools can offer almost any combination of subjects and each subject is certificated separately.

- A Cambridge IGCSE is the formal recognition of a learner's achievement at the end of a particular subject course. The content of the course is based on

an international curriculum developed for 14–16 year olds (although it can be studied by younger or older learners).

- The content of each course is created to suit a wide variety of schools and to avoid cultural bias. It helps to develop creative thinking, enquiry and problem-solving skills and supports the development of the Cambridge learner attributes.
- Each qualification is made up of a number of assessments (called components), the majority of which take place at the end of the course. The methods of assessment include written papers, orals, coursework and practicals.
- Learners have to pass a particular combination of these assessments to achieve the qualification. Some syllabuses offer learners and teachers different assessment options through which to achieve the qualification. This broadens opportunities for students to demonstrate their learning, particularly when their first language is not English.
- In the UK, Cambridge IGCSE is accepted as an equivalent to the GCSE.
- The Cambridge IGCSE grades awarded are A*–G, with A* being the highest. They are designed to cover a wide ability range. Cambridge IGCSE is also available graded 9–1 in certain subjects and administrative zones – grade 7 is aligned to grade A and grade 4 is aligned to grade C.

The main differences between Cambridge IGCSE and qualifications offered by other providers as well as UK GCSEs, are in the syllabus content and methods of assessment:

- Several Cambridge IGCSE subjects have an optional coursework element, whereas with most GCSE and equivalent qualifications offered by other providers, coursework is not an option and where there is coursework, it is compulsory.
- The content of Cambridge IGCSE subjects is tailored to the multicultural, multilingual audience they serve, in a way the GCSE content or the content of IGCSEs offered by other providers is not.
- All UK GCSEs from 2019 will be graded 9-1, where IGCSEs are offered as A*-G. For some zones and subjects, IGCSEs are also available graded 9-1.
- Cambridge provides time-zone variation of papers for its IGCSEs. This ensures that students who sit examinations before others cannot compromise the security of the examinations while examinations are timetabled at sensible local times.

What is a Cambridge O Level?

O Level stands for Ordinary Level, and is an internationally recognised qualification equivalent to the UK General Certificate of Secondary Education (GCSE) and Cambridge IGCSE. Over 40 subjects are available to schools, except those in administrative zones 1, 2 and 6.

- A Cambridge O Level is the formal recognition of a learner's achievement at the end of a particular subject course. The content of the course is based on an international curriculum developed for 14–16 year olds (although it can be studied by younger or older learners).
- The qualifications were developed from the academically focused O Level introduced in the UK in the 1950s and replaced in 1988 in the UK by the GCSE.
- The content of each Cambridge O Level syllabus is designed especially for an international market, and is sensitive to the needs of different countries. In many instances, IGCSEs and O Levels share the same content, have common assessments and share common assessment standards.
- Each qualification is made up of a number of assessments (called components), the majority of which take place at the end of the course. The methods of assessment include written papers, orals and practicals, and for some subjects, coursework.
- Learners have to pass a particular combination of these assessments to achieve the qualification. Some of the syllabuses offer learners and teachers different assessment options to achieve the qualification. This broadens opportunities for students to demonstrate their learning, particularly when their first language is not English.

- In the UK, Cambridge O Level is accepted as an equivalent to the GCSE.
- Cambridge O Level assessment standards are aligned to those of the Cambridge IGCSE, and are equivalent on a subject-for-subject, grade-for-grade basis. The grades awarded are A* to E, with A* being the highest.

The main difference between Cambridge O Level and GCSE and Cambridge IGCSE is the grade range: O Levels are graded on an A*–E scale, whereas Cambridge IGCSEs are on an A*–G scale (and 9–1 grade scale for certain subjects and administrative zones). O Levels, therefore, do not provide as many grades recording student performance at lower levels of attainment. The grades are consistent so an A* or C grade in either represents the same level of performance and both IGCSE and O Level provide an excellent preparation for students going onto Cambridge Advanced.

Syllabus content and assessments are often shared for Cambridge O Level and Cambridge IGCSE, although in several subjects the assessment model at Cambridge IGCSE additionally includes coursework options.

Science specifics

In Cambridge Lower Secondary, the curriculum is called 'science' but in Cambridge Upper Secondary there are important choices to make. Schools may choose to offer biology, chemistry and physics as separate subjects. In this case, learners can take all three or specialise in one or two of them. These 'separate sciences' have the greatest amount of content and offer the very best preparation for Cambridge Advanced science. Separate sciences are available at both Cambridge IGCSE and Cambridge O Level and are extremely popular with schools. At IGCSE level, Co-ordinated Science is also offered. This has two-thirds of the content of each of the separate sciences and is known as a double award, meaning that it is worth two IGCSEs. This still offers good preparation for Cambridge Advanced science and many learners will progress to taking one or more sciences after IGCSE through this route. Some schools offer Co-ordinated Science as the only science option. At both IGCSE and O Level, Combined Science is also offered. This has one third of the content of each of the separate sciences. It is a good choice for learners who need to complete their general science education at this level but do not plan to take sciences further.

> "Schools know their own students best. Streaming them into either the core pathway or the core and extended pathway will clearly impact their future options."

'Core' and 'supplement' tiering

Cambridge IGCSE science subjects, mathematics and English as a second language offer two curriculum options. These are referred to as 'core' and 'extended' or 'supplement' curriculum options. Everyone entering for the subject has to complete the core curriculum, but the extended curriculum can be studied in addition. Students who complete core and extended will be assessed on the full A* - G scale. Students who complete the core can attain grades in the range of C to G.

The extended curriculum provides an opportunity to study the subject in more depth and experience wider coverage of the content. The use of tiering means that questions are set at appropriate levels of demand for the ability range of students taking the tier. Strong candidates can access more demanding material that will prepare them better for studying the discipline at a higher level, including AS or A Level. The extended material, however, can prove to be too cognitively demanding for weaker students while the core is designed to provide a well-rounded education accessible by all. Use of tiering supports a positive assessment experience for all students, to allow everyone to demonstrate what they know, understand and can do.

A school may decide that all learners will study the extended as well as the core, and schools are encouraged to ensure all students are appropriately challenged. Schools know their own students best. Streaming them into either the core pathway or the core and extended pathway will clearly impact their future options. Some students may be struggling because of gaps in their previous teaching, so providing extra support may make it possible for them to access the extended material. The option to enter some candidates for the core examination papers remains until the entry deadline so the decision does not have to be made when the course is first taught.

Alternative course options in IGCSE

Apart from English language, there are several other Cambridge Upper Secondary subjects that have alternative courses (detailed at the end of this guide in the appendices). This flexibility helps teachers identify and select specific courses to meet their teaching requirements.

Some alternative subject courses have particular restrictions ('barred combinations') when it comes to the exams. For example, learners cannot take Cambridge IGCSE Mathematics and Cambridge IGCSE International Mathematics in the same exam series. These restrictions do not mean it is not possible to offer both courses; only that learners cannot undertake the exams or associated assessments of the barred combinations in the same exam series.

Length of study and number of courses

Learners usually study Cambridge IGCSE and Cambridge O Level over one or two years and a few schools offer IGCSE over three years (see section 2.8 on fitting the Cambridge pathway to years of schooling). In many schools, learners study eight or nine subjects, and occasionally more, over a period of two years. In others, learners study a reduced number of subjects, typically about five or six, over one year. Reducing the Cambridge Upper Secondary programme to a one-year period has a direct influence on the balance of the curriculum, as the curriculum will be narrower for any individual learner studying fewer subjects. Some schools allow very able learners to study for exams in selected subjects a year early.

2.5 Cambridge Advanced

By the time learners begin studying the Cambridge Advanced programme, they often want to specialise more, depending on their current interests, ambitions for higher learning and potential career paths. However, it is still possible to study a wide range of different subjects at this level, creating a broad programme of study, and the co-curricular programme can add breadth and balance to the educational experience.

'Planning a Cambridge International AS & A Level Programme' below sets out some different approaches and gives detailed guidance on how teachers can use the programme flexibly to suit their needs. However, in most Cambridge schools it is typical for learners to study three or four subjects. Working at a more advanced level they will need more curriculum time in class for each subject as well as more independent study time. Teachers may decide to include this independent study time on the learner's timetable but it should not normally need teacher time.

What are Cambridge International AS & A Level?

A Level stands for Advanced Level and AS Level stands for Advanced Subsidiary Level. An AS Level contains half the content of the corresponding A Level and is normally completed in one year. This allows for flexibility, as learners can complete AS Levels as qualifications in their own right or as the first half of an A Level, for which they are allowed to carry forward their AS result. Some learners

take all the assessments for their full A Level at the end of the second year (see the 'Planning a Cambridge International AS & A Level programme' below).

Cambridge International AS & A Level are the names of the qualifications that formally recognise a learner's achievement at the end of a particular subject course. The content of the course is more in-depth and demanding than Cambridge IGCSE or O Level. It is based on an international curriculum developed for 16–19 year olds preparing for higher education.

The assessment standards of Cambridge International A Levels are aligned to those of UK A Levels and are equivalent on a subject-for-subject, grade-for-grade basis. The grades awarded are A* to E, with A* being the highest. There is no A* grading in the certification of Cambridge International AS Levels. Cambridge International A & AS Levels are viewed as equivalent to AS & A Level qualifications taken by learners in the UK.

The main differences between Cambridge International AS & A Level qualifications and the UK AS & A Level qualifications are in the syllabus content and mode of assessment:

- Cambridge offers a staged approach no longer available in the UK. For most subjects, the Cambridge AS Level can either be taken as an end-point qualification in its own right, normally after one year of study, or AS Level components can contribute directly to the A Level in a linear examination normally taken at the end of two years along with the other A Level components. Candidates can also build on their AS Level results to count into their A Level result. Cambridge has preserved the staged approach because of the flexibility it provides. In most parts of the world, the AS Level standard represents the level required for direct university entry. Many universities also like to use AS Level results as evidence of student attainment in their admissions process.
- The context or examples used in Cambridge AS and A Level syllabuses and assessments are designed to be culturally sensitive and to provide an international context.
- There is a wider range of subjects available at Cambridge International AS and A Level, for example the wide range of languages offered.
- Cambridge provides time-zone variation of papers for AS and A Level. This ensures that students who sit examinations before others cannot compromise the security of the examinations while examinations are timetabled at sensible local times.

Planning a Cambridge International AS & A Level programme

There are three different approaches for planning and scheduling Cambridge International A Level (see table 3 on next page). Each approach will have a different effect on the structure of the school curriculum and the school timetable.

Before schools decide on which of the three approaches they might allow, it is important for them to check the requirements of universities and other higher education institutions where their learners are likely to want to go. Universities in some countries require three full A Levels for their most popular courses – Approaches 1 or 2 could work for these. Approach 3, AS only, has the potential to provide the broadest and most balanced curriculum but the compromise is less specialisation. This may however be ideal in countries where AS Levels are accepted on their own.

Table 3: Cambridge International AS and A Level options

Approach 1	Approach 2	Approach 3
A 'non-staged' assessment route. Learners take all papers of the Cambridge International A Level course in the same examination series, usually at the end of the second year of study.	A 'staged' assessment route. Learners take the Cambridge International AS Level in Year 1 and/or Year 2 and complete the final Cambridge International A Level in the second series.	Cambridge International AS Level only. Learners take the Cambridge International AS Level exams only. The syllabus content for Cambridge International AS Level is half of a Cambridge International A Level programme.
A learner who successfully completes the non-stage option will normally have studied three or four Cambridge International A Level courses.	A learner who successfully completes the staged assessment option might have outcomes that include: • three Cambridge international A Levels and one AS Level (first example below) • two Cambridge International A Levels and Four AS Levels (second example below) • three Cambridge International A Levels and two AS Levels (third example below).	A learner who successfully completes the Cambridge Internaitonal AS Level only assessment option might have studied eight Cambridge International AS Level courses, completing four in each year. This could represent a broad and balanced curriculum but with less specialisation and depth.

In the first example below, the learner has selected a programme that will result in three Cambridge International A Levels in History, Geography and French and one AS Level in Global Perspectives & Research.

Curriculum level	Subjects selected for study			
First year	AS Level Global Perspectives	AS Level History	AS Level Geography	AS Level French
Second year		A Level History	A Level Geography	A Level French

In the second example on the next page the learner has selected a programme that will result in two Cambridge International A Levels in Mathematics and Economics. They have broadened their programme by selecting an additional two AS Level subjects in the final year. Together with their first year AS Level subjects, they will achieve four Cambridge International AS Level qualifications: English Literature, Biology, Art and Design and Global Perspectives & Research.

Curriculum level	Subjects selected for study			
First year	AS Level Literature - English	AS Level Mathematics	AS Level Biology	AS Level Economics
Second year	AS Level Art & Design	A Level Mathematics	AS Level Global Perspectives	A Level Economics

In the third example below, the learner has selected a more specialised programme, resulting in three Cambridge International A Levels supported by two Cambridge International AS Level awards. In this case, Cambridge International AS Level Business reinforces the mathematics–economics combination, with a possible career in the financial world in mind. On the other hand, this could be criticised as being over-specialised, and it might be preferable for the learner to select a different sort of discipline, for example art or Global Perspectives.

Curriculum level	Subjects selected for study			
First year	AS Level Literature - English	AS Level Mathematics	AS Level Biology	AS Level Economics
Second year	A Level Literature – English	A Level Mathematics	AS Level Business	A Level Economics

Learners need guidance to ensure their intended course of study provides the learning and qualifications they need, either for admission into higher level studies or for pursuing a particular career. As mentioned, it is very important to consider admission requirements for both national and international universities and other higher learning institutions, when constructing curriculum and qualification pathways and guiding learners on subjects to choose.

What is Cambridge Pre-U?

Cambridge Pre-U is a qualification designed by Cambridge to help schools equip learners with the skills they need to succeed at university. The qualification formally recognises a learner's achievement at the end of a particular subject course. It is based on a curriculum that promotes deep understanding of subjects through specialisation.

Learners can take Cambridge Pre-U qualifications separately, and receive grades for each one, or choose three Principal Subjects to achieve the Cambridge Pre-U Diploma. To achieve the Diploma, they also need to complete Global Perspectives & Research, a qualification that gives learners the chance to develop independent thinking, research and communication skills.

- Cambridge Pre-U Principal Subjects are assessed at the end of the two-year course.
- Cambridge Pre-U Principal Subjects are recognised by UK universities as equivalent to A Levels.
- Cambridge Pre-U qualifications have an extended grade range at the top to recognise outstanding achievement. The grades awarded are reported on a nine-grade scale, reflecting three broad bands of achievement: Distinction, Merit and Pass. Each band is sub-divided into three grades: Distinction 1, 2, 3 (D1, D2, D3), Merit 1, 2, 3 (M1, M2, M3) and Pass 1, 2, 3 (P1, P2, P3). Each subject a learner takes at Cambridge Pre-U receives a separate grade, for example, D3.

Cambridge Pre-U is not time-zoned and schools outside the UK need special approval before they offer it. Schools considering offering Cambridge Pre-U outside the UK should contact Cambridge at **info@cambridgeinternational.org**

2.6 Alternative approaches to English language development and demonstrating English language proficiency

Cambridge International offers English as a school subject, with pathways designed for first language, bilingual learners and learners who have English as a second language. Our sister organisation, Cambridge Assessment English (Cambridge English, part of Cambridge Assessment), also offers a range of English language qualifications that are widely accepted by universities, governments and employers around the world.

Both Cambridge International English as a second language and Cambridge English qualifications reference language attainment against The Common European Framework of Reference for Languages (CEFR), a widely used international standard for describing language ability. CEFR describes language ability on a six-point scale, from A1 for beginners, up to C2 for those who have mastered a language. This makes it easy for anyone involved in language teaching and testing, such as teachers or learners, to see the level of different qualifications. It also means that employers and educational institutions can easily compare Cambridge International and Cambridge English language qualifications to other exams in their country.

Cambridge International English as a Second Language is designed primarily for schools where part or all of the curriculum [not just English] is taught through the medium of English. English as a second language is available as one of the subject choices at each stage of the Cambridge Pathway from Primary to Upper Secondary. Schools receive a syllabus, support and assessment materials that are consistent with all Cambridge International courses and reporting and assessment approaches are also consistent so English as a second language fits in seamlessly with the rest of the Cambridge International curriculum.

Cambridge International English as a second language programmes

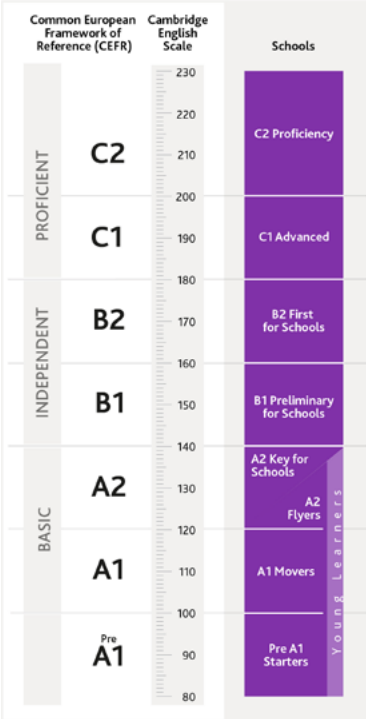
Cambridge International offers a progressive set of learning objectives designed to prepare learners to become skilled users of English as a second language through the Primary and Lower Secondary programmes. The learning objectives are organised into five strands, which together support the development of knowledge, skills and understanding. The *Use of English* strand articulates the linguistic features learners need to be able to understand and use when engaging with the language productively and receptively in the *Reading, Writing, Speaking* and *Listening* strands. By identifying aspects of the curriculum which are reflected in the CEFR text and level descriptors, guidance is provided as to how the curriculum aligns to the CEFR levels. This is where appropriate, as some learning objectives are not addressed by the CEFR but considered important for supporting language learning at Primary and Lower Secondary level. The Cambridge Checkpoint tests at the end of Primary and Lower Secondary provide teachers and learners with feedback on their achievement in reading, writing, listening and use of English.

IGCSE English as a second language also aligns to CEFR but, as with primary and lower secondary, additional learning objectives considered important for a school curriculum at this stage are included. Cambridge IGCSE English as a Second Language (E2L) aims to develop communication skills in listening, speaking, reading and writing, enabling learners to become independent users of English, and to be able to use English to communicate effectively in a variety of practical contexts. Learners will be presented with a variety of stimuli that will build up their skills in reading and writing. They will learn to select relevant details, understand the difference between what is directly stated and implied, and practise writing for different purposes and audiences. They will listen to a range of spoken material, including talks and conversations, in order to develop listening skills. They will also engage in conversations on a variety of topics, and develop their skills in responding to different situations and audiences with a degree of accuracy and clarity.

Cambridge English Language programmes for schools

Cambridge English programmes are often most appropriate for contexts where English is the only subject being taught through the medium of English in the school and close CEFR alignment is considered a high priority. Its in-depth examinations are targeted at specific levels of the Common European Framework of Reference for Languages (CEFR), with clear progression pathways from one level to the next. Cambridge English qualifications encourage development of all four language skills. See **here** for more information.

Figure 2: Cambridge Assessment English Language Assessments Programmes for Schools



Meeting University English language admission requirements

For learners planning to gain entry into universities in English-speaking countries, the English language component of their learning programme is really important. Universities set their own admission criteria for courses and these are usually available on their websites. In order to demonstrate English language proficiency for degree courses, some universities will accept a good grade in IGCSE English as a second language, others require IGCSE First Language English. In the United Kingdom, for example, some universities require a Secure English Language Test [SELT], such as the International English Language Testing System (IELTS) assessed by Cambridge English. There is more information on English language university admissions requirements here.

2.7 Timetabling the curriculum

Although it is important to start the curriculum planning process by designing a school curriculum that delivers the school's mission, schools will also need to consider practical timetabling issues. These are largely determined by school context, local laws and practices, and the scale of the school budget to support resourcing. This section aims to briefly consider some of these.

The school context, vision and educational aims will influence a number of timetabling decisions including:

- the length of the school day, the number of days' schooling a week and the length of the school year
- how much flexibility is built into the curriculum to allow learners to select options and, where applicable, options within subjects
- the extent and nature of co-curricular activities and expectations or requirements for learner participation in these
- the inclusion of any additional courses or programmes that do not end in some form of external assessment, such as religious education, values education, cultural or heritage courses, student leadership and career experience programmes, and decisions about whether or not these are compulsory
- whether multi-levelling is introduced so that learners in different year groups can be scheduled in the same class depending on their needs
- whether there will be setting by ability within a year group in some subjects such as mathematics, so that several parallel classes are run in the same timetable slots

The timetable has to be developed within the resource constraints of the school. These constraints include:

- number of teaching and support staff
- staff contracts stipulating conditions and expectations
- subject expertise and experience of teaching staff

- availability of classrooms and specialist rooms – for example, science laboratories and technology rooms
- availability of resources for language support, special educational needs and gifted learning programmes

When constructing the timetable, curriculum planners must decide how much teaching time to allocate to each subject. This can be expressed in hours per week, but because schools operate different annual calendars, it is often better calculated as hours per year. This equates to the number of periods per week multiplied by the duration of these allocated periods and the number of weeks in the school year. Some schools operate timetables on a 10-day (two-weekly) cycle or some other system of rotation, for example an eight-day cycle. This can create flexibility. Most schools use a regular weekly cycle.

Table 4: Factors influencing timetable decisions

Internal influences	External influences
Organisation structure	Cambridge programme requirements
Resources including staff and facilities	Cambridge qualification requirements
Compulsory subjects or options (degree of learner choice)	Recommended hours a week for each subject
English language capability of learners	National curriculum and qualification requirements
Multi-levelling or fixed school years	External agency requirements, for example, ministry of education
Co-curriculum. Addiitonal courses and activities outside core curriculum	University admissions criteria
Employment contracts	Requirement to take exams in English
	Core vs supplementary subject options

The guided learning hours recommended for Cambridge International programmes are shown opposite.

Table 5: Recommended guided learning hours

Programme	Subject suggested teaching hours
Cambridge Primary	**Art & design** 30 hours per year (about 1 hour per week) **Computing** 22–45 hours per year (about 0.5 – 1.5 hours per week) **Digital literacy** 30 hours per year (about 1 hour per week) **English** 120–150 hours per year (about 4–5 hours per week) **English as second language** 120–150 hours per year (about 4–5 hours per week) **Global Perspectives** Refer to page 15 of the Teacher Guide as teaching time is dependent on the context and how it is implemented at each school **Mathematics** 120–150 hours per year (about 4–5 hours per week) **Music** 30 hours per year (about 1 hour per week) **Physical education** 60–90 hours per year (about 2–3 hours per week) **Science** 45–60 hours per year (about 1.5–2.5 hours per week)
Cambridge Lower Secondary	**Art & design** 45 hours per year (about 1.5 hours per week) **Computing** 45 hours per year (about 1.5 hours per week) **Digital literacy** 30 hours per year (about 1 hour per week) **English** 120–150 hours per year (about 4–5 hours per week) **English as second language** 120–150 hours per year (about 4–5 hours per week) **Global Perspectives** Refer to page 15 of the teacher guide as teaching time is dependent on the context and how it is implemented at each school **Mathematics** 120–150 hours per year (about 4–5 hours per week) **Music** 45 hours per year (about 1.5 hours per week) **Physical education** 60–90 hours per year (about 2–3 hours per week) **Science** 90 hours per year (about 3 hours per week)
Cambridge Upper Secondary	About 130* hours per Cambridge IGCSE or O Level subject before taking the assessments.
Cambridge Advanced	• Staged option 180* hours per Cambridge AS Level subject, further 180 hours per subject to complete the Cambridge A Level. • Non-staged option 360* hours per Cambridge A Level, normally spread over two years.

** Includes teaching time and directed study. Does not include the independent study the learner is expected to carry out. It is recommend that learners are given opportunities for independent study outside of normal timetabled lessons for Cambridge Upper Secondary and Cambridge Advanced courses.*

There are many models for constructing a timetable. However, timetabling should take into account not only providing a schedule of lessons for particular learners in a year group, but also the practical considerations of having the right staff and the right rooms and facilities available for them to take place. The following simplified example is based on practice in one Cambridge school and is intended to illustrate one approach. Detailed consideration of different timetable options is beyond the scope of this guide.

Table 6: Example of school timetable

Period	Time of day	Year 8 class	Year 12 class
1	8:00-8:40	English	Art Business Studies IT
2	8:40-9:20	Arabic	
Break			
3	09:40-10:20	Religious Studies	Mathematics
4	10:20-11:00	Mathematics	
5	11:00-11:40	Science	English
6	11:40-12:20		
Lunch			
7	13:00-13:40	Physical Education	Chemistry/History/Geography
8	13:40-14:20		Second Language (French, Mandarin, Spanish)
9	14:20-15:00	Geography	

In this timetable, the day is divided into nine teaching periods of 40 minutes. For the Year 8 level (typically 12–13 year olds studying a blend of Cambridge Upper Secondary and the school's own curriculum) most periods are single periods of 40 minutes in length. Periods can be combined to form double periods which allow an extended amount of time for particular subjects or activities. For example, the double period for science gives the time needed to carry out practical experiments, and for physical education it includes the time needed for changing.

In Year 12, (typically 16–17 year olds studying for Cambridge AS Levels) subjects are mostly scheduled with double periods, providing 80 minutes for each lesson. Each subject has equal amounts of allocated teaching time, with three double periods and one single period throughout the week, equating to four hours and 40 minutes per subject per week. Because of the greater degree of specialisation at this level, it is possible for the school to schedule subjects to be taught at the same time (for example chemistry, history and geography in the example given above) if no learners want to study more than one of the combinations of subjects timetabled together.

Some schools have longer school days for older learners so that more time is available. This could be every school day or specific days. Extending the day to accommodate the curriculum is a way of increasing the amount of teaching time for subjects, or increasing the number of subjects on offer. Depending on a learner's choice of subjects, they may have study periods allocated in the school day to work on projects or to study in the library. This is consistent with the aim of creating independent and responsible learners but will also depend on the school's ability to provide the facilities learners need and the school's attitude to learners' time management.

The length of timetabled periods can have an impact on the types of pedagogy used in the classroom. Teachers will often adapt their teaching style and the types of activities they create to fit the available lesson duration. There is a tendency for shorter periods to become dominated by whole class instruction. Longer lessons can become wasteful if teachers have not planned and prepared enough work to fill the entire lesson. The school's quality assurance programme

should ensure that teachers have the right amount of time for engaging and effective lessons. Ideally, there should be enough time for the teacher to run several different activities which collectively fulfil the prescribed requirements of the syllabus or curriculum.

2.8 Teaching Cambridge Programmes in school systems with different requirements for the formal years of schooling

The Cambridge pathway has 13 stages and typically, a stage is covered in one year. However, in some countries, schools teach Cambridge stages in shorter or longer time periods, due to differences in the number of formal schooling years. Schools can also choose to teach some Cambridge programmes over different lengths than those most commonly adopted to meet local needs. Cambridge programmes are designed to be flexible and the following examples illustrate how some schools or regions adapt the Cambridge pathway to suit their own circumstances and needs:

Case Study 1:

The Cambridge continuum in 12 years: the experience in Southern Africa

Countries in Southern Africa typically have 12 rather than 13 years of formal schooling. Students start school aged 6 years old in grade 1. Secondary school usually starts at grade 8, when students are 13 years old. Some schools choose to base their school curriculum around Cambridge while others offer Cambridge alongside the national curriculum. In primary and lower secondary it is the norm for Cambridge to be used to complement national curriculum requirements or the school's own curriculum offer. In the IGCSE and A level years some schools choose to use Cambridge as an alternative to the national curriculum while others allow students to complete both providing extra lessons and support for Cambridge preparation.

Most Cambridge schools teach IGCSE over two years in grade 10 and 11 and sit final IGCSE assessments when students on average are 16 years old, while a few schools offer IGCSE over 18 months. Typically, students go on to do Cambridge

Case Study 1 *continued*

AS Level qualifications in the final year of school (grade 12). In some countries, IGCSE is considered the equivalent of the local school leaving certificate and schools teach up to this level. In others, AS Level is accepted as the equivalent to matriculation and the entry standard required for universities. A few schools also offer a post matriculation year grade 13 for students to do the full A Level programme (AS plus A2).

Some schools choose to accelerate Cambridge. This usually involves starting secondary school one year early at grade 7. Students complete Lower Secondary in grade 7 and 8, completing Cambridge Secondary 1 Checkpoint assessments at the end of grade 8 before moving to IGCSE which is taught in grades 9 and 10. Students then go on to do the A Level over two years. Students then have time to do AS Levels over two years (which also might also include resitting some IGCSEs). For students aspiring to the full A Level [AS and A2] they can do the staged AS to A2 route or the full A Level over two years and still graduate in grade 12. Completing the full A Level will help students who want to go to competitive universities overseas and also provides additional points strengthening their application to universities in southern Africa.

A few schools offer very flexible pathways at the secondary level. Students who perform particularly well are allowed to take IGCSE courses over one year, usually in subjects they plan to take through to the full A Level. In a few cases, students can take IGCSEs over three years. This degree of flexibility requires a timetable built around individual student needs and strengths and which can be challenging for schools.

Case Study 2:

The Cambridge Pathway in 12 years: Case study example of Saudi Arabia and Bahrain

Schools in Saudi Arabia and in Bahrain deliver a 12 year programme from the age of 6 to 18. It is not permitted to begin Grade 1 at the age of 5, nor can a school be licensed to deliver a 13 year programme ending at the age of 19. This leaves schools with the challenge of delivering the 13 year Cambridge Pathway in 12 years.

Case Study 2 *continued*

Figure 3 (below) shows three different ways that schools structure the Cambridge Pathway from Primary to Advanced.

In all structures, candidates sit for Cambridge IGCSE, Cambridge International AS & A Level at the same age and Grade or Year; IGCSE – Grade 10 (Year 11 in the UK), AS – Grade 11 (Year 12 in the UK), A Level – Grade 12 (Year 13 in the UK).

Age of compulsory education in the Middle East

Year of external asssessment

Figure 3: Three different structures used for teaching the Cambridge Pathway.

Structure 1*

Age	Cambridge Stage	Year/Grade in KSA
5-6	Cambridge Primary (1)	KG2
6-7	Cambridge Primary (2)	1
7-8	Cambridge Primary (3)	2
8-9	Cambridge Primary (4)	3
9-10	Cambridge Primary (5)	4
10-11	Cambridge Primary (6) (Cambridge Primary Checkpoint)	5
11-12	Cambridge Lower Secondary (7)	6
12-13	Cambridge Lower Secondary (8)	7
13-14	Cambridge Lower Secondary (9) (Cambridge Lower Secondary Checkpoint)	8
14-15	Cambridge IGCSE Year 1 (10)	9
15-16	Cambridge IGCSE Year 2 (11)	10
16-17	Cambridge International AS & A Level Year 1 (12)	11
17-18	Cambridge International AS & A Level Year 2 (13)	12

Structure 2

Age	Cambridge Stage	Year/Grade in KSA
6-7	Cambridge Primary (1)	1
7-8	Cambridge Primary (2)	2
8-9	Cambridge Primary (3)	3
9-10	Cambridge Primary (4)	4
10-11	Cambridge Primary (5+6)* (Cambridge Primary Checkpoint)	5
11-12	Cambridge Lower Secondary (7)	6
12-13	Cambridge Lower Secondary (8)	7
13-14	Cambridge Lower Secondary (9) (Cambridge Lower Secondary Checkpoint)	8
14-15	Cambridge IGCSE Year 1 (10)	9
15-16	Cambridge IGCSE Year 2 (11)	10
16-17	Cambridge International AS & A Level Year 1 (12)	11
17-18	Cambridge International AS & A Level Year 2 (13)	12

** See Structure 2 information on the next page*

Structure 3

Age	Cambridge Stage	Year/Grade in KSA
6-7	Cambridge Primary (1)	1
7-8	Cambridge Primary (2)	2
8-9	Cambridge Primary (3)	3
9-10	Cambridge Primary (4)	4
10-11	Cambridge Primary (5)	5
11-12	Cambridge Primary (6) (Cambridge Primary Checkpoint)	6
12-13	Cambridge Lower Secondary (7+8)**	7
13-14	Cambridge Lower Secondary (9) (Cambridge Lower Secondary Checkpoint)	8
14-15	Cambridge IGCSE Year 1 (10)	9
15-16	Cambridge IGCSE Year 2 (11)	10
16-17	Cambridge International AS & A Level Year 1 (12)	11
17-18	Cambridge International AS & A Level Year 2 (13)	12

*** See Structure 3 information on the next page*

Case Study 2 *continued*

In **Structure 1**, schools begin delivering Cambridge Primary in the equivalent of reception i.e. KG2 (the second year of Kindergarten), and begin Cambridge Primary stage 2 in Grade 1 at the age of 6. Although this structure is designed according to Cambridge's recommended age guidelines, it is challenging to implement. The main challenge is that most new enrolments at Grade 1 (which usually accounts for over 50% of students) are from children that had no prior formal education experience, making stage 2 of the Cambridge Primary programme a challenge to teach. By using this structure, candidates sit for the Cambridge Primary Checkpoint in Grade 5 (equivalent to Year 6 in the UK) and Lower Secondary Checkpoint in Grade 8 (equivalent to Year 9 in the UK).

In **Structure 2**, schools begin delivering Cambridge Primary in Grade 1 (equivalent to Year 2 in the UK), and compress the Cambridge Primary Programme into 5 years. This is typically done by covering Stage 4 and 50% of Stage 5 of the Cambridge Primary curriculum in Grade 4, and covering the remaining 50% of Stage 5 and Stage 6 in Grade 5. By using this structure, candidates sit for the Cambridge Primary Checkpoint in Grade 5 (equivalent to Year 6 in the UK) and Lower Secondary Checkpoint in Grade 8 (equivalent to Year 9 in the UK).

Structure 3 is the most common way the Cambridge Pathway is delivered. Schools begin delivering Cambridge Primary in Grade 1, and teach the six stages in six years. This way, any new students joining the school during primary, don't face the challenge of having to cover more content in a shorter period. They then compress Cambridge Lower Secondary by teaching the three stages of the curriculum in two years. They achieve this by delivering Stage 7 and 50% of Stage 8 in Grade 7, and the remaining 50% of Stage 8 together with Stage 9 in Grade 8 (as shown in Table 7).

Table 7 compression stages 7-9 into two years

Stage 7	Stage 8	Stage 9
Grade 7	Grade 8	

Case Study 2 *continued*

Example of Structure 3

A school in Bahrain covers the content of all three stages effectively in approximately 64 teaching weeks (32 in Grade 7, 32 in Grade 8) by delivering 9 periods a week for science (chemistry x 3, biology x 3, physics x 3), eight periods a week for English, and eight periods a week for mathematics (each period is 45 minutes). This school has found the planning templates Cambridge provides as an effective tool to support planning the delivery of these three stages – in particular the long-term planning templates with learning objectives. The cumulative grade distribution at IGCSE for School A is higher than the country's average – an indication that this structure has worked effectively for their students.

Case Study 3:

Covering the Cambridge Primary programme in five years at HLC International School, Karanai, India

HLC serves students aged 2.5 to 18 years old (from Kindergarten to pre-university). It bases its curriculum around the Cambridge Pathway, offering Primary and Secondary Checkpoints, IGCSE, AS and A Levels. The school strongly emphasises and supports inclusion and diversity and strives to develop the whole person through five initiatives. Supporting inclusion and diversity [Elina]; Differentiated instruction based on evidence [Kognify]; Global citizenship [Karthauyam]; collaboration and sport [Explorers]; and community learning [Militvaa]. The school was one of the first Ashoka Changemaker schools in the world.

One challenge the school faces is that the school system in India is based on 12 rather than 13 years of schooling. In order to cover the six stages of Cambridge Primary in five years, the school has re-organised the stages - placing some a year earlier. Some stages are introduced in the final year of Kindergarten so that students are accelerated into the programme. Teachers have taken the Cambridge curriculum and carefully planned their schemes of work for each year with progression in mind. Expectations for progression for all students are high and students are supported through the Elina and Kognify initiatives.

Case Study 4:

Teaching Cambridge IGCSE in One year at the RDFZ Chaoyang Branch School in Beijing

RDFZ Chaoyang Branch School (RDFZ CBS) is a secondary school. It is a branch of RDFZ, which is affiliated to Renmin University of China under the jurisdiction of the Ministry of Education. The school offers the best of Chinese education together with an international programme that complements the local requirements. In addition to the mandatory Chinese curriculum, RDFZ CBS provides a range of international courses, some compulsory, but many are voluntary. The school strives for academic excellence and the development of broader skills and competencies supporting the development of individual interests.

The main component of the Senior 1 programme (Year 10) are Cambridge IGCSEs. They are intensively taught over the course of nine months from September to May. All of the students are Chinese nationals so are second language English speakers. Students must study English, either English as a second language (or literature for the more able), mathematics and a science - they can choose from biology, chemistry, environmental management or physics). Students can then pick an additional three option subjects from a choice of: accounting, art & design, biology, business studies, chemistry, drama, economics, environmental management, ICT, music, or physics. Examination results are pleasing typically with 48% receiving A* or A.

The timetable is made up of 45, 40-minute periods in a week. All students do eight lessons of English and weaker students also do 5 lessons of extra English (taught by bilingual teachers). All other Cambridge IGCSE subjects are taught in five lessons per week. Students must also complete all compulsory elements of the Chinese curriculum. This includes Chinese language & literature, Chinese music, Chinese art, PE, Chinese history, geography, PE, political science and counselling. Students also have to do two extra-curricular activities after school on a Tuesday and a Thursday. They choose from over 100 activities which are offered by the staff.

Case Study 5:

A broad and balanced curriculum offer at the International School of Brunei

The International school of Brunei (ISB) is an inclusive and not-for-profit co-educational day and boarding school serving approximately 1,400 students aged 2-18 through the early years, primary and secondary sections. The student body comprises over forty different nationalities. The school emphasises academic success and the self-development of students through involvement in a wide range of sport, music, art, drama and outdoor education and is a non-selective school, with a wide range of abilities and aptitudes.

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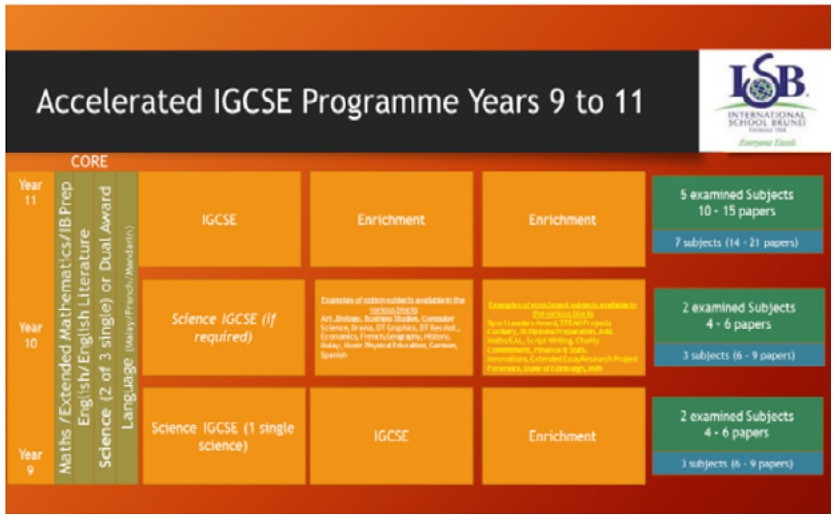


The curriculum for students between the ages of 13 and 16 (years 9, 10 and 11 in the UK system) is designed around the IGCSE. A student's compulsory (core) curriculum requirement is made up of English, mathematics, coordinated science or two single sciences, and a language.

Case Study 5 *continued*

To widen the curriculum offer, and create the flexibility that the ability range requires, the school starts vertical option blocks in Year 9. Under this system, options are chosen and these run for one year, with the recommended Cambridge time allocation. This creates a range of benefits: minority subjects run as choices across much bigger student totals comprising three year groups, international student movement is better accommodated through the one year cycle and the problem of subjects being over-subscribed is eradicated as the system is not a 'one-off'.

Furthermore, it greatly helps to create additional subject challenge for the higher ability Year 9 and 10 students outside the normal l examination cycle. In addition, due to the overall time savings (six hours per week), accrued through early IGCSE study, the school is able to offer a wider range of enrichment opportunities based on staff interest and expertise, which are scheduled on the main timetable and viewed as part of the formal curriculum and not as extra-curricular. These run after school and in lunchtimes.

In terms of student welfare, it could be argued that there is a benefit to spreading the examinations over three years, rather than confining them all to the end of Year 11. Through this system, students are able to study a broader and more balanced curriculum, allowing them more opportunity to explore areas of personal interest and develop a wider range of skills and understanding. Physical education and a school based course on 'essentials for learning and life' are also taken by all and are non-examinable. These are not shown in the diagram.

2.9 Curriculum models for bilingual and multilingual schools

Many schools find it ideal to use Cambridge programmes and qualifications for the English-medium (second-language) strand of a bilingual (or trilingual) education programme. They then use their own national curriculum and qualifications for the first-language strand of the programme.

There are many ways of organising bilingual education and the best approach will depend on the school vision and practical considerations, including resources, suitable teaching staff, environment and the exposure of learners to English language outside the school.

A bilingual/multilingual curriculum model is based on how many subjects are taught and learnt through each language and over how much time.

For example, some schools:

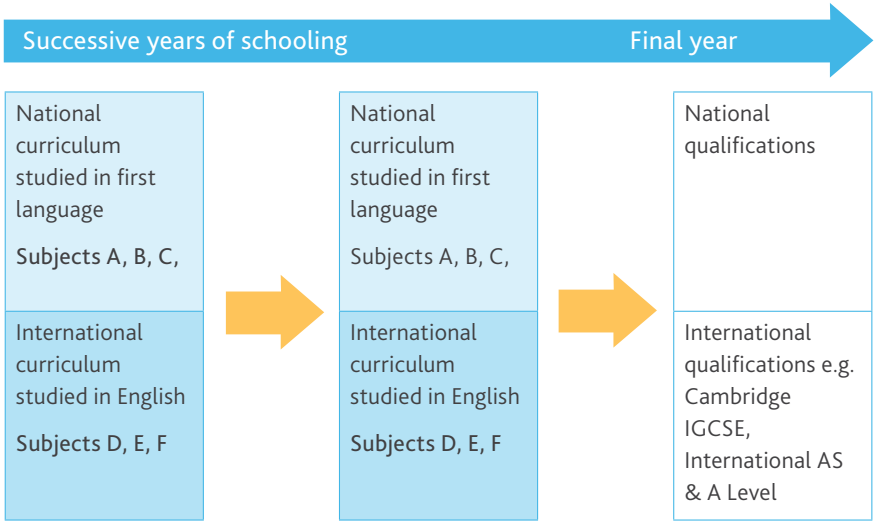
• begin in a small way by teaching one module or project in English	Short-term	Low intensity
• prepare learners by immersing them in English for a short period, e.g. through overseas student exchanges, or by teaching all curriculum subjects in English for one school term	Short-term	High intensity
• teach one or two content subjects in English over several years	Long-term	Low intensity
• teach a substantial part of the curriculum in English over several years	Long-term	High intensity

Fundamental to all these approaches is having teachers who are able to teach their content through the medium of English. Cambridge recommends content and language integrated learning (CLIL) as a methodology to support this process. This means teachers are supporting students in learning the language they need to achieve in their subjects. Schools will need a training strategy to allow local teachers to build up their second-language skills so they can teach their subject through the medium of English unless teachers are already well prepared.

Bilingual education usually requires meeting the needs of two curricula – a national (or sometimes regional) curriculum and an international curriculum. How do schools organise the timetable?

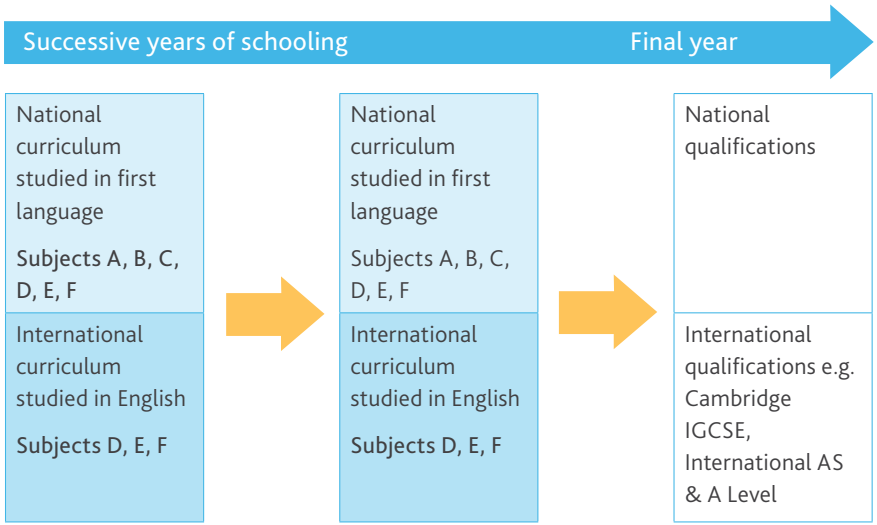
There are two key approaches.

Approach A: Split curriculum



In Approach A, learners study some subjects as part of the national curriculum and other subjects as part of an international curriculum. In this way the problem of double timetabling is avoided. This model is only possible if equal official recognition is given to the qualifications taken in both curricula.

Approach B: Shared subject currciulum



In Approach B, learners study some subjects in both the first language and English. This could allow learners to take both national qualifications and Cambridge qualifications. They study the remaining subjects in the first language. The common subjects (D E F) could be taught using:

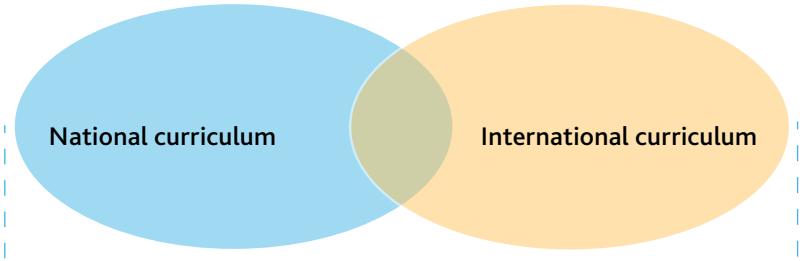
1. **An integrated curriculum**. Teachers should first compare the national curriculum against the Cambridge curriculum for a subject. This will allow them to identify areas of overlap and difference and help them work out what they need to teach in total. Then they can teach the integrated curriculum:
   - **either** in the same class using one bilingual teacher or two team-teachers, one for each language/curriculum. In this way, the same teaching and learning can enable learners to take two qualifications – the national qualification in the first language and the Cambridge qualification in English.

- or rotating classes/weeks/topics/terms/years between the first language and English. Sometimes the learning is rotated or sandwiched over several years. In this way, learning starts in the early years with the national curriculum through the first language, then switches for a period of years to the Cambridge curriculum, when this 'learning in English' period allows learners to work towards international qualifications, before returning to national curriculum priorities in the final years.

An integrated curriculum means that learning is streamlined for the benefit of the learner – the learner just goes to one timetabled class for a subject. However, this does require curriculum mapping, planning and teacher coordination.

2. **Two separate curricula.** The national and Cambridge curricula for a subject are covered in separate classes and languages, with no mapping of areas of overlap/difference.

If the curricula are separate, the learner is probably aware they are going to a national curriculum class and then to a separate Cambridge (e.g. IGCSE) class. Also, some of the learning may be duplicated. However, this may be easier for the school to organise if it is difficult to map the two curricula, if there is not enough overlap between curricula, or if there is a language barrier which prevents teachers coordinating to produce and teach a single, integrated curriculum.



Curriculum mapping for a subject
Curriculum mapping builds an intergrated, flexible sequence for learning by comparing two curricula and identifying common and different topics and skills

Learners in all Cambridge schools need to be able to complete their studies and undertake assessments in subjects through the medium of English. This can be challenging for learners with English as a second language, but there are educational advantages in supporting language development and bilingualism. Not only are learners better prepared for participation in the modern global world, bilingualism also helps support individual cognitive development.

Even if a school is not running a bilingual education programme, there are other ways of developing 'language awareness' in international English-medium schools in order to help support bilingualism or multilingualism. An effective language policy can help to achieve this. Cambridge is committed to supporting schools to develop and implement strategies successfully to support learners in multilingual settings. Cambridge ensures that assessments are fair to learners who do not have English as a first language.

More information is available here.

Case Study 6:

Supporting the development of multi-lingualism and global perspectives in the Netherlands

A number of state schools in the Netherlands complement the national curriculum with Cambridge programmes, usingthe support of Nuffic. Nuffic is an independent, Dutch, not-for-profit organisation dedicated to supporting institutions in the Netherlands with educational and other programmes that foster international co-operation, awarness and language development. Two examples are the Christelijke Scholengemeenschap [CS] Vincent van Gogh in Assen and the Sintermeerten College, Heerlen.

CS Vinvent Van Gogh supports the development of critical thinking, global awareness and English proficiencey by requiring all students to complete Cambridge IGCSE and AS Level Global Perspectives and IGCSE English as a Second Language. Cambridge Global Perspectives is taught as a separate class and IGCSE English as a Second language is integrated into regular English lessons. Global Perspectives fits in particularly well with the international scope of the school's bilingual education, as well as nurturing important research skills and IGCSE English as a Second Language is an ideal way to show that students have reached CEFR B2, as well as a good extra certificate for students at the end of Year 3.

Sintermeerten college requires all students in the bilingual programme to take Cambridge Global Perspectives at IGCSE and AS Level. Cambridge Global Perspectives has been successful at supporting the development of English language and research skills and provides a stimulating and relevant course for bilingual students. The school has recently introduced IGCSE History as an option to challenge the more capable students and they have found this course challenging because of the level of English demanded. The school is considering other Cambridge options, for example AS English and possibly a science.

3. Approaches to teaching and learning

This chapter considers approaches to instruction that have the highest impact on students' learning and performance and support the development of the Cambridge learner and teacher attributes.

Further reading about the ideas in this chapter is available in:

- The *Developing the Cambridge learner attributes* guide
- Chapter 4 of the '*Developing your school with Cambridge*' guide and;
- Other resources in the '*Teaching Cambridge at your schoo*l' area of the Cambridge International website

3.1 The Cambridge teacher

Excellent teaching – including the development of the learner attributes – is the single most significant factor impacting on learners' academic performance and personal growth that a school can influence. Successful schools, and successful school systems, develop and nurture highly skilled teachers who are encouraged to be creative professionals working in a collaborative culture.

It is important to stress that there is no single recipe for excellent teaching, and that different schools, operating in different countries and cultures, will have strong traditions that should be respected. However, there is a growing, evidence-based consensus that a certain number of powerful practices and approaches help learners fulfil their potential and be prepared for modern life.

Understanding cannot be transmitted from one person to another; it is always constructed in learners' minds. In order to develop a learner's understanding, their existing mental models must be challenged and extended. Teachers have to listen to the voice of the learner, in the classroom and as evidenced in the work they produce, and engage with it to support learning to help the learner develop their own understanding. This process helps to develop independent learners as they start to model the teacher's approach.

The most effective teaching practices and learning environments challenge learners' thinking beyond what they could achieve independently. The role of the teacher is to support (sometimes referred to as 'scaffold') student learning in what Vygotsky (1978) described as the 'zone of proximal development'. This is the area of challenge beyond what the learner can manage on their own but achievable with the help of a skilled other person. As a collection of practices and principles, Cambridge International describes this as 'active learning'. The word 'active' refers to learners' being actively engaged in learning rather than passive recipients of teaching. Teachers also need to be active leaders of learning rather than transmitters of knowledge or facilitators of learning. This involves constantly challenging student thinking, monitoring the impact of their instructional approaches and adjusting what they do based on feedback. See the '*Getting started with Active Learning* guide'.

Teaching and learning strategies

Teachers need to employ a variety of teaching strategies in the classroom. This will normally include carefully-designed individual learning activities, group work and whole-class instruction. The key element is the quality of learner engagement and the opportunities provided for feedback between the learner and teacher to guide the next learning steps. Whole class instruction can be a highly effective instructional approach if it includes discussion and learners have the opportunity to respond and contribute.

Teachers should apply assessment practices that regularly inform them whether learners are reaching their objectives. These assessment techniques also allow learners to understand where they are on their learning journey and how they can improve (see the '*Getting started with Assessment for Learning* guide').

Teachers as role models

Outstanding teachers model the Cambridge learner attributes. They are confident, responsible, reflective, innovative and engaged because they:

- **Have mastery of their subject area**. They can relate concepts and skills in such a way that students learn to understand and appreciate the nature of the academic discipline they are studying, and what constitutes excellence for the developmental stage they are teaching.
- **Teach for understanding as well as coverage**. They have the ability to engage with learners' mental ideas about the really important concepts, and take them on a journey of discovery. This approach requires learners to revisit concepts over an extended period of time and within different contexts. This spiralling strategy reinforces learning and leads to deeper levels of understanding.
- **Connect learning to the real world**. They connect learning to other topics in the subject, other disciplines and the experience of learners – making learning relevant.
- **Scaffold learning**. Teachers need to constantly challenge student thinking in the proximal zone of development. The optimal level of performance for a learner is the level that they can reach when they receive expert support, as distinct from the functional level, which they can achieve independently. Scaffolding learning helps to close this gap.
- **Have a learning rather than a performance orientation**. Chris Watkins (2010) points out that too many schools and teachers are more concerned about students looking good rather than learning well. There is considerable evidence that learning to learn is an effective strategy at raising student performance and preparing them to be independent, self-regulated learners equipped for modern life.
- **Are able to model problem solving and consider themselves as mentors as much as teachers**. They are concerned with the holistic development of the learner and understand the critical role that attitudes, emotions and self-confidence play in learning. They communicate a love of learning and believe every learner can achieve.
- **Understand, and can apply, assessment for different purposes**. They have an excellent grasp of summative assessment practices, but they also understand how to use assessment to support student learning. This is the process of identifying what the learner has or has not achieved in order to plan the next steps in learning and provide appropriate support.
- **Use a variety of different teaching strategies and activities**. This includes whole class instruction, collaborative group work and creative assignments and activities, as well as overseeing individual learning.
- **Are reflective and creative practitioners** engaged in ongoing effective professional learning.
- **Are collaborative and supportive of their colleagues**, the school and the school's community.

In order to support schools, Cambridge has developed a set of teacher standards which define the key professional characteristics and practices that teachers should develop to enable effective student learning in Cambridge schools. The standards can help to provide benchmarks against which teachers and their schools can evaluate their current practice and plan future development. They can show how the Cambridge Teacher and Cambridge Leader attributes are demonstrated in practice and they can contribute to the development of a shared frame of reference within which schools can work to improve the quality of teaching and leadership. The standards are flexible and have been developed so that they can be used to best effect in each school context providing a benchmark of what Cambridge considers to be teacher quality. See **here**:

3.2 The Cambridge learner and teacher attributes

Schools want their learners to combine both a deep understanding of their own culture and nation, with the skills to be global learners who are able to contribute and adapt to the uncertainties of the modern world. Cambridge introduced the learner/teacher attributes (Table 8), which recognise that a

meaningful curriculum is more than a collection of different subjects. Learners need to develop the academic abilities, life skills and attitudes needed to be successful in higher education and in the world of work.

The purpose of the Cambridge learner and teacher attributes is to support the development of five powerful and highly desirable learning habits that will inspire students to love learning and help them to lead fulfilled and successful lives. Students who demonstrate the attributes habitually and skilfully employ a broad range of cognitive skills and socio-emotional skills (including personality qualities such as resilience, self-motivation and self-regulation) towards effectively managing their performance.

Table 8: Learner and teacher attributes

	Cambridge learners	Cambridge teachers
Confident	Confident in working with information and ideas – their own and those of others. Cambridge learners are confident, secure in their knowledge, unwilling to take things for granted and ready to take intellectual risks. They are keen to explore and evaluate ideas and arguments in a structured, critical and analytical way. They are able to communicate and defend views and opinions as well as respect those of others.	Confident in teaching their subject and engaging each student in learning. Cambridge teachers know their subject well and know how to teach it. They seek to understand their students and their educational needs. They strive to communicate a love of learning and to encourage students to engage actively in their own learning.
Responsible	Responsible for themselves, responsive to and respectful of others. Cambridge learners take ownership of their learning, set targets and insist on intellectual integrity. They are collaborative and supportive. They understand that their actions have impacts on others and on the environment. They appreciate the importance of culture, context and community.	Responsible for themselves, responsive to and respectful of others. Cambridge teachers are highly professional in their approach to teaching, and they are collaborative and supportive. They understand that their actions will help shape future generations and they are concerned about the holistic development of every individual they teach.
Reflective	Reflective as learners, developing their ability to learn. Cambridge learners understand themselves as learners. They are concerned with the processes as well as the products of their learning and develop the awareness and strategies to be life-long learners.	Reflective as learners themselves, developing their practice. Cambridge teachers are themselves learners, seeking to build on and develop their knowledge and skills through a virtuous circle of reflection on practice – involving research, evaluation and adaptation. They support students to become independent and reflective learners.
Innovative	Innovative and equipped for new and future challenges. Cambridge learners welcome new challenges and meet them resourcefully, creatively and imaginatively. They are capable of applying their knowledge and understanding to solve new and unfamiliar problems. They can adapt flexibly to new situations requiring new ways of thinking	Innovative and equipped for new and future challenges. Cambridge teachers are creative, experimenting with new ideas and pursuing an enquiring approach in their teaching. They are open to new challenges, being resourceful, imaginative, and flexible. They are always ready to learn and apply new skills and techniques.
Engaged	Innovative and equipped for new and future challenges. Cambridge teachers are creative, experimenting with new ideas and pursuing an enquiring approach in their teaching. They are open to new challenges, being resourceful, imaginative, and flexible. They are always ready to learn and apply new skills and techniques.	Engaged intellectually, professionally and socially, ready to make a difference. Cambridge teachers are passionate about learning within and beyond the classroom, sharing their knowledge and skills with teachers in the wider educational community.

These attributes are not intended to be exhaustive. Schools may want to supplement them with others derived from the school's vision. To make the learner attributes more meaningful, school leaders should actively engage the school community with them, helping people understand why they matter and how they fit in with the school mission.

Subject curricula are more than subsets of knowledge to be taught and assessed by teachers and learned by students. They are the basis for the teaching and learning programmes that teachers use to express and deliver their wider expectations of learners. When planning lessons, teachers can build in opportunities for students to participate in learning activities and events that help grow and advance the development of learner attributes – consistent with the active learning approach described in the previous section.

The learner attributes apply across the curriculum and need to be supported both through the school's curriculum and co-curricular programmes.

When designing the school curriculum, it is important to ensure a breadth and balance of subjects and educational activities that contribute to cognitive, creative and psychomotor development. Some subjects lend themselves particularly well to collaborative work, creative expression and developing learner research skills, whether individual or collaborative (for example Cambridge Global Perspectives).

Having a rich selection of co-curricular activities will provide learners with opportunities to develop the inter- and intra-personal skills described in the attributes.

The school's environment, culture and the unacknowledged learning that permeates the school community beyond the classroom, will also have an important role in nurturing these attributes. Hence, the whole school community needs to be engaged with them.

In every school there will be some discrepancy between planned learning outcomes and the experience learners actually receive. It is extremely important to monitor and evaluate the experienced curriculum to see if what learners actually experience corresponds to what was intended. School evaluation procedures involving learners, teachers and parents can provide insightful feedback (see Chapter 4).

> “Becoming a reflective learner also requires being confident, responsible, innovative and engaged.”

3.3 Becoming a reflective learner

The reflective attribute highlights the importance of learners understanding themselves as learners. This requires them to constantly reflect on their learning and accurately judge their own progress. They are able to employ a range of strategies to overcome the learning challenges they will inevitably face. Becoming a reflective learner also requires being confident, responsible, innovative and engaged. All of the learner attributes are interconnected.

Reflective learners:

- are effective at planning and managing their work and performance and accurately evaluating their progress
- understand themselves as learners and the nature of the knowledge they are learning
- apply their understanding to performance, constantly monitor what they are doing and produce appropriate responses
- are able to think both critically and creatively so as to overcome barriers to learning and engage with subject content deeply
- learn from mistakes and see failure as a learning opportunity
- are emotionally resilient when confronted with setbacks
- are confident, but not arrogant, in working with others and sharing ideas
- care about the learning of others and realise that learning is social and collective.

While most schools would agree that learning how to become a reflective learner is critical, many assume that learners will develop these skills independently and so it is not considered as part of the curriculum.

All teachers should prioritise and understand their role in helping students to learn how to learn. Some schools have tried to teach learning/reflective/study skills as an extra course. Separate classes tend not to be very successful because learning strategies and reflective practice are best developed in the context of the learning students experience in their classes.

Effective learners understand that learning is an active process involving questioning, discovery of barriers, devising strategies to overcome the barriers, constantly evaluating progress and changing what they do if it does not work.

Less effective learners often take a passive approach. When trying to revise, for example, they read and re-read books and their notes, trying to absorb the material. This is based on the false premise that understanding can be transmitted from a text (or a person) to the memory.

Active learning has to be deliberately practised in different contexts, and supported by the school and individual teachers who understand and model the practices themselves. This will not happen unless it is emphasised as a curriculum competence and supported by structures and systems that emphasise:

- clearly identifying learning aims and objectives in each subject
- the development of concepts (and therefore language) that help individuals understand and describe the learning process they are going through
- emphasising a holistic understanding of each academic discipline, building bridges between what is learned in one context and in another
- ongoing professional development for teachers and the creation of professional learning communities that support teaching practice.

Reflection and learning to learn are considered in more detail in chapter 3 of the '*Developing the Learner Attributes*' guide.

3.4 Disciplinary and inter-disciplinary approaches

Schools usually, and for good reason, design the school curriculum around the provision of a balance of different subjects appropriate for each age group. However, there are many areas of overlap between subjects. The school curriculum should therefore enable students to develop a holistic understanding of themselves as learners, and to reflect on the similarities and differences between different subject approaches.

The main reason for including academic disciplines in the curriculum is that they nurture the ability to think critically and solve problems with applications that are not easily acquired from everyday experience. Michael Young describes this as 'powerful knowledge' (see Young, 2013). The humanities, social sciences, science, mathematics, languages and the arts - when well taught and appropriately assessed - all develop the ability to think critically and creatively. They do this in ways that are not easily transferable to other contexts.

In order for students to become effective critical and creative thinkers in everyday life, they need to be able to reflect on and apply approaches they learn

in academic disciplines in an interdisciplinary way. Interdisciplinary understanding is extremely important. It refers to the ability - and confidence - to navigate between disciplines, make connections and develop a holistic appreciation of knowledge that provides new perspectives.

Disciplinary understanding needs to be the foundation on which a rigorous interdisciplinary approach is based. Without this foundation, learning can lead to superficial coverage and confusion. Teachers, backed by a supportive curriculum, can help make connections in students' minds between what they learn in one context and another.

Excellent schools support the development of interdisciplinary understanding by expecting teachers to plan collaboratively. Teachers need to understand what their colleagues are teaching to a particular year group in order to make connections with their own classes. Some schools identify interdisciplinary links in the curriculum. This may be done in an informal way with individual teachers sharing their teaching plans in the staff room, or during meetings scheduled for this purpose. One simple example of this would be where students have learned some statistical skills in mathematics, and the geography teacher makes them apply this knowledge to their geography coursework, thereby reinforcing the concepts.

Another way of reinforcing interdisciplinary links is to have curriculum coordinators examining the learning across particular age groups, helping to identify and support meaningful connections. This complements the work of heads of department, who oversee coherence and consistency within a vertical subject curriculum.

Curriculum planning is very important when it comes to choosing the activities, courses and qualifications that will enable learners to draw on their experiences across the curriculum in order to think in interdisciplinary ways. Learners need to be challenged, required to produce extended project work and make presentations on their findings, working collectively and individually on different assignments. This is the approach adopted in Cambridge Global Perspectives.

Cambridge Global Perspectives

Cambridge Global Perspectives is an interdisciplinary programme, offered at Cambridge Primary, Lower Secondary, IGCSE, AS & A Level.

Cambridge Global Perspectives focuses on the nature of argument and evidence, encourages understanding and respect for the perspectives of others, and develops a range of skills needed for success in higher education and the world of work in the 21st century.

Students learn to appreciate a variety of alternative perspectives on global issues where ideas and interests compete and there are no easy answers. They learn how to evaluate different arguments, in particular the evidence and reasoning used to support them, as well as to improve the quality of their own arguments. These important skills are transferable to learners' other subjects.

Through studying global topics, learners gain an international context in which they can develop their skills. Students develop flexible, reflective, creative and critical thinking. They learn how to research issues, arriving at well-reasoned and evidence-based conclusions. Students also learn to work collaboratively with others and effectively communicate and critique ideas so that they become more confident, responsible, reflective, innovative and engaged.

Cambridge Global Perspectives can be taught as a stand-alone subject. However, schools can also opt to use Cambridge Global Perspectives as the curriculum core. This places it at the heart of the school curriculum and emphasises its interdisciplinary nature. Teachers of other subjects would be made aware of its learning and assessment objectives and, where applicable, support them in the teaching of their own subject. Learner research and project work would be coordinated, with subject-expert teachers acting as mentors across the curriculum.

3.5 Using conceptual frameworks to support learning

Concepts are a way of categorising things to make sense of a complex and diverse world. Through this grouping we create a shared framework for understanding, communication and action. Each school subject involves a large number of concepts. Substantive concepts are part of the substance or content

knowledge in a subject, for example in geography these might include 'river', 'trade', 'city' or 'ecosystem'. Second-order concepts shape the key questions asked in a subject and organise the subject knowledge, for example second-order concepts in history might include 'cause and consequence', 'change and continuity', 'similarity and difference' and 'historical significance'. There will often be an overlap of substantive concepts between subjects. A student might learn about 'renewable energy' in science, geography, economics and politics. There may even be some overlap of second-order concepts, for example 'change' in both history and geography. It is the particular combination of substantive and second-order concepts that makes each discipline distinct and unique.

A threshold concept is one that, once understood, modifies learners' understanding of a particular field and helps them to make progress to the next level. It helps them to go through a 'doorway' into a new way of understanding a topic or subject (Meyer and Land, 2003).

Part of effective teaching, supported by effective curriculum and assessment planning, is identifying which concepts are most important or 'key' for a particular developmental stage of learning. Cambridge syllabuses help scaffold learning through identifying important concepts. However, teachers need to adapt these to their own circumstances and incorporate them into their lesson planning and instructional design. Thinking carefully about key concepts can help teachers and heads of Department to better understand their subject discipline, and to support their learners 'progress.

Key concepts help create an understanding of the structure of a discipline, providing opportunities to link, review and put knowledge into context. This helps learners to progress, as well as to think and behave as a skilled mathematician, historian, chemist etc. A key concept will often link one topic to another, for example in economics, the concept of 'opportunity cost' links other areas of the curriculum such as production possibility frontier and the theory of comparative advantage.

For more guidance see the '*Getting started with Key Concepts*' guide.

3.6 Collaboration

Students need to learn to function effectively as team members and leaders, as this is an important ability in life and the workplace. They also need to learn to solve problems collaboratively. The Organisation for Economic Co-operation and Development (OECD, 2013, p. 6) defines collaboration as follows:

'Collaborative problem-solving competency is the capacity of an individual to effectively engage in a process whereby two or more agents attempt to solve a problem by sharing the understanding and effort required to come to a solution and pooling their knowledge, skills and efforts to reach that solution.'

Collaborative problem-solving requires teamwork where individuals actively, responsibly and productively work towards a shared goal. Individual responsibilities may change as progress or obstacles are met. The skills required to be an effective collaborator are different from those required to be a good

individual learner. Students need to be able to define the problem and ensure they have a joint understanding of what is being asked, think critically as a group, communicate and reflect on how well the group is progressing towards solving the problem. Collaboration is not the same as cooperation and this distinction needs to be understood by teachers planning group work.

Schools that focus on the learner attributes have a responsibility to provide opportunities for collaborative learning through well-planned learning activities. Many academic disciplines can provide such learning opportunities through collaboration, including social science fieldwork and science practicals, or project work in courses like Cambridge Global Perspectives and enterprise. The co-curricular programme provides opportunities for group work and collaboration.

3.7 Information literacy and using information & communications technology [ICT] in the classroom

Effectively using ICT resources is another essential skill all learners need to develop. Over the past decade, the use of digital technologies in classrooms has continued to expand. Desktops, laptops, tablets and smart phones are commonly used for learning, as educators find ways to employ today's technologies in school classrooms across all subjects. Including ICT-based resources and activities in teaching programmes can be challenging, but it is vital for today's generation of learners as they use ICT resources to access, process, evaluate and communicate information and data.

It is essential that ICT is used to support good classroom practice. Any technology used must enhance carefully planned teaching and learning goals - not replace them. One example of this is when teachers use technology, e.g. an interactive whiteboard, to develop understanding of new ideas in a way that engages the whole class as active participants rather than as another medium for the teacher to lecture. Cambridge offers professional development qualification courses and qualifications that focus on the optimum use of ICT in classrooms. See here for more information.

With an abundance of information on the internet information literacy has become critically important. Knowing how to access information is one skill but even more important is the ability to critically engage with the information and make balanced judgements about its meaning and reliability. This ability requires an understanding of the nature of the data and the area of knowledge to which it relates. For this reason information literacy needs to be at the heart of each discipline and an area of interdisciplinary inquiry. Information literacy, for example, is as the heart of Cambridge Global Perspectives.

4. Leadership, curriculum evaluation and building school capacity

This chapter considers the critical role played by school leadership in planning, implementing and evaluating the curriculum. The final section of the chapter considers ways of measuring the impact of interventions or changes in practice in order to make judgements about progress.

4.1 Leadership

Schools offering Cambridge International's programmes and qualifications operate using many different administrative structures. Many are state funded, while others are independent. Some schools are privately owned and commercial, while others are run by school boards and are not-for-profit. No matter what the structure, this chapter aims to highlight leadership principles and practices that are most likely to support the development of an effective school.

Effective schools are schools that:

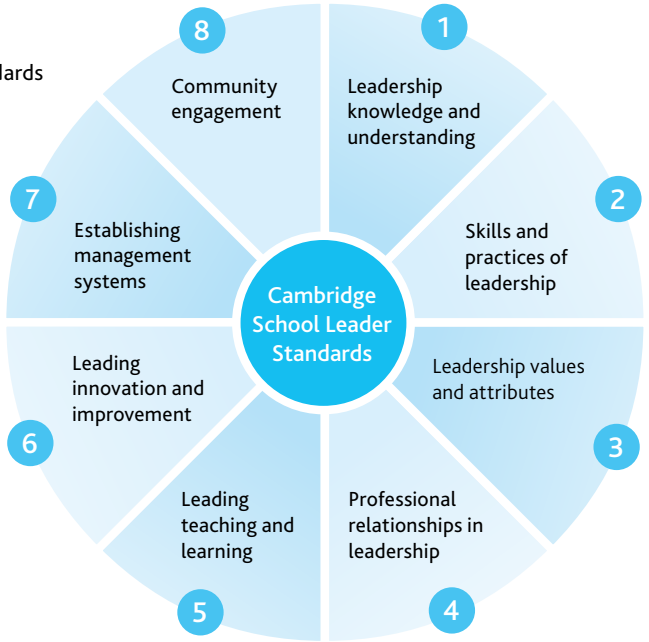
- successfully progress the learning of all of their students, regardless of background, beyond their normal expected developmental rate of growth.
- ensure the educational experience students actually receive, including the impact of the school curriculum, teaching approaches, the co-curriculum and the learning environment, closely aligns to the school vision and educational aims.

Schools will assign different management responsibilities to different individuals within the senior administration team. All schools need to have an individual in the school, normally the principal or school head, who is the senior educational leader. In some schools, this role is separate from the school business head or chief executive, who is responsible for school administration. In other contexts, the business head is line managed by the principal, who has overall responsibility for the school. The focus of this chapter is very much on the role of the senior educational leader.

The Cambridge School Leader Standards define the key professional characteristics and practices that leaders should develop to enable effective teaching and student learning in Cambridge schools. Teachers cannot achieve and sustain high quality outcomes for all students without effective leadership and so the Cambridge School Leader Standards identify and support the challenges of achieving such leadership. They confirm what successful leadership practice looks like and help leaders to determine areas and priorities for their own professional development.

The Standards are divided into eight headings (see figure 3) and 40 standards statements which are detailed and concrete. These enable users to understand how to demonstrate achievement in individual standards.

Figure 3: Cambridge School Leader Standards



Instructional leadership

The Cambridge School Leader Standards place a clear emphasis on the role of the educational leader as an instructional leader.

Instructional leadership focuses on the quality of instruction and maintaining a focus on learning. Robinson's [2007] study of the leadership styles and behaviours that had the greatest impact on student outcomes, concluded that: *"The more leaders focus their professional relationships, their work and their learning on the core business of teaching and learning, the greater their influence on student outcomes."*

Robinson [2011] goes onto identify 5 key functions 'student centred' leaders engage in:

1. Establishing Goals and Expectations. This includes creating a positive and inclusive school climate focused on a culture of learning.
2. Resourcing Strategically. The focus is on using resources in strategic ways to maximum impact to optimise student learning.
3. Ensuring Quality Teaching.
4. Leading Teacher Learning and Development. Professional learning opportunities are focused on improving instructional impact.
5. Ensuring an Orderly and Safe Environment so that everyone in the school, students and staff, feel safe and supported.

> "Everyone in the school community - heads of department, heads of year, teachers and other educators, parents and students, are empowered to play an appropriate leadership role."

In effective schools, the principal is a strong instructional leader. Moreover, leadership is widely distributed as it is viewed more as a process than a position of responsibility. Everyone in the school community - heads of department, heads of year, teachers and other educators, parents and students, are empowered to play an appropriate leadership role.

School administrators (including the principal, heads of department and heads of year) are responsible for building school capacity in a way that allows teachers to realise their full potential.

A number of the school's senior administrators should be actively involved with teachers, observing teaching and learning, and engaging in a professional discussion with teachers about what is happening in the classroom. This professional link can become a very powerful motivational force for teaching professionals, and critical for senior administrators in developing a deep appreciation of what is actually happening in the school.

Administrators need to support teachers so that they can concentrate on student learning and planning teaching. They are responsible for ensuring that the right structure is in place, and that there are enough appropriately qualified staff to deliver the curriculum. Roles and responsibilities need to be well defined and clearly communicated. Ideally, planning time is built into teachers' schedules so that they can work collaboratively in teams (in academic departments or year groups) on developing learning activities. Where possible and practical, teachers should be encouraged to visit each other's class and provide peer support to their colleagues. This is particularly important in developing less experienced teachers and a very cost-effective form of professional development.

Teachers also play a leadership role, in that they are involved in creating, implementing, monitoring, reviewing and refining practices and systems, and then measuring impact in order to improve student learning. Nurturing and using teacher talent in this way creates a virtuous circle of motivation, desire to learn more, commitment and enhanced practice. Working collaboratively to resolve collective challenges can also create a shared sense of purpose and a powerful instrument of change.

Listening to the learner voice is crucial to understanding their perspective on the curriculum and how it is implemented.

Leadership and management functions relating to the curriculum include:

1	Curriculum planning and evaluation
2	Teacher recruitment and evaluation
3	Professional development (PD).
4	Development and implementation of quality assurance policies and procedures.
5	Managing change
6	Involvement with the school and local community.
7	Management of the assessment process and relationships with Cambridge (exams officer).
8	Timetable (considered in the previous chapter).
9	Student admissions, progression through the school and guidance on to higher education.
10	Measuring impact

4.2 Curriculum planning and evaluation

Periodic curriculum evaluation, focused on evidenced-based judgement with a view to improving practice, will help ensure that the curriculum is accomplishing its purpose. Evidenced-based evaluation processes will help to measure what achievements have been made and to identify what needs more work. Table 9 identifies some of the key questions that evaluations should address, although this is by no means a complete list.

Table 9: Some essential questions for curriculum planning and evaluation

Area for review	Examples of questions
Curriculum planning	Does the school's curriculum: • deliver the most appropriate programme of study to support the school's mission and educational aims? • deliver a balanced, coherent and consistent programme of learning with clear and smooth progression routes designed for the needs of learners? • appropriately challenge all ability levels? • recognise the language background of learners and provide them with the support they need to access the curriculum? • provide sufficient opportunity for learner choice? • provide pathways that enable learners to achieve the entrance or admission requirements for university, higher education courses and employment?
Quality assurance policies and practices	• Are your quality assurance policies and practices fit for purpose, clear in their intent and easily understood? • How do you know that the school's quality assurance policies are being adhered to? • What areas need additional quality assurance policies and practices?

Continued

Area for review	Examples of questions
Teacher evaluation Fulfilling Cambridge (and other qualification) subject requirements Effective delivery of learning and meeting learner needs	• Are the stated aims of the curriculum being addressed within the teaching programme? • Are teachers teaching to the syllabus correctly, covering all the prescribed content and skills? • Is there evidence that teachers are using a variety of appropriate teaching strategies and learning activities? • Are the assessment objectives and methodology for assessment being respected? • Are coursework components being correctly implemented and supported? • Is there evidence that teachers are using formative assessment appropriately to inform their teaching practice? • Is there evidence that teachers are differentiating their practice to the needs of individual learners? • Do learning activities provide opportunities for the development of the desired skills and learner attributes? • How are the views of learners taken into account? • Is there a process of lesson observation with supportive feedback to effect improvements in teaching and learning? • Are lessons supported with sufficient resources, suitable for the level of study? • Do lessons include topics of national relevance by structuring and delivering content in local contexts?
Professional development	• Are all teachers engaging in suitable professional development activities to ensure successful implementation of the desired curriculum? • Is your professional development programme meeting the specific needs of teachers and the requirements of the strategic plan? • Is the balance between internal and external professional development opportunities appropriate? • What evidence do you have that the professional development programme is positively influencing classroom practice or learner achievement?

Area for review	Examples of questions
Resources and facilities	• Are facilities and administrative resources appropriate to support teaching programmes? • Do learners and teachers have access to appropriate library/media centre and IT resources? • Are appropriate student welfare and learning support services provided? • Do you have appropriate facilities for the security of examination material?
Formal examinations and qualifications	• Do you have an exams officer to manage the administration of any Cambridge exams you offer? • Is there a process in place to make sure the exams officer carries out their duties in line with Cambridge requirements? • Are the Cambridge (and national) examination requirements and procedures being strictly adhered to? • Are the mechanisms for checking accuracy in, and completeness of, learner data sufficient? • Are the policies regarding authenticity of learners' work being followed? • Are the systems for entering, storing and exchanging learner records secure, with appropriate back-up and retrieval safeguards?
Communication and evaluation methodology	• How can you improve your evaluation procedures to get more meaningful or accurate information? • How is this information shared or disseminated to other stakeholders? • How can the school become more effective in making use of this information to refine and further develop the curriculum? • Is there effective communication and exchange of information with external agencies, for example, Cambridge, other qualification organisations, ministries and other governmental agencies? • Are learner and teacher schedules (timetables) and calendars of events accurate, clear and informative?

Many schools use recognised evaluation/accreditation frameworks to support the process of curriculum and whole-school evaluation. These will provide their own list of questions, processes and criteria. Often these are external, provided by national authorities or accreditation agencies. What is important is that they lead to school improvement and that the whole school community is involved in relevant evaluation and development activities so that everyone takes ownership of the process.

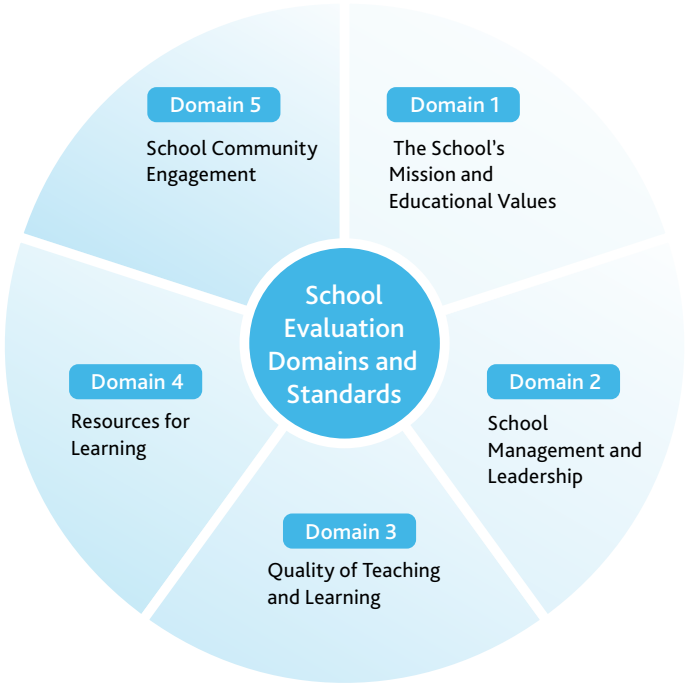
Larger scale school-wide evaluations are very time consuming. For this reason they are conducted only occasionally. It is important that smaller evaluation cycles are built into the regular operations of the school so that evaluation and development are seen as an ongoing process.

Cambridge offers a school self-evaluation service that can contribute powerful insights as part of a broader evaluation strategy. The Cambridge instrument investigates five domains [see figure 4]. These are centred on research-based indictors of effective schools including:

- high academic standards and expectations
- a school climate that focuses on achievement
- instructional leadership
- high performing teachers
- students with a strong self-efficacy and confidence as learners
- parents with high aspirations and expectations
- learning resources that are fit for purpose
- excellent school governance that includes responsible financial management.

> “Cambridge offers a school self-evaluation service that can contribute powerful insights as part of a broader evaluation strategy.”

Figure 4: Cambridge School Evaluation Domains



The self-evaluation process provides an opportunity for schools to engage with their three main stakeholders - students, teachers and parents. It allows them to collect data that will help them reflect on their performance, design improvement strategies and track progress over time. See more here.

4.3 Teacher recruitment and evaluation

As good teaching is such a powerful influence on student learning, nothing is more important than ensuring teaching is as consistently excellent as it can possibly be. Schools should recruit teachers who share the school's vision and, ideally, display the teacher/learner attributes. The best way to improve teaching

practice is to conduct well-designed teacher evaluation and professional development, while building a culture where it is valued and understood.

Teacher evaluation is a very important quality assurance process. Schools will operate different systems, often prescribed by national authorities. While the summative element of judgement or appraisal is important, the formative aspect is even more so. The most effective forms of evaluation allow teachers to self-reflect against elements of clearly-defined criteria. These criteria include the Cambridge Teacher Standards and the learner/teacher attributes, as well as performance criteria in terms of learner results and value added to student learning. Reflective practice, one of the key concepts in the learner/teacher attributes, is reinforced.

Many schools also involve learners in providing feedback to teachers, whether formally or informally. Learner evaluations of their classes, when they are carefully designed and non-threatening, are a powerful practice that provides valuable formative feedback to teachers.

Teacher evaluation needs to relate closely to the school's professional development programme. This ensures that professional development supports areas identified for development during the evaluation process.

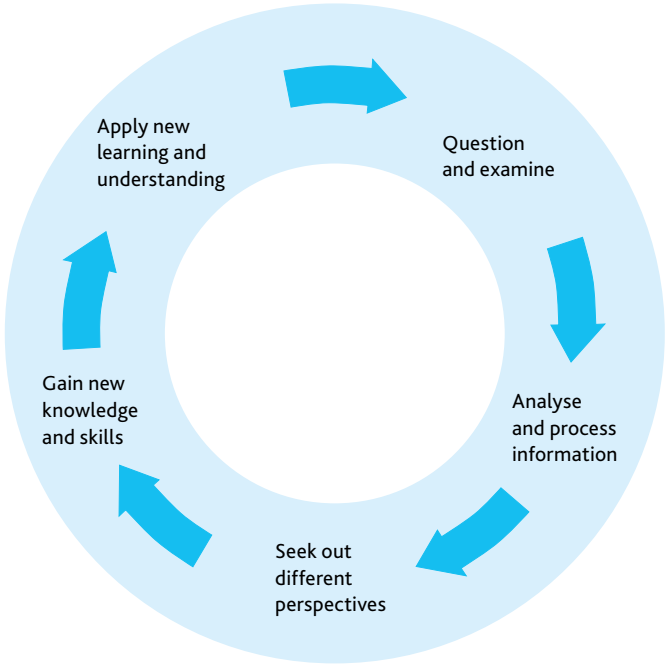
Chapter 6 of the '*Developing your school with Cambridge*' guide provides more information.

4.4 Professional development [PD]

Professional development (PD) includes a wide range of activities and practices that support ongoing and evidenced-based reflective practice (see Figure 5: The reflective cycle). This involves participants in:

- reflecting on current practice through the teacher evaluation process, which will identify PD priorities
- working with peers to share ideas and to observe, record and give feedback on classroom experiences
- reviewing relevant resources to introduce and become familiar with new concepts
- accessing recognised local or international educational expertise to enhance understanding
- planning, trialling, evaluating and modifying new practices and resources
- using collaborative support structures and processes, including peer critiquing and online services.

Figure 5: The reflective cycle



PD needs are likely to span the following areas:

- subject and resource support, including familiarisation with subject content, learning activities and skill acquisition and development
- enhancing understanding of pedagogic and assessment practices and their planning and integration into teaching programmes

- building professional capacity through collaboration with other teaching professionals in the school and through inter-school subject cluster groups or networking
- opportunities to upgrade professional qualifications, with the potential to become teacher-trainers or examiners, or to contribute in other ways that advance the introduction of the curriculum and the uptake of the associated new pedagogy and assessment methodology.

PD needs will be situational. Teachers new to the profession and/or to Cambridge programmes will need close support by experienced colleagues and to attend appropriately targeted training. Experienced teachers will want to improve their professional practice by completing advanced PD programmes, doing PD qualifications, and by becoming involved in professional communities of practice. These resources, courses and professional collaborations stimulate participants to reflect on their experience of working in a school environment and to evaluate their practice.

In this way, participants to reflect on their experience of working within a school environment through stimulus from resources, courses and professional collaboration. Reflective PD encourages individuals to develop action plans and experiment with new strategies. This experimentation gives them additional experiences on which they can reflect, and more opportunities for professional growth.

PD opportunities should not just be for teachers. The school leadership team and teaching support staff will also contribute to the successful implementation of the curriculum and will therefore benefit from relevant and constructive professional development.

For more information about our professional development services see chapter 5 in this guide and Chapter 7 of the '*Developing your school with Cambridge*' guide.

4.5 Developing and implementing quality assurance policies and procedures

Policies and procedures should provide teachers and learners (and where appropriate, parents) with clear direction, guided by the school's mission and aims. They need to be understood by the school community and enforced through quality assurance practices, including teacher evaluation. These resources, courses and professional collaborations stimulate participants to reflect on their experience of working in a school environment and to evaluate their practice.

In addition to the teacher evaluation policy, those that relate to the curriculum usually include:

Language policy: Every school will have its own language profile, so it is important that this is reflected in a policy that recognises the language needs of different groups of learners and teachers. It will consider the solution to questions including: How will English as a second language be supported? How will learners be encouraged to develop their first or best language? What responsibilities do teachers have to support language learning?

Assessment policy: How often are internal summative grading and reporting conducted? What are the grading procedures and how does this relate to the criterion system used by Cambridge and/or other qualifications taught in the school? How is assessment for learning supported? What can learners and parents expect from teachers in terms of reporting and detailed feedback on specific assignments and over specified lengths of time?

Homework policy: What are the expectations? How is this organised to ensure classroom learning is supported?

Special Educational Needs and Gifted and Talented policy: What are the expectations for teachers to differentiate so that all learners are appropriately challenged? How does the school support learners with specific needs?

Co-curricular expectations: What does the school provide for learners beyond regular classes? How does this fit in with teacher contracts and expectations? How does the school work with the local community to support learner participation in activities that it cannot provide itself, or are better provided outside the school?

Discipline policy: What is the code of conduct for teachers and the code of conduct for learners? How is the code of conduct supported and enforced?

What support does the school provide to learners who display discipline problems?

For further information see chapter 3 of the '*Developing your school with Cambridge*' guide.

4.6 Managing change

Introducing Cambridge curricula for the first time will present challenges, particularly if teaching staff are not familiar with the programmes or do not have a background of relevant experience. The high value Cambridge places on teachers becoming creative professionals means that preparation is vital. In other words, we expect teachers to develop their own schemes of work and apply the syllabus to the needs of their learners in the context of the school. To a lesser extent, this is also true for experienced staff who will also need time to plan and refresh their lesson plans, recognising that every class of learners is unique.

Teachers new to Cambridge will be involved in:

- becoming familiar with subject requirements, including assessments, and planning how to satisfy those requirements
- writing or rewriting schemes of work and producing new teaching material
- accessing and evaluating subject resources, for example, textbooks, websites and workbooks
- planning and trialling teaching strategies and assessment practices.

Teachers should be supported so that they have enough time to prepare properly and have access to professional development. One option is to have a 'pre-implementation year', to give teachers the opportunity to review, prepare, practice and evaluate the new material and approaches before full implementation. The opportunity to trial units of work and practise assessment tasks will help to build teachers' confidence and develop a sense of purpose towards the new curriculum.

Mentoring and team teaching are excellent strategies to help manage curriculum change and development. Experienced teachers can support less experienced colleagues and can also lead professional development activities within the school. Team teaching allows teachers to share expertise, provide professional support and learn new skills. While the content in different academic disciplines is different, many of the teaching and assessment principles and practices are often similar, so inter-departmental collaboration can also be very productive. Finally, we recommend working with another school that has experience of Cambridge to support teachers during a time of change. This can be very useful in smaller schools where there may only be one subject teacher at each school level.

"Teachers should be supported so that they have enough time to prepare properly and have access to professional development."

4.7 Involving the local community

It is very useful if parents understand the curriculum, and the choices that learners have to make at different stages. Parent information sessions with question and answer sessions can support school communications.

Parents should support the development of the Cambridge learner attributes at home. Schools can encourage this by using the school reporting process to map learners' progress against these broader attributes, explaining their significance. In the same way that it can be beneficial for staff evaluation to include self-reflection, learners will also benefit from an element of self-evaluation in reporting. Some schools require students to write their own self-evaluations as part of the reporting process. Other schools conduct parent / student conferences where the student leads the discussion. For an example of this see case study 9 on page 43 of the ***learner attributes guide***.

To understand the wider world, learners must first develop a deep appreciation of their local context and culture. Participating in community activities can enrich the curriculum, but can also benefit learners by giving them insights into career options through links with local businesses. Becoming aware of post-school options can help learners choose the subjects they want to study, enabling them to be responsible for their next steps in learning. It can also increase motivation levels and encourage greater participation in classroom activities. Community service can support the development of the learner attributes and help nurture a sense of social responsibility.

4.8 Administering our assessments (exams officers)

The exams officer is the person appointed by the head of centre to act on behalf of the school, with specific responsibility for administering Cambridge exams. We provide detailed support and training for exams officers managing our assessment processes. For more information please see here.

4.9 Student admissions, progression through the school and guidance on to higher education.

Transparency is key in student admissions. The school's policies and selection criteria must be clearly published on the school website and in other relevant documentation. For instance, if potential students must pass an entry test, the requirements must be freely available for students and parents to understand.

Once a student has been accepted, it is important to provide the appropriate level of challenge at each stage of the students' education as described in chapter one and two. The choice of subjects at IGCSE/O Level can be vitally important. If a student decides they wish to study medicine but they did not take chemistry IGCSE, they would be unable to undertake A Level study in the subject and therefore unable to pursue their chosen pathway. It is recommended that students study English, mathematics, at least one science, at least one humanities and one language in IGCSE plus other subjects as appropriate for future career paths. For those wishing to pursue higher education in science, engineering and medicine, all three science subjects in IGCSE would provide good foundations.

At A Level, subject choice becomes even more important. In the UK, the Russell Group universities publish a guide called 'Informed Choices'. This guide gives a list of what they refer to as 'facilitating subjects' as well as guidance on some of the subjects considered less desirable. Mathematics is regarded highly by all subject disciplines. The sciences, history and English literature are all regarded as facilitating subjects. If you wish to study economics, most universities require A Level mathematics rather than A Level economics.

It is recommended that those staff who are involved in advising students on subject choice and on their university/college applications look at the information available on the Cambridge Assessment International Education website. The recognitions database provides a tool for students to search by country and qualification to see where their qualifications are accepted worldwide and if they are given credit in institutions in North America.

General guidance and resources are provided here.

Information on the entry requirements and admissions processes of top destination countries can be accessed here.

4:10 Understanding and measuring impact

Measuring impact is critical to evaluation, and thereby to developing practice and improving student learning. Without measuring impact, how will we know if curriculum revisions or new approaches to teaching and learning have made a difference to our learners' progress and attainment? This section looks at how leadership in schools can answer these questions by introducing the concept of effect size and focusing on three areas in particular:

1. Improvements in student progress and attainment.
2. Changes in teacher self-efficacy.
3. Impact on student self-efficacy.

Impact focus 1: Improvements in student progress and attainment

Measuring effect sizes is one way of helping school leaders and teachers understand the impact of changes they have introduced on student progress and

teacher and student self-efficacy. If teaching strategies or the curriculum are changed in some way, calculating effect sizes helps determine not just if learning and self-efficacy have improved, but by how much. Effect size is a useful way of quantifying or measuring the size of any difference between two groups or data sets helping school leaders and teachers understand the impact of any changes they have introduced and understand what has the maximum benefit for learners and teachers.

An effect size is found by calculating the standardised mean difference between two data sets or groups. In essence, this means we are looking for the difference between two averages, whilst taking into account the spread of values around those averages at the same time. Case study 6 below illustrates this through providing a worked example:

Case Study 6:

Using effect size to measure improvements in student progress following an intervention

Ultimately, as school leaders and teachers, we are interested in the impact of a specific educational intervention or change on student outcomes. We want to know how much progress our learners have made, as well as what they been able to attain or achieve.

Consider the following scenario:
Over the course of a term, a teacher has worked hard with her learners on understanding 'what success looks like' for any given task or activity. She has stressed the importance of everyone being clear about the criteria for success, before learners embark upon the chosen task and plan their way through it. She has even got to the point where learners have been co-authors of the assessment rubrics used, so that they have been fully engaged in the intended outcomes throughout and can articulate what is required before they have even started. The teacher is happy with developments so far, but has it made a difference to student progress? Has learning increased beyond what we would normally expect for an average student over a term anyway?

Case Study 6 *continued*

Here is an extract from the teacher's mark-book:

Student	Sept Task	Nov Task
Katya	13	15
Maria	15	20
Joao	17	23
David	20	18
Mushtaq	23	25
Caio	25	38
Cristina	28	42
Tom	30	35
Hema	32	37
Jennifer	35	40

Before we start analysing this data, we must note the following:

- The task given in September was at the start of the term – the task in November was towards the end of the term.
- Both tasks assessed similar skills, knowledge and understandings in the student. The November task needs to be as close as possible to the September task in assessing the same construct.
- The maximum mark for each was 50.
- The only variable that has changed over the course of the term is the approach to teaching and learning by the teacher. All other things are equal.

With that in mind, looking at the extract above, what conclusions might you draw as an external observer?

Case Study 6 *continued*

You might be thinking something along the lines of:

"Mushtaq and Katya have made some progress, but not very much… Caio and Cristina appear to have done particularly well… David, on the other hand, appears to be going backwards!"

What can you say about the class as a whole?

Calculating effect sizes:

What if we were to apply the concept of 'effect sizes' to the class results above, so that we could make some more definitive statements about the impact of the interventions over the given time period? Remember, we are doing so in order to understand the size of the effect on student progress.

Let's start by understanding how it is calculated. An effect size is found by calculating the standardised mean difference between two data sets or groups. In essence, this means we are looking for the difference between two averages, whilst taking into account the spread of values (in this case, marks) around those averages at the same time.

As a formula, and from our scenario above, it looks like the following:

Effect Size = Average class mark after intervention – Average class mark (before intervention) Spread standard deviation of the class

In words: the average mark achieved by the class before the teacher introduced her intervention strategies is taken away from the average mark achieved by the class after the intervention strategies. This is then divided by the standard deviation of the class as a whole. The standard deviation is merely a way of expressing by how much the members of a group (in this case, student marks in the class) differ from the average value (or mark) for the group.

Case Study 6 *continued*

Inserting our data into a spreadsheet helps us calculate the effect size as follows:

	A	B	C
1	Student	September Task	November Task
2	Katya	13	15
3	Maria	15	20
4	Joao	17	23
5	David	20	18
6	Mushtaq	23	25
7	Caio	25	38
8	Cristina	28	42
9	Tom	30	35
10	Hema	32	37
11	Jennifer	35	40
12			
13	Average mark	23.8 =AVERAGE(B2:B11)	29.3 =AVERAGE(C2:C11)
14	Standard deviation	7.5 =STDEV(B2:B11)	10.11 =STDEV(C2:C11)
15			
16			Standard deviation overall 8.8 =AVERAGE(B14:C14)

Therefore, the effect size for this class = (29.3-23.8)/8.8 = 0.62

But what does this mean?

Case Study 6 *continued*

Interpreting effect sizes to understand impact

In pure statistical terms, a 0.62 effect size means that the average student mark, after the intervention by the teacher, is 0.62 standard deviations above the average student mark before the intervention.

We can state this in another way: the post-intervention average mark now exceeds 61% of the student marks previously.

Going further, we can also say that the average student mark, post intervention, would have placed a student in the top 4 in the class previously. You can see this visually in the table above where 29.3 (the class average after the teacher's interventions) would have been between Cristina's and Tom's marks in the September task.

We know from results' analyses of the Program for International Student Assessment (PISA) and the Trends in International Mathematics and Science Study (TIMMS) that, across the world, a year's schooling on average leads to an effect size of 0.4. John Hattie and his team at The University of Melbourne reached similar conclusions when looking at over 900 meta-analyses of classroom and whole-school interventions to improve student learning – 240 million learners later, the result was an effect size of 0.4 on average for all these strategies. What this means, then, is that any teacher achieving an effect size of greater than 0.4 is doing better than expected (than the average) over the course of a year. From the example given in case study 6, not only are the learners making better than expected progress, they are also doing so in just one term.

Impact focus 2: teacher self-efficacy

Teacher self-efficacy is a term we use to refer to a teacher's level of confidence in their ability to guide learners to success. It captures the idea that, both individually and collectively, teachers believe they can have a highly positive effect on student learning and attainment, regardless of a student's socio-economic background and the level of motivation s/he brings to the learning environment.

This level of confidence can be found by asking teachers to self-report against questions (or items), such as:

1. How much, in your current practice, do you feel you can gauge/measure student understanding of what you have taught?
2. To what extent, in your current practice, do you feel you can use a variety of assessment strategies?
3. How well, in your current practice, do you feel you can implement a variety of active learning strategies?
4. How much, in your current practice, do you feel you can motivate learners who show little or no interest in school work?

A teacher's responses to such questions, before an intervention or change is put in place, can then be compared with their responses afterwards. Allocating a numerical code to the response options, e.g. 0 = No influence; 1 = Some influence; 2 = A lot of influence, etc, enables statistical analysis and the calculation of effect sizes (see above). An exemplar questionnaire, for adaptation by the school, can be found in the appendices.

Impact focus 3: student self-efficacy

Linked closely to the above is the idea of student self-efficacy, which refers to a learner's level of confidence about their ability to be successful within a given context (task, subject, etc) – both now and in the future. Learners with strong self-efficacy are more likely to challenge themselves when faced with difficult situations or tasks and be intrinsically motivated. They willingly exert a high degree of effort in order to be successful, and see failure as a learning opportunity or something that is within their control. Such learners tend also to recover quickly from setbacks, and, ultimately, are likely to achieve their personal goals. One of the main reasons Cambridge developed the learner attributes was to support the development of student self-efficacy.

The level of a student's sense of efficacy can be found by asking them to self-report against questions/descriptors/items, such as the following:

1. I can succeed at anything if I try hard enough.
2. If I practised every day, I could develop any skill.
3. Once I have decided to accomplish something that is important to me, I keep trying, even if it is harder than I originally thought.
4. When I am struggling and taking longer to complete something difficult, I focus on my learning and change my approach, instead of feeling discouraged.
5. I believe that the brain can be developed, just like a muscle.
6. I think that, no matter who you are, you can significantly improve your level of capability.

Once more, a student's responses to such questions, before an intervention or change is put in place, can then be compared with their responses afterwards. Allocating a numerical code to the response options, *e.g. 0 = Not like me at all; 1 = A little like me; 2 = Like me; 3 = A lot like me*, etc, thereby enables statistical analysis and the calculation of effect sizes (see above).

An exemplar questionnaire, for adaptation by the school, can be found in the appendices.

Considerations on measuring impact

In reality, measuring and using effect sizes is not a perfect tool as the assumptions made about similar tasks and identifying only one variable as changing are not fully achievable. That said, calculating effect size provides one set of data to measure impact and needs to be part of a broader discussion and analysis.

Much of this analysis will be qualitative, trying to understand why some students have done better than others and trying to make sense of patterns in the data. School leaders and teachers must look at the data carefully and intelligently in order to understand 'why'. Why did some learners do better than others? Why did some not make any progress at all? In what areas has student attainment or self-efficacy improved, stayed the same or got worse? Its most important function is to support collaborative work and discussion around student learning and progress, helping departments and teachers to work out a common language, high expectations and a clear focus around improving student outcomes.

John Hattie's work (2010 and 2012, see annotated bibliography) provides insightful guidance to schools about what they should prioritise based on effect sizes from international research. Another valuable study is by the Education Endowment Foundation / Sutton Trust (see annotated bibliography).

5. Cambridge International Resources and Support Services

This chapter highlights the range of support services and resources we offer to schools that are implementing Cambridge programmes. It gives an overview of the different types of support available and points to where to find more detailed information. The chapter also sets out the next steps for schools planning to introduce Cambridge or to expand their Cambridge offer.

We offer a range of support materials and services for teachers. These are aimed both at helping them effectively deliver our programmes and at meeting their professional development needs. All teachers can access this support, regardless of whether their school curriculum is wholly or partially based on Cambridge programmes.

For Upper Secondary and Advanced programmes, all our support can be accessed through the School Support Hub:
www.cambridgeinternational.org/support

For our Primary programme, all our support can be accessed via the Primary support site: **https://primary.cambridgeinternational.org**

And for our Lower Secondary programme, all our support can be accessed via the Lower Secondary support site:
https://lowersecondary.cambridgeinternational.org

There are four major areas of support:

1. curriculum materials and resources
2. professional development
3. school improvement services and consultancy
4. help with expanding a school's Cambridge offer or becoming a Cambridge school.

5.1 Curriculum materials and resources

Our new School Support Hub for Cambridge Upper Secondary and Advanced programmes has now replaced the Teacher Support site, making it easier for teachers to find and download the assessment and teaching support materials that they need to deliver Cambridge programmes. We provide a wide range of resources to support teaching and learning, including schemes of work, past papers, mark schemes, example candidate responses and examiner reports.

All registered Cambridge schools teaching our Cambridge Upper Secondary and Cambridge Advanced stages should make use of the School Support Hub regularly to find the resources they need.

The School Support Hub includes online teacher forums, which are a great way to keep up to date with the global Cambridge community. Cambridge teachers can use them to ask questions about their syllabus and get help and ideas from other teachers and subject experts.

Teachers can also use the 'Community Resources' area to upload their own resources to share with other Cambridge teachers, or download materials that others have uploaded to use in lessons.

www.cambridgeinternational.org/support

Assessment tools for Primary and Lower Secondary.

We provide dedicated online support to schools registered to offer Cambridge Primary and Cambridge Lower Secondary. For Primary and Lower Secondary programmes, Progression Tests are end-of-stage tests available for English, English as a Second Language, Mathematics and Science. They are designed to measure learners' progress and identify their strengths and weaknesses. For the Lower Secondary programme you can choose between paper-based and on-screen versions, depending on which is most suitable for your learners and your school.

http://www.cambridgeinternational.org/programmes-and-qualifications/cambridge-primary/cambridge-primary/assessment/

http://www.cambridgeinternational.org/programmes-and-qualifications/cambridge-secondary-1/cambridge-secondary-1/assessment/

Curriculum Support

Schemes of work are medium-term course plans that are available for many of our subjects. They provide suggested teaching sequences and activities for the classroom. We have designed our schemes of work to be as flexible as possible and teachers choose which approach to take.

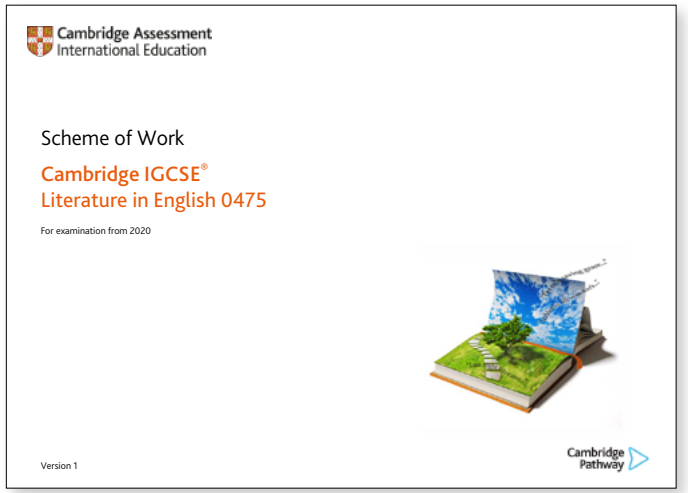
Teacher guides - some subjects have teacher guides which provide extra guidance to help teachers plan their lessons effectively, taking into account the language needs of learners. There are also suggestions to help prepare Upper Secondary and Advanced learners for their final assessment.

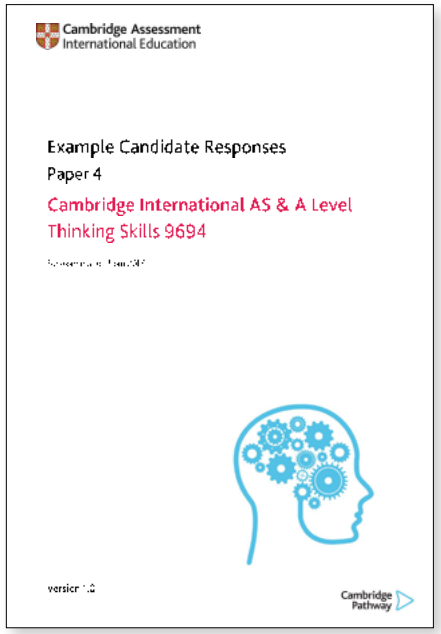
Learner guides are for teachers to share with Upper Secondary and Advanced learners to help them plan their revision programme and better understand what to expect in the examinations.

Resource Plus

Resource Plus is a collection of additional teaching and learning resources designed to help Cambridge teachers deliver challenging concepts and skills in some of our most popular syllabuses. Resource Plus materials have been created by subject experts to give you the confidence to teach new syllabus content, deliver engaging lessons, and clearly explain concepts that can be difficult for learners to understand. Some resources provide teaching support for the syllabus as a whole, while others cover individual areas in depth. More information can be found at: **www.cambridgeinternational.org/resourceplus**

For our Upper Secondary and Advanced qualifications there are also example candidate responses. These booklets use examples of candidates' work to show how different levels of performance (high, middle, low) relate to the subject's curriculum and assessment objectives. Each answer is annotated with examiner comments on the awarded mark and any mistakes the candidate has made. The examiner explains how the candidate could have improved their answer, and lists common mistakes made in this question across all candidates who sat the





exam. They help teachers to understand the standard required to achieve marks, beyond the guidance of the mark scheme.

Endorsed resources

In addition to the resources produced by Cambridge International, we also endorse resources from a range of publishers. Endorsed resources go through a rigorous quality-assurance process to make sure they closely reflect the curriculum framework or syllabus and are appropriate for Cambridge schools worldwide. Resources may be 'endorsed for full syllabus coverage' or endorsed to cover specific sections, topics or approaches.

http://www.cambridgeinternational.org/support-and-training-for-schools/endorsed-resources/

Exam preparation materials

Past question papers: We publish past papers for each subject. These give learners the opportunity to practice at answering different types of question.

Examiner reports: Our principal examiners write detailed reports describing learners' overall performance on each part of the question. The reports give insight into common misconceptions shown by learners, which teachers can address in lessons.

Grade thresholds: These show the minimum number of marks learners needed to achieve in order to be awarded a particular grade.

Mark schemes: These help teachers understand how marks are awarded for each question and what examiners look for when they mark.

Coming soon: Test Maker - a new online service allowing teachers to compile customised test papers using a large bank of past exam questions

For more information go to www.cambridgeinternational.org/support
see also: ● https://vimeo.com/259843531

5.2 Professional development

The overarching aim of Cambridge professional development is to work with schools to transform classroom practice in order to improve student outcomes.

We offer a coherent framework of training and professional development for teachers in Cambridge schools, designed to meet the needs of teachers who have different levels of experience. The support we offer for teachers includes courses and resources aimed at developing the knowledge and skills teachers need to deliver specific programmes and qualifications, and others that are more general, aimed at developing teaching strategies, skills and reflective practice.

We offer courses, seminars and conferences, face-to-face and online training events and webinars. Our online courses are delivered via our virtual learning environment and help teachers to build links and exchange ideas with other Cambridge schools internationally.

Teaching Cambridge programmes and qualifications

We offer three levels of programme-specific and qualification-specific professional development, which we are continually developing and expanding:

Introductory level

Introductory Training is for teachers who are new to Cambridge programmes and qualifications. It introduces teachers to Cambridge programmes, syllabuses and curriculum frameworks and enables them to teach our syllabuses with greater confidence. We strongly recommend this training to teachers who are new to Cambridge or new to a specific qualification.

Teachers will typically learn about:

- Cambridge Assessment International Education
- the aims and structure of Cambridge programmes, syllabuses and curriculum frameworks
- assessment aims and objectives
- question papers, marking exercises and examiner feedback (only applicable for Cambridge Upper Secondary and Cambridge Advanced qualification training)

- Progression Tests, Cambridge Primary Checkpoint and Cambridge Lower Secondary Checkpoint tests
- teaching ideas and approaches, endorsed resources that are available to support teaching.

This training is available face-to-face and online. All of our online training can be accessed on our **Professional Development Learning Community** website.

Extension level

Extension Training is for teachers who have some experience of teaching Cambridge programmes and qualifications. The training in this area enables teachers to engage with our syllabuses and curriculum frameworks in greater depth and build confidence in their delivery. We recommend this training to teachers who have attended Introductory Training and/or have been teaching Cambridge programmes and qualifications for at least one year or one exam cycle.

Teachers will:

- review syllabus and curriculum framework design and the assessment aims
- learn about any major updates to our syllabuses or curriculum frameworks
- extend their understanding of the assessment process through reviewing past question papers, marking exercises, examiner feedback as well as developing practice questions for Cambridge O Level, Cambridge IGCSE, Cambridge International AS & A Level and Cambridge Pre-U
- explore Progression Tests, Cambridge Primary Checkpoint and Cambridge Lower Secondary Checkpoint
- create schemes of work and curriculum resources
- share a range of approaches to teaching and learning.

Enrichment level

Enrichment Professional Development is for teachers and school leaders who have been teaching or implementing Cambridge programmes and qualifications for at least a year and would like to develop their practice in specific areas. This level of our training encourages teachers to reflect on, and take greater responsibility for their teaching, as well as become more innovative in their classroom practice.

There are three different strands to our offer at this level. Teachers and school leaders can choose to focus on:

- skills, concepts or ideas (subject based)
- skills, concepts or ideas (not subject-based)
- a particular aspect of a syllabus or curriculum framework.

This training is available face-to-face, online or a blend of both.

Examples of Enrichment Professional Development include Active Learning and Assessment for Learning, The Inclusive Classroom, and Developing your Leadership with Cambridge.

For a list of forthcoming courses, as well as details of how to enrol, go to: **http://www.cambridgeinternational.org/cambridge-professional-development/events-and-training-calendar/**

Cambridge Professional Development Qualifications

Cambridge Professional Development Qualifications (Cambridge PDQs) transform professional learning for practising teachers and leaders. They provide formal recognition and reward for a school's commitment to establishing a culture of ongoing teacher and school leader development.

Specifically, Cambridge PDQs:

- meet the needs and priorities of the individual and the school
- scaffold school-based professional development
- enhance professional thinking and practice to improve the quality of learning
- provide international benchmarks for professional learning, leading to valuable certification and progression
- energise professional learning communities.

For full details of our Professional Development Qualifications, go to:
www.cambridgeinternational.org/pdq

5.3 School improvement services

School Self-Evaluation

Effective schools successfully progress the learning and development of all of their students, regardless of background, beyond their normal expected rate of growth. To support the progress of their students, many schools regularly review their performance to identify ways in which they can become more effective.

As part of this review process, schools often base their evaluations on evidence from practice. This means that any decisions about how to improve school performance are informed by data.

We have developed a range of surveys that form the basis of a school self-review. Schools can use these to collect feedback from the school's key stakeholder groups: parents, students and teachers. Each of the surveys is based around a set of standards for School Self-Evaluation, which have been developed by Cambridge International and tailored specifically for Cambridge schools. The standards are grouped into five key areas, or domains. Each domain contains a set of standards which help to define the features of an effective school.

Once the school has conducted the surveys, Cambridge will produce a report on the results that combines and compares responses from parents, students and teachers. We will then schedule a video conference or face-to-face meeting with the school leadership team. This meeting is an opportunity to discuss the report's findings, decide on any areas for further analysis, and identify the next steps in the school improvement process. For full details visit:
www.cambridgeinternational.org/support-and-training-for-schools/school-improvement/

School consultancy

We can provide local support and guidance for teachers and school leaders involved in implementing the Cambridge curriculum. By working closely together, we are able to respond to specific needs and provide a more personalised experience. We can also help identify solutions or processes to address any specific problems or challenges. For longer term support, we can work together to develop and implement a more formalised programme. Specific areas might include:

- school improvement planning
- improving the quality of teaching and learning
- teacher appraisal and development
- student assessment and tracking
- resourcing the school
- mobilising the school community.

To talk to Cambridge International about further support, please email:
info@cambridgeinternational.org with 'Local support request' in the email subject line.

For more information, see:
www.cambridgeinternational.org/school-improvement

5:4 Expanding the Cambridge offer or becoming a Cambridge school

For Cambridge schools interested in taking on additional Cambridge qualifications and programmes,, please contact us at:
info@cambridgeinternational.org

To find out more about how to become a Cambridge school, please refer to the registration process here:
www.cambridgeinternational.org/i-want-to/join-cambridge/

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London and New York.

Coe, R. (2002).
It's the Effect Size, Stupid. What effect size is and why it is important. Paper presented at the Annual Conference of The British Educational Research Association, University of Exeter, England, 12-14 September, 2002. A version of the paper is available online:
http://www.leeds.ac.uk/educol/documents/00002182.htm

The Centre for Evaluation and Monitoring, University of Durham, has produced a very useful effect size calculator: http://www.cem.org/effect-size-calculator. Note that it also calculates a confidence interval for any effect size generated. Confidence intervals are useful in helping you understand the margin for error of an effect size you are reporting for your class. These are particularly important when the sample size is small, which will inevitably be the case for most classroom teachers.

For a further explanation of the concept of 'standard deviation' and its use in statistical analysis: https://en.wikipedia.org/wiki/Standard_deviation

Rachel J. Eells (2011)
Meta-analysis of the relationship between collective teacher efficacy and student achievement. A dissertation submitted to the faculty of the graduate school, in candidacy for the degree of Doctor of Philosophy, Program in Educational Psychology, Loyola University Chicago, Chicago, il. August 2011. Online version can be found here:
https://pdfs.semanticscholar.org/6167/a32cba0f727d72b071df00f8fc2d8b6d8673.pdf

Elements of this chapter can also be found in the *Approaches to Learning and Teaching* series of books published by Cambridge University Press, working with Cambridge Assessment International Education (2017-18):
http://www.cambridge.org/us/education/subject/teaching-practice-and-professional-development/approaches-learning-and-teaching

Annotated bibliography and other resources

This guide has presented an overview of the issues and questions that you will need to consider in developing your curriculum. In this section we identify a few texts and other resources and links for schools interested in exploring ideas further. We recommend these because they are relevant, research-based and obtainable. They would make a good initial collection for a staff room resource centre easily accessible to all teachers. They are good starting points, from which you can follow your particular interests, but represent only a few of the wide range available. We encourage schools to share any literature and resource material they have found useful through the teacher support community. We have divided texts and resources into sub sections but most cross over boundaries and are relevant to more than one category.

Curriculum planning and Teaching

Approaches to Learning and Teaching series [2017 / 2018]. Various Authors. Cambridge University Press
This series of books have been written in collaboration with Cambridge Assessment International Examinations. Each book focuses on a different subject and gives examples of effective teaching approaches translating theory into practice.
See: **http://www.cambridge.org/gb/education/subject/teaching-practice-and-professional-development/approaches-learning-and-teaching**

English, F. (2010).
Deciding what to teach and test: Developing, aligning and auditing the curriculum.
3rd Ed. Thousand Oaks, CA: Corwin Press.

Addresses the fundamentals of curriculum design in the context of a standards-based environment, with guidance and useful tools, e.g. for curriculum mapping from a United States perspective.

Flinders, D. and Thornton, S. (2009).
The Curriculum Studies Reader.
3rd Ed. Abingdon: Routledge.

A comprehensive survey of historical and contemporary keynote writing on the curriculum, balanced with concrete examples of innovative curriculum and an examination of contemporary topics, e.g. globalisation.

Kelly, A. V. (2009).
The Curriculum: Theory and Practice.
6th Ed. London: SAGE.

Summarises and explains the main aspects of curriculum theory aimed at experienced readers, and shows how these can and should be translated into practice, in order to create an educational and democratic curriculum for all schools at all levels.

Law, E. and Nieveen, N. (Eds.) (2010).
Schools as curriculum agencies: Asian and European perspectives on school-based curriculum development.
Rotterdam: Sense.

Contemporary concepts of school-based curriculum development and case studies of practice in a range of Asian and European nations, exploring commonalities and differences.

McCormick, R. and Paechter, C. (Eds.) (1999).
Learning and Knowledge.
London: SAGE.

Learning as knowledge construction and the implications of this for the nature of knowledge and for the way it is acquired, e.g. learning within domains and different subject perspectives.

Marsh, C. J. (2009).
Key Concepts for Understanding Curriculum.
4th Ed. Abingdon: Routledge.

An evaluation of major international curriculum concepts and practices including planning, development and management, teaching perspectives, collaborative design and involvement, and ideology.

Myatt, M. (2018)
The Curriculum: Gallimaufry to coherence.
Melton: John Catt Educational Ltd.

An informative, straightforward and concise book whose argument is clear; a proper and demanding curriculum is the entitlement of every child and this book explores how educators can make this a reality. Covering a large amount of information on the curriculum, from cognitive science to individual subject commentaries, this book weaves theory and day-to-day practice together. Anyone involved in curriculum planning would find this a useful resource.

Priestly, M. and Biesta, G. (2014)
Reinventing the Curriculum. New Trends in Curriculum Policy and Practice.
Bloomsbury Academic.

Divided into two halves the first half of this book focuses on Scotland's Curriculum for Excellence (CfE) with contributions from authors discussing and commenting on its defining aspects of developing responsible citizens, effective contributors, confident individuals and successful learners. In the second half of the book the CfE is placed within an international context to highlight recent trends in curriculum policy. Despite a focus on English speaking countries, this book offers all readers useful ways of thinking critically about the direction and tensions of curriculum policy.

Turner, S. (2016)
Secondary Curriculum and Assessment Design.
Bloomsbury Education.

Written from a UK perspective and drawing on ideas from current UK educationalists, this book offers a step by step approach to designing a curriculum and assessment model at both a whole school and subject level. Reflective questions throughout the chapters aim to consolidate the thinking of the reader regarding areas such as the purpose of a curriculum, its key principles and which key researchers the reader aligns themselves most closely with.

Westbury, I. and Milburn, G. (2007).
Rethinking Schooling.
Abingdon: Routledge.

A critical selection of seminal articles from the Journal of Curriculum Studies by international experts. Themes include classrooms and teaching, pedagogy, science and history education, school and curriculum development, and students' lives in schools.

Wiggins, G. and McTighe, J. (2005).
Understanding by Design.
2nd Ed. Alexandria, VA: ASCD.

A backwards design process in which the curriculum planner starts by identifying clear learning outcomes and relevant facets of understanding, and makes explicit the essential questions to be explored.

Young, M., and Lambert, D. (2014)
Knowledge and the Future School.
New York: Bloomsbury Academic.

This book introduces important arguments about the role of knowledge, the work of schools and what a good education involves. It offers a way of thinking for anyone developing a curriculum and places 'powerful knowledge' as an underlying curriculum principle.

Effective schooling

Brighouse, T. and Woods, D. (1999).
How to improve your school.
Abingdon: Routledge.

Focuses on how ideas and intentions can be turned into direct actions that will help a school improve its performance and effectiveness, looking at effective schools and how they have achieved their goals, leadership within schools, teaching and learning effectively, making critical interventions to secure improvement and how schools involve others to support improvement.

Brighouse, T. and Woods, D. (2008).
What makes a good school now?
London: Continuum.

Draws upon extensive work on school improvement over the last 15 years, and is set in the real context of the many changes and new agendas that are a feature of schools today.

Brown, C. and Poortman, C. (2018)
Networks for Learning. Effective Collaboration for teacher, School and System Improvement.
Abingdon: Routledge

This book explores the nature and impact of Professional Learning Networks (PLNs) evaluating different case studies from the Netherlands, Sweden, UK, Canada, Australia and New Zealand, each case study with a different focus such as research networks to child support teams. Each chapter is dedicated to a case study and designed to get the reader reflecting upon how they would engage with and use networks to enhance and sustain school improvement.

Crossley, D. (2013)
Sustainable School Transformation. An Inside-Out School Led Approach.
London: Bloomsbury

Argues change comes for within the school itself. This book draws on numerous international case studies from Finland, Canada, Australia, USA and UK to highlight good practice for sustained improvement as well as lessons learnt. Themes discussed include use of data to inform, approaches to accountability and the importance of community.

Coe, R., Aloisi, C., Higgins, S., and Major, L. (2014).
What makes great teaching? Available online at:
https://www.suttontrust.com/wp-content/uploads/2014/10/What-Makes-Great-Teaching-REPORT.pdf

Review of findings from over 200 evidence-based articles.

Hattie, J. (2009).
Visible learning: A Synthesis of over 800 Meta-Analyses Relating To Achievement.
Oxford: Routledge.

Hattie and colleagues have researched the most powerful influences on achievement in schools. This books presents a synthesis of over 800 meta-analyses and is one of the largest collections of evidence about what works in schools to improve learning. See also Hattie, J. (2012). Visible learning for teachers. London: Routledge. See also Hattie, J. (2015) Visible Learning into Action: International Case Studies of Impact.

Knight, O. and Benson, D. (2014)
Creating Outstanding Classrooms. A whole-school approach.
Abingdon: Routledge

A self-titled 'training manual' the focus of this handbook is to develop excellent teaching and learning through teaching for understanding and being acutely aware of the learner experience. Topics range from curriculum planning, language progression and assessment models; case studies help to link the theory to practice.

MacBeath, J. and Mortimore, P. (Ed.) (2004).
Improving School Effectiveness.
Buckingham: Open University Press.

Reviews findings from seminal international work to analyse school effectiveness, its measurement, and impact for teachers, parents and pupils.

Measures of Effective Teaching project (MET)
www.metproject.org/reports.php

A number of resources are available on the website, primarily focused on measuring teaching effectiveness. Research base entirely in the USA.

Mercer, N. and Hodgkinson, S. (Ed.) (2010).
Exploring Talk in School.
London: SAGE.

Classroom talk is essential for guiding the development of understanding and for learners to understand their teachers and their peers in constructing knowledge. This book considers the practical steps teachers can take to develop effective classroom interaction, looking at: classroom communication and managing social relations; talk in science classrooms; using critical conversations in studying literature; exploratory talk and thinking skills; talking to learn and learning to talk in the mathematics classroom; the 'emerging pedagogy' of the spoken word.

Rose, R. (Ed) (2010)
Confronting Obstacles to Inclusion. International responses to developing inclusive education.
Abingdon: Routledge

This book opens up an international dialogue on the challenges of, and approaches to, developing an inclusive education. Each author puts forward their own views, which deliberately introduces varying perspectives and interpretations of inclusion.

Rudduck, J. and Flutter, J. (2004).
How to Improve Your School.
London: Continuum.

Focuses on those who are most affected by changes in education policy and systems – the learners. Based upon and distilling empirical evidence from a number of research projects, this is an account of contemporary schooling from the learners' perspective. The research indicates that we need to see pupils differently, to re-assess their capabilities and reflect on what they are capable of being and doing.

Bilingualism and learning

Baker, C. (2011).
Foundations of Bilingual Education and Bilingualism.
5th Ed.
Bristol: Multilingual Matters.

A comprehensive introduction to bilingualism and bilingual education, covering all the crucial issues in bilingualism at individual, group and national levels. The 6th edition (2017) updates on technological advances, issues of assessment, identity and bilingualism. There are updated international examples of policy, research and practice.

Chadwick, T. (2012).
Language Awareness in Teaching: A Toolkit for Content and Language Teachers. Cambridge: Cambridge International Examinations and Cambridge University Press.

Aimed primarily at those who teach learners for whom English is not their first language, this Toolkit helps teachers to develop language awareness and support through classroom approaches and coordination with other teachers.

Coyle, D., Hood, P. and Marsh, D. (2010).
CLIL: Content and Language Integrated Learning.
Cambridge: Cambridge University Press.

This is a comprehensive overview of CLIL, from theory to practice, for both language and content-subject teachers, providing guidance on the development of learning activities and materials, teaching approaches, assessment and evaluation.

Cummins, J. and Early, M. (2011).
Identity Texts: The Collaborative Creation of Power in Multilingual Schools.
Stoke on Trent: Trentham Books.

Identity texts describes a variety of creative work by children, led by classroom teachers: collaborative inquiry, literary narratives, dramatic and multimodal performances. This book shows how identity texts have proved to be an effective and inspirational way of engaging learners in multilingual schools around the world.

García, O. (2009).
Bilingual Education in the 21st Century: A Global Perspective.
Oxford: Wiley-Blackwell.

Provides an overview of bilingual education theories and practices throughout the world, and extends traditional conceptions of bilingualism and bilingual education to include global and local concerns in the 21st century. García questions assumptions regarding language, bilingualism and bilingual education, and proposes a new theoretical framework and alternative views of teaching and assessment practices.

Mehisto, P. (2012).
Excellence in Bilingual Education: A Guide for School Principals.
Cambridge: Cambridge International Examinations and Cambridge University Press.

The first guide available to focus on the development and organisation of a bilingual education programme from the perspective of the school leader, providing international perspectives on planning and partners, leadership, learners, teachers and parents. This is a practical guide to support implementation, and evaluation and improvement of practice.

Mehisto, P. and Genesee, F. (2015).
Building Bilingual Education Systems: Forces, Mechanisms and Counterweights.
Cambridge: Cambridge University Press.

In order to provide practical knowledge that is crucial to creating and implementing successful bi/trilingual education systems this book draws on case studies and the lessons learnt from them, practical tools and practitioner stories.

Mehisto, P., Marsh, D. and Frigols, M.-J. (2008).
Uncovering CLIL: Content and Language Integrated Learning in Bilingual and Multilingual Education.
Oxford: Macmillan.

This handbook gives many practical insights into CLIL, at each stage in the cycle of reflective practice, helping teachers to know why and how to facilitate CLIL.

School Leadership

Harris, J., Carrington, S. and Ainscow, M. (2018)
Promoting Equity in Schools. Collaboration, Inquiry and Ethical Leadership.
Abingdon: Routledge

Set against a backdrop of high stakes testing, competition between schools, parental choice and school autonomy in Australia, the agenda of this book is to find ways of promoting equity in schools to break the link between disadvantage and

educational failure and the implications this has for ethical leadership. The collaborative enquiry builds on international research, shares findings from student voice, use of school data, and examines factors that act as barriers to equity.

Fullan, M. (2007).
Leading in a Culture of Change.
San Francisco: Jossey-Bass.

How leaders in all types of organisations can accomplish their goals and become exceptional leaders. Draws on the most current ideas about and theories of effective leadership, with case examples of change, and analyses five core competencies for successful leadership of complex change: attending to a broader moral purpose; keeping on top of the change process; cultivating relationships; sharing knowledge, and setting a vision and context for creating coherence in organisations.

Macbeath, J. and Cheng, Y. C. (Eds.) (2008).
Leadership for Learning: International Perspectives.
Rotterdam: Sense Publishers.

Considers the impact of globalisation on school leadership and the importance of distributed leadership making schools into learning organisations. Examples are taken from 12 countries in different parts of the world.

MacBeath, J. and Dempster, N. (2009).
Connecting Leadership and Learning: Principles for Practice.
Abingdon: Routledge.

Five key principles for practice, tested by teachers, school leaders and learners, across cultural and language boundaries, are explored in school and classroom practice: a focus of learning; an environment for learning; a learning dialogue; shared leadership; internal and external accountability.

Robinson, V. [2011]
Student centered leadership.
Jossey – Bass USA.

Focuses on leadership that improves student outcomes.

Wiliam, D. (2016)
Leadership for Teacher Learning
Florida: Learning Sciences International

Includes a critique of methods of meta-analysis, explanation of the file-drawer problem and logic models.

Wise, C., Bradshaw, P. and Cartwright, M. (Eds.) (2013).
Leading Professional Practice in Education.

Focuses on leading learning and learner leadership, change processes and distributed leadership, and leading professional development, exploring the application of theory in authentic practice in a range of school contexts.

Assessment and assessment for learning

Black, P. et al. (2003).
Assessment for Learning: Putting it into Practice.
Maidenhead: Open University and McGraw-Hill.

Based on a two-year research project involving 36 teachers in UK schools in Medway and Oxfordshire, the specific assessment for learning practices that teachers found fruitful are described. The underlying ideas about learning illustrated by these developments are explored. The problems that teachers encountered when implementing the new practices in their classroom are discussed, with guidance for school management about promoting and supporting such changes.

Christodoulou, D. (2016)
Making Good Progress? The future of Assessment for learning.
Oxford: Oxford University Press

This book highlights the flaws of assessment and suggests alternative ways of assessing learning and the implications this has on teaching methods. Deliberate practice, a knowledge based curriculum and suggested principles behind formative and summative assessments are some of the areas highlighted in this book.

Education Endowment Foundation (2018)
Metacognition and self-regulated learning guidance report.

An accessible overview of existing research with guidance on how to translate this into practice. This report is for senior leaders and classroom teachers who are interested in how research can improve their teaching.

Gardner, J. (Ed.) (2006)
Assessment and Learning.
London: SAGE.

A comprehensive overview of assessment to support

learning, practice-based theory on assessment for learning, and formative assessment to support individual development and motivate learners. Research-informed insights and practical examples come from a wide variety of international contexts.

Harlen, W. (2007).
Assessment of Learning.
London: SAGE.

A critical review of how learners' achievements are assessed for a range of purposes, from reporting progress to selection and qualification. It considers the relationship between learning outcomes and assessment, the use of assessment for target setting and evaluation, and the role of teachers' judgements.

James, M. et al. (2007).
Improving Learning How to Learn.
Abingdon: Routledge.

Focuses on the conditions within schools, and across networks of schools, that are conducive to the promotion, in classrooms, of learning how to learn as an extension of assessment for learning.

Murchan, D, and Shiel, G. (2017)
Understanding and Applying Assessment in Education.
London: SAGE

A comprehensive guide on current practice and trends in assessment. Whilst primarily aimed at new teachers, this book is ideal for anyone wanting to get to grips with the nature of assessment in schools. Topics covered range from theoretical constructs of assessment to implementing assessment for learning in the classroom to assessment planning and policy at a whole school level.

Stobart, G. (2008).
Testing Times: The uses and abuses of assessment.
Abingdon: Routledge

Assessment is a social activity is one of the main themes of this book critically discussing a range of assessment practices and their consequences for teaching and learning. Suggestions of how to reclaim assessment and ensure it is used for legitimate reasons conclude this book.

Swaffield, S. (Ed.) (2008).
Unlocking Assessment: Understanding for Reflection and Application.
Abingdon: Routledge.

This book explores the values, principles, research and theories that underpin our understanding and practice of assessment. It provides practical suggestions and examples, and addresses key points about the future development of assessment. Complex but crucial ideas and issues are made accessible, so that teachers can be more confident and proactive in shaping assessment in their classrooms, in ways that support learning and avoid unintentional harmful consequences.

Weeden, P., Winter, J. and Broadfoot, P. (2002).
Assessment: What's in it for Schools?
Abingdon: Routledge.

Shows how theory can best be put into practice, using as little jargon as possible. Issues discussed include: how skills of reflection, self-evaluation and personal target setting can impact on learning; how far learners are able to evaluate their own performance and what schools can do in the short, medium and long term to promote more effective learning.

Wiliam, D. (2011).
Embedded formative assessment.
Bloomington: Solution Tree.

Wiliam outlines five key strategies of formative assessment: clarifying, sharing and understanding learning intentions and criteria for success; engineering effective classroom discussions, activities and learning tasks that elicit evidence of learning; providing feedback that moves learners forward; activating learners' instructional resources for one another; activating learners as the owners of their learning. Through a summary of the research evidence he shows the impact of each of the above strategies, and offers many practical techniques that teachers can use to incorporate the strategies into their classroom practice.

Wylie, E.C. et al. (2012).
Improving formative assessment practice to empower student learning.
Thousand Oaks, CA: Corwin SAGE.

This practical guide can be used by individual teachers or collaboratively as a study guide in a professional learning community. Case studies provide examples of formative assessment in practice, along with examples of teachers implementing changes in their practice. Readers are encouraged to select a specific aspect of formative assessment to investigate, explore relevant personal practice relevant to that aspect, implement necessary changes, reflect on those changes, and continue the change process.

School evaluation

Hopkins, D. (1989).
Evaluation for School Development.
Buckingham: Open University Press.

Provides a practice-focused guide to school evaluation, its methods, approaches and impact.

MacBeath, J. and McGlynn, A. (2002).
Self-Evaluation: What's in it for Schools?
London: RoutledgeFalmer.

Makes school self-evaluation accessible, and through case studies helps schools and teachers to develop self-confidence in working with evaluation tools. Discusses the concerns and issues of schools to propose challenging ideas for the future.

Ofsted (2012).
School Inspection Handbook (UK).
www.ofsted.gov.uk/resources/school- inspection-handbook
(page 23ff).

In Part 2, the evaluation schedule, grade descriptors for each of the key areas: the achievement of pupils at the school, the quality of teaching in the school, the behaviour and safety of pupils at the school, the quality of leadership in, and management of, the school are given. This might form the basis from which a school could develop its own self-evaluation schedule.

Professional development

Alexandrou, A., and Swaffield S. (Eds.) (2014)
Teacher Leadership and Professional Development.
Abingdon: Routledge.

Both leadership and professional development are central to school improvement. This book brings these two areas together to explore the role of teachers as leaders and raises the question of what difference this makes to student learning. Authors write primarily about their own experiences and research in the UK and USA but a wider international perspective is acknowledged.

Craft, A. (2002).
Continuing Professional Development: A Practical Guide for Teachers and Schools. 2nd Ed.
London: RoutledgeFalmer

For teachers and school leaders to develop understanding of professional and institutional development and of the principles of appraisal and review; to review their own professional development; develop and apply criteria for evaluating the quality and value of professional development; and identify appropriate areas for future development.

Colwell, J. and Pollard, A. (2015)
Readings for Reflective Teaching in Early Education
London: Bloomsbury

This book describes itself as a 'portable library', which is made up from a collection of 88 key readings from important contemporary and seminal publications on early years teaching and learning.

Gilchrist, G. (2018).
Practitioner enquiry: Professional development with impact for teachers, schools and systems.
London: Routledge.

An introduction to all aspects of practitioner enquiry, including case studies from schools.

Hargreaves, A. and Fullan, M. (2012).
Professional Capital: Transforming Teaching in Every School.
New York: Teachers College Press.

Presents action guidelines for classroom teachers and school leaders to transform the culture of teaching and teacher development.

Kennedy, A. (2005)
Models of Continuing Professional Development: a framework for analysis

An analysis of the potential nine models of teacher professional development has for transformative practice and professional autonomy. This article draws on international literature and uses specific examples from Scotland to raise the issues of purpose and power in continued professional development.

Moon, J. (2004).
A Handbook of Reflective and Experiential Learning.
Abingdon: RoutledgeFalmer.

Guide to understanding and using reflective and experiential learning, with practical ideas, tools, activities and photocopiable resources for classroom practice.

O'Leary, M. (2014)
Classroom observation: A guide to the effective observation of teaching and learning.
London: Routledge

Whilst not a tool-kit as such, this book explores the role of classroom observation in teaching. It is situated within the academic literature, but also including practical techniques.

O'Leary, M. (2017)
Reclaiming Lesson Observation. Supporting excellence in teacher learning.
Abingdon: Routledge.

The contributors to this book come from varying educational contexts in the UK, each putting forward their own experiences of lesson observation. The experiences elaborated upon in this book range from the process of transitioning from graded to un-graded observations, an analysis of observation feedback, suggestions for embedding coaching into the observation process and an evaluation of lesson study. This is a useful book to inform reflections on the purpose and outcomes of current models of observation that take place in schools.

Pollard, A. et al. (2008).
Reflective Teaching.
London: Continuum.

The textbook for reflective classroom professionalism, summarising latest research, analysing key topics and principles, and providing resources for continuing professional development.

Pollard, A. (Ed.) (2002).
Readings for Reflective Teaching.
London: Continuum.

This book is a 'portable library' of 120 essential readings for the reflective practitioner, concerning teaching and learning.

Impact

Bassey, M. (1999).
Case study research in educational settings.
Buckingham: Open University Press.

Introduction to using the case study approach in education.

Baumfield, V., Hall, E., and Wall, K. (2013).
Action research in education: Learning through practitioner enquiry (2nd Edn.).
London: Sage Publications Ltd.

A guide to practitioner enquiry, with examples from teachers and guidance on data collection methods.

Churches, R. & Dommett, E. (2016).
Teacher-led research: Designing and implementing randomised controlled trials and other forms of experimental research.
Camarthen, UK: Crown House Publishing.

A guide to all aspects of conducting RCTs in an education context.

Cohen, L., Manion, L., and Morrison, K. (2017).
Research methods in education (8th ed.).
London: Routledge.

A guide to key data collection methods such as questionnaires and interviews.

Denscombe, M. (2017).
The good research guide for small-scale social research projects (6th Edn).
London: Open University Press.

An introduction to strategies and methods for research.

Education Endowment Foundation (EEF)
https://educationendowmentfoundation.org.uk/

The website summarises research on education initiatives. The DIY evaluation tool gives a step-by-step approach to generating effect sizes. **https://v1.educationendowmentfoundation.org.uk/uploads/pdf/EEF_DIY_Evaluation_Guide_(2013).pdf**

White, R., and Gunstone, R. (1992).
Probing understanding.
London: The Falmer Press.

Techniques for investigating students' learning in detail.

Yin, R. (2018).
Case study research (6th Edn.).
Los Angeles: Sage.

A guide to all aspects of case study research, including use in evaluations.

Glossary

Active learning

Learning which engages students and challenges their thinking, using a variety of activities.

Assessment for learning

Essential teaching strategies during learning to help teachers and students evaluate progress in terms of understanding and skill acquisition, providing guidance and feedback for subsequent teaching and learning.

Backwash effect

The impact of an examination on teaching and learning, by influencing the design of the learning programme and activities.

Balanced curriculum

A school curriculum with a complementary range, combination and weighting of subjects. This normally includes mathematics, languages, sciences, technology, humanities, creative arts and physical education.

Benchmarking

Measuring performance against an established standard.

Bilingual education

Teaching and learning in two or more languages, developing both subject and language knowledge and skills.

Broad curriculum

Every student experiences a wide range of different subjects and learning activities.

Cambridge community

Schools using Cambridge educational programmes [currently about 10,000 schools worldwide, located in approximately 160 countries].

Cambridge Handbook

The official document detailing the regulations for running Cambridge examinations and assessments. It details the responsibilities of Centres and forms part of the customers' contract with Cambridge.

Co-curriculum

Valued educational activities that support learning beyond the school curriculum, which the school encourages and supports.

Component

A component is an assessable part of a subject examination, not certificated as a separate entity, e.g. a written paper or a practical.

Concept

A mental representation of a class of things. A concept may refer to concrete or abstract things.

Content and language integrated learning (CLIL)

In a CLIL approach to bilingual education, students develop their subject knowledge and language skills at the same time using specific teaching and learning strategies.

Core subject

A subject which is an essential part of the curriculum, typically English, Mathematics and Science.

An alternative meaning is a subject (like Global Perspectives) which becomes a focus of learning in other subjects enhanced by interdisciplinary approaches and connections with other subjects.

Coursework

Classroom assignments undertaken by learners as prescribed in the syllabus. Normally assessed by the learner's teacher according to criteria set by Cambridge. The work is moderated within the school and then by Cambridge.

Glossary

Creative development
Enabling learners to develop their imagination and original thinking in solving problems and producing ideas, images, artefacts, performances and actions which have value to themselves and others.

Critical thinking
The ability, underlying all rational discourse and enquiry, to assess and evaluate analytically particular assertions or concepts in the light of either evidence or wider contexts.

Curriculum
An overall description of the aims, content, organisation, methods and evaluation of the learning programme and the factors influencing the quality of learning.

The term curriculum is often used in different contexts and different ways (please see page 5 for examples).

Curriculum framework
The systematic structure of the curriculum as set out in document(s) specifying the way in which learning and assessment is to be organised.

Curriculum mapping
Documents all the interrelationships within the curriculum, e.g. what is to be learned, how and when.

Differentiated learning
Adapting one's teaching to suit the needs of different learners for their current level of understanding and performance, by providing appropriate learning activities, support, and assessment, so that all students in the group can learn effectively (see 'Scaffolding learning').

Directed study
Learning in which the teacher as expert authority sets out and transmits the knowledge to be learned.

Distributed leadership
Builds capacity in schools by giving teachers the responsibility for leading in areas of pedagogy, curriculum development and the social and emotional wellbeing of learners.

Dual qualifications
Cambridge and national qualifications.

Educational aims
Statements of the broad purposes or intentions of the curriculum or learning programme.

E-learning
Learning that takes place using electronic media, for example online.

ESOL
English for speakers of other languages.

Exams officer
The person appointed by the principal to act on behalf of the school with responsibility for the day-to-day administration of its Cambridge examination cycle.

Experienced curriculum
What students actually learn from their whole educational experience, including both planned and unintended outcomes, as a result of all their activities in the learning environment.

First language
The language that the learner mainly uses, from childhood and at home.

Formal assessment
Planned and structured measurement of learning.

Glossary

Formative assessment

Provides students with developmental feedback on their progress during the learning programme and informs the design of their next steps in learning.

Guided learning hours

The average amount of teacher-learner contact time a school typically needs to allocate for students to be well-prepared for a qualification.

Higher education

Courses in universities and colleges beyond upper secondary school, e.g. degrees.

Impact

The effect that one thing has on another thing. In schools, this could be the effect a new marking technique has on student progress.

Inclusion

Refers to integrating learners in the regular school system (and class) as opposed to placing a learner in a special school or class. Learners with special educational needs are provided with the technical, assistive or personal supports needed.

Interpersonal skills

Skills used to interact effectively with people on a day to day basis, e.g. communication, empathy

Intrapersonal skills

Skills used to reflect on, manage and develop your own thinking, behaviour and progress.

Long-term planning

Preparation for learners' progress and development over a year or more.

Management cycle

An iterative process in which school leaders set goals, implement actions, monitor and evaluate progress and outcomes in relation to the school's strategic plan.

Metacognition

In simple terms, metacognition is being aware of and in control of one's own mental processes.

Mission statement

A formal statement of the education purpose of the school.

Moderation

The process of checking that assessment standards have been applied correctly, consistently and fairly, and making adjustments if necessary to ensure that all assessments are aligned to the standards.

Multi-levelling

Assessments specifically targeted at different levels of ability.

Multilingual curriculum

Specifies subjects that will be taught in either English or the native language(s).

Non-staged assessment

All the assessment components are taken in one examination session.

Partnership in learning

Active and sustained cooperation between individuals and between institutions to achieve clear shared aims and objectives.

Pedagogy

The theory and practice of teaching and learning.

Pre-university qualifications

Provide the preparation and recognition for entry into higher education, e.g. Cambridge International A levels.

Glossary

Professional development (PD)

Teachers continuously and systematically reflect on and improve their professional thinking and practice, engaging in appropriate learning opportunities to improve and upgrade their knowledge and skills.

Programme of study

A planned schedule of teaching and learning activities, relating to the curriculum framework and qualification.

Progression route

Movement of the student from one stage of learning to another in a systematic and planned sequence.

Psychomotor development

Learning and developing skills incorporating physical movement and coordination.

Qualification

The formal certificated recognition of a student's achievement at the end of a particular course, based on successful performance demonstrated through assessed evidence.

Reflective practice

The process through which the teacher continuously learns from the experience of planning, practice, assessment and evaluation and can improve the quality of teaching and learning over time.

Scaffold learning

The teacher provides appropriate guidance and support to enable students to build on their current level of understanding progressively to acquire confidence and independence in using new knowledge or skill.

Scheme of assessment

The set of examination components through which a learner's achievement in relation to a particular qualification is determined.

Scheme of work

A set of planned units of learning relating to a topic, subject or stage.

School curriculum

Refers to the combination of subjects studied within a school year and in sequential years as the learner moves through the educational system provided by the school.

Second language

A language other than the national or official language of a country.

Self-regulation

The ability to monitor and control our own thoughts, emotions and behaviour.

Shared subject curriculum

Students study selected subjects in both the first language and in English which could lead to the awarding of both national and Cambridge qualifications.

Spiral approach

Areas of learning are revisited systematically within a planned curriculum so that the learner can engage in more depth and detail and acquire related knowledge and skills.

Split curriculum

Students study two curricula, some subjects are studied as part of the national curriculum and others as part of an international curriculum.

Staged assessment

Assessments are arranged throughout the period of learning.

Student-centred learning

In designing the learning activities, the teacher focuses on the needs, abilities and interests of the learner in relation to the learning outcomes.

Glossary

Subject curriculum

The content and skills contained within a syllabus applied across sequential stages of student learning. These stages normally refer to school year levels, and therefore a particular age of learner.

Teacher Support

The framework of courses, resources and guidance that Cambridge provides to help teachers develop their understanding of and practice with Cambridge programmes.

Timetable

A schedule listing the times and durations of lessons across a specific period of time, often a week. This is sometimes referred to as the teaching schedule.

Vision

The school's vision is a compelling sense of the future direction of the school that should be widely shared and inspire commitment.

Zone of proximal development

The difference between what a learner can achieve when they receive expert support and what they can achieve independently.

Appendices

School years and age ranges

In this guide we refer to school years. The table below gives you an idea of how these school years correspond to learner ages from a sample of school systems in different countries.

Age	UK school year system	Malaysia school year system	New Zealand school year system	Pakistan grade system	US grade system
0–4	Nursery/Pre-school	Pre-school playgroup	Early childhood education	Pre-school	Pre-kindergarten 3-4
4–5	Reception	Kindergarten	Early childhood education	Pre-school	Pre-kindergarten 4-5
5–6	Year 1	Kindergarten	Year 1	Grade 1	Kindergarten
6–7	Year 2	Standard 1	Year 2	Grade 2	Grade 1
7–8	Year 3	Standard 2	Year 3	Grade 3	Grade 2
8–9	Year 4	Standard 3	Year 4	Grade 4	Grade 3
9–10	Year 5	Standard 4	Year 5	Grade 5	Grade 4
10–11	Year 6	Standard 5	Year 6	Grade 6	Grade 5
11–12	Year 7	Standard 6	Year 7	Grade 7	Grade 6
12–13	Year 8	Form 1	Year 8	Grade 8	Grade 7
13–14	Year 9	Form 2	Year 9	Grade 8	Grade 8
14–15	Year 10	Form 3	Year 10	Grade 9	Grade 9
15–16	Year 11	Form 4	Year 11	Grade 10	Grade 10
16–17	Year 12	Form 5	Year 12	Grade 11	Grade 11
17–18	Year 13	Form 6	Year 13	Grade 12	Grade 12

Cambridge IGCSE subjects with alternative courses

The list below details the subjects we offer with a number of alternative courses. For example, in mathematics we offer a Cambridge IGCSE with an investigation paper and one without. This flexibility means you can select the course that best meets your learners' needs. Some of our alternative subject courses have particular restrictions (barred combinations) when it comes to the exams.

Cambridge IGCSE science courses
Cambridge IGCSE Combined Science
Cambridge IGCSE Co-ordinated Sciences (Double award)
Cambridge IGSCE Biology
Cambridge IGSCE Chemistry
Cambridge IGCSE Physics
Cambridge IGCSE Physical Science
Cambridge IGCSE Agriculture
Cambridge IGCSE Environmental Management
Cambridge IGCSE Food & Nutrition
Cambridge O Level science courses
Cambridge O level Physics
Cambridge O level Chemistry
Cambridge O level Biology
Cambridge O level Combined Science
Cambridge O level Agriculture
Cambridge O level Food & Nutrition

Cambridge O Level science courses
Cambridge O level Physics
Cambridge O level Chemistry
Cambridge O level Biology
Cambridge O level Combined Science
Cambridge O level Agriculture
Cambridge O level Food & Nutrition
Cambridge IGCSE mathematics courses
Cambridge IGCSE Mathematics
Cambridge IGCSE Mathematics - Additional
Cambridge IGCSE International Mathematics
Cambridge O Level mathematics courses
Cambridge O Level Mathematics
Cambridge O Level Mathematics - Additional
Cambridge IGCSE computing courses
Cambridge IGCSE Computer Science
Cambridge IGCSE Information and Communication Technology
Cambridge O Level computing courses
Cambridge O Level Computer Science

For a full list of the subjects, including different language options, we offer across our programmes and qualifications please see the latest Cambridge prospectus available at www.cambridgeinternational.org

Student Self-Efficacy Questionnaire

Read the statements below and circle the response that best describes you. Be honest.
There are no right or wrong answers. Please keep for reference at a later date.

Student name: _____ Class: _____ Date: _____

	0 = Not like me at all 1 = A little like me		2 = Like me 3 = A lot like me	
1. I can learn what is taught in the class.	0	1	2	3
2. I can succeed at anything if I try hard enough.	0	1	2	3
3. If I practised every day, I could develop any skill.	0	1	2	3
4. Once I have decided to accomplish something that is important to me, I keep trying, even if it is harder than I originally thought.	0	1	2	3
5. I am confident that I will achieve the goals that I set for myself.	0	1	2	3
6. When I am struggling and taking longer to complete something that I find difficult, I focus on my learning and change approach, instead of feeling discouraged	0	1	2	3
7. I will succeed in whatever career path I choose.	0	1	2	3
8. I will succeed in whichever college/university course I choose.	0	1	2	3
9. I believe hard work always pays off in the end.	0	1	2	3
10. My ability/capacity grows with effort and hard work I am prepared to put in.	0	1	2	3
11. I believe that the brain can be developed, just like a muscle.	0	1	2	3
12. I think that, no matter who you are, you can significantly improve your level of capability.	0	1	2	3
	Total =			

Glossary

i. Ability: talent, skill, or proficiency in a particular area.
ii. Goal: the object of a person's ambition or effort; an aim or desired result.
iii. Skill: the ability to do something well; expertise.
iv. Capability: the power or ability to do something.

Teacher Self-Efficacy Questionnaire

Read the statements below and circle the response that best describes you. The statements have been phrased to encourage you to think about your current approach or attitude towards them. Be honest, therefore, and, remember, there are no right or wrong answers. Please retain for reference at a later date.

Teacher name: _____ Date: _____

	0 = Nothing 1 = Some influence		
1. How much, in your current practice, do you feel you can support the students in your class that are having the most difficulty?	0	1	2
2. How much, in your current practice, do you feel you can help your students think critically?	0	1	2
3. How much, in your current practice, do you feel you can motivate students who show little or no interest in school work?	0	1	2
4. How much, in your current practice, do you feel you can help students believe they can do well in school work?	0	1	2
5. How well, in your current practice, do you feel you respond to difficult questions from your students?	0	1	2
6. How much, in your current practice, do you feel you can help your students value learning?	0	1	2
7. How much, in your current practice, do you feel you can gauge/measure student understanding of what you have taught?	0	1	2
8. To what extent, in your current practice, do you feel you can craft effective questions for your students?	0	1	2
9. How much, in your current practice, do you feel you can do to foster student creativity?	0	1	2
10. How much, in your current practice, do you feel you can do to improve the understanding of a student who is struggling?	0	1	2
11. How much, in your current practice, do you feel you can do to adjust your lessons to the appropriate level for individual students?	0	1	2
12. To what extent, in your current practice, do you feel you can use a variety of assessment strategies?	0	1	2
13. To what extent, in your current practice, do you feel you can provide an alternative explanation when students are confused?	0	1	2
14. How much, in your current practice, do you feel you can assist families in helping their children do well in school?	0	1	2
15. How well, in your current practice, do you feel you can implement a variety of active learning strategies?	0	1	2
16. How well, in your current practice, do you feel you can provide appropriate challenges for high-achieving students?	0	1	2
	Total =		