



**Cambridge Assessment
International Education**



An international education from Cambridge

What lies at the heart
of our approach

Welcome to our guide: An international education from Cambridge.



Recently our organisation has changed its name from Cambridge International Examinations to Cambridge Assessment International Education.

This change recognises the widening of our work over many years. The provision of world-renowned examinations remains at the core of what we do, but our work in education has expanded substantially to embrace the school curriculum as a whole, including support for teachers and assessment for learning.

This short guide provides an introduction to what we stand for in education, and describes the five elements that lie at the heart of a Cambridge education: international curriculum, teaching and learning, assessment, international recognition and global community.

We've been providing over 10 000 Cambridge schools in over 160 countries with ever more support – from our Cambridge Global Perspectives® curricula to a rich teacher professional development programme and access to richer data from our assessments.

An international education from Cambridge represents an international standard and a truly global approach to the curriculum. It also equips students whose first language is not English to function competently and confidently in the English language – the principal language of international exchange and business. That's why Cambridge programmes are recognised all over the world as preparing students for their higher education, careers and future lives.

We've been delighted by the interest of our international community of schools in engaging deeply with Cambridge and with one another. We have striven to respond to that demand through more conferences, online communities and social media channels. We are also helping Cambridge schools to create their own local communities, run by schools for schools.

We are excited about this new chapter in our history, and I look forward to continuing to work with you to help Cambridge students achieve success at school, university and work.

Michael O'Sullivan, Chief Executive
Cambridge Assessment International Education

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Introduction

The aim of this document is to communicate clearly to school leaders, teachers, students and parents what lies at the heart of a Cambridge education.

We prepare school students for life, helping them develop an informed curiosity and a lasting passion for learning.

Schools can shape a Cambridge curriculum around how they want students to **learn**, with a wide choice of subjects and flexible ways to offer them. Cambridge programmes inspire students to love learning, helping them **discover** new abilities and a wider world. And we help students develop the skills they need for life, and **achieve** at school, university and work.

Our work is informed by research and underpinned by over 150 years of practical experience working with schools and governments worldwide. We are the only exam board that is wholly owned by a world-leading university, the University of Cambridge.

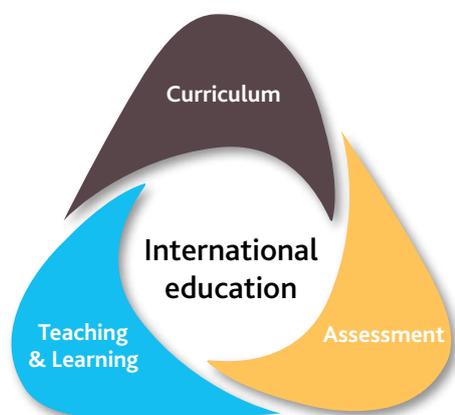
Our global community of nearly a million students in over 10 000 Cambridge schools in 160 countries benefits from qualifications internationally recognised by universities and employers worldwide.

We are a not-for-profit organisation, so we devote our resources to unlocking learners' potential, and contributing to society through the pursuit of education, learning and research at the highest level.

An aligned system of education

We believe education works best when **curriculum, teaching, learning** and **assessment** are closely aligned. That belief inspires the design of each aspect of Cambridge programmes.

Alignment stems from knowing what we want students to learn, understanding how we will know that learning has happened, and encouraging teaching and learning approaches that support it.



1

International curriculum

We believe in giving Cambridge schools the power to shape their curriculum around how they want students to learn.

What are schools bringing into their curriculum with Cambridge? We set out three important things we want students to develop – deep subject knowledge, conceptual understanding and higher order thinking skills. Our Cambridge Pathway is a clear framework for progression from one stage to the next.

Deep subject knowledge, conceptual understanding and higher order thinking skills

Cambridge programmes combine an emphasis on mastering subjects in depth, at the same time as developing skills for study and work in the future.

We believe in the intrinsic value of studying a subject in depth. In the words of Andreas Schleicher (2017), Director for Education and Skills, OECD: 'In top performing education systems the curriculum is not mile-wide and inch-deep, but tends to be rigorous – that is, provides a high level of cognitive demand. It's also more focused – with a few things that are taught well and in great depth and in a way that is coherent.'

Deep subject knowledge is important in order to develop the ability to solve problems, to apply understanding to new situations and to enable learners to progress to the next stage. It's especially important at Cambridge International A Level because most learners aspire to go to university, where deep subject understanding is so vital.

Regular consultation with leading higher education institutions (including Harvard, Stanford and Cambridge) has informed our work to make sure our syllabuses for 16 to 19 year olds encourage learners to develop their **conceptual understanding**: a firm grasp of the subject's key concepts (see Meyer and Land 2003) and developing the skills they need to succeed at university.

We see key concepts as essential ideas that help learners develop a deep understanding of their subject and make links between different aspects. Key concepts can often transform a student's grasp of their subject, and open up new ways of thinking about, understanding or interpreting the important things to be learned. Good teaching and learning incorporate and reinforce a subject's key concepts to help learners gain:

- greater depth and breadth of subject knowledge
- confidence, especially in applying knowledge and skills in new situations
- fluency to talk about their subject conceptually and show how different aspects link together
- a level of mastery of their subject to help them enter higher education.

As well as encouraging students to develop **higher order thinking skills** within subject disciplines – problem solving, critical thinking, independent research, collaboration, presenting arguments – we believe students need to work effectively across disciplines.

Of course this ability is important not only for getting into university but for getting on in life. What's more, it makes learning and teaching enjoyable and rewarding. And the transferable skills students develop in interdisciplinary programmes like Cambridge Global Perspectives® reinforce their understanding and skills within subject disciplines.

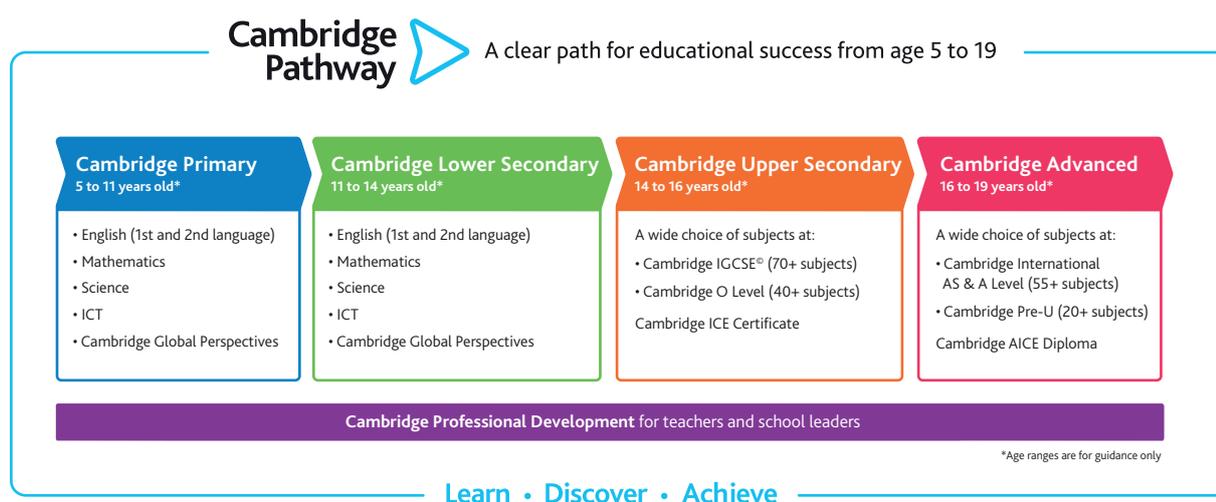
Progression

We offer a coherent curriculum with clear progression at each stage, for students aged 5 to 19. We identify clearly what we want students to learn at each stage.

At each stage, students build on their previous learning – a 'spiral approach' that reinforces what students have learned, while at the same time taking them forward. We design each syllabus with this spiral approach in mind.

In a recent survey, 98 per cent of university admissions tutors told us that Cambridge programmes are an excellent preparation for university and help students succeed when they get to university. They also told us Cambridge students:

- think logically and are able to form ordered and coherent arguments
- are able to think critically
- are able to present reasoned explanations, understand implications and communicate them logically.



Choice and flexibility

We believe that empowering students by allowing them to personalise their learning programme helps build motivation throughout their studies and nurtures their love of learning.

We see our role as supporting schools to develop a curriculum that suits their context, culture and ethos, and that they can tailor to their students' needs. This is why we offer such a wide range of subjects: over 70 at the Cambridge Upper Secondary

stage (Cambridge IGCSE and Cambridge O Level) and over 55 at Cambridge Advanced (Cambridge International AS & A Level).

The structure and breadth of our programmes, therefore, ensures that schools can offer students the choices and combinations of subjects that match their strengths and interests, rather than imposing a narrow or broad range of subjects.

Multilingual education

We value multilingualism and believe that there are many benefits to being bilingual or multilingual – for students, society and schools. We see every learner as a language learner. Language plays an important role in the school curriculum, either as a subject or as a medium of teaching and learning. Similarly, every teacher is a language teacher, and helps students learn the language they need to succeed in their non-language subjects.

At Cambridge, we support schools and partners to implement bilingual education. Cambridge programmes are often used for the English medium strand of a bilingual programme, and we offer

curriculum and assessment for English as a second language for students aged 5 to 16.

Our wide subject range includes a large number of languages – currently, Cambridge IGCSEs are available in more than 30 languages.

Professional development in multilingual education supports our curriculum and assessment offer, with programmes for teaching bilingual learners and courses on language awareness, training around specific language syllabuses and guides for teachers and principals. Our website brings this together in a dedicated bilingual education section.

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Teaching and learning

We design Cambridge programmes to support the development of learners who are confident, responsible, reflective, innovative and engaged – the attributes of the Cambridge learner.

What are our aspirations for students when they leave school? This question was the starting point for the development of the Cambridge learner attributes, introduced in 2011. The purpose of these attributes is to support the development of five powerful and highly desirable habits that will inspire students to love learning. This in turn helps them to achieve success in school, higher education, the workplace and life in general.

Learning habits describe how students approach situations, environments and challenges. They include a combination of values, attitudes, knowledge, skills and strategies. They also assume competence, which is the skilled and appropriate application of the attribute.

We know that, in isolation, these attributes are not new. Most education professionals see developing them as part of their job. But in setting out the Cambridge learner attributes, we have created a list of desirable outcomes intended to encourage schools to support these habits. They also help us to design challenging and relevant qualifications and professional development programmes.

Learning to learn

Put simply, learning happens when students think hard (see Husbands 2014), mobilising a number of

different mental processes and resources that are both cognitive (such as reasoning and memory) and affective (emotional resources that include habits in learning).

Learning habits matter. 'Non-cognitive skills' (see Heckman et al 2014) include personal qualities such as perseverance, self-control, attentiveness, resilience to adversity, openness to experience, empathy and tolerance of diverse opinions.

They:

- predict life outcomes at least as well as or better than traditional measures of cognition
- have positive and strong effects on educational attainment and also additional significant beneficial effects on important workplace and life outcomes
- can be enhanced, and there are proven and effective ways to do so.

Research shows that engaging students in their own learning – for example, via **metacognition** and **active learning** – improves outcomes. As the Cambridge learner attributes suggest, we encourage students to reflect on their learning, so they can articulate where they are in the learning process, and plan and control their learning strategies. The Cambridge learner attributes also provide a cross-curricular language and set of expectations for all students and teachers to engage with.

Metacognition describes the processes involved when learners plan, monitor, evaluate and make changes to their own learning behaviours. The 'meta' refers to higher order cognition about cognition, or 'thinking about thinking'. Metacognition helps students become independent learners. It has a positive impact on learning, over and above the influence of intellectual ability.

Cambridge helps schools develop students' metacognition. Syllabus design is informed by research evidence about metacognition. Cambridge Global Perspectives programmes support learners in the process towards metacognition. Cambridge Professional Development Qualifications encourage and support metacognitive practices in teachers and school leaders.

For Cambridge, **active learning** fosters understanding, rather than rote learning facts. Students can apply this understanding to diverse contexts and problems. Active learning fosters students' learning and their autonomy, giving them great involvement and control over their learning and giving them skills for lifelong learning.

Also, learners are better able to revise for examinations, because they already understand the ideas. Cambridge programmes not only develop and assess retention of knowledge, but ask learners to draw on their understanding so they can analyse, evaluate and synthesise ideas. Active learning is also a key part of the professional development we offer, both via our Professional Development Qualifications and shorter courses.

Cambridge learner attributes

Confident in working with information and ideas – their own and those of others

Cambridge students 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.

Responsible for themselves, responsive to and respectful of others

Cambridge students 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.

Reflective as learners, developing their ability to learn

Cambridge students 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 lifelong learners.

Innovative and equipped for new and future challenges

Cambridge students 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.

Engaged intellectually and socially, ready to make a difference

Cambridge students are alive with curiosity, embody a spirit of enquiry and want to dig more deeply. They are keen to learn new skills and are receptive to new ideas. They work well independently but also with others. They are equipped to participate constructively in society and the economy – locally, nationally and globally.

Helping teachers improve

Cambridge supports teachers to become:

- **confident** in teaching their subject and engaging each student in learning
- **responsible** for themselves, responsive to and respectful of others
- **reflective** as learners themselves, developing their practice
- **innovative** and equipped for new and future challenges
- **engaged** intellectually, professionally and socially, ready to make a difference.

The overwhelming body of research finds that the most important factor in improving student outcomes is good teaching. Teaching, and matching the teaching approach to the needs of students, is clearly the responsibility of each school. Different schools work in different contexts, and they know what is best for their students and teachers. An important part of our mission, therefore, is to help schools develop their teachers' classroom practice.

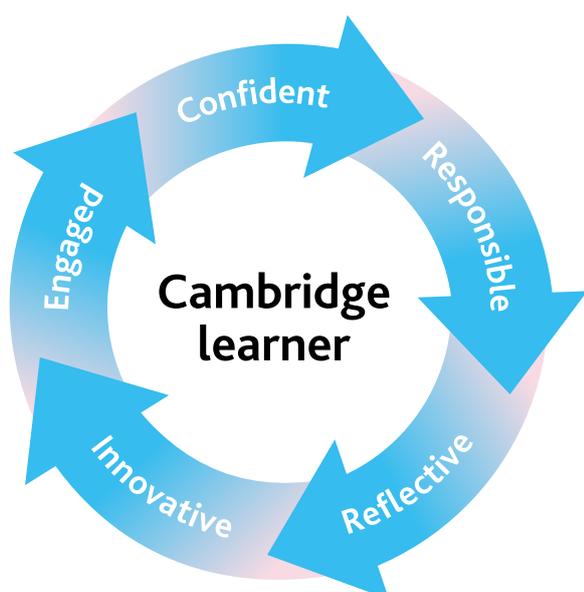
We believe effective teaching and learning can encompass a variety of approaches. Our professional development is designed to reflect that, so that it can

help teachers in a variety of educational contexts improve their performance and practice – and therefore improve student outcomes – throughout their careers.

Teachers and school leaders need to develop their professional thinking and practice continuously. That is why we invest heavily in providing a variety of high-quality, affordable routes for professional development.

We hold over 1000 training events worldwide every year, both face to face and online. Some of these training events focus on exams taken by our students. Other events focus on enriching teachers' own professional practice, and our popular Cambridge Schools Conferences give teachers a chance to learn from expert educators, test out their ideas with others and build their own professional network.

Through our network of Cambridge Professional Development Centres, we provide schools, leaders and teachers with local access to high quality and affordable Cambridge Professional Development Qualification programmes (Cambridge PDQs). Our suite of Cambridge PDQs creates a professional learning and improvement pathway for teachers and school leaders at different stages in their career. They are based on international best practice and research evidence about the kinds of professional development that have real impact and value.



3



Assessment

We recognise that assessment has two important roles: to prove and improve – to prove what students are learning, and to suggest how they can improve their understanding and skills.

Good assessment is at the heart of a good education. When we design our assessment, our starting point is what we want students to develop: deep subject knowledge, conceptual understanding, and higher level thinking skills.

For assessment to work well, the questions used to test students' understanding need to have been designed well, too. This is as true for formative assessment and 'assessment **for** learning' (the questions that teachers ask every day in the classroom) as it is for summative assessment and 'assessment **of** learning' (end-of-year tests and public exams).

Fair, valid and reliable

Our assessments enable effective differentiation of student performance, across cohorts and over time. We design our assessments to be fair, valid, reliable and practicable:

- **Fair:** all students sit exams in the same conditions, as far as possible.
- **Valid:** an assessment assesses what it is intended to assess, and avoids irrelevant matters.
- **Reliable:** if you had taken the exam on a different day, and it was marked by a different examiner, you would get the same outcome.
- **Practicable:** an exam that schools can reasonably stage without excessive arrangements; and students can reasonably sit – for example, the exam is not too long.

We follow our own Code of Practice (2017), which sets out our commitments to quality in major public examinations.

Assessment of learning

Assessment of learning at the end of a programme of study can provide valuable evidence of a student's achievement. It also provides focus, pace, motivation and challenge to learners during a one- or two-year course.

Such assessment also plays a significant role both in selection for next steps in education, university and employment (and therefore in students' lives) and in accountability (and therefore in the lives of teaching professionals). We take very seriously, therefore, our responsibility in making sure all our assessments are fair, valid, reliable and practicable.

We recognise that the way we design summative assessment of learning can strongly influence what happens in the classroom. That is why we use a flexible assessment structure, allowing a 'linear' approach (all exams at the end of the course for Cambridge IGCSE and Cambridge International A Level) or a 'staged' approach (with some Cambridge International AS Level exams halfway through a two-year course).

We believe using a linear and staged approach, rather than a modular one, brings the biggest educational benefits. It maximises time for teaching and learning, so teachers have more time to engage students'

interests and support their development through assessment for learning rather than through multiple modular assessments of learning.

It also helps students develop a strong grasp of each subject as a whole, which universities value highly. We draw on research by Andrea Greve (2016) at the Cognition and Brain Sciences Unit at the University of Cambridge, which supports the view that returning to topics over a period of time supports learning better. Students have more time to revisit and understand topics and concepts, so they can go beyond cramming for a test, and really retain what they have learned. Retaining learning is essential not just for generating new ideas and solutions, but also for making connections across subject disciplines.

We believe that putting students' learning first leads to improved performance in final exams. And by taking exams when their understanding is deepest, at the end of the course, students do not face assessment before they are ready.

Assessment for learning

For Cambridge, 'assessment for learning' (AfL) is an approach integrated into teaching and learning that creates feedback for students to improve learning. We see AfL as a vital part of effective teaching practice.

By following well-designed approaches to AfL, teachers can understand better how their students are learning and use it to plan what they will do next with a class or individual students. AfL also helps the learner to see what they are aiming for and understand what they need to do to achieve those aims. AfL therefore focuses on the teacher and the learner understanding.

What are the **benefits of AfL**? AfL connects assessment and teaching objectives – clarifying assessment objectives provides a clear focus for teaching and learning strategies. AfL, effectively implemented, can support students to become confident, reflective, innovative and engaged (at least four of the Cambridge learner attributes). Research by John Hattie (2009) shows that feedback improves learner achievement (ranked 10th out of 150 factors),

particularly if it involves feedback from learner to teacher about their own learning.

Cambridge supports AfL in different ways.

Our clear curriculum frameworks and syllabuses, with clear learning and assessment objectives, help teachers, at varying levels of experience, point learners to what they need to focus on. Assessment for our Cambridge Primary and Lower Secondary programmes helps learners and teachers assess progress and provide feedback on strengths and weaknesses in the core subjects of English, maths and science. We support teachers' own learning about AfL via our online course, subject-based training and all Cambridge Professional Development Qualifications.

Supporting speakers of English as a second or foreign language

Our assessments are in the medium of English. We design those assessments very carefully to make sure they are accessible to speakers of English as a second or foreign language – both in terms of language and cultural references. Our questions use clear language.

For example, questions in Cambridge International AS & A Level Mathematics use fewer command words than any other international A Level.

Command words explain what students need to do, such as 'calculate', 'define', 'evaluate'. We make sure that each command word relates directly to the relevant assessment objectives and is used consistently within and across syllabuses. More and more of our syllabuses give definitions for each command word we use, so students and teachers can understand the scope, nature and depth of treatment examiners are looking for in a response.

Command	General definition
Calculate	work out from given facts, figures or information
Define	give precise meaning
Evaluate	judge or calculate the quality, importance, amount, or value of something

4



International recognition

It is vital that Cambridge students can be confident that their qualifications will be understood and valued throughout their education and career, in their home country and internationally.

We understand that, as an organisation, we have an important role to play in helping universities worldwide understand our curriculum and assessments, and what the grades that educators and students work so hard to achieve really mean.

We communicate regularly with universities and government authorities, sharing our expertise in curriculum and assessment but also trying to understand their educational challenges and goals so we can work together to ensure a smooth progression for our students.

The understanding universities have of the demand of our curricula and the rigour of our assessments greatly supports the recognition of our programmes and qualifications around the world. In the UK, all universities accept Cambridge International AS & A Levels in exactly the same way as the UK AS and A Levels. Around the world over 1400 universities recognise our qualifications, including over 550 universities in the US (including all the Ivy League) plus key universities in other major higher education destinations such as Canada, Australia, Singapore, South Africa, Germany and the Netherlands.

We are continually building relationships with universities and other higher education institutions so that we build recognition of our programmes and create yet more opportunities for students.

For example, because the US is one of the main destinations for internationally mobile students, we founded a US Higher Education Advisory Council (HEAC) to advise us on expanding recognition of Cambridge programmes in US universities, and to feed into development of our Cambridge Advanced programmes and make sure they continue to meet the needs of higher education.

The current membership includes representatives from Columbia University, Duke University, Florida State University, University of Maryland, University of Michigan, MIT, Pennsylvania State University, University of Southern California, University of Texas at Austin, University of Virginia, University of Washington and Yale University.

5



Global community

We believe one of the benefits of being a Cambridge school is belonging to a worldwide education community. Nearly a million learners from 10 000 schools in 160 countries are currently preparing for their future with our programmes and qualifications.

We listen to and involve our global community of schools to ensure our programmes are rigorous, relevant and world class. We use feedback from our school community to help us improve what we do.

We support professional learning communities which connect teachers around the world so they can share views, information and resources, and learn from one another. Some of these communities are online. For example, subject communities use our popular discussion forums on our support site for teachers. Our Cambridge Global Perspectives community uses a secure online learning area to share approaches with teachers in other countries, and it is a safe space for students to share perspectives with students in another school, in another country, as part of the programme.

We organise a range of community events for Cambridge school leaders and teachers, including local, regional and global conferences every year, and training events where teachers and school leaders can learn from experts and each other.

We support Cambridge schools to set up their own local community of schools, run by schools for schools. They work together to exchange ideas, and to share knowledge and best practice in areas such as school leadership, curriculum planning, professional development and teaching. Working together the community may:

- improve the quality of member schools through exchanging ideas and sharing knowledge and best practice
- support schools new to Cambridge or experiencing change – for example, when they introduce a new Cambridge programme
- form a collective voice to feed back issues to Cambridge, including the views of parents and students; or to influence local governing bodies and higher education about the value of international education and Cambridge programmes
- organise shared training opportunities or events for students – for example, sports days or debating societies.



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