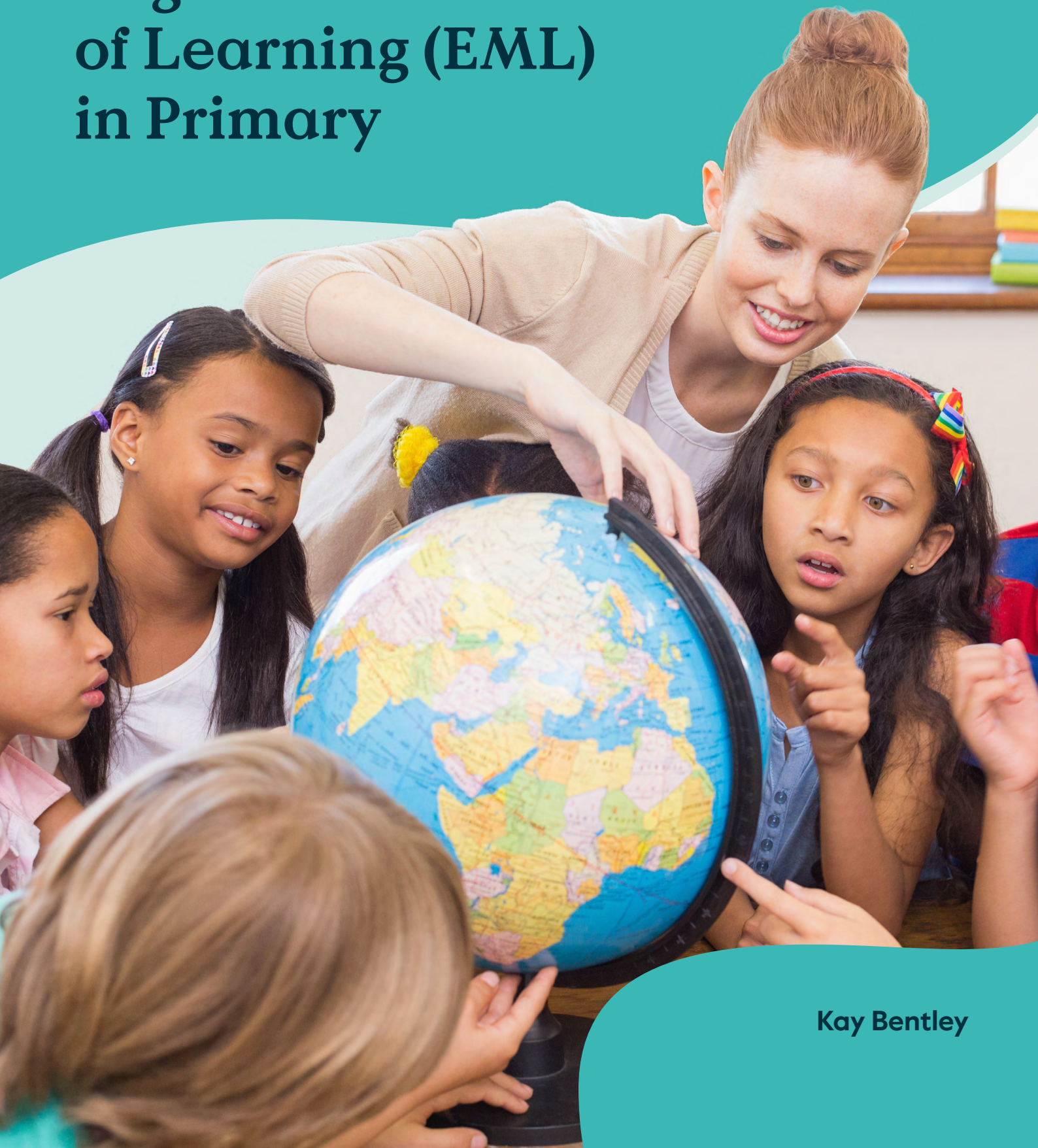
CAMBRIDGE

Cambridge Papers in English Language Education

English as a Medium of Learning (EML) in Primary



Kay Bentley



Contents

	Page
Introduction: What is English as a Medium Learning?	4
Key approaches to EML	6
Why implement EML in primary schools?	13
What challenges do primary teachers face in EML programmes?	17
Delivering effective EML in the primary school classroom	21
Summary and conclusion	29
Further reading	30
Bibliography	32
Author bibliography	34

Introduction: What is English as a Medium Learning?

Teaching and learning primary school subjects through the medium of English has accelerated as an innovation in language education for several decades. Approaches such as English as a Medium of Instruction (EMI), Content-Based Instruction (CBI), and Content and Language Integrated Learning (CLIL), have each contributed to the expansion of interest in teaching subject content in English. These approaches can collectively be described as English as a Medium of Learning or English-Medium Learning (EML). They have been implemented in primary schools around the world, whether in bilingual schools or schools with English Language Teaching (ELT) programmes which include some subject-specific learning.

Drivers of these initiatives include governments, both national and regional; school leaders; teachers and parents. Although any primary school subject can be chosen for subject teaching, curricular subjects commonly taught and learned range from science and geography, maths and computer science to art and physical education.

In primary schools offering bilingual education, there is considerable variation in the amount of time devoted to subject teaching. For example: Primary teachers in Madrid can teach up to 50% in English; Austrian primary teachers have autonomy to decide the amount of time for CLIL but at least one hour a week, and in the UK, a bilingual primary school aims to realise their vision of half the curriculum being taught in Spanish. In Egypt 40% in national bilingual schools. One lesson of maths and science each week in primary bilingual schools in Brazil and Jordan, three or four lessons in national bilingual schools in Indonesia and Turkey, 40% in Egyptian national bilingual schools, and up to 50% in Spain and Mexico. The amount of time for subject teaching may also start as a lower percentage of teaching hours in pre-school contexts and build up to higher amounts by the end of primary.

The rise in the number of bilingual schools that are teaching whole subjects through EML is therefore noticeable. Despite bilingual education having been established in countries such as Argentina more than a century ago, the emergence of primary bilingual schools with classroom teachers – as well as primary language specialists delivering subjects in English – becoming more widespread.

The rise in the number of bilingual schools that are teaching whole subjects through EML is noticeable.

Also accelerating the pace of all programmes adopting EML has been the rising number of primary ELT course books promoting subject topics. CLIL, in particular, came to the attention of primary teachers after the publication of course books, such as Cambridge's:

- *The English Ladder* (2012) with 'a CLIL feature in every unit, focusing on core subjects such as science and maths'.
- *Kid's Box* (revised, 2015) with 'CLIL sections in every unit [to] introduce pupils to learning other subjects in English'.

Teachers' interest in CLIL continued and Cambridge published revised course books with a stronger focus on CLIL. For example:

- *Super Minds, second edition* (2022) offering 'authentic CLIL content'.
- *Kid's Box New Generation Ladder* (2023) 'CLIL sections (that) bring other subjects into the English classroom, meaning the language is taught in a variety of contexts'.
- *Guess What! Updated* (2024) 'interest-grabbing CLIL-based topics'.

Although this was termed 'soft CLIL', with perhaps only one 45- or 60-minute subject lesson each week, the sections or pages within units in a language course enabled primary teachers to gain confidence in teaching and developing learners' knowledge of subject concepts in English. In ELT contexts, teachers began to explore subject concepts with young learners more deeply, often through the use of multimedia. In 2018 Cambridge had also published Science Skills 1 – 6, a set of primary subject-specific books with online activities as 'supplementary science material to be used alongside ELT textbooks'.



A key issue in all EML contexts is the language level of the primary teachers. What is an acceptable language level for teaching curricular subjects in one country may not be acceptable in another. Some schools accept primary teachers with a Common European Framework of Reference for Languages (CEFR) high B1 level, others expect at least CEFR B2 level, and in many bilingual schools a C1 level is required. It is reassuring that the majority of primary teachers say their English language improves when working with subject materials no matter which CEFR level they start with.

Learners, on the other hand, may be complete beginners, such as those in pre-school contexts or those enrolling at a later primary grade, while older learners at the top grades of primary may be reaching a B1 level or above, depending on the intensity of the subject programme.

Evident in all primary contexts with EML is that in order to implement an effective programme a significant amount of planning is needed to address questions such as:

- Who will teach the subject lessons?
- How many subject lessons will we teach?
- Which subjects and subject concepts will we teach?
- Where can we find ideas and materials for teaching the subjects in English?

In addition, an analysis of teacher and learner needs should be undertaken so that appropriate training can be put in place before programmes start, including considering the following questions:

- Which methodology is appropriate?
- How can we support learners?
- How can we evaluate the learning of subject content and language?

As a result of widespread interest, and an abundance of questions about implementing subject-specific learning in primary English language programmes, this White Paper addresses the following issues: why implement such programmes, what can be achieved in doing so, what are the challenges teachers face, and how can schools deliver these programmes effectively? Points made will draw on reference to research from around the globe.

Key approaches to EML

Key approaches to EML

- Bilingual education
- Content-based instruction (CBI)
- English as a medium of instruction (EMI)
- Content and language integrated learning (CLIL)

Bilingual education

Bilingual education can take many forms depending on individual and local contexts. It has been called 'a simple label for a complex phenomenon' (Baker in García, 2009: 5). This is because bilingual schools may have different purposes, for example:

- to educate young learners in English when living in a non-English speaking country and who may already speak two languages, for example, in international schools.
- to offer more than two languages, such as in the Basque Country where English, Basque and Spanish are taught to learners with either Basque or Spanish as their first language (L1).
- to offer several curricular subjects taught in English, for example in Chile and the Netherlands.

Each of these language models encompasses the teaching of a varying number of subjects, as well as varying amounts of subject content, through English. In addition, young learners in some bilingual schools study the same subject through two languages. 'Content subjects and language are inextricably linked. Learners cannot develop academic knowledge and skills without access to the language in which that knowledge is embedded, discussed, constructed or evaluated. Nor can they acquire academic language skills in a context devoid of academic content' (Cambridge Assessment International Education, 2017).

Developing subject literacies is an integral part of EML. Subject literacy is integrated with English literacy to help learners understand, produce and communicate facts, concepts and procedures presented in subject topics. In addition to integrated subject and English literacies, learners develop visual and digital literacies in EML programmes as well.

Visual literacy involves understanding and interpreting multi-modal subject content presented in images, animations, video, diagrams, patterns etc.

Digital literacy develops learners' knowledge of how to use online tools, search engines, and an understanding of how to create digital content. Both visual and digital literacies are 'fundamental to the acquisition of subject-specific literacies.' (Coyle, D. and Meyer O. (2021: 74).

In classroom contexts where teachers encourage learners to develop biliteracy plurilingualsm, and the development of pluriliteracy, skills of oracy emerge. In other words, a range of listening and speaking skills for social, discursive and reflective talk. It is important to remember that learners in EML programmes must also know how to use the specific language of different curricular subjects. Learners can then develop subject oracy.

Key Terms

Translanguaging	When learners use English and their first language (L1), or for some learners their third (L3) or sometimes fourth language (L4). Translanguaging can happen spontaneously during collaborative tasks. For example, learners: • predict the result of a science experiment in English • alternate between using English and the L1 while doing the science experiment • talk about the result of the experiment in pairs, using as much English as they can (using L1 when necessary) • report results to the teacher in English. Learners 'translanguage constantly to co-construct meaning, to include others and to mediate understandings' (García, 2009). Translanguaging can also be planned. For example, learners watch a video clip of an underwater ecosystem in English, then talk about it in English but also use some L1 to express deeper knowledge of the topic. This avoids frustration. 'The focus of translanguaging is on meaning-making and gaining a deeper understanding of subject matter content through two languages' (Mehisto & Ting, 2017). 'Translanguaging has shown to be an effective pedagogical practice... this may be especially in the case of EMI contexts.' (Wei, in Read Talbot, Gruber, & Nishida, 2021).
Biliteracy	This is developed in bilingual classrooms when learners' knowledge of reading or writing in one language supports their emerging reading and writing skills in another language. Learners show they are 'using their various social, linguistic and multimodal abilities to engage in biliteracy activities' (Bauer, 2017).
Plurilingualism	'The ability to call flexibly upon an inter-related, uneven plurilinguistic repertoire' (CEFR, 2018). This involves developing a language programme that values all languages represented by learners in the classroom. Plurilingual education is acknowledged as important but also a challenge for schools because teachers need to develop learners' 'linguistic and intercultural competences so that they can operate effectively as citizens, acquire knowledge and develop open attitudes to otherness' (Council of Europe).

Content-based instruction (CBI)

CBI, like bilingual education, promotes subject teaching through a second or third language and also has a longer history than programmes such as EMI and CLIL, presented below. CBI as a term was first used in the 1960s when associated with French-medium immersion programmes in Canada. Today, CBI continues to be a more commonly used term in the USA and Canada than in Europe. CBI has been described as a 'bilingual model' and 'partial immersion' (Cenoz, 2015). It is considered an approach that 'combines language and content-learning aims ... with difference in the emphasis placed on language and content' (ibid.).

In research into CBI and CLIL as dual-language programmes, Cenoz examined properties such as language and educational aims, type of teacher (subject or language) and the starting age of learners (primary or secondary). Findings stated there were commonalities and no essential differences between CBI and CLIL. There were, however, differences related to 'specific educational contexts where the programmes take place'. For example, in the Netherlands there are plentiful opportunities for learners to use English outside of the classroom, and in the Basque Country three different models of CBI were identified.

English as a medium of instruction (EMI)

EMI has been defined as 'the use of the English language to teach academic subjects in countries or jurisdictions where the first language (L1) of the majority of the population is not English' (Dearden, 2014). In contrast to CBI (an approach predominantly used in Canada and North America) and CLIL (which is widely associated with Europe), EMI is used globally. This is due to the desire for international recognition among schools and colleges in many countries, as well as the status of English as a lingua franca for business, science and technology. EMI has recently seen an unparalleled quantitative expansion in higher education institutions. (Smit, 2023).

'Whereas CLIL has a clear objective of furthering both content and language ... EMI does not (necessarily) have that objective'

EMI is a term more frequently used in higher education and secondary school contexts, where the focus is on delivering the syllabus content, with learning English as a by-product of that focus. Most teachers in EMI programmes think of themselves as subject teachers rather than language teachers. 'Whereas CLIL has a clear objective of furthering both content and language as declared in its title, EMI does not (necessarily) have that objective' (ibid.).

However, some primary schools do use the term EMI to describe teaching curricular subjects in English. In research carried out by Dearden, it was found that there is more implementation of EMI in private primary schools, such as in Brazil and Saudi Arabia, than in public primary schools – while countries such as Turkey have some teaching of EMI in both private and public primary sectors. While CLIL can be taught through other languages such as Spanish and German, EMI is exclusively taught through English.

There is a continuum from approaches where learning English is the primary goal (ELT), through approaches that integrate language and content learning (CBI/CLIL), to approaches where subject learning is the primary goal and English is the medium of instruction (EMI).



Content and language integrated learning (CLIL)

CLIL emerged in Europe in the 1990s as an approach to teaching and learning subjects in English in primary and secondary schools, where the interrelationship between content and language was explicit as well as integrated. 'Content' is first in the acronym, as with CBI, but unlike most immersive teaching in bilingual contexts, CLIL's goal is not full immersion. Instead, CLIL is an approach using conceptually appropriate, subject-specific material, which can match that in the L1. In primary contexts, for example, learning about how body parts work together and how the nervous system works. These science concepts, and the language required to understand and communicate ideas about them, have been built upon as learners proceed through the years of primary school. This is not the same as using stand-alone topic materials from different subjects, which are chosen to fit a language syllabus in one ELT course book and are not developed in subsequent ELT courses.

After CLIL's inception, Coyle developed a practical framework of principles for CLIL: the interrelationship between content, communication, cognition and culture. They 'do not exist as separate elements' (Coyle, Hood & Marsh, 2010). The purpose of the framework was to assist with planning, delivering and evaluating learning of both content and language. Although interrelated, these quotes were used:

- Content: 'It is content which initially guides all the planning along the learning route' (ibid.).
- Communication: 'learning to use language and using language to learn' (ibid.). It also involves using basic interpersonal communicative skills (BICS) for classroom interaction.
- Cognition: focuses on development of a range of thinking processes, which need to be 'analysed for their linguistic demands' (ibid.). Higher-order processes develop learners' cognitive academic language proficiency (CALP). Both BICS and CALP are important in EML classrooms.
- Culture: (sometimes called Citizenship, for example, in Malaysia) incorporates intercultural understanding and appreciation of similarities and differences between the learner's own culture and the cultures of others. 'Culture is not a postscript. It is a thread that weaves its way throughout any topic or theme' (ibid.).

As CLIL evolved and expanded beyond Europe, the Graz group of CLIL practitioners and researchers drew attention to the importance of developing pluriliteracy and learners' subject literacy. The group explained that the approach, 'puts subject literacy development in more than one language at the core of learning so that learners can become 'literate in several subjects and languages.' (Coyle, D. and Meyer, O. (2021). CLIL teachers were encouraged to support learners to attain 'the content literacy required for democratic 21st-century citizenship' (Ting, 2014). Developing subject literacy skills had become a key element in language learning, '... literacy instruction must be embedded across the curriculum ... and developed by the growing complexity of content' (Cambridge Assessment, 2013. What is literacy?).

'As CLIL has evolved ... attention has been drawn to the development of learners' subject literacy skills'

What becomes clear after looking at CLIL in different geographical contexts is that it has become a visible trend, which is spanning geographically as a truly European/International approach' (Ruiz de Zarobe, 2013). A CLIL approach can be top-down but more often it is implemented by individual initiatives from school communities, teachers and parents.

Whether called bilingual education, EMI, CBI or CLIL, each of these approaches is acknowledged in turn as: 'a meaningful way to educate all children' (García, 2009) and which 'would benefit all learners and teachers' (Bower, 2017); 'a growing global phenomenon' (EMI: Dearden, 2014); an integration of 'not only language and content but also all the languages in multilingual repertoires'.



Key Terms

Basic Interpersonal Communicative Skills (BICS)	These are the face-to-face conversational skills learners need in order to interact with each other during subject-specific tasks in the classroom. BICS also involves the use of high-frequency words, such as *again, could, because,* and simple grammatical forms. Research by Cummins found that learners develop fluency in BICS after two years of exposure to the language at school.
Cognitive Academic Language Proficiency (CALP)	This language is very different from BICS. Developing CALP is associated with learning subjects such as science, maths, geography and history. It involves understanding and producing subject-specific vocabulary, advanced general English vocabulary, for example, *analyse, calculate, examine,* and also advanced grammar such as conditional forms and modal verbs associated with higher-order thinking: hypothesising, evaluating and innovating. Cummins stated that these language functions 'occur in all areas of the curriculum, and without them a child's potential in academic areas cannot be realised' (Cummins, 2001). Cummins and other researchers found that in bilingual contexts CALP can take between five to seven years (or longer) to achieve. However, even in primary subject learning in an additional language, 'Pupils were able to cope with subject-content that became cognitively more challenging as they proceeded from one year-group to the next' (Johnstone & McKinstry, 2008). The ability to use both BICS and CALP 'is crucial... to access the school curriculum.' (Rixon, 2015).

What can be confusing about terminology used to describe the teaching of subjects through the medium of English is that some European countries describe their primary programmes as 'bilingual' rather than EMI. These include Spain, the Netherlands and Poland. This is because the approaches 'have similarities and may at times overlap' (Soruç & Griffiths, 2018). In addition, there are primary schools that use none of the four terms to describe teaching EML. For example, in some primary schools in India, the term 'English and subject content integration' is used.

The four approaches described above, as a means of learning curricular subjects in English, reveal evidence of diverse factors involved in implementing them in different parts of the world. Each approach is dynamic because it continues to evolve as a result of educational and social changes in general. All of them indicate that 'language-teaching programmes in the twenty-first century increasingly integrate language and content through an additional language other than the children's home language' (García, 2009).

All [four approaches] indicate that 'language-teaching programmes in the twenty-first century increasingly integrate language and content through an additional language other than the children's home language' (García, 2009).

Evolving EML in primary contexts now involves a focus on STEAM subjects (science, technology, engineering, arts and maths). These subjects are key to 21st century education as they provide age-appropriate, engaging content to deepen learners' knowledge of subject concepts, and develop critical and creative thinking processes. STEAM tasks are often cross-curricular. For example, Technology can involve maths, science and art. STEAM projects have been published in primary course books e.g. Cambridge Primary Path 2nd Edition (2024). They include challenges such as finding out: how our planet changes (Science); what is in a spacecraft (Technology); how to make a model bridge (Engineering); how we make music (Arts); how much water you can save (Maths).



Why implement EML in primary schools?

Many reasons have been examined and researched about why implementing EML is beneficial to both learners and their teachers. In addition to research findings, primary teachers' comments about benefits they observe are important to consider. Initially, teachers may be anxious about teaching a subject such as science or maths in English. This is either because they have been accustomed to teaching the subject in the L1 but not in English or, if they are language specialists, they may not be used to teaching another school subject.

However, with time and deeper understanding of the challenges they and their learners face, many teachers see the bigger picture and can step back and comment upon the many positive aspects of teaching EML either in the physical classroom or online.

Initially, teachers may be anxious about teaching a subject such as science or maths in English ... because they have been accustomed to teaching the subject in the L1 but not in English or, if they are language specialists, they may not be used to teaching another school subject.

When examining primary teachers' comments about EML, the benefits tend to range over four key categories:

- Language development
- Methodology
- Thinking processes
- Motivation

These four areas have been remarked upon both by teachers new to subject teaching in English, and those with three or more years of EML experience. The examples in Table 1 are from teachers working in different primary bilingual schools in Europe.

Benefits	Primary teachers' comments about teaching subjects in english
Language development - Teachers	My English level has improved. I have learned a lot of **specific vocabulary** in many different fields. Teaching subjects makes me **update my language** continuously. With CLIL the **language is full of possibilities**. It's not restricted.
Language development - Learners	They **improve their language fluency** in CLIL all the time. They **learn much more English**, not only the four skills; they have to think, understand and learn subject content using English. It's a benefit for them to be aware **they can use another language to learn new subject concepts**.
Methodology	Children enjoy the **active and hands-on experiences** in their science lessons in English. Learning about CLIL methodology was more than teaching part of the curriculum in English. It was **a rethinking of how I teach**, how to use the resources and scaffolding that our students need. I think ... **about how to present the content, about the type of activities that I present** (Do they make the children think? Are they interesting? Do they offer them opportunities to talk more?)
Thinking processes	The pupils **think about the content** and want to keep learning more about it. An interesting question leads to another one and that one to another one. The **subject content is more meaningful**. They know about the scientific process. **They have learnt to think beyond what they see in the experiments** and developed high level thinking skills. They **learn much more English**, not only the four skills; they have **to think**, understand and learn subject content using English. **What the children learn is well integrated. It lasts**. The way they understand the content is useful and meaningful, so they don't forget the content immediately. **They think** and keep it.
Motivation - Teachers	CLIL **motivates me to work harder and in a different way** after 23 years teaching English. Once you try it, **you feel really motivated** because you see it works. My experiences of adopting CLIL are positive and soft CLIL motivates learners too.
Motivation - Learners	They are **motivated** by the subject content itself, and they learn more because they are **interested in the content**. **Motivating, children love science**. They like what they are going to learn about animals, nature, history as well ... pupils like what I am explaining. **They were thrilled at learning science in English**. This was new for them and because we had used other kinds of materials, more visual, and of course realia – they were pretty enthusiastic about doing it.

Table 1: Primary teachers' comments about teaching subjects in English

These comments reflect the benefits of teaching EML, noted in research published in different sectors of education. In secondary schools, the many benefits reported by Mehisto and Ting (2017) can also be applied to primary contexts:

1. Learners are exposed to a rich range of language
2. Learning is meaningful
3. Teaching is motivating
4. Learner confidence in using the L2 is likely to increase
5. Learners become effective thinkers in both content and language

Benefit 1: Learners are exposed to a rich range of language

Learners are exposed to a rich range of language, including 'a variety of genres, topics, vocabulary ... and functions' (Mehisto & Ting, 2017). As the teacher in Table 1 stated: 'language is full of real possibilities', 'it's not restricted'. In primary teaching, genres or text types from different subjects taught in English include:

- instructions to carry out experiments in science, or how to work out the perimeter of quadrilaterals in maths
- descriptions of types of animals in science, or of 2D and 3D shapes in maths
- explanations of how plants grow in science, or of how rivers flow to the sea in geography.

This rich range of language from different genres gradually develops learner's Cognitive Academic Language Proficiency (CALP), especially at higher stages of primary schooling.

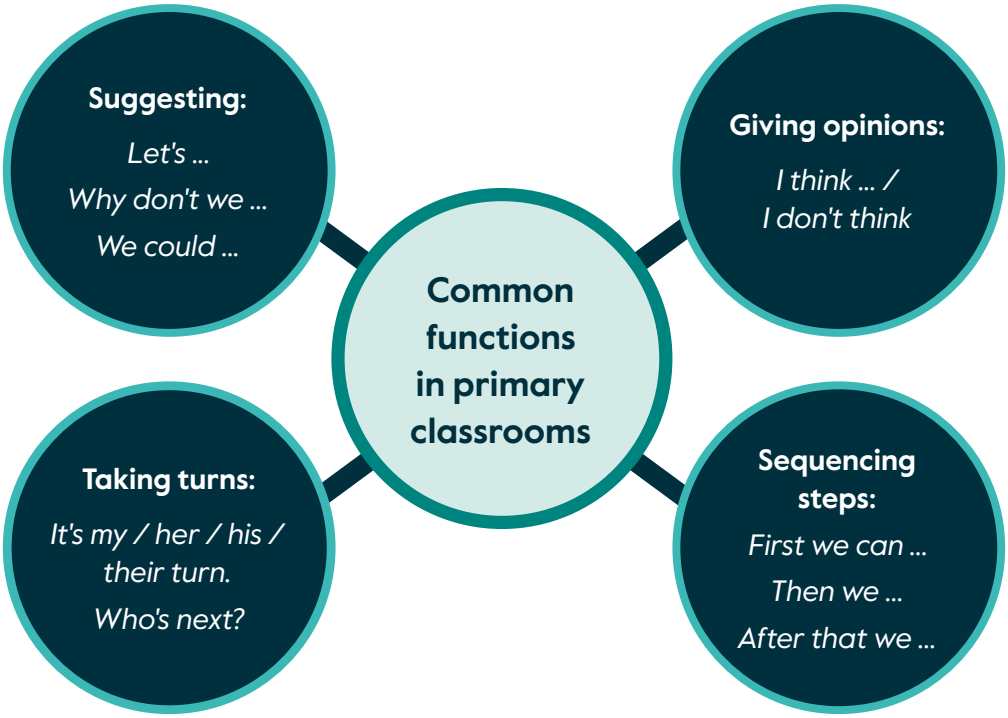


Figure 1: Common functions in primary classrooms also help to develop learners Basic Interpersonal Communication Skills (BICS).

Benefit 2: Learning is meaningful

In primary contexts, learners often find that exploring subject concepts in English can complement, deepen or consolidate what they are learning about the subject in the L1. In maths, for example, they can learn different ways to solve problems. 'The knowledge learners acquire through their first language helps make the English they hear and read more comprehensible ... (and) ... the literacy developed in the primary language transfers to the second' (Navés, 2009).

In primary contexts, learners often find that exploring subject concepts in English can complement, deepen or consolidate what they are learning about the subject in the L1.

Benefit 3: Teaching is motivating

'High motivation, which helps to enable deeper concentration, is especially important to success in learning through an additional language' (Coyle, Hood & Marsh, 2010). Comments made by the primary teachers in Table 1 provide evidence of this. For example, learners are motivated to work harder and 'in a different way'; motivated because teaching subjects in English 'works'. 'Despite the hard work involved in preparing CLIL lessons, the resulting increase in ... motivation and learning is inspirational' (Mehisto & Ting, 2017).

Many primary teachers express positive attitudes towards CLIL and believe, 'CLIL is a fun alternative to regular teaching approaches for both students and teachers, describing CLIL as something different.' (Read Talbot et al., 2021).

Benefit 4: Learner confidence in using the L2 is likely to increase

The subject content 'gives greater purpose to language learning' (ibid.). The primary teachers' comments in Table 1 imply that learners' improvement in language fluency – and their awareness that they can use another language to learn new subject concepts – are likely to increase their confidence in using English. When primary learners manage to communicate new subject knowledge in English they experience success, even though they may make some mistakes with grammar or pronunciation.

Benefit 5: Learners become effective thinkers in both content and language

There is also evidence of effective thinking in the primary teachers' comments in Table 1. Pupils want to 'think about the content'; to 'think beyond what they see in experiments'; to 'think' about what they learned and 'keep' that knowledge. In each of these examples, learners are developing critical and creative thinking processes. Learners have 'cognitive functioning that appears to impact not only their language knowledge, but also their critical thinking' (García, 2009) and because they have 'two ways to describe the world, have the ability to be divergent or creative thinkers'.

Further research in primary contexts with EML programmes has shown that development in learners' L1 has also benefitted from exposure to school subjects learned through English. This 'linguistic interdependence' means that knowledge of one language (or more than one) strengthens knowledge of another.

Further research in primary contexts with EML programmes has shown that development in learners' L1 has also benefitted from exposure to school subjects learned through English. This 'linguistic interdependence' means that knowledge of one language (or more than one) strengthens knowledge of another. Research has also revealed that subject lessons in English can be communicative. 'Highly-focused on meaning, genuine questions are asked ... there is opportunity to use language in non-restrictive ways, there is opportunity for negotiation ... (and) ... pair and group work are an integral part of the lessons' (Pérez-Vidal, 2007).

What challenges do primary teachers face in EML programmes?

It has been claimed that learning subjects in English has few disadvantages. However, successful subject teaching 'is not always straightforward or immediate' (Coyle, Holmes & King, 2009). Teachers at the start of programmes 'need to invest time in rethinking how they will teach through an additional language' (ibid.). This is partly because teachers have to consider their own language and that of their learners, their subject knowledge, and effective methodology for EML. This is in addition to planning, selecting materials and tasks, considering how to support learners and how to carry out ongoing evaluation. Each of these presents a challenge.

Teachers have to consider their own language and that of their learners, their subject knowledge, and effective methodology for EML. This is in addition to planning, selecting materials and tasks, considering how to support learners and how to carry out ongoing evaluation.

As with the benefits of teaching EML, it is important to give primary teachers a voice when articulating their initial challenges about teaching one or more subjects in English. These challenges can be compared with those encountered by primary teachers after they have experienced several years of teaching in EML contexts. Primary teachers new to subject teaching in English stated the following challenges in Table 2:

Challenges	Primary teachers new to subject teaching in english
Teacher language	To feel comfortable with **my language**. **Speaking in English** for all the lesson. **Improving my English** for PE lessons.
Methodology	It obliges me to prepare the lessons using **new strategies**. **The first sessions are difficult** for most of the students and also for the teacher (you've studied a lot about CLIL, searched for resources ... and now it's time to do it).

Table 2: Challenges faced by primary teachers new to subject teaching in English

From Table 2 it is clear that the primary teachers' language level for subject teaching, and their ability to use English throughout a subject lesson, were main concerns. Those teaching sciences were aware of the challenge of including new strategies for teaching subject topics, particularly for practical science lessons. Many teachers express how challenging or 'difficult' it is to start teaching subjects in English despite training, studying, planning and locating appropriate resources.

More-experienced primary teachers, with three or more years of teaching subjects in English, tend to state different challenges. See examples in Table 3:

Challenges	Primary teachers with three or more years' experience of subject teaching in english
Teacher and learner language	Some **ideas are difficult to explain** in English.
Knowledge of subject content	**We have to know a lot about our subject**, have good knowledge of the content. **Teaching terms** in a different language for learners expressing themselves in school subjects is difficult. Teaching science in upper primary levels because **the content is more difficult and intense**.
Methodology	We have to know **how to teach science**. **CLIL pushes me hard to find varied ways of teaching** the same science concepts ... then, **evaluating science concepts**.

Table 3: Challenges faced by primary teachers with three or more years' experience of subject teaching in English

These statements reveal the contrast between teachers' challenges during initial stages in the classroom, and the challenges teachers face after longer experience of EML. The former mostly focus on language the teachers themselves need for subject teaching; the latter on specific language that both teachers and learners need, knowledge of subject content, and methodology.

CHALLENGES

1. Teacher language
2. Learner language
3. Knowledge of subject content
4. Methodology
5. Teachers and other stakeholders

Challenge 1: Teacher language

First and foremost, primary teachers need to feel confident in their English language abilities so that learners can acquire, use and develop subject-specific language.

Some teachers in EML programmes have a B1 English level. It is advisable for them to work towards gaining a B2 level to teach subjects, especially at the upper primary stage. In 2013, the European Commission stated that teachers in CLIL contexts should be fluent speakers of the target language, in this case English.

Therefore 'teachers choosing to incorporate CLIL into their teaching should be supported.' (Pappa, 2021)

> **Primary teachers need to feel confident in their English language abilities so that learners can acquire, use and develop subject-specific language.**

According to the Common European Framework of Reference for Languages (CEFR, 2018), it is at C1 level that a speaker 'can express him / herself fluently and spontaneously without much obvious searching for expressions' ... (and) ... 'can use language flexibly and effectively for social, academic and professional purposes'. Ultimately, teachers in most EML contexts should aim at achieving both of these descriptors.

Another argument for working towards a C1 level is the range of academic vocabulary that learners need to use in primary subjects. Vocabulary such as *sphere* and *sequence* in maths, and *sustainable* and *erosion* in science, are described as C1 level in the English Vocabulary Profile.
See: https://englishprofile.org/?menu=english-vocabulary-profile

Challenge 2: Learner language

Primary teachers, whether new to EML or more experienced, are highly aware of the challenges their learners face. Teachers need to acknowledge and then address them. Learner challenges expressed by teachers include:

- Learning subject concepts is difficult in another language.
- They have to make an extra effort to understand subject material.
- They don't know some subject-specific vocabulary in their own language.
- It's difficult for them to speak in English for the whole class.
- They have to respond to questions about subjects and give examples and reasons.
- Expressing ideas clearly in English can create frustration.
- They have to think more about what they want to say and how to say it.

In EML contexts, teachers should therefore examine key vocabulary, tenses and language chunks that learners need to understand and produce. Some language may need to be paraphrased, simplified or broken into several shorter sentences for comprehensible input. Teachers can prepare this language and present / display it on posters on the wall, or digitally with images. It is also useful to have key vocabulary on handouts for learners to illustrate in class or at home. Teachers should be ready to repeat new vocabulary several times during a lesson and to get learners to repeat it while doing different tasks.

Allowing additional wait time for learners to respond to questions about subject concepts is also important, particularly with why and how questions, when learners need time to process and think about new subject content in another language.

Challenge 3: Knowledge of subject content

A further challenge is knowing which subject concepts are difficult for learners to grasp. Language teachers know, for example, that young learners often forget the 's' ending required for the third person singular form of verbs, that learners can find present continuous forms difficult to use and that some spelling patterns are hard to remember. Language teachers, however, are unlikely to know which science concepts young learners find hard to understand. Many learners believe, for example, that dissolving is a one-way process, that burning a candle is a reversible change and that a TV screen is a natural source of light. Teaching subject-specific concepts, and the terms used to explain them effectively, is therefore quite a challenge. Also, knowing how to use a wide range of strategies to support learning can add to the hurdles that teachers have to overcome.

This is when collaboration with colleagues is invaluable. Those who teach science or maths, for example, will know which concepts learners find hard to understand so can explain them to language teachers in the L1. In return, language teachers can alert colleagues to grammar forms, word order, collocations and preposition phrases, which cause learners difficulty. Teachers can also refer to primary subject-specific online or paper dictionaries for definitions and explanations of concepts.

Challenge 4: Methodology

Teachers need to consider both language methodology and methodology used in the subject they are going to teach. See examples in Table 4.

Methodology	Teachers need to know how to ...	Examples
Personalised learning	... activate learners' prior knowledge of subject content.	What wild animals live in your country? What animals can move faster than you?
Communicative learning	... support learning of subject concepts and vary support strategies so learners can understand, explore and communicate new subject knowledge in English.	Look at the words and pictures of mammals on the board. With your partner, say two facts about mammals.
Task-based, collaborative learning	... set up and monitor subject-specific group tasks and consolidate learning.	Your group is working well. Now think! With a partner take turns to put the insect stickers in the tree diagram?
Reflective learning	... evaluate the integration of subject content and language learning, give feedback, and encourage learners to comment upon their subject and language learning.	This is a good description of the reptile. Think of another adjective for its skin? What do you like about your description?

Table 4: Examples of methodologies and what teachers need to do when teaching subjects in English

Challenge 5: Teachers and other stakeholders in primary schools

In addition to teachers' challenges, other stakeholders are faced with issues surrounding the implementation of EML. All stakeholders need to understand the EML programme in their school and be able to give a rationale for implementing it. Stakeholders also want to know what most learners will achieve by the end of the primary programme: What English level can be achieved? Will learners achieve as much subject learning as if delivered in the L1?

Parents are also stakeholders so it is beneficial to offer subject workshops, such as Cooking in English; Doing a sport in English; Computer skills in English. If parents attend, they experience EML in action and can then understand some of their children's challenges.

Head teachers in a European case study reported that 'having competent, motivated and convinced teachers was the main factor' in implementing programmes well, while teachers 'focused on the importance of training' so they could acquire 'strategies for the classroom' (Soler, González-Davies & Iñesta, 2017).



Delivering effective EML in the primary school classroom

Challenges that many primary teachers face in EML contexts raise several key issues. These need to be addressed before, during and after implementing EML in the physical or online primary classroom. Key issues include:

1. Teachers' language and learners' language
2. Planning
3. Support strategies
4. Evaluating learners

Teachers' language

- **Explaining**

Primary teachers working in EML contexts will need to explain subject-specific terminology. Explaining is more challenging than defining or describing. For example, learners in early primary can identify different landscapes from images and can describe a particular landscape: It's a desert. It's hot and dry.

Primary teachers working in EML contexts will need to explain subject-specific terminology. Explaining is more challenging than defining or describing.

However, to explain why some animals can live in hot deserts is more demanding, so teachers should practise simple explanations: Some animals, like snakes, hide under the sand. They only come out at night when it's cold. Some animals, like camels, get water from desert plants. While this is manageable at early stages, older primary learners may need to know why hot and cold desert landscapes are changing. This requires advanced vocabulary, such as *global warming*, *drought* and *erosion*; advanced grammar (for example, passive forms: As the sand is blown …) and also the language of cause and effect. Again, teachers need to prepare this language before giving explanations to learners.

- **Questioning**

A study with primary subject teachers addressed types of questions teachers ask, to make sure 'the questions they posed covered a complete set of knowledge and cognitive dimensions' (Valverde Caravaca, 2019). This is because in EML contexts, questions should develop higher-order thinking to make content and language learning more meaningful. However, data collected in the study indicated that 'more than 50 per cent of questions required remembering conceptual knowledge and around 20 per cent of them implied understanding conceptual knowledge' (ibid.). Questions involving higher-order thinking, such as analysing, evaluating and creative thinking, were found to be 'missing entirely'.

A further challenge for primary teachers is therefore to plan questions that encourage critical and creative thinking to develop CALP, especially at the upper primary stage. For example:

- *What's different about these vegetables?*
- *Which vegetable do you think is the heaviest?*
- *How could the vegetables change their weight?*

If questions are not in published materials, teachers should write them on the board as well as ask them.

- **Responding, managing and modelling**

Teachers should predict questions that learners may ask and prepare possible responses. They also need to be ready to clarify any misunderstandings about subject concepts and to manage the bilingual classroom. For example, setting up subject-specific collaborative tasks, such as science experiments, organising practical maths investigations, and geography, art or other subject-specific projects.

Creating and maintaining a positive classroom environment by praising, encouraging and giving on-going feedback to learners provides a further challenge. As the teacher in Table 2 stated, 'Speaking in English for all the lesson'.

Modelling language includes learners hearing examples of BICS so that they can then use them for pair and group tasks, or general classroom interaction. Examples include:

- *It's your turn.*
- *Let's do this number.*
- *Can you help me / us please?*

Modelling is also important to support oracy and reading and writing skills across the curriculum. Teachers should provide models of subject-specific text types, such as instructions for making a volcano, a description of an active volcano, and an explanation of how a volcano erupts.

Planning

It is important that teachers have clear content and language objectives for each lesson, whether physical or online, and that learners are aware of these objectives. For example, to understand which materials are suitable for clothes; to be able to sort materials into groups; to be able to describe clothes orally and in writing. The objectives are from the science topic, Properties of Materials, and involve knowing types of materials, which are suitable for different weather conditions, adjectives to describe them and the verb form *is / are made of*. A focus on language 'raises awareness of the power of language and language forms … (and) … an awareness of how language can be used' (Bower, 2017).

Teachers need to locate age-appropriate materials to present the topic. At the start of a lesson, activating learners' knowledge of the subject topic is vital.

In addition, teachers need to locate age-appropriate materials to present the topic. At the start of a lesson, activating learners' knowledge of the subject topic is vital. There are EML contexts where it is acceptable for learners to use some L1 at this step, because they may know vocabulary or chunks of language to describe materials in their L1. Accept, translate and move on, or highlight any words that may be similar in other home languages and in English. 'Although teachers may carefully plan when and how languages are to be used, children themselves use their entire linguistic repertoires flexibly' (García, 2009).

EML primary teachers also experience challenges because of the need to 'customise material specifically for integrating content and language, insufficient planning time and…balancing content and language objectives' (Read Talbot et al., 2021).

However, teachers can now use technology such as ChatGPT to create subject-specific lesson plans or a series of lesson plans for a subject topic. They can then decide to use the plans, refine or adapt them for those with diverse learning needs. This is called adaptive teaching and has evolved from differentiation of learning.
See e.g. https://nationalcollege.com/news/what-is-adaptive-teaching-and-why-is-it-so-important

What is different in EML contexts is that each step in a lesson plan usually takes longer than a subject lesson in the L1, and teachers also need to allow for longer wait time between questions. Furthermore, it is important that EML teachers include cross-curricular links related to subject content that learners are exploring. For example, in the materials example above, asking learners what can be soft or hard / rough or smooth in geography or art classes. Depending on the topic, learners may be able to think of cross-curricular links themselves.

Support strategies

All new subject language needs to be supported. Teachers therefore need knowledge of a range of effective support strategies and an understanding of which ones to use with learners at different stages of primary school. Teachers should consider how they will support new subject input, as well as how to support learners to produce accurate and fluent oral and written language for different subjects. Tasks for individuals, in pairs or in groups also need to be supported through multi-sensory, multimedia experiences, such as input through digital animation, music and interactive tasks. Some learners may require additional support strategies and need to use them for longer than others. The key to supporting learners is to know the language demands of the subject being learned and the learning needs of the pupils.

- **Vocabulary support**

This can take the form of subject-specific word banks with images and vocabulary presented in sense units rather than alphabetically. For example, in the science topic of materials, present opposite adjectives to describe materials with symbols: *soft* ↔ *hard*, *shiny* ↔ *dull*. Any familiar vocabulary should be presented before new words, to reassure younger learners.

Teachers can also use glossaries with words in English and in the L1 to support vocabulary learning. Learners can then be encouraged to find any similarities or differences between words. Does the word look the same, and after listening to it, does it sound the same? Many science and technology words are similar in different languages. For example, *mammal* and *reptile* in English, *mamalia* and *reptilia* in Malay, *mamífero* and *reptil* in Spanish; *computer* in English, *komputer* in Malay, *computadora* in Spanish. Helping learners to notice what's similar and what's different (spelling and / or sound) helps to make subject-specific vocabulary more memorable.

It is common in primary classrooms in EML contexts to see word walls with posters displaying familiar and new subject-specific vocabulary presented with labels or captions. Images or learner drawings are also added to help learners remember new words. It is also useful to prepare topic vocabulary and high-frequency words with difficult spelling patterns, such as *again*, *called*, *could*, *would* on handouts. Input from images, video, animations and diagrams support the development of learners' visual literacy, which is particularly important for primary EML. These encourage learner autonomy because learners can take responsibility for using the handout when they need to check topic vocabulary and spelling for written work.

- **Sentence support**

Both sentence and question starters are helpful strategies to support communication and to boost learner confidence to ask questions. Starters also help learners to use word order accurately.

Examples of sentence starters include:

- *This photo has got / shows / looks like _____.*
- *We can identify / classify / compare / describe _____.*
- *We think the drawing / image is _____-er than _____.*
- *We watched / read / listened to _____.*
- *I agree we can / should _____.*

Examples of question starters include:

- *What is / does this ...?*
- *How does / can the ...?*
- *Why is this a ...?*
- *How can we make our_____ better?*

Both sentence and question starters are generative so can be used in any subject topic with a few adjustments. Sometimes question starters are called 'think alouds' because they encourage the development of cognitive as well as communicative skills.

Sentence gap-fills are another support strategy and learners should know why they are using them. For example, before a science experiment about finding out which materials a magnet attracts, learners can predict what will happen and afterwards write about their findings.

Our predictions:

(younger learners)

1. We think the _____ and the _____ will stick to the magnet. We don't think the _____ and the _____ will stick to the magnet.

(older learners)

2. We think the magnet will attract the _____ but we don't think it will attract the _____.

Our findings:

(younger learners)

1. The _____ and the _____ stick to the m_____.
The _____ and the _____ don't stick to the m _____.

(older learners)

2. The m_____ attracts the _____ but it doesn't attract the _____.

Substitution tables provide a different type of support because learners need to decide which words to use within each language category. For example, after looking at a plant or observing its growth, learners together choose the words to describe it.

We can see There is / are	a some	big ↔ small long ↔ short thin ↔ thick	root / roots. stem. leaf / leaves. flower / flowers.

- **Text support**

To support learners when reading or writing texts, models of different text types such as instructions, descriptions and explanations of subject concepts are necessary. In primary EML, texts should have an abundance of images because 'pictures have a dual function in that they contribute to making the material attractive and engaging and they also give support to comprehension' (Watkins, 2018). Teachers can plan which language features of a particular text type learners will focus on to actively explore language and elicit the purpose of the text. 'A focus on language ... includes the development of children's awareness of language forms and uses, and the ability to critically analyse these' (Gibbons, 2002).

Questions to help learners notice language forms in a text include:

- *Which words describe the two rivers? (adjectives)*
- *How do we know the rivers are different? (comparative forms)*
- *Which of the rivers is polluted and why? (short explanation)*

These geography questions are intended for older primary learners. Younger learners can be supported to notice language in instructions for a recipe, such as words for things we need (nouns + quantities) and words for what we do (imperatives). It is acknowledged that 'their experience of reading in any language and their extent of vocabulary in L1 and L2 will be limited'. However, for older primary learners, 'their challenge is the complexity of the academic texts which they need to access across the curriculum' (Bower, 2017).

Talking with learners about texts, their purpose, and the language and features of layout will enable them to become more confident at reading and writing text in English.

With teacher guidance, learners can together compose a short text type using a writing frame and substituting words and phrases teachers have highlighted with those relevant to the text topic. Talking with learners about texts, their purpose, and the language and features of layout will enable them to become more confident at reading and writing text in English.

Each of these support strategies is designed to encourage learner autonomy, whether for expressing vocabulary and ideas, asking questions, or reading and writing texts. Planned support and shared classroom experience help to make listening, speaking, reading, writing and thinking in English achievable for most learners. 'Scaffolding interpreted as mentoring learning is dynamic...differentiated and individualised.' (Coyle & Meyer, 2021).

- **Visual organisers**

Younger learners, in particular, rely on images, video clips, realia and teacher gestures to understand new subject vocabulary and what they have to do with it. 'It is not difficult ... to create tasks in which the image has a more prominent role and in which learners are engaged on a more cognitively challenging level' (Goldstein, 2016).

Older primary learners can explore different visual organisers, also known as concept maps, and learn about their purposes. However, teachers should 'develop or co-construct concept maps with students ... not merely give them one' (Hattie & Zierer, 2018). See Table 5 for examples of visual organisers often used in primary contexts.

Visual organiser	Purpose	Example task
Venn diagram	To show similarities and differences. To compare and contrast concepts.	Science: Let's look at these animals. How can we classify them into 'live on land' and 'live in the sea'?
Cycle diagram	To show events which happen again and again. To order stages in a cycle.	Science: Why is this diagram a circle shape? With a partner, take turns to order the steps in the water cycle.
Binary key	To identify subject vocabulary using yes / no questions or other binary questions with one answer.	Art: Look at the seven colours and their names. Read the questions. Who can tell me the colour to put in box 1? And box 2? Now write the colour words in the next five boxes.
Mind map	To explore ideas about a concept.	Maths: How can we describe the number 5? (e.g. odd, prime, greater than 3, less than 10). In your group, brainstorm words you know that describe numbers.
Cause-effect diagram	To show how one step leads to another.	Geography: Think! What happens when it rains? What gets wet? This diagram helps you to understand what happens. Rainfall is the cause. In your group write effects in each box.
Carroll diagram	To show two sets of opposite criteria.	Science: Think of objects that are hard and not hard; transparent and not transparent. Draw and label an object in each of the four boxes.
Storyboard	To show a sequence of events using a series of drawings - often used with speech / thought bubbles or captions.	History: You did a role-play about life in Ancient Greece. Tell me what you remember. In the storyboard, do five drawings showing what people did. Then, draw speech bubbles with words in them.

Table 5: Examples of visual organisers that are often used in primary contexts

Using dynamic images, video clips and other forms of visual input can activate learners' knowledge of subject content as well as develop their visual literacy.

Visual organisers are found to be 'most effective after initial exposure to a new topic' (ibid.). Additional visual input in primary classrooms includes bar and pie charts, and at older stages, line graphs. These are regularly used in maths, science and geography topics for learners to look at and interpret data. Using dynamic images, video clips and other forms of visual input can activate learners' knowledge of subject content as well as develop their visual literacy. 'Visual literacy is an essential element of contemporary literacy' (Bearne, 2015).

Tasks with visual input are also described as meaningful 'language events' when learners can speak with and listen to others. They are 'pivotal to … the development of vocabulary for speaking, reading and writing … (and) … have not only a content focus but also a language focus' (Bower, 2017).

Evaluating learners in primary EML contexts

Learners should be able to demonstrate their understanding and knowledge of subject concepts in English. An effective way of doing this is through ongoing, everyday formative assessment. This involves teachers observing and noting how well learners are achieving the content and language objectives planned for each subject lesson. It also involves learners being active in identifying which objectives they think they have achieved. Teachers then need to give learners feedback on their progress. With evidence of how much learning is taking place, teachers can plan future subject learning in English.

Although most evaluation involves advanced planning, unplanned opportunities can happen for teachers to note progress. For example, during spontaneous learner talk about what they are doing in class or during class visits related to subject learning outside school.

Evaluating learning, however, encompasses more than finding evidence of subject content and language acquired. Formative assessment focuses on cognitive and social development as well. Some primary teachers also evaluate learners' attitudes towards learning subjects in English. These interconnected elements can be evaluated while learners are doing subject-specific tasks such as oral or written work, drama and role-play, projects, experiments and investigations. It is also important to ask learners how they think they are progressing and if they are enjoying learning subjects in English. Self or peer assessment is effective for this. 'Teacher-to-student feedback may be important, but learner-to-teacher feedback is just as or even more important' (Hattie & Zierer, 2018).

The frame in Table 6 can be used or adapted to record learner progress and achievement of content and language learning, cognitive processes and social attitudes. Teachers decide which group of learners they will observe during a lesson, record a date when the objective was achieved, has improved or needs further support. Teachers can add notes to comment on any particular problems or successes. It is useful to repeat evaluation at least three times during a school year, then the evidence is there to feedback to learners and their parents. The table can be simplified for self or peer assessment and subjects substituted.

Name:			
Can:	**Well**	**Improving**	**Needs support**
remember subject-specific vocabulary			
understand a new art / science / maths concept			
apply knowledge of an art / science / maths concept to a task			
evaluate own and a partner's art / science / maths work			
create an art poster / a science questionnaire / a maths puzzle			
respond to art / science / maths questions: closed			
respond to art / science / maths questions: open			
ask questions about art / science / maths: closed			
ask questions about art / science / maths: open			
use a support strategy to talk about an art / science / maths concept			
describe steps in an art / science / maths task			
think critically or creatively during an art / science / maths task			
take turns during a subject-specific task			
help others to complete a subject-specific task			
demonstrate positive attitudes towards learning			

Table 6: A sample frame to record learner progress and achievement

Summary and conclusion

1. Teaching EML in a range of primary contexts is expanding globally.
2. Teachers should be able to describe the type of EML programme their school promotes and understand key terminology to describe subject learning in English.
3. Teachers need to aim to improve their English language level in order to educate learners effectively, especially at higher levels of primary school.
4. When planning, teachers should:
    - have clear objectives for subject content and language learning in each lesson
    - know or find out which particular subject concepts are difficult for learners to grasp
    - be aware of a full range of support strategies and materials to help learners communicate their ideas about subject-specific concepts
    - be ready to provide additional support to those with specific learning needs.
5. When evaluating learning, teachers should consider how much progress has been made in:
    - understanding and communication of subject-specific content
    - development of critical and creative thinking skills for subject learning in English
    - growth of maturity in social attitudes and behaviour during subject-specific lessons.

The success of EML primary programmes also relies on:

- effective leadership from head teachers or from teachers appointed as 'bilingual coordinators' as in Dutch schools. They need to clearly communicate to staff and parents the aims of the EML programme, who is teaching subject content in English, when, how often, and how this will be organised.
- teachers who have engaged with professional development courses to enable them to deliver an inclusive EML model and who collaborate with colleagues to share subject plans, activities and materials appropriate for different age groups.
- parents who are well informed about the EML programme and who are encouraged to attend meetings about plans, progress and any future changes being considered.
- links to other primary schools implementing EML programmes and visits from consultants or other EML professionals who can encourage and offer advice to staff.

Research evidence from studies of bilingual education reveals that if primary EML programmes are implemented well, young learners can achieve higher levels of English proficiency than programmes that teach English as a separate subject only. By following the ideas set out in this paper, primary teachers can feel confident in delivering an EML programme for their school.

Further reading

Books

These three books are recommended because they focus specifically on primary contexts rather than on secondary and higher sectors of education or all three.

- Bower, V. (2017). *Supporting pupils with EAL in the primary classroom*. London: Open University Press.
- Coyle, D. and Meyer, O. (2021) Beyond CLIL *Pluriliteracies Teaching for Deeper Learning*. Cambridge: Cambridge University Press
- Cremin, T. (2015). *Teaching English Creatively*. (2nd Edition.) Oxford: Routledge.
- Egger, G. and Lechner, C. (2022) *Primary CLIL around Europe*: Delta
- Gibbons, P. (2021) *Scaffolding Language, Scaffolding Learning. Teaching Second Language Learners in the Mainstream Classroom* (2nd Edition) Portsmouth NH: Heinemann.
- Hemmi, C. and Banegas D. (2021) *International Perspectives on CLIL*. Palgrave Macmillan

EAL (English as an Additional Language) in Britain is equivalent to ELL (English Language Learning) in North America. Both EAL and ELL address the needs of learners who have a range of different home languages and who may be new to the country where they live.

Articles

The articles below examine EML approaches and key terms presented in this Paper in more depth. Some include other sectors of education in addition to primary.

- Cambridge Assessment International Education. (2017). Bilingual Learners and Bilingual Education. Available at: https://www.cambridgeinternational.org/Images/271190-bilingual-learners-and-bilingual-education.pdf
- Pluriliteracy: Glossary of terms. Complied by Council of Europe. Available at: https://www.ecml.at/F7/Glossary/tabid/1496/language/en-GB/Default.aspx
- Content teaching in primary schools in India. The Open University. Available at: https://www.open.edu/openlearncreate/pluginfile.php/134854/mod_resource/content/3/EE09_AIE_Final.pdf
- https://www.onestopenglish.com/clil/clil-in-austria-an-interview-with-andreas-baernthaler/550180.article
- https://www.onestopenglish.com/clil/my-favourite-onestopclil-resource-is--/501235.article
- https://www.onestopenglish.com/clil/cliling-me-softly-in-thailand-collaboration-creativity-and-conflict/500927.article
- https://school-education.ec.europa.eu/en/professional-development/courses/clil-essentials-content-and-language-integrated-learning-barcelona-spain
- https://www.cambridge.org/core/services/aop-cambridge-core/content/view/CF3C5C78BE4EC692EC3F8BE98E2A7176/S0261444820000622a.pdf/research-into-practice-clil-in-south-america.pdf
- TKT: CLIL Glossary of terms (2019) (including visual organisers and their purposes) https://www.cambridgeenglish.org/images/22194-tkt-clil-glossary-document.pdf

Resources

- https://pstt.org.uk/resources/
- https://clillanguageteachers.weebly.com
- https://www.factworld.info/en/cat/resources
- https://www.stem.org.uk/resources

Subject-specific websites for primary (KS1 = 5 – 7) (KS2 = 7 – 11)

These websites provide classroom ideas for teaching subjects commonly taught in primary EML contexts. They can be used in physical or online classrooms. Teachers can use, adapt or supplement the ideas presented in them.

In addition to subject-specific websites, a high-frequency word list and a glossary of terms are listed for reference.

Arts

- https://www.nhm.ac.uk/schools/teaching-resources.html?gad_source=1&gbraid= 0AAAADnzvHMrAIGjxHcoCFr7NnZnXoq72&gclid=EAIaIQobChMIxLbsnumDhwMVUpJQBh0YRwcFEAAYAiAAEgJ6zfD_BwE
- https://artuk.org/learn/learning-resources
- https://www.tate.org.uk/art/teaching-resource

Maths

- https://nrich.maths.org/curriculum/counting-comparing-and-ordering-age-7-11 maths problems for 7–11 year olds
- https://global.oup.com/education/content/dictionaries/free-resources/oxford-primary-illustrated-maths-dictionary-free-resources/?region=uk Oxford Primary Maths Dictionary Resources
- https://www.stem.org.uk/primary/resources/collections/maths
- https://nrich.maths.org/12631
- https://www.bbc.co.uk/bitesize/articles/zdjkjfr#zdkqs82

Science

- https://www.youtube.com/watch?v=e5tu4a1Fe9A (2019) Cambridge Primary Digital Classroom Science Experiment Stage 1 (plants)
- https://www.youtube.com/watch?v=zOUconVysFY (2019) Cambridge Primary Science Digital Classroom Stage 4 (melting solids)
- https://www.youtube.com/watch?v=zD3hXPKJAtY (2019) Cambridge Primary Science Digital Classroom Stage 6 (conductivity)
- https://global.oup.com/education/content/dictionaries/free-resources/oxford-primary-illustrated-science-dictionary-free-resources/?region=uk Oxford Primary Science Dictionary Resources
- https://explorify.uk
- https://www.natgeokids.com/uk/
- https://www.wwf.org.uk/get-involved/schools/resources

Environment

- https://subjecttoclimate.org/teacher-guides/2024-earth-day-activity-guides-for-kids?gad_source=1&gbraid=0AAAAAoNol2ebgbRtKbz9n_ozT0DEdFgFb&gclid=EAIaIQobChMI7tLGxZCEhwMVTJdQBh2VDQiCEAAYBCAAEgKIG_D_BwE
- https://www.rainforestconcern.org/explore/resources?gad_source=1&gbraid=0AAAADrcGXwQ4k2gfsj1flGE1ZXrCGqNM&gclid=EAIaIQobChMI9-Gn9JKEhwMVvZVQBh2SPgr7EAAYASAAEgJ92vD_BwE

High-frequency words

- https://www.highfrequencywords.org/hfw100fp.pdf (first 100)

Most subjects

- https://cafod.org.uk/education/primary-teaching-resources/climate-and-environment
- https://www.bbc.co.uk/teach/topics/cekpvy5vp79t

Glossary of terms *TKT: CLIL Glossary of terms.* (including visual organisers and their purposes)

- https://www.cambridgeenglish.org/Images/22194-tkt-clil-glossary-document.pdf

All primary subjects

- https://www.bbc.co.uk/teach/primary/zd7p47h

Bibliography

Bauer, E.B. (2017). *Biliteracy* ResearchGate. Available at: https://www.researchgate.net/publication/321709458_Biliteracy

Bearne, E. (2015). Creatively Exploring Visual and Digital Texts. In Cremin, T. (2015). *Teaching English Creatively*. (2nd Edition.) Oxford: Routledge, 150–164.

Bower, V. (2017). *Supporting pupils with EAL in the primary classroom*. London: Open University Press.

British Council. (2014). CLIL Policy and Practice: Competence-based education for employability, mobility and growth. Available at: https://www.britishcouncil.org/sites/default/files/bc_regionalpolicydialogues_baja.pdf

Cambridge Assessment. (2013). What is literacy? An investigation into definitions of English as a subject and the relationship between English, literacy and 'being literate'. Available at: https://www.cambridgeassessment.org.uk/Images/130433-what-is-literacy-an-investigation-into-definitions-of-english-as-a-subject-and-the-relationship-between-english-literacy-and-being-literate-.pdf

Cambridge Assessment International Education. (2017). Bilingual learners and bilingual education. Available at: https://www.cambridgeinternational.org/Images/271190-bilingual-learners-and-bilingual-education.pdf

Council of Europe. (Plurilingualism.) Platform of resources and references for plurilingual and intercultural education. Available at: https://www.coe.int/en/web/language-policy/platform

Council of Europe. (2018). Common European Framework of Reference for Languages (CEFR). Available at: https://www.coe.int/en/web/common-european-framework-reference-languages/

Coyle, D., Holmes, B., & King, L. (2009). Towards an integrated curriculum – CLIL National Statement and Guidelines. The Languages Company. Available at: https://www.all-languages.org.uk/wp-content/uploads/2021/06/clil_national_statement_and_guidelines.pdf

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

Coyle, D. & Meyer, O. (2021) *Beyond CLIL Pluriliteracies Teaching for Deeper Learning*. Cambridge: Cambridge University Press.

Cremin, T. (2015). *Teaching English Creatively*. (2nd Edition.) Oxon: Routledge.

Cummins, J. (2001). *Negotiating Identities: Education for Empowerment in a Diverse Society*. Los Angeles: California Association for Bilingual Education.

Dearden, J. (2014). *English as a medium of instruction - a growing global phenomenon*. Oxford: British Council. Available at: https://www.britishcouncil.org/sites/default/files/e484_emi_-_cover_option_3_final_web.pdf

Dornyei, Z. and Ushioda, E. (2011) *Teaching and Researching Motivation* (2nd Edition. Harlow: Longman.

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

Gibbons, P. (2002). *Scaffolding Language Scaffolding Learning*. Teaching Second Language Learners in the Mainstream Classroom. Portsmouth NH: Heinemann.

Goldstein, B. (2016). *Visual literacy in English language teaching*. Part of the Cambridge Papers in ELT series. Cambridge: Cambridge University Press. Available at: https://www.cambridge.org/elt/blog/wp-content/uploads/2017/06/CambridgePapersinELT_Visual-Literacy_2016.pdf

Hattie, J. & Zierer, K. (2018). *10 Mindframes for Visible Learning Teaching for Success*. Oxon: Routledge.

Jiménez Catalán, R.M., & Ruiz de Zarobe, Y. (2009). The Receptive Vocabulary of EFL Learners in Two Instructional Contexts: CLIL versus non-CLIL Instruction. In ed., Y. Ruiz de Zarobe & R.M. Jiménez Catalán *Content and Language Integrated Learning: Evidence from Research in Europe*. Bristol: Multi-lingual Matters, 81–111.

Johnstone, R., & McKinstry, R. (2008). Evaluation of EPPI: Final Report. Early Primary Partial Immersion. Available at: https://www.scilt.org.uk/Portals/24/Library/research/eppi_book.pdf

Macaro, E., Curle, S. Pun, J. Jiangshan, A. & Dearden, J. (2020) *Curriculum Integrated Language Teaching*. Cambridge: Cambridge University Press.

Mehisto P. with Ting, Y.L.T. (2017). *CLIL Essentials for Secondary School Teachers*. Cambridge: Cambridge University Press.

Muñoz, A.J. (2021) *It wasn't my fault: Lecturers Notes to Former Selves after Five Years of EMI Service*. In Read Talbot, K., Gruber, M-T., & Nishida, R. (eds.) The Psychological Experience of Integrating Content and Language. (pp.174 – 194) Bristol: Multilingual Matters.

Navés, T. (2009). Effective Content and Language Integrated Learning (CLIL) Programmes. In ed., Y. Ruiz de Zarobe & R.M. Jiménez Catalán. *Content and Language Integrated Learning: Evidence from Research in Europe*. Bristol: Multi-lingual Matters, 22–40.

Pratt, L. & Foley, Y. (2020) In *Beyond CLIL Pluriliteracies Teaching for Deeper Learning* (p.147) Cambridge: Cambridge University Press.

Pérez-Vidal, C. (2007). The need for focus on form in content and language integrated approaches: An exploratory study. Barcelona: University Pompeu Fabra, 39–54. Available at: https://www.academia.edu/69596493/The_Need_for_Focus_on_Form_FoF_in_Content_and_Language_Integrated_Approaches_an_Exploratory_Study

Read Talbot, K. & Gruber M-T. (2021) *Conclusion: Challenges, Opportunities, Implications and Future Directions*. In Read Talbot, K., Gruber M-T. and Rieko, N. (eds.) The Psychological Experience of Integrating Content and Language. Bristol: Multilingual Matters, (pp.283 – 297).

Read Talbot, K., Gruber M-T., Lammerer, A., Hofstadler, N. &Mercer, S. (2021) *Comparatively Speaking: Well-being at the Primary, Secondary and Tertiary Levels in Austria*. The Psychological Experience of Integrating Content and Language. Bristol: Multilingual Matters, (pp. 153 – 173).

Rixon, S. (2015) *Primary English and Critical Issues: A Worldwide Perspective*, in Bland, J. (ed.), Teaching English to Young Learners. Critical Issues in Language Teaching with 3 – 12 Year Olds. London: Bloomsbury Academic (pp. 31 – 51.)

Ruiz de Zarobe, Y. (2013). CLIL implementation: from policy-makers to individual initiatives. *International Journal of Bilingual Education and Bilingualism*, 16(3): 231–243. Available at: https://www.tandfonline.com/doi/full/10.1080/13670050.2013.777383

Smit, U. (2023) *English-medium instruction* (EMI) ELT Journal, 77(4) 499- 503

Soler, D., González-Davies, M., & Iñesta, A. (2017). What makes CLIL leadership effective? A case study. *ELT Journal*, 71(4): 478–490.

Soruç, A. & Griffiths, C. (2018). English as a medium of instruction: students' strategies. *ELT Journal*, 72(1): 38–48.

Valverde Caravaca, R. (2019). Effective questioning in CLIL classrooms: empowering thinking. *ELT Journal*, 73(4): 367–376.

Watkins, P. (2018). Extensive reading for primary in English Language Education. Part of the Cambridge Papers in ELT series. Cambridge University Press & Assessment.

Wei, L. (2018) Translanguaging as a practical theory of language. *Applied Linguistics* 39 (1), (pp. 9 – 30).

Author biography

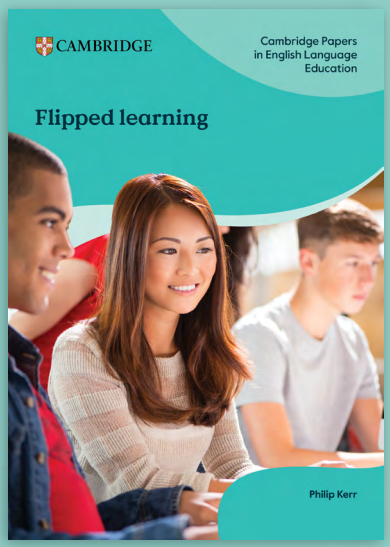
Kay Bentley is a consultant for CLIL and bilingual programmes in predominantly primary education. She has taught pupils and worked with teachers in European bilingual schools. For Cambridge, she has authored Primary Curriculum Box, The TKT Course: CLIL Module and CLIL pages for a six-level course, Guess What! She wrote and was an educator on a Cambridge online course, Teaching your Subject in English. Her writing also includes materials for primary Maths, Natural and Social Science as well as chapters on CLIL assessment and mainstreaming CLIL.

Explore more

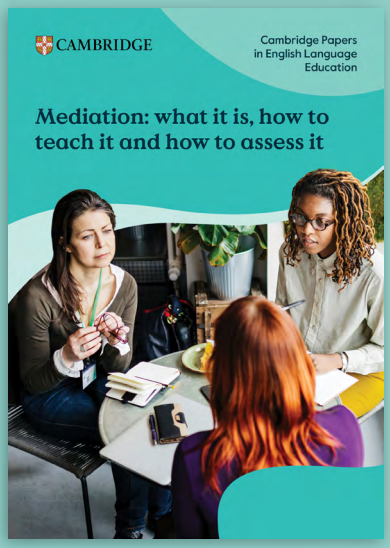
Cambridge Papers

in English Language Education









cambridge.org/english-insights



Find out more at
cambridge.org

We believe that English can unlock a lifetime of experiences and, together with teachers and our partners, we help people to learn and confidently prove their skills to the world.

Where your world grows

CAMBRIDGE
UNIVERSITY PRESS & ASSESSMENT

All details are correct at the time of going to print in July 2026.

© Cambridge University Press & Assessment 2026