

# Arizona Department of Education RFI ADED14-0003 Submission from Cambridge International Examinations

December 2013



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## 1. Preamble

The RFI has set out clearly a set of specific questions relating to assessment in the Arizona context. It also makes specific reference to the implementation of Arizona's College and Career Readiness Standards, aligned to the Common Core Standards. In addition to responding to specific questions about our assessments, we have also provided a response to the wider issue of the types of assessment that might best serve the quality of teaching and learning experiences in schools, and the improvement in levels of achievement that the new standards are designed to promote.

In all circumstances where there is external assessment of education, the nature of the assessment has a major influence on what happens in the classroom. If test results have real implications for future educational or career opportunities, teachers and students alike will always be focused on achieving the best possible test results. It follows that tests should be designed with this in mind, as well as the necessary considerations of validity, reliability and fairness. In the words of the recently published Gordon Commission report<sup>1</sup> 'To be helpful in achieving the learning goals laid out in the Common Core, assessments must fully represent the competencies that the increasingly complex and changing world demands...To do so, the tasks and activities in the assessments must be models worthy of the attention and energy of teachers and students.' The best set of standards in the world cannot be effective in changing educational outcomes if the assessments students face at the end of their course do not require the exercise of the higher order skills included in the standards. This may sound like stating the obvious, but changing a paradigm of assessment requires a change of organisational culture, and many programs requiring change, in education as elsewhere, fail because of entrenched organisational cultures.

Cambridge has a long record of conducting the type of high quality assessment that is now required, using open ended essays and problems to be solved and explained, as well as performance tasks such as science practical experiments, research papers and individual or group assignments. We have seen the impact that this has both in the classroom and in terms of college and career readiness for young people all over the world, including schools in Arizona and elsewhere in the United States.

We make limited use of multiple choice items in our tests, and have long experience of designing and scoring constructed responses with high reliability.

We have worked with international partners such as the Singapore Examination and Assessment Board over many years, and continue to do so. Schools in places that are internationally recognised for high achievement such as New Zealand and Shanghai work with Cambridge. We are currently working at national level in a rapidly growing list of countries in the Middle East, in Southeast Asia, in Central Asia and in Europe to support education reform projects. These projects all share the goal of promoting the acquisition of 21<sup>st</sup> Century Skills, using the powerful coupling of appropriate curriculum with high quality assessments designed alongside the curriculum. It is our experience that Cambridge assessments, together with the integrated programs of learning that lead to the assessments, provide a response to the wider issue that is fit for purpose and has been tried and tested in a wide range of educational contexts.

For the past five years we have worked with the National Council on Education (NCEE) and the Economy in the context of the Excellence for All pilot, known initially as the Board Examination Systems pilot. We are monitoring the impact of our work in the context of this pilot, and this report includes reference to some of the early outcomes of this research.

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<sup>1</sup> [http://gordoncommission.org/publications\\_reports.html](http://gordoncommission.org/publications_reports.html) Public Policy Report

In the responses to individual requirements set out below, we have described what we currently have to offer that fits well with the types and levels of assessments sought by the Arizona Department of Education. We would need to make some changes in order to meet all the requirements described, and while this would be possible, we would see the ideal scenario for the role of assessment in contributing to the success of the new standards a little differently.

The reason why we do not currently have external summative assessments for each grade from 3 to 8 is that we believe that formative and diagnostic assessment – that is assessment for learning rather than assessment of learning – to be of vital importance, especially in the early years. If this is combined with too-frequent summative assessment, the value of the diagnostics is to a greater or lesser extent undermined. Successful implementation of the new standards will require a change in the approach of teachers in the classroom. It is certainly not the case that there is only one right way to teach these new standards, but it is the case that the new standards will require teachers to change their practice, as much as it will require students to change how and what they learn. The Cambridge Progression tests provide valid assessment at the end of each grade, in the form of calibrated tests that are scored by teachers. The Progression tests are designed to be scored by teachers following the rubrics provided. They give teachers, parents, school leaders and students useful information about what has been learned well and what has been learned less well. Because the teachers engage with the scoring, they come quickly to understand what it is that their students are or are not doing, and hence they can quickly internalise the standards. This ensures ownership of the standards and the achievement that is less easily acquired when the test is sent away to be scored.

## 2. Background

### 2.1. History, governance and structure

#### **Name of company**

Cambridge International Examinations, a division of University of Cambridge Local Examinations Syndicate (referred to in this bid by its trading name, Cambridge Assessment)

Postal address: Cambridge Assessment  
1 Hills Road  
Cambridge  
CB1 2EU

Email: info@cambridgeassessment.org.uk  
Telephone: 011 44 1223 553311  
Fax: 011 44 1223 460278

#### **Type of company**

Cambridge Assessment is a not-for-profit educational organization which operates and manages Cambridge University's three exam boards and carries out cutting-edge and operational research on assessment in education.

Contact person: Diane Palmer, Director of Assessment  
Telephone: 011 44 1223 553512  
Email: palmer.d@cie.org.uk

## 2.2. Company profile

### Part of the University of Cambridge

Cambridge International Examinations is a division of The Cambridge Assessment Group which was established in 1858 as a department of the University of Cambridge, one of the world's leading universities. Cambridge Assessment is a not-for-profit organization, and is Europe's largest assessment agency. It plays a leading role in researching, developing and delivering educational assessment across the globe. The Cambridge Assessment Group incorporates three awarding bodies as well as the largest educational research capability of its kind in Europe. We provide a range of academic, vocational and skills-based tests and qualifications to 8 million learners every year, as well as a variety of assessment services to governments worldwide.

In addition to our three exam boards and our research operation, we also offer consultancy, professional development and a network for the assessment and education community. Our composition is illustrated in the diagram below.



Figure 1: Composition of Cambridge Assessment

Cambridge Assessment delivers over 40 million different assessments in total to over 8 million candidates every year, as detailed in the table below:

	<b>Candidates (per year)</b>	<b>Schools</b>	<b>Countries</b>
<b>Cambridge Assessment</b>	8 million	25,000	170
<b>Cambridge English Language Assessment</b>	4 million	2,700	130
<b>Cambridge International Examinations</b>	2 million	9,000	160
<b>Oxford, Cambridge and RSA Examinations</b>	2 million	13,000	15

## **Our mission**

Our mission is to promote excellence in education. We do this by playing a leading role in developing and delivering educational assessment in over 170 countries around the world. We have a deep-seated belief in the value of education and we work with our stakeholders to ensure that all our assessments support high quality learning.

Our highly regarded research-led and evidence-based approach means our qualifications are recognized by over 13,000 universities, employers and official bodies across the globe.

We have a strong track record in advising governments and education bodies on education reform and engage regularly with policy makers on the education agenda, and how best to provide learners with the knowledge and skills that they need.

We pride ourselves on world class processes and systems that ensure we deliver the right assessments to the right candidates and get them their results on time. We believe that it is our role, as experts in assessment and a body independent of government, to influence, advise and offer guidance on education policy and strategy around the world.

## **Delivering excellence – five key capabilities**

### **1. Assessment and test design**

In addition to our range of tests we offer customized assessment services that deliver all the benefits of Cambridge certification. Tests are always integrated into existing regional or national frameworks.

### **2. Curriculum development**

We offer a broad range of specialist services designed to help governments and education bodies around the world define, achieve and maintain learning excellence. We deliver core subjects (maths, science, English) from age 5-19, and in addition from age 14 upwards a broad range of subjects. We also design and deliver customised curricula for individual clients.

### **3. Monitoring and evaluation**

We provide expert evaluations and international benchmarking of qualifications and syllabuses. This adds international credibility and recognition to national examinations. We also have extensive experience in the training, monitoring and evaluation of examiners.

### **4. Quality assurance in assessment**

We offer a range of quality assurance services starting with curriculum and syllabus evaluation and continuing to end-certification and on-going validation of standards. We have also developed a self-assessment framework for ministries and examination boards to assess their own performance and training needs.

### **5. Teacher and trainer development**

We work with governments to reform education systems and help localize examinations by training officials, teachers, markers and examiners. Our training and support services for teachers are extensive, including the delivery of new curricula and generic skills such as formative assessment. We offer formal Professional Development Qualifications for serving teachers. Training formats include regional workshops on subject specific standards, curriculum overview and delivery strategies and assessment methodologies.

**Highly regarded research**

We have the largest research capability of its kind within Europe, pioneering the latest techniques and evaluating current assessments. Externally funded research is also undertaken, including for the regulators in the UK. This means that we are able to contribute to education debates, providing our expertise to the Government, and to the wider policy-making community to ensure that education policy is informed by research and evidence.

**Quality assurance**

We invest heavily in quality management systems and have a purpose-built space to accommodate all our printing, warehousing and distribution needs. We distribute 40 million different assessments annually to over 170 countries. In addition, Cambridge Assessment is ISO accredited – an international standard for quality management systems. This means that teachers, candidates, examiners and employees can continue to have confidence that our IT operations and systems are managed to the highest levels in terms of quality and security.

### 3. Capability

#### Cambridge Assessment executive team:



**Simon Lebus**  
**Chief Executive of Cambridge Assessment and Chairman of OCR**

Simon Lebus was appointed Group Chief Executive of Cambridge Assessment on 1st July 2002. He became Chairman of OCR in 2004.

A Bye-Fellow of Emmanuel College, Simon has spent his career operating in complex and competitive business environments, where the drive for excellence and quality, good teamwork and the need for continuous improvement are essential for success. These are all characteristics that have made Cambridge Assessment a world leader in educational assessment.

Simon is also on the Board of the University Education Faculty.



**Dr Mike Milanovic**  
**Chief Executive of Cambridge English Language Assessment**

Dr Michael Milanovic has been CEO of Cambridge English Language Assessment since 2003. He is a trustee of The International Research Foundation for English Language Education and Manager of the Association of Language Testers in Europe - an association of 33 providers of high quality language assessments in 26 languages. He is also series editor for Studies in Language Testing, a series published by Cambridge University Press which now includes over 35 volumes and has attracted wide praise for its academic standards.

Dr Milanovic holds a PhD in language assessment and has over 30 years' academic, practical and managerial experience in this field. His personal expertise encompasses qualitative and quantitative research, strategic leadership and the development of rigorous quality management systems. He has led major projects in collaboration with governments around the world, including Chile, China, Colombia, Egypt, France, Spain and Vietnam and with the European Commission. He has been closely involved with both IELTS and with the Council of Europe's Common European Framework of Reference since their inception in the 1980s.

As CEO of Cambridge English Language Assessment, Dr Milanovic heads an organisation of over 400 people which has provided English language exams since 1913. These exams are taken by nearly 4 million people a year in 130 countries. Cambridge English is a part of the University of Cambridge, which is regularly ranked as the world's No.1 University and recently celebrated its 800th anniversary.



**Michael O'Sullivan**  
**Chief Executive of Cambridge International Examinations**

Michael O'Sullivan was appointed Chief Executive of Cambridge International Examinations in April 2013.

Previously, Michael was Director of the Cambridge Commonwealth Trust and Cambridge Overseas Trust. Prior to that role, Michael was Secretary General of the EU Chamber of Commerce in China.

Most of his earlier career was spent with the British Council; most recently as Director, British Council in China. Other roles have included Head of Corporate Planning, and East Asia and Pacific Policy Director.



**Mark Dawe**  
**Chief Executive of Oxford Cambridge and RSA Examinations (OCR)**

Mark Dawe was appointed Chief Executive of OCR in November 2010.

Previously Mark was Principal and Chief Executive of Oaklands College in Hertfordshire. He has a wealth of experience across a broad spectrum in the education field and is a board member of the Association of Learning Providers, Chair of the Association of Colleges for the Eastern Region, a Trustee of awarding body VTCT (an awarding body for vocational qualifications) and board member of the Principals' Professional Council. He also recently headed the Capital Task Group on behalf of the Association of Colleges and is now Chair of the National Capital Reference Group.



**Tim Oates**  
**Group Director of Assessment Research and Development**

Tim Oates joined Cambridge Assessment in May 2006 to spearhead the rapidly growing Assessment Research and Development division. He was previously at the Qualifications and Curriculum Agency (QCA), where he had been Head of Research and Statistics for most of the last decade.

He has advised the UK Government for many years on both practical matters and assessment policy.

**Group staff**

The Group employs almost 2,000 staff worldwide, over 1,200 of whom are in our head office in Cambridge; 400 in our Midlands based offices and others based in regional offices both in the UK and Internationally.

	<b>Permanent Staff</b>	<b>Consultants</b>
<b>Cambridge Assessment</b>	2,000	40,000
<b>Cambridge English Language Assessment</b>	500	20,000
<b>Cambridge International Examinations</b>	350	9,000
<b>Oxford, Cambridge and RSA Examinations</b>	550	14,000

**Individuals who will work with Arizona officials**

The biographies of people who would be working on this are found in Section 12 of the document.

## 4. Overview of assessment



The Cambridge Curriculum is a continuum starting at age 5 and running all through to age 19. The programs are progressive, embodying the same commitment to the acquisition and exercise of higher order skills, deep understanding and confidence in applying learning at every stage. Cambridge Primary and Secondary 1 cover Grades 3-8, and include diagnostic feedback while Cambridge IGCSE and Advanced cover Grades 9-12.

### 4.1. Cambridge Primary is appropriate for grades 1-5

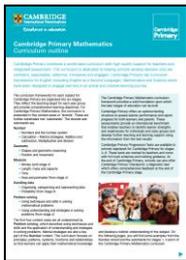
Cambridge Primary combines a world-class curriculum with high-quality support for teachers and integrated assessment. The curriculum is dedicated to helping schools develop learners who are confident, responsible, reflective, innovative and engaged. Cambridge Primary has curriculum frameworks for English (including English as a Second Language), Mathematics and Science which have been designed to engage learners in an active and creative learning journey. The curriculum frameworks for each subject for Cambridge Primary are organised into six stages. They reflect the teaching target for each year group and provide comprehensive learning objectives. The curriculum and assessments are not currently formally benchmarked against the Common Core Standards, or Arizona College and Career Readiness Standards though they embrace a closely similar approach to the importance of acquisition and exercise of higher order skills. Work to benchmark formally against these is underway.

Cambridge Primary offers an optional testing structure to assess learner performance and report progress for both learners and parents. These assessments provide an international benchmark that enables teachers to identify learner strengths and weaknesses within individuals and class groups and develop further teaching and learning support using the information from the test results. Cambridge Primary Progression Tests are available to schools registered for Cambridge Primary for Grades 2-5. These tests are marked by teachers and come with full rubrics and scoring guidance. At the end of Cambridge Primary, schools can also offer Cambridge Primary Checkpoint, a diagnostic test which offers comprehensive feedback at the end of the Cambridge Primary Years program.

#### Cambridge Primary English - Curriculum outline

The curriculum frameworks for each subject for Cambridge Primary are organised into six stages. They reflect the teaching target for each year group and provide comprehensive learning objectives. For Cambridge Primary English, the curriculum is presented in five content areas or 'strands'. These are further subdivided into 'substrands'. The framework promotes an enquiry-based approach to learning to develop thinking skills and encourage intellectual engagement. The five strands and substrands are:



<p>Phonics, spelling and vocabulary</p> <p>Grammar and punctuation</p> <ul style="list-style-type: none"> <li>• Reading</li> <li>• Writing</li> </ul> <p>Reading</p> <ul style="list-style-type: none"> <li>• Fiction and poetry</li> <li>• Non-fiction</li> </ul> <p>Writing</p> <ul style="list-style-type: none"> <li>• Fiction</li> <li>• Non-fiction</li> <li>• Presentation</li> </ul> <p>Speaking and listening</p>	
<p><b>Cambridge Primary math - Curriculum outline</b></p> <p>For Cambridge Primary math, the curriculum is presented in five content areas or 'strands'. These are further subdivided into 'substrands'. The strands and substrands are:</p> <p>Number</p> <ul style="list-style-type: none"> <li>• Numbers and the number system</li> <li>• Calculation – Mental strategies, Addition and subtraction, Multiplication and division</li> </ul> <p>Geometry</p> <ul style="list-style-type: none"> <li>• Shapes and geometric reasoning</li> <li>• Position and movement</li> </ul> <p>Measure</p> <ul style="list-style-type: none"> <li>• Money (until stage 3)</li> <li>• Length, mass and capacity</li> <li>• Time</li> <li>• Area and perimeter (from stage 4)</li> </ul> <p>Handling data</p> <ul style="list-style-type: none"> <li>• Organising, categorising and representing data</li> <li>• Probability (from stage 5)</li> </ul> <p>Problem solving</p> <ul style="list-style-type: none"> <li>• Using techniques and skills in solving mathematical problems</li> <li>• Using understanding and strategies in solving problems (from stage 4)</li> </ul>	

The Primary English curriculum aims to enable learners to communicate confidently and effectively and to develop critical skills in order to respond to a range of information, media and texts with enjoyment and understanding. Learners who follow this framework will develop a first language competency in English based on a curriculum designed to be successful in any culture and to promote cross-cultural understanding. The Cambridge Primary English curriculum framework provides a solid foundation on which the later stages of education can be built.

The first four content areas of the Cambridge Primary Maths curriculum are all underpinned by Problem solving, which describes using techniques and skills and the application of understanding and strategies in solving problems. Mental strategies are also a key part of the Number content. This curriculum focuses on principles, patterns, systems, functions and relationships so that learners can apply their mathematical knowledge and develop a holistic understanding of the subject.

*Cambridge Primary Maths* is an innovative combination of curriculum and resources designed to support teachers and learners to succeed in primary maths through best-practice international teaching and a problem-solving approach.

This online and print-based resource brings together the world-class Cambridge Primary curriculum from Cambridge International Examinations, high-quality publishing from Cambridge University Press and expertise in engaging online enrichment materials for the mathematics curriculum from the NRICH project based at the University of Cambridge.

*Cambridge Primary Maths* offers teachers a website that maps resources and links to materials offered through the primary curriculum, NRICH<sup>2</sup> and Cambridge Primary textbooks and e-books. These resources include engaging online activities, best-practice guidance and examples of *Cambridge Primary Maths* in action.

The Cambridge curriculum is dedicated to helping schools develop learners who are confident, responsible, reflective, innovative and engaged. It is designed to give learners the skills to problem solve effectively, apply mathematical knowledge and develop a holistic understanding of the subject.

The *Cambridge Primary Maths* textbooks provide best-in-class support for this problem-solving approach, based on pedagogical practice found in successful schools across the world. The engaging NRICH online resources help develop mathematical thinking and problem-solving skills.

Cambridge Primary Maths will be launched in January 2014, <http://www.cie.org.uk/programmes-and-qualifications/whats-new/coming-soon/cambridge-primary-maths/>

Cambridge Primary offers high-quality support, including teaching materials and training to help teachers to plan and deliver the program.

### **Training and development**

Cambridge Primary schools receive access to a free online introductory training course. The course enables an unlimited number of teachers to learn at their own pace over the first year. We also offer tutor-led online training and face-to-face training, as well as [professional development qualifications](#).

### **Teaching materials**

Teaching materials available to Cambridge Primary schools include:

- Teacher guides – these bring together Unit lesson plans sample Daily lesson plans, planning and implementation guides
- Resource lists – these include resources endorsed by Cambridge, recommended by Cambridge and suggested by teachers
- Textbooks prepared by leading educational publishers.

### **Cambridge Primary support website**

Schools registered for Cambridge Primary have free access to our secure [Cambridge Primary support site](#), which offers:

- Administration and support resources to help you plan and deliver the program.

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<sup>2</sup> The NRICH website, set up by the University of Cambridge in 1996, aims to enrich the experience of the math curriculum by offering challenging and engaging activities

- Teacher guides and schemes of work for each part of Cambridge Primary.
- News and information on primary events and training, including the introductory online training course.
- Testing and analysis tools.

Many schools use the Cambridge Primary testing structure to assess learner performance and report progress to learners and parents. Cambridge Primary assessment uses internationally benchmarked tests, giving parents extra trust in the feedback they receive.

There are two assessment options:

- Cambridge Primary Progression Tests (marked in school)
- Cambridge Primary Checkpoint (marked by Cambridge examiners)

### **Cambridge Primary Progression Tests**

Cambridge Primary Progression Tests provide valid internal assessment of knowledge, skills and understanding in English, mathematics and science. There is currently a single Progression test for each grade, but in the timescale indicated Cambridge can develop secure end of year tests for each grade that will provide diagnostic feedback for teachers, parents and students. The tests:

- Enable learning to be assessed each year
- Provide detailed information about the performance of each learner for Grades 2,3,4 and 5
- Enable teachers to give structured feedback to learners and parents
- Enable teachers to compare strengths and weaknesses of individuals and groups
- Are paper and pencil and do not require computers to administer
- Are marked by teachers in your school
- Come with clear guidance, standards and rubrics
- Can be used any time in the year as many times as needed
- Can be downloaded from our secure Cambridge Primary support site.

We provide a unique analysis tool for Cambridge Primary Progression Tests – the Cambridge Progress Checker. It is available on the Cambridge Primary support site. You can upload learners' test results and then analyse the results and create and print reports. You can also compare a learner's results against their class, school or the cohort around the world and on a year-by-year basis.

### **Cambridge Primary Checkpoint**

[Cambridge Primary Checkpoint](#) is a diagnostic testing service that helps your learners by giving comprehensive feedback on their strengths and weaknesses in each subject area.

We offer Cambridge Primary Checkpoint tests within three week windows twice a year in April and October. They are usually taken at the end of Cambridge Primary program in Grade 5. The tests are marked in Cambridge and each learner receives a statement of achievement and a diagnostic report.

## **4.2. Cambridge Secondary 1 is appropriate for grades 6-8**

This flexible curriculum can be adapted to suit the individual needs of schools. There is a curriculum framework for each subject – English and math providing a clear teaching structure. Mapping of Secondary 1 Math and English curricula frameworks against the Arizona College and Career Readiness Standards for Language Arts and Mathematics has been conducted by the Center for the Future of Arizona in conjunction with 7 Arizona middle schools currently using the Cambridge program. This mapping document is confidential and can be found in the Addenda.

### **Cambridge Secondary 1 English - Curriculum framework.**

This framework provides a comprehensive set of progressive learning objectives for English. The objectives detail what the learner should know or what they should be able to do in English in each year of lower secondary education. They provide a structure for teaching and learning and a reference against which learners' ability and understanding can be checked.

Cambridge Secondary 1 English enables learners to communicate confidently and effectively and to develop the skills to respond to a range of information, media and texts with understanding and enjoyment.

The Cambridge Secondary 1 English curriculum promotes an enquiry based approach to learning to develop thinking skills and encourage intellectual engagement. The curriculum is presented in five content areas. Phonics, spelling and vocabulary and Grammar and punctuation relate to use of English. Grammar and punctuation is further divided into Reading and Writing to reflect the different ways in which grammar and punctuation are applied in each of these skills. Reading, Writing, and Speaking and listening are about developing thinking skills and encouraging intellectual engagement. The learning objectives span knowledge and understanding and other qualities.



### **Cambridge Secondary 1 math – Curriculum framework**

This framework provides a comprehensive set of progressive learning objectives for math. The objectives detail what the learner should know or what they should be able to do in each year of lower secondary education. The learning objectives provide a structure for teaching and learning and a reference against which learners' ability and understanding can be checked.

The Cambridge Secondary 1 math curriculum is presented in six content areas: Number, Algebra, Geometry, Measure, Handling data and Problem solving. The first five content areas are all underpinned by Problem solving, which provides a structure for the application of mathematical skills. Mental strategies are also a key part of the Number content. Together, these two areas form a progressive step preparing students for entry onto IGCSE level courses. This curriculum focuses on principles, patterns, systems, functions and relationships so that learners can apply their mathematical knowledge and develop a holistic understanding of the subject. The Cambridge Secondary 1 math curriculum framework continues the journey from the Cambridge Primary math framework and provides a solid foundation upon which the later stages of education can be built.



Many schools use the **Cambridge Secondary 1** testing structure to assess learner performance and report progress to learners and parents. Cambridge Secondary 1 assessment uses internationally benchmarked tests. There are two assessment options:

- Cambridge Secondary 1 Progression Tests (marked in school)
- Cambridge Secondary 1 Checkpoint (marked by Cambridge examiners).

## **Cambridge Secondary 1 Progression Tests**

Cambridge Secondary 1 Progression Tests provide valid internal assessment of knowledge, skills and understanding in English, mathematics and science. The tests:

- Enable learning to be assessed each year
- Provide detailed information about the performance of each learner for Grades 6,7 and 8
- Enable teachers to give structured feedback to learners and parents
- Enable teachers to compare the strengths and weaknesses of individuals and groups
- Are paper and pencil and do not require computers to administer
- Are marked by teachers at the school
- Come with clear guidance, standards and rubrics
- Can be used any time in the year, as many times as needed
- Can be downloaded from the secure Cambridge Secondary 1 support site.

We provide a unique analysis tool for Cambridge Secondary 1 Progression Tests – the Cambridge Progress Checker – to track learners' progress. It is available on the Cambridge Secondary 1 support site. Teachers can upload learners' test results and then analyse the results and create and print reports. Teachers can also compare a learner's results against their class, school or other schools around the world and on a year-by-year basis.

## **Cambridge Checkpoint**

[Cambridge Checkpoint](#) is a diagnostic testing service that helps learners by giving comprehensive feedback on their strengths and weaknesses in each subject area.

We offer Cambridge Checkpoint tests during three week windows twice a year and they are usually taken at the end of Cambridge Secondary 1 (8<sup>th</sup> grade). The tests are marked in Cambridge and each learner receives a statement of achievement and a diagnostic report.

## **4.3. Cambridge IGCSE English First Language, English Literature, Mathematics and Additional Mathematics. Cambridge International AS and A Level Mathematics are appropriate for Grades 9-12**

The programs of study and assessments for these subjects have been developed specifically to be aligned with the Common Core Standards, as part of the work of the Excellence for All / Arizona Move on When Ready pilot (Initially known as the Board Examination Systems pilot).

The syllabus document for each of these is included with this pack of information, and provides detail of the content of the program of study and the nature of the end of course assessments. Clear guidance as to the assessment objectives and the weighting is included in the syllabus documents.

It is Cambridge practice to publish the test and the scoring rubric after each administration, so that teachers are able to use these materials for end of topic diagnostic tests. In addition to publishing the test and the scoring rubric we also publish a report written by the Principal Examiner for the subject, which provides details of what the whole cohort did well or found challenging question by question.

Results reports include detailed item analysis.

### **Cambridge IGCSE First Language English (Common Core Compliant)**

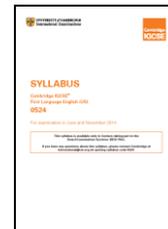
Cambridge IGCSE First Language English is designed for students whose mother tongue is English. The course allows students to:

- develop the ability to communicate clearly, accurately, and effectively when speaking and writing
- learn how to use a wide range of vocabulary and the correct grammar, spelling, and punctuation
- develop a personal style and an awareness of the audience being addressed.

Students are also encouraged to read widely, both for their own enjoyment and to further their awareness of the ways in which English can be used. Cambridge IGCSE First Language English also develops more general analysis and communication skills such as synthesis, inference, and the ability to order facts and present opinions effectively.

Successful candidates are well prepared for further study including Cambridge International AS and A Level

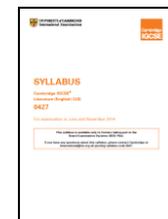
GCE English Language, Cambridge Pre-U, and the Cambridge International AS and A Level English.



### **Cambridge IGCSE Literature (English) (Common Core Compliant)**

Cambridge IGCSE Literature (English) is accepted by universities and employers as proof of real knowledge and understanding. Successful candidates gain lifelong skills, including the ability to:

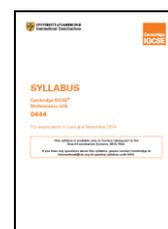
- read, interpret, and evaluate texts through the study of literature in English;
- develop an understanding of literal and implicit meaning, relevant contexts, and of the deeper themes or attitudes that may be expressed;
- recognize and appreciate the ways in which writers use English to achieve a range of effects;
- present an informed, personal response to materials they have studied;
- explore wider and universal issues, promoting students' better understanding of themselves and of the world around them.

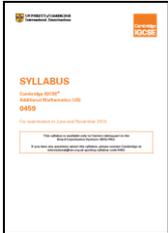


### **Cambridge IGCSE math (Common Core Compliant)**

Cambridge IGCSE math is accepted by universities and employers as proof of mathematical knowledge and understanding. Successful Cambridge IGCSE math candidates gain lifelong skills, including:

- the development of their mathematical knowledge;
- confidence by developing a feel for numbers, patterns, and relationships;
- an ability to consider and solve problems and present and interpret results;
- communication and reason using mathematical concepts;



<ul style="list-style-type: none"> <li>• a solid foundation for further study.</li> </ul>	
<p><b>Cambridge IGCSE Additional math (Common Core Compliant)</b></p> <p>Cambridge IGCSE Additional math is accepted by universities and employers as proof of essential mathematical knowledge and ability.</p> <p>The Additional math syllabus builds on the skills and knowledge developed in the Cambridge IGCSE math syllabus.</p> <p>Successful Cambridge IGCSE Additional math candidates gain lifelong skills, including:</p> <ul style="list-style-type: none"> <li>• the further development of mathematical concepts and principles</li> <li>• the extension of mathematical skills and their use in more advanced techniques</li> <li>• an ability to solve problems, present solutions logically, and interpret results</li> <li>• a solid foundation for further study.</li> </ul>	

#### 4.4. Timeline for development to ensure full implementation in 2014-2015

In order to meet all the requirements as set out in the RFI for externally scored assessments for all grades 3-11 in 2014-2015, Cambridge would need to adapt the Primary and Secondary Progression and Checkpoint tests in two ways.

First, the content of all the tests would need minor changes to make them fully compliant with the Arizona College and Career Readiness Standards. Background work to achieve this has already begun, with a preliminary report from the Center for the Future of Arizona just completed for Grades 6-8 and first steps taken for the earlier grades. These changes can be achieved within this timescale.

Second, the format of the Progression tests would need changing so that the tests are externally scored and the results reported in the same format as those for the Checkpoint tests for Grades 5 and 8. This could also be achieved within this timescale.

Cambridge will not be able to deliver computer based assessments in 2015, but would be able to do so from 2016 onwards. It is suggested elsewhere in this submission that it might be difficult for schools to adapt at the same time to a new style of assessment and a move from pencil and paper to computer based tests, with the danger that the unfamiliar medium becomes the focus of change programs in schools rather than the new requirements of the standards, so this is not seen as necessarily a weakness.

#### 4.5. Alignment with the Arizona standards and college readiness

The NCEE's Technical Advisory Committee<sup>3</sup> (TAC) tasked two of its distinguished members, Joan Herman, former Director of the National Center for Research on Evaluation, Standards and Student Testing (CRESST), and Robert Linn, with conducting an independent study of the alignment between the Common Core Standards in English Language Arts and Mathematics and the lower division examinations of the Excellence for All providers. The study focused on

<sup>3</sup> See Appendix 1 at the end of this document for short bios of members of the Technical Advisory Committee

end-of-course English language arts and mathematics exams offered by ACT's QualityCore and Cambridge IGCSE English (first language, extended version), English Literature, and Mathematics (extended version).

These Cambridge IGCSE English tests have been developed to align with the Common Core Standards which are the basis for the Arizona standards and have been used by Arizona schools participating in the Excellence for All pilot.

The overall objective of the study was to determine the extent to which the course tests are a good representation of the Common Core Standards in terms of content and rigor. The report of the study will be complete in early December, and a preliminary report about the outcomes was presented to Cambridge and NCEE leaders in Washington DC in November. The study rated each of the assessments against the requirements of the standards on four dimensions: stimulus complexity, prompt language complexity, content demands and complexity of response. The math study also rates the practices addressed.<sup>4</sup>

The panel spoke extremely positively about the Cambridge IGCSE English tests, reporting that they find them to be a very good match to the Common Core Standards and particularly praising the way in which the rubrics are designed to reward close reading and depth of analysis. The panel will make some recommendations for minor changes, described by panel members as 'tweaks', that will further improve the alignment, and Cambridge will be taking these recommendations on board. The panel also had much that is positive to say about Cambridge IGCSE Mathematics tests, particularly highlighting the attention to conceptual understanding, depth of knowledge and reasoning. They indicated that they will have some useful feedback in their final report that will enable Cambridge to make changes that will further improve the alignment of the tests in the coming year.

#### **4.6. Comparability with other States' criterion references assessments**

The NCEE TAC has also carried out comparability studies of the assessments in the lower division of the Excellence for All pilot. The aim of these studies is twofold. First, to enable the setting of cut scores on the Excellence for All providers' tests that will be regarded as indicative of college/career readiness, and second, to enable a comparison to be made between scores on the assessments of different providers. The approach of one study was to establish an empirical link between students' performance on each of the assessments taken under the Excellence for All pilot and the College Board's Preliminary SAT (PSAT).

The work - undertaken by researchers<sup>5</sup> at the Center for Advanced Study in Education (CASE), City University of New York – was commissioned by NCEE in accordance with the undertaking they had made to set up a TAC to carry out comparability studies across assessments participating in Excellence for All. The analysis considered students' performance on six distinct cognitive assessments, three drawn from the PSAT, which includes measures of critical reading, writing, and mathematics - all in standard multiple-choice format. The students also all completed three distinct IGCSE examinations, two in English (First Language English and English Literature).

The study was based on a comparison of the scores achieved on the PSAT with the scores achieved by the same students on the three Cambridge IGCSE assessments. The outcome of the study is a set of cut scores on the three Cambridge IGCSE assessments that are now acknowledged as providing evidence of college and career readiness for students in the

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<sup>4</sup> See Appendix 2 at the end of this document for short bios of the investigating panel members.

<sup>5</sup> Howard Everson, Ally Stevens, Jay Verkuilen

Excellence for All pilot. It is planned to repeat the study during 2014 on a larger scale, using both PSAT and ACT's PLAN assessments as comparators.

#### **4.7. The Impact of the Cambridge International AS/A Level (AICE) Acceleration Program on US College Readiness**

The successful transition from a high school environment to postsecondary study is contingent, in part, upon a student being college ready. Cambridge International Examinations has commissioned and conducted research that focuses on the Cambridge International A Levels and includes two aspects. First, an examination of the impact on what is taught and learned in the classroom of teachers' and students' desires to achieve good scores on the test – often referred to in shorthand as teaching to the test. Second, an analysis of the relative effects on college readiness of Cambridge programs of learning and assessment. Based on a review of the literature, nine criteria necessary to gauge a student's college readiness have been identified. Attributes of Cambridge students drawn from a number of impact studies have been mapped onto these criteria to elucidate the degree to which the Cambridge program promotes US college readiness. The impact research draws on data from an opportunity sample of eight case study high schools and two universities. The focus of the impact research has been on: comparisons of college readiness amongst Cambridge International A Level students; impact in the classroom of Cambridge International A Level on preparation content, methods, skills, activities and materials; and perceptions of Cambridge International A Level test fairness, pressures, likes and dislikes; and the profile of the impact study participants.<sup>6</sup>

##### **US Impact Studies**

As part of the continuing program to update and refine its study of the impact of the Cambridge international programs of learning, Cambridge International Examinations has undertaken a series of studies investigating their impact on a range of US stakeholders (see, for example, Shaw, 2011)<sup>7</sup>.

##### **US Predictive Validity Studies**

The primary purpose of this research (which is currently in its second phase) is to highlight the predictive validity of Cambridge examinations and other students' characteristics to predict preparedness for and continued academic success at US universities. For tests that are used for university selection purposes it is vital to demonstrate predictive validity.

The research undertaken uses data collected from three years' worth of students enrolled at Florida State University (FL). The data include information about each student's performance at high school, ethnicity, gender, and first-year Grade Point Average (GPA). Multilevel modelling has been applied to the data using the statistical software package MLwiN to investigate the relationships between the variables, and in particular to determine which are the best indicators of academic success at university.<sup>8</sup>

Cambridge would expect to plan appropriate research to complement existing studies, together with the Arizona Department of Education, as part of an implementation plan for our tests.

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<sup>6</sup> Article in submission

<sup>7</sup> Shaw, S. D. (2011). Investigating the Impact of Cambridge International Assessments on U.S. Stakeholders: Student and Teacher Perceptions. *College and University*, Vol.87 No.2, pp.12-23, Fall

<sup>8</sup> Shaw, S. D. & Bailey, C. (2011). Success in the US: Are Cambridge International Assessments Good Preparation for University Study? *Journal of College Admission*, No.213, pp.6-16, Fall

Shaw, S. D. & Bailey, C. (2011). An American university case study approach to predictive validity: Exploring the issues. *Research Matters*, Issue 12, June 2011, pp. 18-26

#### **4.8. Describe the available accessibility features as well as assessment accommodations for individuals with disabilities and English Language Learners**

Cambridge is committed to ensuring fair access to all of our qualifications. The Cambridge Code of Practice explains the principles governing Cambridge's approach to the delivery of assessments. Section 1.4 of the Code of Practice specifically defines the principles framing responsibilities and guiding all actions and activities in the area of accessibility of qualifications and assessments.

When developing new, and revising existing, qualifications a checklist is used to ensure that equality and accessibility issues have been considered – and unnecessary barriers to access have been avoided. This checklist was developed with reference to the Ofqual General Conditions of Recognition and associated guidance documents. Ofqual is the UK government's regulator, responsible for ensuring that assessment providers comply with legal requirements for fair access to tests, as well as all other aspects of the quality of the design and conduct of assessments used in England. As a recognised UK assessment provider, Cambridge is subject to 'close and continuous monitoring by Ofqual, which involves regular unannounced visits to ensure that we are complying both with their requirements and with our own procedures. A recent visit focused on our range of accommodations for fair access, and we were given a positive report.

Clear instructions exist for those involved in the development of question papers and responsible for the syllabus. These instructions reference expectations that question papers will not disadvantage particular groups of candidates on grounds other than competence in the subject. Linguistic demand, and the desire to avoid where possible the need for modification, is a specific criteria mentioned in these instructions.

A Question Paper Evaluation Committee meeting is held to evaluate a question paper before approval of the paper as ready for use, and pays specific attention to the language demand of the paper.

We ensure that only Schools who have committed to working with our regulations (by registering with us) are able to enter our examinations and assessments. The Cambridge Handbook and Administrative Guide explain what access arrangements are and how to apply for them if a School has candidates facing any barrier to access. These documents are updated annually, distributed to Schools in hard copy and made freely available for download from the public facing Cambridge website.

We categorise our access arrangements as one of three types – School delegated arrangements, Access arrangements, and Modified question papers.

School delegated arrangements can be approved in Schools and implemented without reference to Cambridge and Schools provide summary information to Cambridge. School delegated arrangements could include:

- Use of a word processor
- Up to 25% extra time, and/or supervised rest breaks
- Use of coloured overlays to address visual perception difficulties

Access arrangements require approval from Cambridge and must be applied for in writing. All applications whether successful or not receive a written response from Cambridge and a record of all applications is maintained. Emergency access arrangements can be put in place by Schools if circumstances warrant – but Cambridge must be informed as soon as possible of any such arrangements.

Access arrangements could, for example, include:

- Extra time above 25%, and/or supervised breaks
- Provision of readers, scribes, prompters, or practical assistants
- Another arrangement that removed a barrier to access
- Transcripts of listening tests to allow live speakers for hearing impaired candidates

Schools can apply for modified format question papers for candidates facing barriers to access. Formats available include:

- Braille
- A3 enlarged
- A4 18 point bold
- Question paper printed on coloured paper

Most Cambridge qualifications offer alternate routes to completion, using different component combinations. A candidate may therefore be able to complete an assessment whilst avoiding a potential barrier posed by a particular component.

As a general principle we will consider any access arrangement applied for, beyond those specifically mentioned above. If a proposed arrangement removes a barrier that prevents a candidate from accessing a qualification and does not give the candidate any advantage over others, and does not alter or compromise the competent standard being assessed then it can be approved.

Because our tests are designed for learners worldwide, it is recognised that many learners using the tests will not be first language speakers of English. This means that all item writers and test developers are required to be careful to ensure that the carrier language of our qualifications is as simple as possible. We carry out research into the language level requirements for access to and success in our tests. In addition, for the English Language Arts curriculum, we provide separate assessments, also mapped against the Common Core Standards, for students whose English is at Second Language rather than First Language level.

## 5. Computer-Based Assessment

Computer-Based Assessment forms part of a broader application of technology that we refer to as 'e-Assessment'. This includes not only computer-based testing, but also the support for the development, and assessment of, e-Portfolios. For the purposes of this response however, we focus on Computer-Based Testing.

Cambridge Assessment has a broad and deep experience of delivering Computer-Based Testing in a variety of different platforms, each suited to specific assessments and modes of delivery. Our primary high-stakes assessment platform, Connect Plus, jointly developed with RM Education, has been used for high-stakes assessment delivery since 2011. Last year, Cambridge English delivered around 230,000 tests through the platform. OCR also delivers a significant number of Computer-Based Tests, including GCSEs, as well as largely 'on demand' Vocational Assessments. This latter group of assessments are delivered through the BTL Surpass platform. Other assessment platforms are also used to deliver other examinations across the group. Cambridge in particular has been delivering Computer-Based Testing for live examinations since 2006; we deliver not only own assessments, but support partners such as the Singapore Examinations and Assessment Board in the development of their own Computer-Based Testing strategy.

This range of platforms and services can only be supported through a standards-based approach to authoring assessment items – a requirement met by our XML-based Content Creation and Management System (CCMS). This will soon allow us to deliver a broad range of Computer-Based Tests in standardised formats, including QTI and XHTML. Through this system, we are planning to significantly broaden the range of Computer-Based Tests that Cambridge offers, starting with our full range of Primary and Secondary 1 Tests by 2016.

In more general terms, test administration – either for Computer- or Paper-Based assessments – is managed either through Cambridge Direct or the Cambridge Primary/Cambridge Secondary 1 portals. These services allow schools (or groups of schools, e.g. from a whole state or country) to make their examination entries, and access results and performance analysis.

Regarding required technical specifications, the administration of either Computer or Paper-based assessments requires nothing more than a modern web browser (IE 8+, Firefox, Chrome or Safari). For the delivery of high-stakes Computer-Based Tests, specific hardware and software is required. The exact specification depends on the delivery system; however, using Connect Plus as an example, only a relatively modest specification computer is required.

In its most robust configuration, Connect Plus requires each Candidate PC (the computer at which a candidate takes a test) to have at least:

- Processor Speed: 1.6Ghz (as an indicator of age rather than outright performance)
- Memory (RAM) 256MB memory (an additional 32MB is required if a dedicated graphics card is not present)

Test Administrators also require a computer to start, stop (and if appropriate, pause) the test. These computers also provide part of the back-up strategy for candidate responses during the test. These computers require a slightly higher specification as a consequence:

- Processor Speed: 2.4GHz
- Memory (RAM) 512Mb

The school itself requires a reliable network and internet connection for the test (although internet access is not mandatory during the test itself):

- Minimum internet bandwidth: 512Kbits/sec
- Minimum Wireless/shared bandwidth: 54 MBits/sec 802.11 a, g, n or later

These requirements assume that no more than 300 candidates within a single school will be taking the test at the same time – if this is the case, the specifications will change. Connect Plus itself requires Windows XP or above, and can also run on Macs.

Schools taking a Computer-Based Test are provided with full guidance documentation and online/telephone support not only during the test itself, but also during the preparation phase. Schools are provided with both validation tests (to prove the system is configured correctly on the school network) and practice tests (for candidates to familiarise themselves with the test interface and relevant item types).

Cambridge has also provided bespoke training and support for intermediary organisations delivering their assessments, including both administration and teaching staff.

The UK regulator Ofqual requires that a paper-based alternative is provided alongside the Computer-Based Test as a 'fallback' option, in case of technical issues.

## 6. Assessment administration

	<b>Grades 3-5</b>	<b>Grades 6-8</b>
<b>English Reading and Writing</b>	2 x 1 hour tests	2 x 1 hour 10 minute tests
<b>Mathematics</b>	2 x 45 minute tests	2 x 1 hour tests

Assessments for Cambridge IGCSE English First Language include one two hour test and submission of a portfolio of coursework that is submitted to Cambridge before the testing window.

Assessments for Cambridge English Literature include one two hour test and a portfolio of coursework that is submitted to Cambridge before the testing window.

Assessments for Cambridge IGCSE Mathematics include two written tests totalling 4 hours. Our current testing windows are in April and October for tests for Grades 2-8 and May and November for Grades 9-12.

Cambridge provides school leaders and teachers with a series of professional development opportunities starting with subject specific online orientation courses followed by regional workshops which cover the curriculum, standards, assessment methodology and implementation strategies. Test administration training is also available both online and regionally to support schools using the Cambridge program.

## 7. Assessment standard setting and scoring

Some aspects of standard setting and scoring are different for the tests used for Grades 3-8 and for those used for Grades 9-11. The main reason for the difference is that Cambridge publishes all the items used in the tests for Grades 9-11 after each administration, and no items are re-used. In this way we provide ample availability of sample and practice assessments, complete with the scoring rubric and the report written by the chief scorer. This means, however, that it is not possible to anchor the difficulty of current tests by using items that have been used previously. The tests used for Grades 3-8 are constructed using field tested items, and the tests are calibrated in advance. These tests are not usually published following administration and items are re-used selectively to anchor the difficulty of the tests.<sup>9</sup> This means that the setting of cut scores for these tests is carried out in a different way, using Item Response Theory. The quality assurance processes outlined below for the qualifications and training of involved personnel are the same for all tests.

### Grades 3-9

Scoring rubrics for the Checkpoint tests, like those for other Cambridge tests, are developed alongside the tests. The procedures for ensuring consistency and accuracy of scoring are also the same as those for Grades 9-11.

The standard setting process is not the same as that used for Grades 9-11 because these tests are constructed using field tested items of known difficulty, and standards are set using the partial credit model variant of the Rasch theory.

### Grades 9-11

The process for developing the scoring criteria – scoring rubrics – is outlined below, as these are developed alongside the tests. The procedures for ensuring consistency and accuracy of scoring are set out in overview in the Cambridge Code of Practice.

The development of the syllabus, question papers and draft scoring rubrics lays the foundation for a successful scoring process. The success of the scoring itself depends on the selection and training of examiners and the supervision of the process. As with the development of the question papers, the scoring involves different roles.

The **Principal Examiner** for each paper leads the scoring of that paper. S/he is responsible for ensuring that there is a draft scoring rubric available for the standardisation meeting, and a final scoring rubric following the meeting. The Principal Examiner writes a report about the examination when the scoring is complete and this is published so that teachers and others can understand how the work was scored. Depending on the number of candidates taking the examination, there may be one or more **Team Leaders**, each responsible for a team of **Assistant Examiners**. Each Team Leader is responsible for the quality assurance of the work carried out by the Assistant Examiners in his/her team.

The number of examiners is restricted to the smallest number who can complete the scoring of the work of all the candidates without undue fatigue, since the smaller the number of examiners, the more reliably it can be ensured that all are scoring to the same standard. The number of examiners must be large enough to ensure that no examiner scores the work of candidates known to him/her, and that there is a second examiner available to score the work of any candidate who may appeal against the outcome of the scoring following the release of results.

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<sup>9</sup> For these tests, sample and practice assessments are available using items that will not be used in future live tests.

Examiners must have a degree in their subject and extensive recent experience of teaching the subject at this level.

New applicants for e-scoring take Cambridge's *Test to Assess*, an online scoring simulation exercise that assesses their initial aptitude for the role. If they are successful, they will be included on a scoring panel, where they will undertake initial training in the methodology of scoring and in the administrative procedures to be followed.

Cambridge's online scoring system, *scoris*, has been ratified by the regulator Ofqual and approved for its flexibility, ease of use and accuracy. The item characteristic curves produced by this scoring system feed into question paper setting and are used in standard setting.

For every question paper, examiners are trained before scoring begins. This is called standardisation and ensures that all examiners are scoring to the same standard. Each examiner – both those who are new to the scoring panel and those who have experience – must demonstrate their correct understanding and application of the scoring rubric before they are allowed to begin scoring the candidates' work.

Each examiner's scoring is continuously monitored during the scoring, by the use of 'seeded scripts' and also by spot checking by the Principal Examiner or Team Leader. The scoring software delivers 'seeded scripts' to the examiners at frequent intervals. The correct score for each item on these scripts is held in the system and the system flags if an examiner has awarded a different score, so that immediate corrective action can be taken.

Cambridge has carried out studies of scoring in different modes, i.e. traditional pen and paper and e-scoring. These indicate a high level of inter- and intra- rater reliability.

The quality assurance procedures built into the marking software provide real time feedback to senior examiners so that they are able to intervene and either provide further guidance to examiners or stop them from marking.

Item level data from the scoring are used both to feed back into item and test design to improve the characteristics of items and tests and to identify instances where the scoring rubric could have been improved to support more reliable scoring in future. This also feeds into improvements in the *Test to Assess* for new applicants and into standardisation of examiners.

At the end of each session of scoring the Principal Examiners and Team Leaders write a report on each examiner's work and each examiner is assigned a score between A and D. Any examiner scored D is not allowed to undertake any further scoring – this indicates that the work they scored had to be scored again by another examiner. A score of A indicates potential to lead a team, B is accurate scoring, C indicates scoring that was accurate on some items, but identifies the need for restriction to more straightforward types of scoring, together with additional training.

Cambridge works to a 100% error free standard. There are two kinds of error that we wish to avoid. One is in making judgements – whether in the process of test design, scoring or standard setting – and the other is in putting together question papers that are typographically perfect.

In the course of test design our procedures minimise the possibility of using an item that is invalid either because it requires knowledge or skills not included in the syllabus study program or because it is poorly worded. If it does happen that such an item is included in a test, it can be dealt with in ways that eliminate unfairness to the candidate as far as possible.

The standardisation of examiners provides an opportunity to ensure that all scorers are aware if there is an item that has been misinterpreted by a significant proportion of candidates. If the unexpected interpretation can properly be assessed, then this is added to the scoring rubric. In

exceptional circumstances this may not be possible. If there is printing error on the paper and the item simply does not work, then a decision is made to discount the item for all candidates.

The procedures for developing items and tests are designed to eliminate error from all question papers. Cambridge measures the success of this by the percentage of question papers that are 100% error free. In every one of the last five years this has been in excess of 99.9% and in June 2010 it was 100%.

During the scoring period, the scoring software automatically identifies any scorer who is not working correctly according to the rubric.

At the end of the scoring period the item level data reports produced by the software enable us to estimate and report the Standard Error of Measurement on a routine basis and provide an internal consistency measure (Cronbach's alpha).. They also create item characteristic curves. These reports are used both in the standard setting for the current administration and in the Question Paper Evaluation Committee<sup>10</sup> for future administrations of the test.

## **7.1. Performance levels and performance level descriptors**

Performance levels for each subject are set out as Grade Descriptors in the subject syllabi. These inform the drafting of the scoring rubrics and the training of scorers during standardisation.

When the scoring is complete, cut scores are applied to the score distribution to enable the award of grades to candidates. Since the tests are not pre-calibrated, the cut score may vary slightly from one year to the next. The development process for each question paper provides assurance that the papers will be of the same order of difficulty from one year to the next, but it can happen that the candidates will find a paper generally a little harder or a little easier than was the case for the previous cohort. Setting the cut scores must take account of this in a way that distinguishes between a slightly easier paper and a slightly better set of examination candidates. This is a specialised task, requiring both the use of technical and statistical data and professional judgement. It is undertaken by Product Managers and Principal Examiners following detailed procedures and supervised by senior assessment experts within Cambridge.

The technical and statistical information used include data about the performance of candidates in previous years, examples of actual candidate work which was just at the cut score in previous years (this is compared to the candidate work at and close to the proposed cut scores for the current year), and data about the performance of both candidates and items in the current year's tests.

The scores on each question paper are aggregated to produce a single score and grade for the subject, either by straight addition or by appropriate weighting according to the weighting of the Assessment Objectives for each paper and for the syllabus.

Several analyses have been conducted by Cambridge to investigate how the reliability of grades can be reported in a meaningful way and which help determine the extent to which grade outcomes would be the same if the test or assessment were to be replicated.

Rasch analysis of item level data is carried out to verify that there is appropriate information in the area of performance level scores to ensure reliability. Cambridge uses this method to spot check specific tests as a validation exercise.

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<sup>10</sup> The role of the Question Paper Evaluation Committee is explained in Section 10.

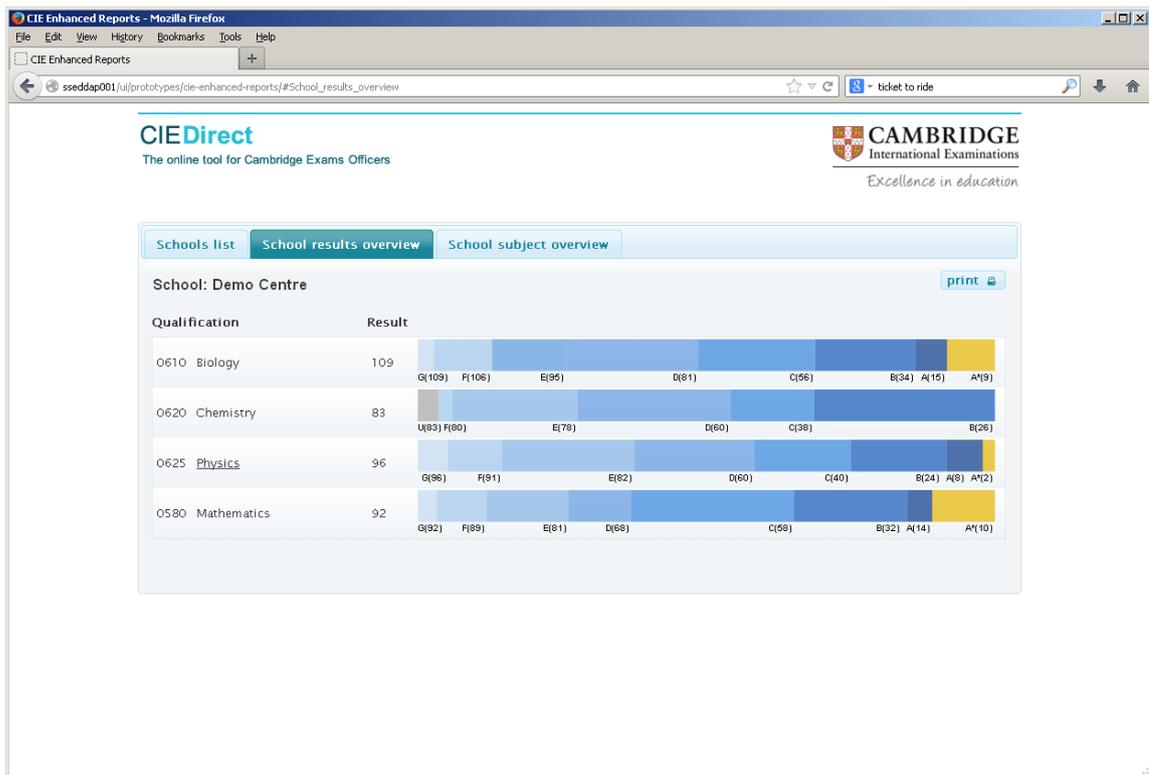
Another method used for expressing reliability information in terms of the grade scale is to relate the standard error of measurement, SEM, to the size of the grade bandwidth in marks – the grade classification index.

The 'Standard Error Method' (advocated by Stearns & Smith, 2008) offers further evidence of grade classification. In this method the conditional SEM obtained from an IRT analysis is used. This measure of candidate error varies across the score range and gives a more accurate answer than the grade classification index. This approach has been used by Cambridge Assessment researchers Tom Bramley and Vikas Dhawan in the context of a currently ongoing project on Reliability of Qualifications, undertaken for the examination regulator Ofqual. The construct validation program now incorporates this approach as one of several methods designed to evidence both internal test consistency and marker reliability.

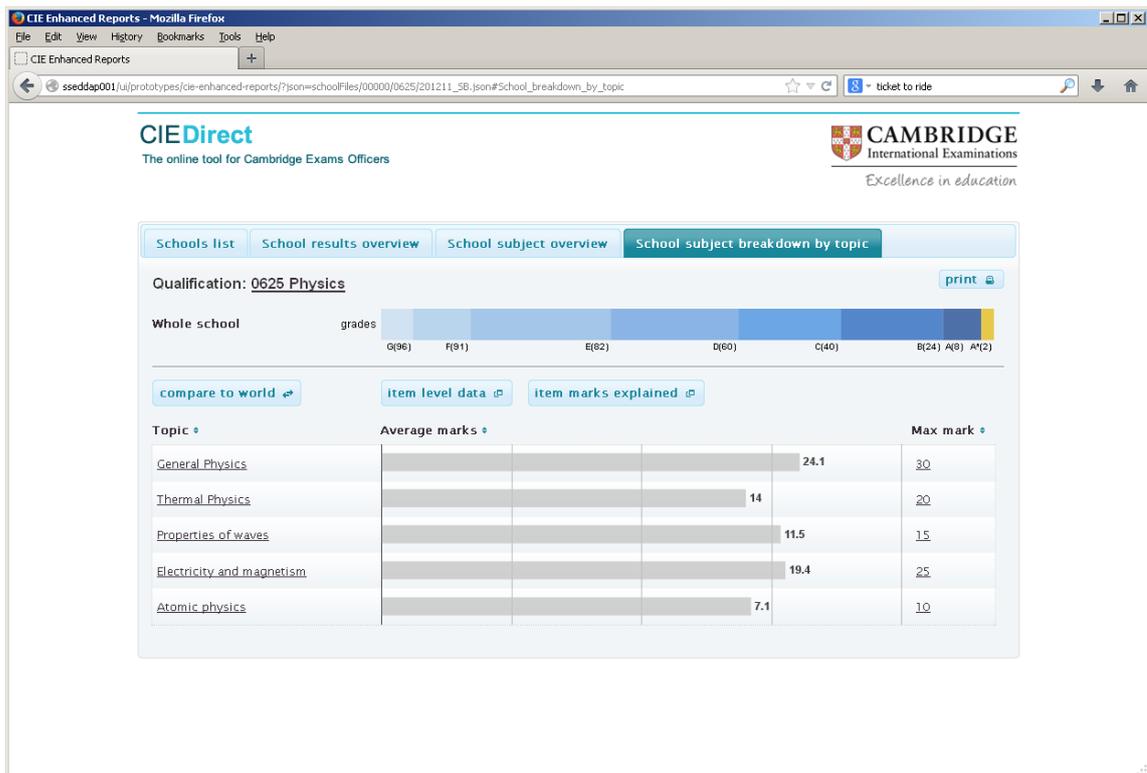
## 8. Score reports

Example performance descriptors for English IGCSE are shown associated with the items Appendix B, which also illustrate how the descriptors are applied through the rubrics. Each of the syllabi included as addenda includes generic performance descriptors associated with each grade

The screen shots below illustrate the kind of information that will be available to inform teachers, parents and students about their test results.



This report provides a high level overview of a whole school's results in four IGCSE subjects. It shows the number of candidates who took each test and the number and proportion of candidates achieving each grade in each subject. It can be seen that the Chemistry results are weaker than those in other subjects, especially mathematics.



This report shows the average number of marks scored by all candidates in the school for each of the topic areas covered by the Physics test. It also shows the maximum number of marks that were available for each topic in the test. It can be seen from this report that candidates scored quite evenly on the different topic areas, with a slight relative weakness of performance in Atomic Physics compared to Electricity and Magnetism.

**CIEDirect**  
The online tool for Cambridge Exams Officers

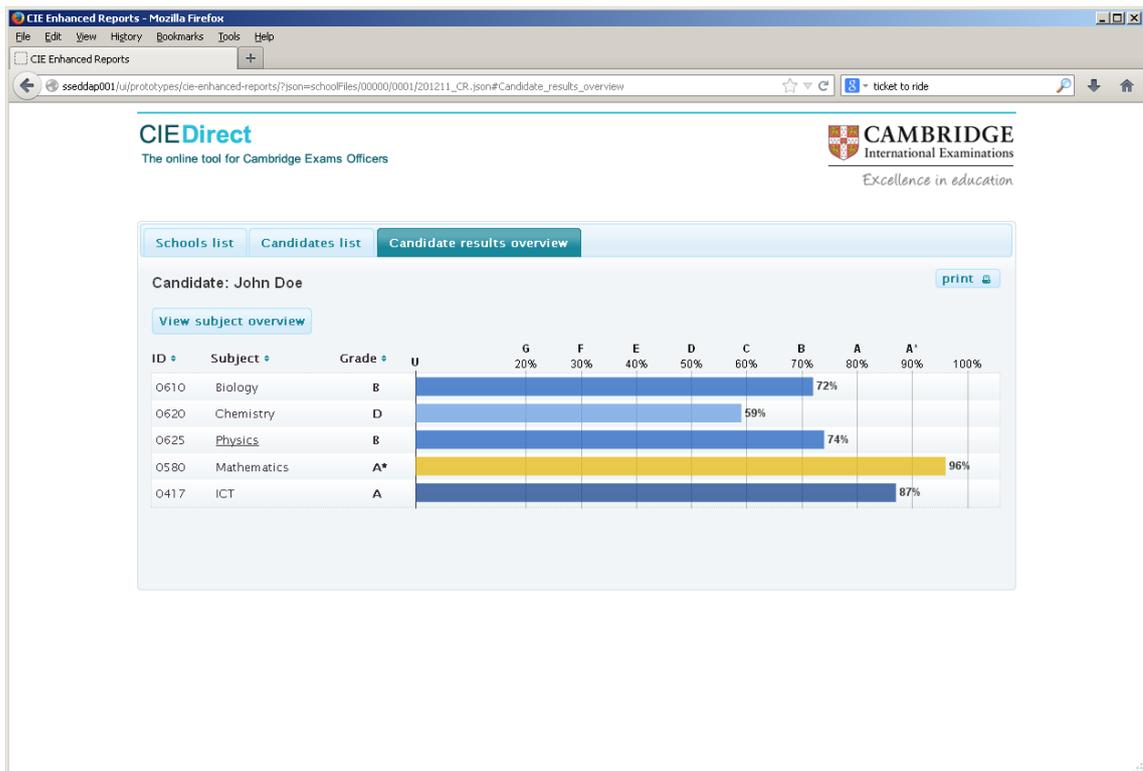
**CAMBRIDGE**  
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Schools list | **Candidates list** [print](#)

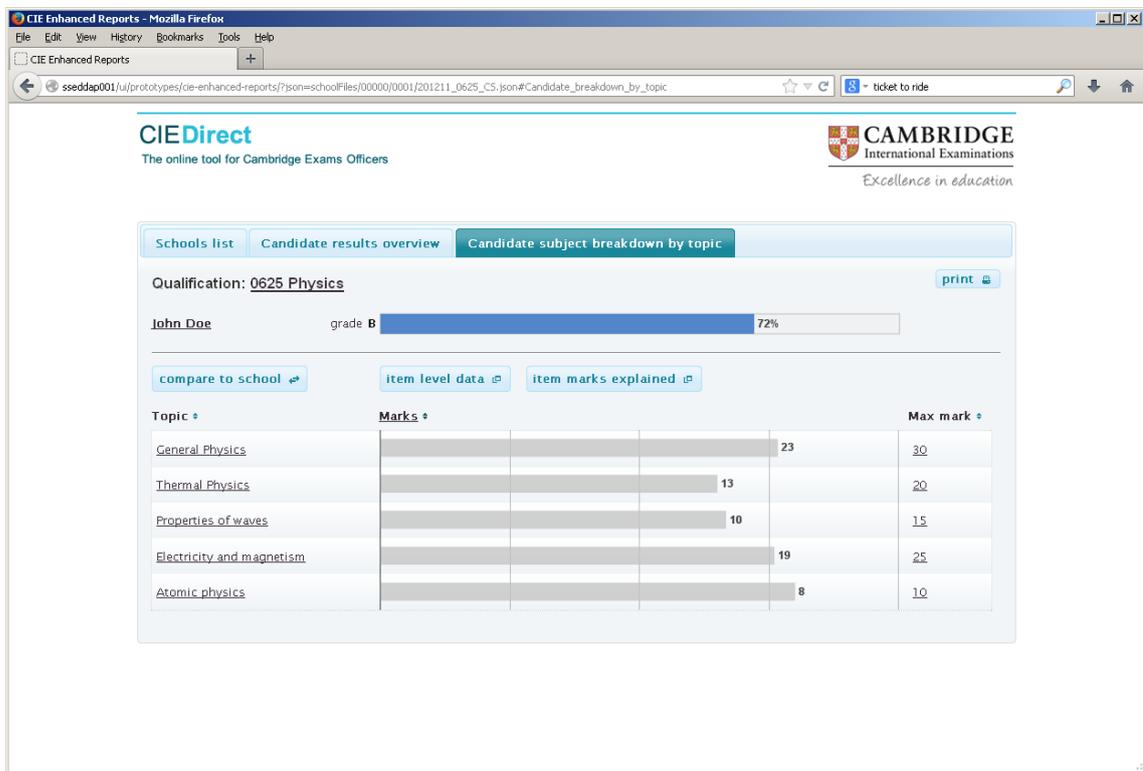
Demo Centre

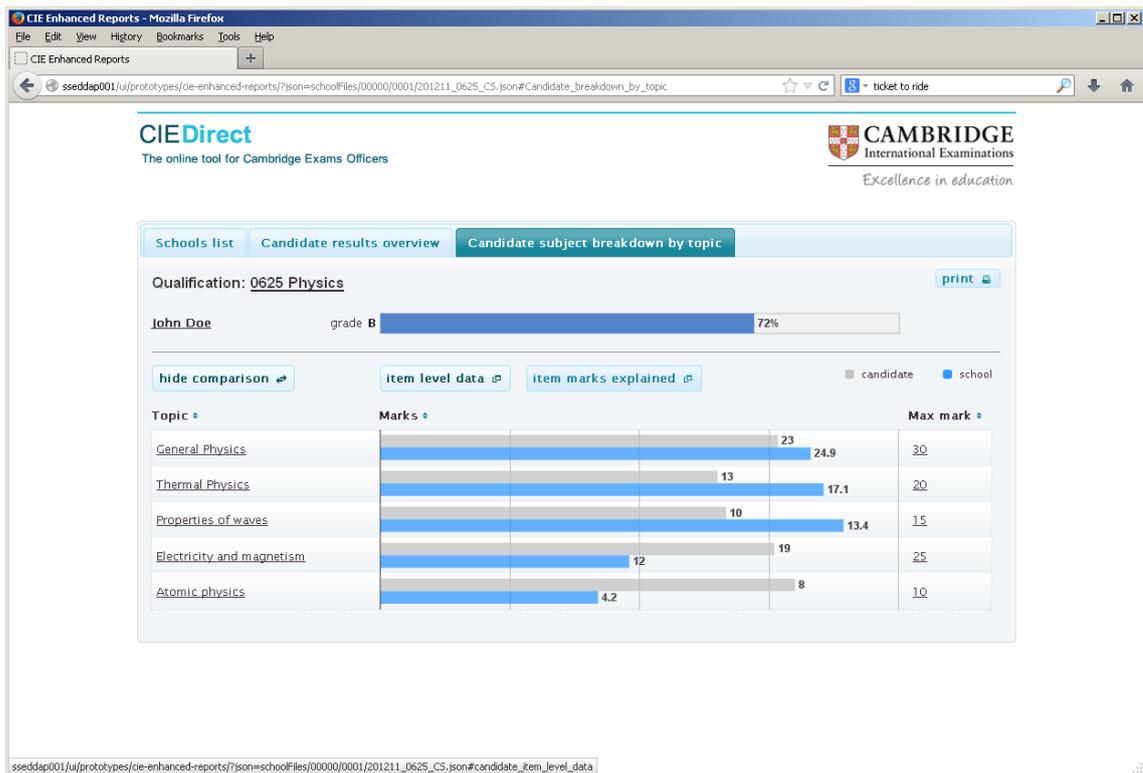
Candidates

0001	John Doe	<a href="#">results</a>
0002	Michael Smith	<a href="#">results</a>
0003	Mohammed Noor	<a href="#">results</a>
0004	Audrey van den Hoek	<a href="#">results</a>
0005	Ravi Rinarco	<a href="#">results</a>
0006	Danille Bergwerf	<a href="#">results</a>
0007	Yu Dam Lee	<a href="#">results</a>
0008	Ramona Peoples	<a href="#">results</a>

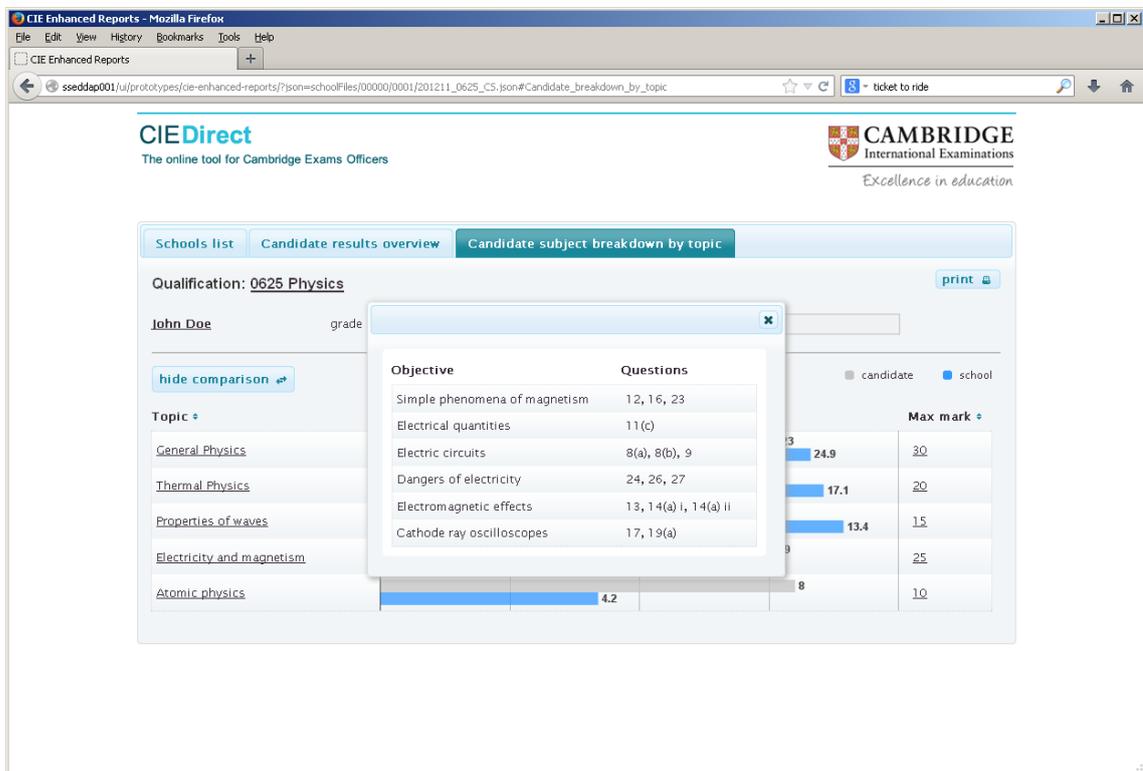


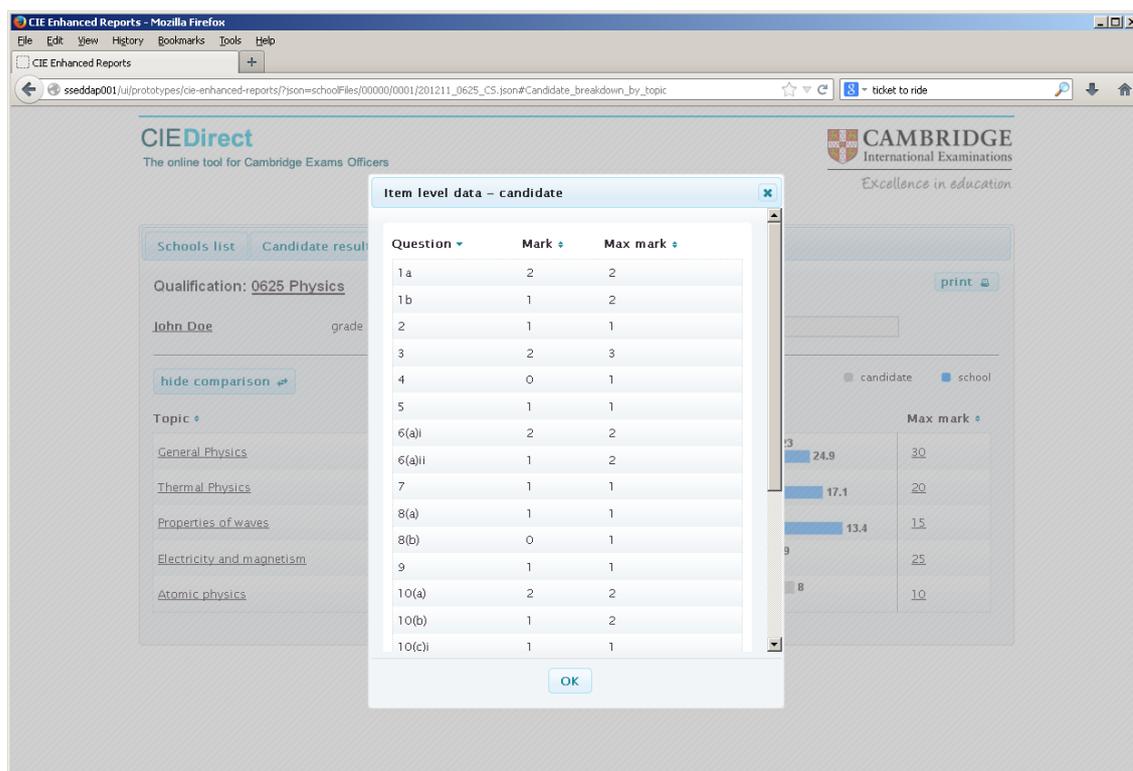
These two screen shots illustrate how it is possible to view a complete set of results for each candidate. It can be seen that John Doe is progressing much better at Math than he is at Chemistry.





These two reports show John Doe's marks for each topic in the Physics test. In the first screen they are shown in isolation and in the second they are compared with those of other candidates in the school. John Doe can be seen to shine at Atomic Physics compared to others in the school, but to lag behind in his understanding of Properties of Waves, for example.





The preceding screens show a detailed breakdown of John Doe's Physics marks, first for the test items that assessed the Electricity and Magnetism topic, and second by item number for the whole test. By navigating the reports it is possible to form a full and detailed picture of the performance of individuals or groups of candidates either across all subjects, or by individual subjects and sub topics.

The Primary and Secondary 1 Progression and Checkpoint tests provide scores for each subject, strand and sub-strand ranging from 1.0 to 6.0, with 6.0 being the best. As students progress through the grades, their scores indicate whether they are maintaining the same standard with their work in the next grade, or whether they are making faster or slower progress than previously. For example, a student with a score of 4.1 in their Math Checkpoint test at Grade 5 and a score of 3.5 in their Math Checkpoint test at Grade 8 would not have made steady progress but would have fallen behind the expected rate of learning.

The suite of reports provided following Checkpoint tests provide information about overall achievement and strengths and weaknesses in subjects, strands and sub-strands at the level of the whole school and for each teaching group as well as for individual students. Individual students receive detailed results indicating their strengths and weaknesses. Examples of these test reports are to be found in the Addenda.

## 9. Assessment development

### Principles of universal design

Cambridge has a comprehensive policy for access and accommodation. This is a requirement for our accreditation as an examination board by Ofqual, based on the stringent requirements of the Equalities Act (2010). The policy is set out in detail in Cambridge's Handbook for Centers, which is included as an Addendum.

The policy is based on the premise that candidates should be tested according to what they can do. Accommodation arrangements are such that a candidate with a disability is treated fairly, neither gaining advantage nor suffering disadvantage compared to candidates without disabilities.

The instructions both for syllabus design and for Setters include the requirement that the principles of accessibility be built in at every stage. These requirements are taken into account in the layout of question papers as well as in the content of the actual tasks.

Cambridge's Administrative Guide provides detailed information for administrators on the implementation of the accommodations, and this is also covered in the training provided. By their nature, requirements for accommodation are often very specific to an individual and Cambridge provides personal advice about the best way to apply the available accommodation when this is requested.

Cambridge is currently bound by the UK Disability Discrimination Act, which is similar in its provision to the Americans with Disabilities Act and Section 504 of the Vocational Rehabilitation Act. Cambridge will ensure that all decisions are compliant with these Acts.

The Disability and Discrimination Act requires examination boards to ensure that the accommodations made are such that candidates with disabilities are able to access the examinations without either advantage or disadvantage. This is the basis on which we work, in partnership with disability groups and across the different examination boards in the UK.

In theory we check that the distribution of grades given to candidates with disabilities is comparable to that of other candidates. In practice this is not straightforward, as we are hampered by the provisions of the Data Protection Act, so that it is not always possible to identify all candidates with disabilities. There has been extensive discussion among providers, and it seems likely that we will be able to conduct more useful studies in this area.

In designing assessments, Cambridge is mindful that teachers and students tend to concentrate on learning the things that the tests will assess. This means that a well-designed assessment will encourage good teaching and learning, and a poorly designed assessment is likely to have a destructive impact on the experience both of teachers and learners. Cambridge is actively committed to designing assessments that will encourage positive experiences in the classroom.

Cambridge uses a wide variety of assessment methods including extended essay, short answer and structured questions, multiple choice questions, performance based tests (for example, speaking tests for languages and music performances), laboratory skills tests, and coursework. The choice of assessment model and item type is governed by the demands of the subject. In general, Cambridge favors the use of open-ended questions that require the application of knowledge in novel contexts in at least some parts of the assessment of every subject.

Cambridge syllabi conform to a rigorous process of design and quality assurance, as set out in the Cambridge Assessment document *The Cambridge Approach* and in CAMBRIDGE's *Code of Practice*

Each syllabus sets out:

- the aims of the program
- the assessment objectives
- the scheme of assessment
- the curriculum content to be covered

The Cambridge *Code of Practice* sets out the principles by which syllabi are designed. This includes, for example, the requirement that the learning content of each syllabus be clearly specified, accurate and up-to-date; that syllabi be accompanied by guidance material that clearly exemplifies the coverage and depth of treatment required in both the teaching of the learning content and its assessment; that each scheme of assessment be capable of measuring candidates' attainment across the target ability range, designed to reward positive achievement, and providing candidates with the opportunity to show what they know, understand and can do; and that candidate performance is assessed against the same standard regardless of the point in the course at which assessment takes place.

## 9.1. Item development

The process of item development in terms of the quality assurance stages employed is covered in the Code of Practice and The Cambridge Approach documents and in Section 10 below. Appendix A and Appendix B include examples of actual items that have been used together with scoring rubrics, comments from Principal Examiners and, in the case of English, sample candidate responses to the items.

The exemplar questions in Appendix A have been selected to illustrate how a range of student response can be elicited within a question, allowing students of different abilities to demonstrate their aptitudes. Naturally within any examination there would be a range of questions; in Cambridge examinations, some are indeed targeted at specific student abilities, but these would normally be shorter questions. However, Cambridge considers longer, more involved questions, such as those shown below, to be crucial to the development of higher skills in mathematics, such as problem solving and reasoning, and considers that these skills should be assessed in students of all abilities. Cambridge therefore includes questions such as these with a range of accessibility within all our mathematics examinations.

After each question, the rubric that was employed is given, followed by the comments of the Principal Examiner after the writing of the exam by students. The form of the rubrics shows how marks are awarded for different parts of the question and how part marks are awarded for answers that are not completely correct, but which employ the correct methods to some degree. Cambridge considers such awarding of partial credit, where earned by evident understanding, to be important in the assessment of student ability. The Principal Examiner's reports indicate the range of responses that were provided by students, and show how the questions were accessible to students of different abilities.

Appendix B provides three examples of items, taken from IGCSE English, which require students to demonstrate a range of performance based on the depth and complexity of reading and writing standards. Examples of student responses are included.

## 10. Test development

### 10.1. Sound procedures for training and monitoring task developers

Many of Cambridge's assessments are developed as whole tests rather than being written as individual tasks. Writers and developers of either tasks or tests have extensive experience of scoring similar tests for Cambridge. The minimum requirement either for scoring or for developing tasks is a degree in the subject in question and at least three years' experience of teaching the subject at the relevant level.

There are sound procedures for training and monitoring task and test developers based on robust quality assurance processes. Training is provided for item writers both by Cambridge and by the Assessment Research and Development Group in Cambridge Assessment.

### 10.2. Development Process – review and coherence

Like the standards setting and scoring process, this has different aspects for the Grade 3-8 tests and the Grade 9-11 tests

#### Grades 3-8

These tests are constructed from an item bank of field-tested items, according to a test specification linked to the assessment strands and sub-strands. Items are commissioned twice a year, are revised and edited by expert personnel and are banked. After field testing they are made available for use in construction of live tests. Quality assurance principles that apply to development of tests for Grades 9-11 apply equally to Grades 3-8.

#### Grades 9-11

Tests for Grades 9-11 are constructed from an initial draft written by a single subject expert. It takes between eighteen months and two years to develop a set of question papers to assess a subject at IGCSE or at AS/ A Level. During this process the content of the tasks and tests is reviewed and mapped to ensure that the tasks measure both appropriate content and the correct assessment objectives thereby ensuring that the results are valid, reliable and fair. A number of roles exist with defined responsibilities at each stage, ensuring that the work of each task/test developer is monitored and that the tasks and tests once developed are free from bias and fit for purpose.

For each subject, Cambridge employs a **Product Manager** who is responsible for the proper completion of the development process, including all the quality assurance stages. Product Managers are graduates in their subject and usually have experience of teaching the subject at the relevant level.

Each question paper in a subject has a **Principal Examiner** who is normally responsible for setting the question paper and takes responsibility for the teams of scorers. The Principal Examiner must confirm that the question paper for which s/he is responsible is free from error must prepare the scoring rubric that will be the basis of the scoring. In addition to being subject experts with relevant teaching experience, Principal Examiners must have extensive experience of scoring examinations. Cambridge provides specific training to cover the aspects of their role that are new to them.

The roles and activities of Setter, Reviser, Question Paper Evaluation Committee and Vetter ensure that each test is fit for purpose. Each role is taken by a subject expert with relevant teaching and/or assessment experience. Every test and scoring rubric benefits from the input

of at least three separate experts working independently during the development process. Cambridge provides training, usually on a subject-level basis, for these roles.

The **Setter** is often also the Principal Examiner and makes the first draft of a question paper. A test in a particular subject usually includes at least two question papers which are designed to assess different parts of the knowledge, skills and understanding set out in the subject syllabus. The Setter is constrained in developing the question paper by detailed requirements that ensure the fairness, validity and reliability of the examination. The question paper and scoring rubric are developed in parallel throughout the process.

The **Reviser** reads the Setter's first draft and works through a detailed checklist which reflects the requirements for validity that informed the Setter's work. The Reviser will actively seek out any unintended consequences of the Setter's best intentions, as well as errors and omissions. The Reviser also makes an exhaustive check of the question paper's format, e.g. the correct number sequence of pages and questions, and the correct number of marks in each section and for the whole paper. More than 35 separate checks must be completed in carrying out this exercise. Each question paper and scoring rubric is reviewed in light of the Reviser's comments. The Setter responds to the suggested revisions and the Product Manager ensures that they are carried out in time for all the question papers and scoring rubrics for the subject to be sent to the members of the Question Paper Evaluation Committee in advance of the meeting.

The **Question Paper Evaluation Committee (QPEC)** includes the Setters and Revisers, the Principal Examiners and the Product Manager. The job of the QPEC is to review all the question papers and scoring rubrics for a subject together. In this way, they can ensure that the papers work together as a complex assessment instrument. Each paper and scoring rubric has been written and revised with a careful eye to issues of validity, but this may be the first opportunity to look at them as a collective whole, and to ensure that between them they provide good coverage of the syllabus, without overlap or repetition in terms of the topics they assess or the contexts used in the source and stimulus material for the questions. These meetings are characterised by robust discussion and frequent challenge. The meetings continue over several days, and many of the questions and scoring rubrics will be refined and further developed through the rigorous process of discussion to which each one is subjected.

It may not be possible for every aspect of a syllabus to be assessed every year, and it is the responsibility of the QPEC to ensure that, over a small number of years, all the skills, applications, knowledge and understanding specified in the syllabus are assessed.

The **Vetter** sees the question paper for the first time after the QPEC meeting, when a revised draft of each question paper and scoring rubric has been created. The rationale for this stage of the process is to test the paper and to allow an expert who has not previously seen or been involved with the paper to take a view on its fitness for purpose. The Vetter works through a set of checks, drawn from a list of more than 80 checks, some of which apply to particular kinds of question, such as those involving graphs or tables, and others equally applicable to all questions.

When the Vetter's checks have been completed and any work that has been found necessary has been carried out, the question paper and scoring rubric are sent to the Principal Examiner, who works through the paper and signs it off, and to the Product Manager, who proof reads the paper and passes it as ready to be printed.

Issues of test bias are addressed by the stringent quality assurance of the test design process, and in addition to this the Construct Validity program ensures that only true constructs are tested. The performance of each question paper is reviewed and one of the review criteria is bias – in the case of gender bias the item level analysis automatically produces this data.

The effectiveness of an examination in measuring how well students have mastered the content of the syllabus is an important aspect of validity.

*The Cambridge Approach* places strong emphasis on the aspects of question papers that contribute to the validity of the assessment.

For example, Validity Principles 4, 6 and 7 (p 9) state:

'The internal structure of the assessment should be consistent with the internal structure of the content domain. Those things which attract marks or credit should be genuinely significant elements of performance in a subject, and the assessment should have authentic sequencing of activities and processes.'

'Construct under-representation should be guarded against in the development and evaluation of the assessment. This indicates that the tasks which are measured in the assessment fail to include important dimensions or facets of the construct which is the focus of the assessment. Under such circumstances the test results are unlikely to reveal a candidate's abilities in respect of the construct.'

'Construct irrelevant variance' should be minimised. For example, if an examination question is about ratio, it should only be possible to score on the question by using ratio. Any extraneous elements – such as obscure contexts which are used in the question, or asking the question to be completed with undue speed, should be identified and remedied...'

The checklists used by the Setter, Reviser and Vetter, the agenda for the Question Paper Evaluation Committee and the procedural requirements such as use of a setting grid to indicate the relationship between the questions on the paper, the assessment objectives and the assessment structure, serve to ensure that these requirements are met.

Cambridge's Construct Validity project uses a number of analyses that demonstrate that students are responding to test tasks as intended. These include

- traditional analyses
- Rasch analyses
- factor analyses
- identification of processes expected and apparent in candidate responses
- interviews with candidates after answering examination questions.

The Principal Examiners' Report following each examination includes comment on the extent to which this has been true for the items on each question paper.

Consequential validity is addressed through impact and predictive validity studies. (In addition, ongoing research to evaluate intended and unintended uses of outcomes forms part of the extensive validation program.)

## 11. Assessment costs

We offer a range of assessment types and modes which provide an excellent fit with Common Core Standards. Our standard prices to individual schools, for externally set and marked assessments, are between \$18.50-\$81.90 per subject depending on the type of assessment, the purpose of the test, the uses the data and information are put to and the grade or school stage the assessment is designed for.

As a not for profit organisation we pass on savings, operating with prices below those in our standard list, where working with large groups of schools, States and systems on a national scale provide economies to the operation of the assessments.

We provide a range of assessments on the basis of a per school licence. Used in some of the top performing schools across the world, they offer particularly good value for money and additional educational benefits where large cohorts of students are assessed. Designed to be administered by teachers and schools directly, these assessments are supported by analytical tools which give rich instant data and information on progress and attainment to students, teachers and schools. The Primary and Secondary 1 Progression tests come under this category.

Supporting educational and teacher excellence is core to our mission. Recognising that school budgets for teacher training and professional development in contexts other than the United States can be constrained, our prices for examinations provide a subsidy to the training programmes we provide to teachers. Our understanding is that in Arizona it is more usual for the cost of training not to be subsidised by the costs of assessment. It is therefore likely that there will be opportunities for the price of assessments to be lower, where funding for training is provided through another mechanism.

Our aim is to offer high quality, best fit, value for money assessments which support the educational aims and standards of the Arizona State context. We expect to design a programme of assessment, reporting and teacher and school support that fits your purposes and fits with any information you are able to share as to your budgets and that of schools.

## 12. Qualifications and experience of the project team

Short CVs of who we will/could involve

### ***Diane Palmer***

*Director, Assessment, Cambridge International Examinations*

Ms Palmer obtained a BA Hons degree in Politics, Philosophy and Economics from Oxford University, and worked as Economics Research Officer for the Engineering Employers' Federation before becoming a teacher. During her teaching career she participated in an early Records of Achievement project in Bath and pioneered work experience in a large comprehensive in Bristol. She also worked for University of Cambridge Local Examinations Syndicate (UCLES) as an A Level examiner. In 1989, Ms Palmer completed her M.Ed. in Curriculum and Management. From 1989 to 1994 Diane worked for Common Purpose, a not-for-profit organization dedicated to building networks between senior decision-makers in cities to improve joined-up thinking behind their decisions.

In 1994, Diane joined UCLES, now Cambridge Assessment, in an administrative role before working in the Chief Executive's office as an internal consultant for two years. She then joined Cambridge International Examinations as Assistant Director for Examinations. Ms Palmer is also Project Sponsor (equivalent to Project Director) for the support provided by Cambridge Assessment to the Directorate of National Examinations in Bahrain.

### ***Dr Helen Eccles,***

*Director, Development Division, Cambridge International Examinations*

Helen Eccles joined Cambridge International Examinations as Director of Development in January 2010. Helen's division is responsible for all Cambridge curricula, training materials and assessments. As an expert in curriculum design and standards of examinations, she works with the UK regulator of examinations, Ofqual, and the UK government on projects such as educational reform and the quality of marking.

Helen has a particular interest in computer-based tests and online courses, as well as working on the delivery of 21st century skills in the curriculum to ensure students are properly prepared for university study and appropriately trained for the workplace following a degree-level qualification.

Helen was previously Assistant Director, Standards and Development at OCR, our sister organisation. Before that she was Chair of Examiners for Science, becoming the Head of the OCR Chairs' team.

Helen first became involved in examining in 1993 as a principal examiner for Chemistry A Level. Before that she worked in medical research at the Imperial Cancer Research Fund and the Medical Research Council (specialising in lung cancer) before moving into teaching at Hills Road Sixth Form College in Cambridge and then Homerton College, University of Cambridge.

Helen Eccles has a doctorate in Chemistry from the University of Cambridge and is a life Member of Clare Hall College. She entered the field of assessment following a career teaching A-level Chemistry at the UK's top sixth-form college, and Education at the Faculty of Education in Cambridge.

### ***Dr Tristian Stobie***

*Director, Education Division, Cambridge International Examinations*

Tristian Stobie leads the development of our education strategy for schools, supporting Cambridge teachers and learners and working in partnership with those engaged in education reform.

Tristian's career has spanned a wide range of educational contexts. Starting as a teacher (working in New Zealand, the UK, southern Africa and Western Europe), he moved into school administration with roles including Vice-Principal, and Middle and Secondary Principal.

Tristian completed a Master's and a Doctorate degree at the University of Bath with research interests in schools administration, curriculum and pedagogy.

He has also worked in a number of roles for the International Baccalaureate Organisation, most recently as the Head of IB Diploma Curriculum Development from 2006 to 2009. He joined Cambridge International Examinations in July 2011 from Atlantic College, a United World College in Wales.

### **Mark Dowling**

*Deputy Director (Standards), Assessment Division, Cambridge International Examinations*

Mark is a graduate of King's College Cambridge. He taught history and economics in secondary schools (age range 11 to 18) for fourteen years before returning to the University of Cambridge to work in January 1989. He has been the subject specialist member of staff responsible for Economics and Business Studies but for several years has run a group responsible for the maintenance of standards and for the quality of international assessments. His interests and fields of activity include the appropriate use of multiple-choice items, the effect of modularisation of qualifications on their assessment, the variety of evidence that may be used to maintain standards in grading (setting of cut scores) and the production of documentation about assessment processes for different audiences. In 2006-7 he spent six months on secondment to the Hong Kong Examinations and Assessment Authority as their advisor on assessment quality. Since 2010 he has been a frequent visitor to the Malaysian Examinations Council to advise on the assessment of their reformed examinations for 18-year-olds.

In 2007 he was elected one of the first Fellows of the Association for Educational Assessment (Europe). (AEA-Europe).

### **Stuart Shaw**

*Principal Research Officer, Assessment Services Division, Cambridge International Examinations*

Stuart began his career as an engineer, and holds an honours degree in Physics, a diploma in Applied Physics and a research degree in Metallurgy. His early experience, gained with an international plc, covered a range of engineering specialisms. Following his time in industry, he entered the TEFL world (Teaching English as a Foreign Language), gaining a certificate and diploma in TESOL and a Master degree in Applied Linguistics. He had several years' experience as an EFL teacher and Director of Studies. Stuart also holds a Master degree in Theology.

Stuart has worked for Cambridge Assessment since January 2001 where he is particularly interested in demonstrating how Cambridge Assessment seeks to meet the demands of validity in its assessments. Before leading a research team in the area of mainstream international examinations, Stuart worked on a range of Cambridge English (formerly Cambridge ESOL - English for Speakers of Other Languages) products with specific skill responsibilities for assessing writing. He has experience in the areas of researching and managing second language writing assessment in an ESOL context; developing, revising and introducing assessment procedures for new testing scenarios and disseminating good practice to others through mentoring, lecturing, informal advice; and the establishment of criteria for good practice in the type of public examination offered by University of Cambridge English Examinations and Cambridge International Examinations.

Stuart is an experienced presenter and has lectured for the School of Fuel Management and for the Department of Theoretical and Applied Linguistics (University of Cambridge). He is currently an affiliated lecturer with the Faculty of Education (University of Cambridge).

Stuart has a wide range of publications in English second language assessment and educational research journals. Recent books include: *Examining Writing: Research and practice in assessing second language writing* (Shaw and Weir, 2007); and *The IELTS Writing Assessment Revision Project: towards a revised rating scale* (Shaw and Falvey, 2008). He has recently completed a book on validity with Prof. Paul Newton (Institute of Education, London University) which will be published in early 2014 (SAGE publications).

Stuart is a Fellow of the Association for Educational Assessment in Europe (AEA-Europe) and a Fellow of the Chartered Institute of Educational Assessors (CIEA).

### ***Anthony Dawson***

*Senior Assessment Advisor, Assessment Division, Cambridge International Examinations*

Anthony holds a D.Phil. in Physics from the University of York. He taught Physics to Advanced Level in the Maldives for five years before returning to the UK in 1992 to work for the government agency responsible for the National Curriculum and for regulating public examinations. During this period he was involved with the revision of the Physics section of the Science National Curriculum for 5- to 16-year-olds in all state-funded schools in England and Wales.

In 1994 he began work Cambridge Assessment, of which Cambridge International Examinations is a part. Having worked on the development of national assessments for 14-year-olds in Science and managed a range of international examinations in Physics, he now works in a group responsible for the maintenance of standards and the assurance of quality in international examinations in all subjects.

One of his areas of activity is psychometric support for the Directorate of National Examinations in Bahrain, where he was instrumental in designing the system of national assessments. He has also been closely involved with the design, implementation and maintaining of a security system for examinations which may be taken across a wide range of time zones. He has responsibilities for ensuring that Cambridge coursework assessments are reliable and fit for purpose, and is one of a small team of assessment experts responsible for ensuring that examination standards are appropriately set and maintained. He is a source of advice for Cambridge staff on a wide variety of assessment issues.

### ***Dr Matthew Richards***

*Assistant Director, Innovation & Development, Cambridge International Examinations*

Following the awarding of his Ph.D at the University of Bristol, Matt worked in a variety of capacities within the Education Technology arena before joining CAMBRIDGE in 2005. Since then, he has focused on the use of technology in both the delivery and support of education and assessment, including the implementation of services to support online teacher training, exams administration and computer-based assessment. This enabled Matt to build a deep and 'joined-up' understanding of the ways in which technology can be used to support teachers, the delivery of our curricula and the ultimately the assessment of candidates.

In the context of e-Assessment, Matt delivered the first ever computer-based IGCSE examination in 2006, as well as the Progress Checker tool for the analysis of learner skill development through CAMBRIDGE's Progression Tests. More recently, besides ongoing Computer-Based Test (CBT) development and trialling, his team was involved in the design and delivery of the Connect Plus Computer-Based Testing platform, and its international rollout. He has led the CBT collaboration with the Singapore Examinations and Assessment Board (SEAB), as they move forward with their own national Computer-Based Testing plans. During

this (ongoing) collaboration, Matt provided expertise in the planning and implementation of their CBT strategy, planning and implementing trials, as well as providing support and training for Assessment and Operations staff. This work has so far led to the publication of two conference papers.

Matt is now leading the development of CAMBRIDGE's e-Assessment strategy. This year, we launched an international, online collaboration and e-Portfolio service for teachers and learners, initially in support of its Global Perspectives qualifications. In 2016, we plan to deliver Computer-Based alternatives to CAMBRIDGE's Progression and Checkpoint tests.

### **Anne Gutch**

*Deputy Director, Qualifications, Assessment Division, Cambridge International Examinations*

A proven track record in situation analysis and building a new team to define and administer a new assessment system including the : i) definition of organisational structures and roles, ii) definition and documentation of assessment practice and operational assessment administration processes and iii) specification of resources and facilities to support them.

Anne Gutch is an experienced and senior officer at Cambridge Assessment. For the past 20 years she has worked in assessment in a varied range of contexts within Cambridge Assessment. Earlier, Anne worked as a Subject Officer in Cambridge English, later becoming an Examination Co-ordinator, line managing staff and leading on the revision of a high stakes international ESOL examination, and subsequently becoming an Assistant Director within Cambridge English, responsible for IELTS and the general English Qualifications. Anne is now a Deputy Director within the Assessment Group in Cambridge International Examinations, responsible for the effective delivery of all general qualifications and international educational projects such as those with Kazakhstan and Egypt. Prior to joining Cambridge Assessment she worked at various institutions in Europe, including the British Council, teaching English as a Foreign Language, and as a Languages and Linguistics lecturer in Bulgaria, thus living and working in a range of countries. Anne also has a Bachelor of Arts Degree, a Diploma in the Teaching of English Overseas, and a Master's degree in Education.

### **Ariel S. Foster**

*Regional Consultant, USA, Communications & Customer Relationships, Cambridge International Examinations*

Ariel Foster is a regional consultant for Cambridge International Examinations' operations in the United States. She is responsible for strategy development, special projects, and school outreach in the mid-Atlantic and New England states.

Prior to joining Cambridge International Examinations this Fall, she served as the Executive Director of Advanced Placement (AP) College and University Services at the College Board. During her tenure with AP, she led research design and study implementation evaluating higher education recognition of substantially redesigned AP curricula.

Prior to AP, Ariel was the Executive Director of the College-Level Examination Program (CLEP) where she supported Department of Defense contracted educational services and several state-level initiatives developed to support college degree completion.

### **Kara Kofira**

*Assistant International Project Manager, Education, Cambridge International Examinations*

Kara Kofira is an assistant international project manager at Cambridge Assessment. She is responsible for the design of project plans, agreement of deliverables, identification and mitigation of project risks, facilitation of meetings with clients and financial control of projects.

During her 5 years with Cambridge Assessment, she has managed projects focussing on the development and implementation of new curriculum, assessment and training for schools and

teachers in the United States as part of initiatives with the College Board and the National Center on Education and the Economy, and also has managed the development of e-assessment and online learning courses for second-language English speakers.

Prior to joining Cambridge Assessment, she was a teacher in New York State. She holds a master's degree in teaching from Fordham University and master's degree in education from the University of Cambridge.

***Sherry Reach***

*Regional Manager for Americas, Communications & Customer Relationships, Cambridge International Examinations*

Sherry Reach is based in Florida and has served for twelve years as a liaison to Cambridge schools located in the U.S. She works with schools and school districts and state departments of education to identify their needs and help implement Cambridge programs.

Prior to working with Cambridge, Sherry taught students at the high school and college levels and coordinated the implementation of the Cambridge AICE diploma program at the first US school to offer it.

Sherry was also involved with the professional development of teachers during her tenure as Asst. Director at the Center for Economics Education at Auburn University, Alabama. Sherry holds Masters of Education and Bachelor of Science degrees from Auburn University.

## **12.1. Mathematics Panel for CCSS alignment study**

***Wally Etterbeek***

Wally Etterbeek is professor emeritus in the Mathematics Department at California State University - Sacramento where he taught for 35 years. Throughout his career, however, he has maintained strong interests in K-12 mathematics education and teacher preparation. Among these experiences are nearly a decade of teaching in local elementary schools and two decades teaching high school advanced mathematics, including AP courses. Dr. Etterbeek was a lead member of the Mathematics Diagnostic Testing Project (MDTP), an innovative testing program focused on readiness assessment for courses from Pre-algebra to Calculus to support students' college readiness and to bridge secondary and college expectations. He received his Ph.D. in mathematics from University of California - Davis in 1968.

***Julie Gainsburg***

Julie Gainsburg is associate professor of secondary education at California State University, Northridge. She teaches credential and masters-level courses in mathematics education, coordinates the Performance Assessment for California Teachers (PACT) for the department, and chairs dissertations in the college's Ed.D. program. She has served at CSU-system-level in the Early Assessment Program and on the CSU Single-Subject Reading Task Force. Dr. Gainsburg is a member of the Design Team for the edTPA, a national teacher performance assessment, and of the Media Cluster Editorial Panel for the National Council of Teachers of Mathematics. Her research foci are the development of new and inservice mathematics teachers, and the mathematical expertise of engineers. Prior to CSUN, she taught high-school mathematics and helped design the first Big Picture School in Providence, RI. She received her Ph.D. in curriculum and teacher education from Stanford University in 2003.

***Robert L. Kimball, Jr.***

Robert L. Kimball, Jr. taught at Wake Technical Community College in Raleigh, North Carolina from 1981 until 2011 when he retired. For 27 of those years, he was head of the Mathematics and Physics Department. Previously, he taught mathematics and coached in high school. Dr. Kimball was the founding president of NCMATYC and was a regional vice president of

AMATYC. He has chaired the Technical Mathematics Committee of AMATYC and served on advisory boards for projects related to the workplace. In addition to writing a textbook and manuals, he was also a writer and consultant to AMATYC's *CROSSROADS in Mathematics: Standards for Introductory College Mathematics* as well as to *Beyond Crossroads*. He has been a project investigator on several ATE and CCLI awards from the National Science Foundation. He currently is engaged by the Carnegie Foundation for the Advancement of Teaching on its advisory committee for both *StatWay* and *MathWay* (now *QuantWay*) and is also serving on the team of authors writing lessons for *QuantWay*.

### ***Tiayana Marks***

Tiayana Marks is a test design and development associate in the New York City Department of Education. She has been working with classrooms and school districts since 1997. She began her career as a teacher, teaching 3<sup>rd</sup> grade in Wisconsin and later 6<sup>th</sup> grade in Brooklyn, NY. She began working in mathematics assessment in 2005 as a senior mathematics editor at The Princeton Review. Ms. Marks managed the development of formative assessments for various school districts around the nation. In 2007, she joined the Office of Performance and Accountability at the New York City Department of Education as a test design and development associate. In this role, she designed, managed and evaluated summative and formative assessments, including performance assessments. She engaged extensively with the Common Core State Standards and oversaw the design and development of content for all mathematics assessments developed for the city. She served on the Citywide Math Leadership Team and as a reviewer of NAEP assessment items. Ms. Marks is currently consulting on various initiatives related to the Common Core State Standards. She serves as a curriculum reviewer for New York State's new Common Core aligned curriculum. She is working as a curriculum writing consultant with EdLabs. Additionally, she is supporting the development of PARCC items with Council for Aid to Education.

### ***Barbara Schallau***

Barbara Schallau is the Math Curriculum Coordinator for East Side Union High School District in San Jose, CA. Prior to her position as Curriculum Coordinator, she was a classroom teacher for 22 years and has been a profession development provider for 20 years. Her professional development workshops focus on activities for underperforming math students (including special ed, ELL, and regular ed). Ms. Schallau's philosophy is that that math is not something to be afraid of. Not only can students, teachers, and parents understand math concepts, but also they can do them with confidence.

### ***Barbara Griggs Wells***

Barbara Griggs Wells is a consultant whose work focuses on providing professional development for secondary mathematics departments in public schools. She received a B.S. in mathematics from Howard University and spent over 25 years teaching mathematics in the District of Columbia and California public schools--evenly divided between junior and senior high schools. In 1990-91 the UCLA Mathematics Department awarded her the Visiting High School Lecturer position. After receiving a Ph.D. in education from UCLA with a specialty in mathematics administration, curriculum and teaching studies, she served as UCLA site director and California statewide school liaison coordinator for the Mathematics Diagnostic Testing Project. During her tenure as a member of the UCLA Mathematics Department she coordinated the pre-service teacher education program for secondary mathematics teachers and taught related seminars and courses in mathematics methods. Dr. Wells has also served as a member of the math content group for the Third International Mathematics and Science Study and as the assessment leader at the UC Office of the President for the California Mathematics Professional Development Institutes. Her publications and presentations have emphasized the value of writing as an effective instructional strategy for learning mathematics.

## 12.2. English Language Arts Panel for CCSS Alignment Study and English Panel CCSS Alignment Study

### Biographical Sketches

#### ***Paul Carney***

Paul Carney is an instructor at Minnesota State Community and Technical College – Fergus Falls (M-State) since 1988. During his tenure at M-State, he has taught courses in composition, literature, humanities, men's studies, criminology and creative writing. He has served two terms as President of the Minnesota Council of Teachers of English and is a former fellow and board member of The Minnesota Writing Project. He also has served as co-chair of Minnesota's P-16 Collaborative sub-committee on college and career readiness for writing. He currently serves on the Assessment Advisory Committee for the Minnesota Department of Education. His research interests include writing assessment, college readiness standards alignment and general education assessment in higher education.

In 2007 he developed Ready or Not Writing, a web-based program that invites high school students to submit their writing to college English instructors for feedback and support. He also is the developer and director of up2U, a competency-based program that prepares community college students for transfer to university and degree completion. In 2009 he was selected to serve on the English Language Arts Work Team for the Common Core State Standards. In 2011 he joined the National Center on Education and the Economy's English Panel to analyze the literacy demands found in introductory courses at open enrollment colleges and universities. He is the recipient of the 2012 Educator of the Year Award from the Minnesota State Colleges and Universities. He received his BA from Southern Methodist University and earned Masters Degrees in English and Sociology from The University of Texas at El Paso.

#### ***Mark W. Conley***

Mark W. Conley is professor of literacy and teacher education at the University of Memphis and co-investigator for the Center for the Study of Adult Literacy. Previously, he was a professor at Michigan State University for 21 years, specializing in teacher education and adolescent literacy. At Michigan State, he developed a tutoring program for teacher preparation students working with 250 adolescents each year at five local urban middle schools. Since coming to Memphis, he wrote the curriculum and is a part of the team effort to implement the Memphis Literacy Corps, an intensive tutoring program to boost the literacy skills of over-age grades 4, 5 and 6 students in the Memphis City Schools. The Memphis Literacy Corps is the largest, research-based tutoring instructional intervention ever attempted in the United States, involving 900 tutors and almost 3000 children.

Dr. Conley is author of numerous articles about literacy for adolescents, appearing in the *Journal of Adolescent and Adult Literacy* and the *Harvard Educational Review*. He has written texts on adolescent literacy and assessment as well as edited several volumes summarizing research on adolescent literacy. His research focuses on literacy and subject matter connections, examining literacy demands experienced by students in content area classrooms. Most recently, he has been researching the uses of computer-based tutoring approaches for students struggling to learn complex topics in mathematics and science. He holds a certified flight instructor certificate with an instrument rating and teaches acoustic guitar building in his spare time as part of his passion for teaching and learning.

#### ***Linda D. Friedrich***

Linda D. Friedrich serves as the Director of Research and Evaluation at the National Writing Project, where she has worked since 2002. She leads NWP's research and evaluation efforts; oversees the use and ongoing development of its writing assessment system; and, as a member of NWP's management team, supports the organization in strategically using research results and tools. Her research interests include teacher leadership and professional development, writing assessment, teacher research and the diffusion of knowledge and

practice. With Ann Lieberman, Senior Scholar, Stanford University, she authored *How Teachers Become Leaders: Learning from Practice and Research* (2010). Prior to joining the National Writing Project, she served as Director of Research at the Coalition of Essential Schools. She earned her Ph.D. in Administration and Policy Analysis at Stanford University's School of Education.

***Dorothy S. Strickland***

Dorothy S. Strickland is The State of New Jersey Professor Reading and the Samuel DeWitt Proctor Professor of Education Emerita at Rutgers University. A former classroom teacher and reading specialist, she is a past president of the International Reading Association and a member of the IRA Reading Hall of Fame. She received IRA's Outstanding Teacher Educator of Reading Award and the National Council of Teachers of English Outstanding Educator in the Language Arts. Dr. Strickland was a member of the panel that produced *Becoming a Nation of Readers* and served on the Validation Committee for the Common Core State Standards. She currently serves as a member of the Content Technical Work Group for the *Partnership for the Assessment of Readiness for College and Careers (PARCC)*. Her publications include: *Bridging the Literacy Achievement Gap, Grades 4-12*; and *The Administration and Supervision of Reading Programs*.

### **12.3. Membership of the Technical Advisory Committee of the National Council on Education and the Economy**

***Howard T. Everson – Co-Chair***

Howard T. Everson is Executive Director and Professor at the City University of New York's Center for Advanced Study in Education. Prior to joining the City University, he was Professor of Psychology and Psychometrics at Fordham University. Dr. Everson's research and scholarly interests focus on the intersection of cognitive psychology, instruction and assessment. He has contributed to developments in educational psychology, psychometrics and quantitative methods in psychology. He serves as consulting research scientist to number of organizations, including the American Councils for International Education, the American Institutes for Research, and the National Center on Education and the Economy.

Dr. Everson was founding director of the Educational Statistics Services Institute at the American Institutes for Research. He also served as Vice President for Academic Initiatives and Chief Research Scientist for the College Board, and was a Psychometric Fellow at the Educational Testing Service. Dr. Everson is a Fellow of both the American Educational Research Association and the American Psychological Association, a charter member of the American Psychological Society, and past-president of the Division of Educational Psychology (Division 15) of the American Psychological Association. He currently serves on APA's Committee on Testing and Assessment Issues and the National Collegiate Athletic Association's Advisory Panel on Research, and chairs the New York State Regents Examination's Technical Advisory Panel.

***James W. Pellegrino - Co-Chair***

James W. Pellegrino is Liberal Arts and Sciences Distinguished Professor and Distinguished Professor of Education at the University of Illinois at Chicago. He also serves as Co-director of UIC's interdisciplinary Learning Sciences Research Institute. Previously he was Professor of Psychology and a Research Associate of the University of Pittsburgh's Learning Research and Development Center, Professor of Education and Psychology at the University of California at Santa Barbara, Frank W. Mayborn Professor of Cognitive Studies at Vanderbilt University, where he also served as co-director of the Learning Technology Center and Dean of Vanderbilt's Peabody College of Education and Human Development.

Dr. Pellegrino's research and development interests focus on children's and adult's thinking and learning and the implications of cognitive research and theory for assessment and instructional

practice. Much of his current work is focused on analyses of complex learning and instructional environments, including those incorporating powerful information technology tools, with the goal of better understanding the nature of student learning and the conditions that enhance deep understanding. A special concern of his research is the incorporation of effective formative assessment practices, assisted by technology, to maximize student learning and understanding.

Dr. Pellegrino's has led several National Academy of Sciences/National Research Council study committees. These include chair of the Study Committee for the *Evaluation of the National and State Assessments of Educational Progress*, co-chair of the Study Committee on *Learning Research and Educational Practice*, and co-chair of the Study Committee on the *Foundations of Assessment*. He was a member of the Study Committee on *Improving Learning with Information Technology* and chaired the *Panel on Research on Learning and Instruction* for the Strategic Education Research Partnership. Most recently he completed service as a member of the Study Committee on *Test Design for K-12 Science Achievement* and currently serves on the Study Committee on *Science Learning: Games, Simulations and Education*. He is a lifetime National Associate of the National Academy of Sciences and a past member of the NRC's Board on Testing and Assessment. In 2007 he was elected to lifetime membership in the National Academy of Education and has served on AERA's Governing Council.

### **Lloyd Bond**

Lloyd Bond is a Consulting Scholar with the Carnegie Foundation for the Advancement of Teaching and Emeritus Professor of Education at the University of North Carolina, Greensboro. From 2002 to 2008 he was a Senior Scholar at Carnegie working in the area of assessment across several Carnegie Foundation programs. Dr. Bond obtained the Ph. D. in Psychology (1976) from the Johns Hopkins University, specializing in psychometrics and quantitative methods. He taught test theory and psychometrics at the University of Pittsburgh, and at the University of North Carolina (Greensboro).

Dr. Bond has published widely in the area of assessment, measurement theory and testing policy and has made fundamental contributions to the literature on measuring complex performance and cognitive process underlying test performance. He has held editorial positions on the leading journals in educational and psychological measurement and serves on numerous commissions and panels devoted to testing and testing policy. He is currently a member of the Data Analysis Committee of the National Assessment of Educational Progress (NAEP) and the Psychometric Panel of the College Board. Previously he served on the National Academy of Sciences' Committee on Indicators of Science and Mathematics Education and their Committee on Science Assessment Standards. A fellow of both The American Psychological Association and the American Educational Research Association (AERA), Professor Bond is the recipient of numerous honors and awards, including the Presidential Citation from AERA for Contributions to Educational Measurement and an APA Distinguished Service Award for his work on the Joint Standards for Educational and Psychological Testing. He has served as a trustee for the College Board, and currently sits on the boards of the Human Resources Research Organization and CRESST.

### **Phillip Daro**

Phillip Daro is a Senior Fellow for Mathematics at Pearson's America's Choice where he focuses on programs for students who are behind and algebra for all. He also directs the partnership of the University of California, Stanford and others with the San Francisco Unified School District for the Strategic Education Research Partnership, with a focus on mathematics and science learning among students learning English or developing academic English. Recently he chaired the workgroup that developed the *Common Core State Standards for Mathematics*.

Mr. Daro has directed, advised and consulted to a range of mathematics education projects. He currently serves on the NAEP Validity Studies panel, has chaired the mathematics standards committees for Georgia and Kentucky and chaired the Technical Advisory Group for ACHIEVE's Mathematics Work Group. He also has served on the College Board's Mathematics Framework Committee, the RAND Mathematics Education Study Panel, and several mathematics task forces for the State of California. A regular consultant to large urban school districts across the country, from the mid '80s until the 90s, he was the director of the California Mathematics Project for the University of California. He also worked with reading and literacy experts and panels on problems related to academic language development, especially in mathematics classroom discourse.

***Richard P. Durán***

Richard P. Durán is a Professor at the Gevirtz Graduate School of Education, University of California, Santa Barbara. Prior to joining UCSB, he served as a research scientist at Educational Testing Service where he conducted studies on the validity of the SAT for use in predicting Latino students' college achievement, the validity of the GRE test, and the validity of the Test of English as Foreign Language. Since joining UCSB Dr. Duran has conducted and published research on assessment validity and education policy, and educational interventions serving English language learners preparing for college. He has investigated how more effective instruction could be designed to improve the academic outcomes of culturally and linguistically diverse students who don't perform well on standardized tests and who come from low-income families, and how students' self awareness of their performance can lead to new notions of assessment. Most recently he has been conducting research on student learning in after-school computer clubs.

Dr. Duran has served as a member of the National Research Council Board on Testing and Assessment, and as a member of the NRC Committee on Appropriate Test Use that authored a congressionally mandated report on the validity of tests for high school graduation purposes. He currently serves as a member of the NAEP Validity Studies Panel and on the Technical Advisory Committees for the state assessment systems of Washington and California.

***Edward H. Haertel***

Edward H. Haertel is the Jacks Family Professor of Education - Emeritus at Stanford University, where his research and teaching focus on quantitative research methods, psychometrics and educational policy, especially test-based accountability and the use of test data for educational program evaluation. Haertel's early work investigated the use of latent class models for item response data. His recent research projects have included studies of standard setting and standards-based score interpretations, statistical properties of test-based accountability systems, metric-free measures of score gaps and trends, and the policy uses and consequences of test-based accountability. Recent publications include "Validating Standards-Based Test Score Interpretations" (2004, with W. A. Lorie), *Uses and Misuses of Data for Educational Accountability and Improvement* (2005 NSSE Yearbook, with J.L. Herman), "Reliability" (in *Educational Measurement*, 4th ed., 2006), and *Assessment, Equity, and Opportunity to Learn* (2008, co-edited with Pamela Moss, James Gee, Diana Pullin, and Lauren Young).

Dr. Haertel has served as president of the National Council on Measurement in Education, chairs the Technical Advisory Committee concerned with the design and evolution of California's test-based school accountability system, chairs the NRC's Board on Testing and Assessment, and from 2000 to 2003 chaired the Committee on Standards, Design, and Methodology of the National Assessment Governing Board. He has served on numerous state and national advisory committees related to educational testing, assessment, and evaluation, including the Joint Committee responsible for the 1999 edition of the Standards for Educational and Psychological Testing. Dr. Haertel has been a fellow at the Center for Advanced Study in the Behavioral Sciences and is a fellow of the American Psychological Association and a

member of the National Academy of Education where he has served in several different leadership positions.

**Joan Herman**

Joan Herman is a senior scientist and former co-director of the National Center for Research on Evaluation, Standards, and Student Testing (CRESST) at UCLA. Her research has explored the effects of testing on schools and the design of assessment systems to support school planning and instructional improvement. Her recent work has focused on assessment validity and teachers' use of formative assessment practices in mathematics and science. She also has wide experience as an evaluator of school reform. Dr. Herman's work is noted for bridging research and practice. Among her books are *Tracking Your School's Success: A Guide to Sensible School-Based Evaluation*; and *A Practical Guide to Alternative Assessment*, both of which have been popular resources for schools across the country.

A former teacher and school board member, Dr. Herman also has published extensively in research journals and is a frequent speaker to policy audiences on evaluation and assessment topics, advisor to state and local educational agencies, and a regular participant in projects for the National Academy of Sciences and the National Research Council. She served on the NAS's Committee on the Design of Science Assessment, and is currently serving on the Roundtable on Education Systems and Accountability. Dr. Herman is past president of the California Educational Research Association and has been elected to a variety of leadership positions in the American Educational Research Association, National Organization of Research Centers, and Knowledge Alliance. Among her current involvements, she is editor of *Educational Assessment*, member of the Joint Committee for the Revision of the Standards for Educational and Psychological Measurement, member at large for AERA, and chair of the Board for Para Los Niños.

**Robert L. Linn**

Robert L. Linn is a distinguished professor emeritus of education in the research and evaluation methods program of the University of Colorado. He has published over 250 journal articles and chapters in books dealing with a wide range of theoretical and applied issues in educational measurement. Dr. Linn's research explores the uses and interpretations of educational assessments, with an emphasis on educational accountability systems. His work has investigated a variety of technical and policy issues in the uses of test data, including alternative designs for accountability systems and the impact of high-stakes testing on teaching and learning. He has received several awards for his contributions to the field, including the ETS Award for Distinguished Service to Measurement, the E.L Thorndike Award, the E.F. Lindquist Award, the National Council on Measurement in Education Career Award, and the American Educational Research Association Award for Distinguished Contributions to Educational Research.

Dr. Linn is a member of the National Academy of Education (NAEd) and a Lifetime National Associate of The National Academies. He has been an active member of the American Educational Research Association for more than 40 years and served as vice president of the AERA Division of Measurement and Research Methodology, vice chair of the joint committee that developed the 1985 Standards for Educational and Psychological Testing, and as president of AERA. He is a past president of the National Council on Measurement in Education, past editor of the Journal of Educational Measurement and editor of the third edition of Educational Measurement, a handbook sponsored by NCME and the American Council on Education. He was chair of the National Research Council's Board on Testing and Assessment and served on the NRC's Board of the Center for Education, and on the Advisory Committee for the Division of Behavioral and Social Sciences. He served as chair of the NAEd Committee on Social Science Research Evidence on Racial Diversity in Schools, and as chair of Committee on Student Achievement and Student Learning for the National Board for Professional Teaching Standards.

**Catherine E. Snow**

Catherine E. Snow is the Patricia Albjerg Graham Professor of Education at the Harvard Graduate School of Education. She received her Ph.D. in psychology from McGill and worked for several years in the linguistics department of the University of Amsterdam. Her research interests include children's language development as influenced by interaction with adults in home and preschool settings, literacy development as related to language skills and as influenced by home and school factors, and issues related to the acquisition of English oral and literacy skills by language minority children. She has co-authored books on language development (e.g., *Pragmatic Development* with Anat Ninio) and on literacy development (e.g., *Is Literacy Enough?* with Michelle Porche, Patton Tabors and Stephanie Harris), and published widely on these topics in referred journals and edited volumes.

Dr. Snow's contributions to the field include membership on several journal editorial boards, co-directorship at the origin of the Child Language Data Exchange System, and editorship for many years of *Applied Psycholinguistics*. She served as a board member at the Center for Applied Linguistics and a member of the National Research Council's Committee on Establishing a Research Agenda on Schooling for Language Minority Children. She chaired the NRC's Committee on Preventing Reading Difficulties in Young Children, which produced a report that has been widely adopted as a basis for reform of reading instruction and professional development. She has also served on the NRC's Council for the Behavioral and Social Sciences and Education, and as president of the American Educational Research Association. A member of the National Academy of Education, Dr. Snow has held visiting appointments at the University of Cambridge, England, Universidad Autonoma in Madrid, and The Institute of Advanced Studies at Hebrew University in Jerusalem, and has guest taught at Universidad Central de Caracas, El Colegio de Mexico, Odense University in Denmark, and several institutions in The Netherlands.

**Dylan Wiliam**

Dylan Wiliam is Emeritus Professor of Educational Assessment at the University of London's Institute of Education where he recently completed a term as the Institute's Deputy Director. After a first degree in mathematics and physics, and one year teaching in a private school, he taught in inner-city schools for seven years, during which time he earned further degrees in mathematics and mathematics education. In 1984 he joined Chelsea College, University of London, which later became part of King's College London. During this time he worked on developing innovative assessment schemes in mathematics before taking over the leadership of the mathematics teacher education program at King's. Between 1989 and 1991 he was the Academic Coordinator of the Consortium for Assessment and Testing in Schools, which developed a variety of statutory and non-statutory assessments for the national curriculum of England and Wales. After his return to King's, he completed his PhD, addressing some of the technical issues thrown up by the adoption of a system of age-independent criterion-referenced levels of attainment in the national curriculum of England and Wales.

From 1996 to 2001 Dr. Wiliam was the Dean and Head of the School of Education at King's College London, and from 2001 to 2003, he served as Assistant Principal of the College. In 2003 he moved to the US, as Senior Research Director of the Learning and Teaching Research Center at the Educational Testing Service. His recent work has focused on the use of assessment to support learning (sometimes called formative assessment). He was the co-author, with Paul Black of a major review of the research evidence on formative assessment published in 1998 and has subsequently worked with many groups of teachers, in both the UK and the US, on developing formative assessment practices. Another current interest is how school-based teacher learning communities can be used to create effective systems of teacher professional development at scale.

## Appendix A

### Comments on specific questions

**Question 1:** The first part of the question addresses section HSA-CED2 of the Mathematical Standards and assesses HSMP2 (reason abstractly) and HSMP4 (the mathematical interpretation and modelling of situations). Parts (b) & (c) assess a student's ability to think rationally about problems, making connections and deductions (HSMP2). The Examiner's report illustrates how the 'show that' format, used in (b)(i) and (c)(i), allowed students who could not do these parts to nevertheless progress and access other parts of the question.

**Question 2:** This question addresses HSG –C2 of the Mathematical Standards. It assesses circle theorems and circle measurement, and the emphasis is on students being able to apply their knowledge with rational argument to the solution of mathematical problems (HSMP1; HSMP2; HSMP3). Part (c) also demonstrates the need for precision in numerical work (HSMP6). A regular feature of Cambridge questions is that they encourage students to apply techniques to new problems, rather than to simply demonstrate knowledge in standard situations. Again the mark scheme and Principal Examiner's report demonstrate how a range of performance can be accommodated and given credit.

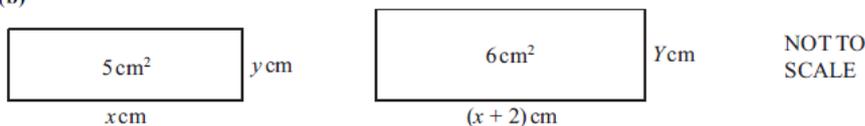
**Question 3:** This question addresses HSF-IF2 of the Mathematical Standards. The different parts of the question explore students' understanding of functions to different depths, ranging from the more procedural, standard techniques, to some quite sophisticated understanding (HSMP2; HSMP7). Again, the mark scheme shows how different student performance can be credited, and the Examiner's report demonstrates that students of different ability could access the question to different extents.

### Question 1

- (a) Marcos buys 2 bottles of water and 3 bottles of lemonade.  
 The total cost is \$3.60.  
 The cost of one bottle of lemonade is \$0.25 more than the cost of one bottle of water.  
 Find the cost of one bottle of water.

[4]

(b)



The diagram shows two rectangles.

The first rectangle measures  $x$  cm by  $y$  cm and has an area of  $5\text{ cm}^2$ .

The second rectangle measures  $(x + 2)$  cm by  $Y$  cm and has an area of  $6\text{ cm}^2$ .

- (i) When  $y + Y = 1$ , show that  $x^2 - 9x - 10 = 0$ .

[4]

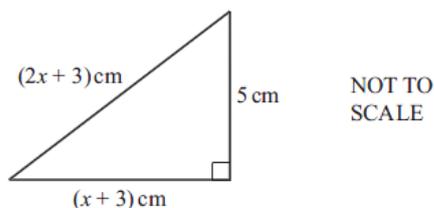
- (ii) Factorise  $x^2 - 9x - 10$ .

[2]

- (iii) Calculate the perimeter of the first rectangle.

[2]

(c)



The diagram shows a right-angled triangle with sides of length  $5$  cm,  $(x + 3)$  cm and  $(2x + 3)$  cm.

- (i) Show that  $3x^2 + 6x - 25 = 0$ .

[4]

- (ii) Solve the equation  $3x^2 + 6x - 25 = 0$ .

Show all your work and give your answers correct to 2 decimal places.

[4]

- (iii) Calculate the area of the triangle.

[2]

**Question 1 Mark Scheme**

(a)	0.57	<b>B4</b>	<p>Condone use of other variables  <b>M1</b> for <math>2w + 3l = 3.6</math> o.e.  <b>and M1</b> for <math>l = w + 0.25</math> o.e.  <b>A1</b> for correct <math>aw = b</math> or <math>cl = d</math></p> <p>or <b>M2</b> for <math>2w + 3(w + 0.25) = 3.6</math> o.e.  or <math>2(l - 0.25) + 3l = 3.6</math> o.e.  or <b>M1</b> for <math>w + 0.25</math> or <math>l - 0.25</math> seen  <b>A1</b> for <math>2w + 3w = 3.6 - 0.75</math> or better  or <math>2l + 3l = 3.6 + 0.5</math> or better  <math>l = 0.82</math> implies <b>M2A1</b>  trial &amp; error scores <b>B4</b> or zero  accept answer 57 if written <b>57 cents</b>  after <b>M0, SC3</b> if answer 57</p>
(b) (i)	$\frac{5}{x} + \frac{6}{x+2} = 1 \text{ o.e.}$  $5(x+2) + 6x = x(x+2) \text{ o.e.}$  $5x + 10 + 6x = x^2 + 2x$ $0 = x^2 - 9x - 10$	<b>M2</b>	<p>e.g. <math>\left(1 - \frac{5}{x}\right)(x+2) = 6</math></p> <p><b>M1</b> for <math>\frac{5}{x}</math> seen or <math>\frac{6}{x+2}</math> seen  or <math>xy = 5</math> <b>and</b> <math>(x+2)Y = 6</math> o.e.  or <math>xy = 5</math> <b>and</b> <math>(x+2)(1-y) = 6</math> o.e.  e.g. <math>(x-5)(x+2) = 6x</math></p> <p><b>A1</b> Allow <math>5x + 10 + 6x = x^2 + 2x</math> and allow <b>all</b> over correct denominator but must see this line  One correctly expanded line seen</p> <p><b>E1</b> No errors or omissions</p>
(ii)	$(x-10)(x+1)$	<b>2</b>	<b>SC1</b> for $(x+a)(x+b)$ where $ab = -10$ or $a + b = -9$
(iii)	21	<b>2FT</b>	<p>FT a positive <math>x</math> into <math>2\left(x + \frac{5}{x}\right)</math></p> <p><b>M1</b> for 0.5 seen or 5 / <i>their</i> positive root</p>

(c) (i)	$(2x+3)^2 = (x+3)^2 + 5^2 \text{ o.e.}$ $4x^2 + 6x + 6x + 9 = x^2 + 3x + 3x + 9 + 25$ o.e. $3x^2 + 6x - 25 = 0$	<b>M1</b>	
(ii)	$\frac{-6 \pm \sqrt{6^2 - 4(3)(-25)}}{2(3)}$  - 4.06, 2.06 final answer	<b>2</b>	<p><b>B1</b> for <math>4x^2 + 6x + 6x + 9</math> or <math>4x^2 + 12x + 9</math>  <b>B1</b> for <math>x^2 + 3x + 3x + 9</math> or <math>x^2 + 6x + 9</math>  <b>E1</b> No errors or omissions</p> <p><b>B1</b> for <math>\sqrt{6^2 - 4(3)(-25)}</math> or better seen  If in form <math>\frac{p + \sqrt{q}}{r}</math> or <math>\frac{p - \sqrt{q}}{r}</math> o.e.  <b>B1</b> for <math>p = -6</math> and <math>r = 2(3)</math> or better</p> <p><b>B1B1</b> <b>B1 B1</b>  After B0 B0  <b>SC1</b> for - 4.1 <b>and</b> 2.1  or - 4.055... <b>and</b> 2.055...  or -4.06 and 2.06 seen</p>
(iii)	12.63 to 12.65 or 12.6 or 12.7	<b>2FT</b>	<p>FT (a positive <math>x + 3</math>) <math>\times</math> 2.5  <b>SC1</b> for <math>0.5 \times</math> <i>their</i> positive value <math>\times</math> 5 written</p>

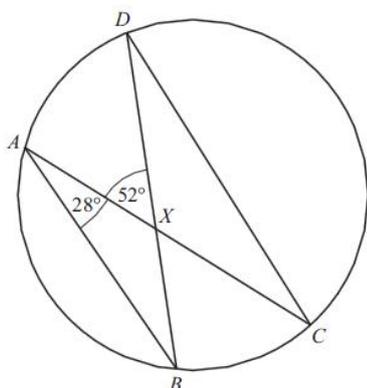
## Question 1 Examiner's Report

Many candidates found parts of this question to be very demanding, particularly **parts (b)(i) and (c)(i)** that required candidates to show clearly how to form the given equation. It was common to see candidates attempt to solve these equations, with the quadratic formula being used repeatedly throughout the question.

- (a) Well answered by the majority of candidates with many gaining full marks, often by using a numerical approach rather than an algebraic method. Those that used algebra gave well-worked solutions, clearly writing a single equation or a correct pair of simultaneous equations. Incorrect answers usually came from confusing the connection between  $w$  and  $l$  and writing  $w = l + 0.25$ . Some candidates introduced other variables instead of using  $w$  and  $l$  and this often led to confusion.
- (b) (i) This was the most demanding question on the paper with many weaker candidates leaving this part blank. It proved a challenge for the more able candidates with many making little progress past the  $xy = 5$  and  $(x + 2)Y = 6$  stage. Some confused  $y$  and  $Y$ , others did not make use of  $y + Y = 1$ . Although a variety of starting points were seen, most successful candidates usually wrote expressions for  $y$  and  $Y$ , then equated to 1 and proceeded to give a clear and logical proof of the required equation. A significant number attempted to solve the equation.
- (ii) This was generally well done. Many were able to factorise correctly and gain the 2 marks. There were some cases of reversed signs but overall this part was well answered.
- (iii) Many candidates found the correct perimeter or gained the follow through marks by using their values from **part (b)(ii)**. Some obtained the perimeter 21 despite not being able to factorise. The most common errors were: simply quoting the positive  $x$  value, finding the sum of two adjacent sides and incorrect addition of  $10 + 10 + 0.5 + 0.5$ .
- (c) (i) Although this was another 'show that' question candidates were generally more successful than in **part (b)(i)**. Many were able to use Pythagoras' Theorem correctly and expand the brackets then collect terms to obtain the required equation. Incorrect expansions  $4x^2 + 9$  and  $x^2 + 9$  were seen occasionally and it was noticeable that candidates made more mistakes if they started  $(2x + 3)^2 - (x + 3)^2$ . Some errors or omissions were made in the final line of working. Candidates should check carefully that they have written the equation precisely to avoid losing the accuracy mark. A common error was to start with  $(2x + 3)(x + 3)$ . Several candidates attempted to solve the equation using the quadratic formula.
- (ii) The majority of candidates knew the formula and applied it well clearly showing all their working. Most observed the 2 decimal places but truncating to 2.05 and  $-4.05$  was a common error. A minority used completing the square and they were usually successful. Those using the formula need to take greater care with their presentation to avoid losing marks unnecessarily. They need to ensure that the division line is completely drawn and the square root sign encloses all of  $b^2 - 4ac$ .
- (iii) Generally well done. Most found the area correctly or chose a correct positive value and were able to gain the follow through marks for correct use of the basic area of triangle formula. A few only multiplied their value of  $(x + 3)$  by 5 and some used 2.5 multiplied by their  $x$ .

**Question 2**

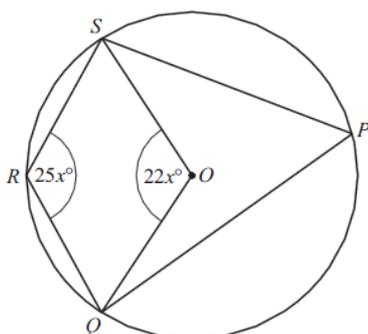
(a)



$A, B, C$  and  $D$  lie on a circle.  
The chords  $AC$  and  $BD$  intersect at  $X$ .  
Angle  $BAC = 28^\circ$  and angle  $AXD = 52^\circ$ .  
Calculate angle  $XCD$ .

[3]

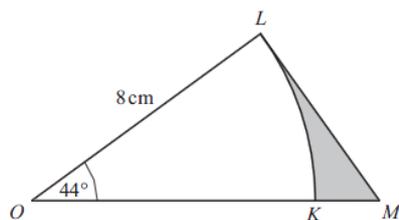
(b)



$PQRS$  is a cyclic quadrilateral in the circle, center  $O$ .  
Angle  $QOS = 22x^\circ$  and angle  $QRS = 25x^\circ$ .  
Find the value of  $x$ .

[3]

(c)



NOT TO  
SCALE

In the diagram  $OKL$  is a sector of a circle, center  $O$  and radius 8 cm.  
 $OKM$  is a straight line and  $ML$  is a tangent to the circle at  $L$ .  
Angle  $LOK = 44^\circ$ .

Calculate the area shaded in the diagram.

[5]

## Question 2 Mark Scheme

(a)	24	3	M2 for 24 at <i>B</i> or 128 at <i>X</i> and 28 at <i>D</i> . or M1 for 28 at <i>D</i> or 128 at <i>X</i> allow on diagram
(b)	5 www	3	M2 for $360 - 22x = 2 \times 25x$ o.e. or better or $22x = 2(180 - 25x)$ o.e. or better or $11x + 25x = 180$ o.e. or better or M1 for $P = 11x$ or reflex $O = 360 - 22x$ or reflex $O = 50x$ allow on diagram
(c)	6.32 to 6.34          www	5	B1 for $OLM = 90^\circ$ (seen or implied) allow on diagram and M1 for $LM = 8 \tan 44$ [7.7255...] or $OM = 8 \div \cos 44$ [11.1213...] and M1dep on previous M for $0.5 \times 8$ $\times$ their $LM$ or $0.5 \times 8 \times$ (their $OM$ ) $\sin 44$ and M1 for $\frac{44}{360} \times \pi \times 8^2$ o.e. [24.5 to 24.6]

## Question 2 Examiner's Report

Some very good solutions were seen from candidates that clearly knew their circle theorems. Others found this question difficult with **part (c)** proving to be beyond many of the weaker candidates.

- (a) There were many correct answers and many more gained at least one mark by correctly finding some of the angles  $ABX$ ,  $XDC$  or the obtuse angles at  $X$ . Some used alternate angles and gave the answer as  $28^\circ$ . Others assumed that  $X$  was the centre of the circle and having found that angle  $DXC = 128^\circ$  then took the triangle  $DXC$  to be isosceles leading to an answer of  $26^\circ$ .
- (b) Many correct solutions were seen but slightly fewer candidates were successful in this part of the question compared with **part (a)**. Those that worked with angles at the centre usually gave angle  $SPQ$  as  $11x$  and then formed an equation based on opposite angles of a cyclic quadrilateral. Far fewer gave the reflex angle  $SOQ$  as  $50x$  and used angles at a point. Some thought that the quadrilateral  $SOQR$  was cyclic and  $25x + 22x = 180$  (or even 360) was a common mistake.
- (c) This type of question requires candidates to show a clear progression through the various stages of calculation. To ensure the accuracy of the final answer is within the acceptable range candidates should keep at least 4 significant figures in the working for their answers to each stage. The method to find the area of a sector was well known and many were able to find a correct value. Using  $44 \div 360$  as 12% or 0.12 is not advised as this level of premature approximation leads to an out of range final answer. Those that realised angle  $OLM$  was a right angle usually made some progress on finding the area of the triangle. Most successful candidates found  $LM$  using  $8 \tan 44$  and then used  $\frac{1}{2} \times 8 \times LM$  to find the area of the triangle. Some incorrectly assumed  $OM$  was 8 and attempted  $\frac{1}{2} \times 8 \times 8 \sin 44$ . It was common to see candidates dropping a perpendicular  $LP$  from  $L$  to  $OM$  and then using a combination of trigonometry and Pythagoras' to find  $LP$  and  $OP$ . A few then calculated  $OM$  which led to  $PM$  or  $LM$  and then the area of the triangle. Some were successful but this inefficient method was often left unfinished or led to mistakes and inaccurate values being obtained.

### Question 3

$$f(x) = x^2 + x - 3 \quad g(x) = 2x + 7 \quad h(x) = 2^x$$

- (a) Solve the equation  $f(x) = 0$ .  
Show all your working and give your answers correct to 2 decimal places. [4]
- (b)  $f(g(x)) = px^2 + qx + r$   
Find the values of  $p$ ,  $q$  and  $r$ . [3]
- (c) Find  $g^{-1}(x)$ . [2]
- (d) Find  $x$  when  $h(x) = 0.25$ . [1]
- (e) Find  $h(h(h(3)))$ .  
Give your answer in scientific notation, correct to 4 significant figures. [4]
- (f) The graph of  $y = h(x)$  is mapped onto the graph of  $y = 2^{x+1}$ .  
There are two possible **single** transformations which produce this mapping.  
One is a translation by the vector  $\begin{pmatrix} -1 \\ 0 \end{pmatrix}$ .  
Describe fully the other **single** transformation. [3]

### Question 3 Mark Scheme

(a)	$\frac{-1 \pm \sqrt{1^2 - 4 \times 1 \times (-3)}}{2}$  -2.30, 1.30 final answer	2	<b>B3</b> for $\sqrt{1^2 - 4 \times 1 \times (-3)}$ or better and if in the form $\frac{p \pm \sqrt{q}}{r}$ or $\frac{p - \sqrt{q}}{r}$ then <b>B1</b> for $p = -1$ and $r = 2(1)$ or better
(b)	4, 30, 53	3	<b>M1</b> for $(2x + 7)^2 + (2x + 7) - 3$ and <b>B1</b> for $(2x + 7)^2 = 4x^2 + 14x + 14x + 49$ oe
(c)	$\frac{x-7}{2}$	2	<b>M1</b> for $y - 7 = 2x$ or $x = 2y + 7$ or $-7$ <b>then</b> $\div 2$ clearly seen in correct order with arrow or better or $\frac{y-7}{2}$
(d)	-2	1	
(e)	$1.158 \times 10^{77}$	4	<b>B3</b> for $1.16 \times 10^{77}$ or $1.1579 \dots \times 10^{77}$ or $1.1157 \times 10^{77}$ or <b>B2</b> for $2^{256}$ seen or <b>B1</b> for $2^8$ seen or 256
(f)	Stretch x-axis invariant [factor]2 or $2 \times 2^x$ seen	3	<b>B1</b> <b>B1</b> <b>B1</b>

### Question 3 Examiner's Report

- (a) Almost all of the stronger candidates earned all four marks in this question on functions. Less able candidates tended to make more errors with the substitution or the presentation of their formula. Commonly  $-b$  was written separately from the rest of the formula. Some were able to recover. Slips with the arithmetic led to some obtaining incorrect solutions and in other cases solutions were not given to the required degree of accuracy.
- (b) A minority earned all three marks for finding  $p$ ,  $q$  and  $r$ . Others picked up one or two marks for a correct substitution or for a correct expansion of the square term. A common error involved attempts to simplify  $p(2x + 7)^2 + q(2x + 7) + r$  or  $f(x).g(x)$ . A significant number made no attempt.
- (c) Candidates generally were more successful finding the inverse function and many earned both marks. Common errors included leaving answers in terms of  $y$ , or slipping up with the rearrangement following a correct start.
- (d) A majority were able to find the correct value of  $x$ . The most common error was to calculate  $h(2)$ .
- (e) All levels of ability found this a more challenging end to the question and many weaker candidates struggled to make any progress. Some candidates laid out calculations step by step and were usually successful. Others were confused by the order of operations and answers based on  $6^{27}$ ,  $8^{27}$  were seen. Others worked on  $2^3 = 8$  then cubed 8 followed by the cube of 512. A significant number made no attempt to correct their answer to four significant figures.
- (f) This was found to be challenging by all candidates and as such it was rare to see a completely correct solution. Many solutions involved reflections or translations. Many made no attempt at all

## Appendix B

### Contents of Appendix B

#### IGCSE First Language English

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#### IGCSE English Literature

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#### IGCSE First Language English

##### Paper description

Within 0500 IGCSE First Language English, syllabus Paper 2 offers the greatest range of higher order questioning. This is an extended tier paper that is a test of reading for both explicit and implicit meaning. Skills tested here include the abilities to:

- construct selective summaries
- select and adapt material
- make inferences
- analyse and evaluate.

### Example of a higher order question 1

Re-read the descriptions of:

- (a) Aunt Pegg in paragraphs 2 and 3;
- (b) the children in paragraph 5.

Select words and phrases from these descriptions, and explain how the writer has created effects by using this language.

[Total marks: 10]

*This question tests Reading Objective R4 (to understand how writers achieve effects). Higher ability candidates will be able to select and evaluate evocative and unusual words and show understanding of how a writer's language is used effectively. They may also explore non-vocabulary choices such as grammar/syntax and punctuation choices. Candidates at this level will also be able to give an overview of how selected features give a combined effect and equate this with the writer's reasons for using them.*

#### **Passage: Aunt Pegg**

Our parents were over-indulgent towards us, and we were happy but not particularly well-behaved children. Maybe they felt guilty because, on one occasion, they had to leave home for two weeks on business and invited our Aunt Pegg to look after us. She accepted the challenge eagerly.

Vile Aunt Pegg! Leering, sneering, peering Aunt Pegg! We would be enjoying a friendly fight or just sitting doing nothing when she would pounce on us like a cat, and savage retribution would follow. As we stood in the corner of the room with hands on heads, she would snarl, 'How dare you! Making my tidy room messy, wasting your time. I saw you!'

Aunt Pegg had eyes on sticks. How she saw us we never knew: one moment she wasn't there, the next she was on top of us. She was a wizened, tiny woman of great muscular strength and energy, and her mouth was like an upside-down new moon without the hint of a smile. She constantly spoke of her 'philosophy of life' but we only experienced the superficial features of it. She kept us occupied at all times, sweeping the yard, tidying the house and learning to cook tasteless, crumbling cakes. On the first day she blew a whistle to order us downstairs to a breakfast of chewy, sugarless oat cereal. The sugary, salty foods we loved were locked away, and eating our morning bowlful was a lonely marathon. If we didn't eat it all up, we were given extra cleaning to do.

By day two we were very mournful children. Nostalgia set in as we remembered our happier past. We went about our daily tasks like little zombies. We became uncommunicative and even forgot (to our Aunt's extreme pleasure) to insult each other. Both of us longed for the day when our dear parents would return and unlock the barred doors of our prison.

On day three we were introduced to our educational program. She set us impossible mental arithmetic sums at tremendous speed and always finished with 'And twenty-nine, add 'em all together and take away the number I first said'. Then there was 'Reading Improvement', which consisted of moral tales from the nineteenth century, and 'Practical Farmwork', which mostly involved the identification and eradication of weeds. We were not allowed to re-enter the house until we had successfully whispered the name of the plant into Aunt Pegg's good ear. If we did not use the official Latin name she would snap at us. 'You wicked child! It is certainly not Hairy Stinkweed. I'll not have swearing in my house!'

Of course we attempted to break free. It happened on a visit to town, while we were carrying the heavy bags with Aunt Pegg marching behind, tapping her walking stick like an officer in the army. At a mutual sign we dropped the bags and ran for it. Our Aunt seemed prepared for this. She blew her

whistle and shouted ‘Stop thief!’ and we were painfully restrained by several burly members of the public.

When we reached home we were given a stern lecture on ‘philosophy’ and ‘morals’ and sent to bed with just a slice of bread, some cheese and a lettuce leaf. We hated lettuce. Apparently much of Aunt Pegg’s philosophy was connected with diet.

She must have thought that we were lazy, naughty children who needed strong routine and discipline to prevent the rot from setting in. How we cried with joy when our smiling parents returned, bearing presents and hugging us tight.

**Mark Scheme:**

<b>Band 1</b>	<b>9-10</b>	Wide ranging discussion of language with some high quality comments that add meaning and associations to words in both parts of the question, and demonstrate the writer's reasons for using them. May group examples to demonstrate overview of meaning/inference/attitude. The candidate tackles imagery with some precision and imagination. There is evidence that the candidate understands how language works.
<b>Band 2</b>	<b>7-8</b>	Reference is made to a number of words and phrases, and some explanations are given and effects identified in both parts of the question. Images are recognised as such and the candidate goes some way to justify them. There is some evidence that the candidate understands how language works.
<b>Band 3</b>	<b>5-6</b>	A satisfactory attempt is made to identify appropriate words and phrases. Candidates mostly give meanings of words and any attempt to suggest and explain effects is weak. One half of the question may be better answered than the other. Candidates may identify linguistic devices but not explain why they are used. Explanations are basic or in very general terms (or may be virtually ignored).
<b>Band 4</b>	<b>3-4</b>	Candidates select a mixture of appropriate words and words that communicate less well. Explanations are only partially effective and occasionally repeat the language of the original, or comments are very general and do not refer to specific words.
<b>Band 5</b>	<b>1-2</b>	The choice of words is partly relevant, sparse or sometimes unrelated to the text. While the question has been understood, the candidate does little more than offer a few words and makes very slight, generalised comments. The answer is very thin.
<b>Band 6</b>	<b>0</b>	The answer does not fit the question. Inappropriate words and phrases are chosen.

**Answer:**

2 (a) The description of Aunt Pegg is made very effective in several ways:

- ‘Vile Aunt Pegg!’ – The brevity of this sentence along with the capitalised words and the exclamation mark definitely achieve a sense of how passionately the writer feels about her through added emphasis.
- ‘Leering, sneering, peering...’ is also powerful as the words all have the same sound, and make the sentence sound a touch poetic. The repetition of ‘Aunt Pegg!’ which follows also adds emphasis to the whole passage so far.
- ‘Like a cat’ is quite important as it is a simile which can represent countless adjectives; graceful, clever, charming etc., but in this context represents Aunt Pegg’s unexpected pounce, and the ability of a cat to move silently (and almost become invisible) which we are told by “one moment she wasn’t there...” in Paragraph 3. The cat-like effect is reaffirmed and emphasised towards the end of the paragraph through the use of the word ‘snarl’.

- *The writer makes the description of Aunt Pegg complete by describing physical aspects; “wizened, tiny woman...”, “upside-down new moon” This is another simile, which allows us to more easily imagine Aunt Pegg.*
- (b) *The children are described through another simile: “little zombies”. This gives us an impression of the monotony of their days, and the boredom. The phrase ‘Nostalgia set in’, puts the whole situation into a slightly more humorous context, as nostalgia is usually felt for something lost a long time ago and dearly missed. In this case it has been two days and the things missed are luxuries such as sweets. The writer blows the whole situation out of proportion, quite cleverly as he writes exactly as a child would have seen it.*

**Examiner’s comment:**

*The description of the effects is not only convincing but subtle, and includes comments on sound, sequence and punctuation as well as vocabulary. Some of the choices are linked to explain the sustained imagery of the passage. The response ends with a summary overview of the narrator having the perception of a child. Though the response is not consistently excellent (the end of part (a) does not explain the similes, and part (b) has only two choices) there is enough proof of a secure understanding of how language works for the top mark to be awarded.*

Mark awarded: 10

**Example of Higher Order Question 2**

You are a Headteacher and have received the publicity flyer printed opposite from the Green Team Challenge management (GTC). You have decided that your school will nominate a student for the challenge, and you have received three recommendations, following a vote by the whole school.

Imagine you hold a meeting with your Deputy Headteacher to decide which one of the three candidates to nominate.

Write the dialogue between yourself and your Deputy Headteacher.

In your conversation you should:

- Evaluate the strengths and weaknesses of each of the finalists
- Explain the reasons for your final choice.

Base your writing on the ideas found in the publicity flyer and the information about finalists on the opposite page.

Begin your conversation as follows:

Headteacher: Let’s consider what these students have said. I must let the GTC know today which finalist we have chosen.

You should write between 1½ and 2 sides, allowing for the size of your handwriting.

Up to 10 marks are available for the content of your answer and up to 15 marks for the quality of your writing.

[25 marks]

*This question tests writing objective W1-W5:*

- *articulate experience and express what is thought, felt and imagined*
- *order and present facts, ideas and opinions*
- *understand and use a range of appropriate vocabulary*
- *use language and register appropriate to audience and context*
- *make accurate and effective use of paragraphs, grammatical structures, sentences, punctuation and spelling.*

*AND aspects of reading objectives R1–R3:*

- *understand and collate explicit meanings*
- *understand, explain and collate implicit meanings and attitudes*
- *select, analyse and evaluate what is relevant to specific purposes.*

*Higher ability candidates will be able to select and evaluate the most relevant details, linking them clearly and applying them within the dialogue. They will develop a sound rationale within their writing that is detailed, coherent and draws on implicit ideas from the text. Such candidates will have an excellent sense of audience and will express their ideas with a fluent structure, wide-ranging vocabulary and virtually no error.*

### **Passage: Green Team Challenge**

Good news! Your school has the opportunity to recommend one lucky senior pupil to take part in our exciting new venture: Green Team Challenge. The challenge is to set up an education and visitors' Centre in an environmentally unique area of rainforest.

We are looking for the most courageous, intelligent and adaptable sixteen to eighteen-year-old from your school. He or she will need to be physically fit and ready to take part in the types of challenge facing the team as they live and work together for twelve weeks.

After a week's preparation on how to fish for food, keep fires alight, cook a meal, manage first aid, plus basic construction and team-building, they'll also learn what is and isn't safe in the rainforest. They need to be able to absorb all the information we give them, solve problems and cope with the everyday conditions of their new environment. Although the rainforest is hot, it is also tropical, which means storms, heavy rain and long days when, as a group, they will need to get on and communicate well in order to avoid conflict, hazards and even boredom!

Choose well for your candidate to have the chance of being selected as one of the 20 lucky members of the Green Team. This is a unique opportunity for your most suitable student to have a life-changing experience and to act as an ambassador for your school. You have exactly one week to inform us of your choice.

### *GTC management*

The three finalists:

#### *Marissa*

I am a top candidate. Not only do I exercise and run daily – I'm in training for the 1500 metres which is a test of endurance and speed – but I'm also good with words. I'm on the debating team and I am very convincing when I want to be! I'm clever too as I've done well in my exams, especially biology. I can listen well and I help stop arguments occurring by solving others' problems. Okay, it's true that I don't like bugs and snakes, but I can deal with them. I'm good at canoeing and love being outdoors. I'm proud of my school and want to represent it in a positive way.

*Didier*

This isn't a challenge for weaklings so don't choose one! Instead take a look at my muscles. I've been body building since I was twelve and have won ten competitions so far. I'm also great at map reading so I won't get lost, even if the other team members want me to! When I was younger I was in an activity group for boys and we learned how to light fires, swim in rivers and fish for our supper. I'm used to managing our football team; now that needs some tough negotiating skills at times. I'm also pretty handy with a hammer and I helped my dad build our garden shed.

*Kim*

Thanks for all your support out there. I'd like to think I'm an all round achiever: I keep fit by playing football and cycling everywhere. I've just completed my lifesaving badges in swimming and I go rock climbing during my spare time. I'm a keen inventor and won a prize at the National Science Fair recently. I get on well with others and have been part of the Student Counselling Service for over a year. I'm the eldest in our house. Actually I'm the one in charge of all the recycling, and both these factors make me responsible, believe me. I'm a steady person who likes working with others, making new friends and overcoming any obstacles I come across along the way.

### Mark scheme

#### Writing

<b>Band 1</b>	<b>13-15</b>	Excellent, consistent sense of audience; argumentative/conversational style; very fit for purpose. Fluent varied sentences/wide range of vocabulary. Strong sense of structure and sequence. Virtually no error.
<b>Band 2</b>	<b>10-12</b>	Sense of audience mostly secure; quite stylish and fluent; sense of overall structure; arguments occasionally well developed. Writing is mainly accurate, sentences mostly fluent/complex sentences/range of vocabulary/occasional error/mostly well sequenced.
<b>Band 3</b>	<b>8-9</b>	Recognisable sense of audience; mostly written in accurate, if fairly straightforward language; some arguments on finalists based on material are apparent; mostly quite well structured. Errors minor; language straightforward but effective. Vocabulary fit for task/balanced conversation.
<b>Band 4</b>	<b>5-7</b>	Written in an appropriate if sometimes inconsistent style; expression mainly accurate; factual rather than argumentative; basic structure: has beginning, middle and end. Fairly frequent (minor) errors; language and vocabulary simple with occasional attempts at argument.
<b>Band 5</b>	<b>3-4</b>	Functional expression; facts selected and occasionally listed; has a beginning, but main part of the conversation is not always well sequenced. Some serious errors in grammar and use of vocabulary. Errors slightly intrusive.
<b>Band 6</b>	<b>1-2</b>	Language and style not clear; some blurring and lack of order. Despite some serious errors, can mainly be followed. Simple sentences.
<b>Band 7</b>	<b>0</b>	Serious inaccuracies and problems with language and grammar are too intrusive to gain a mark in Band 6.

#### Reading

<b>Band 1</b>	<b>9-10</b>	Most aspects of the finalists are clearly presented and developed – the links between these and the text above are strong and logically made. Ideas grow out of the strengths and weaknesses and are developed to suggest a sound rationale for the strongest pupil. Effective reading between the lines.
<b>Band 2</b>	<b>7-8</b>	Many of the aspects of the finalists are discussed and there is evidence of linking them to the text above. Strengths and weaknesses are well linked to the text and ideas are developed. Good overall use of material.
<b>Band 3</b>	<b>5-6</b>	Acceptable coverage of strengths and weaknesses but not many implicit points are developed/mentioned. Comments are linked to the text but are more stated than developed.

<b>Band 4</b>	<b>3–4</b>	Some coverage of finalists' points is noted, but the answer consists chiefly of a retelling/outlining with occasional/slight linking.
<b>Band 5</b>	<b>1–2</b>	The answer as a whole is occasionally, though slightly, related to the text. The aim of the linking is partially clear but use of material is erratic.
<b>Band 6</b>	<b>0</b>	Answer does not relate to question and/or too much unselective copying directly from the material to gain a mark in Band 5.

**Answer:**

**Headteacher:** *Let's consider what these students have said. I must let the GTC know today which finalist we have chosen. Frankly, I am sorry to have left it so late but I have been extremely busy, you must forgive me.*

**Deputy:** *Of course Headteacher and I am also fully aware of your dilemma; there really is some stiff competition this year and of course only one can be chosen. We had better start by looking at three pupils' qualities and weakness; they are all outstanding so it will certainly be a tough decision. Obviously we must be sure to choose a candidate who will represent our school in an admirable fashion.*

**Head:** *Yes that certainly goes without saying; whoever is chosen will be an ambassador... So anyway, let's start with Didier. I must say he has genuinely impressed me, he looks strong and athletic and is of course very popular with the other boys, being football captain, you know. And look here he says he has already been part of an activity group for boys, lighting fires and fishing for food and shelter building, all very important criteria from the GTC leaflet, he may be the man to fly the flag for our school, he can even read maps which is fantastic for a young man of his age.*

**Deputy:** *Yes, this is all true but I get a feeling that the boy is rather too arrogant. It must be the way he boasts of his sporting success, I don't know but to me Didier is possibly the weakest candidate. I am sure that we can both agree that he has the strength and outdoor skills experience, but I don't think he will have the correct mind set to get on with the others and to avoid conflict. He almost says so himself.*

**Head:** *I do see your point to be honest; maybe we shouldn't be too hasty. On to Marissa then, again very physically able and athletic, yes she is participating in the 1500 metres, and she seems to be clever too, convincing and good with words, all very valid. In fact, she seems to be a bit of an all rounder and it is certainly the case that her recent biology results will prove useful should she need to do any first aid.*

**Deputy:** *Yes I agree, a splendid candidate If I may say so, she can already canoe and loves the outdoors and most of all she has great pride for her school, wonderful. She is even part of the debating team, I...*

**Head:** *Actually I must stop you there deputy. Thinking about it, I believe this could be a slight weakness you know, I mean if she can put up a good argument then in the tropical conditions it could be quite heated between her and other girls, although she says she can stop arguments, and yes, she doesn't like the bugs and snakes, this could prove a huge weakness in the jungle. I think we must think carefully, to rush is to err.*

**Deputy:** *Of course headteacher, very true. Okay, shall we have a look at our final candidate?*

**Head:** *Yes yes, of course. Kim is it? Yes here we are. AHA! Now would you look at this, I like the look of this, an all round achiever, I must say I like the idea of that, again good with people, that's important. Kim also likes outdoors and rock climbing, not only that but she has done her first aid course, very good. A good inventor, good good, shows initiative I think, and she is already into recycling and the 'Greener' side of life, which is what this is all about.*

**Deputy:** *Do you believe Kim should therefore win the competition, headteacher?*

**Head:** *(long pause) You know, I think I do. She seems to be a better all round candidate than the other two, more important than being concentrated in one position I think.*

**Deputy:** *I think your right. She does display more agreeable qualities, and does in fact fit the criteria better. I think that she will learn and adapt quickly, whereas the other two may run out of steam quickly.*

**Head:** *Indeed. Well I think that's about it then, I think we have covered everything, Kim shall win the competition as she seems to be the type of person who could be easily "adaptable" as the leaflet indeed states. Thank you, Deputy Headteacher, Kim it is!*

**Examiner's comment:**

There are many positive aspects to this answer, not least the fact that the reading text is examined thoroughly and subsequently many obvious and implicit points are covered in the discussion. The conversation is both convincing and mature, evaluating some implicit ideas that other candidates often miss, and looking past the more obvious fitness and sports points to interpersonal skills or lack of these. The text is covered well, not just the more obvious physical fitness aspects, but the sense of representing the school and whether candidates will fit in well socially with the other students on the challenge. Arguments are generally well developed, and the dialogue is quite natural and fluent.

There are occasional sentence separation errors, though the fluency of the writing and sense of audience works well.

Mark: 13 (reading) + 9 (writing)

## IGCSE English Literature

### Paper description:

Questions on examination components in this specification assess candidates on their ability to show in-depth knowledge of textual content, and to communicate a sensitive and informed personal response in analysis of literary texts (whether they are set texts, 'unseen' texts, or texts studied as coursework).

The syllabus encourages higher order skills through assessment objectives relating to exploring texts *beyond surface meanings to show deeper awareness of ideas and attitudes*, and *recognising and appreciating ways in which writers use language, structure, and form to create and shape meanings and effects*.

### Example of a higher order question

Read carefully this extract from a novel. In it, a man called Biju, who is working in a restaurant in New York, has heard that there has been trouble in the remote, hilly part of India where his father, a cook, lives. He tries to phone his father to check that he is all right. He rings a guesthouse near where his father lives. The watchman, who looks after the guesthouse, goes to fetch Biju's father. The watchman and his family stay to hear what the phone call is all about.

How does the writer make the situation described in the extract amusing and, at the same time, sad?

To help you answer, you might consider:

- the description of the way the watchman and his family behave
- the dialogue between Biju and his father
- the ways the writing suggests the feelings of both Biju and his father and the difficulties of communication between them.

*For information: this is an 'Unseen' task. For this examination component, candidates are offered a choice of two 'unseens'. The instructions recommend that they spend about 10 minutes reading through the material carefully before they begin writing. The total time allowed for answering (including reading time) is 75 minutes.)*

### Passage:

The phone sat squat in the drawing room of the guesthouse encircled by a lock and chain so the thieving servants might only receive phone calls and not make them. When it rang again, the watchman leapt at it, saying, "Phone! Phone!" and his whole family came running from their hut outside. Every time the phone rang, they ran with committed loyalty. Upkeepers of modern novelties, they would not, *would not*, let it fall to ordinariness.

"HELLO?"

"HELLO? HELLO?"

They gathered about the cook, giggling in delicious anticipation.

"HELLO?"

“HELLO? PITAJI<sup>11</sup>??”

“BIJU?” By natural logic he raised his voice to cover the distance between them, sending his voice all the way to America.

“Biju, Biju,” the watchman’s family chorused, “it’s Biju,” they said to one another.

“Oh, it’s your son,” they told the cook. “It’s his son,” they told one another. They watched for his expressions to change, for hints as to what was being said at the other end, wishing to insinuate themselves deeply into the conversation, to *become it*, in fact.

“HELLO HELLO????”

“???? HAH? I CAN’T HEAR. YOUR VOICE IS VERY FAR.”

“I CAN’T HEAR. CAN YOU HEAR?”

“He can’t hear.”

“WHAT?”

“*Still can’t hear?*” they asked the cook.

The atmosphere of Kalimpong reached Biju all the way in New York; it swelled densely on the line and he could feel the pulse of the forest, smell the humid air, the green-black lushness; he could imagine all its different textures, the plumage of banana, the stark spear of the cactus, the delicate gestures of ferns; he could hear the croak *trrrr whonk, wee wee butt ock butt ock* of frogs in the spinach, the rising note welding imperceptibly with the evening. . . .

“HELLO? HELLO?”

“*Noise, noise,*” said the watchman’s family, “*Can’t hear?*”

The cook waved them away angrily, “*Shshshshsh,*” immediately terrified, then, at the loss of a precious second with his son. He turned back to the phone, still shooing them away from behind, almost sending his hand off with the vehemence of his gestures.

They retreated for a moment and then, growing accustomed to the dismissive motion, were no longer intimidated, and returned.

“HELLO?”

“KYA?<sup>12</sup>”

“WHAT?”

The shadow of their words was bigger than the substance. The echo of their own voices gulped the reply from across the world.

“THERE IS TOO MUCH NOISE.”

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<sup>11</sup> *Pitaji*: Father

<sup>12</sup> *Kya?*: What?

The watchman's wife went outside and studied the precarious wire, the fragile connection trembling over ravines and over mountains, over Kanchenjunga<sup>13</sup> smoking like a volcano or a cigar — a bird might have alighted upon it, a nightjar<sup>14</sup> might have swooped through the shaky signal, the satellite in the firmament could have blipped —

"Too much wind, the wind is blowing," said the watchman's wife, "the line is swaying like this, like this" — her hand undulating<sup>15</sup>.

The children climbed up the tree and tried to hold the line steady. A gale of static inflicted itself on the space between father and son.

"WHAT HAPPENED?" — shrieking even louder — "EVERYTHING ALL RIGHT?!"

"WHAT DID YOU SAY?"

"Let it go," the wife said, plucking the children from the tree, "you're making it worse."

"WHAT IS HAPPENING? ARE THERE RIOTS? STRIKES?"

"NO TROUBLE NOW." (Better not worry him.) "NOT NOW!!"

"Is he going to come?" said the watchman.

"ARE YOU ALL RIGHT?" Biju shrieked on the New York street.

"DON'T WORRY ABOUT ME. DON'T WORRY ABOUT ANYTHING HERE. ARE THERE PROPER ARRANGEMENTS FOR EATING AT THE HOTEL? IS THE RESTAURANT GIVING YOU ACCOMMODATION? ARE THERE ANY OTHER PEOPLE FROM UTTAR PRADESH<sup>16</sup> THERE?"

"Give accommodation. Free food. EVERYTHING FINE. BUT ARE YOU ALL RIGHT?" Biju asked again.

"EVERYTHING QUIET NOW."

"YOUR HEALTH IS ALL RIGHT?"

"YES. EVERYTHING ALL RIGHT."

"Ahh, everything all right," everyone said, nodding. "Everything all right? Everything all right."

Suddenly, after this there was nothing more to say, for while the emotion was there, the conversation was not; one had bloomed, not the other, and they fell abruptly into emptiness.

"When is he coming?" the watchman prompted.

"WHEN ARE YOU COMING?"

"I DON'T KNOW. I WILL TRY. . . ."

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<sup>13</sup> *Kanchenjunga*: a mountain in the Himalayas

<sup>14</sup> *nightjar*: a kind of bird

<sup>15</sup> *undulating*: waving up and down

<sup>16</sup> *Uttar Pradesh*: a state in India

Biju wanted to weep.

“CAN’T YOU GET LEAVE?”

He hadn’t even attained the decency of being granted a holiday now and then.

He could not go home to see his father.

“WHEN WILL YOU GET LEAVE?”

“I DON’T KNOW. . . .”

“HELLO?”

“*La ma ma ma ma ma ma*, he can’t get leave. Why not? Don’t know, must be difficult there, make a lot of money, but one thing is certain, they have to work very hard for it. . . . Don’t get something for nothing . . . nowhere in the world. . . .”

“HELLO? HELLO?”

“PITAJI, CAN YOU HEAR ME?”

They retreated from each other again — *Beep beep honk honk trr butt ock*, the phone went dead and they were stranded in the distance that lay between them.

“HELLO? HELLO?” – into the rictus<sup>17</sup> of the receiver.

“Hello? Hello? Hello? Hello?” they echoed back to themselves. The cook put down the phone, trembling.

“He’ll ring again,” said the watchman. But the phone remained mute. Outside, the frogs said *tttt tttt*, as if they had swallowed the dial tone. He tried to shake the gadget back into life, wishing for at least the customary words of good-bye. After all, even on clichéd phrases, you could hoist true emotion.

“There must be a problem with the line.”

“Yes, yes, yes.” As always, the problem with the line.

“He will come back fat. I have heard they all come back fat,” said the watchman’s sister-in-law abruptly, trying to comfort the cook.

#### Mark scheme

<b>Band 1</b>	<b>23-25</b>	Answers in this band have all the qualities of Band 2 work, with further insight, sensitivity, individuality and flair. They show sustained engagement with both text and task.
<b>Band 2</b>	<b>20-22</b>	<i>Sustains a perceptive, convincing and relevant personal response:</i> <ul style="list-style-type: none"><li>• shows a clear critical understanding of the text</li><li>• responds sensitively and in detail to the way the writer achieves her/his effects</li><li>• integrates much well-selected reference to the text.</li></ul>
<b>Band 3</b>	<b>17-19</b>	<i>Makes a well-developed, detailed and relevant personal response:</i> <ul style="list-style-type: none"><li>• shows a clear understanding of the text and some of its deeper</li></ul>

<sup>17</sup> *rictus*: gaping mouth

		<p>implications</p> <ul style="list-style-type: none"> <li>• makes a developed response to the way the writer achieves her/his effects</li> <li>• supports with careful and relevant reference to the text.</li> </ul>
<b>Band 4</b>	<b>14-16</b>	<p><i>Makes a reasonably developed relevant personal response:</i></p> <ul style="list-style-type: none"> <li>• shows understanding of the text and some of its deeper implications</li> <li>• makes some response to the way the writer uses language</li> <li>• shows some thoroughness in the use of supporting evidence from the text.</li> </ul>
<b>Band 5</b>	<b>11-13</b>	<p><i>Begins to develop a relevant personal response:</i></p> <ul style="list-style-type: none"> <li>• shows some understanding of meaning</li> <li>• makes a little reference to the language of the text</li> <li>• uses some supporting textual detail.</li> </ul>
<b>Band 6</b>	<b>8-10</b>	<p><i>Attempts to communicate a basic personal response:</i></p> <ul style="list-style-type: none"> <li>• makes some relevant comments</li> <li>• shows a basic understanding of surface meaning of the text</li> <li>• makes a little supporting reference to the text.</li> </ul>
<b>Band 7</b>	<b>5-7</b>	<p><i>Some evidence of simple personal response:</i></p> <ul style="list-style-type: none"> <li>• makes a few straightforward comments</li> <li>• shows a few signs of understanding the surface meaning of the text</li> <li>• makes a little reference to the text.</li> </ul>
<b>Band 8</b>	<b>2-4</b>	<p><i>Limited attempt to respond:</i></p> <ul style="list-style-type: none"> <li>• shows some limited understanding of simple/literal meaning.</li> </ul>
<b>Below Band 8</b>	<b>0-1</b>	<i>No answer / Insufficient to meet the criteria for Band 8.</i>

**Examiner's comment:**

Those who were prepared to negotiate their own way through the passage's length and depth of descriptive detail often did very well, not least because the passage offered so many opportunities for detailed comment on the power of language and the writer's craft.

Features of the strongest answers:

- *They benefited from using the recommended reading time well. Stronger candidates took the time to read the dialogue carefully and work out who was speaking. They selected details judiciously which illuminated their own response, rather than attempting to produce exhaustive paraphrase of content.*
- *They made careful use of the framework provided by the question and bullet points. They realised that these helped them to identify sources of humour and pathos, and to identify the passage's central metaphor.*
- *They showed the ability to move beyond the straightforward and evaluate the impact of the writer's craft and purpose.*
- *They were able to demonstrate their appreciation that the passage was written in a way that captured the commotion and disorder of the situation, and to write effectively about its humour. They were characterised by an ability to analyse humour in the ways in which the watchman's family continually succeed in insinuating themselves into the drama of the situation, even achieving the last word. They also saw the humorous way in which Biju's imagination conjures up the sounds, smells and textures of his homeland over the telephone wire, but also noted that Biju 'wanted to weep' and that the cooks down the phone 'trembling', and so they detected the true emotion behind the clichés of impaired conversation. The very best saw how closely what is amusing and what is sad are intertwined both in the writing and in the reader's response.*
- *They saw the frustration behind the humour of the repeated HELLOs and appreciated the way the writer used capitalisation and punctuation to reinforce this difficulty in communicating which goes beyond the merely literal.*

- *They showed appreciation and enjoyment of the extravagance of the writing and its subtlety, seeing the hollowness of the cliché 'Everything is all right' and how little reassurance it really provides. The difficulties of communicating were understood at a deeper level than the literal.*
- *They made frequent and close reference to the text, followed by analytical comment in order to substantiate their personal responses.*
- They sustained clarity of critical argument.

**Answer:**

In this extract the writer combines the farcical comedy of a family struggling to use a simple piece of technology with the sad frustration of a father and son unable to communicate properly. The extract begins amusingly, but towards the end becomes more sad.

The opening sentence mentions that the phone sat "encircled by a lock and key," so "thieving servants" wouldn't use it. While this is an exaggeration on the part of the watchmen, it is amusing to see how the phone is so valuable to them. The incongruity of such a simple piece of technology (as we see it) and their extreme way of behaving around it is a running theme throughout. This is illustrated by their reaction to the ringing phone whereas we would simply walk over and answer it, it is clearly quite an event for them as the watchman leaps at it, and the entire family comes running. The repetition of the words "would not" in italics is amusing because it shows how determined the family is to not "fall to ordinariness". This seems unnecessary and is also ironic since for us a phone is very ordinary, so their reaction to it is amusing.

The cook, by natural logic, raises his voice because of the distance of the call. This is ironic because there is nothing logical about raising your voice to use the phone, which makes this matter-of-fact statement amusing. When the family has its Biju, they "told one another" who it was. This is a contradiction of terms, if they were telling "one another" then essentially (taking it literally) they were telling themselves, so they already knew. This shows how proud they are of recognising who it is they feel the need to tell themselves, even though they already know.

The next exchange has very short sentences, clusters of question marks, capital letters and interjections from the family. This makes the conversation chaotic, farcical and therefore humorous. The interjections say phrases like "he can't hear". This is stating the obvious and the fact that it is a standalone statement gives the sense that it's important and meaningful, though of course it isn't. This juxtaposition adds to the farce.

For the first time in the extract we get a sense of sadness as the "atmosphere of Kalimpong reached Biju all the way in New York", and his home land is described in intricate detail. This shows how clearly he remembers his homeland and how he misses it giving this section a certain sadness and nostalgia. However this moment is cut out suddenly by "HELLO? HELLO?" The use of uppercase letters and shortness of the line make the statement very sudden and therefore amusing. The sad element is quickly brought back as the cook is "terrified at the loss of a precious second with his son." This shows how much he misses his son, and combined with his son's nostalgia for his homeland, we now see they both wish Biju was home, which is a sad situation. Once again the comic element returns as the cook shoos them away, "Almost sending his hand off with the vehemence of his gestures". This is a very funny image, and stops the passage from being too sad.

The phrase beginning "the shadow by their words" is in a very short paragraph, making the image stand out, and it adds a powerful sense of sadness. This is continued in the next paragraph, where the wire is described as being "a fragile connection trembling over ravines and mountains". This shows how tenuous the cook's connection is to his son. The watchman's wife then acts out the word "swaying" with her hand, which is not only unneeded but a comic image.

As the children climb into the tree, it's as if everyone is getting involved and scene is chaotic, although we are quickly reminded of "the space between father and son" which is a poignant image. The comedy comes back as the mother is "plucking" the children from the tree, which is a very comic image.

The phrase "Best not to worry him" conveys that the cook is having to lie to his son, which is an awful thing to have to do. Again the humour is ever present, in the phrase "shrieked on the New York street". The writer reminds us that Biju is on a street yelling into the phone, which is amusing. In the next words, from the cook, though, he tries to reassure his son asking him if all is well, showing how much he cares for him.

Later the repetition of the phrase "Everything all right" is amusing because it is said in a tone of voice that the family understand how things are, which juxtaposes with the fact that the phrase is not grammatically correct, which is amusing. In the next paragraph the writer says "while the emotion was there, the conversation was not". This conveys the frustration of the father and son not knowing what to say to each other. Further on, "Biju wanted to weep" as he has to lie to his father about not being able to come home, and not wanting to tell his father the truth. The facts of this situation are put bluntly and simply in the two sentences, showing the simple and unavoidable source of his sadness.

However, at the other end they work out what is going on, which makes the situation even worse because now the cook fully understands how bad it is in New York for his son. The phrase "they were stranded in the distance that lay between them" reinforces how far from each other they were, and how without the phone – which had too died – they were lost. The word "trembling" creates the image of the cook putting down the phone, not knowing when he'll hear from Biju again and realising it'll be very long before he can see him again. The next sentences are all in their own paragraph, showing how silent the room was and how slowly time was passing. The phrase "wishing at least for the customary words of good-bye" shows how desperate he is that he can't even get a full proper goodbye from his own son. He tries to "shake the gadget back into life", as it has come to represent his son, and is now cold and lifeless. Metaphorically it's as if his son has died.

The watchman's wife's final speech is both amusing and sad. It's amusing because it's impossible that her words will make the cook feel better, but it's sad at the same time because it's such a pathetic and useless attempt at comforting him.

The writer makes this extract amusing by using farcical chaos and comic images (not to mention the chronic over-use of uppercase to exaggerate the shouting). Towards the end the writer makes it seem more sad by emphasising the son's sadness and reluctance to tell his father the truth, and the father's emotions when he realises how long it will be before he sees his son.

#### **Examiner's Comment:**

The initial overview picks up the terms of the question: 'the extract begins amusingly, but towards the end becomes more sad'. The well-focused introductory paragraph shows that the candidate has considered the impact of the text as a whole (including aspects of genre and tone) before starting to write. There is appreciation of how humour comes from 'exaggeration' and 'incongruity'. Quotation and critical comment are skilfully integrated as part of a sustained engagement with the style of the writing: e.g. 'the repetition of the words "would not" in italics is amusing because it shows how determined the family is to not "fall to ordinariness"'. There is sensitive appreciation of the contrast of the mood in the homesickness section and how this has been achieved. The candidate intuitively senses the sadness of Biju's situation by attention to the detail: e.g. 'the facts of his situation are put bluntly and

simply in two sentences, showing the simple and unavoidable source of his sadness'. While the argument might at times have been made with greater economy and explicitness, the response comments on so much of the detail, responding closely to language, structure and form with insight.

#### **Top Band 1 Answer - Answer 2**

The writer is able to create a very interesting piece. He does this by making the situation described in the extract both amusing, and at the same time sad. This is by combining a conversation between a father and son, as well as curious characters in the background.

The writer uses the watchman and his family to create comedy, so as to break the ice of the conversation being held. He describes the family, making them appear as though they have nothing better to do other than to eaves-drop. But makes their behaviour appear as normal because they rarely received phone calls. Great humour is also brought about as the watchman and his household try to improve the difficult connection between the two. Although the watchman's family appears as useful, the writer creates the event in a way that appears as though they were only helping so as to listen in on the conversation. Thus they are not portrayed as helpful, but as annoying meddlers.

From the conversation that is being held together with the background of what had happened, the writer brings it out as important. From the dialogue it is also clear to see that the father and son had not talked for a while. The writer is also able to create a certain amount of suspense, as the conversation is not completed. The writer also creates sympathy for both characters as they try to catch up, but are cut short due to poor connection.

The language and descriptions used, create a perfect picture of how Biju and his father were feeling. The writer is able to tell the reader that Biju is homesick without mentioning it directly. He only describes the way that Biju felt at home, just by speaking to his father and recalling the smells and scenery of Kalimpong. He is also able to create a feeling of anxiety between the two, involving the audience in the process. This is, as they desperately try to hear each other over the phone. As the connection keeps interrupting, as well as the involvement of the nosy watchman and his family, it is clear that the father was irritated. The father is brought out as concerned and worried and he wonders when his son will get leave. Bothered with the fact that his son may be over working himself.

From the way in which the writer has chosen to create this difficult situation, he is able to bring out a very interesting and involving piece. This is because he has chosen to use a topic that many may have been witness to, in their day to day lives. He chooses to use capital letters in the dialogue, so as to show the tone in which both father and son were speaking in. The novelist's way of writing is very unique, although some may see it as cliché.

**Examiner's Comment:**

The response begins with a sound overview of the text - the writer has made the situation 'both amusing, and at the same time sad' - and analyses both the extract's content and structure. There is an understanding of a 'writer at work', but the focus tends to be on narrative detail rather than language: 'he describes the family, making them appear as though they have nothing better to do than eavesdrop'. The response lacks analysis of verbal and descriptive detail. The lack of a technique of well-selected quotation followed by comment on the writer's choice of word means a Band 3 mark would be inappropriate. For example, an excellent observation on Biju's homesickness (in the third paragraph) is not adequately developed through comment on inferences embedded in the text or comment on effects created by specific words. Similarly, there is an understanding of the emotions of the passage and a response to how readers might react, but not how these emotions are communicated to the reader.

