基本能力評估
Basic Competency Assessment

「全港性系統評估」(TSA) 的評估總結報告及學校報告，提供資料讓學校及教師具體地了解到學生在基本能力方面的強項與弱項，從而優化教學及教學的計畫。
此外，「學生評估」(SA) 亦為學校提供多一套有效的評估工具，教師可通過學生的學習需要和進度，並配合校內的評估機制靈活運用，從而進一步提高學生的學習成效。SA 的特色包括：

1. 設有網上中央評估庫；
2. 設有網上評估活動；
3. 由電腦系統評核學生的表現，並提供即時評估報告，供教師參考。

教師可根據評估結果及對學生的整體認識，作適當的跟進，以促進學生的学习，為進一步提高學與教的效能，教育局根據 SA 及 TSA 評估的結果及分析，提供「網上學與教支援」(WLTS)。

The Territory-wide System Assessment (TSA) reports and school reports provide information about students' strengths and weaknesses against specific Basic Competencies. They help schools and teachers to enhance their plans on learning and teaching.

The Student Assessment (SA) also provides schools with an additional assessment tool. Teachers can conduct this assessment according to their student needs and learning progress. The assessment can be flexibly used with other assessment tools at schools so that the effectiveness of student learning would be further enhanced. The features of the Student Assessment include:

1. Web-based central assessment item bank
2. Online assessments
3. Computer marking and instant reports on students' performance

Based on the online assessment results and their knowledge about the students, teachers can provide appropriate follow-ups to enhance student learning. To enhance learning and teaching effectiveness, the Education Bureau also provides Web-based Learning and Teaching Support (WLTS) for schools according to assessment results and analysis of SA and TSA.

如何善用豐富的診斷性評估數據作有效的回饋？
How to use the rich diagnostic assessment data for effective feedback?

研究項目的重要性
The importance of research projects

我們進行個案研究，以深入了解學習困難及驗證學習需要等問題，從而制定有效之支援策略和製作適切的網上教材。在學校進行研究，加上有專學者及教育局課程主任的參與，對培訓教師善用評估數據以促進學與教十分有幫助。請參閱內頁中，英、數三科的研究結果舉例。

Case studies are conducted to investigate the causes of the learning problems and verify the learning needs in order to formulate effective support strategies and produce useful learning materials. With the expertise of tertiary academics and EDB officers, research work conducted in the school context also serves to build teachers' capacity in using assessment data to enhance learning and teaching. Please find examples of the research findings in Chinese Language, English Language and Mathematics as follows.
A study named Using Assessment Data to Enhance Learning and Teaching (English Language Education) was conducted in 2009 to examine the 2008 TSA Reading papers and students' performance data (P3, P6 & S3) to identify prospective students' learning problems, and the dimensions in which weaknesses in students' performance are manifest. Subsequent research work then took place in the school context to empirically verify some students' key reading problems observed. The principal investigator is Dr Anthony K.K. Tong of The University of Hong Kong.

The key findings include the following:

1. Vocabulary size
   Many weaker students participated in the study have too small a vocabulary to cope with the TSA reading tests given to them at their levels. Some even did not know up to 10% of the words in a text and the loss of words learnt was alarming. In the long run, direct, explicit teaching and learning of some high frequency words at the primary and junior secondary levels will benefit students in their development of reading abilities.

2. Text type knowledge
   Students' knowledge of common text types should be enhanced to understand some key messages in texts. This means that the teaching of reading can be organised not only around reading skill types, such as scanning, skimming, locating specific information, gist-getting, etc, but also the specific structure of some common text types such as stories and poems. In particular, structural elements of various text types need to be taught explicitly.

Some Web-based Learning and Teaching Support (WLTS) units have been newly developed to address such learning needs. Action research would be conducted in a cluster of schools to strengthen the use of the support materials. Further details about the research reports and relevant WLTS materials can be accessed at the WLTS website.
數學科

學生在全港性系統評估關於應用斜率公式及平行線與垂直線的斜率關係等題目中表現持續欠佳。於2009年我們與香港大學教育學院李文生先生合作進行了一次研究，利用較詳盡的評估課業，診斷學生對斜率的了解及其相聯的圖像與幾何特徵的理解。

在訪談中，我們發現學生只知道記憶斜率公式，而對斜率的幾何意義欠缺了解。例如求圖一的直線斜率，他們要先找出直線上兩點的坐標，才能利用斜率公式計算直線斜率，而並不知道只需利用方格數出直線的水平及鉛垂變化，就能計算直線斜率。

學生對繪畫平行和垂直線亦感到困難。雖然他們大都知道（但不能解釋）平行線的斜率相等，但他們並不能以此繪畫平行線（圖二）。他們對如何在方格紙上準確地繪畫垂直線更茫無頭緒（圖三），甚至有人將「垂直」與「鉛垂」混淆。

針對研究所得的學生學習需要，我們設計了一套學與教材料，希望能改善學生對相關概念的掌握。有關教材及詳盡的研究報告可在我們的「網上學與教支援」網站下載。

![圖一 Figure 1](image1)
![圖二 Figure 2](image2)
![圖三 Figure 3](image3)

MATHEMATICS

The TSA results reflect students' consistent weakness in using the slope formula and relating slopes in parallel or perpendicular lines. In 2009 we conducted a study with Mr. Arthur Lee of The University of Hong Kong to further understand students' difficulties in learning this topic, by using a set of more elaborated assessment tasks to diagnose students' understanding of the connection between the slope as a measure and its graphical/geometric characteristics.

We found in the interviews that in general students only memorized the slope formula without understanding its geometric significance. For example, in Figure 1 they had to identify coordinates of two points on the line in order to use the slope formula to find the slope. They were not aware that the slope could be found by counting the horizontal and vertical changes using the square grid.

Students also have difficulties in drawing parallel and perpendicular lines. Although many students knew (but were unable to explain) that parallel lines have equal slopes, they did not make use of this relation to draw the parallel line (Figure 2). Furthermore, they had no idea how to draw perpendicular lines correctly on square grid (Figure 3). Some students even mixed up "perpendicular" with "vertical".

Based on the findings of learning needs of students on the concept of slope, a set of materials was designed to improve students' conceptual understanding. The materials, together with the detailed study report, are available in the WLTS website.
Web-based Learning and Teaching Support (WLTS) is an integral part of the Basic Competency Assessment (BCA) project. To support teachers in providing timely assistance to students to achieve the Basic Competencies, this online resource offers suggested follow-up actions and interactive tasks/materials for teachers to use in addressing the learning problems.

http://wlts.edb.hkedcity.net