

## Motivating Students to Learn - Writing Mathematics Diaries

### Level: Primary 1

**Writing Mathematics diaries** is an activity used to enhance students' motivation in learning Mathematics.

### Description

- Students are invited to write their Mathematics ideas in their diaries.
- The diaries may consist of problem posing or a record of real-life experiences that correspond to ordinary lessons.
- Students are often invited to pose problems for their fellow classmates to solve or to present their Mathematics stories orally to the whole class.
- By allowing students to have diversified outcomes, the writing of Mathematics diaries can accommodate students with a wide range of academic abilities.

### Implementation of the learning activity:

Embracing the belief of "**Not Giving Up On Any Students**" (一個都不能少), teachers of the two participating schools in the research project made efforts to:

- acknowledge and recognise the work of students by displaying it in the classroom.
- select the diaries related to their lessons and make them part of their lessons.
- organise students into groups to facilitate the sharing of diaries and peer learning.
- provide ample time for students to present their stories and to express their ideas orally.
- help students attribute their success to their efforts and stabilise their feelings of self-worth.

Below is an episode from the classroom learning and teaching process:

\*\* “梁老師讓大家一起分享一些同學的數學日記。她將幾位同學的數學日記印在投影片上，然後邀請日記的作者站在教室前面，向大家講述他寫的數學故事，並請其他小朋友一起解題。

小朋友們很大膽，走到教室面前講自己的故事：「昨天，我和媽媽一起上街買雪糕，一共要買十一支雪糕，但店裡只有六支，那麼我們還要多買幾支呢？」話音剛落，就有好幾個同學脫口而出「五支」。梁老師讚揚他們算得好，並請一個同學出來，在投影片上畫上不足數量的雪糕。小朋友仔細認真地畫每一支雪糕，那種執著的神情是很多成年人所嚮往的。

梁老師又請另外一個小朋友將故事所表達的意思，用數學算式表示出來，並寫在投影片上。梁老師此舉成功地幫助學生在「非形式」與「形式」之間建立溝通的橋樑。

活動過程中，有一個同學記不起自己所寫的故事，其餘的同學爭先恐後地想幫他演繹他所畫的圖畫，其間充份展示小朋友們對數學學習的興趣以及互相幫助的熱情。”

\*\* The classroom episode was extracted from an article jointly written by teachers of LKWFSL Wong Yiu Nam Primary School (AM) and the Chinese University of Hong Kong consultant team.

### **Impact on Students' learning:**

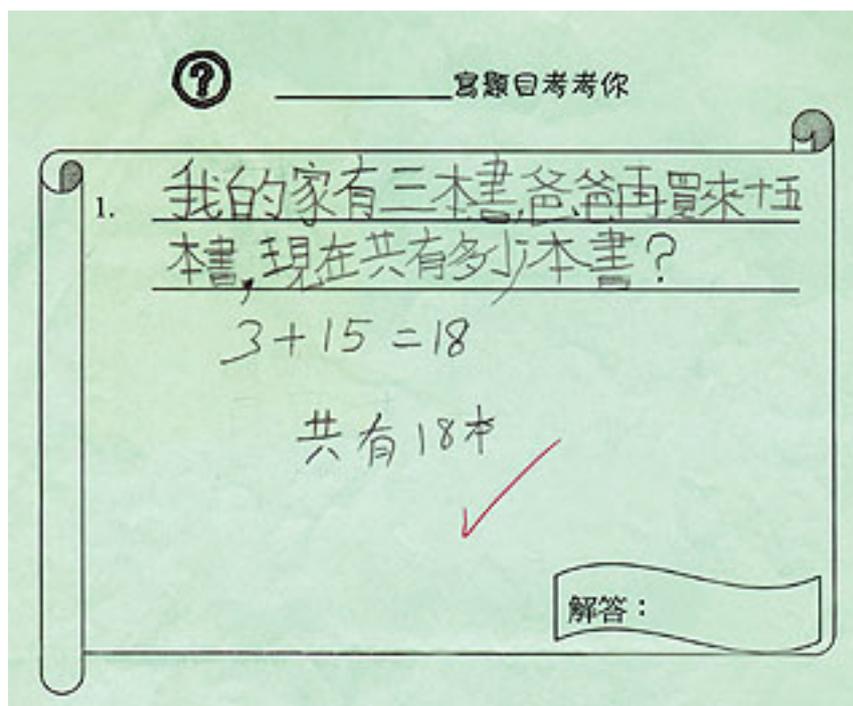
From the classroom episode described above, the impacts on students' learning are observed to be as follows:

- Students' **motivation to learn** is enhanced and maintained by taking an active role in the classroom. Taking initiative in writing their diaries helps to develop in students a sense of ownership and autonomy.
- Students, even the ones with weaker performance, can experience **pride and confidence** through the **continuous sharing of Mathematics diaries** with their peers and recognition by teachers and peers.
- By writing their Mathematics diaries, students **can apply their Mathematical concepts in a real-life context** and realise the practical relevance of the knowledge gained.
- **Peer assistance is fostered and students are encouraged to challenge** as well as to learn from each other.
- **Strengths and weaknesses of students are easily identified** so that teachers can shape their teaching practice to improve learning.

## Students' Work

The following two examples of students' work from the learning activity illustrate how students pose problems and create their own pictures by using different shapes. \*\* Students' work was contributed by the CUHKFAA Thomas Cheung School and the LKWFSL Wong Yiu Nam Primary School (AM).

\*\* Problem posed by one student and solved by his/her classmate.



\*\* “一隻小鳥” was created by using different shapes.

