Results of Primary 3 Mathematics in Territory-wide System Assessment 2016

The percentage of Primary 3 students achieving Mathematics Basic Competency in 2016 is 89.9%.

Primary 3 Assessment Design

The assessment tasks for P.3 were based on the Basic Competency at the end of KS1 for the Mathematics Curriculum (Trial Version) and the Mathematics Curriculum Guide (P1 – P6), 2000. The tasks covered the four dimensions of the Mathematics Primary 1 to 3 curriculum, i.e. **Number, Measures, Shape & Space and Data Handling**, and tested the concepts, knowledge, skills and applications relevant to these dimensions.

The Assessment included items in a number of formats based on the context of the question, including fill in the blanks, answers only and answers involving working steps as well as multiple choice. Some of the test items consisted of sub-items. Besides finding the correct answers, students were also tested on the ability to present their solutions to problems, including writing out necessary statements, mathematical expressions and explanations.

The Assessment consisted of 95 test items (134 score points) covering all the 49 Basic Competency Descriptors of the four dimensions. These items were grouped into four sub-papers, each 40 minutes in duration and covered all four dimensions. Some items appeared in more than one sub-paper to act as inter-paper links. Each student was required to attempt only one of the four sub-papers. The number of items in the various sub-papers is summarized in Table 8.1. These numbers include overlapping items that appear in more than one sub-paper to enable the equating of test scores.

Table 8.1 Number of Items and Score Points for P.3

Subject	No. of Items (Score Points)				
	Paper 1	Paper 2	Paper 3	Paper 4	Total*
Mathematics Written Paper					
Number	16(19)	14(19)	16(19)	16(19)	42(52)
Measures	8(13)	10(14)	8(12)	8(11)	26(38)
Shape and Space	7(10)	7(9)	7(11)	7(11)	21(30)
Data Handling	2(5)	2(5)	2(4)	2(4)	6(14)
Total	33(47)	33(47)	33(46)	33(45)	95(134)

* Items that appear in different sub-papers are counted once only.

Performance of Primary 3 Students Achieving Basic Competence in 2016

Based on the recommendations of the Committee, the principles for modifications of paper and item design are meeting the learning needs of students, alleviating the learning burden on students, aligning with the spirit of curriculum and reflecting the standards of basic competencies. Moderation Committee adopted the recommendations of the Committee. The number of items in the Assessment was reduced, with a cut of around 20%. Only one basic competency was assessed in each item. Items requiring solving linking problems was minimised. Items were related to students' life experiences and tied in with their mental development.

Primary 3 Number Dimension

Students' performance in this dimension was satisfactory. Students were capable of recognizing the place values of digits in a whole number. They performed satisfactorily in addition, subtraction, multiplication and division of whole numbers as well as in their mixed operations. P.3 students were able to solve application problems and showed working steps in their solutions. They understood the basic concepts of fractions and were able to compare fractions. Further comments on students' performance are provided below with examples from different sub-papers quoted in brackets.

Understanding basic concepts of numbers and fractions

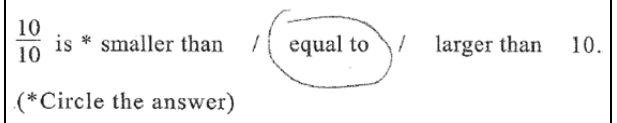
- The majority of students performed well in recognizing the place values of digits in a whole number (e.g. Q1/M1, Q1/M3) and the values represented by the digits (e.g. Q1/M4).
- Students were able to express a whole number in Arabic numerals (e.g. Q3/M1) and order or write 5-digit numbers according to specified criteria (e.g. Q2/M1, Q3/M3). However, some students could not express the required 5-digit number in Arabic numerals. For instance, they mixed up 'five thousand two hundred and six' and 'fifty-two thousand and six' (see an example of students' work as follows).

Q3/M1
用阿拉伯數字寫出「五萬二千零六」。 答案：5206

- The majority of students were able to use a fraction to represent part of a whole (e.g. Q16/M1, Q12/M2). However, some students might be careless in reading the diagram in Q15/M1 and gave the wrong denominator.

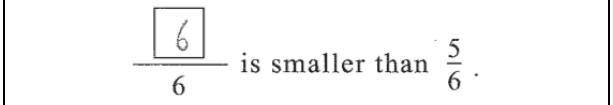
- Most students could recognize the relationship between fractions and 1 as the whole (e.g. Q15/M4). However, in Q13(a)/M2, some students misunderstood the value of $\frac{10}{10}$ as 10.

Q13(a)/M2



- The majority of students were able to compare fractions (e.g. Q14/M2, Q16/M4) but some students filled in the wrong numerator or denominator (e.g. Q13(b)/M2, Q11/M4).

Q13(b)/M2



Performing basic calculations with whole numbers

- The majority of students performed well in the addition of whole numbers (e.g. Q4/M1) including carrying and repeated addition of 3-digit numbers (e.g. Q4/M3, Q3/M4).

- The majority of students performed well in the subtraction of 3-digit numbers, involving repeated subtraction (e.g. Q5/M1, Q6/M1, Q5/M3). A small number of students did decomposition wrongly and chose the option B in Q4/M4.

- The majority of students were good at performing the multiplication of whole numbers up to 1 digit by 3 digits involving carrying (e.g. Q7/M1, Q6/M3, Q6/M4).

- The majority of students were capable of dividing 3-digit numbers with 1-digit number (e.g.Q8/M1, Q7/M4). In Q7/M3, a small number of students failed to put a zero in the quotient and chose the wrong option B.

- The majority of students performed well in the mixed operations of addition and subtraction including small bracket (e.g. Q8/M3) as well as in those operations involving addition and multiplication (e.g. Q8/M4). However, in Q9/M1, some students neglected the computational rule of doing 'multiplication before subtraction' and chose the wrong option D.

Solving application problems

- The majority of students were capable of solving simple application problems involving addition, subtraction, multiplication, division or mixed operations (e.g. Q14/M1, Q10/M1, Q10/M2, Q11/M2, Q9/M3, Q10/M3, Q11/M3, Q12/M3).
- In Q11/M1, some students confused division with multiplication in solving application problems (see an example of students' work as follows).

Q11/M1
8張光碟共有152首兒歌，平均每張光碟有 1216 首兒歌。

- In Q12/M1, some students misunderstood the meaning of '5 dozen' and chose the options B or D.
- In solving application problems, the majority of students were capable of showing the correct solutions (see the examples of students' work as follows).

Q11/M3	
399+199+199 =598+199 =797 答她共須付797元	她共須付： 399+199×2 =797(元)

- Although some students could write the correct mathematical expressions, they made careless mistakes in calculating the answers (see examples of students' work as follows).

Q14/M1	Q11/M2
230-43+186 =197+186 =383 王見有花383朵。	一箱曲奇餅： 48×8 =424(塊)

- Some students missed the bracket in writing the mathematical expression, though they gave the correct step and answer (see an example of students' work as follows).

Q10/M2

還餘：
941 - 484 + 391
= 941 - 875
= 66 (個)

- The majority of students were able to solve problems involving addition or multiplication of money (e.g. Q12/M4, Q13/M1).

Primary 3 Measures Dimension

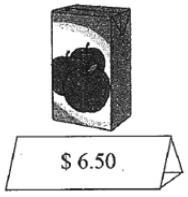
The students performed well in this dimension. The majority of students could identify and use Hong Kong money, read price tags, measure and compare the length and capacity of objects; choose the appropriate tools for measuring and recording the length and weight of objects. Students were capable of telling the dates and days of the week, telling time from a clock face and a digital clock. They in general could record the duration of time for different activities.

Some students were not able to use appropriate tools to measure the capacity of containers. They could not measure and compare the weight of objects using improvised units. Further comments on students' performance are provided with examples from different sub-papers quoted in brackets as follows.

Hong Kong money

- The majority of students could identity and use Hong Kong money (e.g. Q18/M1, Q18/M4). Most students could read the price tags well (e.g. Q17(a)/M1, Q15(a)/M2).

Q17(a)/M1

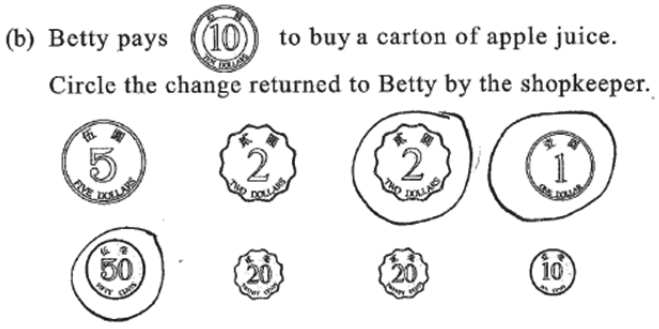


(a) A carton of apple juice costs

SIX dollars and fifty cents.

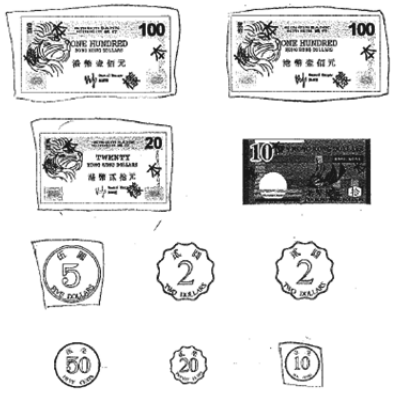
- Students performed well in exchanging money directly (e.g. Q18(b)/M1, Q18/M4). If the amount involved in change is not large, students in general could circle the correct answer (e.g. Q21(b)/M3). If the amount involved in change is quite large, some students made careless mistakes in calculation (e.g. Q15(b)/M2).

Q21(b)/M3



Q15(b)/M2

(b) 少川付一張 500 元紙幣購買一件外套。圖出店員須找回的金額。



Knowledge of time

- Most students were capable of telling the dates from a calendar (e.g. Q18/M2, Q24(a)/M4). Nevertheless, a small number of students could not write down the correct days of a week according to given conditions (e.g. Q24(b)/M4). Students mixed up 'It lasts for 4 days' and 'joins the competition on the third day'.

Q24/M4

根據下面五月份的月曆，回答下列各題。

五月						
星期日	星期一	星期二	星期三	星期四	星期五	星期六
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

(a) 媽媽訂購了一台鋼琴，並安排在五月的第三個星期二送貨，那天是 5 月 15 日。

(b) 鋼琴比賽由五月二十二日起一連四天舉行，子晴在第三天出賽，那天是星期 五 。

- Most students were capable of telling time from a clock face/digital clock (e.g. Q19(a)/M2). Few students confused hour hand with minute hand of a clock (e.g. Q22(a)/M1).

Q22(a)/M1

以下兩個鐘面顯示一節舞蹈班開始和完結的時間。

開始時間
2:21

完結時間

(a) 舞蹈班的開始時間是下午 2 時 21 分。

- Most students were capable of reading timetable, including in '24-hour time'. They performed well in calculating the duration of time for activities (e.g. Q17(a)/M3, Q19(b)/M2).

Q17(a)/M3

Central → Cheung Chau
Departure Time
19:20
19:40
20:00
20:30
21:00
21:30
22:10
23:20

Study the timetable of the ferries on the left.

(a) The first ferry leaves Central at 19:20, and reaches Cheung Chau at 19:55.
The journey takes 35 minutes.

Q19(b)/M2

學校今天舉行戶外活動。一年級學生於

到達郊野公園。

(b) 他們於 

離開郊野公園，他們在郊野公園共逗留了 3 小時。

- Students in general were able to recognize the 24-hour time, but some students failed to convert the 24-hour time to the time in the afternoon (e.g. Q17(b)/M3).

Q17(b)/M3

Central → Cheung Chau
Departure Time
19:20
19:40
20:00
20:30
21:00
21:30
22:10
23:20

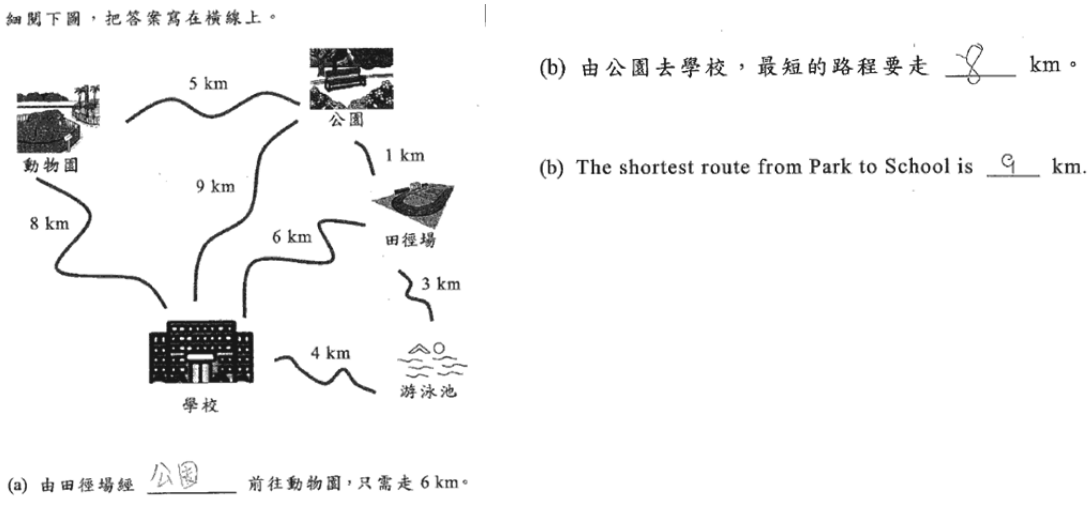
(b) The last ferry from Central to Cheung Chau departs at
23 : 20 p.m.

Length, distance, weight and capacity

- Almost all students could compare the lengths of objects and the distances between objects directly (e.g. Q22/M3) and compare the length of objects and the distance between objects using improvised units (e.g. Q17/M4).

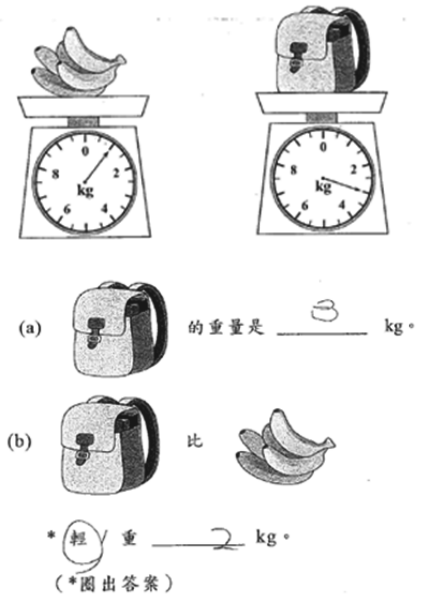
- Students could choose stride length as 'ever-ready rulers' to measure the length of objects (e.g. Q17/M2). They performed well in measuring the height of objects with appropriate measuring tools (e.g. Q20/M3).
- The majority of students could record the length of an object with an appropriate unit (e.g. Q19(a)/M1, Q24(2)/M3, Q19/M4), and use 'centimetre' (cm) and 'kilometre' (km) to express the length of objects and the distance between objects (e.g. 20/M2, Q19(a)/M3). However, few students were not able to find the shortest distance between two places (e.g. Q19(b)/M3). Students confused 'the direct route' with 'the shortest route'.

Q19/M3



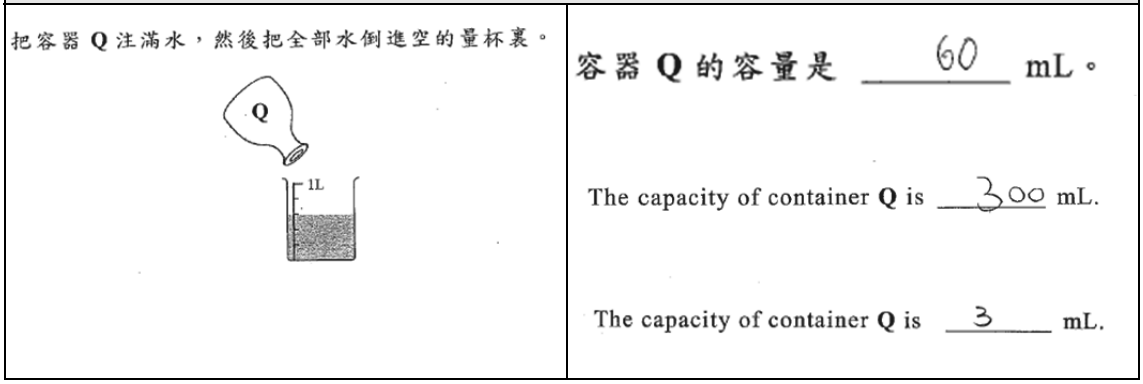
- Many students were able to compare the weight of objects directly (e.g. Q21/M4) and measure and compare the weight of objects using improvised units (e.g. Q23/M1). They could choose the appropriate tools to measure the weight of objects (e.g. Q23/M3) and record the weight with appropriate units (e.g. Q16(b)/M2, Q24(1)/M3). Students in general could represent the weight of objects using 'kilogram' (kg) (e.g. Q23(a)/M4), but their performances were not equally good when they compared the weight of two objects (e.g. Q23(b)/M4).

Q23/M4



- The majority of students did well in measuring and comparing the capacities of containers with improvised units (e.g. Q24/M1). A small number of students were not able to use 'millilitre'(mL) to measure the capacity of containers (e.g. Q18/M3). For instance, students did not know 1L equals 1000 mL or misunderstood a graduation represented 100 mL. Nearly half of the students could not choose the appropriate measuring tools for measuring capacity (e.g. Q24/M2).

Q18/M3



Primary 3 Shape & Space Dimension

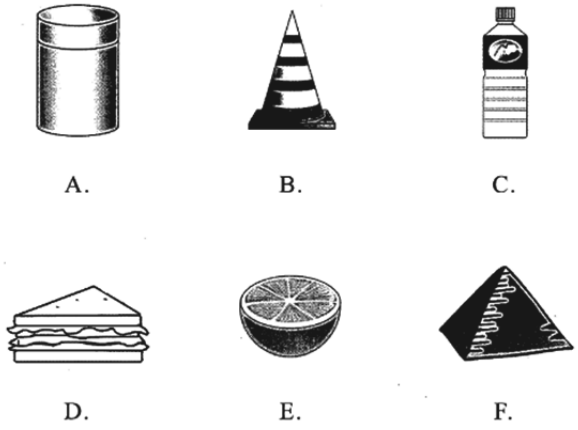
The performance of P.3 students was good in the Shape & Space Dimension. The majority of students were capable of identifying 2-D shapes, 3-D shapes, straight lines, curves, right angles and the four directions. However, some students were comparatively weak in basic concepts such as distinguishing between pyramids and

cones; quadrilaterals and parallelograms; parallel lines and perpendicular lines. Further comments on students' performance are provided below with examples from different sub-papers quoted in brackets.

3-D Shapes

- The majority of students were capable of identifying 3-D shapes including cones and cylinders (e.g. Q26/M1, Q25/M2). A small number of students confused a cone with a pyramid and chose the option C in Q26/M1.
- Generally P.3 students were able to classify familiar objects in daily life according to their shapes (e.g. Q25/M1; Q28/M2). However, objects similar to triangular prisms were easily mistaken as pyramids (see examples of students' work on Q25(b)/M1 as follows).

Q25(b)/M1



角錐：D, F

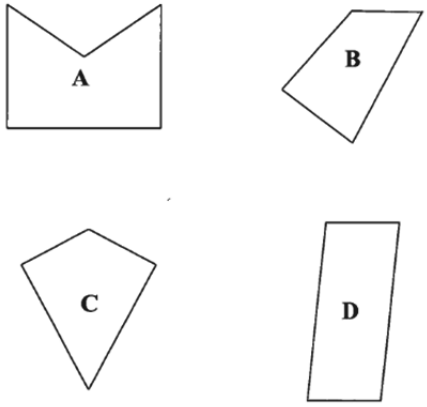
Pyramid(s): F D

- The majority of students were able to compare the thickness of objects intuitively (e.g. Q26/M2) except some of them confused the thickness of a book with its length.

2-D Shapes

- The majority of students could identify 2-D shapes including trapeziums, rectangles, pentagons, parallelograms and circles (e.g. Q27/M1, Q27/M2, Q28/M3). However, a small number of students confused a quadrilateral with a parallelogram (see an example of students' work as follows).

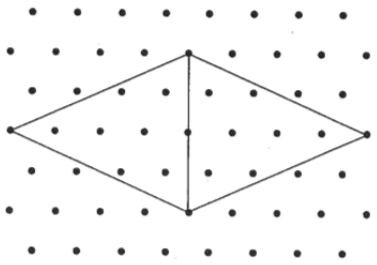
Q27(b)/M1



Parallelogram(s): B D

- P.3 students could group 2-D shapes according to the number of sides (e.g. Q29/M4).
- The majority of students could recognize right-angled triangles and isosceles triangles (e.g. Q28/M1, Q31/M2, Q27/M3) (see an example of students' work on Q31/M2 as follows).

Q31/M2



志傑用橡皮圈在釘板上圍出兩個

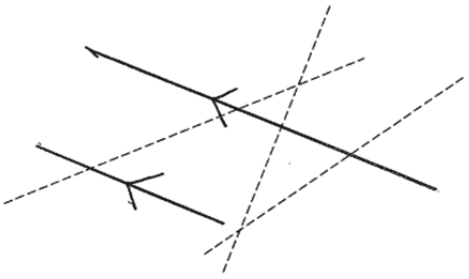
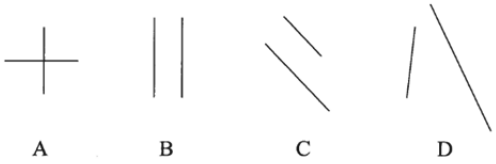
* 等邊 / 直角 / 等腰 三角形。

(*圈出答案)

- The majority of students could find the relative positions of two 2-D shapes (e.g. Q29/M3).

Straight Lines and Curves

- Most students were capable of identifying straight lines and curves (e.g. Q30/M3).
- The majority of students were able to identify parallel lines (e.g. Q29/M1) but some students were not able to recognize perpendicular lines (e.g. Q29/M2) or confusing perpendicular lines with parallel lines (e.g. Q28/M4).

Q29/M1	Q28/M4
	 A B C D 列出由垂直線組成的圖。 答案：B C

Angles

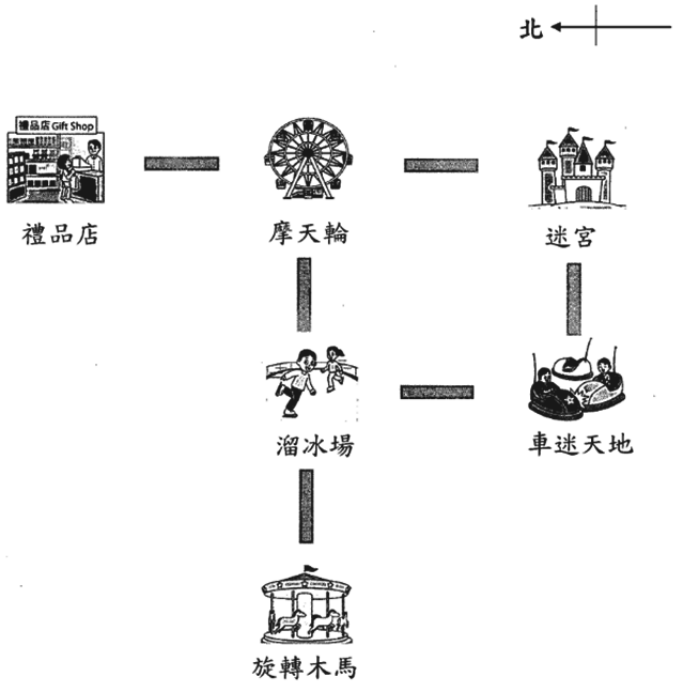
- Most students were able to recognize a right angle (e.g. Q30/M1) and compare the size of angles (e.g. Q30/M2) (see an example of students' work as follows).

Q30/M2
 細閱上圖，把 x、y 和 z 三個角由小至大排列出來。 答案：∠z（最小），∠x，∠y（最大）

Directions

- The majority of students were able to recognize the four main directions, namely, north, east, south and west (e.g. Q31/M1).
- When the 'north' direction is not pointing upward, the majority of students can also find the correct directions (see an example of students' work on Q31/M4 as follows).

Q31/M4



(a) 詠賢從旋轉木馬向東方走到溜冰場後，再向 南 方走，便到達車迷天地。

(b) 車迷天地在迷宮的 西 方。

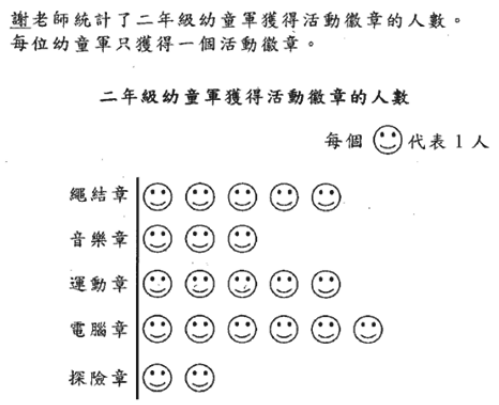
Primary 3 Data Handling Dimension

Students performed very well in this dimension. They could read information from the data given in pictograms and interpret data to answer straightforward questions. They were also capable of constructing pictograms from tabulated data. Further comments on students' performance are provided below with examples from different sub-papers quoted in brackets.

Reading and interpreting pictograms

- Most students did well in directly reading and interpreting the data from given pictograms (e.g. Q32(a)/M1, Q32(a)/M2, Q32(a)/M3). They could compare the data given in pictograms and carry out simple calculations to find the answers (e.g. Q32(b)/M1, Q32(b)/M2, Q32(b)/M3).

Q32/M1



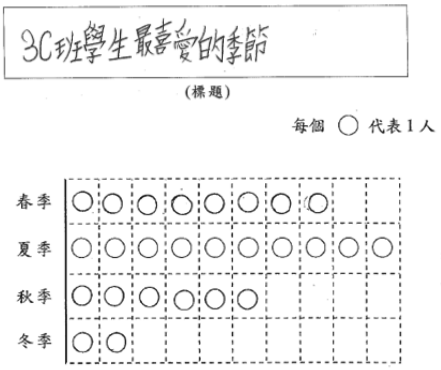
(a) 獲得 探險 章的人數最少，只有 2 人。

(b) 二年級幼童軍獲得活動徽章的人數共有 21 人。

Constructing pictograms

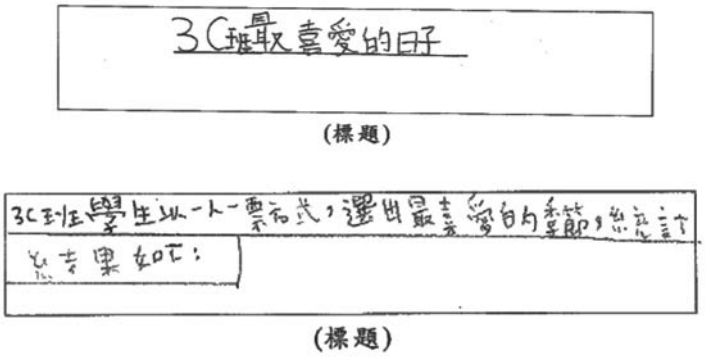
- Most students were capable of constructing pictograms from tabular data (e.g. Q33(b)(2)/M1, Q33(b)/M2, Q33(2)/M3) and providing a proper title for a pictogram (e.g. Q33(b)(1)/M1, Q33(1)/M3).

Q33/M3



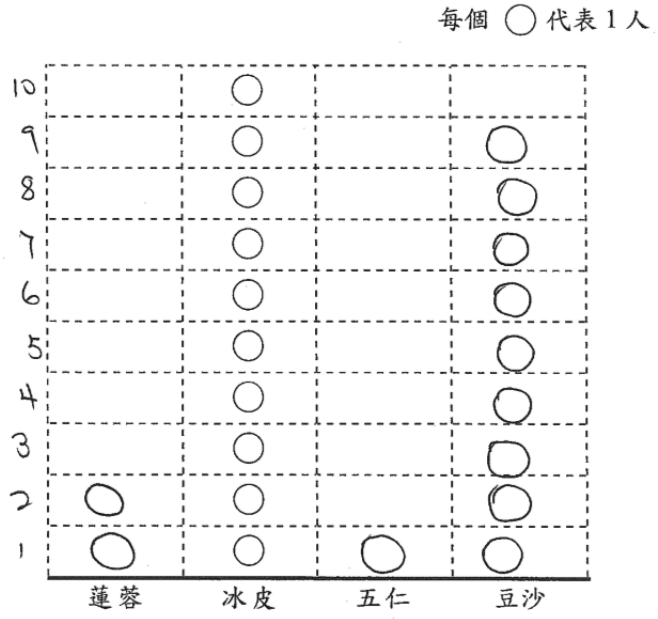
- Nevertheless, few students could not express explicitly in the title about the purpose of conducting the survey.

Q33/M3



- A very small proportion of students unnecessarily added a 'frequency axis' to represent the data given by a pictogram whereas a few of them might have confused pictograms with bar charts (see the example of student's work on Q33(b)(2)/M1 as follows).

Q33(b)(2)/M1



General Comments on Primary 3 Student Performances

P.3 students performed well in the Number Dimension. The majority of students mastered the basic concepts of whole numbers and fractions as well as the computational skills of the four operations. They were able to solve daily application problems and show working steps of solutions. However, some students could not write mathematical expressions or give answers with correct units or conclusions.

In the Measures Dimension, students in general were able to apply the basic concepts to solve problems. The majority of students could identify and use money, read the price tags properly, tell the dates and days of a week, and find the duration of an activity. They could also measure and compare the length, weight and capacity of objects and choose the appropriate units for measuring and recording the length and weight of objects. However, a few students failed to choose appropriate tools to measure the capacity of containers.

P.3 students performed well in the Shape & Space Dimension. The majority of students were able to identify 2-D shapes and 3-D shapes, lines and curves, right angles and the

four directions. However, some students mixed up some basic concepts, such as cones and pyramids; quadrilaterals and parallelograms; parallel lines and perpendicular lines.

Students did very well in the Data Handling Dimension. They could read data from given pictograms with a one-to-one representation and construct pictograms from tabular data. Furthermore, they could interpret the data given in pictograms correctly.

Good Performance of Primary 3 Students in 2016

Good performing students demonstrated mastery of the concepts and skills assessed by the sub-papers. They were more skillful in doing computations and could solve application problems with different contexts. They could clearly present their solutions in solving problems (see examples of student's work below).

Q10/M2	
941-484-391 =457-391 =66 ∴還餘66個橙。	941-(484+391) =941-875 =66 66 oranges are left.

Good performing students had thorough conceptual understanding of the fractions. They were capable of comparing fractions and recognizing the relationship between fractions and one as a whole.

Good performing students could exchange and use money as well as read the price tags. They could tell the dates and days of a week, tell time from a clock face and digital clock, recognize and apply the '24-hour time' system and find the duration of an activity. For the lengths and the weights of objects, and the capacities of containers, they were able to compare, choose appropriate tools to measure and use suitable units to record.

Good performing students were capable of identifying 2-D shapes, 3-D shapes, straight lines, curves, parallel lines, perpendicular lines, understanding angles and right angles, comparing the size of angles as well as recognizing the four main directions.

Good performing students were capable of reading and analyzing data from pictograms and perform simple calculation for finding the answers according to the relevant information in the diagrams. They could construct pictograms by referring to the given raw data and provide a proper title for a pictogram (see an example of student's work below).

Q33(b)/M1

Overview of Student Performances in Mathematics at Primary 3 Territory-wide System Assessment 2014-2016

The percentages of students achieving Basic Competency in 2014, 2015 and 2016 are provided below.

Table 8.2 Percentages of P.3 Students Achieving Mathematics Basic Competency in 2014-2016

Year	% of Students Achieving Mathematics Basic Competency
2014	87.4
2015	87.6
2016	89.9

A comparison of the strengths and weaknesses of P.3 students in 2014, 2015 and 2016 provides teachers with useful information on how to help students improve their learning. The table in the following pages provides a brief comparison of the students' performances in each of the four dimensions for the last three years.

Table 8.3 Overview of Student Performances in Mathematics at P.3 Territory-wide System Assessment 2014-2016

Year / Number	2014	2015	2016	Remarks
Strengths	• Students showed an outstanding performance in recognizing the place values of digits in a whole number and the values represented by the digits. • Students were able to select digits to form 5-digit numbers satisfying specific criteria. • Students did quite well in performing mixed operations of whole numbers and solving simple application problems. • The majority of students were able to solve application problems and demonstrate working steps clearly in presenting their solutions. • The majority of students were capable of using fractions to represent parts of a whole.	• Students were able to recognize the place values of digits in a whole number and the values represented by the digits. • Students did quite well in performing mixed operations of whole numbers. • The majority of students performed steadily in solving simple application problems. • Students performed well in understanding the basic concept of fractions and comparing fractions.	• Students were able to recognize the place values of digits in a whole number and the values represented by the digits. • Students performed well in the mixed operations and solving application problems. • Students could show the solution and the working steps in solving problems. • Students were able to understand the basic concept of fractions and compare fractions.	• Students should try to understand the requirements before answering the questions. • Students should calculate the numerical answers carefully and give the correct units.
Weaknesses	• Some students were not aware of the concept about fractions that the whole must be divided into a number of equal parts. • A very small proportion of students confused either the subtrahend with the minuend or the dividend with the divisor. • A few students did not understand the meaning of the quotient and the remainder in solving problems of division and ignored the remainder. • Students were particularly weak in performing division involving conversion of dollars to cents.	• Almost half of the students were weak in forming and ordering whole numbers up to 5 digits satisfying specific conditions. • A few students read questions carelessly and could not give meaningful expressions. • A very small proportion of students confused either the subtrahend with the minuend or the dividend with the divisor.	• Some students did not understand the requirements of the questions and performed the calculations carelessly. • Some students could not write the correct mathematical expressions in solving problems or present the answer with the correct unit and conclusion.	

Year / Measures	2014	2015	2016	Remarks
Strengths	• Students were able to identify Hong Kong money. • Students could write the dates and days of a week from a calendar correctly. • Students performed well in telling the time on a clock face or digital clock. • Students were able to measure and compare the length of objects and the capacity of containers. • Students could record the length and weight of objects as well as the capacity of containers with suitable units. • Students could choose appropriate measuring tools to measure length of objects and the capacity of containers.	• Students were able to identify Hong Kong money and read the price tags. • Students performed well in telling the time on a clock face or digital clock. • Students performed well in directly comparing the length and weight of objects, and the capacities of containers. • Students did well in measuring objects with appropriate tools and recording answers with suitable measuring units.	• Students were able to identify Hong Kong money and read the price tags. • Students were capable of telling the dates and days of a week. • Students performed well in telling the time on a clock face or digital clock. • Students could measure and compare the length, weight and capacity of objects. • Students performed well in choosing appropriate tools to measure the height and weight of objects. • Students could record the length and weight of objects with appropriate units.	• It is suggested that students can be involved more in hands-on activities regarding measurement so as to help them to grasp the basic concept and consolidate their understanding in measurement. • In regard to choosing the appropriate tools for measuring objects, it is suggested to know more about the reasons behind the students' choice. It is worth to note that whether students use 'matching' for selection of measuring tools. For instance, 'teaspoon' matches with 'cup' (Q24/M2, 2016), 'glasses' matches with 'eyes' (Q23/M3, 2015), etc.
Weaknesses	• Students' performance was only fair in handling the exchange of money. • Students' performance was relatively weak in comparing the weight of objects and choosing appropriate measuring tools to measure the weight of objects.	• The performance of students in recording the duration of activities was only fair. • Students were weak in using suitable units to measure and compare the capacity of containers.	• When the amount involved in change is quite large, some students made careless mistakes in calculation. • Students were relatively weak in choosing the appropriate tools for measuring capacity.	

Year / Shape and Space	2014	2015	2016	Remarks
Strengths	• Students improved in identifying 2-D shapes and 3-D shapes. • Students' performance was stable in recognizing the simple characteristics of triangles. • Students were good at identifying straight lines and curves as well as recognizing a set of parallel lines and perpendicular lines. • Students performed well in comparing the size of angles. • Students were capable of recognizing the four directions.	• Students' performance was stable in identifying 2-D shapes and 3-D shapes. • Students were capable of recognizing the simple characteristics of triangles. • Students were capable of identifying straight lines, curves, parallel lines and perpendicular lines. • Students were able to recognize right angles and compare the size of angles. • The performance of students was quite good in recognizing the four directions.	• Students' performance was stable in identifying 3-D and 2-D shapes. • Students were capable of identifying straight lines and curves as well as a pair of parallel lines. • Students performed well in recognizing the four directions.	• It is suggested that students be shown more standard 3-D shapes and real objects of different shapes. • It could enhance learning by introducing some daily examples of parallel lines and perpendicular lines.
Weaknesses	• Some students were weak in grouping 2-D shapes and wrongly classify figures having curves and straight lines as polygons. • There is room for improvement in recognizing the four directions when the 'north' direction on a map was not pointing upward.	• Some students easily mistook a prism with triangular faces to be a pyramid. • A small number of students confused spheres with objects with round surfaces. • Some students were weak in recognizing right-angled triangles. • The performance of students dropped when the 'north' direction on a map was not pointing upward.	• Some students were not able to recognize perpendicular lines or confused perpendicular lines with parallel lines. • Some students were not able to judge the correct direction relative to a given reference point.	

Year / Data Handling	2014	2015	2016	Remarks
Strengths	• Students did well in reading and interpreting the data directly from given pictograms, and carry out simple calculations in order to answer questions. • Students showed improvement in answering open-ended question. • The majority of students were capable of constructing pictograms from tabular data.	• Students were able to read and compare the data given in pictograms in order to answer questions. • Students performed steadily in answering open-ended question. • Students were capable of constructing pictograms from tabular data.	• Students were able to read information from the data given in pictograms and interpret data to answer straightforward questions. • Students could construct pictograms by referring to the given raw data.	• Students should choose the appropriate words for the titles in order to express explicitly the purpose of conducting the survey.
Weaknesses	• A few students used wrong and ambiguous keywords for the titles.	• A small proportion of students were weak in answering open-ended question using the actual data given in pictograms. • Some students used the wrong and ambiguous keywords for the titles.	• A few students could not express explicitly in the title about the purpose of conducting the survey.	