ISA
Mathematical Literacy
Sample Materials

Grade 3
Grade 4
Grade 5
ISA Mathematical Literacy Sample Materials
Grade 3, Grade 4 and Grade 5

This collection of mathematical literacy sample materials represents a typical range of mathematics material in ISA tests from Grade 3 to Grade 5. The purpose of this collection is to show teachers examples of the kinds of mathematical literacy that are used in the ISA.

Questions in context
This collection has 5 Units containing a total of 11 questions. Each Unit establishes a context for the questions associated with it. An actual ISA mathematical literacy test has 15-20 Units set in a wide variety of contexts, with a total of 30-35 questions.

The pages following the sample Units show the classification, descriptor and marking guide for each question.

Classification of questions
Questions are classified by competency –
   Reproduction, Connection or Reflection
and by content –
   Quantity, Change and Relationships, Space and Shape, or Uncertainty.

Question descriptors
The descriptors for each question provide the basis for the described scales of achievement on which ISA results are reported.

Question format
This collection has 5 multiple-choice questions and 6 open-ended questions requiring students to write a response. An actual ISA test has approximately 50 per cent multiple-choice questions and 50 per cent open-ended questions. Some of the open-ended questions only require a short answer, others require a calculation or an explanation. Examples of both kinds of open-ended questions are included. The marking guide shows how the open-ended questions are scored.

This collection of materials is not a test.

The materials in this collection have NOT been selected to represent the typical range of difficulty of an ISA test. An actual ISA test is carefully constructed to ensure that the range of difficulty of the questions reflects the range of mathematical ability of the population for each grade.

The materials in this collection cover Grades 3, 4 and 5. Some materials may be too hard for Grade 3 and some materials may be too easy for Grade 5. If a teacher wants to use some of these materials for students to practise on, it is important that the teacher only selects the Units that are of an appropriate level of difficulty for their students.

Teachers should use this material as a model. Teachers can develop questions that assess similar kinds of skills using their own mathematics materials.

Other ISA Sample Mathematical Literacy Collections:

- Grades 5, 6 and 7
- Grades 7, 8, 9 and 10.
Toys at the shop cost 32 zeds, 12 zeds, 19 zeds and 23 zeds. Write these prices in increasing order.

_____ zeds,  _____ zeds,  _____ zeds,  _____ zeds.
Wet Days

This graph shows the number of wet days during March, April, May and June.

2 Which two months together had 13 wet days?
- March and April
- April and May
- May and June
- March and June

3 In July there were nine wet days.
Complete the graph to include July.

4 Which month had the smallest number of wet days?
- March
- April
- May
- June
Teresa looked in the windows of the apartment across her street. This is what she saw.

What can be seen in the second floor window third from the left?

Which window has a dog in it?

The ground floor window, first from the left
The first floor window, second from the right
The second floor window, second from the left
The third floor window, first from the left
The third floor window, second from the left
A teacher has organised a Treasure Hunt for her class.
This is a map of the school.

About how far do the students need to walk from the centre of the sports field to the treasure at \( \times \)?

____________________ m

A driver in Car A, heading north on Church Road, wishes to enter the car park off Church Road and park next to Car B.

Which turns should the driver make?

- Turn left, turn left, turn right
- Turn right, turn left, turn right
- Turn left, turn left, turn left
- Turn right, turn right, turn left
- Turn right, turn right, turn right
Angelique measured the height of a bean plant each Saturday for four weeks.

Her measurements are shown in the table.

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>March 1</td>
<td>2 cm</td>
</tr>
<tr>
<td>2</td>
<td>March 8</td>
<td>8 cm</td>
</tr>
<tr>
<td>3</td>
<td>March 15</td>
<td>14 cm</td>
</tr>
<tr>
<td>4</td>
<td>March 22</td>
<td>20 cm</td>
</tr>
</tbody>
</table>

Use this calendar to answer the next two questions.
What height would you expect Angelique’s plant to be on Saturday April 5 if it keeps growing in the same way?

____________________ cm

On what date would you expect Angelique’s plant to reach 50 cm if it keeps growing in the same way?

____________________

Angelique’s friend Emile started measuring a different bean plant on Saturday in Week 1 also. He decided to make a graph of the growth of his plant.

Emile’s plant growth

In which week did Angelique’s plant have the same height as Emile’s plant?

____________________
Marking Guides Grade 3, Grade 4 and Grade 5

TOY PRICES

Q1 Toys at the shop cost 32 zeds, 12 zeds, 19 zeds and 23 zeds. Write these prices in increasing order.

*Competency:* Reproduction
*Content:* Quantity
*Descriptor:* List four 2-digit numbers in increasing order.

Marking guide

- **Code 2** 12, 19, 23, 32
- **Code 1** 32, 23, 19, 12 (decreasing order)
- **Code 0** Other
- **Code 9** Missing

WET DAYS

Q2 Which two months together had 13 wet days?

*Competency:* Reproduction
*Content:* Uncertainty
*Descriptor:* Find two columns that add to a given value on a simple column graph.
*Key:* D – March and June

Q3 In July there were nine wet days.

Complete the graph to include July.

*Competency:* Reproduction
*Content:* Uncertainty
*Descriptor:* Completes a bar graph to represent a given frequency.
Marking Guide

Wet days

<table>
<thead>
<tr>
<th>Months of the year</th>
<th>Number of wet days</th>
</tr>
</thead>
<tbody>
<tr>
<td>March</td>
<td>5</td>
</tr>
<tr>
<td>April</td>
<td>4</td>
</tr>
<tr>
<td>May</td>
<td>8</td>
</tr>
<tr>
<td>June</td>
<td>9</td>
</tr>
<tr>
<td>July</td>
<td>10</td>
</tr>
</tbody>
</table>

**Code 1**  As shown (line added)
   Dotted lines show acceptable range

**Code 0**  Other

**Code 9**  Missing

Q4  Which month had the smallest number of wet days?

*Competency:* Reproduction  
*Content:* Uncertainty  
*Descriptor:* Find the least frequent category by interpreting a simple column graph.  
*Key:* B – April
THE WINDOWS

Q5 What can be seen in the second floor window third from the left?

*Competency:* Reproduction

*Content:* Shape and Space

*Descriptor:* Use location language to identify position.

*Key:* 🐱

Q6 Which window has a 🐱 in it?

*Competency:* Reproduction

*Content:* Shape and Space

*Descriptor:* Use location language to identify position.

*Key:* D – The third floor window, first from the left

TREASURE HUNT

Q7 About how far do the students need to walk from the centre of the sports field to the treasure at ⭐?

*Competency:* Connection

*Content:* Shape and Space

*Descriptor:* Estimate distance in metres on a map using a simple scale.

**Marking guide**

- **Code 1**  Any answer between 110 and 130
- **Code 0**  Other
- **Code 9**  Missing

Q8 A driver in Car A, heading north on Church Road, wishes to enter the car park off Church Road and park next to Car B.

Which turns should the driver make?

*Competency:* Reproduction

*Content:* Shape and Space

*Descriptor:* Read a map and determine the turn directions (left/right) needed to get from point A to point B.

*Key:* D – Turn right, turn right, turn left
BEAN PLANT

Q9 What height would you expect Angelique’s plant to be on Saturday April 5 if it keeps growing in the same way?

Competency: Reproduction
Content: Change and Relationships
Descriptor: Find a value on a given date, combining information from a calendar and a table showing a pattern of growth.

Marking guide

Code 1 32
Code 0 Other, including marks/calculations on the previous page
Code 9 Missing (i.e. no marks on either page)

Q10 On what date would you expect Angelique’s plant to reach 50 cm if it keeps growing in the same way?

Competency: Connection
Content: Change and Relationships
Descriptor: Given a new value, extrapolate from a table showing a pattern of growth to find a date on a calendar.

Marking guide

Code 1 April 26 or just ‘26’ or ‘April 20–26’
Code 0 Other, such as week 9
Code 9 Missing

Q11 In which week did Angelique’s plant have the same height as Emile’s plant?

Competency: Connection
Content: Change and Relationships
Descriptor: Compare growth data in a table with those in a linear graph.

Marking guide

Code 1 Week 4 (or just ‘4’) or March 22
Code 0 Other
Code 9 Missing