SSLN 2011 Numeracy questions exemplifying learners’ strengths and areas for improvement in numeracy organisers which were identified as requiring further development.

Measurement Primary 4 (first level)

- ordering real life objects according to size and weight

Which of these is likely to weigh more than 1 kilogram?

A: 2 apples  
B: 2 grapes  
C: 2 melons  
D: 2 plums

Answer: ____________________

Which of these is most likely to weigh 5 kilograms?

A  
B  
C  
D

- Practical tasks in measuring and using appropriate units
SSLN 2011 Numeracy questions exemplifying learners’ strengths and areas for improvement in numeracy organisers which were identified as requiring further development

- Understanding of the concept of a fraction and using common fractions to represent parts of a whole
- Understanding how groups of items can be shared equally

Shade three quarters of the shape

Cross out (x) half of these shapes

Kelly cuts all of these oranges into quarters.

How many quarters does she have altogether?

A  4  
B  8  
C  12 
D  16 

P4 strength
SSLN 2011 Numeracy questions exemplifying learners’ strengths and areas for improvement in numeracy organisers which were identified as requiring further development

Find $\frac{1}{8}$ of the following.

- I can find a fraction of an amount by applying my knowledge of division
- Understanding of the concept and notation of fractions

A baker drops a box of 15 eggs.

$\frac{1}{3}$ of the eggs break.

How many of the eggs break?

Answer: _______________ eggs

Jack buys 55 plants for his garden.

$\frac{1}{5}$ of them are violets.

How many violets does Jack buy?

Answer: _______________ violets

There are 51 pupils in Primary 7 at Beach Primary School.

$\frac{1}{3}$ of them can swim.

How many of the Primary 7 pupils can swim?

Answer: _______________ pupils
84 pupils are taking part in the school’s sports day. 

\( \frac{1}{6} \) of them are competing in the long jump.

How many pupils are taking part in the long jump?

Answer: _______________ pupils

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The car park has 90 spaces.

\( \frac{1}{10} \) of the spaces are for disabled drivers.

How many spaces are for disabled drivers?

Answer: _______________ spaces

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- Unitary fraction of an amount within a simple work problem
- Finding equivalent fraction, decimal fractions and percentages and using the preferred form in solving problems
- I can show the equivalent forms of simple fractions, decimal fractions and percentages

Find \( \frac{1}{7} \) of 630g.

Answer: _______________

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Find 10% of 630g.

Answer: _______________
SSLN 2011 Numeracy questions exemplifying learners’ strengths and areas for improvement in numeracy organisers which were identified as requiring further development

Which of the following numbers are less than \( \frac{2}{10} \)?

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- Understanding and using inverse relationships of adding, subtracting, multiplying and dividing when simplifying calculations and solving problems
- Carry out the necessary calculations to solve related problems

The vet treated 120 animals last week.

\[ \frac{9}{10} \] of the animals were rabbits

How many rabbits did the vet treat last week?

Answer: _____________ rabbits

A school has a role of 588 pupils.

\[ \frac{3}{7} \] of them are boys.

How many boys are there?

Answer: _____________ boys

- Finding an amount of a fraction using common fractions
- Carrying out calculations involving common percentages e.g. 10%, 25%, 50% within simple word problems
- Using equivalent forms of simple fractions and percentages e.g. 75% = \( \frac{3}{4} \)
- Increasing or decreasing proportionally quantities within straightforward contexts
- Carrying out calculations with decimal fractions (just over half can do this accurately)
SSLN 2011 Numeracy questions exemplifying learners’ strengths and areas for improvement in numeracy organisers which were identified as requiring further development

Find \( \frac{1}{7} \) of 630g.
Answer: ________________

- **Carrying out calculations with a wide range of fractions, decimal fractions and percentages**
- **Understanding the relationship between simple proportion and ratio and using these concepts to solve problems in context**

30 litres of water are mixed with 5 litres of orange juice to make an orange drink.

Work out the ratio of water to orange concentrate.
Write the ratio in its simplest form.
Answer: ________________
SSLN 2011 Numeracy questions exemplifying learners’ strengths and areas for improvement in numeracy organisers which were identified as requiring further development

- ordering real life objects according to size and weight (areas of strength)

<table>
<thead>
<tr>
<th>Question</th>
<th>Area</th>
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<tbody>
<tr>
<td>How much longer is line B than line A?</td>
<td>P4 strength</td>
</tr>
<tr>
<td></td>
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<tr>
<td>Answer: ____________________ cm</td>
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</table>

Use a ruler to measure these lines

What is the length of the longest line?

<table>
<thead>
<tr>
<th>Length of the longest line</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>__________________________</td>
<td>P4 strength</td>
</tr>
</tbody>
</table>

Answer __________________________ cm

Some of the numbers are missing from this ruler.

What is the length of this toy brick to the nearest centimetre?

<table>
<thead>
<tr>
<th>Toy Brick Length</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>__________________</td>
<td>P4 strength</td>
</tr>
</tbody>
</table>

Answer __________________________ cm

- Practical tasks in measuring and using appropriate unit (areas of improvement)

What is the length of this paper clip to the nearest centimetre?

<table>
<thead>
<tr>
<th>Paper Clip Length</th>
<th>Area for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>__________________</td>
<td>P4 area for improvement</td>
</tr>
</tbody>
</table>

Answer: ____________________ cm
- **Choosing appropriate units of measure/using scales (areas of strength)**

What does this toy tractor weigh?

![Toy tractor on a scale]

Answer: _______________ grams

A box of apples is put on a scale. What did the box of apples weigh?

![Box of apples on a scale]

Answer: _______________ kg
Choosing appropriate units of measure/using scales (areas of improvement)

How much do these apples weigh?

<table>
<thead>
<tr>
<th></th>
<th>153g</th>
<th>150g</th>
<th>180g</th>
<th>190g</th>
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<tr>
<td>A</td>
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Jill pours milk into a measuring jug.

How much milk is in the jug?

Answer: _______________ litres
• Estimating the area of a shape by counting squares or other methods (areas of strength)

Circle the letters in the two shapes that have the same area.

What is the area of the shaded shape?

Answer: ____________________ square centimetres
SSLN 2011 Numeracy questions exemplifying learners’ strengths and areas for improvement in numeracy organisers which were identified as requiring further development

- **Estimating the area of a shape by counting squares or other methods (areas of strength)**

Each square has an area of 1 square centimetre.

What is the area of the shaded shape?

Answer: ______________________ square centimetres

Donald draws a triangle on a grid.

What is the area of the triangle?
Each square = 1 square centimetre.

Answer __________cm²

Mal makes this shape in card. The house is white and the doors and windows are red.

What area is white?

Answer: ______________________ square centimetre
• Estimating an amount an object holds. (areas for improvement)

The jug contains orange juice.

Estimate how many mugs can be filled with juice from the jug.

A  2
B  4
C  8
D  12
Measurement Primary 7 (second level)

• Different methods to find the volume of a simple 3D object. (areas of strength)

Which two blocks have the same volume as D?

A

B

C

D

E

Answer: _______ and _______

• Different methods to find the volume of a simple 3D object. (areas of improvement)

Box B is twice as long, twice as wide and twice as high as Box A

Box A holds 1 kilogram of tea.

How much will box B hold?

Answer: ___________________ kilograms
A full bottle holds 1 litre of water.

How many 200ml containers can be filled from these bottles?

Answer: ________________

How many of these triangular tiles would you need to tile an area 40cm long and 40 cm wide?

[Diagram of a triangle with sides 10 cm and a square with sides 40 cm]

A 4
B 8
C 16
D 32

P7 area for improvement
A new television arrives in a box which is 2m wide, 2.5m deep and 3m tall.
What is the volume of the box?

![Drawing of a box with dimensions 3m x 2.5m x 2m]

Answer: ______________m³

Each side of a cube has the length 4cm.
Calculate the volume of the cube.

![Drawing of a cube with a side length of 4cm]

Answer: ___________________ cm³
Using common units of measure and converting between related units of the metric system.

What is the total weight of the fruit?

Answer: _________________ g

This jug has some diluting juice in it.

Liam adds water to make 2 litres of juice.

How much water did Liam add?

Answer: _______ litres ___________ ml

A jug holds \(1 \frac{3}{4}\) litres of water.

How many millilitres is this?

Answer: ____________________ ml

A piece of rope measures 3.745 metres.

How many centimetres is this?

Answer: _____________ cm
SSLN 2011 Numeracy questions exemplifying learners’ strengths and areas for improvement in numeracy organisers which were identified as requiring further development

- **Find the perimeter and area of a simple 2D shape (strengths)**

  Calculate the perimeter of this shape.

  ![Perimeter Diagram]

  Answer: ________________ cm

  What is the perimeter of Julie’s room?

  ![Perimeter Diagram]

  Answer: ________ m

- **Find the perimeter and area of a simple 2D shape (areas for improvement)**

  A rectangle is cut into two triangles. What is the area of one triangle?

  ![Triangle Diagram]

  Answer: ____________ cm²

  A rectangle is 30cm long and 10cm wide. What is the area of the rectangle?

  ![Rectangle Diagram]

  Answer: ____________ cm²

  Reflective question:
  Why do children provide an answer of 40cm² or 80cm²?
SSLN 2011 Numeracy questions exemplifying learners’ strengths and areas for improvement in numeracy organisers which were identified as requiring further development

What is the area of this square?

Answer: ____________ cm²

Each edge of a cube measures 8cm.
Each face of the cube is to be painted white.

Which calculation gives the area to be painted white in square cm?
Tick one box

A  6 x 8
B  8 x 8
C  6 X 8 X 8
D  8 X 8 X 8

Reflection point:
Less than 1/3 of pupils could answer this type of question correctly

P7 area for improvement
SSLN 2011 Numeracy questions exemplifying learners’ strengths and areas for improvement in numeracy organisers which were identified as requiring further development

**Measurement S2 (third level)**

- Using common units of measure and converting between related units of the metric system.  
  \[ \text{MNU 2-11b} \]

- Choosing the appropriate units and degree of accuracy for the task  
  \[ \text{MNU 3-11a} \]

### S2 strength

Converting between related units

Choosing appropriate units and carrying out calculations with a wider range of numbers including fractions and decimal fractions (area of improvement)

**Example 1**

This jug can hold 4 litres of liquid.  
\(1 \frac{3}{4}\) litres are added to the liquid already in the jug.

How much liquid is in the jug?  
Give your answer as a **decimal fraction**.

Answer: __________ litres

**Example 2**

Subtract 93.5 grams from 1.656 kg.  
Give your answer in grams.

Answer: __________ grams

**Example 3**

A leaking tap drips 2500 ml of water every hour.  
How much water is leaked in one day? Give your answer in **litres**.

Answer: __________ litres
7 1 m of curtain material is cut from a roll of fabric. 
4
The roll has 10 m 4 cm on it.

After the cut has been made, what length of material will still be left on the roll?

Answer: _____________ m ________________ cm
• Find the perimeter and area of a simple 2D shape *MNU 2-11c*

• Use a formula to calculate area or volume when required *MNU 3-11a*
• Find the area of compound 2D shapes and volume of 3D objects *MNU 3-11b*

**Perimeter of 2D shapes (strength)**

Allan made a square picture frame at school. What is the perimeter of the frame?

Answer: ____________________ mm

**Find the area of a simple 2D shape or volume of a simple 3D object**

Calculate the area of this right-angled triangle.

Answer: ____________________ cm²

**Measurement tasks involving numeracy skills: working backwards (inverse operations)**

The two shapes below have the same perimeter. What is the breadth of the rectangle?

Note: The diagrams are not to scale.

Answer: ____________________ cm
Abdul’s father is building a pond in his garden.
The shape of the pond is a regular hexagon.
The perimeter of the pond is 7.5 metres.
What is the length of one side?

Answer: __________ m

The diagram shows a piece of card. The area of the card is 96cm².
It can be folded to make a cube.

What would be the length of one edge of this cube?
Answer: ____________________ cm

A cube has a volume of 125m³.
What is the length of one side of the cube?

Answer: ___________________________ metres

The length of a rectangular field is 8 metres more than twice its width.
If the field is 40 metres wide, what is the perimeter?

Answer: __________ metres
Paul is tiling part of a kitchen wall. The area to be tiled is 265cm long and 125 cm high.

How many 20cm sauce tiles are needed to tile this area?
Answer:__________________________ tiles

How many centimetre cubes will fit into a cube of side 10cm?
Answer: _____________________________
SSLN 2011 Numeracy questions exemplifying learners’ strengths and areas for improvement in numeracy organisers which were identified as requiring further development

- **Understanding of the concept of a fraction and using common fractions to represent parts of a whole**
- **Understanding how groups of items can be shared equally**

### Shade three quarters of the shape

![Shape with four squares and one shaded]

**P4 strength**

### Cross out (x) half of these shapes

![Eight stars with four crossed out]

**P4 strength**

### Kelly cuts all of these oranges into quarters.

![Five oranges]

How many quarters does she have altogether?

- **A** 4
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Write the ratio in its simplest form.

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