Parent-Pupil

MATHS

Information File 2

Measures

for SEAG Entrance Assessment

PMP Publications

Other titles available from PMP Publications
for SEAG Entrance Assessment preparation

- Parent-Pupil English Information File 1: *Punctuation, Grammar and Spelling*
- Parent-Pupil English Information File 2: *Comprehension and Vocabulary*
- English Punctuation, Grammar and Spelling Test Pack 1 (*39 check-up exercises*)
- English Punctuation, Grammar and Spelling Test Pack 2 (*27 check-up exercises*)
- English Comprehension Test Pack 1 (*16 tests*)
- English Comprehension Test Pack 2 (*16 tests*)

- Parent-Pupil Maths Information File 1: *Number*
- Parent-Pupil Maths Information File 2: *Measures*
- Parent-Pupil Maths Information File 3: *Shape and Space*
- Parent-Pupil Maths Information File 4: *Handling Data*
- Maths Question Test Pack (*6 tests*)

- Practice Tests Series 1 (*3 complete tests*)
- Practice Tests Series 2 (*3 complete tests*)
- Practice Tests Series 3 (*3 complete tests*)

Contents

Introduction

This Information File is a comprehensive revision package in Maths covering all aspects of the **Measures** attainment target as required for the SEAG Entrance Assessment. The 4 books in the series provide a comprehensive revision guide for parents, and also covers the mathematics requirements of The Northern Ireland Curriculum for the end of Key Stage 2.

It should be understood, however, when using the book that mathematical processes can often be performed in more than one prescribed way and for some children the methods outlined within the book might not always 'unlock the door' to understanding.

We recommend that when a child is experiencing difficulty in grasping a specific mathematical process that parents meet with their child's class teacher to discuss the nature of the problem and possible solutions to it.

The Information File comprises:

- A comprehensive reference file detailing information that children should know for the **Measures** attainment target of the mathematics element of the SEAG Entrance Assessment and at the end of Key Stage 2. The content, which should be learnt, is outlined briefly in a number of ***NEED TO KNOW*** boxes.

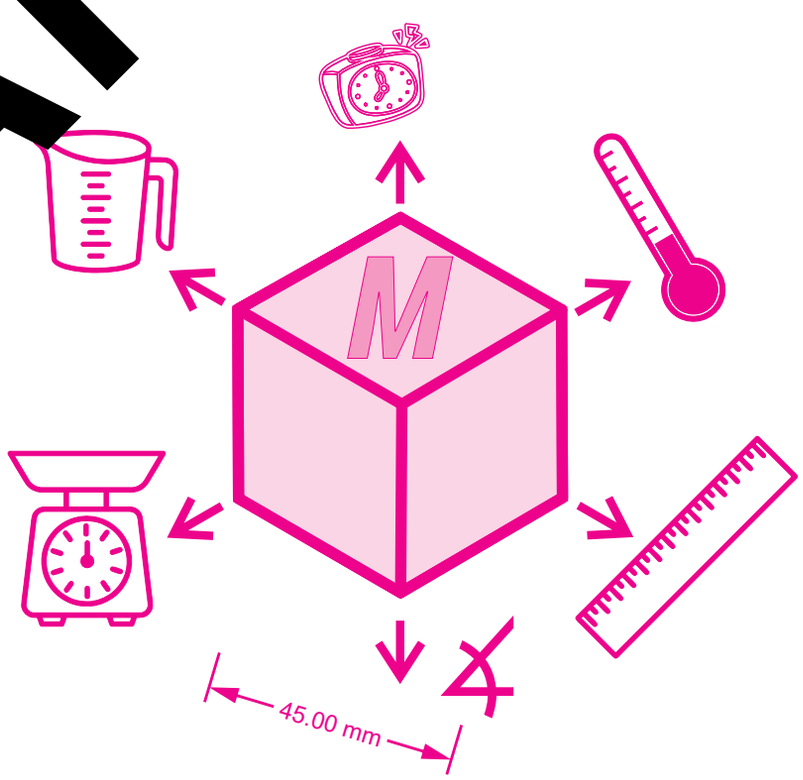
NEED TO KNOW

- A variety of example questions, with annotated step by step procedures illustrating how answers can be calculated.

Step 1
Step 2
Step 3

- 3 practice tests that mirror the format of the maths element of the SEAG Entrance Assessment.

Measures



Length

NEED TO KNOW

Children should know and recognise a variety of equivalent lengths expressed either as fractions, whole numbers or decimals,
e.g. ½ km = 0.5 km = 500 m.

Length can be measured in:

- ✳ MILLIMETRES (**mm**),
- ✳ CENTIMETRES (**cm**),
- ✳ METRES (**m**)

or

- ✳ KILOMETRES (**km**).

Length can be estimated using some common everyday mea[illegible]ke body parts, e.g. arm span, hand span, digit, palm, stride, foot, etc.

Equivalent Lengths

10 mm	= 1 cm	[illegible]000 [illegible]	= [illegible]
100 cm	= 1 m	[illegible]000	= 1 km

1. Metres and centimetres

Fraction		[illegible]umber		Decimal
1 m	=	100 cm	=	1.0 m
½ m	=	50 cm	=	0.5 m
¼ m	=	[illegible] cm	=	0.25 m
¾ m	=	75 cm	=	0.75 m

2. Kilom[illegible] and m[illegible]es

[illegible]		Whole number		Decimal
1 k[illegible]	=	1000 m	=	1.0 km
[illegible]	=	500 m	=	0.5 km
¼ km	=	250 m	=	0.25 km
¾ km	=	750 m	=	0.75 km

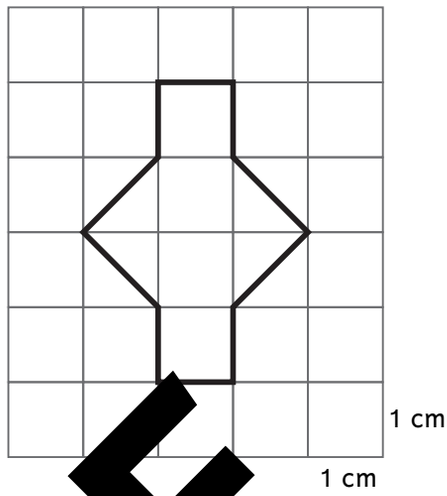
? *Example question*

1 **Which length below is equivalent to ¼ km?**

A 750 m **B** .0250 km **C** 250 m **D** 25 cm **E** 0.25 m

Answer: **C** 250 m

3 Calculating an area of a shape by counting squares



Calculate the area of this shape:

Step 1 Count the number of whole squares:
4 = 4 cm²

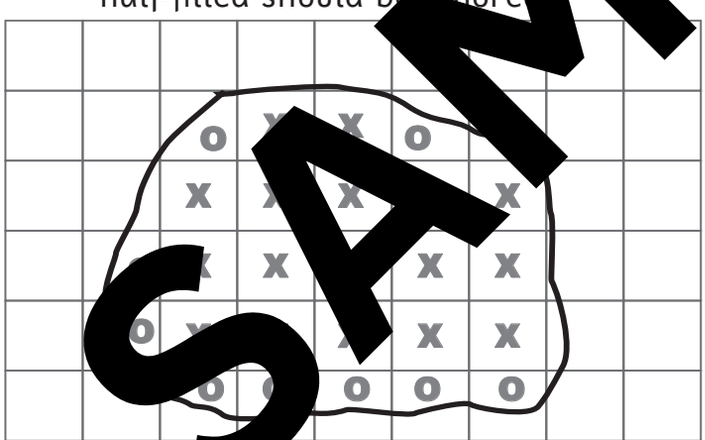
Step 2 Count the number of half squares:
4 half squares = 2 whole squares
= 2 cm²

Step 3 Add the totals together:
4 + 2 = 6 cm²

Area: 6 cm²

4 Calculating the area of an irregular shape through approximation

The approximate area of an irregular shape can be calculated by counting the number of whole squares inside a shape and adding to this the number of half squares or more within a shape. Squares less than half-filled should be ignored.



x = whole squares
o = ½ square or more

17 ⇒ whole squares
9 ⇒ ½ squares or more
---
26 cm² = (approximate area)

Step 1 Count the total number of whole squares, and put an 'X' in each square.

Step 2 Count the total number of squares which are half-filled or more, and put an 'O' in each square.

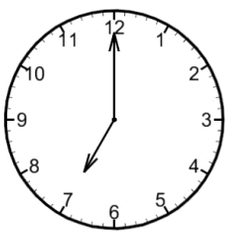
Step 3 Add the total number of whole and half-filled or more squares (Xs and Os).

Approximate area: 26 cm²

Time

Two types of clock can be used to display time:

1. Analogue clocks (with hands)



2. Digital clocks (with figures)

NEED TO KNOW

Children should:

- ⁜ know how to tell the time in analogue and digital form
- ⁜ know time equivalents
- ⁜ know how to change from 12 hour to 24 hour time
- ⁜ understand and use timetables and calendars.

Time Equivalents

60 seconds	=	1 minute	30 seconds	=	½ minute
			15 seconds	=	¼ minute
			45 seconds	=	¾ minute
60 minutes	=	1 hour	30 minutes	=	½ hour
			15 minutes	=	¼ hour
			45 minutes	=	¾ hour
24 hours	=	1 day			
7 days	=	1 week	2 weeks	=	1 fortnight
12 months	=	1 year	365 days	=	1 year
			366 days	=	1 leap year
10 years	=	1 decade	100 years	=	1 century

A leap year comes around every 4 years, e.g. 2016, 2020, 2024, etc. To calculate whether a certain year is a leap year you divide the number by 4. If there is no remainder the year is a leap year.

e.g.

$$4 \overline{)\,2022} \quad 0505 \text{ r } 2$$

⟹ 2022 is not a leap year

$$4 \overline{)\,2024} \quad 0506 \text{ r } 0$$

⟹ 2024 is a leap year

Children may be asked to calculate the difference between two times.

2 A man started work at 6:45 a.m. and finished work at 4:15 p.m.
How long did he spend at work?

hr	min

Step 1 Convert both times to 24-hour clock times:

6:45 a.m. ⇒ 06:45
4:15 p.m. ⇒ 16:15

See page 28— table of times

Step 2 Subtract the two times

hr		min
16	:	15
06	:	45

15 is too small to s[illegible] so we need [illegible]orrow 1 hou[illegible]om the hour co[illegible]

hr		min
16		15
15	:	[illegible]
06	:	[illegible]
~~09~~	:	~~30~~

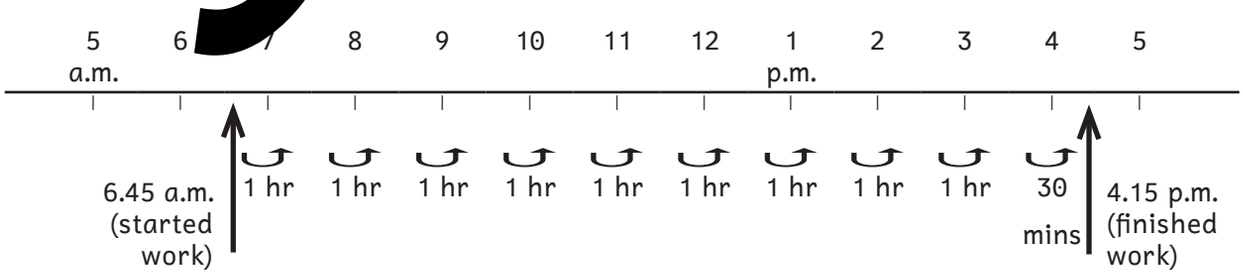
Your [illegible]orrowed hour becomes 60 [illegible]tes, which when added to the 15 [illegible]utes becomes 75 minutes.

[illegible]ake the borrowed hour away so 16 hours becomes 15 hours.

Answer: The man [illegible]s a[illegible]. for 9 hours 30 minutes.

9 hr	30 min

Rathe[illegible]han d[illegible] the [illegible]lculation above, many children find it easier to count on in [illegible]om [illegible] earlier time to the later time, i.e. 6:45 a.m. to 4:15 p.m..



9 hrs + 30 mins = 9 hr 30 min

MEASURES

Test 1

Mark: / 28

Children should have **30 minutes** to complete this test.

DATE OF TEST					
Day		Month		Year	

Candidate's Name

You should choose the **best** answer and mark the box beside or below it. Mark your answer with a thin horizontal line like this ▭.

1 **What is the lightest weight in the list below?**

A 170.10 g ▭ **B** 1.711 kg ▭ **C** 17101 g ▭ **D** [illegible]0 kg ▭ **E** 170.01 g ▭

2 Sangeetha wants to work [illegible]an appr[illegible]imate area of a piece of material that is 23 cm × 56 cn.

Which calculation [illegible]e cl[illegible]est to the actual answer?

▭ **A** [illegible] × 60 cm
▭ **B** 3[illegible]m ×
▭ **C** 25 [illegible]0 cm
▭ **D** 20 c[illegible] 60 cm
▭ **E** [illegible]cm × 50 cm

3 **What is the volume of the oil tank in the picture?**

A 60 m^3 ▭ **B** 65 m^3 ▭ **C** 70 m^3 ▭ **D** 75 m^3 ▭ **E** 80 m^3 ▭

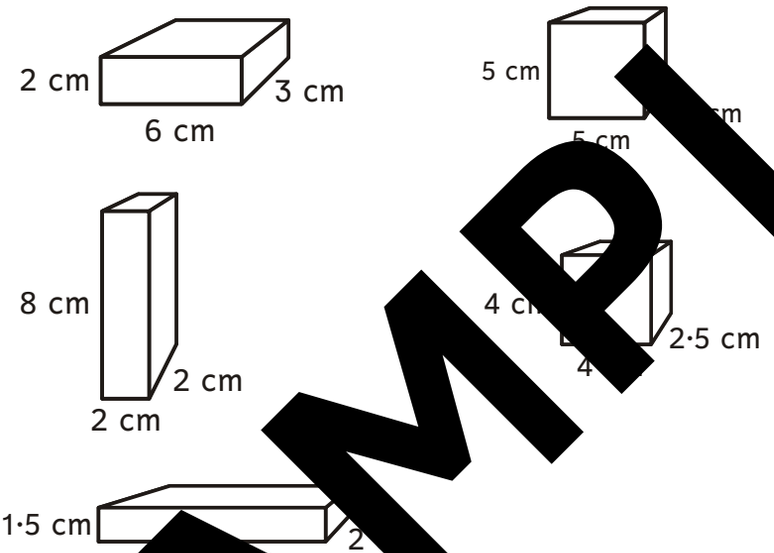
22 Each side of a regular octagon is 6.6 cm long.

What is the perimeter of the octagon?

A 39.6 cm ☐ **B** 33 cm ☐ **C** 52.8 cm ☐ **D** 66 cm ☐ **E** 43.56 cm ☐

For questions 23–28 you have to **write your answers**, neatly, in the box beside the question.

23 **What is the difference in volume between the largest and smallest containers?**



_____ cm^3

24 The temperature in London on the 1st February was 5°C while in Glasgow the temperature was 8°C lower.

What was the temperature in Glasgow?

_____ °C

25 A hardware shop sells rolls of string, 25 m in length.

How many 25 cm lengths of string can be cut from each roll?

_____

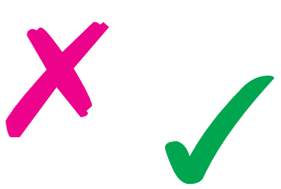
28 Richard wants to travel from Sheffield to London by train.
He needs to arrive in London by 3:30 pm.

What is the latest time that Richard can leave Sheffield?
Write your answer in 12-hour clock notation.

Sheffield *dep.*	**London** *arr.*
12:02	14:00
12:31	14:41
13:02	15:00
13:31	15:41
14:02	16:00
14:31	16:41
15:02	
15:31	17:41

END OF TEST

Answer Key



Test 3

see page 52

1. D – 900 cm^3
2. B – 3h 35m
3. E – 4.2 l
4. C – 1.75 l
5. B – 42 cm
6. E – 16:30
7. C – 36 cm
8. A
9. D – 193 ml
10. C – 81 cm^2
11. D – 40
12. C – 10°C
13. B – 13:00
14. E – 168 cm^3
15. E – 50 m
16. E – cm
17. D – 1.8 kg
18. C – 3.25 l
19. D – 36 cm^2
20. B – 25 mins
21. E – ruler
22. D – 594 cm
23. 216 cm^3
24. 18°C
25. [illegible]
26. [illegible] kg
27. [illegible]
28. 1:02 p.m.