

# Sample Assessment Material

with example answers and examiner marks

These marked sample assessment papers are to aid in teaching and learning and should be used as a guide only.

eraser, ruler graduated in centimetres, pair of compasses.

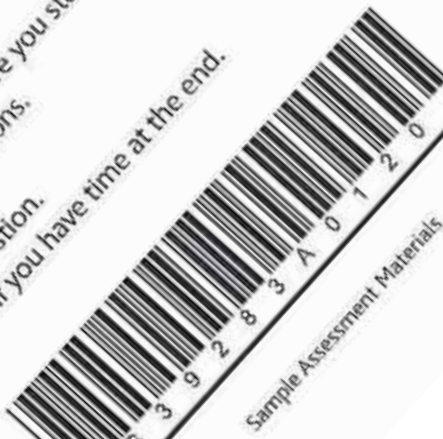
- Use a black ink or ball-point pen.
- Write in the boxes at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided – there may be more space than you need.
- **Calculators may be used.**

## Information

- The total mark for this paper is 48.
- The marks for **each** question are shown in brackets – use this as a guide as to how much time to spend on each question.
- **Where you see this sign you should show clearly how you get your answers as marks will be awarded for your working out.**

## Advice

- Read each question carefully before you start to answer it.
- Show all stages in the calculations. Keep an eye on the time.
- Tick your answers if you have time at the end.



Sample Assessment Materials

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5

✓

Write your name here


Surname	Other names
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**Edexcel**  
**Functional Skills**

Centre Number	Candidate Number																
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# Mathematics

## Level 2



Sample Assessment Material <b>Time: 1 hour 30 minutes</b>	Paper Reference <b>FSM02/01</b>
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<b>You must have:</b> Pen, calculator, HB pencil, eraser, ruler graduated in centimetres and millimetres, protractor, pair of compasses.	Total Marks <span style="font-size: 2em; color: red;">36</span>
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### Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*
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### Information

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### Advice

- Read each question carefully before you start to answer it.
- Show all stages in the calculations.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

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What should the correct **Total claim** be?

(4)

Use the box below to show clearly how you get your answer.


$$28 \times 0.29 = 8.12 \checkmark$$

$$4.80 + 3.40 = 8.20 \checkmark$$

$$\begin{array}{r} 8.12 \\ + 8.20 \\ \hline 16.32 \end{array} \checkmark$$

$$\begin{array}{r} 16.32 \\ + 122.50 \\ \hline 138.82 \end{array} \checkmark$$

$$\boxed{138.82} \checkmark$$

(4)

(Total for Question 1 = 4 marks)

2 Barry has to organise interviews on one day.

5 people are going to be interviewed for a job.  
The 5 people are Ali, Ben, Charlie, Dan and Erica.

Each person will have 3 separate interviews.  
Each person will be interviewed once in each of 3 rooms.

Anyone **not** being interviewed will wait in the waiting room.

- Each interview will last 15 minutes.
- There are 5 minutes between each interview.
- The first interviews will start at 9.00 am.
- All rooms can be used for interviews at the same time.

Room 1	Room 2	Room 3	Waiting room

Draw a chart or table to show the times and rooms for the 5 people being interviewed.

(4)

Use the box below to show your answer clearly.

	Room 1	Room 2	Room 3	UR
9.00	Ali	Ben	Charlie ✓	Dan + Erica
9.15				Ali, Ben, Charlie, Dan + Erica
9.20	Ben	Charlie ✓	Dan ✓	Erica + Ali
9.35				Ali, Ben, Charlie, Dan + Erica
9.40	Charlie ✓	Dan ✓	Erica ✓	Ali, Ben
9.55	Dan ✓	Erica ✓		Ali, Ben, Charlie, Dan + Erica
10.10				Charlie, Ali, Ben
10.15				Ali, Ben, Charlie, Dan + Erica
10.20	Erica ✓			Ali, Ben, Charlie, Dan + Erica
				Ali, Ben, Charlie + Dan

Ali only interviewed in Room 1  
 Ben only interviewed in Rooms 1 and 2  
 structure of 15 min interview end 5 min time correct.  
 "2+1"  
 (3)

(Total for Question 2 = 4 marks)

3 Barry has been asked to compare the pay for four similar jobs advertised in a news paper.

<p>Able Computer Sales <i>Sales Consultant</i></p> <p>Pay: £23,000 per year</p>	<p>Beta IT Support <i>Sales Assistant</i></p> <p>Full time: 30 hours per week Pay: £15 per hour</p>
<p>Compu Systems <i>Sales Agent</i></p> <p>Pay per month will be £1800, plus commission of 1% of monthly sales. Average monthly sales are £22,000.</p>	<p>Digital Hardware <i>Sales Adviser</i></p> <p>Salary of £20,000 per year + team bonus of 20% of salary.</p>

(a) How much does Beta IT Support pay per year?

(2)

Use the box below to show clearly how you get your answer.



$$\begin{aligned} 15 &\times 30 \quad \checkmark \\ &= 450 \times 52 \\ &= \pounds 23400 \quad \checkmark \end{aligned}$$

$$\begin{aligned} 52 \text{ weeks} \\ &= 1 \text{ year} \end{aligned}$$

(2)

(b) Which job pays the most money?

(6)

Use the box below to show clearly how you get your answer.

Able Computer Sales

= £23,000 per year X ✓

Beta IT Support = £23,400 per year X ✓

Compu systems = £24,240 per year

Digital Hardware = £24,000 per year X

$$\begin{array}{r} £1800 \\ + 220 \\ \hline £2020 \\ \times 12 \\ \hline \end{array}$$

$$= £24,240 ✓$$

$$\begin{array}{l} 1\% \text{ of} \\ 22,000 \\ = 220 \end{array}$$

$$\begin{array}{r} * \\ 20,000 \end{array}$$

$$\begin{array}{l} 10\% = 2,000 \\ \times 2 = 4,000 \end{array} ✓$$

$$\begin{array}{r} + \\ 20,000 \\ + 4,000 \\ \hline 24,000 \end{array} ✓$$

$$4 + 2 = 6 \text{ (6)}$$

Compu systems

- All converted to yearly salaries for comparison.
- All yearly salaries correctly calculated.
- Correct decision made - Compu Systems chosen.

(Total for Question 3 = 8 marks)

## Section B: Mid-Shire Council

Answer all questions in this section.

Write your answers in the spaces provided.

- 4 A man has complained to Mid-shire Council.  
He says that a neighbour's hedge is causing loss of light to his garden.



When the hedge is too high, the council can order the neighbour to cut the hedge.  
The council uses this formula to work out the height allowed for a hedge.

$$H = DA \div L$$

H = The height of hedge allowed (m)

D = Direction factor

A = The area of the garden affected by the hedge (m<sup>2</sup>)

L = The length of the hedge (m)

The direction factor of the man's garden is 0.55

The area of the man's garden affected by the hedge is 40.5 m<sup>2</sup>.

The length of the hedge is 9 m.



The height of the hedge is 3 m.

Should the council order the neighbour to cut the hedge?

(3)

Use the box below to show clearly how you get your answer.

$H = DA - L$

$$\begin{array}{r} H = 0.55 \\ \times 40.5 \\ \hline \div 9 \end{array}$$

$$\begin{array}{r} 0.55 \times 40.5 \\ = 22.275 \end{array}$$

$$\begin{array}{r} 22.275 \\ \div 9 \\ \hline = 2.475 \end{array}$$

figures substituted correctly  
3m

$$\begin{array}{r} H \\ 3 = 0.55 \times \\ 40.5 \\ \div 9 \end{array}$$

correct answer

Yes.



correct decision made.

2+1 = 3

because his hedge = 3m  
which  
is higher than  
2.475

(Total for Question 4 = 3 marks)

5 Mid-shire Council runs a service which delivers meals to elderly people.

The council uses five vans to deliver meals.

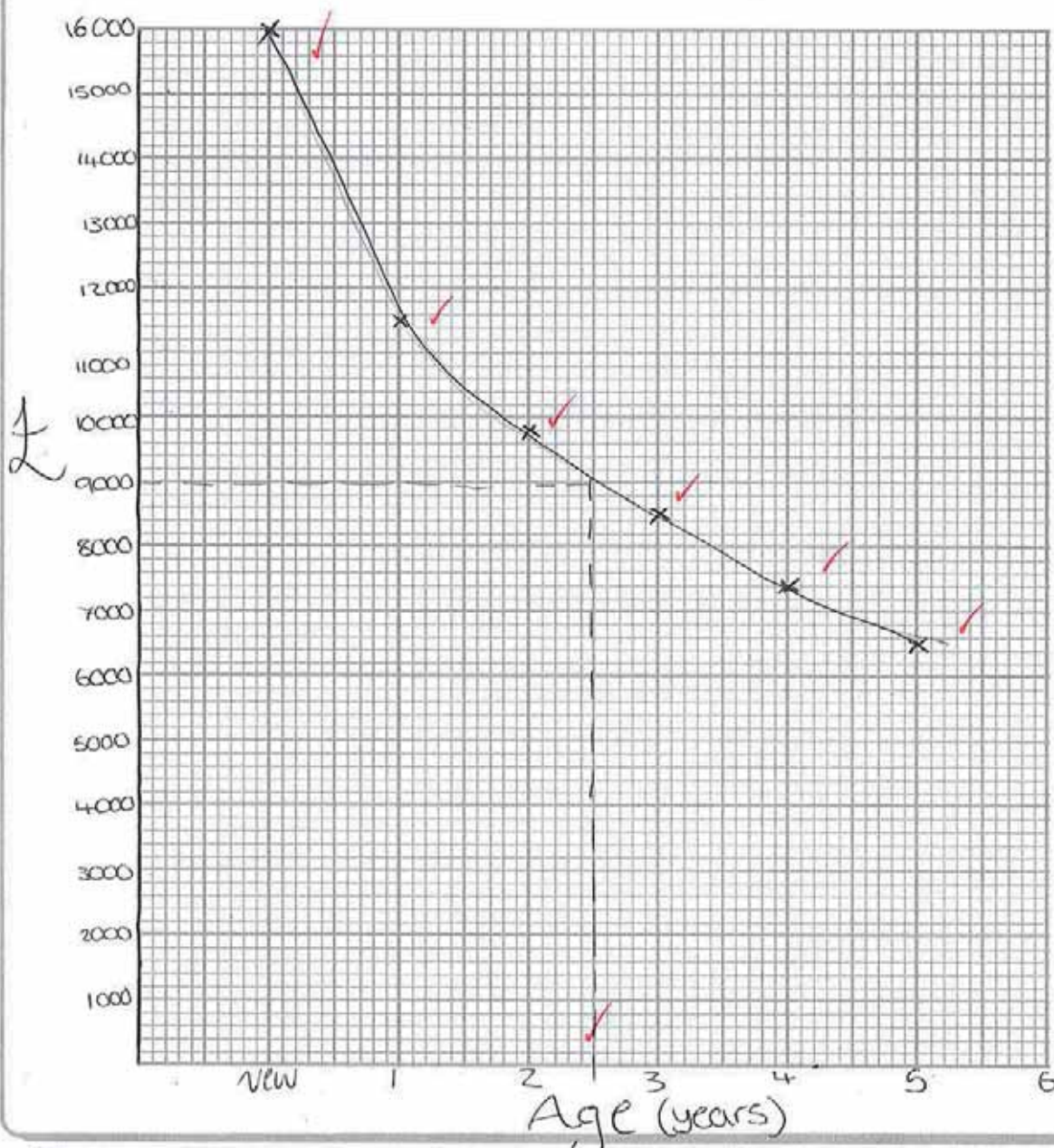
The vans are the same make and model.

The table below gives information about the value and ages of the five vans.

New	1 year old	2 years old	3 years old	4 years old	5 years old
£16 000	£ 11 500	£9800	£8500	£7400	£6500

The council want to be able to estimate the value of a van using its age.

(a) Draw a graph the council could use to estimate the value of a van. (3)



The council wants to buy another van of the same make and model to deliver meals.

One van is 2.5 years old.

(b) How much should the council expect to pay for the van?

(2)

Use the box below to show clearly how you get your answer.

Age  $\rightarrow$  2.5  
go up to line  
go across ✓  
= £9000

(a) Graph - correct with axes labelled and scale present ; accept new instead of 0 on x axis .

(b) candidate has used graph correctly to come up with an appropriate estimate

3 + 2 = (5)

(Total for Question 5 = 5 marks)

Jenny has to reduce the cost of grit mixture for the council.  
She recommends changing to the following mixture.

**Jenny's mixture**

Grit mixture has a salt content of 25% by weight.

The council will still use 300 tonnes of this grit mixture **each day** the roads are icy.  
The cost of materials has **not** changed.

It is predicted that there will be **29** days in 2010/11 when the roads are icy.  
Jenny compares the cost of her plan with last year's plan for 29 days.

Jenny says her plan will cost less than last year's plan.

**(b)** What is the difference in cost for the council if they use Jenny's mixture for 2010/11? (6)

Use the box below to show clearly how you get your answer.



Not attempted.

0

**(Total for Question 6 = 8 marks)**

### Section C: Garden

Answer all questions in this section.

Write your answers in the spaces provided.

- 7 Jeba grows plants.  
She uses liquid plant food.

#### Concentrated Liquid Plant Food

Bottle contains: 1500 ml plant food

*Instructions to feed each plant:*

Mix 15 ml of plant food with 1 litre of water

Jeba uses 15 ml of plant food with 1 litre of water to feed 1 plant.

She has 9 plants growing in the greenhouse.

The plants in the greenhouse need feeding with plant food **once a week**.

She has 11 plants growing in the vegetable plot.

The plants in the vegetable plot need feeding with plant food **twice a week**.

How many bottles of plant food does Jeba use in 12 weeks? (4)

$$15 \times 9 = 135$$

$$\times 12$$

$$= 1620 \text{ ml}$$

$$15 \times 11 = 165$$

$$\times 24$$

$$= 3960$$

$$5580$$

$$5580$$

$$\div 1500$$

$$= 3.72$$

4 bottles

See  
over

Use the box below to show clearly how you get your answer.

$$15 \times 9 = 135$$

$$\times 12$$

$$= 1620 \text{ ml} \quad \checkmark$$

$$15 \times 11 = 165$$

$$\times 24$$

$$= 3960 \text{ ml} \quad \checkmark$$

$$\hline 5580 \text{ ml} \quad \checkmark$$

The correct amount of plant food for 12 weeks has been divided by the amount in 1 bottle

$$\div 5580$$

$$\div 1500$$

$$= 3.72$$

4 bottles  $\checkmark$

$$1 + 2 + 1 = 4$$

(Total for Question 7 = 4 marks)

8 Jeba uses food waste to make compost.

Her compost bin is in the shape of a cuboid.  
The compost bin has length 65 cm, width 64 cm  
and height 120 cm.



Diagram NOT  
accurately drawn

Volume of a cuboid = length  $\times$  width  $\times$  height

Jeba fills the compost bin completely with food waste.

The food waste becomes compost and reduces in volume by 40%.

(a) What is the volume of the compost **after** it has been reduced by 40%? (3)

Use the box below to show clearly how you get your answer.

$$65 \times 64 \times 120 \checkmark$$

$$= 499200$$

$$\div 10$$

$$= 49920 \checkmark$$

$$\times 4 = 199680$$

$$\begin{array}{r} 499200 \\ - 199680 \\ \hline 299520 \text{ cm}^3 \checkmark \end{array}$$

Volume correct

40% calculated  
correctly

then subtracted  
from original volume  
units correct (3)

(b) Show how you can check your answer to (a). Write your check in the box below. (2)

$$\begin{array}{r} 299520 \\ + 199680 \\ \hline 499200 \end{array}$$

$$65 \times 64 \times 120 \\ = 499200 \checkmark$$

(2)

Jeba can cover  $0.25 \text{ m}^2$  of the vegetable plot with 1 litre of compost.

The vegetable plot is a rectangle which measures 11 m by 7 m.

$$1 \text{ litre} = 1000 \text{ cm}^3$$

$$1000 \text{ litres} = 1 \text{ m}^3$$

(c) Can Jeba cover all of the vegetable plot with compost from **one** compost bin? (4)

Use the box below to show clearly how you get your answer.



$$11 \times 7 = 77 \text{ m}^2 \quad \checkmark \text{ correct area}$$

$$\div 0.25 \text{ m}^2$$

$$= 308 \quad \checkmark \text{ number of litres for plot correctly calculated}$$

$$499200$$

3

$$308 \text{ litre} \times 1000$$

$$= 308000$$

converted into  $\text{cm}^3$

$$1 \text{ compost bin} = 308000 \text{ cm}^3$$

so

yes  $\checkmark$

correct decision

$$1 + 3 = 4$$

(Total for Question 8 = 9 marks)



**SECTION A: Mid-shire Council**

**Answer all questions in this section.**

**Write your answers in the spaces provided.**

- 1 Mid-shire Council is planning a charity meal.  
The meal will have a first course, a second course and a third course.  
People will choose what they want for each course.

First course: Soup or Salad.

Second course: Curry or Pasta Bake.

Third course: Cake or Ice cream.

The waiting staff need a data collection sheet to record the meal choices of each person.  
A record of the meal choices is needed for each table.  
There will be 5 people sitting at each table.

Design a data collection sheet to record the meal choices for one table.

(3)

Table No	First Course		Second Course		Third Course		Total bill per person
	Soup	Salad	Curry	Pasta Bake	Cake	Ice cream	
1st Order							
2nd Order							
3rd Order							
4 <sup>th</sup> order							
5 <sup>th</sup> Order							
Price per Item and Total							

✓ All features present

(3)

Use the box below to show clearly how you get your answer.



$$6 \times 10 = 60 \text{m}^2$$

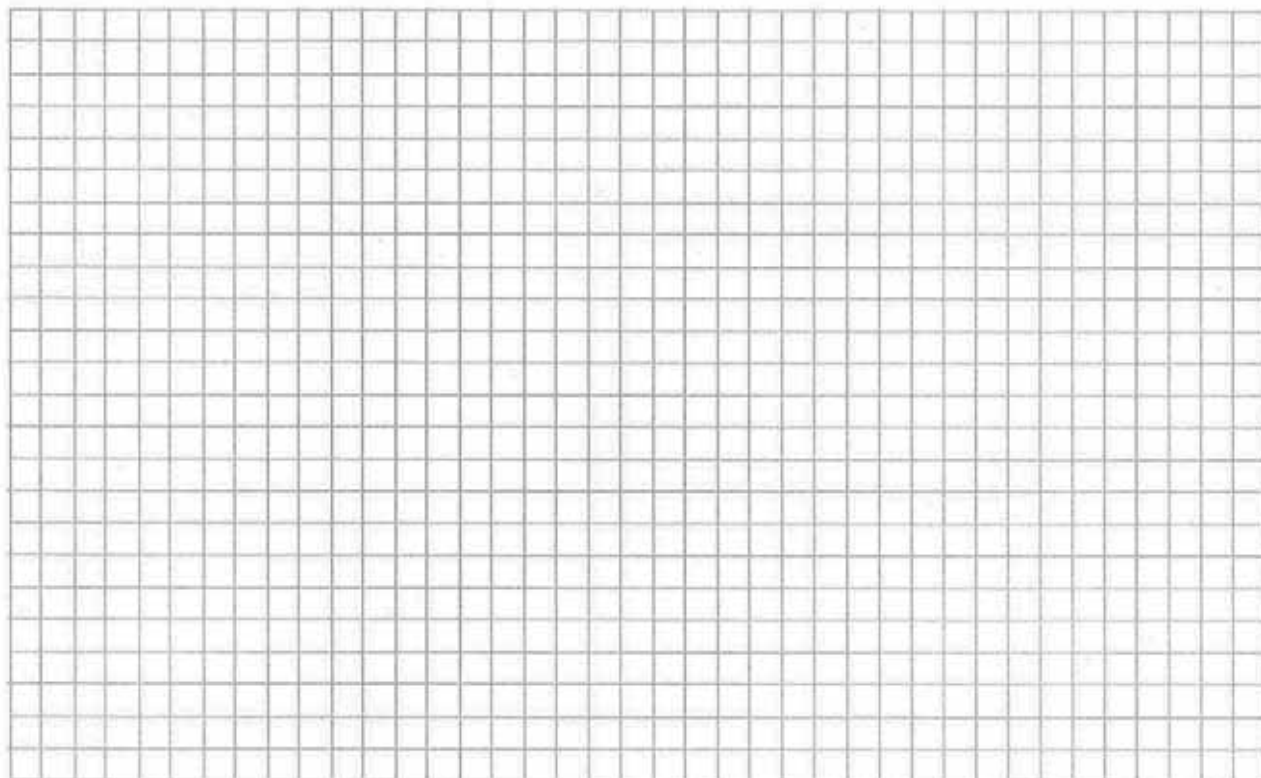
$$75 \times 37.5 = 2812.5 \text{cm}^2$$

$$100 \text{cm} = 1 \text{m}$$

The candidate has started to use areas; this alone is insufficient to score any marks.

0

You can use this grid to help you work out your answer.



(Total for Question 9 = 3 marks)

**TOTAL FOR PAPER = 48 MARKS**