Differences between **Pearson Edexcel** and **OCR** GCSE

Pearson Edexcel

Below is a summary of the content differences between our qualification at Pearson Edexcel and OCR GCSE 9-1 Mathematics. Included as an appendix are example questions and further specification details.

Additional Content This content is included in our Mathematics GCSE, you may need to update your schemes of learning to include these.

Stem & Leaf Diagrams
Students are expected to be able to draw and extract information, such as the median, from stem and leaf diagrams on both Higher and Foundation Tier. When drawing stem and leaf diagrams, it is expected that they will be "ordered" stem and leaf diagrams (this requirement may not be explicitly mentioned in the exam question).

Frequency Polygons
Students are expected to be able to draw and extract information from frequency polygons on both Higher and Foundation Tier.

Capture – Recapture
The Peterson capture – recapture method is expected at Higher Tier.

Variation in Content Below shows topics where the content may include additional items or variations.

Venn Diagrams
Students are expected to use the formal notation for unions and intersections and in conjunction with probability e.g. P(AUB) on both Foundation and Higher Tier.

Functions
Students are expected to use the formal notation for functions, inverse functions and composite functions, e.g. f(x), gf(x) on Higher Tier.

Iteration
To find approximate solutions to equations numerically students will be expected to use iteration formulae on Higher Tier. OCR considers iteration at GCSE to be using systematic sign-change methods (trial and improvement). We use sign-change to indicate that a solution lies between two values, but questions can include iteration formulae.

Trigonometry
Students are expected to know about the ambiguous case when using the sine rule on Higher Tier.

Appendix 1 – Example Assessment Items

Pearson Edexcel

Additional Content:

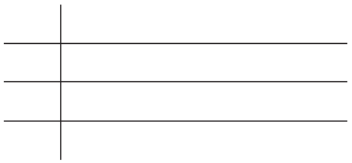
Stem & Leaf Diagrams

November 2022 (Foundation Paper 2)

15 Hetvi asked her friends how many stickers they each have in their collection.
Here are her results.

77	86	94	87	71	98
74	103	71	85	82	84
97	91	88	89	75	

(*a*) Show this information in a stem and leaf diagram.



Key:

(3)

(*b*) Find the median number of stickers.

.....

(2)

(Total for Question 15 is 5 marks)

November 2022 (Foundation and Higher Paper 1)

7 The table shows information about the heights, in cm, of a group of Year 9 girls.

least height	150 cm
median	165 cm
greatest height	170 cm

This stem and leaf diagram shows information about the heights, in cm, of a group of 15 Year 9 boys.

15	8 9 9
16	4 5 7 7 8
17	0 3 4 4 7
18	0 2

Key: 15 | 8 represents 158 cm

Compare the distribution of the heights of the girls with the distribution of the heights of the boys.

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(Total for Question 7 is 3 marks)

Pearson Edexcel

Additional Content:

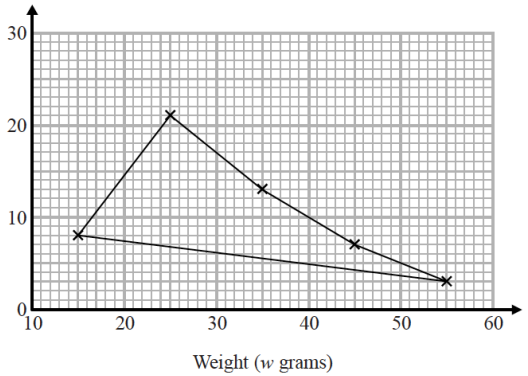
Frequency Polygons

November 19 (Foundation and Higher Paper 2)

21 The table shows some information about the weights of 50 potatoes.

Weight (w grams)	Frequency
$10 < w \leqslant 20$	6
$20 < w \leqslant 30$	21
$30 < w \leqslant 40$	13
$40 < w \leqslant 50$	7
$50 < w \leqslant 60$	3

Iveta drew this frequency polygon for the information in the table.
The frequency polygon is **not** fully correct.



Write down **two** things that are wrong with the frequency polygon.

1.....

.....

2.....

.....

(Total for Question 21 is 2 marks)

June 19 (Foundation and Higher Paper 3)

26 The table shows information about the heights of 80 plants.

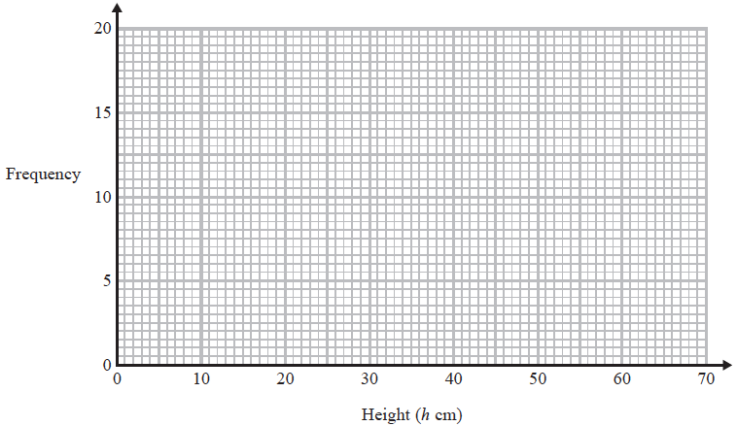
Height (h cm)	Frequency
$10 < h \leqslant 20$	7
$20 < h \leqslant 30$	13
$30 < h \leqslant 40$	14
$40 < h \leqslant 50$	12
$50 < h \leqslant 60$	16
$60 < h \leqslant 70$	18

(a) Find the class interval that contains the median.

.....

(1)

(b) On the grid, draw a frequency polygon for the information in the table.



(2)

(Total for Question 26 is 3 marks)

Pearson Edexcel

Additional Content:

Capture – Recapture

June 22 (Higher Paper 2)

14 Saffron wants to work out an estimate for the total number of fish in a lake.

On Friday, Saffron catches 180 fish from the lake.
She puts a tag on each of these fish and puts them back into the lake.

On Saturday, Saffron catches 305 fish from the same lake.
She finds that 45 of the 305 fish are tagged.

Work out an estimate for the total number of fish in the lake.

.....

(Total for Question 14 is 3 marks)

November 22 (Higher Paper 2)

15 Faiza is studying the population of rabbits in a park.
She wants to estimate the number of rabbits in the park.

On Monday she catches a random sample of 20 rabbits in the park, marks each rabbit with a tag and releases them back into the park.

On Tuesday she catches a random sample of 42 rabbits in the park.
12 of the rabbits are marked with a tag.

(*a*) Find an estimate for the number of rabbits in the park.

.....

(3)

Albie is studying the population of rabbits in a wood.

One day, he catches 55 rabbits and finds that 40 of these rabbits are marked with a tag.

Albie estimates there are 50 rabbits in the wood.

(*b*) Explain why Albie's estimate cannot be correct.

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(1)

(Total for Question 15 is 4 marks)

Pearson Edexcel

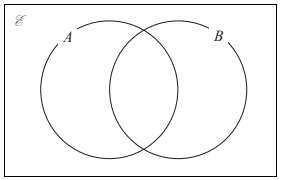
Variation in Content:

Venn Diagrams

Pearson
November 20 (Foundation and Higher Paper 2)

22 $\mathscr{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$
$A = \{\text{even numbers}\}$
$B = \{\text{factors of } 10\}$

(*a*) Complete the Venn diagram for this information.



(3)

A number is chosen at random from the universal set, $\mathscr{E}$

(*b*) Find the probability that this number is in the set $A \cap B$

.....

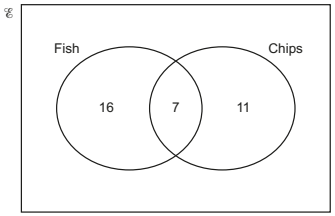
(2)

(Total for Question 22 is 5 marks)

OCR
November 22 (Foundation P1)

12

15 A researcher asked 53 customers leaving a fish and chip shop what they had bought.
The Venn diagram shows some of the results.



(a) How many customers bought chips but not fish?

(a) ..... **[1]**

(b) Complete the Venn diagram to show the number of customers who did not buy fish or chips.
[2]

(c) One of the 53 customers is chosen at random.

Write down the probability that this customer bought fish.

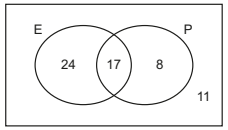
(c) ..... **[2]**

OCR
November 22 (Higher P1)

15

16 A salesroom sells various types of car.
Some cars are electric (E), some are petrol (P), some are both and some are neither.

The Venn diagram below shows the salesroom's stock of cars.



A petrol car is picked at random.

Find the probability that the car is also electric.

..... **[2]**

17 Find the equation of the line through (4, 5) that is perpendicular to $y = 2x - 3$.

..... **[3]**

Pearson Edexcel

Variation in Content:

Functions

Pearson Edexcel
June 22 (Higher Paper 2)

19 The functions g and h are such that

$$g(x) = \sqrt[3]{2x-5} \qquad h(x) = \frac{1}{x}$$

(a) Find g(16)

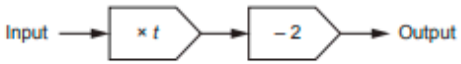
.....

(1)

(b) Find $hg^{-1}(x)$
Give your answer in terms of x in its simplest form.

OCR
November 22 (Higher Paper 3)

13 (a) Here is a function.

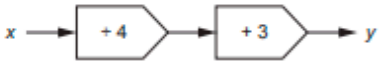


When the input is 6, the output is 18.

Find the value of t.

(a) $t =$ ..... **[3]**

(b) Here is another function.
When the input is x, the output is y.



Write an algebraic expression for ***x* in terms of *y***.

Pearson Edexcel

Variation in Content:

Iteration

Pearson Edexcel
June 22 (Higher Paper 3)

20 The profit made by a shop increases each year.

The profit made by the shop in year n is £P_n

Given that the profit made by the shop in the next year is £P_{n+1} then

$$P_{n+1} = aP_n + 800 \text{ where } a \text{ is a constant.}$$

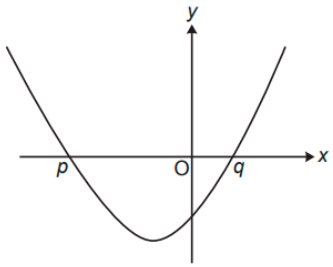
The table shows the profit made by the shop in 2018 and in 2019

Year	2018	2019
Profit	£24 000	£29 600

Work out the profit predicted to be made by the shop in 2021

OCR
June 22 (Higher Paper 2)

13 The graph of $y = x^2 + 6x - 2$ is shown below.
The roots of the equation $x^2 + 6x - 2 = 0$ are at p and q.



(a) (i) Calculate y when $x = 1$.

(a)(i) $y =$ ..... **[1]**

(ii) Without solving the equation, explain why q must lie between 0 and 1.

.....

..... **[2]**

(iii) Explain why using a method of iteration is not the most appropriate way of finding a solution to this equation.

.....

..... **[1]**

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Variation in Content:

Trigonometry

Sample Assessment Material (Higher Paper 2)

21 In triangle RPQ,

$RP = 8.7$ cm
$PQ = 5.2$ cm
Angle $PRQ = 32°$

(a) Assuming that angle PQR is an acute angle, calculate the area of triangle RPQ.
Give your answer correct to 3 significant figures.

..... cm^2
(4)

Appendix 2 – Additional Specification Information

Pearson Edexcel

Additional Content:

Stem and Leaf Diagrams and Frequency Polygons (STATISTICS S2)

DfE Content Statement	Pearson Content Guidance	OCR Specification Notes	Observations of any differences
S2 interpret and construct tables, charts and diagrams, including frequency tables, bar charts, pie charts and pictograms for categorical data, vertical line charts for ungrouped discrete numerical data, **tables and line graphs for time series data** and know their appropriate use	To include stem and leaf diagrams. Candidates will be expected to be able to draw a time series graph by plotting points from given information and take readings from time series graphs provided. Moving averages will not be tested and neither will average seasonal trends. Questions could be set on the general trend, however.	Design tables to classify data. Interpret and construct line graphs for time series data and identify trends (e.g. seasonal variations).	Stem and leaf diagrams and frequency polygons are expected by us; no mention by OCR.

Capture – Recapture (STATISTICS S1)

DfE Content Statement	Pearson Content Guidance	OCR Specification Notes	Observations of any differences
S1 **infer properties of populations or distributions from a sample, whilst knowing the limitations of sampling**.	Questions concerning questionnaires will no longer be set. To include the calculation of summary statistics from a sample, knowing that these are estimates for the population. Stratified sampling is not part of the GCSE 9–1 specification. However, the ability to infer properties of populations or distributions from a sample is part of the specification so candidates could be asked questions relating to this. At Higher tier, to include the Peterson capture – recapture method.	Define the population in a study and understand the difference between a population and sample. Infer properties of populations or distributions from a sample. Understand what is meant by simple random sampling, and bias in sampling.	Our specification states that Peterson capture – recapture method is expected at Higher Tier.

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Variations to Content:

Venn Diagrams (STATISTICS S6)

DfE Content Statement	Pearson Content Guidance	OCR Specification Notes	Observations of any differences
P6 enumerate sets and combinations of sets systematically, using tables, grids, Venn diagrams **and tree diagrams**. P9 **calculate and interpret conditional probabilities through representation using expected frequencies with two-way tables, tree diagrams and Venn diagrams**.	To include set notation: ξ , ∩ , ∪ , ∈, A'	Use set notation to describe a set of numbers or objects. e.g. D = *{x: 1 < x < 3}* E = *{x: x is a factor of 280}* Derive or informally understand and apply the formula p(A *or* B) = p(A) + p(B) – p(A *and* B)	Questions will be asked using words on OCR

Functions (ALGEBRA A7)

DfE Content Statement	Pearson Content Guidance	OCR Specification Notes	Observations of any differences
A7 where appropriate, interpret simple expressions as functions with inputs and outputs; **interpret the reverse process as the 'inverse function'; interpret the succession of two functions as a 'composite function'**.	(The use of formal function notation is expected)	(Knowledge of function notation will not be required)	OCR Specification specifically excludes function notation.

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Variations to Content:

Iteration (GEOMETRY G15)

DfE Content Statement	Pearson Content Guidance	OCR Specification Notes	Observations of any differences
A20 find approximate solutions to equations numerically using iteration **R16 work with general iterative processes.**	For example, $P_{n+1} = kP_n$	Find approximate solutions to equations using systematic sign-change methods (for example, decimal search or interval bisection) when there is no simple analytical method of solving them. Specific methods will not be requested in the assessment.	The use of iterative formulae is not required by OCR.

Trigonometry (GEOMETRY G15)

DfE Content Statement	Pearson Content Guidance	OCR Specification Notes	Observations of any differences
G22 know and apply the sine rule, $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$, and cosine rule, $a^2 = b^2 + c^2 - 2bc \cos A$, to find unknown lengths and angles.	The ambiguous case is not explicitly mentioned but was included on the Sample Assessment Material	Recall and use the sine rule, $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$	OCR have stated on their Switching to OCR material that knowledge of the ambiguous case is not required.