GCSE Mathematics

EXAM BOARD: *AQA*

EXAMS: *3 – BOTH 1 HOUR 30 MINUTES LONG*

PAPER 1 IS NON-CALCULATOR (80 MARKS)

PAPER 2 AND 3 ARE CALCULATOR PAPERS (80 MARKS EACH)

TWO TIERS: HIGHER (GRADES 9 TO 4) AND FOUNDATION (GRADES 5 TO 1)

Each paper gets progressively more difficult as you go through them.

Easier concepts at the start – Hardest concepts at the end

More questions involve problem solving skills compared to the previous GCSE course.

Make sure your child knows off by heart all of facts and formulae

Using small pieces of card (half A5 roughly) copy out the formulae to learn.

Working with a friend / parent /other and using the pieces of card mentioned above test your child. 'what is the formula for…..'

Write them out repeatedly…….?

Conversion between metric units and between imperial units is assumed. As is conversion from metric to imperial (and vice versa).

GCSE Maths

Formulae you'll need to know

Pythagoras' theorem
In any right-angled triangle where a, b and c are the length of the sides and c is the hypotenuse:

$$a^2 + b^2 = c^2$$

Trigonometry formulae
In any right-angled triangle ABC where a, b and c are the length of the sides and c is the hypotenuse:

$$\sin A = \frac{a}{c} \qquad \cos A = \frac{b}{c} \qquad \tan A = \frac{a}{b}$$

In any triangle ABC where a, b and c are the length of the sides:

$$\text{sine rule: } \frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\text{cosine rule: } a^2 = b^2 + c^2 - 2bc \cos A$$

$$\text{Area} = \frac{1}{2} ab \sin C$$

The quadratic formula
The solutions of $ax^2 + bx + c = 0$ where $a \neq 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Circumference and area of a circle
Where r is the radius and d is the diameter:

$$\text{Circumference of a circle} = 2\pi r = \pi d$$

$$\text{Area of a circle} = \pi r^2$$

Perimeter, area, surface area and volume formulae

Where a and b are the lengths of the parallel sides and h is their perpendicular separation:

$$\text{Area of a trapezium} = \frac{1}{2}(a + b)h$$

$$\text{Volume of a prism} = \text{area of cross section} \times \text{length}$$

Compound interest
Where P is the principal amount, r is the interest rate over a given period and n is the number of times that the interest is compounded:
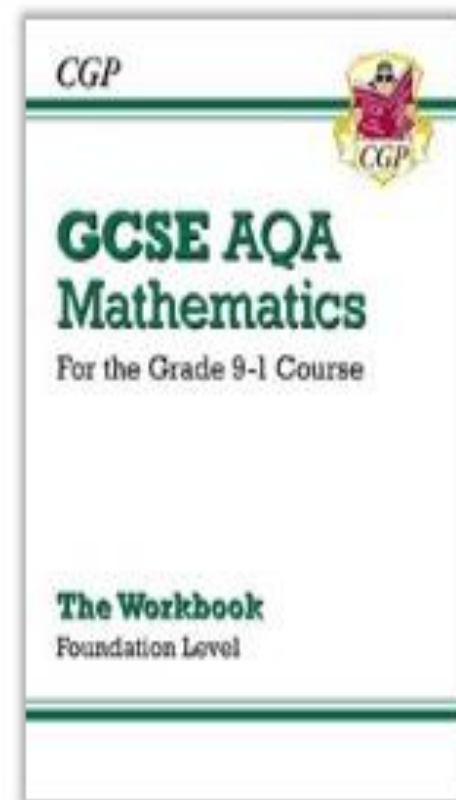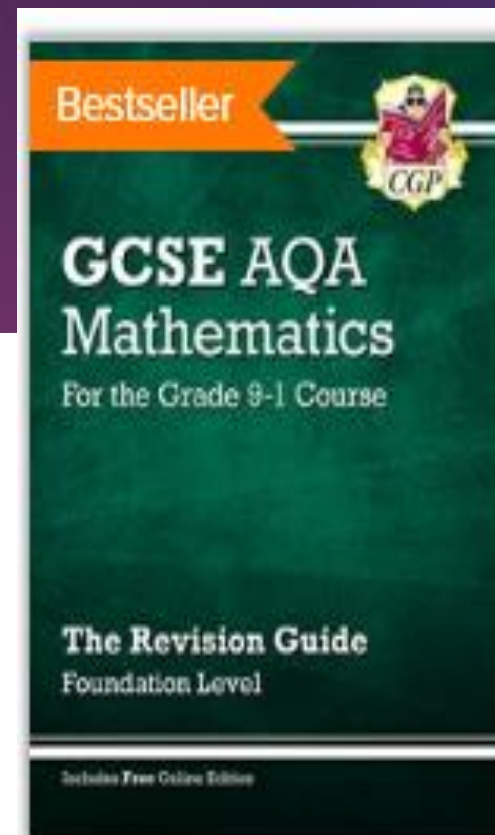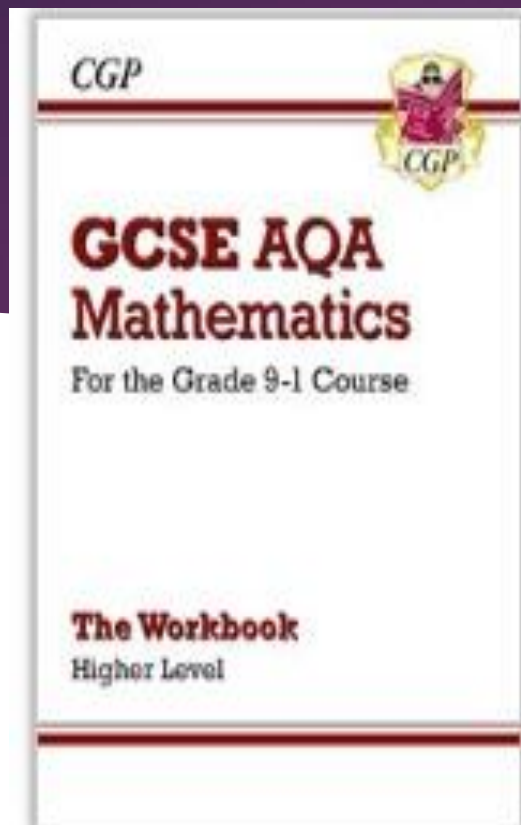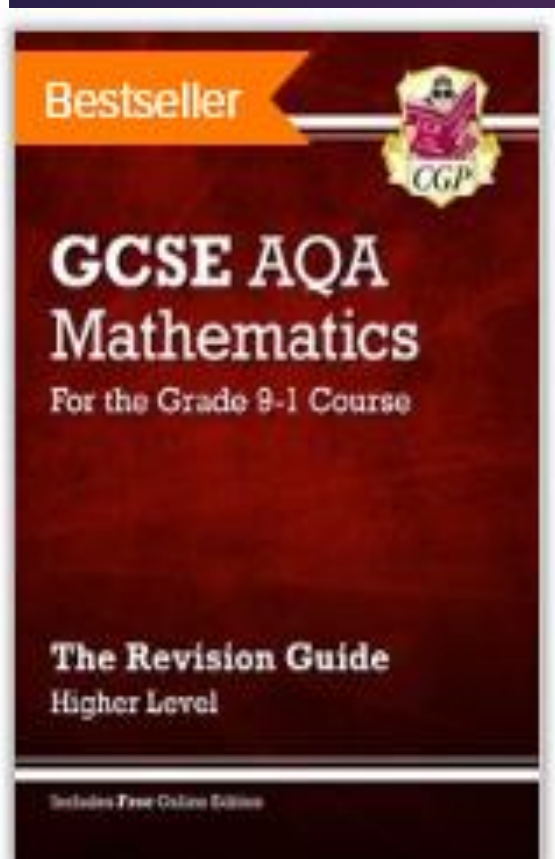
$$\text{Total accrued} = P\left(1 + \frac{r}{100}\right)^n$$

Probability
Where $P(A)$ is the probability of outcome A and $P(B)$ is the probability of outcome B:

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

$$P(A \text{ and } B) = P(A \text{ given } B) P(B)$$

AQA

HOW TO REVISE?

1.   **Work through past papers** but make sure that you ask for help with any questions you get stuck on – everything will be in the exam

2.   **Work through questions in a workbook**. Check your answers if you are getting them right move on to the next topic. As always if you get stuck ask for help!

3. **Get a pad of paper**…….using the question from your exercise book, attempt it again. May be best to copy out the question if it is short otherwise you might end up looking at the answers.

4. **Try the questions on** www.MyMaths.co.uk. Login oldbuck and password ratio. Has good clear explanations and worked examples.

5. **Look things up in your revision guide.**

6.   **Attend revision sessions at school.**

Useful websites and ideas

You can find past papers and mark schemes here: https://www.aqa.org.uk/exams-administration/exams-guidance/find-past-papers-and-mark-schemes

1. Youtube has some good explanations but you need to search.

2. https://www.bbc.com/bitesize/levels/z98jmp3

3. https://corbettmaths.com/5-a-day/

4. https://www.missbsresources.com/quick-wits-revision

5. http://mrbartonmaths.com/students/gcse/

Planning and use of time

- Plan a revision timetable carefully. (Failure to plan, plan for failure)

- A little and often is best. Roughly 30 minutes at a time is best.

- Don't leave it to the last minute…….

- 5 or 10 minutes of help outside a lesson from a maths teacher regularly makes a huge difference.