

## **Higher Support Videos and Links:**

This pack contains many useful links to different websites that have videos, PowerPoint presentations and notes. Instructions for mymaths are attached at the end of this document. You will find in the Files section on TEAMS the HSN full Higher notes and logins for mymaths.

If you are absent from class (and well enough to do so) please follow the course outline, find the topic you are on and try to keep up to date by watching the supporting videos and reading notes. You should try to attempt the homework set by your class teacher. This will be communicated through teams.

\*Remember you can always ask a reliable friend to send you a photo of class notes\*

**Current topic will be shared on Teams by the class teacher. The scheme of work can be found under the Higher Mathematics tab.**

### **Block 2:**

**Differentiation  
Recurrence Relations  
Quadratics  
Polynomials**

A full course outline will soon be added to your Microsoft Team.

On the following websites scroll down to find HIGHER then click on topic links.

[Higher PowerPoints and Videos](#)

[Higher Flipped Learning Videos](#)

[Higher Maths Worksheets and Notes](#)

### **Further YouTube Higher Mathematics Video Links:**

**Subscribe to channel via:**

[https://www.youtube.com/channel/UCLRbc\\_zoVf-utqInightKVg](https://www.youtube.com/channel/UCLRbc_zoVf-utqInightKVg)

### **Straight Line**

Video 1 - Equation of a straight line - <https://youtu.be/DObCu39w1kTw>

Video 2 - Special Lines - <https://youtu.be/Y10ix9SiE3w>

Video 3 –  $m = \tan\theta$  - <https://youtu.be/2JJMDBYg5OM>

Video 4 – Perpendicular lines - <https://youtu.be/viHI7K4noXQ>

Video 5 – Altitude - <https://youtu.be/cw4mEMnQ7Xs>

Video 6 – Perpendicular bisector - <https://youtu.be/lbY-Mz7BWsE>

Video 7 – Medians - [https://youtu.be/qeGC5FII\\_pw](https://youtu.be/qeGC5FII_pw)

Video 8 – Intersecting lines - <https://youtu.be/2q7RiTLQjWE>

Video 9 – Collinearity - <https://youtu.be/-5ArFOJtphM>

## **Vectors**

Video 1 – Revision of National 5 - [https://youtu.be/P5W\\_yqF5tUc](https://youtu.be/P5W_yqF5tUc)

Video 2 – Magnitude and unit vector - <https://youtu.be/5quysJyXL6Y>

Video 3 – Basis vectors - <https://youtu.be/PFbFQYVranw>

Video 4 – The zero vector - <https://youtu.be/KLsW5FrkeyQ>

Video 5 – Collinearity - <https://youtu.be/br9DXTt-T5Q>

Video 6 – Section formula - <https://youtu.be/7WFsUBiw-t8>

Video 7 – Dividing a line in a given ratio - [https://youtu.be/ytHiVN9\\_nek](https://youtu.be/ytHiVN9_nek)

Video 8 – Scalar product with an angle - <https://youtu.be/MsLSVIKPoyU>

Video 9 – Scalar product with components – <https://youtu.be/th1ZLjuy89s>

Video 10 – Angle between two vectors - <https://youtu.be/tk0ZiHqbz7w>

## **Quadratics & Polynomials**

Video 1 – Sketching quadratics - <https://youtu.be/Vc9m0j5SeeE>

Video 2 – Solving quadratic inequalities - <https://youtu.be/huaMwHNBrtU>

Video 3 – The discriminant - <https://youtu.be/BBGowxmEsKA>

Video 4 – Completing the square - <https://youtu.be/nS4URJyFwmM>

Video 5 – The equation of a parabola - <https://youtu.be/l1HSmaQhjwk>

Video 6 – Intersection of lines and parabolas - <https://youtu.be/kjzFonz7djw>

Video 7 – Polynomials and synthetic division - <https://youtu.be/5SvcqQULZtM>

Video 8 – Finding unknown coefficients - <https://youtu.be/NDIqJMa4z8g>

Video 9 – Find the intersection of curves – <https://youtu.be/nPLWi1f4ctE>

Video 10 – Determining the equation of a curve - [https://youtu.be/GDRoxEv\\_HDk](https://youtu.be/GDRoxEv_HDk)

## **Differentiation**

Video 1 – Introduction to differentiation - <https://youtu.be/qfgMONTMxak>

Video 2 – Differentiating more complex variables - <https://youtu.be/ENDxZMbTOGk>

Video 3 – Differentiating other variables and rate of change - <https://youtu.be/MmNIZLhGZ7U>

Video 4 – Equations of tangents - [https://youtu.be/5SE\\_6cb5xjQ](https://youtu.be/5SE_6cb5xjQ)

Video 5 – Increasing and decreasing curves - [https://youtu.be/VZ\\_Qd9XyK9M](https://youtu.be/VZ_Qd9XyK9M)

Video 6 – Stationary points - [https://youtu.be/0jQ\\_LcsxeYw](https://youtu.be/0jQ_LcsxeYw)

Video 7 – Points of Inflexion - <https://youtu.be/umJ51npx2OA>

Video 8 – Curve sketching - <https://youtu.be/BZzE24uJcm0>

Video 9 – Closed intervals – <https://youtu.be/TY8LOVZnLec>

Video 10 – Graphs of derivatives - <https://youtu.be/BnkewWV1uyY>

## **Functions and Graphs**

Video 1 – Graph transformations translation - <https://youtu.be/hZhyQgs7mRM>

Video 2 – Graph transformations reflection - <https://youtu.be/-gTVh3tgEic>

Video 3 – Graph transformations scaling - <https://youtu.be/TyKbbUS1BPE>

Video 4 – Composite functions - <https://youtu.be/bafWExKeTCo>

Video 5 – Inverse functions - <https://youtu.be/U54ktQoKqhl>

Video 6 – Exponential, log and Trig graphs - <https://youtu.be/1JvLwQggftk>

## Integration

Video 1 – Introduction to integration - <https://youtu.be/WOCou5ZA9-c>

Video 2 – Preparing to integrate - <https://youtu.be/m2-Y2Z-tDc>

Video 3 – Differential equations - <https://youtu.be/-W04dYu2Umo>

Video 4 – Definite integrals - <https://youtu.be/HbvF1KhmEno>

Video 5 – Area under a curve part 1 - <https://youtu.be/vzSVB0hUf5Q>

Video 6 – Area under a curve part 2 - <https://youtu.be/09sxrAT9i1Q>

Video 7 – Area between two curves - <https://youtu.be/vuQsh5kxuPw>

## Trigonometry

Video 1 – Solving basic trig equations - <https://youtu.be/S6ym0aXaA0Q>

Video 2 – Solving quadratic trig equations - <https://youtu.be/0mDkq-huZoc>

Video 3 – Solving trig equations in radians - [https://youtu.be/XH2WWk\\_W8Ak](https://youtu.be/XH2WWk_W8Ak)

Video 4 – Trig equations involving a double angle - <https://youtu.be/LiCG3VgxNdQ>

Video 5 – Compound angles sine rule - <https://youtu.be/PS918DK0FAI>

Video 6 – Compound angles cosine rule - [https://youtu.be/8CDtQ97\\_vQQ](https://youtu.be/8CDtQ97_vQQ)

## Circle

Video 1 – Circle with centre the origin - <https://youtu.be/5wUYQBEOBzi>

Video 2 – Circle with centre (a,b) - <https://youtu.be/SHRnoq6pVV0>

Video 3 – The general equation of a circle - <https://youtu.be/WytLvq5ilig>

Video 4 – Intersection of a line and a circle - <https://youtu.be/joFn43M6W1Q>

Video 5 – Equation of a tangent to a circle - <https://youtu.be/mOixxO0dAbE>

Video 6 – Intersection of circles - <https://youtu.be/EeUq2KBQ-9k>

## Further Calculus

Video 1 – Differentiating  $\sin x$  and  $\cos x$  - <https://youtu.be/Egm3aZ2yyMc>

Video 2 – Differentiation using the chain rule - <https://youtu.be/UxQG2Pd5CJA>

Video 3 – Integrating  $\sin x$  and  $\cos x$  - <https://youtu.be/wHcSCVomoCM>

Video 4 – Integrating using the chain rule - <https://youtu.be/K3ziWtalZOk>

## Logs and Exponentials

Video 1 – Evaluating logs - <https://youtu.be/IIOSEZR4LMQ>

Video 2 – Rules of logs - <https://youtu.be/hg0dTOjeRj0>

Video 3 – Solving log equations - <https://youtu.be/7YT8LUMc7nY>

Video 4 – Special number  $e$  - [https://youtu.be/\\_1CLQpkss0A](https://youtu.be/_1CLQpkss0A)

Video 5 – Experimental data - [https://youtu.be/rB70A0B\\_mSk](https://youtu.be/rB70A0B_mSk)

Video 6 – Graphing with logarithmic axes - <https://youtu.be/wXhQTDqIfa0>

## Wave Function

Video 1 – Introduction of the wave function - <https://youtu.be/K0liToRX97Q>

Video 2 – Other forms of the wave function - <https://youtu.be/eG9r2hLzjIQ>

Video 3 – Multiple angles and the wave function - <https://youtu.be/GmBi9wUpGJQ>

Video 4 – Maximum and minimum values - <https://youtu.be/F4t-S0uEbBs>

Video 5 – Solving equations using the wave function - <https://youtu.be/Z172fk5bR-c>

## Recurrence Relations

Higher Mathematics Recurrence Relations Video

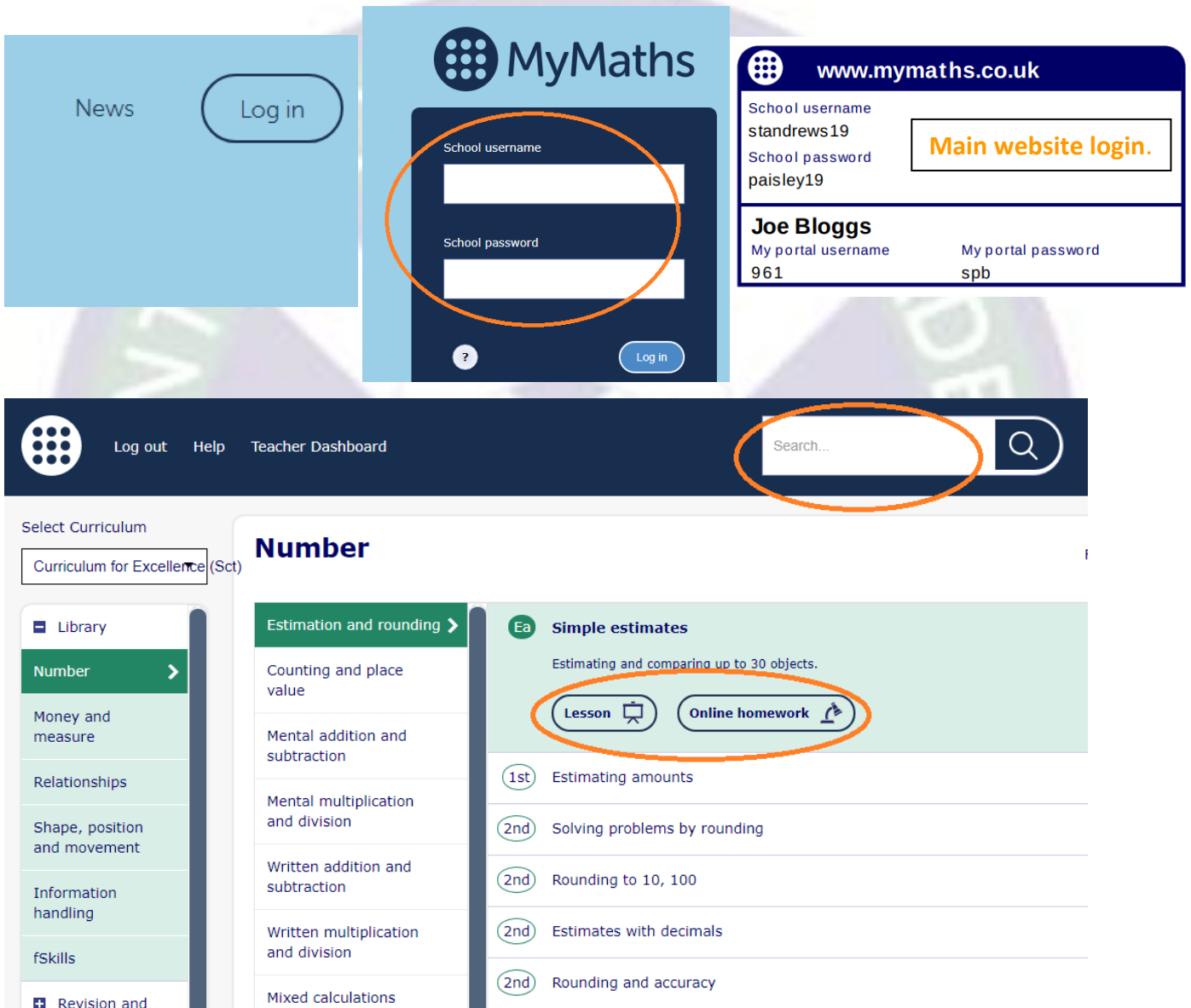
Video 1 – Introduction to recurrence relations - <https://youtu.be/qbmQt7dBQTK>

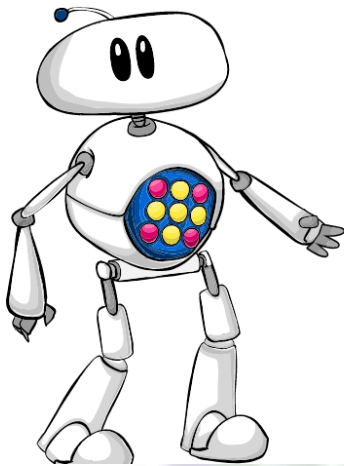
Video 2 – Finding the limit of a recurrence relation - <https://youtu.be/tAvxAx7Mo4s>

Video 3 – Finding the value of a and b in a recurrence relation - [https://youtu.be/k6AhH\\_Ac\\_P4](https://youtu.be/k6AhH_Ac_P4)

**MYMATHS:** [mymaths](http://mymaths.co.uk)

Your teacher will provide you with a username and password for the main website and the portal. After logging in, the homepage is a library of Maths topics at all levels, use the search bar to find the topic you are on. Click on Lesson and then Online homework. You will be able to access the practice homework without signing in. Please find screenshots below to help you.





## Welcome!

You are probably here because your teacher has set you some homework.

Don't forget to log in!

Your teacher will not know that you have done your homework unless you log in with your username and password.

Username

Password

Log in

Would you like to practise?

Click the practice button if you only want to practise this homework task.

Practice

To access homework assigned to you by your teacher you will need to log in using your portal username and password.

