

Loudoun Academy  
Mathematics Department



National 5 Mathematics  
Course Schedule

- The content of the Units (Expressions & Formulae, Relationships and Applications) is contained within the three teaching blocks.
- Successful completion of the Units through Department Assessment is mandatory in line with guidance provided by the SQA.
- Throughout the duration of the delivery of the course there will be four department assessments presented at final exam standard and these will take place at the following times: May (S3), October (S4), January (S4) and March (S4) and will be used to monitor progress at National 5 level.
- For students not achieving the standard required, usual teacher and department intervention strategies will be put in place to support the students as much as possible.

## Block 1

### 1. Rounding to Significant Figures

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
1.1	I can round to a given number of significant figures.  (Remember prior learning: rounding to decimal place and nearest 10, 100, £, etc.)	Always show unrounded answer before showing rounded answer.	Round to 1 significant figure: <a href="https://youtu.be/i-RLO7ZqpFc">https://youtu.be/i-RLO7ZqpFc</a>  Rounding to 2 significant figure: <a href="https://youtu.be/nxpFJyKdls">https://youtu.be/nxpFJyKdls</a>  Rounding to 3 significant figure: <a href="https://youtu.be/DyMYgaPoEZI">https://youtu.be/DyMYgaPoEZI</a>

## 2. Gradient and Equation of a Straight line

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
2.1	I can determine the gradient of a straight line, given two points.	<p>Simplify gradients if expressed as fractions.</p> <p>This equation will not be provided in class tests and exams and must be memorised.</p>	<p>Find gradient: <a href="https://youtu.be/eywBJicmHD8">https://youtu.be/eywBJicmHD8</a></p> <p>Find gradient and simplify: <a href="https://youtu.be/vPilhnyRTjg">https://youtu.be/vPilhnyRTjg</a></p>
2.2	I can determine the equation of a straight line in the form $y = mx + c$	<p>Simplify by ensuring constant values (if any) are simplified</p> <p>This equation will not be provided in class tests and exams and must be memorised.</p>	<p>Determining gradient &amp; y-intercept <a href="https://youtu.be/XOT_8FSjz6Q">https://youtu.be/XOT_8FSjz6Q</a></p> <p>Determining gradient &amp; y-intercept after rearranging <a href="https://youtu.be/bSoDsLgGMIw">https://youtu.be/bSoDsLgGMIw</a></p> <p><a href="https://youtu.be/5jZRxAKeFo8">https://youtu.be/5jZRxAKeFo8</a></p>
2.3	I can use the formula $y - b = m(x - a)$ to find the equation of a straight line and use the general linear equation $Ax + By + C = 0$	<p>Simplify by ensuring constant values (if any) are simplified</p> <p>These equations will not be provided in class tests and exams and must be memorised.</p>	<p>Calculating equation of straight line from the gradient and a point on the line <a href="https://youtu.be/yC5cXYGfyjo">https://youtu.be/yC5cXYGfyjo</a></p> <p>Equation of straight line from two coordinate points <a href="https://youtu.be/tcCcEeriTmc">https://youtu.be/tcCcEeriTmc</a></p> <p>Equation of straight line from two coordinate points where the gradient is a fraction <a href="https://youtu.be/o1wKUjgoYG0">https://youtu.be/o1wKUjgoYG0</a></p>
2.4	I can use and apply functional notation, $f(x)$ .		<p>Evaluating functions <a href="https://youtu.be/fvCg6MVarSw">https://youtu.be/fvCg6MVarSw</a></p> <p>Evaluating functions – fractions and negatives <a href="https://youtu.be/vQzCag3becg">https://youtu.be/vQzCag3becg</a></p> <p>Working backwards <a href="https://youtu.be/z-EKsYKR_C8">https://youtu.be/z-EKsYKR_C8</a></p>

### 3. Volume of 3D solids

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
3.1	<p>I can calculate the volume of a standard solid</p> <ul style="list-style-type: none"> <li>• cone</li> <li>• pyramid</li> <li>• sphere</li> <li>• composite shape</li> </ul>	<p>Ensure units are shown in final answers.</p> <p>Volume of a pyramid is not covered in the links. The equation is like the volume of a cone with the <math>\pi r^2</math> part replaced with the area of the base of the pyramid (A):</p> $V = \frac{1}{3}Ah$ <p>Composite shapes are also not covered and should be practiced from past paper questions.</p> <p>The equations for the volume of a sphere, cone and pyramid will be provided in class tests and exams. The equation for the volume of a cone is not provided and must be memorised.</p>	<p>Volume of a cylinder  <a href="https://youtu.be/vKBsLY2hEjM">https://youtu.be/vKBsLY2hEjM</a></p> <p><a href="https://youtu.be/_g6ZT1xx_h8">https://youtu.be/_g6ZT1xx_h8</a></p> <p><a href="https://youtu.be/ntbnP0Bhbpl">https://youtu.be/ntbnP0Bhbpl</a></p> <p>Volume of a cone  <a href="https://youtu.be/AS7Zefyc6eM">https://youtu.be/AS7Zefyc6eM</a></p> <p><a href="https://youtu.be/HdLj2WIXaO4">https://youtu.be/HdLj2WIXaO4</a></p> <p><a href="https://youtu.be/4p-8qsOd1eE">https://youtu.be/4p-8qsOd1eE</a></p> <p>Volume of a sphere  <a href="https://youtu.be/ZmooVHoCcCk">https://youtu.be/ZmooVHoCcCk</a></p> <p><a href="https://youtu.be/j1ly9ouTRB8">https://youtu.be/j1ly9ouTRB8</a></p> <p><a href="https://youtu.be/bR876001jXE">https://youtu.be/bR876001jXE</a></p>

## 4. Algebraic Expressions

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
4.1	<p>I can work with algebraic expressions involving</p> <ul style="list-style-type: none"><li>• Collecting like terms</li><li>• Expanding brackets</li><li>• Multiplying pairs of brackets</li><li>• Multiplying a binomial by a trinomial</li></ul>	<p>For context algebraic questions, key words eg “Area” or “Perimeter” candidates look to link with prior knowledge and multiply or add as appropriate.</p>	<p>Single brackets <a href="https://youtu.be/GUOZ-JsOJFI">https://youtu.be/GUOZ-JsOJFI</a>  <a href="https://youtu.be/P9XL20Wo1Bo">https://youtu.be/P9XL20Wo1Bo</a>  <a href="https://youtu.be/6J2bH88xEaE">https://youtu.be/6J2bH88xEaE</a></p> <p>Pairs of brackets <a href="https://youtu.be/feh6NwvbQMs">https://youtu.be/feh6NwvbQMs</a>  <a href="https://youtu.be/KCQuPlxdEFM">https://youtu.be/KCQuPlxdEFM</a>  <a href="https://youtu.be/OYWz_XeWrmU">https://youtu.be/OYWz_XeWrmU</a></p> <p>Bracket times a trinomial <a href="https://youtu.be/gOIfNVORvLU">https://youtu.be/gOIfNVORvLU</a>  <a href="https://youtu.be/rkf-MiLqZBE">https://youtu.be/rkf-MiLqZBE</a>  <a href="https://youtu.be/CP-uTkESLYM">https://youtu.be/CP-uTkESLYM</a></p>

## 5. The Circle

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
5.1	I can find angles using the angle properties of triangles and quadrilaterals		<a href="https://youtu.be/gMN2Zz9AuTE">https://youtu.be/gMN2Zz9AuTE</a>
5.2	I can find the angles using the angle properties of circles.	Look for special triangles (isosceles/equilateral/RA) and symmetry to perform calculations.	<a href="https://youtu.be/f9OECe-OKIU">https://youtu.be/f9OECe-OKIU</a> <a href="https://youtu.be/z_zzRqPFBKQ">https://youtu.be/z_zzRqPFBKQ</a>
5.3	I can find the interior and exterior angles of polygons.		<a href="https://youtu.be/e1SE7IOpw44">https://youtu.be/e1SE7IOpw44</a>
5.4	I can calculate the length of an arc or the area of a sector of a circle.	Find Area/Circumference then multiply by angle/360.	Calculating arc length <a href="https://youtu.be/AGpJcluLS9I">https://youtu.be/AGpJcluLS9I</a> <a href="https://youtu.be/fPa56-sdBZU">https://youtu.be/fPa56-sdBZU</a>
5.5	I can find the angle at the centre, given length of arc/area of sector.	Understand the connection between: arc/Circ & sector/Area & angle/360	<a href="https://youtu.be/RGGZx9QVTJs">https://youtu.be/RGGZx9QVTJs</a> <a href="https://youtu.be/pG68IzR9Imc">https://youtu.be/pG68IzR9Imc</a>

## 6. Pythagoras' Theorem

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
6.1	I can apply Pythagoras' Theorem in complex 2D situations		Questions 1 and 2 only: <a href="http://www.national5maths.co.uk">www.national5maths.co.uk</a>
6.2	I can apply the converse of Pythagoras' Theorem.		<a href="https://youtu.be/q6kD_oh5dLM">https://youtu.be/q6kD_oh5dLM</a>
6.3	I can apply Pythagoras' Theorem in 3D problems.	Sketch both the face triangle and space triangle side by side.	Question 4 only: <a href="http://www.national5maths.co.uk">www.national5maths.co.uk</a>
6.4	Symmetry in the circle I can apply Pythagoras and Trigonometry	There are no examples of trigonometry applied inside a circle here. The links provided only provide revision on the general principles of trigonometry.	Pythagoras <a href="https://youtu.be/XNi1KjZHdfA">https://youtu.be/XNi1KjZHdfA</a>  Trigonometry, calculate missing side <a href="https://youtu.be/rQ-DAup--l8">https://youtu.be/rQ-DAup--l8</a>  <a href="https://youtu.be/hyd16PT-OTw">https://youtu.be/hyd16PT-OTw</a>  Trigonometry, calculate missing angle <a href="https://youtu.be/y0uQ_vtDpow">https://youtu.be/y0uQ_vtDpow</a>

## 7. Factorising

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
7.1	<p>I can factorise an expression</p> <ul style="list-style-type: none"> <li>• by finding a common factor</li> <li>• with a difference of 2 squares</li> <li>• as a trinomial</li> </ul> <p>Introduce simplifying algebraic fractions by factorising only.</p>	<p>Go through checklist when factorising.            Nat5 common factor will always be followed by difference of 2 squares or trinomial factorising.</p>	<p>Common Factor  <a href="https://youtu.be/rTrIQNINkeA">https://youtu.be/rTrIQNINkeA</a>  <a href="https://youtu.be/GC2kojky94c">https://youtu.be/GC2kojky94c</a>  <a href="https://youtu.be/r-qB7_38b1g">https://youtu.be/r-qB7_38b1g</a></p> <p>Difference of two squares  <a href="https://youtu.be/fGlir-oetaA">https://youtu.be/fGlir-oetaA</a>  <a href="https://youtu.be/Yog87K3kqhY">https://youtu.be/Yog87K3kqhY</a>  <a href="https://youtu.be/_MJG4D9By38">https://youtu.be/_MJG4D9By38</a></p> <p>Trinomial factorisation  <a href="https://youtu.be/-oiQbk8OrPU">https://youtu.be/-oiQbk8OrPU</a>    <a href="https://youtu.be/nytOokg8Jj8">https://youtu.be/nytOokg8Jj8</a>  <a href="https://youtu.be/MuZ7W2IsnCo">https://youtu.be/MuZ7W2IsnCo</a></p>

8. Topic 8 has been removed from the 2021/22 course to offset time lost from lockdown



## 9. Factorising a Quadratic Equation into Completed Square Form

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
9.1	I can complete the square in a quadratic expression with unitary $x^2$ coefficient.	Exam questions never ask you to “complete the square”. You will be asked to express in the form $(x \pm a)^2 \pm b$ .	<a href="https://youtu.be/h0_AZUsaS_c">https://youtu.be/h0_AZUsaS_c</a>
9.3	I can identify features of a quadratic function of the form $y = (x \pm a)^2 \pm b$ , $k = 1$ or $-1$		<a href="https://youtu.be/ktcvItSbP-k">https://youtu.be/ktcvItSbP-k</a> <a href="https://youtu.be/IU2gTGxtM-o">https://youtu.be/IU2gTGxtM-o</a>

## 10. Solving Equations and Inequations

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
10.1	I can solve linear equations containing brackets.		<a href="https://youtu.be/A8zhs3Kza8s">https://youtu.be/A8zhs3Kza8s</a>
10.2	I can solve linear equations containing fractions.		<a href="https://youtu.be/kHEPbLb-8bs">https://youtu.be/kHEPbLb-8bs</a>
10.3	I can solve more complex inequations.		<a href="https://youtu.be/UI9rg7JP0OE">https://youtu.be/UI9rg7JP0OE</a> <a href="https://youtu.be/_Irl8-JaeqQ">https://youtu.be/_Irl8-JaeqQ</a> <a href="https://youtu.be/SeptlqBPfCo">https://youtu.be/SeptlqBPfCo</a>

## Block 2

### 11. Fractions

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
11.1	I can apply the four operations to calculations involving mixed numbers.		Adding and subtracting <a href="https://youtu.be/BKpvHmjMWYo">https://youtu.be/BKpvHmjMWYo</a>  Multiplying <a href="https://youtu.be/Yloru6O0oAs">https://youtu.be/Yloru6O0oAs</a>  Dividing <a href="https://youtu.be/RBX56VHZvBQ">https://youtu.be/RBX56VHZvBQ</a>
11.2	I can complete calculations involving combinations of the four operations with fractions and mixed numbers.		Adding and Subtracting <a href="https://youtu.be/d-Zxf9NHsy8">https://youtu.be/d-Zxf9NHsy8</a>  <a href="https://youtu.be/Y2X3DqfWyl4">https://youtu.be/Y2X3DqfWyl4</a>  <a href="https://youtu.be/f4C9vs1OVKE">https://youtu.be/f4C9vs1OVKE</a>  Multiplying <a href="https://youtu.be/qB_9Y7aHnTU">https://youtu.be/qB_9Y7aHnTU</a>  <a href="https://youtu.be/f3UXc3L77tM">https://youtu.be/f3UXc3L77tM</a>  <a href="https://youtu.be/oJihvEkLil">https://youtu.be/oJihvEkLil</a>  Dividing <a href="https://youtu.be/KXzxxPvvYUY">https://youtu.be/KXzxxPvvYUY</a>  <a href="https://youtu.be/Y8_tYesP5uc">https://youtu.be/Y8_tYesP5uc</a>  <a href="https://youtu.be/wdLg-mzKB08">https://youtu.be/wdLg-mzKB08</a>

## 12. Algebraic Fractions

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
12.1	I can reduce an algebraic fraction to its simplest form.		<a href="https://youtu.be/ITyvGIEuZCE">https://youtu.be/ITyvGIEuZCE</a> <a href="https://youtu.be/Wa_PJ-1TU08">https://youtu.be/Wa_PJ-1TU08</a> <a href="https://youtu.be/EgcU00_Szsl">https://youtu.be/EgcU00_Szsl</a>
12.2	I can apply one of the four operations to algebraic fractions.	Students should apply existing number of four operations to algebraic context.	<p>Add and Subtract</p> <a href="https://youtu.be/COLqerLLg1U">https://youtu.be/COLqerLLg1U</a> <a href="https://youtu.be/9rWrnRksbPk">https://youtu.be/9rWrnRksbPk</a> <a href="https://youtu.be/WSE5xGHSAfs">https://youtu.be/WSE5xGHSAfs</a> <p>Multiply</p> <a href="https://youtu.be/KIRogIQJyKE">https://youtu.be/KIRogIQJyKE</a> <a href="https://youtu.be/O3qVH5H7CX8">https://youtu.be/O3qVH5H7CX8</a> <a href="https://youtu.be/lmvYrFw51Mc">https://youtu.be/lmvYrFw51Mc</a> <p>Divide</p> <a href="https://youtu.be/8JXr_e0EzBM">https://youtu.be/8JXr_e0EzBM</a> <a href="https://youtu.be/lqMRmuLvVLE">https://youtu.be/lqMRmuLvVLE</a> <a href="https://youtu.be/H3Ds_73rXQo">https://youtu.be/H3Ds_73rXQo</a>

## 13. Simultaneous Equations

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
13.2	I can solve simultaneous equations by substitution.	The elimination method can be used for questions of this type.	
13.3	I can solve simultaneous equations by elimination.		<a href="https://youtu.be/rIYY66gPUZE">https://youtu.be/rIYY66gPUZE</a> <a href="https://youtu.be/SkodDmej-ow">https://youtu.be/SkodDmej-ow</a> <a href="https://youtu.be/rogcty4CNIY">https://youtu.be/rogcty4CNIY</a>
13.4	I can create and solve a pair of simultaneous equations from text.	This is a very common style of exam questions. This link shows some old questions of this type.	<a href="http://national5maths.co.uk">national5maths.co.uk</a>

## 14. Changing the Subject of a Formulae

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
14.1	I can change the subject of a simple formula.	Apply knowledge of solving equations to rearrangement.	<a href="https://youtu.be/yczCIJA49Gs">https://youtu.be/yczCIJA49Gs</a>
14.2	I can change the subject of a formula containing fractions.	Multiply by denominator to remove fractions.	<a href="https://youtu.be/-tlQOdmS7pA">https://youtu.be/-tlQOdmS7pA</a>
14.3	I can change the subject of a formula containing brackets, roots or powers.		<a href="https://youtu.be/1CgxNv7EnV0">https://youtu.be/1CgxNv7EnV0</a> <a href="https://youtu.be/QwsPJ7fAkR8">https://youtu.be/QwsPJ7fAkR8</a> <a href="https://youtu.be/sT5YexiZxig">https://youtu.be/sT5YexiZxig</a>

## 15. Indices

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
15.1	I can simplify expressions using the laws of indices	Remind of four operations for fractions.  Do fractions calculations at the side if needed.	Multiplying and Dividing <a href="https://youtu.be/saG_trWz6sc">https://youtu.be/saG_trWz6sc</a>  <a href="https://youtu.be/UuyIb56Uisc">https://youtu.be/UuyIb56Uisc</a>  <a href="https://youtu.be/dGhaFhtUePU">https://youtu.be/dGhaFhtUePU</a>  Powers of powers, zero, negatives and fractions <a href="https://youtu.be/aj-mbLoQqHQ">https://youtu.be/aj-mbLoQqHQ</a>  <a href="https://youtu.be/fR6dk6Pr_jw">https://youtu.be/fR6dk6Pr_jw</a>
15.2	I can carry out calculations involving scientific notation, with and without a calculator.	Consider approach for “easier” numbers and apply same strategy.	<a href="https://youtu.be/IEpT1gRLITk">https://youtu.be/IEpT1gRLITk</a>  <a href="https://youtu.be/pL1CC482ges">https://youtu.be/pL1CC482ges</a>  <a href="https://youtu.be/wzCY6i-AGM">https://youtu.be/wzCY6i-AGM</a>

## 16. Percentages

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
16.1	I can work with appreciation.		Appreciation <a href="https://youtu.be/li3RE2X33ks">https://youtu.be/li3RE2X33ks</a>
16.2	I can work with compound interest.		Increase <a href="https://youtu.be/6Q2JNbbfI9E">https://youtu.be/6Q2JNbbfI9E</a> <a href="https://youtu.be/vJByXuB9BZg">https://youtu.be/vJByXuB9BZg</a> Decrease <a href="https://youtu.be/kVIHEsg1v54">https://youtu.be/kVIHEsg1v54</a> <a href="https://youtu.be/XK4AvAi_v3g">https://youtu.be/XK4AvAi_v3g</a>
16.3	I can reverse a percentage change. (calculator and non-calculator)		<a href="https://youtu.be/SR-xa21SHoc">https://youtu.be/SR-xa21SHoc</a> <a href="https://youtu.be/Lzj10DhtUts">https://youtu.be/Lzj10DhtUts</a> <a href="https://youtu.be/ZNVX1c4arQo">https://youtu.be/ZNVX1c4arQo</a>

## 17. Surds

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
17.1	I can simplify a surd		<a href="https://youtu.be/xh4GQzQrAPI">https://youtu.be/xh4GQzQrAPI</a> <a href="https://youtu.be/PgfbzNi0kug">https://youtu.be/PgfbzNi0kug</a>
17.2	I can work with surds when expanding brackets		<a href="https://youtu.be/cPC3B18xvaQ">https://youtu.be/cPC3B18xvaQ</a>
17.4	I can apply knowledge of different forms of a quadratic function to solve related problems.	Questions 7 and 8 of the link give examples of surds used in different types of questions.	<a href="http://www.national5maths.co.uk">www.national5maths.co.uk</a>

## 18. Solving Quadratics by Factorising and using the Quadratic Formula

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
18.1	I can solve a quadratic equation by factorising.		<a href="https://youtu.be/wnfoPqyofms">https://youtu.be/wnfoPqyofms</a> <a href="https://youtu.be/VHyhWZb2cql">https://youtu.be/VHyhWZb2cql</a> <a href="https://youtu.be/i2Xbg0qXPI4">https://youtu.be/i2Xbg0qXPI4</a>
18.2	I can sketch a quadratic function of the form <ul style="list-style-type: none"> <li>• <math>y = (x - a)(x - b)</math></li> <li>• <math>y = ax^2 + bx + c</math></li> </ul>		<a href="https://youtu.be/PVLm96ORHyA">https://youtu.be/PVLm96ORHyA</a>
18.3	I can solve a quadratic equation by completing the square.	Completed square form can be rewritten as a quadratic and the quadratic formula applied.	
18.4	I can use the quadratic formula.	Show unrounded prior to rounding	<a href="https://youtu.be/us18ZFTGa90">https://youtu.be/us18ZFTGa90</a> <a href="https://youtu.be/LK7alSYzHeA">https://youtu.be/LK7alSYzHeA</a> <a href="https://youtu.be/dBNRVJv1_Os">https://youtu.be/dBNRVJv1_Os</a>
18.6	I can find the points of intersection of a parabola and a straight line.	Examples provided in class. This is not often asked at exam and there are few examples to work from.	
18.7	I can solve problems using quadratic equations.	Mixed past paper examples can be found at the link. Note that if a graph uses different letters than 'x' and 'y' then the equation should also be written in terms of these different letters.	<a href="http://www.national5maths.co.uk">www.national5maths.co.uk</a>



## 19. Trigonometric Graphs and Equations

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
19.1	<p>I can work with trigonometric graphs and relate to four quadrants to create CAST diagram.</p> <p>I can work with <math>\tan A = \frac{\sin A}{\cos A}</math></p>	<p>Introduce graphs of Sine and Cosine by plotting points.</p> <p>Introduce Tangent graph.</p> <p>Make connection with +ve/-ve values and CAST diagram.</p>	<p>Work out trigonometric equation from graph  <a href="https://youtu.be/XsLc5ccsZj0">https://youtu.be/XsLc5ccsZj0</a></p> <p><a href="https://youtu.be/7Rz8JWspyw0">https://youtu.be/7Rz8JWspyw0</a></p> <p><a href="https://youtu.be/KMJ0h6BgU4I">https://youtu.be/KMJ0h6BgU4I</a></p> <p>Drawing trigonometric graphs from equation  <a href="https://youtu.be/uA8xXgyfDfY">https://youtu.be/uA8xXgyfDfY</a></p> <p><a href="https://youtu.be/WqU5P37_LRw">https://youtu.be/WqU5P37_LRw</a></p> <p><a href="https://youtu.be/4_-4vVY3FPc">https://youtu.be/4_-4vVY3FPc</a></p>
19.2	I can solve a trigonometric equation.	<p>Solve to sin/cos/tan</p> <p>Inverse sin/cos/tan</p> <p>CAST Diagram for 2<sup>nd</sup> solution</p>	<p><a href="https://youtu.be/uHGbyZ3XaR4">https://youtu.be/uHGbyZ3XaR4</a></p> <p><a href="https://youtu.be/m9iSbpcDSIA">https://youtu.be/m9iSbpcDSIA</a></p> <p><a href="https://youtu.be/nBX0V4pojrg">https://youtu.be/nBX0V4pojrg</a></p>
19.3	I can work with trig equations in a given context.	Substitute given value into equation then process.	<a href="http://www.national5maths.co.uk">www.national5maths.co.uk</a>
19.4	I can work with exact values.	Introduce $\sin 30^\circ = \frac{1}{2}$ develop triangle from there.	<p><a href="https://youtu.be/Aocg4MDUNpg">https://youtu.be/Aocg4MDUNpg</a></p> <p><a href="https://youtu.be/RK9ID6AxFAg">https://youtu.be/RK9ID6AxFAg</a></p> <p><a href="https://youtu.be/Z8Fbl0E0zkl">https://youtu.be/Z8Fbl0E0zkl</a></p>
19.5	I can work with the trig identities.		<p><a href="https://youtu.be/KyI0Up5gjrE">https://youtu.be/KyI0Up5gjrE</a></p> <p><a href="https://youtu.be/AXfBo5vXVvY">https://youtu.be/AXfBo5vXVvY</a></p>

## Block 3

### 20. Information Handling

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
20.1	I can calculate and interpret the standard deviation of a dataset.	How far, on average, each data is from mean. Develop formula through explanation	<a href="https://youtu.be/8Cpli6SqA-I">https://youtu.be/8Cpli6SqA-I</a> <a href="https://youtu.be/kgtqhflLccs">https://youtu.be/kgtqhflLccs</a> <a href="https://youtu.be/IFUVtCj60Tg">https://youtu.be/IFUVtCj60Tg</a>

### 21. Quadratic Graphs

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
22.1	I can recognise and determine the equation of a quadratic function from its graph <ul style="list-style-type: none"> <li><math>y = kx^2</math></li> </ul> $y = (x+p)^2 + q$ $k, p, q \in \mathbb{Z}$		<a href="https://youtu.be/4P3qV67eeVc">https://youtu.be/4P3qV67eeVc</a>
22.2	I can apply knowledge of different forms of a quadratic function to solve related problems.	See 18.7 from Topic 18.	
21.5	I can calculate the value of the intercept of the vertical axis.	Overlap with 2.2 from the Straight Line topic.	
21.6	I can state and interpret probabilities.		<a href="http://national5maths.co.uk">national5maths.co.uk</a>

## 22. Trigonometry

Section Number	Description of Outcome	Additional Notes	Link to Example Questions
22.1	I can find the area of a triangle. (include parallelogram/ polygon)		<a href="https://youtu.be/FAQBliry4A8">https://youtu.be/FAQBliry4A8</a> <a href="https://youtu.be/gDwp_pQvZvk">https://youtu.be/gDwp_pQvZvk</a>
22.2	I can use the Sine Rule		<a href="https://youtu.be/mfCp8vckCwg">https://youtu.be/mfCp8vckCwg</a> <a href="https://youtu.be/UvnJHf-VE9U">https://youtu.be/UvnJHf-VE9U</a> <a href="https://youtu.be/Nu8ZvSFpY9E">https://youtu.be/Nu8ZvSFpY9E</a>
22.3	I can use the Cosine Rule		<a href="https://youtu.be/fp_JPUjO0VI">https://youtu.be/fp_JPUjO0VI</a> <a href="https://youtu.be/3OyKIXJyZ5c">https://youtu.be/3OyKIXJyZ5c</a> <a href="https://youtu.be/cSiVoXva0yo">https://youtu.be/cSiVoXva0yo</a>

23. Topic 23 has been removed from the 2021/22 course to offset time lost from lockdown