

Year 9 Maths Oak Academy Work Half Term 2

FOUNDATION

Unit: FN4	
Rounding including significant figures	https://classroom.thenational.academy/lessons/round-to-two-decimal-places-cdhkcr https://classroom.thenational.academy/lessons/round-up-to-three-significant-figures-68w66e
Estimation	https://classroom.thenational.academy/lessons/estimating-answers-6mw3jt
Order of operations	https://classroom.thenational.academy/lessons/order-of-operations-and-arrays-60t64c
Converting Time	N/A
Speed Distance Time	https://classroom.thenational.academy/lessons/calculating-speed-distance-and-time-6mrkje

Unit: FA1	
Simplifying expressions	https://classroom.thenational.academy/lessons/collecting-like-terms-6tgk8r
Simplifying indices	https://classroom.thenational.academy/lessons/multiply-powers-c5jk4e https://classroom.thenational.academy/lessons/divide-powers-6wt36t
Expanding single brackets	https://classroom.thenational.academy/lessons/expand-2-brackets-and-simplify-expressions-part-1-crvk4c
Factorising single brackets	https://classroom.thenational.academy/lessons/factorising-single-brackets-70rkgr

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<https://classroom.thenational.academy/lessons/factorising-single-brackets-factor-out-a-letter-64wk0c>

<https://classroom.thenational.academy/lessons/factorise-single-brackets-factor-a-number-and-a-letter-6crked>

<https://classroom.thenational.academy/lessons/factorising-single-brackets-more-complicated-expressions-c8tk2t>

Unit: FA2

Using function machines	https://classroom.thenational.academy/lessons/calculations-with-variables-6dj64t
Solving equations	https://classroom.thenational.academy/lessons/solving-one-step-equations-chk32d https://classroom.thenational.academy/lessons/solving-two-step-equations-60tk8d https://classroom.thenational.academy/lessons/solving-equations-with-brackets-6rt3ec https://classroom.thenational.academy/lessons/solving-equations-with-unknown-on-both-sides-6xgkar
Substitution	https://classroom.thenational.academy/lessons/substitute-a-positive-term-into-a-formula-cdgkge https://classroom.thenational.academy/lessons/substitute-a-negative-term-into-a-formula-75j3cc
Generating a sequence	https://classroom.thenational.academy/lessons/growing-pattern-sequences-70w32t
Finding the nth term of linear sequences	https://classroom.thenational.academy/lessons/write-the-nth-term-of-a-linear-sequence-70w62d

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Unit: FA3

Drawing quadratic graphs	https://classroom.thenational.academy/lessons/plot-simple-quadratic-equations-6gr32e
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Unit: FA4

Solve coordinate problems	https://classroom.thenational.academy/lessons/solving-geometric-problems-6rr68d
Drawing straight line graphs from a table	https://classroom.thenational.academy/lessons/draw-graphs-of-the-form-ymxc-by-using-a-table-of-values-cnk68c
Understanding $y=mx+c$	https://classroom.thenational.academy/lessons/find-the-equation-of-a-straight-line-using-ymxc-60u3gr
Speed Distance Time Recap	https://classroom.thenational.academy/lessons/calculating-speed-distance-and-time-6mrkje
Distance-time graphs	https://classroom.thenational.academy/lessons/distance-time-graphs-c9hpar

CROSSOVER

Unit: CN4

Order of Operations	https://classroom.thenational.academy/lessons/order-of-operations-and-arrays-60t64c
Rounding including significant figures	https://classroom.thenational.academy/lessons/round-to-two-decimal-places-cdhkr https://classroom.thenational.academy/lessons/round-up-to-three-significant-figures-68w66e
Estimation	https://classroom.thenational.academy/lessons/estimating-answers-6mw3jt
Finding upper and lower bounds	https://classroom.thenational.academy/lessons/upper-and-lower-bounds-error-intervals-c4v32c

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Writing numbers in standard form	https://classroom.thenational.academy/lessons/convert-large-numbers-to-standard-form-6wv36c https://classroom.thenational.academy/lessons/convert-small-numbers-to-standard-form-cmup8e
Using a calculator	N/A
Converting Time	N/A
Speed Distance Time	https://classroom.thenational.academy/lessons/calculating-speed-distance-and-time-6mrkje

Unit: CN5

Simplifying and calculating with surds	https://classroom.thenational.academy/lessons/simplify-simple-surds-6mvk8c https://classroom.thenational.academy/lessons/simplify-a-surd-of-the-form-ab-cctp4r https://classroom.thenational.academy/lessons/write-ab-in-form-x-crr3jr
	https://classroom.thenational.academy/lessons/add-two-surds-where-you-need-to-simplify-chh6cc
	https://classroom.thenational.academy/lessons/multiply-two-surds-and-simplify-6wt62c
	https://classroom.thenational.academy/lessons/multiply-two-surds-with-coefficients-69j6ac
Non-algebraic direct and inverse proportion	https://classroom.thenational.academy/lessons/proportion-problems-cdj3ed

Unit: CA1

Expand and simplify algebraic expressions including double brackets	https://classroom.thenational.academy/lessons/expand-2-brackets-and-simplify-expressions-part-1-crvk4c
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	https://classroom.thenational.academy/lessons/expand-and-simplify-double-brackets-cdhkjc
Factorising including quadratic	https://classroom.thenational.academy/lessons/factorise-single-brackets-factor-a-number-and-a-letter-6crked https://classroom.thenational.academy/lessons/factorise-a-quadratic-cgukit
Solving linear equations	https://classroom.thenational.academy/lessons/solving-one-step-equations-chk32d https://classroom.thenational.academy/lessons/solving-two-step-equations-60tk8d https://classroom.thenational.academy/lessons/solving-equations-with-brackets-6rt3ec https://classroom.thenational.academy/lessons/solving-equations-with-unknown-on-both-sides-6xgkar
Forming equations	https://classroom.thenational.academy/lessons/forming-and-exploring-equations-70r3gr

Unit: CA2

Substitution	https://classroom.thenational.academy/lessons/substitute-a-positive-term-into-a-formula-cdgkge
Identifying and using sequences - Fibonacci /Geometric/Quadratic	https://classroom.thenational.academy/lessons/triangular-and-fibonacci-style-sequences-69gk8d
Finding the nth term of linear sequences	https://classroom.thenational.academy/lessons/write-the-nth-term-of-a-linear-sequence-70w62d

Unit: CA3

Drawing quadratic graphs	https://classroom.thenational.academy/lessons/plot-simple-quadratic-equations-6gr32e
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Solving quadratic equations by factorisation	https://classroom.thenational.academy/lessons/solve-a-quadratic-equation-by-factorising-cnk36c
The difference of two squares	https://classroom.thenational.academy/lessons/factorise-a-quadratic-difference-of-two-squares-71jpac

Unit: CA4	
Drawing straight line graphs from a table	https://classroom.thenational.academy/lessons/draw-graphs-of-the-form-ymxc-by-using-a-table-of-values-cnk68c
Understanding $y=mx+c$	https://classroom.thenational.academy/lessons/find-the-equation-of-a-straight-line-using-ymxc-60u3gr
Drawing straight line graphs from $y=mx+c$	https://classroom.thenational.academy/lessons/find-the-intercept-and-gradient-from-a-line-given-in-any-form-6mrk8c
Gradients of lines	https://classroom.thenational.academy/lessons/find-the-gradient-of-a-line-60wkjd
Finding the equation of a straight line	https://classroom.thenational.academy/lessons/draw-graphs-of-the-form-axby-c-by-using-a-table-of-values-71k68t
Speed Distance Time Recap	https://classroom.thenational.academy/lessons/calculating-speed-distance-and-time-6mrkje
Distance-time graphs	https://classroom.thenational.academy/lessons/distance-time-graphs-c9hpar https://classroom.thenational.academy/lessons/calculate-speed-from-distance-time-graphs-crw38d

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HIGHER

Unit: HN4	
Order of Operations	https://classroom.thenational.academy/lessons/order-of-operations-and-arrays-60t64c
Rounding including significant figures	https://classroom.thenational.academy/lessons/round-to-two-decimal-places-cdhkr https://classroom.thenational.academy/lessons/round-up-to-three-significant-figures-68w66e
Estimation	https://classroom.thenational.academy/lessons/estimating-answers-6mw3jt
Finding upper and lower bounds	https://classroom.thenational.academy/lessons/upper-and-lower-bounds-error-intervals-c4v32c
Error Intervals	See Finding upper and lower bounds
Converting Time	N/A
Speed Distance Time	https://classroom.thenational.academy/lessons/calculating-speed-distance-and-time-6mrkje
Writing numbers in standard form	https://classroom.thenational.academy/lessons/convert-large-numbers-to-standard-form-6wv36c https://classroom.thenational.academy/lessons/convert-small-numbers-to-standard-form-cmup8e
Calculating with numbers in standard form	https://classroom.thenational.academy/lessons/adding-two-numbers-in-standard-form-74w3gc

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	https://classroom.thenational.academy/lessons/subtracting-two-numbers-in-standard-form-6tgpac https://classroom.thenational.academy/lessons/multiplying-two-numbers-in-standard-form-60w66r https://classroom.thenational.academy/lessons/dividing-two-numbers-in-standard-form-cdh3ce
Using a calculator	N/A

Unit: HN5	
Simplifying and calculating with surds	https://classroom.thenational.academy/lessons/simplify-simple-surds-6mvk8c https://classroom.thenational.academy/lessons/simplify-a-surd-of-the-form-ab-cctp4r https://classroom.thenational.academy/lessons/write-ab-in-form-x-crr3jr https://classroom.thenational.academy/lessons/add-two-surds-where-you-need-to-simplify-chh6cc https://classroom.thenational.academy/lessons/multiply-two-surds-and-simplify-6wt62c https://classroom.thenational.academy/lessons/multiply-two-surds-with-coefficients-69j6ac
Expanding brackets with surds	https://classroom.thenational.academy/lessons/expand-single-brackets-containing-a-surd-6cvpcd

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	https://classroom.thenational.academy/lessons/expand-double-brackets-containing-surds-cgt62r
Non-algebraic direct and inverse proportion	https://classroom.thenational.academy/lessons/proportion-problems-cdj3ed

Unit: HA1	
Expand and simplify algebraic expressions including double and triple brackets	https://classroom.thenational.academy/lessons/expand-2-brackets-and-simplify-expressions-part-1-crvk4c https://classroom.thenational.academy/lessons/expand-and-simplify-double-brackets-cdhkjc https://classroom.thenational.academy/lessons/expand-product-of-more-than-two-binomials-cmw38d
Factorising including quadratic	https://classroom.thenational.academy/lessons/factorise-single-brackets-factor-a-number-and-a-letter-6crked https://classroom.thenational.academy/lessons/factorise-a-quadratic-cgukjt
Solving linear equations	https://classroom.thenational.academy/lessons/solving-one-step-equations-chk32d https://classroom.thenational.academy/lessons/solving-two-step-equations-60tk8d https://classroom.thenational.academy/lessons/solving-equations-with-brackets-6rt3ec https://classroom.thenational.academy/lessons/solving-equations-with-unknown-on-both-sides-6xgkar

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Forming equations	https://classroom.thenational.academy/lessons/forming-and-exploring-equations-70r3gr
Solving linear inequalities	https://classroom.thenational.academy/lessons/solve-one-and-two-step-inequalities-chj3jr
Changing the subject of a formula	https://classroom.thenational.academy/lessons/change-the-subject-of-a-formula-6hhp2t

Unit: HA2

Substitution	https://classroom.thenational.academy/lessons/substitute-a-positive-term-into-a-formula-cdgkge
Identifying and using sequences - Fibonacci /Geometric/Quadratic	https://classroom.thenational.academy/lessons/triangular-and-fibonacci-style-sequences-69gk8d
Finding the nth term of linear sequences	https://classroom.thenational.academy/lessons/write-the-nth-term-of-a-linear-sequence-70w62d
Finding the nth term of quadratic sequences	https://classroom.thenational.academy/lessons/find-the-nth-term-of-a-quadratic-sequence-6xgp8c

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Unit: HA3	
Drawing quadratic graphs	https://classroom.thenational.academy/lessons/plot-simple-quadratic-equations-6gr32e
Solving quadratic equations by factorisation	https://classroom.thenational.academy/lessons/solve-a-quadratic-equation-by-factorising-cnk36c
The difference of two squares	https://classroom.thenational.academy/lessons/factorise-a-quadratic-difference-of-two-squares-71jpac
Roots and Turning Points	https://classroom.thenational.academy/lessons/identify-and-interpret-roots-intercepts-and-turning-points-of-quadratic-graphs-c4uk8d
Sketching quadratic graphs	https://classroom.thenational.academy/lessons/plot-other-quadratic-equations-65h3ed
Solving quadratic equations - Formula	https://classroom.thenational.academy/lessons/use-formulae-to-solve-quadratic-equations-any-value-70vkae
Simultaneous linear equations	https://classroom.thenational.academy/lessons/solve-linear-simultaneous-equations-where-you-need-to-multiply-one-of-the-equations-6nh64t
Unit: HA4	
Drawing straight line graphs from a table	https://classroom.thenational.academy/lessons/draw-graphs-of-the-form-ymxc-by-using-a-table-of-values-cnk68c
Understanding $y=mx+c$	https://classroom.thenational.academy/lessons/find-the-equation-of-a-straight-line-using-ymxc-60u3gr

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Drawing straight line graphs from $y=mx+c$	https://classroom.thenational.academy/lessons/find-the-intercept-and-gradient-from-a-line-given-in-any-form-6mrk8c
Gradients of lines	https://classroom.thenational.academy/lessons/find-the-gradient-of-a-line-60wkjd
Finding the equation of a straight line	https://classroom.thenational.academy/lessons/draw-graphs-of-the-form-axby-c-by-using-a-table-of-values-71k68t
Rearranging $ax + by + c = 0$ into $y=mx+c$	https://classroom.thenational.academy/lessons/find-the-intercept-and-gradient-from-a-line-given-in-any-form-6mrk8c
Speed Distance Time Recap	https://classroom.thenational.academy/lessons/calculating-speed-distance-and-time-6mrkie
Distance-time graphs	https://classroom.thenational.academy/lessons/distance-time-graphs-c9hpar https://classroom.thenational.academy/lessons/calculate-speed-from-distance-time-graphs-crw38d

Unit: HA5

Graphs of cubic, exponential and reciprocal functions	https://classroom.thenational.academy/lessons/draw-graphs-of-simple-cubic-functions-using-a-table-of-values-cnk36d https://classroom.thenational.academy/lessons/recognise-draw-sketch-and-interpret-graphs-of-the-reciprocal-function-y-1x-cct30d
Using real life graphs such as growth/decay, conversion graphs	https://classroom.thenational.academy/lessons/exchange-rates-with-graphs-6cv36d