Use complex numbers in polynomial identities and equations. Build on work with quadratic equations in Secondary Mathematics II (Standards N.CN.8–9)	
Standard N.CN.8: Extend polynomial identities to the complex numbers. *For example, rewrite* $x^2 + 4$ *as* $(x + 2i)(x - 2i)$.	
Concepts and Skills to Master	
• Use polynomial identities to rewrite polynomial expressions that involve complex numbers.	
Related Standards: Current Course	Related Standards: Future Courses
III.N.CN.9, III.A.APR.2, III.A.APR.3, III.A.APR.4, III.A.APR.6, III.A.SSE.2, III.F.IF.7, III.F.IF.8, III.F.IF.9	P.N.CN.3

Support for Teachers

Critical Background Knowledge
• The meaning and form of complex numbers (II.N.CN.1) • Adding, subtracting, and multiplying complex numbers (II.N.CN.2) • Solving quadratic equations and understand the nature of the roots (II.N.CN.7, II.N.CN.8)
Academic Vocabulary
i, complex number, imaginary, root, zero, factor, coefficient, conjugate pair
Resources:
Curriculum Resources: https://www.uen.org/core/core.do?courseNum=5630#71584

Use complex numbers in polynomial identities and equations. Build on work with quadratic equations in Secondary Mathematics II (Standards N.CN.8–9)	
Standard N.CN.9: Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials. Limit to polynomials with real coefficients.	
Concepts and Skills to Master	
• Know that the Fundamental Theorem of Algebra guarantees that polynomial functions will have solutions in the complex number system. • Show that polynomials with degree n have exactly n roots over the complex number system.	
Related Standards: Current Course	Related Standards: Future Courses
III.N.CN.8, III.A.APR.1, III.A.APR.2, III.A.APR.3, III.A.APR.4, III.A.APR.6, III.A.CED.1, III.A.SSE.2, III.F.IF.8, III.F.IF.9	P.N.CN.3

Support for Teachers

Critical Background Knowledge
• Meaning and form of complex numbers (II.N.CN.1) • Adding, subtracting, and multiplying complex numbers (II.N.CN.2) • Know the Fundamental Theorem of Algebra (focus is on quadratics) (II.N.CN.9)
Academic Vocabulary
i , complex numbers, imaginary, root, zero, factor, coefficient, conjugate
Resources:
Curriculum Resources: https://www.uen.org/core/core.do?courseNum=5630#71585