Assessment Planning

Grade: Math 2 Unit: 3

Standards/Topics	Conceptual Understanding	Procedural Skill & Fluency	Application
N.CN.1 Know there is a complex number *I* such that $i^2 = -1$, and every complex number has the form *a + bi* with *a* and *b* real.	*4 Complex Numbers and Solving Quadratics Formative/Summative Answer Key*	*4 Complex Numbers and Solving Quadratics Formative/Summative Answer Key*	
N.CN.2 Use the relation $i^2 = -1$ and the commutative, associate, and distributive properties to add, subtract, and multiply complex numbers.	*4 Complex Numbers and Solving Quadratics Formative/Summative Answer Key*	*4 Complex Numbers and Solving Quadratics Formative/Summative Answer Key*	
N.CN.7 Solve quadratic equations with real coefficients that have complex solutions.	*4 Complex Numbers and Solving Quadratics Formative/Summative Answer Key*	*4 Complex Numbers and Solving Quadratics Formative/Summative Answer Key*	
N.Q.2 Define appropriate quantities for the purpose of descriptive modeling.		*4 Complex Numbers and Solving Quadratics Formative/Summative Answer Key*	

A.SSE.1 Interpret expressions that represent a quantity in terms of its context. b) Interpret complicated expressions by viewing one or more of their parts as a single entity. ~~*For example, interpret P(1+r)n as the product of P and a factor not depending on P.*~~	*1 Solving Quadratic Equations* *Formative/Summative* *Self-Assessment Skeleton* 6 Basketball Task Formative/Summative	*4 Complex Numbers and Solving Quadratics* *Formative/Summative* *Answer Key*	*4 Complex Numbers and Solving Quadratics* *Formative/Summative* *Answer Key* 6 Basketball Task Formative/Summative
A.SSE.2 Use the structure of an expression to identify ways to rewrite it. *For example, see* $x^4 - y^4$ *as* $(x^2)^2 - (y^2)^2$, *thus recognizing it as a difference of squares that can be factored as* $(x^2 - y^2)(x^2 + y^2)$.	*1 Solving Quadratic Equations* *Formative/Summative* *Self-Assessment Skeleton* 6 Basketball Task Formative/Summative	*1 Solving Quadratic Equations* *Formative/Summative* *Self-Assessment Skeleton* *4 Complex Numbers and Solving Quadratics* *Formative/Summative* *Answer Key*	*4 Complex Numbers and Solving Quadratics* *Formative/Summative* *Answer Key* 6 Basketball Task Formative/Summative
A.SSE.3 Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. a) Factors a quadratic expression to reveal the zeros of the function it defines. b) Complete the square in a quadratic expression to reveal the maximum value of the function it defines.	*1 Solving Quadratic Equations* *Formative/Summative* *Self-Assessment Skeleton*	*1 Solving Quadratic Equations* *Formative/Summative* *Self-Assessment Skeleton* *4 Complex Numbers and Solving Quadratics* *Formative/Summative* *Answer Key*	
A.REI.1 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.	*1 Solving Quadratic Equations* *Formative/Summative* *Self-Assessment Skeleton* *2 Deriving Quadratic Formula* *Formative* *Rubric* *3 Using Quadratic Formula* *Formative/Summative* *Answer Key*	*0 Unit 3 Pre-Assessment* *Answer Key* *1 Solving Quadratic Equations* *Formative/Summative* *Self-Assessment Skeleton* *2 Deriving Quadratic Formula* *Formative* *Rubric* *3 Using Quadratic Formula* *Formative/Summative*	

		Answer Key *4 Complex Numbers and Solving Quadratics* *Formative/Summative* *Answer Key*	
A.REI.4 Solve quadratic equations in one variable. a) Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x – p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form. b) Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b.	*1 Solving Quadratic Equations* *Formative/Summative* *Self-Assessment Skeleton* *2 Deriving Quadratic Formula* *Formative* *Rubric* *3 Using Quadratic Formula* *Formative/Summative* *Answer Key*	*0 Unit 3 Pre-Assessment* *Answer Key* *1 Solving Quadratic Equations* *Formative/Summative* *Self-Assessment Skeleton* *2 Deriving Quadratic Formula* *Formative* *Rubric* *3 Using Quadratic Formula* *Formative/Summative* *Answer Key* *4 Complex Numbers and Solving Quadratics* *Formative/Summative* *Answer Key* *5 Solving Quadratics Puzzle Activity* *Formative* *Observational Checklist*	
A.REI.7 Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. *For example, find the points of intersection between the line $y = –3x$* and the circle $x^2 + y^2 = 3$.	6 Basketball Task Formative/Summative	6 Basketball Task Formative/Summative	6 Basketball Task Formative/Summative

Pre-Assessment(s)	Formative Assessment(s)	Summative Assessment(s)	Self-Assessment(s)
0 Unit 3 Pre-Assessment	*1 Solving Quadratic Equations* *3 Using Quadratic Formula* *4 Complex Numbers and Solving Quadratics* *5 Solving Quadratics Puzzle* *6 Basketball Task*	*3 Using Quadratic Formula* *1 Solving Quadratic Equations* *4 Complex Numbers and Solving Quadratics* *6 Basketball Task*	*0 Unit 3 Pre-Assessment*

Sample Lesson Sequence

1. **A.SSE.1, 2, 3 N.Q.2 Solving quadratic equations algebraically – Sample Lesson Plan (5 days)**
    a. **Solving quadratic equations using factoring**
    b. **Solving quadratic equations using the properties of square roots**
    c. **Solving quadratic equations by completing the square**
2. A.REI.1, 4, 7, A.CED. 4 Using the process of completing the square with a quadratic equation in standard form to derive the Quadratic formula. (6 days)
    a. Noticing patterns when solving quadratic equations using completing the square
    b. Derive the Quadratic formula
    c. Solve problems using the quadratic formula
3. N.CN.1, 2, 7, A.SSE.3, N.Q.2 Complex numbers, including real and non-real numbers, as solutions of quadratic equations. (5 days)
    a. Equations with a negative discriminate
    b. Complex numbers (real and non-real)
    c. Operations with complex numbers