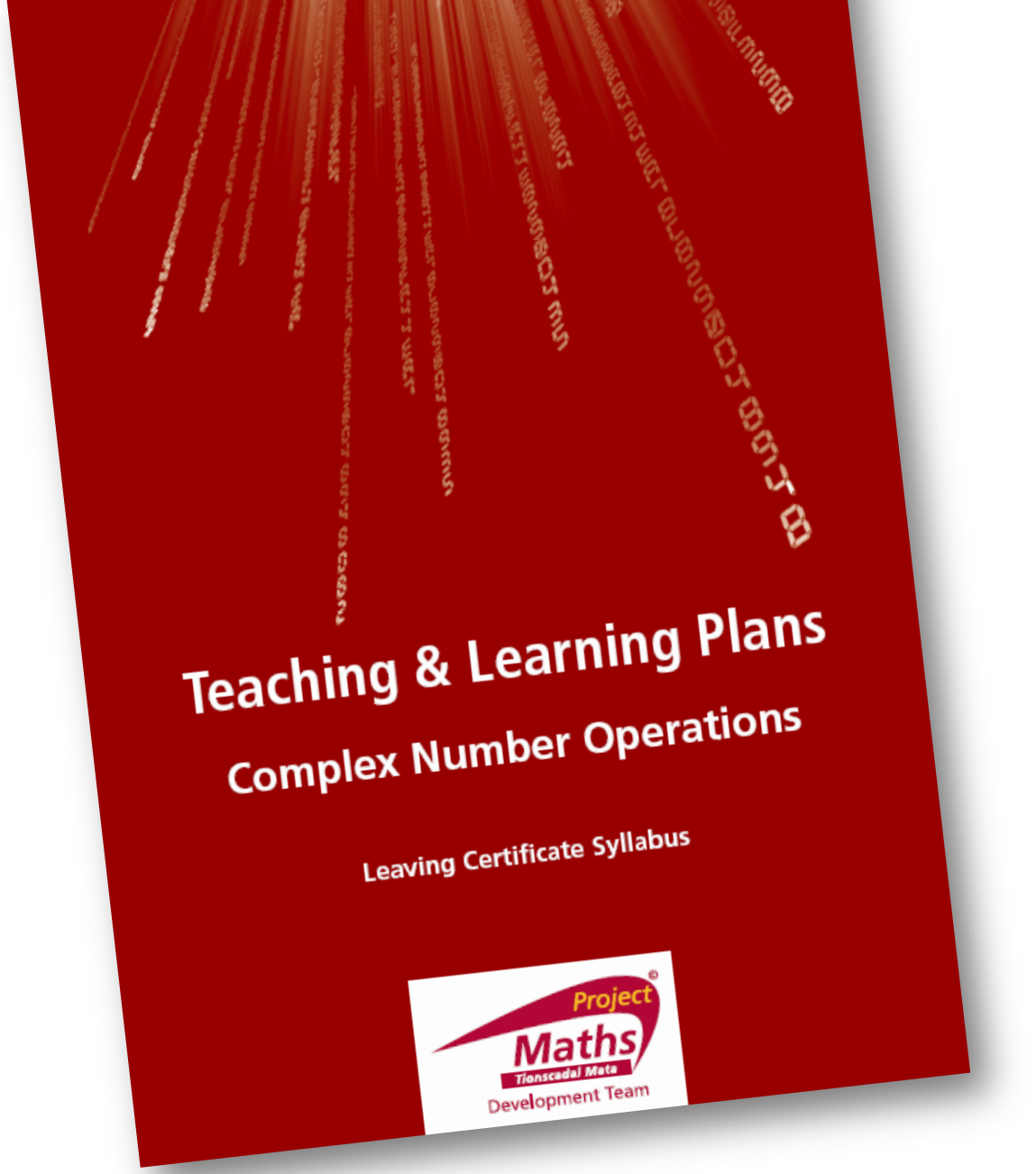
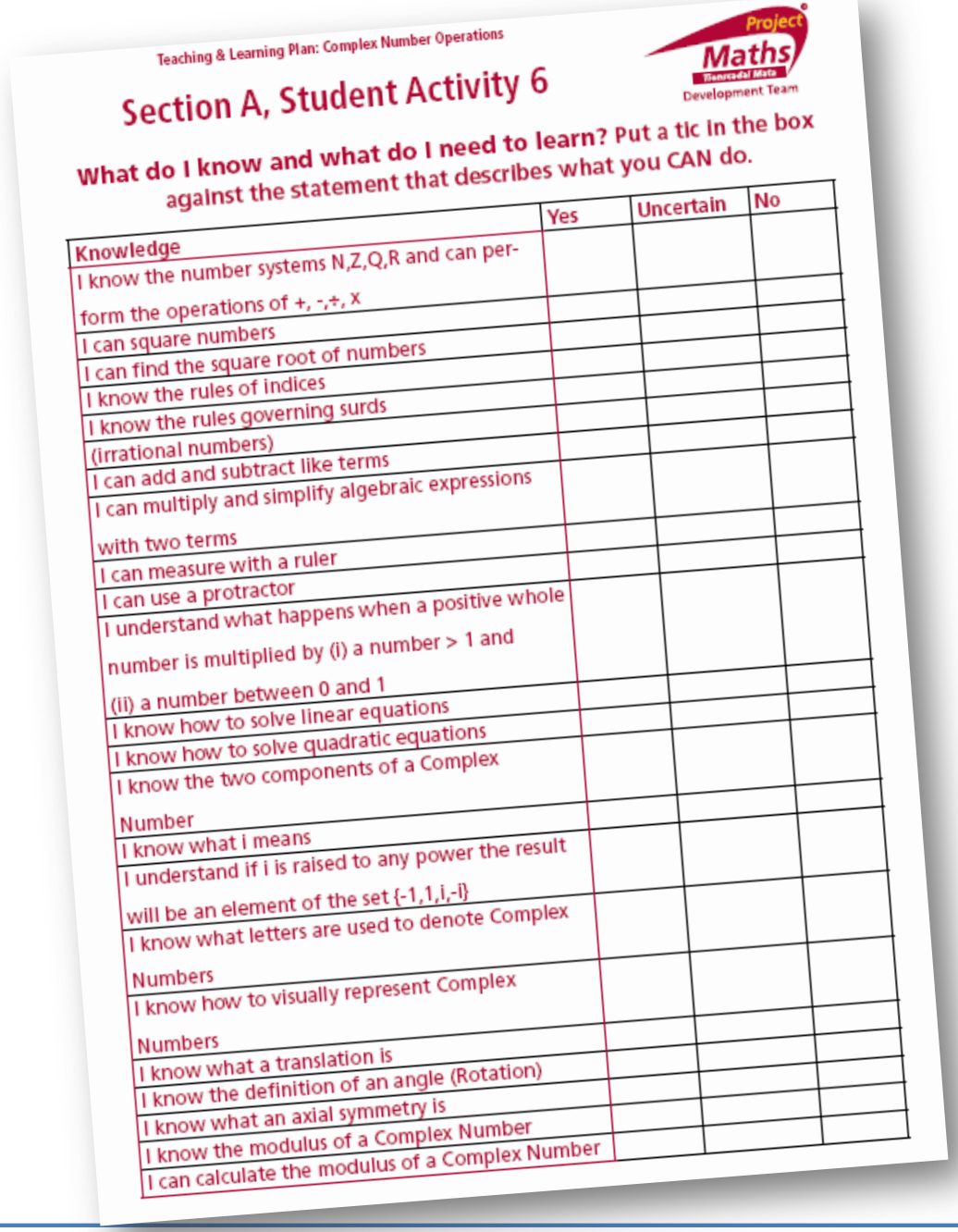

Teaching & Learning Plans
Complex Number Operations
Leaving Certificate Syllabus
Project Maths
Tionscadal Mata
Development Team



Teaching & Learning Plan: Complex Number Operations

Project Maths Development Team

Section A, Student Activity 6

What do I know and what do I need to learn? Put a tic in the box against the statement that describes what you CAN do.

Knowledge	Yes	Uncertain	No
I know the number systems N,Z,Q,R and can perform the operations of +, -,÷, x			
I can square numbers			
I can find the square root of numbers			
I know the rules of indices			
I know the rules governing surds (irrational numbers)			
I can add and subtract like terms			
I can multiply and simplify algebraic expressions with two terms			
I can measure with a ruler			
I can use a protractor			
I understand what happens when a positive whole number is multiplied by (i) a number > 1 and (ii) a number between 0 and 1			
I know how to solve linear equations			
I know how to solve quadratic equations			
I know the two components of a Complex Number			
I know what i means			
I understand if i is raised to any power the result will be an element of the set {-1,1,i,-i}			
I know what letters are used to denote Complex Numbers			
I know how to visually represent Complex Numbers			
I know what a translation is			
I know the definition of an angle (Rotation)			
I know what an axial symmetry is			
I know the modulus of a Complex Number			
I can calculate the modulus of a Complex Number			

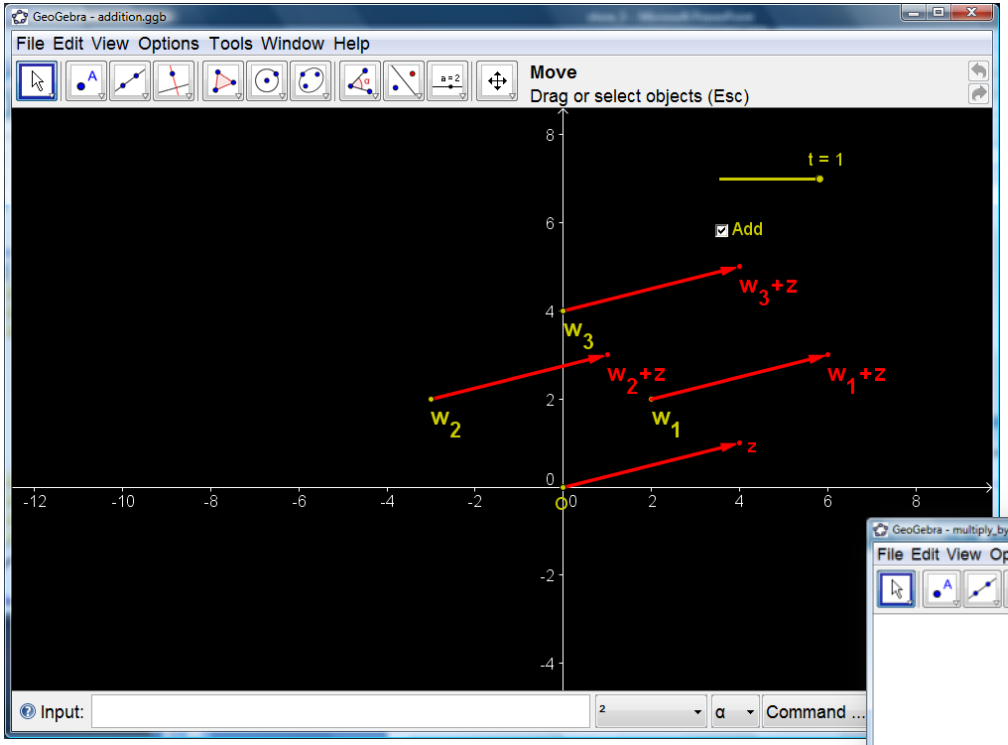
Knowledge Checklist

Complex Number Operations

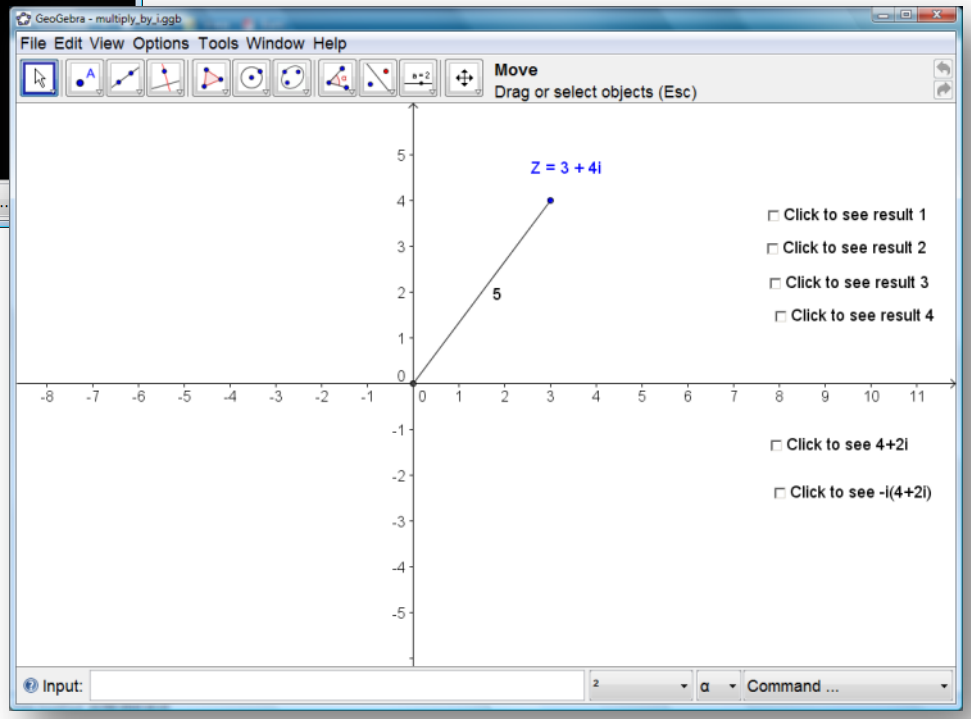
The Addition of Complex Numbers	The Subtraction of Complex Numbers	The Multiplication of Complex Numbers	The Division of Complex Numbers
Add the real parts and add the imaginary parts.	Re-Re and Im-Im **BRACKETS**	$(a+ib)(c+id)$ $=(ac-bd)+i(ad+bc)$	
Example 1: $(12+4i)+(7+2i)$ $\Rightarrow 19+6i$	**Example 1:** $2+4i-(1+2i)$ $1+2i$	**Example 1:** $z_1 = 7-6i$ $z_2 = 5-2i$ $z_1 \cdot z_2 = (7-6i)(5-2i)$ $= 23-44i$	**Example 1:**
Example 2: $(7-2i)+(9-4i)$ $\Rightarrow 16-6i$	**Example 2:** $3-8i-(2-4i)$ $1-\cancel{12i}$ oops! $1-4i$ BRACKETS	**Example 2:** $w = 4+3i$ $w^2 = (4+3i)^2$ $=(4+3i)(4+3i)$ $= 7+24i$	**Example 2:**

ANTZ VIDEO: LOOK FOR USE OF COMPLEX NUMBERS

- Groups of 2 – 2 Activities
- 1 Student – 1 Activity
- Leave group – practice pair
- Return share



addition.ggb



multiply_by_i.ggb

Geogebra Files

ANTZ VIDEO: LOOK FOR USE OF COMPLEX NUMBERS

COMPLEX NUMBERS VIDEO MONTAGE

CLICK TO PLAY VIDEO