# ARGAND ADVENTURE

## TEACHER'S GUIDE

### 1  Introduction

Argand adventure is an interactive online game designed to introduce A-level mathematics students to the topic of complex numbers. It includes engaging graphics with 5 levels introducing key concepts such as addition, subtraction, multiplication and connecting oscillating waves to complex numbers.

### 2  Learning outcomes

By the end of this resource students will be able to;

- **Define** a complex number
- **Solve** problems **adding** and **subtracting** complex numbers
- **Convert** cartesian complex numbers into polar form.
- **Explain** the connection between geometric shapes and multiplication of complex numbers.
- **Explain** the link between complex numbers and oscillating waves.

### 3  When to use

- For **A-level Mathematics** students this resource can be introduced at any point of study as complex numbers are not covered in the curriculum. (The first few levels of this resource may also be suitable for other KS3/4 students as they require little previous knowledge).
- For students on the **Further Mathematics** pathway, it may be beneficial to introduce this resource as an introduction to the topic of complex numbers but may also be used alongside teaching of the topic for students to reinforce their learning.

### 4  How to use

Argand Adventure is a fully encapsulated game and needs no additional content. Each level has easy to follow instructions and a guidebook providing traditional mathematics notes and examples. Simply open the website on a **laptop** or **PC** and click 'Start Adventure' to begin the first level!