



# One Should Always Generalize (MATT3920)

## Introduction

The German mathematician, Carl Jacobi (1804-1851), once said "One should always generalize". In this talk we will discuss the key role that the idea of generalization plays in the development of mathematics.

We will look two general categories of generalization - generalizing a problem and abstraction - and discuss the main features of each type. Different examples of generalization will be presented stemming from high-school mathematics to research-level mathematics including

- fractional dimension
- abstract algebra
- p-adic numbers

and more.

Students will be exposed to the overarching ideas of generalization and abstraction in mathematics. They should be able to appreciate how mathematicians generalize a theory or problem and the various gains from doing so.

## Programme Type

Mathematics Talk

## Speaker

Dr. Jonathan TSAI  
Head (Education Consulting), NTK Academic Group

Dr. Jonathan Tsai obtained his PhD in Mathematics from the University of Cambridge in 2008. Since then he has worked at all levels of mathematics including cutting-edge research and high school mathematics education. His education philosophy is that any student, mathematically-inclined or not, would benefit from being able to "think like a mathematician". In other words, how to think logically and rationally and critically - qualities required to excel in any field.

## Target Participants



- S1 – S6 HKAGE student members
  - Class size: 40
- \* *First-come, first-served*

## Language



English with English handout

## Application Deadline **26 November 2018**

## Schedule



Date	1 December 2018 (Saturday)
Time	10:30 am to 12:00 nn (Please arrive at 10:15 am for registration)
Venue	Room 303, The Hong Kong Academy for Gifted Education

## Enquiries



For enquiries, please contact us at 3940 0101 after language selection, press "1".