

# **IB Diploma Programme Grade Descriptors**

## **Mathematics**

### **August 2000**

The attached document describes the expectations of achievement within all mathematics subjects for candidates at each grade. The descriptors are given in the form of levels of performance that candidates should be able to demonstrate, and show those aspects of academic achievement that the senior examining team are evaluating when determining grades for examination papers and for internally assessed work. The descriptors are written in a generalized form that makes them equally applicable to all the mathematics subjects within group 5.

For each grade, the performance of a typical candidate is given. In reality, few candidates will fall consistently into one grade level or another, and most will display some of the characteristics of more than one grade. Examiners look to place candidates in the grade that most broadly matches their performance, allowing for some compensation across the different aspects. This is done by reviewing the work of many candidates on each examination component, for each examination session.

It is hoped that teachers will find these descriptors useful both in guiding their candidates prior to assessment, and also in preparing predicted grades for their candidates.

## **Mathematics Grade Descriptors**

### **Grade 7      Excellent performance**

Demonstrates a thorough knowledge and understanding of the syllabus; successfully applies mathematical principles at a sophisticated level in a wide variety of contexts; successfully uses problem-solving techniques in challenging situations; recognizes patterns and structures, makes generalizations and justifies conclusions; understands and explains the significance and reasonableness of results, and draws full and relevant conclusions; communicates mathematics in a clear, effective and concise manner, using correct techniques, notation and terminology; demonstrates the ability to integrate knowledge, understanding and skills from different areas of the course; uses technology proficiently.

### **Grade 6      Very good performance**

Demonstrates a broad knowledge and understanding of the syllabus; successfully applies mathematical principles in a variety of contexts; uses problem-solving techniques in challenging situations; recognizes patterns and structures, and makes some generalizations; understands and explains the significance and reasonableness of results, and draws relevant conclusions; communicates mathematics in a clear and effective manner, using correct techniques, notation and terminology; demonstrates some ability to integrate knowledge, understanding and skills from different areas of the course; uses technology proficiently.

### **Grade 5      Good performance**

Demonstrates a good knowledge and understanding of the syllabus; successfully applies mathematical principles in performing routine tasks; successfully carries out mathematical processes in a variety of contexts, and recognizes patterns and structures; understands the significance of results and draws some conclusions; successfully uses problem-solving techniques in routine situations; communicates mathematics effectively, using suitable notation and terminology; demonstrates an awareness of the links between different areas of the course; uses technology appropriately.

### **Grade 4      Satisfactory performance**

Demonstrates a satisfactory knowledge of the syllabus; applies mathematical principles in performing some routine tasks; successfully carries out mathematical processes in straightforward contexts; shows some ability to recognize patterns and structures; uses problem-solving techniques in routine situations; has limited understanding of the significance of results and attempts to draw some conclusions; communicates mathematics adequately, using some appropriate techniques, notation and terminology; uses technology satisfactorily.

### **Grade 3      Mediocre performance**

Demonstrates partial knowledge of the syllabus and limited understanding of mathematical principles in performing some routine tasks; attempts to carry out mathematical processes in straightforward contexts; communicates some mathematics, using appropriate techniques, notation or terminology; uses technology to a limited extent.

### **Grade 2      Poor performance**

Demonstrates limited knowledge of the syllabus; attempts to carry out mathematical processes at a basic level; communicates some mathematics, but often uses inappropriate techniques, notation or terminology; uses technology inadequately.

### **Grade 1      Very poor performance**

Demonstrates minimal knowledge of the syllabus; demonstrates little or no ability to use mathematical processes, even when attempting routine tasks; is unable to make effective use of technology.