



# **IB Diploma Grade Descriptors**

## **Group 4**

**February 1999**

The attached document describes the expectations of achievement within all group 4 subjects (the experimental sciences) 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 setting grades for examination papers and for internally assessed work.

For each grade, the performance of a typical candidate is given, separated into those aspects relating to examination performance and those relating to practical work. In reality, very 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, for each examination session.

The different levels of performance for each grade are closely related to the general objectives for all group 4 programmes, given in the subject guides. The grade descriptors are therefore equally applicable to different subjects in group 4 and to both higher level and standard level.

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.

Grade descriptors for other subject groups of the Diploma are currently being developed.

## **Group 4 Grade Descriptors**

### **Grade 7      Excellent performance**

Displays comprehensive knowledge of factual information in the syllabus and a thorough command of concepts and principles. Selects and applies relevant information, concepts and principles in a wide variety of contexts. Analyses and evaluates quantitative and/or qualitative data thoroughly. Constructs detailed explanations of complex phenomena and makes appropriate predictions. Solves most quantitative and/or qualitative problems proficiently. Communicates logically and concisely using appropriate terminology and conventions. Shows insight or originality.

Demonstrates personal skills, perseverance and responsibility in a wide variety of investigative activities in a very consistent manner. Works very well within a team and approaches investigations in an ethical manner, paying full attention to environmental impact. Displays competence in a wide range of investigative techniques, paying considerable attention to safety, and is fully capable of working independently.

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

Displays very broad knowledge of factual information in the syllabus and a thorough understanding of concepts and principles. Selects and applies relevant information, concepts and principles in most contexts. Analyses and evaluates quantitative and/or qualitative data with a high level of competence. Constructs explanations of complex phenomena and makes appropriate predictions. Solves basic or familiar problems and most new or difficult quantitative and/or qualitative problems. Communicates effectively using appropriate terminology and conventions. Shows occasional insight or originality.

Demonstrates personal skills, perseverance and responsibility in a wide variety of investigative activities in a very consistent manner. Works well within a team and approaches investigations in an ethical manner, paying due attention to environmental impact. Displays competence in a wide range of investigative techniques, paying due attention to safety, and is generally capable of working independently.

### **Grade 5      Good performance**

Displays broad knowledge of factual information in the syllabus. Shows sound understanding of most concepts and principles and applies them in some contexts. Analyses and evaluates quantitative and/or qualitative data competently. Constructs explanations of simple phenomena. Solves most basic or familiar problems and some new or difficult quantitative and/or qualitative problems. Communicates clearly with little or no irrelevant material.

Demonstrates personal skills, perseverance and responsibility in a variety of investigative activities in a fairly consistent manner. Generally works well within a team and approaches investigations in an ethical manner, paying attention to environmental impact. Displays competence in a range of investigative techniques, paying attention to safety, and is sometimes capable of working independently.

**Grade 4      Satisfactory performance**

Displays reasonable knowledge of factual information in the syllabus, though possibly with some gaps. Shows adequate comprehension of most basic concepts and principles but with limited ability to apply them. Demonstrates some analysis or evaluation of quantitative or qualitative data. Solves some basic or routine problems but shows limited ability to deal with new or difficult situations. Communicates adequately although responses may lack clarity and include some repetitive or irrelevant material.

Demonstrates personal skills, perseverance and responsibility in a variety of investigative activities, although displays some inconsistency. Works within a team and generally approaches investigations in an ethical manner, with some attention to environmental impact. Displays competence in a range of investigative techniques, paying some attention to safety, although requiring some close supervision.

**Grade 3      Mediocre performance**

Displays limited knowledge of factual information in the syllabus. Shows a partial comprehension of basic concepts and principles and weak ability to apply them. Shows some ability to manipulate data and solve basic or routine problems. Communicates with a possible lack of clarity and some repetitive or irrelevant material.

Demonstrates personal skills, perseverance and responsibility in some investigative activities in an inconsistent manner. Works within a team and sometimes approaches investigations in an ethical manner, with some attention to environmental impact. Displays competence in some investigative techniques, occasionally paying attention to safety, and requires close supervision.

**Grade 2      Poor performance**

Displays little recall of factual information in the syllabus. Shows weak comprehension of basic concepts and principles and little evidence of application. Exhibits minimal ability to manipulate data and little or no ability to solve problems. Offers responses which are often incomplete or irrelevant.

Rarely demonstrates personal skills, perseverance or responsibility in investigative activities. Works within a team occasionally but makes little or no contribution. Occasionally approaches investigations in an ethical manner, but shows very little awareness of the environmental impact. Displays competence in a very limited range of investigative techniques, showing little awareness of safety factors and needing continual and close supervision.

**Grade 1      Very poor performance**

Recalls fragments of factual information in the syllabus and shows very little understanding of any concepts or principles.

Rarely demonstrates personal skills, perseverance or responsibility in investigative activities. Does not work within a team. Rarely approaches investigations in an ethical manner, or shows an awareness of the environmental impact. Displays very little competence in investigative techniques, generally pays no attention to safety, and requires constant supervision.