

Design guide

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International Baccalaureate®
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Alignment of objectives and assessment criteria

In the MYP, assessment is closely aligned with the written and taught curriculum. Each strand from MYP design has a corresponding strand in the assessment criteria for this subject group. Figure 5 illustrates this alignment and the increasingly complex demands for student performance at higher achievement levels.

B Developing ideas

In order to reach the aims of design, students should be able to:

- i. develop design specifications which clearly states the success criteria for the design of a solution
- ii. develop a range of feasible design ideas, which can be correctly interpreted by others
- iii. present the chosen design and justify its selection
- iv. develop accurate and detailed planning drawings/diagrams and outline the requirements for the creation of the chosen solution.

Achievement level	Level descriptor
0	The student does not reach a standard identified by any of the descriptors below.
1–2	The student: <ol style="list-style-type: none"> i. lists some basic design specifications for the design of a solution ii. presents one design, which can be interpreted by others iii. creates incomplete planning drawings/diagrams.
3–4	The student: <ol style="list-style-type: none"> i. lists some design specifications, which relate to the success criteria for the design of a solution ii. presents a few feasible designs, using an appropriate medium(s) or annotation, which can be interpreted by others iii. justifies the selection of the chosen design with reference to the design specification iv. creates planning drawings/diagrams or lists requirements for the creation of the chosen solution.
5–6	The student: <ol style="list-style-type: none"> i. develops design specifications which outline the success criteria for the design of a solution ii. develops a range of feasible design ideas using an appropriate medium(s) and annotation which can be interpreted by others iii. presents the chosen design and justifies its selection with reference to the design specification iv. develops accurate planning drawings/diagrams and lists requirements for the creation of the chosen solution.
7–8	The student: <ol style="list-style-type: none"> i. develops detailed design specifications, which explain the success criteria for the design of a solution based on the analysis of the research ii. develops a range of feasible design ideas, using an appropriate medium(s) and detailed annotation, which can be correctly interpreted by others iii. presents the chosen design and justifies fully and critically its selection with detailed reference to the design specification iv. develops accurate and detailed planning drawings/diagrams and outlines requirements for the creation of the chosen solution.

Figure 5
Design objectives and criteria alignment

Design assessment criteria: Year 1

Criterion A: Inquiring and analysing

Maximum: 8

At the end of year 1, students should be able to:

- i. explain and justify the need for a solution to a problem
- ii. state and prioritize the main points of research needed to develop a solution to the problem
- iii. describe the main features of one existing product that inspires a solution to the problem
- iv. present the main findings of relevant research.

Achievement level	Level descriptor
0	The student does not reach a standard described by any of the descriptors below.
1–2	The student: <ol style="list-style-type: none"> i. states the need for a solution to a problem ii. states the findings of research.
3–4	The student: <ol style="list-style-type: none"> i. outlines the need for a solution to a problem ii. states some points of research needed to develop a solution, with some guidance iii. states the main features of an existing product that inspires a solution to the problem iv. outlines some of the main findings of research.
5–6	The student: <ol style="list-style-type: none"> i. explains the need for a solution to a problem ii. states and prioritizes the main points of research needed to develop a solution to the problem, with some guidance iii. outlines the main features of an existing product that inspires a solution to the problem iv. outlines the main findings of relevant research.
7–8	The student: <ol style="list-style-type: none"> i. explains and justifies the need for a solution to a problem ii. states and prioritizes the main points of research needed to develop a solution to the problem, with minimal guidance iii. describes the main features of an existing product that inspires a solution to the problem iv. presents the main findings of relevant research.

Criterion B: Developing ideas

Maximum: 8

At the end of year 1, students should be able to:

- i. develop a list of success criteria for the solution
- ii. present feasible design ideas, which can be correctly interpreted by others
- iii. present the chosen design
- iv. create a planning drawing/diagram which outlines the main details for making the chosen solution.

Achievement level	Level descriptor
0	The student does not reach a standard described by any of the descriptors below.
1–2	The student: <ol style="list-style-type: none"> i. states one basic success criterion for a solution ii. presents one design idea, which can be interpreted by others iii. creates an incomplete planning drawing/diagram.
3–4	The student: <ol style="list-style-type: none"> i. states a few success criteria for the solution ii. presents more than one design idea, using an appropriate medium(s) or labels key features, which can be interpreted by others iii. states the key features of the chosen design iv. creates a planning drawing/diagram or lists requirements for the creation of the chosen solution.
5–6	The student: <ol style="list-style-type: none"> i. develops a few success criteria for the solution ii. presents a few feasible design ideas, using an appropriate medium(s) and labels key features, which can be interpreted by others iii. presents the chosen design stating the key features iv. creates a planning drawing/diagram and lists the main details for the creation of the chosen solution.
7–8	The student: <ol style="list-style-type: none"> i. develops a list of success criteria for the solution ii. presents feasible design ideas, using an appropriate medium(s) and outlines the key features, which can be correctly interpreted by others iii. presents the chosen design describing the key features iv. creates a planning drawing/diagram, which outlines the main details for making the chosen solution.

Criterion C: Creating the solution

Maximum: 8

At the end of year 1, students should be able to:

- i. outline a plan, which considers the use of resources and time, sufficient for peers to be able to follow to create the solution
- ii. demonstrate excellent technical skills when making the solution
- iii. follow the plan to create the solution, which functions as intended
- iv. list the changes made to the chosen design and plan when making the solution.

Achievement level	Level descriptor
0	The student does not reach a standard described by any of the descriptors below.
1–2	<p>The student:</p> <ol style="list-style-type: none"> i. demonstrates minimal technical skills when making the solution ii. creates the solution, which functions poorly and is presented in an incomplete form.
3–4	<p>The student:</p> <ol style="list-style-type: none"> i. lists the main steps in a plan that contains some details, resulting in peers having difficulty following the plan to create the solution ii. demonstrates satisfactory technical skills when making the solution iii. creates the solution, which partially functions and is adequately presented iv. states one change made to the chosen design or plan when making the solution.
5–6	<p>The student:</p> <ol style="list-style-type: none"> i. lists the steps in a plan, which considers time and resources, resulting in peers being able to follow the plan to create the solution ii. demonstrates competent technical skills when making the solution iii. creates the solution, which functions as intended and is presented appropriately iv. states one change made to the chosen design and plan when making the solution.
7–8	<p>The student:</p> <ol style="list-style-type: none"> i. outlines a plan, which considers the use of resources and time, sufficient for peers to be able to follow to create the solution ii. demonstrates excellent technical skills when making the solution iii. follows the plan to create the solution, which functions as intended and is presented appropriately iv. lists the changes made to the chosen design and plan when making the solution.

Criterion D: Evaluating

Maximum: 8

At the end of year 1, students should be able to:

- i. outline simple, relevant testing methods, which generate data, to measure the success of the solution
- ii. outline the success of the solution against the design specification
- iii. outline how the solution could be improved
- iv. outline the impact of the solution on the client/target audience.

Achievement level	Level descriptor
0	The student does not reach a standard described by any of the descriptors below.
1–2	The student: <ol style="list-style-type: none"> i. defines a testing method, which is used to measure the success of the solution ii. states the success of the solution.
3–4	The student: <ol style="list-style-type: none"> i. defines a relevant testing method, which generates data, to measure the success of the solution ii. states the success of the solution against the design specification based on the results of one relevant test iii. states one way in which the solution could be improved iv. states one way in which the solution can impact the client/target audience.
5–6	The student: <ol style="list-style-type: none"> i. defines relevant testing methods, which generate data, to measure the success of the solution ii. states the success of the solution against the design specification based on relevant product testing iii. outlines one way in which the solution could be improved iv. outlines the impact of the solution on the client/target audience, with guidance.
7–8	The student: <ol style="list-style-type: none"> i. outlines simple, relevant testing methods, which generate data, to measure the success of the solution ii. outlines the success of the solution against the design specification based on authentic product testing iii. outlines how the solution could be improved iv. outlines the impact of the solution on the client/target audience.

Design assessment criteria: Year 3

Criterion A: Inquiring and analysing

Maximum: 8

At the end of year 3, students should be able to:

- i. explain and justify the need for a solution to a problem
- ii. construct a research plan, which states and prioritizes the primary and secondary research needed to develop a solution to the problem
- iii. analyse a group of similar products that inspire a solution to the problem
- iv. develop a design brief, which presents the analysis of relevant research.

Achievement level	Level descriptor
0	The student does not reach a standard described by any of the descriptors below.
1–2	The student: <ol style="list-style-type: none"> i. states the need for a solution to a problem ii. states some of the main findings of relevant research.
3–4	The student: <ol style="list-style-type: none"> i. outlines the need for a solution to a problem ii. states the research needed to develop a solution to the problem, with some guidance iii. outlines one existing product that inspires a solution to the problem iv. develops a basic design brief, which outlines some of the findings of relevant research.
5–6	The student: <ol style="list-style-type: none"> i. explains the need for a solution to a problem ii. constructs a research plan, which states and prioritizes the primary and secondary research needed to develop a solution to the problem, with some guidance iii. describes a group of similar products that inspire a solution to the problem iv. develops a design brief, which outlines the findings of relevant research.
7–8	The student: <ol style="list-style-type: none"> i. explains and justifies the need for a solution to a problem ii. constructs a research plan, which states and prioritizes the primary and secondary research needed to develop a solution to the problem independently iii. analyses a group of similar products that inspire a solution to the problem iv. develops a design brief, which presents the analysis of relevant research.

Criterion B: Developing ideas

Maximum: 8

At the end of year 3, students should be able to:

- i. develop a design specification which outlines the success criteria for the design of a solution based on the data collected
- ii. present a range of feasible design ideas, which can be correctly interpreted by others
- iii. present the chosen design and outline the reasons for its selection
- iv. develop accurate planning drawings/diagrams and outline requirements for the creation of the chosen solution.

Achievement level	Level descriptor
0	The student does not reach a standard described by any of the descriptors below.
1–2	<p>The student:</p> <ol style="list-style-type: none"> i. lists a few basic success criteria for the design of a solution ii. presents one design idea, which can be interpreted by others iii. creates incomplete planning drawings/diagrams.
3–4	<p>The student:</p> <ol style="list-style-type: none"> i. constructs a list of the success criteria for the design of a solution ii. presents a few feasible design ideas, using an appropriate medium(s) or explains key features, which can be interpreted by others iii. outlines the main reasons for choosing the design with reference to the design specification iv. creates planning drawings/diagrams or lists requirements for the chosen solution.
5–6	<p>The student:</p> <ol style="list-style-type: none"> i. develops design specifications, which identify the success criteria for the design of a solution ii. presents a range of feasible design ideas, using an appropriate medium(s) and explains key features, which can be interpreted by others iii. presents the chosen design and outlines the main reasons for its selection with reference to the design specification iv. develops accurate planning drawings/diagrams and lists requirements for the creation of the chosen solution.
7–8	<p>The student:</p> <ol style="list-style-type: none"> i. develops a design specification which outlines the success criteria for the design of a solution based on the data collected ii. presents a range of feasible design ideas, using an appropriate medium(s) and annotation, which can be correctly interpreted by others iii. presents the chosen design and outlines the reasons for its selection with reference to the design specification iv. develops accurate planning drawings/diagrams and outlines requirements for the creation of the chosen solution.

Criterion C: Creating the solution

Maximum: 8

At the end of year 3, students should be able to:

- i. construct a logical plan, which outlines the efficient use of time and resources, sufficient for peers to be able to follow to create the solution
- ii. demonstrate excellent technical skills when making the solution
- iii. follow the plan to create the solution, which functions as intended
- iv. explain changes made to the chosen design and the plan when making the solution.

Achievement level	Level descriptor
0	The student does not reach a standard described by any of the descriptors below.
1–2	The student: <ol style="list-style-type: none"> i. demonstrates minimal technical skills when making the solution ii. creates the solution, which functions poorly and is presented in an incomplete form.
3–4	The student: <ol style="list-style-type: none"> i. outlines each step in a plan that contains some details, resulting in peers having difficulty following the plan to create the solution ii. demonstrates satisfactory technical skills when making the solution iii. creates the solution, which partially functions and is adequately presented iv. outlines changes made to the chosen design or plan when making the solution.
5–6	The student: <ol style="list-style-type: none"> i. constructs a plan, which considers time and resources, sufficient for peers to be able to follow to create the solution ii. demonstrates competent technical skills when making the solution iii. creates the solution, which functions as intended and is presented appropriately iv. outlines changes made to the chosen design and plan when making the solution.
7–8	The student: <ol style="list-style-type: none"> i. constructs a logical plan, which outlines the efficient use of time and resources, sufficient for peers to be able to follow to create the solution ii. demonstrates excellent technical skills when making the solution iii. follows the plan to create the solution, which functions as intended and is presented appropriately iv. explains changes made to the chosen design and plan when making the solution.

Criterion D: Evaluating

Maximum: 8

At the end of year 3, students should be able to:

- i. describe detailed and relevant testing methods, which generate accurate data, to measure the success of the solution
- ii. explain the success of the solution against the design specification
- iii. describe how the solution could be improved
- iv. describe the impact of the solution on the client/target audience.

Achievement level	Level descriptor
0	The student does not reach a standard described by any of the descriptors below.
1–2	The student: <ol style="list-style-type: none"> i. describes a testing method, which is used to measure the success of the solution ii. states the success of the solution.
3–4	The student: <ol style="list-style-type: none"> i. describes a relevant testing method, which generates data, to measure the success of the solution ii. outlines the success of the solution against the design specification based on relevant product testing iii. lists the ways in which the solution could be improved iv. outlines the impact of the solution on the client/target audience.
5–6	The student: <ol style="list-style-type: none"> i. describes relevant testing methods, which generate data, to measure the success of the solution ii. describes the success of the solution against the design specification based on relevant product testing iii. outlines how the solution could be improved iv. describes the impact of the solution on the client/target audience, with guidance.
7–8	The student: <ol style="list-style-type: none"> i. describes detailed and relevant testing methods, which generate accurate data, to measure the success of the solution ii. explains the success of the solution against the design specification based on authentic product testing iii. describes how the solution could be improved iv. describes the impact of the solution on the client/target audience.