

## Assessment criteria overview

Assessment for science courses in all years of the programme is criterion-related, based on four equally weighted assessment criteria:

<b>Criterion A</b>	Knowing and understanding	<b>Maximum 8</b>
<b>Criterion B</b>	Inquiring and designing	<b>Maximum 8</b>
<b>Criterion C</b>	Processing and evaluating	<b>Maximum 8</b>
<b>Criterion D</b>	Reflecting on the impacts of science	<b>Maximum 8</b>

Subject groups **must** assess **all** strands of **all** four assessment criteria **at least twice** in **each year** of the MYP.

In the MYP, subject-group objectives correspond to assessment criteria. Each criterion has eight possible achievement levels (1–8), divided into four bands that generally represent limited (1–2); adequate (3–4); substantial (5–6); and excellent (7–8) performance. Each band has its own unique descriptor that teachers use to make “best-fit” judgments about students’ progress and achievement.

This guide provides the **required assessment criteria** for years 1, 3 and 5 of MYP sciences. In response to national or local requirements, schools may add criteria and use additional models of assessment. Schools must use the appropriate assessment criteria as published in this guide to report students’ final achievement in the programme.

Teachers clarify the expectations for each summative assessment task with direct reference to these assessment criteria. Task-specific clarifications should clearly explain what students are expected to know and do. They could be in the form of:

- a task-specific version of the required assessment criteria
- a face-to-face or virtual classroom discussion
- a detailed task sheet or assignment.

# Sciences assessment criteria: Year 1

## Criterion A: Knowing and understanding

*Maximum: 8*

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

- i. outline scientific knowledge
- ii. apply scientific knowledge and understanding to solve problems set in familiar situations and suggest solutions to problems set in unfamiliar situations
- iii. interpret information to make scientifically supported judgments.

Achievement level	Level descriptor
0	The student <b>does not</b> reach a standard described by any of the descriptors below.
1–2	<p>The student is able to:</p> <ol style="list-style-type: none"> <li>i. <b>select</b> scientific knowledge</li> <li>ii. <b>select</b> scientific knowledge and understanding to <b>suggest solutions</b> to problems set in <b>familiar situations</b></li> <li>iii. <b>apply</b> information to <b>make judgments, with limited success.</b></li> </ol>
3–4	<p>The student is able to:</p> <ol style="list-style-type: none"> <li>i. <b>recall</b> scientific knowledge</li> <li>ii. <b>apply</b> scientific knowledge and understanding to <b>suggest solutions</b> to problems set in <b>familiar situations</b></li> <li>iii. <b>apply</b> information to <b>make judgments.</b></li> </ol>
5–6	<p>The student is able to:</p> <ol style="list-style-type: none"> <li>i. <b>state</b> scientific knowledge</li> <li>ii. <b>apply</b> scientific knowledge and understanding to <b>solve problems</b> set in <b>familiar situations</b></li> <li>iii. <b>apply</b> information to <b>make scientifically supported judgments.</b></li> </ol>
7–8	<p>The student is able to:</p> <ol style="list-style-type: none"> <li>i. <b>outline</b> scientific knowledge</li> <li>ii. <b>apply</b> scientific knowledge and understanding to <b>solve problems</b> set in <b>familiar situations</b> and <b>suggest solutions</b> to problems set in <b>unfamiliar situations</b></li> <li>iii. <b>interpret</b> information to <b>make scientifically supported judgments.</b></li> </ol>

## Criterion B: Inquiring and designing

*Maximum: 8*

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

- i. outline an appropriate problem or research question to be tested by a scientific investigation
- ii. outline a testable prediction using scientific reasoning
- iii. outline how to manipulate the variables, and outline how data will be collected
- iv. design scientific investigations.

Achievement level	Level descriptor
0	The student <b>does not</b> reach a standard described by any of the descriptors below.
1–2	The student is able to: <ol style="list-style-type: none"><li>i. <b>select</b> a problem or question to be tested by a scientific investigation</li><li>ii. <b>select</b> a testable prediction</li><li>iii. <b>state</b> a variable</li><li>iv. design a <b>method with limited success</b>.</li></ol>
3–4	The student is able to: <ol style="list-style-type: none"><li>i. <b>state</b> a problem or question to be tested by a scientific investigation</li><li>ii. <b>state</b> a testable prediction</li><li>iii. <b>state</b> how to manipulate the variables, and <b>state</b> how <b>data</b> will be collected</li><li>iv. design a <b>safe method</b> in which they <b>select materials and equipment</b>.</li></ol>
5–6	The student is able to: <ol style="list-style-type: none"><li>i. <b>state</b> a problem or question to be tested by a scientific investigation</li><li>ii. <b>outline</b> a testable prediction</li><li>iii. <b>outline</b> how to manipulate the variables, and <b>state</b> how <b>relevant data</b> will be collected</li><li>iv. design a <b>complete and safe method</b> in which they <b>select appropriate materials and equipment</b>.</li></ol>
7–8	The student is able to: <ol style="list-style-type: none"><li>i. <b>outline</b> a problem or question to be tested by a scientific investigation</li><li>ii. <b>outline</b> a testable prediction <b>using scientific reasoning</b></li><li>iii. <b>outline</b> how to manipulate the variables, and <b>outline</b> how <b>sufficient, relevant data</b> will be collected</li><li>iv. design a <b>logical, complete and safe method</b> in which they <b>select appropriate materials and equipment</b>.</li></ol>

## Criterion C: Processing and evaluating

*Maximum: 8*

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

- i. present collected and transformed data
- ii. interpret data and outline results using scientific reasoning
- iii. discuss the validity of a prediction based on the outcome of the scientific investigation
- iv. discuss the validity of the method
- v. describe improvements or extensions to the method.

Achievement level	Level descriptor
0	The student <b>does not</b> reach a standard described by any of the descriptors below.
1–2	The student is able to: <ol style="list-style-type: none"><li>i. <b>collect and present</b> data in numerical and/or visual forms</li><li>ii. <b>interpret</b> data</li><li>iii. <b>state</b> the validity of a prediction based on the outcome of a scientific investigation, <b>with limited success</b></li><li>iv. <b>state</b> the validity of the method based on the outcome of a scientific investigation, <b>with limited success</b></li><li>v. <b>state</b> improvements or extensions to the method that would benefit the scientific investigation, <b>with limited success</b>.</li></ol>
3–4	The student is able to: <ol style="list-style-type: none"><li>i. <b>correctly collect and present</b> data in numerical and/or visual forms</li><li>ii. <b>accurately interpret</b> data and <b>outline</b> results</li><li>iii. <b>state</b> the validity of a prediction based on the outcome of a scientific investigation</li><li>iv. <b>state</b> the validity of the method based on the outcome of a scientific investigation</li><li>v. <b>state</b> improvements or extensions to the method that would benefit the scientific investigation.</li></ol>
5–6	The student is able to: <ol style="list-style-type: none"><li>i. <b>correctly collect, organize and present</b> data in numerical and/or visual forms</li><li>ii. <b>accurately interpret</b> data and <b>outline</b> results <b>using scientific reasoning</b></li><li>iii. <b>outline</b> the validity of a prediction based on the outcome of a scientific investigation</li><li>iv. <b>outline</b> the validity of the method based on the outcome of a scientific investigation</li><li>v. <b>outline</b> improvements or extensions to the method that would benefit the scientific investigation.</li></ol>
7–8	The student is able to: <ol style="list-style-type: none"><li>i. <b>correctly collect, organize, transform and present</b> data in numerical and/or visual forms</li><li>ii. <b>accurately interpret data</b> and <b>outline</b> results <b>using correct scientific reasoning</b></li><li>iii. <b>discuss</b> the validity of a prediction based on the outcome of a scientific investigation</li><li>iv. <b>discuss</b> the validity of the method based on the outcome of a scientific investigation</li><li>v. <b>describe</b> improvements or extensions to the method that would benefit the scientific investigation.</li></ol>

## Criterion D: Reflecting on the impacts of science

*Maximum: 8*

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

- i. summarize the ways in which science is applied and used to address a specific problem or issue
- ii. describe and summarize the various implications of using science and its application in solving a specific problem or issue
- iii. apply scientific language effectively
- iv. document the work of others and sources of information used.

Achievement level	Level descriptor
0	The student <b>does not</b> reach a standard described by any of the descriptors below.
1–2	The student is able to, <b>with limited success</b> : <ol style="list-style-type: none"><li>i. <b>state</b> the ways in which science is used to address a specific problem or issue</li><li>ii. <b>state</b> the implications of using science to solve a specific problem or issue, interacting with a factor</li><li>iii. <b>apply</b> scientific language to communicate understanding</li><li>iv. document sources.</li></ol>
3–4	The student is able to: <ol style="list-style-type: none"><li>i. <b>state</b> the ways in which science is used to address a specific problem or issue</li><li>ii. <b>state</b> the implications of using science to solve a specific problem or issue, interacting with a factor</li><li>iii. <b>sometimes apply</b> scientific language to communicate understanding</li><li>iv. <b>sometimes</b> document sources correctly.</li></ol>
5–6	The student is able to: <ol style="list-style-type: none"><li>i. <b>outline</b> the ways in which science is used to address a specific problem or issue</li><li>ii. <b>outline</b> the implications of using science to solve a specific problem or issue, interacting with a factor</li><li>iii. <b>usually apply</b> scientific language to communicate understanding <b>clearly and precisely</b></li><li>iv. <b>usually</b> document sources correctly.</li></ol>
7–8	The student is able to: <ol style="list-style-type: none"><li>i. <b>summarize</b> the ways in which science is applied and used to address a specific problem or issue</li><li>ii. <b>describe and summarize</b> the implications of using science and its application to solve a specific problem or issue, interacting with a factor</li><li>iii. <b>consistently apply</b> scientific language to communicate understanding <b>clearly and precisely</b></li><li>iv. document sources <b>completely</b>.</li></ol>

# Sciences assessment criteria: Year 3

## Criterion A: Knowing and understanding

*Maximum: 8*

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

- i. describe scientific knowledge
- ii. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations
- iii. analyse information to make scientifically supported judgments.

Achievement level	Level descriptor
0	The student <b>does not</b> reach a standard indicated by any of the descriptors below.
1–2	<p>The student is able to:</p> <ol style="list-style-type: none"> <li>i. <b>recall</b> scientific knowledge</li> <li>ii. apply scientific knowledge and understanding to <b>suggest solutions</b> to problems set in <b>familiar situations</b></li> <li>iii. <b>apply</b> information to make <b>judgments</b>.</li> </ol>
3–4	<p>The student is able to:</p> <ol style="list-style-type: none"> <li>i. <b>state</b> scientific knowledge</li> <li>ii. apply scientific knowledge and understanding to <b>solve problems</b> set in <b>familiar situations</b></li> <li>iii. <b>apply</b> information to make <b>scientifically supported judgments</b>.</li> </ol>
5–6	<p>The student is able to:</p> <ol style="list-style-type: none"> <li>i. <b>outline</b> scientific knowledge</li> <li>ii. apply scientific knowledge and understanding to <b>solve problems</b> set in <b>familiar situations</b> and <b>suggest solutions</b> to problems set in <b>unfamiliar situations</b></li> <li>iii. <b>interpret</b> information to make <b>scientifically supported judgments</b>.</li> </ol>
7–8	<p>The student is able to:</p> <ol style="list-style-type: none"> <li>i. <b>describe</b> scientific knowledge</li> <li>ii. apply scientific knowledge and understanding to <b>solve problems</b> set in <b>familiar and unfamiliar situations</b></li> <li>iii. <b>analyse</b> information to make <b>scientifically supported judgments</b>.</li> </ol>

## Criterion B: Inquiring and designing

*Maximum: 8*

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

- i. describe a problem or question to be tested by a scientific investigation
- ii. outline a testable hypothesis and explain it using scientific reasoning
- iii. describe how to manipulate the variables, and describe how data will be collected
- iv. design scientific investigations.

Achievement level	Level descriptor
0	The student <b>does not</b> reach a standard identified by any of the descriptors below.
1–2	The student is able to: <ol style="list-style-type: none"><li>i. <b>state</b> a problem or question to be tested by a scientific investigation, with <b>limited success</b></li><li>ii. <b>state</b> a testable hypothesis</li><li>iii. <b>state</b> the variables</li><li>iv. design a <b>method, with limited success</b>.</li></ol>
3–4	The student is able to: <ol style="list-style-type: none"><li>i. <b>state</b> a problem or question to be tested by a scientific investigation</li><li>ii. <b>outline</b> a testable hypothesis <b>using scientific reasoning</b></li><li>iii. <b>outline</b> how to manipulate the variables, and <b>state</b> how <b>relevant data</b> will be collected</li><li>iv. design a <b>safe method</b> in which they <b>select materials and equipment</b>.</li></ol>
5–6	The student is able to: <ol style="list-style-type: none"><li>i. <b>outline</b> a problem or question to be tested by a scientific investigation</li><li>ii. <b>outline and explain</b> a testable hypothesis <b>using scientific reasoning</b></li><li>iii. <b>outline</b> how to manipulate the variables, and <b>outline</b> how <b>sufficient, relevant data</b> will be collected</li><li>iv. design a <b>complete and safe method</b> in which they <b>select appropriate materials and equipment</b>.</li></ol>
7–8	The student is able to: <ol style="list-style-type: none"><li>i. <b>describe</b> a problem or question to be tested by a scientific investigation</li><li>ii. <b>outline and explain</b> a testable hypothesis <b>using correct scientific reasoning</b></li><li>iii. <b>describe</b> how to manipulate the variables, and <b>describe</b> how <b>sufficient, relevant data</b> will be collected</li><li>iv. design a <b>logical, complete and safe method</b> in which they <b>select appropriate materials and equipment</b>.</li></ol>

## Criterion C: Processing and evaluating

*Maximum: 8*

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

- i. present collected and transformed data
- ii. interpret data and describe results using scientific reasoning
- iii. discuss the validity of a hypothesis based on the outcome of the scientific investigation
- iv. discuss the validity of the method
- v. describe improvements or extensions to the method.

Achievement level	Level descriptor
0	The student <b>does not</b> reach a standard identified by any of the descriptors below.
1–2	<p>The student is able to:</p> <ol style="list-style-type: none"> <li>i. <b>collect and present</b> data in numerical and/or visual forms</li> <li>ii. <b>accurately interpret</b> data</li> <li>iii. <b>state</b> the validity of a hypothesis <b>with limited reference</b> to a scientific investigation</li> <li>iv. <b>state</b> the validity of the method <b>with limited reference</b> to a scientific investigation</li> <li>v. <b>state limited</b> improvements or extensions to the method.</li> </ol>
3–4	<p>The student is able to:</p> <ol style="list-style-type: none"> <li>i. <b>correctly collect and present</b> data in numerical and/or visual forms</li> <li>ii. <b>accurately interpret</b> data and <b>describe</b> results</li> <li>iii. <b>state</b> the validity of a hypothesis based on the outcome of a scientific investigation</li> <li>iv. <b>state</b> the validity of the method based on the outcome of a scientific investigation</li> <li>v. <b>state</b> improvements or extensions to the method that would benefit the scientific investigation.</li> </ol>
5–6	<p>The student is able to:</p> <ol style="list-style-type: none"> <li>i. <b>correctly collect, organize and present</b> data in numerical and/or visual forms</li> <li>ii. <b>accurately interpret</b> data and <b>describe</b> results <b>using scientific reasoning</b></li> <li>iii. <b>outline</b> the validity of a hypothesis based on the outcome of a scientific investigation</li> <li>iv. <b>outline</b> the validity of the method based on the outcome of a scientific investigation</li> <li>v. <b>outline</b> improvements or extensions to the method that would benefit the scientific investigation.</li> </ol>
7–8	<p>The student is able to:</p> <ol style="list-style-type: none"> <li>i. <b>correctly collect, organize, transform and present</b> data in numerical and/or visual forms</li> <li>ii. <b>accurately interpret data and describe</b> results using <b>correct scientific reasoning</b></li> <li>iii. <b>discuss</b> the validity of a hypothesis based on the outcome of a scientific investigation</li> <li>iv. <b>discuss</b> the validity of the method based on the outcome of a scientific investigation</li> <li>v. <b>describe</b> improvements or extensions to the method that would benefit the scientific investigation.</li> </ol>

## Criterion D: Reflecting on the impacts of science

*Maximum: 8*

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

- i. describe the ways in which science is applied and used to address a specific problem or issue
- ii. discuss and analyse the various implications of using science and its application in solving a specific problem or issue
- iii. apply scientific language effectively
- iv. document the work of others and sources of information used.

Achievement level	Level descriptor
0	The student <b>does not</b> reach a standard identified by any of the descriptors below.
1–2	The student is able to: <ol style="list-style-type: none"><li>i. <b>state</b> the ways in which science is used to address a specific problem or issue</li><li>ii. <b>state</b> the implications of the use of science to solve a specific problem or issue, interacting with a factor</li><li>iii. <b>apply</b> scientific language to communicate understanding but does so <b>with limited success</b></li><li>iv. document sources, <b>with limited success</b>.</li></ol>
3–4	The student is able to: <ol style="list-style-type: none"><li>i. <b>outline</b> the ways in which science is used to address a specific problem or issue</li><li>ii. <b>outline</b> the implications of using science to solve a specific problem or issue, interacting with a factor</li><li>iii. <b>sometimes apply</b> scientific language to communicate understanding</li><li>iv. <b>sometimes</b> document sources <b>correctly</b>.</li></ol>
5–6	The student is able to: <ol style="list-style-type: none"><li>i. <b>summarize</b> the ways in which science is applied and used to address a specific problem or issue</li><li>ii. <b>describe</b> the implications of using science and its application to solve a specific problem or issue, interacting with a factor</li><li>iii. <b>usually apply</b> scientific language to communicate understanding <b>clearly and precisely</b></li><li>iv. <b>usually</b> document sources <b>correctly</b>.</li></ol>
7–8	The student is able to: <ol style="list-style-type: none"><li>i. <b>describe</b> the ways in which science is applied and used to address a specific problem or issue</li><li>ii. <b>discuss and analyse</b> the implications of using science and its application to solve a specific problem or issue, interacting with a factor</li><li>iii. <b>consistently apply</b> scientific language to communicate understanding <b>clearly and precisely</b></li><li>iv. document sources <b>completely</b>.</li></ol>