

# Sciences Assessment Criteria for MYP Year 5 – Grade 10

<b>Criterion A: Knowledge and Understanding</b>				
(0)	<b>Beginning (1-2)</b>	<b>Developing (3-4)</b>	<b>Accomplished (5-6)</b>	<b>Exemplary (7-8)</b>
<i>I have not achieved a standard described by any of the descriptors to the right.</i>	<p><i>I am able to:</i>  <b>state</b> scientific knowledge   apply scientific knowledge and understanding to <b>suggest solutions</b> to problems set in <b>familiar situations</b>   <b>interpret</b> information to make judgments.</p>	<p><i>I am able to:</i>  <b>outline</b> scientific knowledge   apply scientific knowledge and understanding to <b>solve problems</b> set in <b>familiar situations</b>   <b>interpret</b> information to make <b>scientifically supported judgments</b>.</p>	<p><i>I am able to:</i>  <b>describe</b> scientific knowledge   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>   <b>analyse</b> information to make <b>scientifically supported judgments</b>.</p>	<p><i>I am able to:</i>  <b>explain</b> scientific knowledge   apply scientific knowledge and understanding to <b>solve problems</b> set in <b>familiar and unfamiliar situations</b>   <b>analyse and evaluate</b> information to make <b>scientifically supported judgments</b>.</p>

## Criterion B: Inquiring and Designing

(0)	<b>Beginning (1-2)</b>	<b>Developing (3-4)</b>	<b>Accomplished (5-6)</b>	<b>Exemplary (7-8)</b>
<i>I have not achieved a standard described by any of the descriptors to the right.</i>	<p><i>I am able to:</i>  <b>state</b> a problem or question to be tested by a scientific investigation   <b>outline</b> a testable hypothesis   <b>outline</b> the variables   <b>design</b> a method, <b>with limited success</b>.</p>	<p><i>I am able to:</i>  <b>outline</b> a problem or question to be tested by a scientific investigation   <b>formulate</b> a testable hypothesis <b>using scientific reasoning</b>   <b>outline</b> how to manipulate the variables, and <b>outline</b> how <b>relevant data</b> will be collected   design a <b>safe method</b> in which he or she <b>selects materials and equipment</b>.</p>	<p><i>I am able to:</i>  <b>describe</b> a problem or question to be tested by a scientific investigation   <b>formulate and explain</b> a testable hypothesis <b>using scientific reasoning</b>   <b>describe</b> how to manipulate the variables, and <b>describe</b> how <b>sufficient, relevant data</b> will be collected   design a <b>complete and safe method</b> in which I select appropriate <b>materials and equipment</b>.</p>	<p><i>I am able to:</i>  <b>explain</b> a problem or question to be tested by a scientific investigation   <b>formulate and explain</b> a testable hypothesis <b>using correct scientific reasoning</b>   <b>explain</b> how to manipulate the variables, and <b>explain</b> how <b>sufficient, relevant data</b> will be collected   <b>design a logical, complete and safe method</b> in which I select appropriate <b>materials and equipment</b>.</p>

## Criterion C: Processing and Evaluating

(0)	<b>Beginning (1-2)</b>	<b>Developing (3-4)</b>	<b>Accomplished (5-6)</b>	<b>Exemplary (7-8)</b>
<i>I have not achieved a standard described by any of the descriptors to the right.</i>	<p><i>I am able to:</i>  <b>collect and present</b> data in numerical and/or visual forms   <b>interpret</b> data   <b>state</b> the validity of a hypothesis based on the outcome of a scientific investigation   <b>state</b> the validity of the method based on the outcome of a scientific investigation   <b>state</b> improvements or extensions to the method.</p>	<p><i>I am able to:</i>  <b>correctly collect and present</b> data in numerical and/or visual forms   <b>accurately interpret</b> data and <b>explain</b> results   <b>outline</b> the validity of a hypothesis based on the outcome of a scientific investigation   <b>outline</b> the validity of the method based on the outcome of a scientific investigation   <b>outline</b> improvements or extensions to the method that would benefit the scientific investigation.</p>	<p><i>I am able to:</i>  <b>correctly collect, organize and present</b> data in numerical and/or visual forms   <b>accurately interpret</b> data and <b>explain</b> results <b>using scientific reasoning</b>   <b>discuss</b> the validity of a hypothesis based on the outcome of a scientific investigation   <b>discuss</b> the validity of the method based on the outcome of a scientific investigation   <b>describe</b> improvements or extensions to the method that would benefit the scientific investigation.</p>	<p><i>I am able to:</i>  <b>correctly collect, organize, transform and present</b> data in numerical and/or visual forms   <b>accurately interpret</b> data and <b>explain</b> results <b>using correct scientific reasoning</b>   <b>evaluate</b> the validity of a hypothesis based on the outcome of a scientific investigation   <b>evaluate</b> the validity of the method based on the outcome of a scientific investigation   <b>explain</b> improvements or extensions to the method that would benefit the scientific investigation.</p>

## Criterion D: Reflecting on the Impacts of Science

(0)	<b>Beginning (1-2)</b>	<b>Developing (3-4)</b>	<b>Accomplished (5-6)</b>	<b>Exemplary (7-8)</b>
<i>I have not achieved a standard described by any of the descriptors to the right..</i>	<p><i>I am able to:</i>  <b>outline</b> the ways in which science is used to address a specific problem or issue   <b>outline</b> the implications of using science to solve a specific problem or issue, interacting with a factor   <b>apply</b> scientific language to communicate understanding but does so <b>with limited success</b>   document sources, with <b>limited success</b>.</p>	<p><i>I am able to:</i>  <b>summarize</b> the ways in which science is applied and used to address a specific problem or issue   <b>describe</b> the implications of using science and its application to solve a specific problem or issue, interacting with a factor   <b>sometimes apply</b> scientific language to communicate understanding</p>	<p><i>I am able to:</i>  <b>describe</b> the ways in which science is applied and used to address a specific problem or issue   <b>discuss</b> the implications of using science and its application to solve a specific problem or issue, interacting with a factor   <b>usually apply</b> scientific language to communicate understanding <b>clearly and precisely</b></p>	<p><i>I am able to:</i>  <b>explain</b> the ways in which science is applied and used to address a specific problem or issue   <b>discuss and evaluate</b> the implications of using science and its application to solve a specific problem or issue, interacting with a factor   <b>consistently apply</b> scientific language to communicate understanding <b>clearly and precisely</b></p>

### Command Terms for Sciences

**Analyse** - Break down in order to bring out the essential elements or structure. To identify parts and relationships, and to interpret information to reach conclusions.

**Apply** - Use knowledge and understanding in response to a given situation or real circumstances

**Describe** - Give a detailed account or picture of a situation, event, pattern or process

**Design** - Produce a plan, simulation or model

**Discuss** - Offer a considered and balanced review that includes a range of arguments, factors or hypotheses. Opinions or conclusions should be presented clearly and supported by appropriate evidence

**Document** - Credit sources of information used by referencing (or citing), following one recognized referencing system. References should be included in the text and also at the end of the piece of work in a reference list or bibliography

**Evaluate** - Make an appraisal by weighing up the strengths and limitations

**Explain** - Give a detailed account

**Formulate** - Express precisely and systematically the relevant concept(s) or argument(s)

**Interpret** - Use knowledge and understanding to recognize trends and draw conclusions from given information

**Outline** - Give a brief account

**Present** - Offer for display, observation, examination or consideration

**Recall** - Remember or recognize from prior learning experiences

**Select** - Choose from a list or group

**Solve** - Obtain the answer(s) using appropriate methods

**State** - Give a specific name, value or other brief answer without explanation or calculation

**Suggest** - Propose a solution, hypothesis or other possible answer

**Summarize** - Abstract a general theme or major point(s)

TOTAL /32	IB LEVEL	BC % RANGE	Specific BC %
1-5	1	<50	0, 10, 20, 30, 40
6-9	2	51-59	50, 55
10-14	3	60-66	60, 65
15-18	4	67-72	70
19-23	5	73-85	75, 80
24-27	6	86-94	86, 90
28-32	7	95-100	95, 100

**IB Grade Descriptors**

1	Produces work of very limited quality. Conveys many significant misunderstandings or lacks understanding of most concepts and contexts. Very rarely demonstrates critical or creative thinking. Very inflexible, rarely using knowledge or skills.
2	Produces work of limited quality. Expresses misunderstandings or significant gaps in understanding for many concepts and contexts. Infrequently demonstrates critical or creative thinking. Generally inflexible in the use of knowledge and skills, infrequently applying knowledge and skills.
3	Produces work of an acceptable quality. Communicates basic understanding of many concepts and contexts, with occasionally significant misunderstandings or gaps. Begins to demonstrate some basic critical and creative thinking. Is often inflexible in the use of knowledge and skills, requiring support even in familiar classroom situations.
4	Produces good-quality work. Communicates basic understanding of most concepts and contexts with few misunderstandings and minor gaps. Often demonstrates basic critical and creative thinking. Uses knowledge and skills with some flexibility in familiar classroom situations, but requires support in unfamiliar situations.
5	Produces generally high-quality work. Communicates secure understanding of concepts and contexts. Demonstrates critical and creative thinking, sometimes with sophistication. Uses knowledge and skills in familiar classroom and real-world situations and, with support, some unfamiliar real-world situations.
6	Produces high-quality, occasionally innovative work. Communicates extensive understanding of concepts and contexts. Demonstrates critical and creative thinking, frequently with sophistication. Uses knowledge and skills in familiar and unfamiliar classroom and real-world situations, often with independence.
7	Produces high-quality, frequently innovative work. Communicates comprehensive, nuanced understanding of concepts and contexts. Consistently demonstrates sophisticated critical and creative thinking. Frequently transfers knowledge and skills with independence and expertise in a variety of complex classroom and real-world situations.

**Process to get to an IB mark:**

1. Assess student work according to criterion.
2. Record their achievement for each criterion at least twice.
3. Decide on an overall level of achievement for each criterion.
4. Add up the levels of achievement from each criterion.
5. Convert total to the IB 7-point scale.
6. Enter the corresponding IB comment into the comment section of BCeSIS for each reporting term.