

# IB Criteria for Math - Grades 7&8

## Criterion A: Knowing and understanding

Maximum: 8

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> appropriate mathematics when solving simple problems in familiar situations</li> <li>ii. <b>apply</b> the selected mathematics successfully when solving these problems</li> <li>iii. generally <b>solve</b> these problems correctly.</li> </ol>
3-4	The student is able to: <ol style="list-style-type: none"> <li>i. <b>select</b> appropriate mathematics when solving more complex problems in familiar situations</li> <li>ii. <b>apply</b> the selected mathematics successfully when solving these problems</li> <li>iii. generally <b>solve</b> these problems correctly.</li> </ol>
5-6	The student is able to: <ol style="list-style-type: none"> <li>i. <b>select</b> appropriate mathematics when solving challenging problems in familiar situations</li> <li>ii. <b>apply</b> the selected mathematics successfully when solving these problems</li> <li>iii. generally <b>solve</b> these problems correctly.</li> </ol>
7-8	The student is able to: <ol style="list-style-type: none"> <li>i. <b>select</b> appropriate mathematics when solving challenging problems in both familiar and unfamiliar situations</li> <li>ii. <b>apply</b> the selected mathematics successfully when solving these problems</li> <li>iii. generally <b>solve</b> these problems correctly.</li> </ol>

## Criterion B: Investigating patterns

Maximum: 8

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>apply</b>, with teacher support, mathematical problem-solving techniques to discover simple patterns</li> <li>ii. <b>state</b> predictions consistent with patterns.</li> </ol>
3-4	The student is able to: <ol style="list-style-type: none"> <li>i. <b>apply</b> mathematical problem-solving techniques to discover simple patterns</li> <li>ii. <b>suggest</b> relationships and/or general rules consistent with findings.</li> </ol>
5-6	The student is able to: <ol style="list-style-type: none"> <li>i. <b>select</b> and apply mathematical problem-solving techniques to discover complex patterns</li> <li>ii. <b>describe</b> patterns as relationships and/or general rules consistent with findings</li> <li>iii. <b>verify</b> these relationships and/or general rules.</li> </ol>
7-8	The student is able to: <ol style="list-style-type: none"> <li>i. <b>select</b> and apply mathematical problem-solving techniques to discover complex patterns</li> <li>ii. <b>describe</b> patterns as relationships and/or general rules consistent with correct findings</li> <li>iii. <b>verify</b> and <b>justify</b> these relationships and/or general rules.</li> </ol>

### Criterion C: Communicating

Maximum: 8

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><b>use</b> limited mathematical language</li> <li><b>use</b> limited forms of mathematical representation to present information</li> <li><b>communicate</b> through lines of reasoning that are difficult to interpret.</li> </ol>
3-4	The student is able to: <ol style="list-style-type: none"> <li><b>use</b> some appropriate mathematical language</li> <li><b>use</b> different forms of mathematical representation to present information adequately</li> <li><b>communicate</b> through lines of reasoning that are able to be understood, although these are not always clear</li> <li>adequately <b>organize</b> information using a logical structure.</li> </ol>
5-6	The student is able to: <ol style="list-style-type: none"> <li>usually <b>use</b> appropriate mathematical language</li> <li>usually <b>use</b> different forms of mathematical representation to present information correctly</li> <li>move between different forms of mathematical representation with some success</li> <li><b>communicate</b> through lines of reasoning that are clear although not always coherent or complete</li> <li>present work that is usually <b>organized</b> using a logical structure.</li> </ol>
7-8	The student is able to: <ol style="list-style-type: none"> <li>consistently <b>use</b> appropriate mathematical language</li> <li><b>use</b> different forms of mathematical representation to consistently present information correctly</li> <li>move effectively between different forms of mathematical representation</li> <li><b>communicate</b> through lines of reasoning that are complete and coherent</li> <li>present work that is consistently <b>organized</b> using a logical structure.</li> </ol>

### Criterion D: Applying mathematics in real-life contexts

Maximum: 8

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><b>identify</b> some of the elements of the authentic real-life situation</li> <li><b>apply</b> mathematical strategies to find a solution to the authentic real-life situation, with limited success.</li> </ol>
3-4	The student is able to: <ol style="list-style-type: none"> <li><b>identify</b> the relevant elements of the authentic real-life situation</li> <li><b>select</b>, with some success, adequate mathematical strategies to model the authentic real-life situation</li> <li><b>apply</b> mathematical strategies to reach a solution to the authentic real-life situation</li> <li><b>describe</b> whether the solution makes sense in the context of the authentic real-life situation.</li> </ol>
5-6	The student is able to: <ol style="list-style-type: none"> <li><b>identify</b> the relevant elements of the authentic real-life situation</li> <li><b>select</b> adequate mathematical strategies to model the authentic real-life situation</li> <li><b>apply</b> the selected mathematical strategies to reach a valid solution to the authentic real-life situation</li> <li><b>describe</b> the degree of accuracy of the solution</li> <li><b>discuss</b> whether the solution makes sense in the context of the authentic real-life situation.</li> </ol>
7-8	The student is able to: <ol style="list-style-type: none"> <li><b>identify</b> the relevant elements of the authentic real-life situation</li> <li><b>select</b> appropriate mathematical strategies to model the authentic real-life situation</li> <li><b>apply</b> the selected mathematical strategies to reach a correct solution</li> <li><b>explain</b> the degree of accuracy of the solution</li> <li><b>explain</b> whether the solution makes sense in the context of the authentic real-life situation.</li> </ol>