

MYP Assessment Rubric for **Mathematics** Criteria: A. Knowledge and Understanding Achievement Level
IB Level Descriptor Student Friendly language Decoder

0 SBP: Unsatisfactory

The student does not reach a standard described by any of the descriptors given below.

The student does not reach a standard described by any of the descriptors given below

- There is not enough evidence to give the student a grade on Knowledge of Understanding.

1-2

SBP: 1=Unsatisfactory 2= Partially proficient

The student **attempts** to make deductions when solving **simple** problems in **familiar** contexts.

The student **attempts** to draw conclusions when solving **simple** problems in **familiar** situations.

- When solving a problem, students include some of the information to show that they understand at least part of the problem.
- The answer to the problem is not completely correct.
- Correct use of math vocabulary and symbols is limited and sometimes incorrect.

- The problem given is easier and similar to those that have been seen in class. 3-4

Partially proficient

The student **sometimes** makes **appropriate** deductions when solving **simple and more- complex** problems in **familiar** contexts.

The student **sometimes** makes **appropriate** conclusions when solving **simple and more complex** problems in **familiar** situations.

- When solving a problem, students include some of the information to show that they understand at least part of the problem.
- Sometimes answers are correct and other times only part of the answer is correct.
- Correct use of math vocabulary and symbols is limited.

- The problem given is more difficult but still similar to those that have been seen in class. 5-6

Proficient

The student **generally** makes **appropriate** deductions when solving **challenging** problems in a **variety** of **familiar** contexts.

The student **generally** makes **appropriate** conclusions when solving **challenging** problems in a **variety** of **familiar** situations.

- When solving a problem, students include most or all of the information to show that they understand the problem.
- Usually the answer to the problem is correct.
- Math vocabulary and symbols are used correctly.

- The problem given is more difficult but still similar to those that have been seen in class. 7-8

Advanced

The student **consistently** makes **appropriate** deductions when solving **challenging** problems in a **variety** of contexts including **unfamiliar** situations.

The student **consistently** makes **appropriate** conclusions when solving **challenging** problems in a **variety** of situations including **unfamiliar** ones.

- When solving a problem, students include all needed information to show that they completely understand the problem.
- The answer to the problem is almost always correct.
- Math vocabulary and symbols are used correctly.
- The problem given is more difficult and is different than those seen before in class. **Notes** 1. Assessment tasks should allow students to demonstrate knowledge and understanding of the concepts and skills within the appropriate level of MYP mathematics. 2. Assessment tasks for this criterion are likely to be class tests and/or examinations. Teachers are encouraged to use other tasks also, such as open-ended investigations. 3. Assessment tasks should provide students with problems set in a variety of contexts.

SBP: Standards Based Progress

MYP Assessment Rubric for **Mathematics** Criteria: B Investigating Patterns Achievement Level
IB Level Descriptor Student Friendly language Decoder

0 SBP: Unsatisfactory

The student does not reach a standard described by any of the descriptors given below.

The student does not reach a standard described by any of the descriptors given below

There is not enough evidence to give the student a grade on Investigating Patterns.

1-2

SBP: 1=Unsatisfactory 2= Partially proficient

The student **applies, with some guidance**, mathematical problem-solving techniques to recognize **simple** patterns.

The student **applies, with some guidance** problem- solving methods with **simple** patterns.

- The student does not understand what the problem is asking.
- The student is not aware of the changes in the pattern.

- The student can solve the problem with assistance.

3-4

Partially proficient

The student **selects and applies** mathematical problem-solving techniques to recognize patterns, and **suggests** relationships or general rules.

The student **selects and applies** mathematical problem-solving methods with patterns, **suggests** relationships or general rules.

- The student begins to understand what the problem is asking.
- The student can describe changes in the pattern.

5-6

Proficient

The student **selects and applies** mathematical problem-solving techniques to recognize patterns, **describes** them as relationships or general rules, and **draws conclusions** consistent with findings.

The student **selects and applies** mathematical problem-solving methods with patterns, **describes** them as relationships or general rules, and **draws conclusions** consistent with results/answers.

- The student clearly understands what the problem is asking.
- The student knows which problem-solving methods to apply.
- The student can communicate their problem-solving methods.
 - The student can use the answer to draw conclusions based on the changes in the pattern. 7-8

Advanced

The student **selects and applies** mathematical problem-solving techniques to recognize patterns, **describes** them as relationships or general rules, **draws conclusions** consistent with findings, and **provides justifications or proofs**.

The student **selects and applies** mathematical problem-solving methods with patterns, **describes** them as relationships or general rules, **draws conclusions** consistent with results/answers, and **provides justifications or proofs**.

- The student clearly understands what the problem is asking.
- The student knows which problem-solving methods to apply.
- The student can communicate their problem-solving methods.
- The student can use the answer to draw conclusions based on the changes in the pattern.
- The student can reflect on the conclusions and communicate those correctly using writing, pictures or presentations.

Notes 1. Assessment tasks should allow students to demonstrate their ability to apply and reason using concepts and skills of the appropriate level of MYP mathematics. 2. Assessment tasks for this criterion are likely to be reasoned pieces of work, including open-ended investigations set in a variety of contexts. 3. Little credit should be given for knowledge and understanding which is assessed using criterion A. **SBP: Standards Based Progress**

MYP Assessment Rubric for **Mathematics** Criteria: C communication in mathematics Achievement Level IB Level Descriptor Student Friendly language Decoder

0 SBP: Unsatisfactory

The student does not reach a standard described by any of the descriptors given below.

The student does not reach a standard described by any of the descriptors given below

- There is not enough evidence to give the student a grade on Communication in Mathematics.

1-2

SBP: Partially Proficient

The student shows **basic** use of mathematical language **and/or** forms of mathematical representation. The lines of reasoning are **difficult to follow**.

The student shows **basic** use of math vocabulary and appropriate forms of representation. The student's reasoning is **difficult to follow**.

- The student can show solutions using numbers, symbols, and/or words, although some mistakes may be present.
- The student answers parts of the problem, but the solution may be unclear or hard to follow.
 - The student can sometimes show solutions in more than one form and may make connections between the representations **3-4**

SBP: Proficient

The student shows **sufficient** use of mathematical language **and** forms of mathematical representation. The lines of reasoning are **clear** though not always **logical** or **complete**. The student moves between different forms of representation **with some success**.

The student shows **sufficient** use of math vocabulary **and** appropriate forms of representation. The student's reasoning is **clear** though not always **logical** or **complete**. The student moves between different forms of

representation **with some success**.

- The student usually can show solutions using numbers, symbols, and/or words properly.
- The student answers most parts of the problem in a way that is often clear, mostly complete, and fairly easy to follow.
- The student can usually show solutions in more than one form while making connections between the representations **5-6**

SBP: Advanced

The student shows **good** use of mathematical language **and** forms of mathematical representation. The lines of reasoning are **concise, logical and complete**. The student moves **effectively** between different forms of representation.

The student shows **good** use of math vocabulary **and** appropriate forms of representations.

The student's reasoning is **clear, logical and complete**. The student moves **effectively** between different forms of representation.

- The student can show solutions using numbers, symbols, and/or words properly.
- The student answers all parts of the problem in a clear and complete solution that is easy to follow.
- The student can show solutions in more than one form while making connections between the representations.

Notes 1. Assessment tasks should allow students to communicate effectively when using concepts and skills of the appropriate level of MYP mathematics. 2. Assessment tasks for criteria A, B and D can also be used for this criterion

SBP: Standards Based Progress

MYP Assessment Rubric for **Mathematics** Criteria: D Reflection in mathematics Achievement

IB Level Descriptor Student Friendly language Decoder Level 0 **SBP: Unsatisfactory**

The student does not reach a standard described by any of the descriptors given below.
The student does not reach a standard described by any of the descriptors given below
There is not enough evidence to give the student a grade on Reflection in mathematics.

1-2

SBP: Partially Proficient

The student **attempts** to explain whether his or her results make sense in the context of the problem. The student **attempts to describe** the importance of his or her findings in connection to real life.

The student **attempts** to explain whether his/her results make sense in the context of the problem.

The student **attempts to describe** the importance of his/her results and make connections to real life.

- The student makes an effort to explain their answer.
- The student can see and connect their results to real life.

3-4

SBP: Proficient

The student **correctly but briefly explains** whether his or her results make sense in the context of the problem and **describes** the importance of his or her findings in connection to real life. The student **attempts** to justify the degree of accuracy of his or her results where appropriate.

The student **correctly but briefly explains** whether his/her results make sense in the context of the problem. The student **describes** the importance of his/her results and makes connections to real life.

The student **attempts** to justify the level of accuracy of his/her results when appropriate.

- The student can look back at their answer and tries to explain if their answer is reasonable.
- The student can see and connect their results to real life.
- The student attempts to justify or give some reasons why their level of accuracy is appropriate.

5-6

SBP: Advanced

The student **critically explains** whether his or her results make sense in the context of the problem and provides a **detailed explanation** of the importance of his or her findings in connection to real life. The student **justifies** the degree of accuracy of his or her results where appropriate. The student **suggests improvements** to the method when necessary.

The student **critically explains** whether his/her results make sense in the context of the problem and provides a **detailed explanation** of the importance of his/her results in connection to real life. The student **justifies** the level of accuracy of his/her results where appropriate. The student **suggests improvements** when necessary.

- The student can look back at their answer and explain if their answer is reasonable.
- The student can see and explain in detail how their results are important to real life.
- The student can justify or give reasons why their level of accuracy is appropriate.

• The student can suggest improvements to the way they solved the problem when necessary.

Notes 1. Describe: present an account without providing reasons or explanations. 2. Explain: give a detailed account including reasons, causes or justifications. Explanations should answer the questions “why” and “how”. **SBP:**
Standards Based Progress