



IB MYP Year 4

Year 9 Mathematics

APPLICATIONS OF TRIGONOMETRY

Assessment Notification



Teachers: Ms. Luk, Ms. Lau & Ms. Li

Due Date: At the end of the 4th lesson, beginning March 23, 2015

Time Allowed: 4 lessons

STATEMENT OF INQUIRY:

How can we use logic to help us improve or invent technical innovations that can help us solve problems?

TEXTBOOK: New Trend Mathematics Chapter 10, Haese Mathematics Chapter 13

YOUR TASK:

The objective of the task is to design and make an instrument called a **Clinometer**. Then you will use it to measure the angle of elevation and to estimate the height of an inaccessible structure (your teacher will tell you what you will be measuring and will do the measurements in class). You are expected to have all the needed materials on the first day of class (March 23rd, 2015) so that you can start working right away.

INSTRUCTIONS:

- ◆ Read the **instructions** for each stage and **rubric** carefully.
- ◆ Show all **steps** and proper **units**.
- ◆ All work **MUST** be done **in school** but you are allowed to bring materials to class from home.
- ◆ Any copying or other cheating, will automatically receive a 0.
- ◆ You are allowed to use non-electronic **dictionary**.
- ◆ **Calculators** are allowed.

ASSESSMENT:

- ◆ Read the criteria descriptors carefully before you start your work. This will give you a clear understanding of what is required and what a quality piece of work for this task must include. This way you give yourself the best chance of achieving the highest level in this task.
- ◆ This task assesses Criteria **C & D**.

Criterion C: Communication in Mathematics

Achievement level	IBO Published Descriptor
0	The student does not reach a standard described by any of the descriptors given below.
1–2	<p>The student is able to:</p> <ul style="list-style-type: none"> iv. use limited mathematical language v. use limited forms of mathematical representation to present information vi. communicate through lines of reasoning that are difficult to interpret.
3–4	<p>The student is able to:</p> <ul style="list-style-type: none"> v. use some appropriate mathematical language vi. use appropriate forms of mathematical representation to present information adequately vii. communicate through lines of reasoning that are complete viii. adequately organize information using a logical structure.
5–6	<p>The student is able to:</p> <ul style="list-style-type: none"> vi. usually use appropriate mathematical language vii. usually use appropriate forms of mathematical representation to present information correctly viii. usually move between different forms of mathematical representation ix. communicate through lines of reasoning that are complete and coherent x. present work that is usually organized using a logical structure.
7–8	<p>The student is able to:</p> <ul style="list-style-type: none"> vi. consistently use appropriate mathematical language vii. use appropriate forms of mathematical representation to consistently present information correctly viii. move effectively between different forms of mathematical representation ix. communicate through lines of reasoning that are complete, coherent and concise x. present work that is consistently organized using a logical structure.

Criterion D: Applying Mathematics in Real-life Contexts

Achievement level	IBO Published Descriptor
0	The student does not reach a standard described by any of the descriptors given below.
1–2	<p>The student is able to:</p> <ul style="list-style-type: none"> iii. identify some of the elements of the authentic real-life situation iv. apply mathematical strategies to find a solution to the authentic real-life situation, with limited success.
3–4	<p>The student is able to:</p> <ul style="list-style-type: none"> v. identify the relevant elements of the authentic real-life situation vi. select, with some success, adequate mathematical strategies to model the authentic real-life situation vii. apply mathematical strategies to reach a solution to the authentic real-life situation viii. discuss whether the solution makes sense in the context of the authentic real-life situation.
5–6	<p>The student is able to:</p> <ul style="list-style-type: none"> vi. identify the relevant elements of the authentic real-life situation vii. select adequate mathematical strategies to model the authentic real-life situation viii. apply the selected mathematical strategies to reach a valid solution to the authentic real-life situation ix. explain the degree of accuracy of the solution x. explain whether the solution makes sense in the context of the authentic real-life situation.
7–8	<p>The student is able to:</p> <ul style="list-style-type: none"> vi. identify the relevant elements of the authentic real-life situation vii. select appropriate mathematical strategies to model the authentic real-life situation viii. apply the selected mathematical strategies to reach a correct solution to the authentic real-life situation ix. justify the degree of accuracy of the solution x. justify whether the solution makes sense in the context of the authentic real-life situation.