**Tin Ka Ping Secondary School**

**F.2 Mathematics**

**Lesson plan**

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| **Topic** | Zero and negative integral indices |
| **Target & Class Size** | Form 2 students (2A), Local: 26 & Cross-Border Students: 7 |
| **Date & Time** | 10:45-11:15 (5th period), 24th May |
| **Prior knowledge** | Simplifying algebraic expressions with positive integral indices  Applying law of indices to simply the algebraic expressions involving positive integral indices |
| **Object of learning** | Applying law of indices to simply the algebraic expressions involving any integral indices (positive/ zero / negative) |
| **Critical features** | CF1: Identify the definition of zero index and skills for simplification  CF2: Identify the definition of negative integral indices and skills for simplification |

**Pre-lesson**

* Students are asked to finish the lesson worksheet P.1-2 the day before. (Distributed on 23/5)
* The preparation time should be within 10 minutes.
* Students are expected to review the simplification by using laws of indices in positive integers.
* Students are expected to identify the definition of zero and negative integral indices in their own preparation.

**Rundown**

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| **Part** | **Task** |
| 1 | Identify the definition of zero index     |  |  |  |  | | --- | --- | --- | --- | | Question(s) | Variant | Invariant | Discernment | | (a) and (b) | The way of simplifying  (laws of indices VS algebraic notation) | The values of the algebraic expressions | Identify two ways of simplification and presentation are identical so that 1 could be revealed. | |
| 2 | Identify definition of negative integral indices   * Through peer checking of WS P.2 and teacher’s clarification      |  |  |  |  | | --- | --- | --- | --- | | Question(s) | Variant | Invariant | Discernment | | (a) and (b) | The way of simplifying  (laws of indices VS algebraic notation) | The values of the algebraic expressions | Identify two ways of simplification and presentation are identical so that could be revealed. | |
| 3 | Ask students to do Pop-Quiz 1   * Applying zero and negative integral indices in simple questions. * Mainly checking their concepts. |
| 4 | Conclusion  Demonstrate the examples on P.3, and then ask students to do Question 1.  Do Pop-Quiz 2. mixed-type question on WS P.4 |
| 5 | Demonstrate the examples on P.4, and then assign one groupmate in each group to present the answers on the blackboard. |
| 6 | Assessment - Post-test |