**Chapter 4 Assessment**

*Outcome FP10.2 – Demonstrate an understanding of irrational numbers in both radical (including mixed radical) and exponent forms through: representing: identifying: simplifying: ordering: relating to rational numbers: applying exponent laws.*

**PART 1:**

In groups of 5-6, create a project to demonstrate mastery of the above outcome. You may create a poster, PowerPoint, prezi, video, etc… if you have another idea, ask your teacher for approval. Create your project as if you are teaching this outcome to another student – what would they need to know and what examples would be useful?

You must include:

1. **Rational and Irrational Numbers (10 marks in total)**
   1. Definitions (1 mark)
   2. General Form (1 mark)
   3. At least 2 examples of rational numbers and 2 examples of irrational numbers(8 - 2 marks per example)
2. **Radicals and mixed radicals (9 marks in total)**
   1. Definitions (1 mark)
   2. General Forms (2 marks)
   3. How to simplify radicals (2 marks)
   4. At least 2 examples (4 -2 marks per example)
3. **The exponent form of radicals (8 marks in total)**
   1. How does one relate to the other – general forms (4 marks)
      1. Fractional Exponents
   2. At least 2 examples (4 - 2 marks per example)
4. **Negative exponents (6 marks in total)**
   1. General Formulas – (2 mark)
   2. How is the negative exponent related to the reciprocal? (4 marks)
5. **Explain how to use estimating to order a set of rational and irrational numbers from least to** **greatest on a number line (7 marks)**
   1. Include at least:
      1. 6 numbers (1 mark)
      2. 1 irrational radical (1 mark)
      3. 1 rational radical (fraction) (1 mark)
      4. 1 fractional exponent (1 mark)
      5. 1 negative exponent (1 mark)
   2. Ordered numbers correctly while explaining strategy used (2 marks)

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**PART 2**

Individually:

Create a quiz with at least 10 questions demonstrating an understanding of rational and irrational numbers, radicals and mixed radicals, the exponent form of radicals, negative exponents, simplifying and ordering rational and irrational numbers. You must come up with the questions yourself, but you may use your textbook for inspiration. You must also create the answer key demonstrating how to arrive at the answer – only giving the answer will not result in full marks.

(1 mark per question, 1 mark per answer)

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**\*\*This project outline will used to assess your project. Feedback will be given in relation to each section on this sheet and general feedback will be given to the entire class. If you have any questions ask a peer or ask the teacher.**

**Checklist: (Not for marks – just a general guide through the project)**

* I have carefully read through the directions and expectations
* I have given the correct definitions for each section
* I have used the correct general forms for each section
* I have given the correct number of examples for each section
* I have completed each section
* My example are accurate and demonstrate my understanding of each concept
* I have fully explained any “how” section – either written or with an additional example
* I understand how one concept relates to another
* I have given the required information as stated in the project
* I have created at least 10 questions for my quiz
* I have created an answer key showing how to arrive at the answer
* My answer key is accurate and easy to follow
* I have asked a peer for help if I needed it
* I have asked the teacher for clarification or help if I needed it
* I have double-checked my work to ensure it is accurate
* I have asked a peer to check my work and fixed any mistakes or misunderstandings
* I understand rational and irrational numbers and can demonstrate my understanding in various forms