Teacher(s)	Ms.Kanika Suri ,Ms.Manisha Sehgal	Subject group and discipline	Mathematics		
Unit title	Number System	MYP year	1	Weeks	13 weeks

Inquiry: Establishing the purpose of the unit

Key concept	Related concept(s)	Global context
Form	**System, Equivalence**	**Fairness and Development**

Statement of inquiry Key Concept + Related Concepts + Global Context Exploration = Statement of Inquiry

Making fair judgements is easier if we understand a variety of numeric systems and forms

Inquiry questions

Factual—
- What is each number system used for in our world?
- how do we express quantities?
- When do we need Common Denominators?

Conceptual—

- Does order Matter?

- Can you ever have less than nothing?

- how do we divide something that was already divided?

- Do different forms lead to different situations?

Debatable—

- Are number systems discovered or developed?

- Can inequality ever be fair?

- Is fairness always equal?

Objectives	Summative assessment	
Objective A:Knowing and Understanding i. Select appropriate mathematics when solving problems in both familiar and unfamiliar situations ii. Apply the selected mathematics successfully when solving problems iii. Solve problems correctly in a variety of contexts. Objective B: Investigating Patterns	Outline of summative assessment task(s) including assessment criteria: A pen and paper test will be conducted in which questions to check their knowledge will be present along with unfamiliar situations where they need to judge whether the situation is fair or not by looking at the problem mathematically.	Relationship between summative assessment task(s) and statement of inquiry: The summative task is related to the SOI as the students will be presented with situations where they have to logically decide whether the situation is fair or not.

i. apply mathematical problem-solving techniques to recognize patterns ii. describe patterns as relationships or general rules consistent with correct findings Objective C: Communicating i. Use appropriate mathematical language (notation, symbols and terminology) in both oral and written explanations ii. Use appropriate forms of mathematical representation to present information Objective D: Applying Mathematics in real life context i. Identify relevant elements of authentic rea life situations v. describe whether a solution makes sense in the context of the authentic real-life situation.		

Approaches to learning (ATL) (It is imperative to describe the activities rather than just writing strands of an ATL)

1.Thinking Skills – Critical thinking :

- Propose and evaluate a variety of solutions (games on Sheppard software)

- Consider ideas from multiple perspectives (FA-2 integers)
- Interpret data(FA-1-number properties)

2.Communication skills

- Negotiate ideas and knowledge with peers and teachers (Flipped Classroom-Students explaining various concepts)
- Understand and use mathematical notation (FA-2 integers)
- Organize and depict information logically (Activity on big numbers)

3.Organization skills

- Bring necessary equipment and supplies to class
- Keep an organized and logical system of information files/notebooks

Action: Teaching and learning through inquiry

Content	Learning process
Introduction of Number system	**Learning experiences and teaching strategies** Introduction of lesson with 'Think- pair- share' activity where students have to cite example of real world situations in which they might need different types of numbers <mark>(pg-3 –hodder)</mark>. Activity:Give examples of real world situations in which you might need : • Regular counting numbers from 1 onwards • The number '0' • a negative number • a fraction • a decimal

Big Numbers	An Activity will be conducted in the class with pairs. Each student will be provided with set of cards with digit 0-9 and they have to perform a task==(Pg-3-Hasse)==
Rounding off numbers	Students will practice questions on rounding off numbers. ==(Importance of Commas will be discussed Pg-12-Hodder)==
Role of Zero and one Square numbers and cube numbers Divisiblity test Factor,Multiples,HCF and LCM Positive and negative numbers	Explaination 1. Students have to colour the grid and answer few questions on the basis of the required specification based on factors and multiples and properties of numbers. (Formative assessment Criteria –A : Knowledge and understanding) Worksheet will be given 1. The aim of the activity is that student should be able to apply concept of integers to real life situations. (Formative assessment Criteria –D : Applying in real life contexts ,Criteria C: Communicating) Students revised the concept of fractions by playing various maths games on

	wwwsheppardsoftware.com
	Activity: Chandra's mobile phone storage (Formative assessment -Criteria D)
	Situations followed by questions
	Chandra pays for 4GB of data on her mobile phone every month and has to pay extra if she exceeds this limit.Her phone keeps track of her data usage throughout the month.
	Q1 If she used $\dfrac{1}{4}$ th of her data by the fourth day of the month,how many GB of Data is left?
Fractions	Q2 If she uses 1.8 GB ,How much data in fractions has she used ?
	Q3 If She uses an average of 0.1GB per day,How much data will she have used by the twentieth day of the month?Will she go over if she continues using data at the same rate?
	Q4 Is it possible for Chandra to use $\dfrac{125}{100}$ of her data allowance?What does this mean?
	Introduction of the chapter with videos on decimals and decimals place value
	1 www.youtube.com/watch?v=xiMuFg9UqNY
	2 https://www.youtube.com/watch?v=KG6ILNOiMgM
	Students will be divided into teams and relay race will be conducted to solve a set of questions.

Decimals	
	Formative assessment 1. Students have to colour the grid and answer few questions on the basis of the required specification based on factors and multiples and properties of numbers. **(Criteria –A : Knowledge and understanding)** 2The aim of the activity is that student should be able to apply concept of integers to real life situations. **(Criteria –D: Applying in real life contexts ,Criteria C: Communicating)** **3 End of unit assessment** **Chandra's mobile phone storage** In this activity student have practised skills that are assessed using criteria D:Applying Mathematics to real life contexts
	Differentiation • Worksheet with different type of questions with easy, medium and high level will be given. • Activities in pairs will be conducted .Different set of learners will be grouped into teams

	so that Peer learning can take place.

Resources
• Book by hodder publication
• http://map.mathshell.org/tasks.php
• Wwwsheppardsoftware.com

Reflection: Considering the planning, process and impact of the inquiry

Prior to teaching the unit	During teaching	After teaching the unit
Students have a fair knowledge of number systems, so it will be easy to revise the number systems and then work on the four operations	Students took a lot of time in understanding subtraction of integers and comparison of decimal numbers and challenging problems based on it.	Students are quite clear with the topic of big numbers and addition of integers so less time should be devoted in that topic. Also, more time is required in decimals and fractions

Teacher(s)	Ms.Kanika Suri ,Ms.Manisha Sehgal	Subject group and discipline	Mathematics		
Unit title	**Algebra**	MYP year	1	Weeks	6 weeks

Inquiry: Establishing the purpose of the unit

Key concept	Related concept(s)	Global context
Relationships	**Simplification ,Patterns**	**Identities and Relationships**

Statement of inquiry Key Concept + Related Concepts + Global Context Exploration = Statement of Inquiry
Identifying and using patterns and rules is the key to simplifying relationships, in life and in algebra.

Inquiry questions

Factual—
- What is algebra?
- What are like terms and how do we collect them?
- How can I tell if terms are like or not? What are algebraic products?

Conceptual—

- How do we express ourselves in algebra?

- What are unlike terms and what do I do with them?

- What happens if we have a negative term, or more than one term?

- Are variables the key to understanding relationships?

Debatable—

- Why do we need to have common rules of communication?

- Does it help to be the same or is it better to be different?

- Could algebra be a universal language?

Objectives	Summative assessment	

Investigating Patterns(B)
 	
  i)apply mathematical problem-solving techniques to recognize patterns
 	
  ii) describe patterns as relationships or general rules consistent with correct findings
 	
Communicating (C)
 	
  i) use appropriate mathematical language (notation, symbols and terminology) in both oral and written statements
 	
  ii)use different forms of mathematical
 	
  representation to present information
 	
 iii) communicate coherent mathematical lines of reasoning
	Outline of summative assessment task(s) including assessment criteria:
	
	A written exam based on criteria C and B will be conducted where they need to collect terms in pyramid and applying operations and reach to the top of the pyramid. Patterns will be given to the scholars to identify the rule.
		Relationship between summative assessment task(s) and statement of inquiry:
		
		Students will identify the patterns to understand relationships better.

Approaches to learning (ATL)

1. **Thinking Skills – Critical thinking:**
   - Draw reasonable conclusions (FA-2)
   - Apply existing knowledge to generate new ideas

2. **Communication Skills**

   •Understand and use mathematical notation (FA-1)

   •Read critically and for comprehension

3. **Transfer skills:**

   - Apply skills and knowledge in unfamiliar situation (FA-1)

4. **Self-Management-Affective skills**

   - Demonstrate persistence and perseverance (Snake Activity)

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Action: Teaching and learning through inquiry

Content	Learning process
Algebra	**Learning experiences and teaching strategies** Introduction with the help of the video on What is Algebra by Math Antics. Below is the link https://www.youtube.com/watch?v=NybHckSEQBI . A handout with all basic definitions and concepts was discussed and provided.

	Activity:What Changes and what doesn't(ATL-Communication skills-Read critically and for comprehension) Pg-35-hodder Publications
	TED talks -Why do we use x so much?
	https://www.npr.org/2015/03/06/388518850/why-do-we-solve-for-x.
	Worksheet-1- Based on identification of constant, variable, coefficient and types of algebraic expressions will be given and discussed.
	Worksheet -2- based on simplying algebraic expression by collecting like terms and then identifying the coefficients,variables and type of algebraic expressions.
	Workshet-3- Writing algebraic expression from statements and phrases
	Worksheet-4-Combining like terms and simplifying the variable. FA-1-Activity Race to the top(Pg 40 Hodder) ATL –Transfer skills:Apply skills and knowledge in unfamiliar situation) Assessment Criteria :Criteria C:Communicating
	Worksheet-5-Finding the solution of the simple linear equations Fa-2 –Investigate and describe patterns ATL:Critical thinking skills –Draw reasonable conclusions and generalizations Assessment Criteria :Criteria B:Investigating Pattern

	Games based on finding the solution of simple equation will be played in the class.
	-AGE OF MATH
	https://www.mathgames.com/math-games.html
	-KING OF MATH
	https://www.mathgames.com/play/kingofmath.html
	Quiz will be conducted in the class as the exit ticket.
	EOUA: A written exam based on criteria C and B will be conducted where they need to collect terms in pyramid and applying operations and reach to the top of the pyramid.Patterns will be given to the scholars to identify the rule.
	Formative assessment • FA-1-Activity Race to the top(Pg 40 Hodder) ATL –Transfer skills:Apply skills and knowledge in unfamiliar situation) Assessment Criteria :Criteria C:Communicating • Fa-2 –Investigate and describe patterns ATL:Critical thinking skills –Draw reasonable conclusions and generalizations Assessment criteria: Criteria B: Investigating Patterns.
	Differentiation • Worksheet with different type of questions with easy, medium and high level will be given. • Level of questions will be different in the activities
Resources	

- Book by Hodder publication

- http://map.mathshell.org/tasks.php

- http://mathgames .com

https://www.youtube.com/watch?v=NybHckSEQBI .

Reflection: Considering the planning, process and impact of the inquiry

Prior to teaching the unit	During teaching	After teaching the unit
- Basic terminology of algebra to be discussed - Key words to be discussed in detail.	Students are a little confused with the key words so more practice is required .	