# Unit of Work: Fractions

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Pedagogy

- This unit of work has been modeled on theoretical underpinnings of a constructivist nature, Piaget (child centered approach – age appropriate learning), Vygotsky (Zone of Proximal development – experiential learning) and more recently Jerome Bruner (dialogic teaching – shared learning experiences) who all identify that successful learning best occurs when these variety of elements are combined to create the ideal environment for the learning process.
- Classroom interactions will be covered in a variety of ways, but this unit has a focus of bringing digital tools into practical use through worked mathematical examples, theory development, explanation/exploration, design and publication in a blended learning environment. This unit will encourage students to extend their thinking and communication skills through a series of challenging activities and lessons so they are able to clearly articulate the mathematical concept of fractions.
- In preparing lessons for a high majority of indigenous learners, I have incorporated elements from Tyson Yunkaporta’s 8 ways framework to assist with differentiation in the lesson deliveries.
- Work to develop a passion for mathematics in my students.

Rationale

- The Australian Curriculum: Mathematics provides students with essential mathematical skills and knowledge in number and algebra, measurement and geometry, and statistics and probability. It develops the numeracy capabilities that all students need in their personal, work and civic life, and provides the fundamentals on which mathematical specialties and professional applications of mathematics are built.
- Mathematics has its own value and beauty and the Australian Curriculum: Mathematics aims to instil in students an appreciation of the elegance and power of mathematical reasoning. Mathematical ideas have evolved across all cultures over thousands of years, and are constantly developing. Digital technologies are facilitating this expansion of ideas and providing access to new tools for continuing mathematical exploration and invention. The curriculum focuses on developing increasingly sophisticated and refined mathematical understanding, fluency, reasoning, and problem-solving skills. These proficiencies enable students to respond to familiar and unfamiliar situations by employing mathematical strategies to make informed decisions and solve problems efficiently.
- The Australian Curriculum: Mathematics ensures that the links between the various components of mathematics, as well as the relationship between mathematics and other disciplines, are made clear. Mathematics is composed of multiple but interrelated and interdependent concepts and systems which students apply beyond the mathematics classroom. In science, for example, understanding sources of error and their impact on the confidence of conclusions is vital, as is the use of mathematical models in other disciplines.
- The curriculum anticipates that schools will ensure all students benefit from access to the power of mathematical reasoning and learn to apply their mathematical understanding creatively and efficiently. The Mathematics curriculum provides students with carefully paced, in-depth study of critical skills and concepts. It encourages teachers to help students become self-motivated, confident learners through inquiry and active participation in challenging and engaging experiences.

The lesson sequence it is intended (to):
- Provide opportunities for students to work independently and collaboratively using ICT tools
- Ensure each lesson has clear specified objectives
- Lessons and activities follow a logical sequence
- Teacher and student engagement and communication in a priority
- Scaffolding and strategies are provided for students
- Conduct appropriate and ongoing assessment, student-self and peer.
Key Ideas

Understanding
- Students build a robust knowledge of adaptable and transferable mathematical concepts. They make connections between related concepts and progressively apply the familiar to develop new ideas. They develop an understanding of the relationship between the ‘why’ and the ‘how’ of mathematics. Students build understanding when they connect related ideas, when they represent concepts in different ways, when they identify commonalities and differences between aspects of content, when they describe their thinking mathematically and when they interpret mathematical information.

Fluency
- Students develop skills in choosing appropriate procedures; carrying out procedures flexibly, accurately, efficiently and appropriately; and recalling factual knowledge and concepts readily. Students are fluent when they calculate answers efficiently, when they recognise robust ways of answering questions, when they choose appropriate methods and approximations, when they recall definitions and regularly use facts, and when they can manipulate expressions and equations to find solutions.

Problem-solving
- Students develop the ability to make choices, interpret, formulate, model and investigate problem situations, and communicate solutions effectively. Students formulate and solve problems when they use mathematics to represent unfamiliar or meaningful situations, when they design investigations and plan their approaches, when they apply their existing strategies to seek solutions, and when they verify that their answers are reasonable.

Reasoning
- Students develop an increasingly sophisticated capacity for logical thought and actions, such as analysing, proving, evaluating, explaining, inferring, justifying and generalising. Students are reasoning mathematically when they explain their thinking, when they deduce and justify strategies used and conclusions reached, when they adapt the known to the unknown, when they transfer learning from one context to another, when they prove that something is true or false, and when they compare and contrast related ideas and explain their choices.
# Unit Overview

## Unit Overview:

Maths is a process of discovery through inquiry and this unit of work ‘Fractions’ will provide students a variety of exercises, lessons, demonstrations and tasks. Learning will be inquiry-based, with students critically analysing, evaluating and interpreting a range of interactive and experiential resources to develop their knowledge and understanding. Research will incorporate ICT including web-based and other traditional sources as appropriate.

Students will work collaboratively with guided group discussion and investigation to produce physical and digital artefacts which will develop student understanding of the unit materials. Students will be encouraged to participate in class discussions and also work in small groups to develop collaborative support skills based on the prescribed lesson plans.

This unit will also integrate other curriculum areas including ICT to build students’ knowledge, skills and understandings to assist with the inquiry and to demonstrate their findings using written, oral and digital formats. Inquiry based activities will incorporate self and peer assessment with learning outcomes assessed using both formative and summative techniques.

## Prior Knowledge

In Year 3, students model and represent unit fractions including 1/2, 1/4, 1/3, 1/5 and their multiples to a complete whole (ACMNA058)

By the end of Year 4, students should be able to Investigate equivalent fractions used in contexts (ACMNA077)

## Content Descriptions

- (ACMNA102) - Compare and order common unit fractions and locate and represent them on a number line
- (ACMNA103) - Investigate strategies to solve problems involving addition and subtraction of fractions with the same denominator
- (ACMNA104) - Recognise that the place value system can be extended beyond hundredths
- (ACMNA105) - Compare, order and represent decimals
- (ACMNA107) - Describe, continue and create patterns with fractions, decimals and whole numbers resulting from addition and subtraction

## Cross Curriculum Capabilities

- **Mathematics** – Interpret and apply proportional reasoning
- **Literacy** – Comprehending and composing texts, developing word knowledge and vocabulary,
- **Critical and creative thinking** – Inquiring – identifying, exploring and organising information and ideas through identifying, organising and processing information through analysis. Seeking solutions
- **Information and Communication Technology (ICT)** – The particular elements of Information and Communication Technology (ICT) Capability addressed by this content description through Applying and Creating with ICT

## Year 5 Achievement Standard

By the end of Year 5, Students order decimals and unit fractions and locate them on number lines. They add and subtract fractions with the same denominator. Students continue patterns by adding and subtracting fractions and decimals.

## Links to future learning: Year 6:

- Compare fractions with related denominators and locate and represent them on a number line (ACMNA125)
- Solve problems involving addition and subtraction of fractions with the same or related denominators (ACMNA126)
- Find a simple fraction of a quantity where the result is a whole number, with and without digital technologies (ACMNA127)
**ICT Applications**

Indicates the ICT which is integrated into the learning

1. IWB (Interactive Whiteboard/Smartboard), Device (tablet/computer), YouTube, Edmodo, MathPlaground
2. IWB, Device, Windows Movie Maker/iMovie, Mathletics, MathPlaground
3. IWB, Device, YouTube, Bitstrips.com/Toondoo, Mathletics
4. IWB, Device, YouTube, Mathletics
5. IWB, YouTube, Device, Edmodo, MathPlaground
6. IWB, YouTube, Device, Mathletics, MathPlaground

**Student Diversity**

A diverse range of learning needs broadens the width of education delivery to include the entire learning spectrum, from those with severe learning difficulties to those who are extraordinarily capable. Given that the nature of this lesson sequence includes a significant amount of group discussion and input, the following considerations should be made for any student, but particularly those with EAL/D, identified SEN or who are placed on individual learning programs, as suggested by the Board of Studies (BOS, 2015)

1. Differentiation to activities, for example rephrasing questions, using simplified language, fewer questions or alternative formats for tasks/alternate pathways.
2. For students with impairments that may challenge verbal participation, a peer or assistant may offer input articulated in a variety of ways supported by the learning website.
3. Providing greater time for a student to respond to questioning, or provide rephrased prompts with simple language
4. As a part of everyday learning, peer-led instruction can be beneficial for all parties involved, use a student with higher research skills/confidence and specify they develop a mentor relationship with a learner of lower ability/confidence student.
5. Encourage fast finishing groups to work collaboratively and assist any learners who they feel may benefit from their guidance. Finishing fast does not mean you are finished.

**Key Inquiry Questions**

- What is a fraction and why does it matter?
- What is the process of manipulating fractions?
- How do you calculate the ‘correct’ answer?
- What does this have to do with Football?
- Is there a hack or an easier way?

**Key Concepts**

- Identify
- Place on a number line
- Decimals
- Percentages
- Significance
## Lesson Sequence

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<th>Lesson</th>
<th>Summary</th>
<th>Assessment</th>
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<tr>
<td><strong>Introduction</strong></td>
<td>1. Just a Bite</td>
<td>Video, discussion, diagnostic assessment – observation and edmodo.com quiz.</td>
<td>Diagnostic</td>
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<tr>
<td><strong>Explain</strong></td>
<td>2. Fruit Ninja</td>
<td>Activity – Fruit Ninja, report, Mathletics (managed tasking with extensions – Fractions)</td>
<td>Formative</td>
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<td>3. Creative Activity</td>
<td>Number Line (intro to decimal-fraction relationship) discussion and exercises.</td>
<td>Observations</td>
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<td><strong>Develop</strong></td>
<td>4. Physical Maths</td>
<td>Cardio and kicking, number line demonstration, video assessment</td>
<td>Diagnostic</td>
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<tr>
<td><strong>Explain</strong></td>
<td>5. Maths in Practice</td>
<td>Real world applications demonstration</td>
<td>Formative</td>
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<tr>
<td><strong>Assess</strong></td>
<td>6. Fraction Finals</td>
<td>Discussion, digital artefact, conclusion</td>
<td>Summative</td>
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## Lesson Overview

### Lesson 1

**Title:** Just a Bite  
**Objective:** Introduce unit, revision and Diagnostic Assessment  
**Content:** Revision, explanation of terms, key concepts, assessments. Discuss timeline and expectations.  
**Cross Curriculum Link:** Literacy – Comprehending and composing texts, developing word knowledge and vocabulary  
**Assessment:**  
1. Teacher Observations – (Re-Cap Yr. 4 Achievement Std.)  
2. Peer & Self-Assessment – Edmodo.com quiz  
3. Diagnostic – Edmodo.com Quiz  
**Summary:** Introduce fractions unit, explanation of terms and key concepts. Discuss timeline (6 lessons), what is expected (behavior, management, effort, visible learning goals).  
Incorporates the following:  
1. **Group Discussion** – Reflection on prior learning (to re-cap Year 4 Achievement Standards). This learning experience also provides an open line of Inquiry for the students to engage in dialogue about what they WANT to learn.  
2. **Video** – [https://www.youtube.com/watch?v=AtBUQH8Tkqc](https://www.youtube.com/watch?v=AtBUQH8Tkqc)  
3. **Edmodo.com** – Quiz (diagnostic assessment)

### Lesson 2

**Title:** Fruit Ninja  
**Objective:** Introduce physical perspective and purpose (link to Money Maths)  
**Content:** Activity – cut up fruit to nominated fractions  
**Cross Curriculum Link:** Literacy – Comprehending and composing texts, developing word knowledge and vocabulary  
**Assessment:**  
1. Teacher Observations – review videos  
2. Peer & Self-Assessment – Edmodo.com exercise task  
3. Formative - Mathletics  
**Summary:** Activity – cut up fruit/cake/pizza/objects to nominated fractions (photograph, big print and display). Students to create video of activity and describe the fraction process.  
1. **Group Discussion** – What was the process, what was the purpose – what did we learn?  
2. **Exercise** – E-task, reading, solving and writing solutions  
3. **Activity** - Mathletics

### Lesson 3

**Title:** Creative Maths  
**Objective:**  
**Content:** Students to create a digital artefact demonstrating their knowledge of fractions  
**Cross Curriculum Link:** Literacy – Comprehending and composing texts, developing word knowledge and vocabulary.  
**Assessment:**  
1. Teacher Observations – review artefacts  
2. Peer & Self-Assessment – Peer review
Summary: Students to create digital cartoon sequence to demonstrate what they understand of fractions

1. **Group Discussion** – Reflection, when we cut up fruit it had a purpose, communicate purpose of fractions and how they are represented numerically.
2. **Video** – https://www.youtube.com/watch?v=n0FZ
3. **Edmodo.com** – Electronic worksheets with examples and working, adding and subtracting whole numbers, and positive fractions.

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<tr>
<th>Lesson 4</th>
<th>Title: Physical Maths</th>
<th>Objective:</th>
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<tbody>
<tr>
<td>Content:</td>
<td>Reflection from previous learning, relationship between number-line and percentages.</td>
<td><strong>Assessment:</strong></td>
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<tr>
<td><strong>Cross Curriculum Link:</strong></td>
<td>Literacy – Comprehending and composing texts, developing word knowledge and vocabulary.</td>
<td>1. Teacher Observations</td>
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<td><strong>Critical and creative thinking</strong></td>
<td>Inquiring – identifying, exploring and organising information and ideas through identifying, organising and processing information through analysis. Seeking solutions</td>
<td>2. Peer &amp; Self-Assessment</td>
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<tr>
<td><strong>Summary:</strong></td>
<td>Students view representations of a number-line in physical items, video and on the football field.</td>
<td>3. Mathletics feedback</td>
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<tr>
<td>1. <strong>Group Discussion</strong> – When we can identify certain fractions, there is a relationship with these numbers as a percentage.</td>
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<td>2. <strong>Exercise</strong> – Outdoors to football field where students will move as a group to a physical representation on a number line.</td>
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<td>3. <strong>Activity</strong> – Mathletics</td>
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<th>Lesson 5</th>
<th>Title: Maths in Practice</th>
<th>Objective:</th>
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<tbody>
<tr>
<td>Content:</td>
<td>Reflection on fractions having a genuine purpose</td>
<td><strong>Assessment:</strong></td>
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<tr>
<td><strong>Cross Curriculum Link:</strong></td>
<td>Literacy – Comprehending and composing texts, developing word knowledge and vocabulary.</td>
<td>1. Teacher Observations –</td>
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<tr>
<td><strong>Critical and creative thinking</strong></td>
<td>Inquiring – identifying, exploring and organising information and ideas through identifying, organising and processing information through analysis. Seeking solutions</td>
<td>2. Peer &amp; Self-Assessment –</td>
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<tr>
<td><strong>Summary:</strong></td>
<td>Applying percentages and fractions in genuine scenarios</td>
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<tr>
<td>1. <strong>Group Discussion</strong> – Bartering, swapping, discounts and finance (future link to money maths)</td>
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<td>2. <strong>Video</strong> – Building an arch</td>
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<td>3. <strong>Edmodo.com</strong> – Electronic worksheets with examples and working, adding and subtracting whole numbers, and positive fractions.</td>
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<th>Lesson 6</th>
<th>Title: Assessment</th>
<th>Objective:</th>
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<tbody>
<tr>
<td>Content:</td>
<td>Creating artefacts to represent answers to quiz</td>
<td><strong>Assessment:</strong></td>
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<td><strong>Cross Curriculum Link:</strong></td>
<td>Literacy – Comprehending and composing texts, developing word knowledge and vocabulary.</td>
<td>1. Teacher Observations –</td>
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<tr>
<td><strong>Critical and creative thinking</strong></td>
<td>Inquiring – identifying, exploring and organising information and ideas through identifying, organising and processing information through analysis. Seeking solutions</td>
<td>2. Peer &amp; Self-Assessment –</td>
</tr>
<tr>
<td><strong>Summary:</strong></td>
<td>Applying percentages and fractions in genuine scenarios</td>
<td>3. Summative-Assessment – See Assessment Guide</td>
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**Summary:** Students apply ICT skills to create digital artefacts to solve real world problems, involves adding and subtracting fractions, whole numbers, decimals and percentages.

1. **Group Discussion** – Reflection on unit learning
2. **Exercise** – Use any ICT program to best solve problems, create a video of your solutions and email for marking.
3. **Activity** – Summative assessment task

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### Lesson Plans

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<tr>
<th>Subject</th>
<th>Topic: Fractions</th>
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<tr>
<td><strong>Title:</strong></td>
<td>Just a Bite</td>
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<td><strong>Date:</strong></td>
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<td><strong>Session:</strong></td>
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<td><strong>Timing:</strong></td>
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<td><strong>Grade:</strong></td>
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**Behavior Management:**
1. Rewards – group points for tally mark, encouragement and positive action
2. Modified tasking for focus/literacy challenge. Reward success
3. Distract and re-focus: Brain Gym activity and return to task. Reward when focused
4. Relocate student, possibly review actions at recess/lunch. Reward if successful

**Cohort Diversity:** 24 Indigenous (5 Individual Learning Program [ILP] – all have devices), 3 Non-Indigenous are high achieving, and 2 additional non-Indigenous who have poor attendance but perform at an average level.

**Learning Intention:**

**Success Criteria:**
1. Students recall facts, information and other relevant data to illustrate an understanding of fractions.
2. Students construct and present this information in an appropriate format
3. Students pose questions and dictate any particular interests which may be investigated during the unit.

**Assessment:**
1. Participation – Observations of student involvement
2. Participation – Direct Questioning
3. Diagnostic – Assessment of report (see rubric)

**Resources:**

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<th>Time</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:50</td>
<td><strong>Introduce subject and material, discussion</strong> About the upcoming Unit, uncover the content, and discuss the Unit Outline, content, lesson sequence and assessment requirements. The class will be familiar with the language “show me what you are learning”</td>
</tr>
<tr>
<td>11:00</td>
<td><strong>1. WARM UP:</strong></td>
</tr>
<tr>
<td></td>
<td>2. <strong>Structured discussion</strong> about what the group is familiar with from the year 4 achievement standard. During this discussion, a student will scribe the key information down into the KWL chart under K(now). This should be completed on the IWB (Smart Board)</td>
</tr>
<tr>
<td>11:15</td>
<td>3. The second part of the discussion is about what we might W(ant) to learn about fractions. Students who may have posed questions or require greater detail/clarity may take this first of many opportunities to demonstrate the types of knowledge they want to complete the unit with.</td>
</tr>
<tr>
<td>11:25</td>
<td>4. <strong>Video – Explanation</strong></td>
</tr>
<tr>
<td></td>
<td>5. <strong>Experiment – Ice investigations:</strong> Create each of the states of matter, photograph and document your activities for your report. You have 10 minutes to write the experiment up and have it approved and 20 minutes to complete the experiment. You may work in small groups and will need to demonstrate for the class how you achieved each state.</td>
</tr>
</tbody>
</table>
4. **Conclusion:** We have covered the information we already knew, we understand some of the key details and can begin to process the information in our KWL chart. The next lesson shall involve.

**Class Feedback:** Who: worked well? Was rewarded? What did they do differently to someone who did not get a reward? Who is confident of the year 3 learning and is ready to move forward with yr. 5? Anyone stuck or not understanding?

**Differentiate a)** Follow this link:
1. Have a play with the app

**b)** Follow this link:

**c)** Additional videos:

**Evaluation: Prompts**
1. What worked well in this lesson?
2. What part needs attention/fine tuning prior to re-delivery?
3. What would you recommend to a colleague in a similar situation?

**Reflection: Prompts**
1. Were you prepared? What did you not need? What did you miss?
2. Did the students enjoy the lesson? Were they excited about the excursion?
3. Did you enjoy teaching the lesson? What could (practically) make it more enjoyable?

**Comments/Observations:**

<table>
<thead>
<tr>
<th>Subject: Mathematics</th>
<th>Topic: Fractions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title:</strong> Fruit Ninja</td>
<td><strong>Serial:</strong> 2/6</td>
</tr>
<tr>
<td><strong>Session:</strong> After Recess</td>
<td><strong>Class Size:</strong> 29</td>
</tr>
<tr>
<td><strong>Timing:</strong> 35 minutes</td>
<td><strong>Grade:</strong> 5</td>
</tr>
</tbody>
</table>

**Cohort Diversity:** 24 Indigenous (5 Individual Learning Program [ILP] – all have devices), 3 Non-Indigenous are high achieving, and 2 additional non-Indigenous who have poor attendance but perform at an average level.

**Learning Intention:**

**Success Criteria:**
1. Students recall facts, information and other relevant data to illustrate an understanding of fractions.
2. Students construct and present this information in an appropriate format
3. Students pose questions and dictate any particular interests which may be investigated during the unit.

**Behavior Management:**
1. Rewards – group points for tally mark, encouragement and positive action
2. Modified tasking for focus/literacy challenge. Reward success
3. Distract and re-focus: Brain Gym activity and return to task. Reward when focused
4. Relocate student, possibly review actions at recess/lunch. Reward if successful

**Curriculum Objective:**

**Assessment:**
1. Participation – Observations of student involvement
2. Participation – Direct Questioning
3. Formative – Assessment of video observations and Mathletics Results

**Time** | **Program**
|---------|----------------|
| 10:50   | 1. **Engage:** Activity – cut up fruit to nominated fractions

Ian Hampton – EST204 – SS15 – Assignment 2: Units of Work
### 11:00 Structured discussion: What was the process, what was the purpose – what did we learn?
### 11:15 Exercise – E-task, reading, solving and writing solutions
### 11:25 Conclusion: Activity - Mathletics

#### Differentiate
   **a)** Follow this link:
   1. Have a play with the app
   **b)** Follow this link:
   **c)** Additional videos ...

#### Evaluation: Prompts
1. What worked well in this lesson?
2. What part needs attention/fine tuning prior to re-delivery?
3. What would you recommend to a colleague in a similar situation?

#### Reflection: Prompts
1. Were you prepared? What did you not need? What did you miss?
2. Did the students enjoy the lesson? Were they excited about the excursion?
3. Did you enjoy teaching the lesson? What could (practically) make it more enjoyable?

#### Comments/Observations:

---

**Subject:** Mathematics  
**Topic:** Fractions

**Title:** Creative Maths  
**Serial:** 3/6  
**Date:**

**Session:** After Recess  
**Class Size:** 29

**Timing:** 35 minutes  
**Grade:** 5

**Cohort Diversity:** 24 Indigenous (5 Individual Learning Program [ILP] – all have devices), 3 Non-Indigenous are high achieving, and 2 additional non-Indigenous who have poor attendance but perform at an average level.

**Learning Intention:**

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1. Students recall facts, information and other relevant data to illustrate an understanding of fractions.
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**Curriculum Objective:**

**Assessment:**
1. Participation – Observations of student involvement
2. Participation – Direct Questioning
3. Diagnostic – Assessment of report

**Resources:**

**Time** | **Program**
---|---
10:50  | **Summary:** Students to create digital cartoon sequence to demonstrate what they understand of fractions
11:00  1. **Group Discussion** – Reflection, when we cut up fruit it had a purpose, communicate purpose of fractions and how they are represented numerically.
11:25  2. **Video** – https://www.youtube.com/watch?v=n0FZ
11:35  3. **Edmodo.com** – Electronic worksheets with examples and working, adding and subtracting whole numbers, and positive fractions.

**Differentiate**

- **a)** Follow this link:
  1. Have a play with the app
- **b)** Follow this link:
- **c)** Additional videos ...

**Evaluation: Prompts**
1. What worked well in this lesson?
2. What part needs attention/fine tuning prior to re-delivery?
3. What would you recommend to a colleague in a similar situation?

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1. Were you prepared? What did you not need? What did you miss?
2. Did the students enjoy the lesson? Were they excited about the excursion?
3. Did you enjoy teaching the lesson? What could (practically) make it more enjoyable?

**Comments/Observations:**

---

**Subject:** Mathematics  **Topic:** Fractions

<table>
<thead>
<tr>
<th>Title</th>
<th>Serial</th>
<th>Date</th>
<th>Behavior Management:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Footy Fractions</td>
<td>4/6</td>
<td></td>
<td>1. Rewards – group points for tally mark, encouragement and positive action</td>
</tr>
<tr>
<td>Session</td>
<td>After Recess</td>
<td>Class Size: 29</td>
<td>2. Modified tasking for focus/literacy challenge. Reward success</td>
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<tr>
<td>Timing</td>
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<td>Grade: 5</td>
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<td>Cohort Diversity</td>
<td>24 Indigenous (5 Individual Learning Program [ILP] – all have devices), 3 Non-Indigenous are high achieving, and 2 additional non-Indigenous who have poor attendance but perform at an average level.</td>
<td>4. Relocate student, possibly review actions at recess/lunch. Reward if successful</td>
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**Curriculum Objective:**

**Learning Intention:**

**Success Criteria:**
1. Students recall facts, information and other relevant data to illustrate an understanding of fractions.
2. Students construct and present this information in an appropriate format
3. Students pose questions and dictate any particular interests which may be investigated during the unit.

**Time**  **Program**

| 10:50 | Summary: Students view representations of a number-line in physical items, video and on the football field. |
| 11:00 | 1. **Group Discussion** – When we can identify certain fractions, there is a relationship with these numbers as a percentage. |
11:25  2. **Exercise** – Outdoors to football field where students will move as a group to a physical representation on a number line.
11:35  3. **Activity** – Mathletics:

- **Differentiate**
  - **a)** Follow this link:
  - 1. Have a play with the app
  - **b)** Follow this link:
  - **c)** Additional videos ...

**Evaluation: Prompts**
1. What worked well in this lesson?
2. What part needs attention/fine tuning prior to re-delivery?
3. What would you recommend to a colleague in a similar situation?

**Reflection: Prompts**
1. Were you prepared? What did you not need? What did you miss?
2. Did the students enjoy the lesson? Were they excited about the excursion?
3. Did you enjoy teaching the lesson? What could (practically) make it more enjoyable?

**Comments/Observations:**

---

**Subject:** Mathematics  
**Topic:** Fractions

<table>
<thead>
<tr>
<th><strong>Title:</strong> Fraction Frenzy</th>
<th><strong>Serial:</strong> 5/6</th>
<th><strong>Date:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Session:</strong> After Recess</td>
<td><strong>Class Size:</strong> 29</td>
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**Curriculum Objective:**

**Resources:**

**Assessment:**
1. Participation – Observations of student involvement
2. Participation – Direct Questioning
3. Diagnostic – Assessment of report (see rubric)

**Time**  
**Program**

<table>
<thead>
<tr>
<th><strong>10:50</strong></th>
<th><strong>Summary:</strong> Applying percentages and fractions in genuine scenarios</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>11:00</strong></td>
<td>1. <strong>Group Discussion</strong> – Bartering, swapping, discounts and finance (future link to money maths)</td>
</tr>
<tr>
<td><strong>11:25</strong></td>
<td>2. <strong>Video</strong> – Building an arch</td>
</tr>
</tbody>
</table>
11:35 | 3. Edmodo.com – Electronic worksheets with examples and working, adding and subtracting whole numbers, and positive fractions.

**Differentiate**

**a)** Follow this link:
1. Have a play with the app

**b)** Follow this link:

**c)** Additional videos ...

**Evaluation: Prompts**

1. What worked well in this lesson?
2. What part needs attention/fine tuning prior to re-delivery?
3. What would you recommend to a colleague in a similar situation?

**Reflection: Prompts**

1. Were you prepared? What did you not need? What did you miss?
2. Did the students enjoy the lesson? Were they excited about the excursion?
3. Did you enjoy teaching the lesson? What could (practically) make it more enjoyable?

**Comments/Observations:**
### 3. Activity – Summative assessment task

<table>
<thead>
<tr>
<th>Differentiate</th>
<th>Evaluation: Prompts</th>
<th>Reflection: Prompts</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Follow the link:</td>
<td>1. What worked well in this lesson?</td>
<td>1. Were you prepared? What did you not need? What did you miss?</td>
</tr>
<tr>
<td>1. Have a play with the app</td>
<td>2. What part needs attention/fine tuning prior to re-delivery?</td>
<td>2. Did the students enjoy the lesson? Were they excited about the excursion?</td>
</tr>
<tr>
<td>b) Follow this link:</td>
<td>3. What would you recommend to a colleague in a similar situation?</td>
<td>3. Did you enjoy teaching the lesson? What could (practically) make it more enjoyable?</td>
</tr>
<tr>
<td>c) Additional videos ...</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comments/Observations:**
### Assessment

<table>
<thead>
<tr>
<th>Type of assessment</th>
<th>What will be assessed</th>
<th>Method</th>
<th>% Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>Overall participation in class discussions and activities throughout the course of the unit.</td>
<td>Observations</td>
<td>10%</td>
</tr>
<tr>
<td>ICT</td>
<td>Student’s ability to use ICT effectively to complete and submit tasks.</td>
<td>Observations</td>
<td>20%</td>
</tr>
<tr>
<td>Experiment</td>
<td>Ability to work together as a class and in small groups to complete experiments.</td>
<td>Observations, Questioning</td>
<td>20%</td>
</tr>
<tr>
<td>Report</td>
<td>The clarity of the report findings based on the technique employed in the practical experimentation.</td>
<td>Rubric</td>
<td>25%</td>
</tr>
<tr>
<td>Article</td>
<td>Student’s ability to work individually or in a group to organise and evenly distribute tasks amongst each other. Research is put into own words. Evidence of sentences/paragraphs used to structure article. Spelling punctuation will be checked for errors. Article identifies states of matter, processes of change and simple articulate explanation. Article demonstrates a good understanding of the topic.</td>
<td>Rubric</td>
<td>25%</td>
</tr>
</tbody>
</table>

Students understanding of the topic will be assessed by using a variety of formative and summative assessment strategies throughout the course of this unit.

**Formative assessment** - Formative assessment will be used as an ongoing diagnostic evaluation to gauge a student’s progress by recording observations and questioning a student understanding,

**Summative assessment** - Summative assessments for this unit will be an article explaining in the student’s own terms what are the characteristics of fractions, how to add and subtract similar and unlike fractions.

---

### Formative Assessment By Observations - Key

<table>
<thead>
<tr>
<th>Group</th>
<th>Grading Tally Rubric</th>
<th>Identified Observation Comments</th>
<th>Summative Assessment Rubric</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Achievement (H.Ach)</td>
<td>2-D, 7-C, 9+B, 13+A</td>
<td>Tally:</td>
<td></td>
</tr>
<tr>
<td>Special Education Needs (SEN)</td>
<td>1-D, 3-C, 5+B, 9+A</td>
<td></td>
<td>25% - Complete Content</td>
</tr>
</tbody>
</table>

### Summative Assessment Rubric [Expanded]

<table>
<thead>
<tr>
<th>Value</th>
<th>Component</th>
<th>Defined</th>
</tr>
</thead>
<tbody>
<tr>
<td>25%</td>
<td>Presentation</td>
<td>Employed appropriate software to create document (5). Actual document appeal, tidy, legible, design (10) The article presents a level of understanding which matches the student/group effort in developing the article research, to draft, to presentation (10)</td>
</tr>
<tr>
<td>25%</td>
<td>Accuracy</td>
<td>The document contains information which is regarded as fact (15) Has been verified by more than one other source. (10)</td>
</tr>
<tr>
<td>25%</td>
<td>Content</td>
<td>The article contains material that has come from a variety of sources (5) Covers an interesting subject perspective (5) Is relevant to the class learning (5) Incorporates the use of effective language to communicate the material in a presentable manner (10)</td>
</tr>
<tr>
<td>25%</td>
<td>Artefact</td>
<td>The article is logical and makes sense (5) Contains information which conveys the author’s understanding of the task and material (10) Contains relevant information which may assist other students to develop knowledge about the subject (10)</td>
</tr>
</tbody>
</table>