

# Transformation by design unit outline: Year 7 Number

## Using mathematics to understand God's world-negative and positive numbers

### Main idea

- Maths helps us appreciate how amazing God's creation is!

### Biblical perspective (creation, fall, redemption, restoration)

#### Creation

- God created our beautiful world. He set reliable patterns in place, creating order out of chaos.
- He saw everything He made and pronounced it 'good' (Genesis 1).
- Really hot and cold; and really high and low places, all have their own beauty.
- Psalm 19:1 and Job 38 give some insight into the awesome world that God created.



#### Fall

- Humans may hold the belief that everything in the world can be understood through human wisdom and/or knowledge of mathematics and science.
- Humans may worship that which is created rather than the creator.
- Mathematics is reduced to black-and-white numbers in a textbook. Beauty and context are lost.
- Romans 1:20-23

#### Redemption and Restoration

- Romans 8, especially 1-2; 18-25 tells us that the saving work of Jesus makes it possible to worship the Creator, not the created, and carries the hope that one day all of creation will also be restored to its fullness and beauty.
- Maths allows us to appreciate the design and detail of God's creation more fully. However, it also helps us realise that the more we know, the more we don't actually understand. This points to how great God is.

*"The heavens declare the glory of God; the skies proclaim the work of his hands. Day after day they pour forth speech; night after night they reveal knowledge. They have no speech, they use no words; no sound is heard from them. Yet their voice goes out into all the earth, their words to the ends of the world." Psalm 19:1-4*

### Threads

PONDERING CREATION Students contemplate both the Creator and His handiwork and respond in delight and praise.

#### Enduring understandings

- Our understanding of negative numbers (integers) helps us better conceptualise the width and breadth of our world and appreciate the extremes, such as temperature.

#### Essential questions

##### ***How does maths help us stand in awe of God?***

- Where can we see the fingerprints of God in creation?
- How do we respond to questions of nature that we cannot answer?
- How does understanding numbers that go below zero help us appreciate God's world?

<b>Misconceptions</b>
<ul style="list-style-type: none"> <li>• Everything can be understood by human wisdom, or through mathematics and science.</li> <li>• Mathematics is what is found in a school textbook and is boring</li> </ul>
<b>Life-long learning</b>
<p>Heart: Maths helps me grow in appreciation of aspects of the created world, and stand in awe of God</p> <p>Head: With God's help I notice beautiful number patterns in our number system</p> <p>Heart: (With God's help), I use Maths as a tool to clearly explain things to others and solve problems</p>
<b>Australian Curriculum Outcomes ACARA 9.0</b>
<p>Strand: Number</p> <ul style="list-style-type: none"> <li>• Compare, order, and solve problems involving addition and subtraction of integers AC9M7N07</li> <li>• Use mathematical modelling to solve practical problems involving rational numbers and percentages, including financial contexts; formulate problems, choosing representations and efficient calculation strategies, using digital tools as appropriate; interpret and communicate solutions in terms of the situation, justifying choices made about the representation AC9M7N09</li> </ul>
<b>Christian perspective: framing activities</b>
<b>Part 1: Integers</b>
<ul style="list-style-type: none"> <li>• Integer poster</li> <li>• Unit outline for students and self-reflection rubric</li> <li>• Cover pages for workbooks</li> </ul>
<ul style="list-style-type: none"> <li>• Mathematics in everyday life – homework task. Also encourages family interactions (appendix 1)</li> </ul>
<p>Marvelling at the extremes of God's world (separate website post)</p> <ul style="list-style-type: none"> <li>• Class activity: 'high and low places' to marvel at God's world (PowerPoint)</li> <li>• Class activity: extremes of temperature (PowerPoint and experiment with dry ice)</li> <li>• Videos such as <ul style="list-style-type: none"> <li>○ The Marina Trench: (Long way down Marina trench) <a href="https://www.youtube.com/watch?v=Y2tm4OuMhDI">https://www.youtube.com/watch?v=Y2tm4OuMhDI</a></li> <li>○ How far can you dig? <a href="https://www.youtube.com/watch?v=E39GlysMevQ">https://www.youtube.com/watch?v=E39GlysMevQ</a></li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Discussion: How does understanding numbers that go below zero help us appreciate God's world? (ideally do this on an online discussion board to share answers and marvel together at God's creation)</li> </ul>
<ul style="list-style-type: none"> <li>• Intersperse with integers skills &amp; drills from worksheets/ textbook</li> </ul>
<ul style="list-style-type: none"> <li>• Integer assignment</li> </ul>
<b>End of topic exam</b>
<ul style="list-style-type: none"> <li>• On the first page of the exam include these questions [2 marks each based on thoughtful</li> </ul>

answers]:

- Negative numbers helps me be amazed by ..... in creation.
- This is because...
- One other thing I have learnt this term is...
- Now go back and fill in the self-evaluation (include the self-evaluation rubric on the next page)

