Fruit fractions: Fruit salad crafty creations

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| Year levelStrand(s)Lesson length Code | * Year 3 and Year 4
* Number
* 60 mins
* AC9M3N02
* [AC9M4N03](https://v9.australiancurriculum.edu.au/f-10-curriculum.html/learning-areas/mathematics/year-4/content-description?subject-identifier=MATMATY4&content-description-code=AC9M4N03&detailed-content-descriptions=0&hide-ccp=0&hide-gc=0&side-by-side=1&strands-start-index=0&subjects-start-index=0&view=quick)
* [AC9M4N04](https://v9.australiancurriculum.edu.au/f-10-curriculum.html/learning-areas/mathematics/year-4/content-description?subject-identifier=MATMATY4&content-description-code=AC9M4N04&detailed-content-descriptions=0&hide-ccp=0&hide-gc=0&side-by-side=1&strands-start-index=0&subjects-start-index=0&view=quick)
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| Lesson summary | Students demonstrate knowledge of fractions through creating their very own simulated ‘fruit salad’. Pose the questions: if you were to create a fruit salad what would it have in there? In what ratios/proportions? Are there any fruits you wouldn’t want in there? Which fruits go/don’t go together? Showcase your understanding of common (and decimal) fractions through this hands-on ‘Creative Craft’ learning experience. |
| Learning intention | Students can:* creatively apply my understanding of fractions (and decimals) to craft representations of fruit salads, showing the different ways to express proportions. I understand the connection between fractions and decimals
* explore and apply my knowledge of fractions to represent fruit salad ingredients using common fractions and decimal fractions. I will use visual aids like number lines, arrays, and fraction walls to express my knowledge creatively.
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| Success criteria | By the end of this lesson:* students can explain, using appropriate mathematical vocabulary, the practicality of fractions and decimals in the context of creating fruit salad representations and how they are applied in real-life scenarios
* students can create visual representations of fruit salad fractions, including equivalent fractions and decimal fractions, to demonstrate their understanding of fractions in the context of crafting fruit salads creatively.
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| Why are we learning about this? | Fractions and decimals are fundamental mathematical concepts that have practical applications in our daily lives. Think about enjoying a delicious fruit salad. Have you ever wondered how to accurately represent the various components in words and pictures? Good chefs know that the balance between different flavours and ingredients is what creates the perfect meal. In this lesson, we delve into the world of fractions and decimals through creative fruit salad crafting. By mastering these concepts, you'll gain the skills to express proportions accurately and use them in real-life situations, such as sharing or cooking recipes. |
| Prerequisite student knowledge and language | It is expected that students have:basic arithmetic skills (addition, subtraction, and multiplication)some familiarity with common fruits and their shapes or parts is usefulsome experience with common (and decimal) fractions. |
| **Resources** | Teacher’s slides (PowerPoint)Guess who fractions game (Word)Cardboard posters for each studentDifferent coloured Unifix, MultiLink, Lego, coloured paper or other physical materialsReal chopped fruit (optional) |

Curriculum information

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| Achievement standard | Students represent unit fractions and their multiples in different ways.They recognise equivalent fractions and make connections between fraction and decimal notations. Students count and represent fractions on a number line. |
| Content description(s) | Students recognise and represent unit fractions including $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5} $and $\frac{1}{10}$ and their multiples in different ways; combine fractions with the same denominator to complete the whole. AC9M3N02Students find equivalent representations of fractions using related denominators and make connections between fractions and decimal notation. [AC9M4N03](https://v9.australiancurriculum.edu.au/f-10-curriculum.html/learning-areas/mathematics/year-4/content-description?subject-identifier=MATMATY4&content-description-code=AC9M4N03&detailed-content-descriptions=0&hide-ccp=0&hide-gc=0&side-by-side=1&strands-start-index=0&subjects-start-index=0&view=quick)Students count by fractions including mixed numerals; locate and represent these fractions as numbers on number lines. [AC9M4N04](https://v9.australiancurriculum.edu.au/f-10-curriculum.html/learning-areas/mathematics/year-4/content-description?subject-identifier=MATMATY4&content-description-code=AC9M4N04&detailed-content-descriptions=0&hide-ccp=0&hide-gc=0&side-by-side=1&strands-start-index=0&subjects-start-index=0&view=quick) |
| General capabilitiesCross-curriculum priority | **General capabilities**Literacy: Speaking and listening ([PL5](https://v9.australiancurriculum.edu.au/f-10-curriculum/general-capabilities/literacy?element=0&sub-element=0))Numeracy: Interpreting fractions ([PL5 and PL6](https://v9.australiancurriculum.edu.au/f-10-curriculum/general-capabilities/numeracy?element=0&sub-element=4)) Number and place value ([PL6](https://v9.australiancurriculum.edu.au/f-10-curriculum/general-capabilities/numeracy?element=0&sub-element=0))Critical and Creative Thinking: Create possibilities ([PL3](https://v9.australiancurriculum.edu.au/f-10-curriculum/general-capabilities/critical-and-creative-thinking?element=1&sub-element=0)) Draw conclusions and provide reasons ([PL3](https://v9.australiancurriculum.edu.au/f-10-curriculum/general-capabilities/critical-and-creative-thinking?element=2&sub-element=1)) **Cross Curricular Priorities**Aboriginal and Torres Strait Islander Histories and Cultures: Country/Place ([A\_TSICP1](https://v9.australiancurriculum.edu.au/f-10-curriculum/cross-curriculum-priorities/aboriginal-and-torres-strait-islander-histories-and-cultures?organising-idea=0)) |
| Areas of challenge | Some students may:express fractions creatively; that is, creative application of fractions and decimals in crafting fruit salad representations may pose challenges, as it requires students to think abstractly and find innovative ways to visually represent proportionslack of deep understanding of fractions as students may think for example that if they add another banana piece to their fruit salad which is currently $\frac{2}{18}$ banana, it will now be $\frac{3}{18}$ banana, not $\frac{3}{19}$not be used to being autonomous in a task such as this, so may get stuck choosing materials, or which fruits they may wish to use. |
| Strategies | [Concrete, Representational, Abstract (CRA)](https://www.mathematicshub.edu.au/plan-teach-and-assess/teaching/teaching-strategies/concrete-representational-abstract-cra/)[Collaborative learning](https://www.mathematicshub.edu.au/plan-teach-and-assess/teaching/teaching-strategies/collaborative-learning/)[Differentiated teaching](https://www.mathematicshub.edu.au/plan-teach-and-assess/teaching/teaching-strategies/differentiated-teaching/) |

Lesson structure

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| Introduction10 mins | Use the teacher’s slides to support your teaching. Pre-prepare your materials by printing the Guess who game. **Warm-up challenge** Number Talk: $\frac{2}{4} + \frac{1}{2}=$Show warm-up from slide 2. Students use mini-whiteboards or their exercise books to prove their answer using mathematical diagrams.Expect responses such as: ‘You can't add them as they are different denominators’; $\frac{3}{6}$ (simply adding the numerators and denominators).There are multiple correct responses to this problem such as $\frac{4}{4}, \frac{2}{2}, 1$and one whole.**Differentiation** (extension): $\frac{5}{10}+\frac{3}{20}=$ **Differentiation** (support): Provide physical/visual aids; request student work with a peer |
| Explore/investigate35 mins | Begin by revisiting fractions. Show students examples of simple fractions, such as $\frac{1}{2}, \frac{1}{3}$, and $\frac{1}{4}$, using visuals like pizza slices or shapes divided into equal parts. Explain that fractions are equal piece of a whole. **Fraction Game** (Guess Who?)Play a modified 'Guess Who?' game where students use fractions to make guesses; for example, ‘Are you more than half?’, ‘Is your denominator an even number?’ or ‘Do you have a numerator of 3?’. Download the game and print it for students. **Differentiation** (support): The support version of the game uses only halves, quarters, thirds and wholes (and a few equivalents) whilst the standard version incorporates fifths and tenths. There are two versions of each game sheet, including either just the diagram or the diagram and its fraction.Explicit Teaching: Make the learning intention and success criteria explicit, allowing students to rate their prior knowledge of fractions on a scale of 1–5 using a visual hand cue. Brainstorm what we know about fractions on the whiteboard as a ‘mind map’**Practical Component**Creative fruit salad craft* Show students visual images of fruit salads (slide 3).
* Discuss the significance of Aboriginal and Torres Strait Islander fruits like quandong and finger lime, emphasising their cultural and culinary importance. For relevant supporting information refer to [Quandongs](https://eprints.qut.edu.au/244218/4/Quandongs_2.0_ver6.pdf) [PDF].
* Distribute craft materials like Lego pieces, coloured paper, different coloured Unifix, MultiLink cubes etc.
* Instruct students to create their own fruit salad representations using any of the materials provided (students scrunch up the coloured paper or utilise the other craft materials to create their ‘fruit salad’ where the colour of the material represents the colour of the fruit, for example, a yellow Unifix cube may represent a piece of banana, a green may represent a finger lime.
* Hand out the cardboard and encourage students to use common fractions (for example, $\frac{1}{2}, \frac{1}{4 }$) and decimal fractions (for example, 0.5, 0.25) to indicate the proportions of fruits in their fruit salad.
* Challenge students to represent their fruit salad fractions using the cardboard poster in as many ways as possible:
* Decimal fractions, common fractions, equivalent fractions
* Horizontal, vertical number lines
* Arrays
* Fraction walls
* Allow students to share their fruit salad representations with the students in their group, explaining how they used fractions and decimals to depict fruits and proportions.
* Revisit the learning goals and success criteria to assess their understanding.

**Differentiation** (extension):Challenge students with a deeper understanding of fractions to explore various creative methods of representing equivalent fractions in their fruit salad craft. Encourage them to think beyond common representations and seek innovative ways to showcase fractions and proportions.**Differentiation** (support):For students who may find fractions challenging, provide tangible aids such as fraction cards or models to help them visualise and understand the concept of fractions while crafting their fruit salad representations. Alternatively encouraged them to work with a peer tutor. |
| Summary and reflection15 mins | Summarise the key points of the lesson by reminding students of their creative fruit salad representations and how they used fractions and decimals to showcase fruit proportions. Emphasise the practical application of fractions in everyday life and the fun of learning through creativity.**Reflection questions**Invite students to reflect on what they've learned and their experiences with fractions and creative fruit salad representations:* ‘What did you find most interesting about using fractions and decimals to represent fruit salads creatively?’
* ‘What have we learned about numerators and denominators today and how they relate to our fruit salad representations?’
* ‘How can you imagine using fractions and decimals in everyday situations, such as sharing a fruit salad or measuring ingredients for a recipe?’
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| Assessment | The following formative assessment is suggested for this lesson.Students present their ‘fruit salads’ to the class, or alternatively celebrate the lesson with a hands-on fruit fraction feast, allowing students to enjoy real fruits in fractions and showcase their learning. |