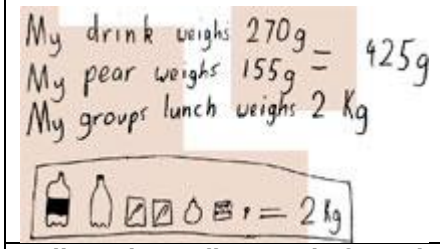
Mass 2

Stage 3 Outcome

A student:
› describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions MA3-1WM
› selects and applies appropriate problem-solving strategies, including the use of digital technologies, in undertaking investigations MA3-2WM
› selects and uses the appropriate unit and device to measure the masses of objects, and converts between units of mass MA3-12MG

Language: Students should be able to communicate using the following language: mass, measure, scales, tonne, kilogram, gram.

Teaching and Learning Activities	Notes/ Future Directions/Evaluation	Date/ LAC Icons
Explicit Teaching Teacher must explain and demonstrate how to connect decimal representations to the metric system. Students will: • recognise quivalence of whole-number and decimal representations of measurements of mass, eg 3 kg 250 g is the same as 3.25 kg • interpret decimal notation for masses, eg 2.08 kg is the same as 2 kilograms and 80 grams • measure mass using scales and record using decimal notation of up to three decimal places, eg 0.875 kg Student must understand how to convert between kilograms and grams and between kilograms and tonnes. Students will explain and use the relationship between the size of a unit and the number of units needed to assist in determining whether multiplication or division is required when converting between units, eg 'More grams than kilograms will be needed to measure the same mass, and so to convert from kilograms to grams, I need to multiply One litre of water has a mass of one kilogram and a volume of1000 cubic centimetres. While the relationship between volume and capacity is constant for all substances, the same volumes of substances other than water may have different masses, eg 1 litre of oil is lighter than 1 litre of water, which in turn is lighter than 1 litre of honey. This can be demonstrated using digital scales.		Literacy

Whole Class Teaching Activities **The Average Lunch** Students find the average mass of lunch, including fruit and drinks, eaten by the students in their small group. Students use the measurement of each group's lunch mass to calculate the total mass of all lunches for the class for one day. Express the total in kilograms and grams. Students then find how many 5 kg crates would be needed for carrying the lunches from the whole class. 		Literacy Critical and creative thinking
Follow That Jelly Bean(refer to lesson plan pp138-139 for more details) Students investigate the length of a line of jellybeans, if 0.5 t of jellybeans were placed end-to-end. *How long would the line be?* 		Critical and creative thinking
Towering tins Students calculate the height of a tower of items where the tower has a total mass of 1 tonne. Examples of items may include: drink cans (full or empty), books, bricks, an "average" Year 5 or Year 6 student.		Critical and creative thinking

A Wet Week Students calculate the mass of rainwater that would fall on a football field in a wet week. Either measure rainfall, or select reports of rainfall from the newspaper or television weather reports. Calculate by finding the volume of water on the football field and then converting to units of mass. Students will relate the mass of one litre of water to one kilogram Students compare the mass of water on a football field and a netball court.		Critical and creative thinking
Problem Solving Students complete problems similar to: **Mass** Estimate and place in order the following: a standard family car a million cubic centimetres of water a team of international male rugby players (15 players) enough potatoes to make chips to feed everyone in the school for a week. Students solve problems involving different units of mass, eg find the total mass of three items weighing 50 g, 750 g and 2.5 kg		Critical and creative thinking