

External assessment 2025

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Stimulus book

# Food & Nutrition

## General instruction

- Work in this book will not be marked.

# Stimulus 1

## Test kitchen report

An infant food company has developed three prototype formulations for the lactose-intolerant infant nutrition consumer market (NCM). The company has researched consumer preferences with a focus group from the NCM, while also researching infant nutrition, feeding and safety advice. The prototypes were tested by parents and carers with infants aged nine months. Prototype 1 comes in plastic packaging, while Prototypes 2 and 3 come in a pouch.

## Prototype formulations

- Prototype 1: Savoury pancakes
- Prototype 2: Pasta bolognaise
- Prototype 3: Chicken meatballs

## Consumer trends for the NCM

- **Value for money**  
When considering a range of options, consumers prefer products with the lowest unit price, even if this means buying a larger amount than desired. The acceptable price range for ready-made infant meals is between \$2.50 and \$3.50 per serve.
- **Convenient**  
Consumers are willing to pay more for products that are convenient and quick to prepare.
- **Encourage self-feeding<sup>1</sup>**  
Consumers like products that support physical development in infants by encouraging chewing and self-feeding, such as products that infants can eat using their fingers.

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<sup>1</sup> eating independently, for instance using a spoon or by hand

## Recommendations for infant nutrition (based on Food Standards Australia New Zealand and World Health Organization guidelines)




Foods for infants should:

- have less than 15% of their energy from sugar
- have less than 50 mg of sodium per 100 g.

Recommended daily intake (RDI) for infants 8–12 months	
Energy	2600–3260 kJ
Protein	14 g
Fat, total	30 g
– saturated	< 7 g
Carbohydrate	95 g
– sugars	< 15 g
Sodium	170 mg
Iron	11 mg
Calcium	270 mg

### Infant-feeding guidelines

- Avoid hard, uncooked foods and whole nuts, as they are a choking hazard.
- Avoid raw or undercooked eggs due to the risk of salmonella poisoning.
- Test the temperature of food before feeding it to an infant.

Food texture for infants		
		
<b>8 months</b> Mashed and lumpy	<b>10 months</b> Increased textures and foods that allow self-feeding	<b>12 months</b> The same foods as the rest of the family, with a variety of textures

## Stimulus 2

### Prototype 1: Savoury pancakes

**Texture:** Firm with small chunks

**Cost:**

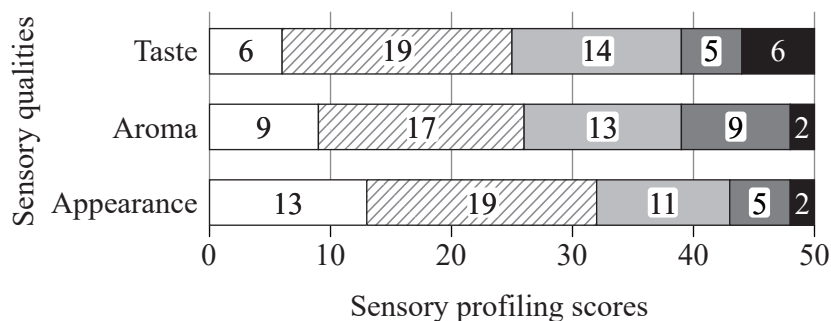
- \$2.55 per serve (120 g)
- \$2.13 per 100 g

Food components	Procedure	Heating instructions
265 g sweet potato 220 g zucchini 20 g spring onion, chopped 20 g chives, chopped 70 g plain flour 3 eggs (60 g each)	1. Grate the sweet potato and zucchini into a bowl, making sure to squeeze out all the juice from the zucchini. 2. Add spring onion, chives and flour. 3. Add eggs and mix well. 4. Cook $\frac{1}{4}$ cup of batter at a time in a non-stick pan, turning over, until golden on both sides.	Remove plastic packaging. Warm in a sandwich press for 30 seconds. Cool slightly and cut into pieces before serving.

### Nutritional information

	Per serve 120 g	Per 100 g
Energy	491 kJ	409 kJ
% energy from sugar		14.5%
Protein	5.9 g	4.9 g
Fat, total	2.7 g	2.3 g
– saturated	0.9 g	0.8 g
Carbohydrate	15.6 g	13 g
– sugars	4.2 g	3.5 g
Sodium	58 mg	48 mg
Iron	1.1 mg	0.9 mg
Calcium	37.6 mg	31.3 mg

### Sensory profiling data (50 profilers)



## Prototype 2: Pasta bolognaise

**Texture:** Lumpy with large chunks

**Cost:**

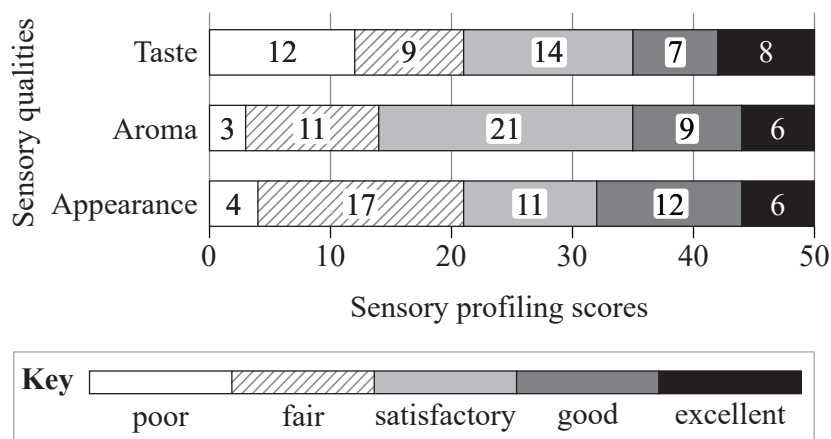
- \$3.35 per serve (175 g)
- \$1.91 per 100 g

Food components	Procedure	Heating instructions
400 g zucchini 130 g carrot 150 g onion 100 g celery 10 g garlic 20 g olive oil 500 g beef mince 10 g basil, chopped 800 g tinned diced tomatoes 30 g tomato paste 150 g pasta spirals	1. Finely dice the zucchini, carrot, onion, celery and garlic. 2. Heat the oil and sauté the carrot, onion, celery and garlic. 3. Add the beef mince and sauté until brown. 4. Add the basil, tomatoes, zucchini and tomato paste. Simmer for 45 minutes. 5. Cook pasta spirals in boiling water for 12 minutes or until al dente. Drain. 6. Stir cooked pasta into bolognaise sauce.	Do not microwave in pouch.  Open pouch and place in a pot of simmering water until warm, approximately 3–4 minutes.  Remove pouch and shake to evenly distribute heat. Squeeze into a bowl.  Test temperature before serving.

### Nutritional information

	Per serve 175 g	Per 100 g
Energy	523 kJ	299 kJ
% energy from sugar		12.5%
Protein	19.4 g	11.1 g
Fat, total	4.6 g	2.6 g
– saturated	1.6 g	0.9 g
Carbohydrate	6.6 g	3.8 g
– sugars	3.8 g	2.2 g
Sodium	88 mg	50 mg
Iron	1.4 mg	0.8 mg
Calcium	40.3 mg	23 mg

### Sensory profiling data (50 profilers)



### Prototype 3: Chicken meatballs

**Texture:** Firm with large chunks

**Cost:**

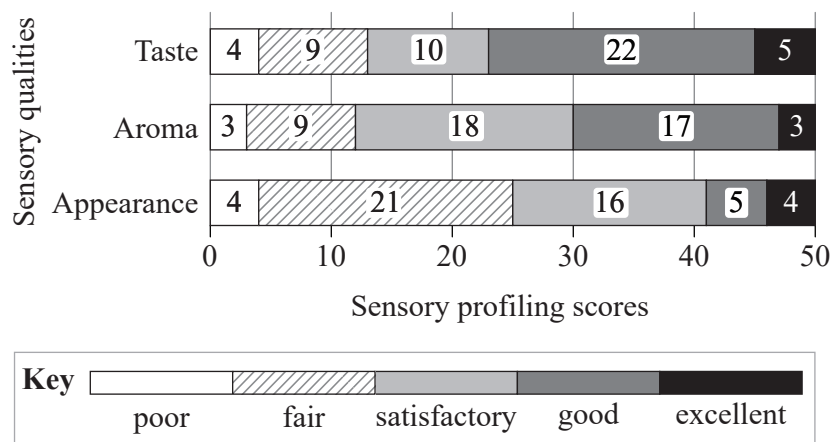
- \$3.10 per serve (150 g)
- \$2.07 per 100 g

Food components	Procedure	Heating instructions
150 g onion 120 g carrot 20 g spring onion 20 g olive oil 100 g apple 500 g chicken mince 40 g breadcrumbs 2 g dried thyme	1. Finely chop the onion, carrot and spring onion. Sauté in oil until tender. 2. Grate the apple into a bowl, squeezing out the juice. 3. Add sautéed vegetables, chicken mince, breadcrumbs and dried thyme to the bowl and mix well. 4. Form the mixture into 40 g balls. 5. Bake at 180 °C for 20 minutes until meatballs are golden.	Do not microwave in pouch. Open pouch and place in a pot of simmering water until warm, approximately 2–3 minutes. Remove pouch and shake to evenly distribute heat. Squeeze into a bowl. Test temperature before serving.

### Nutritional information

	Per serve 150 g	Per 100 g
Energy	813 kJ	542 kJ
% energy from sugar		9.1%
Protein	12.5 g	8.3 g
Fat, total	9.9 g	6.6 g
– saturated	2.5 g	1.7 g
Carbohydrate	8.5 g	5.7 g
– sugars	4.4 g	2.9 g
Sodium	117 mg	78 mg
Iron	0.94 mg	0.63 mg
Calcium	28.6 mg	19.1 mg

### Sensory profiling data (50 profilers)



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## References

- Data sourced from the National Health and Medical Research Council 2006, *Nutrient Reference Values for Australia and New Zealand*.
- Adapted from Whiteford, A 2023, 'Savoury Waffles', *Healthy Little Foodies*, <https://www.healthylittlefoodies.com/savoury-waffles/>.
- Adapted from Whiteford, A 2021, 'Baby Bolognese', *Healthy Little Foodies*, <https://www.healthylittlefoodies.com/extra-veggies-bolognese/>.
- Adapted from Whiteford, A 2023, 'Chicken Meatballs for Babies', *Healthy Little Foodies*, <https://www.healthylittlefoodies.com/fruity-chicken-balls/>.
- Food Regulation Standing Committee 2023, Issues paper: *Commercial foods for infants and young children*, *FRSC*, <https://www.foodregulation.gov.au/sites/default/files/2024-01/commercial-foods-for-infants-and-young-children-issues-paper.pdf>.
- World Health Organization, *Guideline: sugars intake for adults and children*, [https://iris.who.int/bitstream/handle/10665/149782/9789241549028\\_eng.pdf](https://iris.who.int/bitstream/handle/10665/149782/9789241549028_eng.pdf).

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