

Technology and Living School-based Assessment Food Science and Technology strand

**Guidelines on project for
Food Product Development
(October 2024)**

Project	Suggested maximum no. of pages (A4 size)	Suggested lesson time (based on 40 mins / lesson)	Mark	Total Mark
- Proposal				40
(i) Design Task / Problem	0.5	1 double lesson	10	
(ii) Design Brief	0.5	1 single lesson		
(iii) Research	4	1 double lesson		
(iv) Design Specification	1	1 single lesson		
(v) Idea Generation (5 - 7)	4	1 double lesson	10	
(vi) Developing Own Ideas (2 - 3)	6	1 - 2 double lessons + 1 single lesson		
- Realisation and Evaluation				
(vii) Final product making (1)	3	1 double lesson	15	
(viii) Overall evaluation	1	1 single lesson		
Communication and presentation	--	--	5	
	Total: ≤ 20 pages	Total: about 14 - 16 single lessons		

Product Development Process

(i) Design Task / Problem (max.: 0.5 page)

The design task / problem may be given to a student by the teacher or a student may decide his/her own task / problem. The task / problem must involve designing and making a food product.

(ii) Design Brief (max.: 0.5 page)

Once the design task / problem is decided, a student is expected to write a clear and concise design brief to guide his/her research in addressing the following information:

- What type of food product needs to be designed?
- Who is it for? Identify the target market, their age range, sex and social background
- Where will it be used / consumed?
- Are there any special user requirements (e.g. nutritional, cultural, religious, economic or environmental)?

(iii) Research (max.: 4 pages)

To gather information from a wide range of appropriate sources that helps you design a successful food product e.g.

- internet search
- books, newspaper, magazines, leaflets
- survey (shop survey or consumer questionnaire)
- product analysis

- product test report (e.g. 'Choice' magazine)
- visits to manufacturers (e.g. internet, videos or CD-ROM), restaurants, supermarkets, snack bars, street stalls, canteen etc...

(iv) Design specification (*max.: 1 page*)

A design specification should include the following which enable you to generate a range of design ideas and then guide your thinking about the food product you are developing.

- Type and purpose of product
- Requirements of target group
- Nutritional information
- Types of ingredients to be used
- Portion size
- Shape / Flavour / Colour
- Price range of the product
- Packaging
- Storage and shelf life considerations
- Environmental issues

(v) Idea Generation (*max.: 4 pages*)

- Brainstorming of initial ideas
- Idea sketches

(vi) Developing Own Ideas (*max.: 6 pages*)

- Developing prototypes for trialling and testing
- Sensory evaluation / Sensory analysis (tasting)
- Evaluation

(vii) Final product making (*max.: 3 pages*)

- Production flowchart (including HACCP) / time schedule / equipment / ingredients
- Making of the final product
- Sensory evaluation / Sensory analysis (tasting)
- Testing of the final product against the specification
- Evaluation

(viii) Overall evaluation (*max.: 1 page*)

- Product evaluation
- Process evaluation
- Suggestions for modifications

Sample project title / design task provided by teacher and
Sample design brief developed by student, with guidance
from teacher

Sample 1

Design task

Low carbon eating

Emission of greenhouse gases is one of the major causes of global warming. These greenhouse gases are produced during food processing, packaging, storage and transportation. For this reason, the concept of low carbon eating is being promoted recent years. Some people reduce the consumption of meat. Some people choose to become vegetarians.

Design brief

Design and produce a savoury or sweet snack that promotes low carbon eating.

Sample 2

Design task

Ethnic food

Eating ethnic foods is a great way to experience different cultures. Different cultures have developed their own unique cuisine using spices and flavours indigenous to the region.

Design brief

Design and make an 'ethnic' burger that could be served at a kiosk in an international food fair for visitors of different nationalities.

Sample 3

Design task

Healthy snacks

Snack foods are eaten in large quantities in HK and many other countries. People eat snack foods between or instead of meals every day, or at parties and picnics. Many snack-food products are designed to be eaten quickly and easily, and to be filling and satisfying.

Design brief

Design and make a healthy snack food product suitable for sale in school canteens. The food product should be in individual portion and aimed at young children.

Research: Information Search

Information 1

Source: *e.g. Internet, books, magazines...etc.*

Information 2

Source:

Research: Product Analysis

To compare and analyse a selection of food products similar to what you intend to design and make

Name of the food product	Food Product A	Food Product B	Food Product C
	Photo of the food product	Photo of the food product	Photo of the food product
Cost / Retail price			
Weight			
Appearance			
Texture			
Flavour/aroma			
Nutritional information			
Packaging			
How does the food product suit its target market group?			

Design Specification

Example 1:

Design Specification

Use: part of main meal for older babies, toddlers and pre-school children

Target group: parents and child carers of older babies, toddlers and pre-school children

Nutrients: nutrients from whole milk; vitamins, minerals, and fibre from fruits; carbohydrate from sugar

Ingredients: pasteurised, whole milk, puree fresh fruit, sugar

Size: 75g

Shape: round, 80 mm in diameter

Flavour: natural fruit flavouring from added fruit

Colour: natural colouring from added fruit

Cost: manufacture: approximately HK\$25.00, recommended retail price HK\$40.00

Manufacture: added fruit to be stirred into set yoghurt before packaging

Packaging: plastic pot with easy to remove plastic lids, in packs of 6 with cardboard sleeve. Colourful cartoon characters on label.

Storage: chilling cabinet, can be frozen

Image: healthy, easy to eat, an aid to a baby learning to feed itself, right size for small appetites

Advertising: baby magazines, 'women's' magazines, afternoon and early evening TV commercials

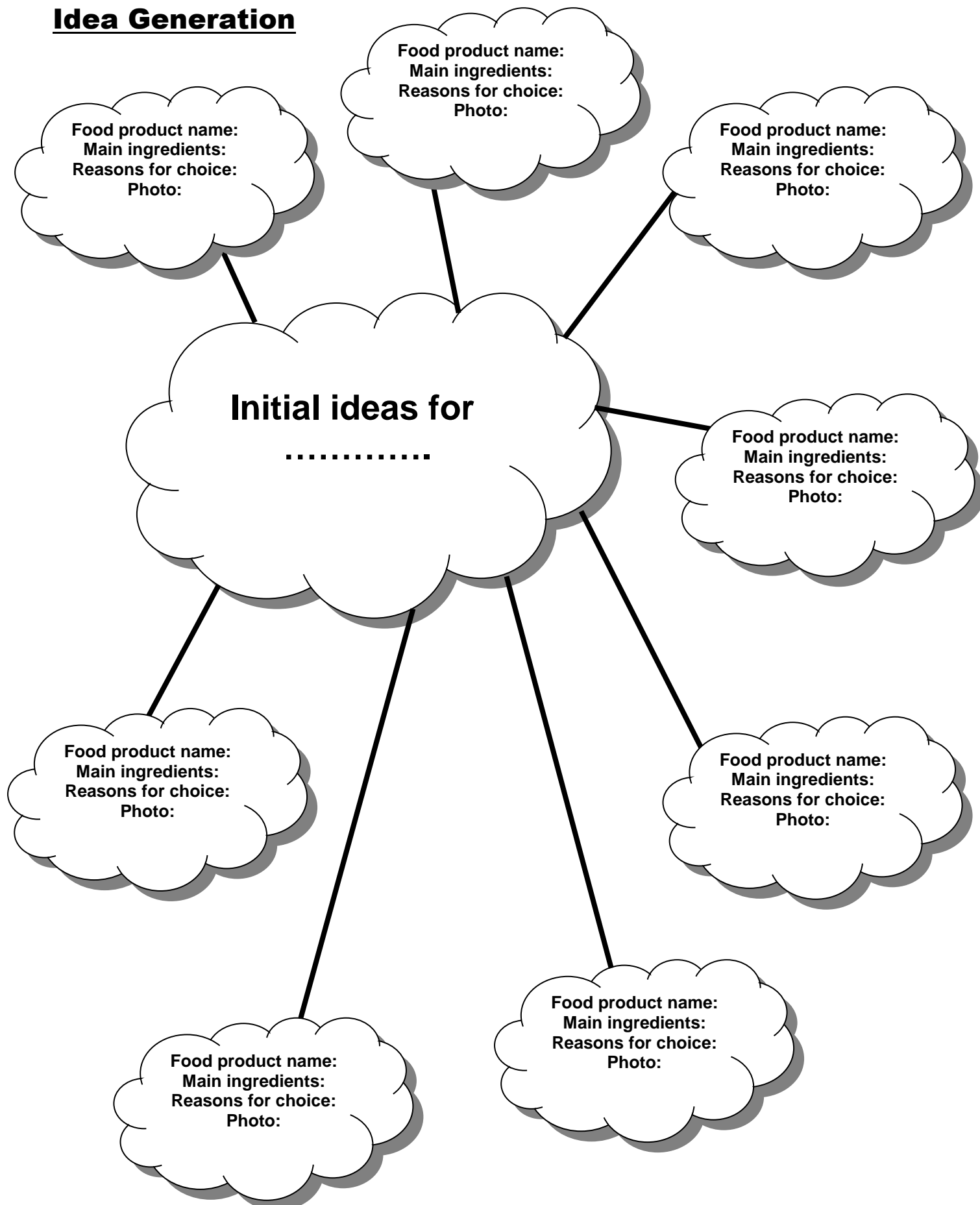
Example 2:

Design Specification

My food product must:

- be a nutritious, filling savoury product that could be served in the school canteen
- appeal to vegetarians and meat-eaters
- include fibre and protein and be a good source of vitamins
- use fresh, tasty and colourful ingredients, with a variety of textures.
- serve two child's portions
- cost between HK\$20.00 - HK\$25.00
- be suitable for small batch production
- be stored in a refrigerator with a shelf-life of 5-6 days
- use a heat resistant food container that can be recycled

Idea Generation



Developing Idea (1)

Food Product Name: _____

Ingredients / quantities / equipment / method / time plan	Photo of the food product
	Sensory evaluation results

Developing Idea (2)

Food Product Name: _____

Ingredients / quantities / equipment / method / time plan

Photo of the food product

Sensory evaluation results

Nutritional Information

Costing (per product / portion)

Specification point	Idea 2 [✓/ ✗/ ✖]

Evaluation of the food product / problems encountered / suggestions for modifications

Developing Idea (3)

Food Product Name: _____

Ingredients / quantities / equipment / method / time plan	Photo of the food product
	Sensory evaluation results

Final Product

Final Food Product Name: _____

Photo of the final food product

Photos showing the production of the final product

Ingredients / quantities / equipment /
production flowchart (including HACCP)

Nutritional Information	
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Costing (per product / portion)

[illegible]

Sensory evaluation results

Evaluation of the final product / problems encountered / suggestions for modifications

SENSORY DESCRIPTORS (Tasting words)

We use our senses to evaluate what we eat, so **sensory descriptors** are words for describing the appearance, taste and texture of food.

The following word bank gives examples of words used for food tastings. The list is not exhaustive, add your own words to the list. Some words fit under more than one heading.

SENSORY DESCRIPTORS			
Appearance (Looks) – colour, aesthetics	Texture (Mouthfeel) – how food and drink feels in your mouth		Taste, flavour and smell
Appetising	Airy	Lumpy	Acid
Attractive	Brittle	Mushy	Bitter
Boring	Chewy	Powdery	Bland
Bright	Cold	Rubbery	Burnt
Clear	Crispy	Slimy	Creamy
Cold	Crumbly	Smooth	Dry
Colourful	Crunchy	Soft	Fatty
Crumbly	Dry	Soggy	Fishy
Dry	Fine	Springy	Fruity
Dull	Firm	Sticky	Herby
Fattening	Fizzy	Stiff	Old
Fresh	Flaky	Stringy	Peppery
Fruity	Foamy	Tender	Salty
Glowing	Greasy	Thick	Sharp
Greasy	Gritty	Thin	Sickly
Healthy	Hard	Tough	Smoky
Hot	Hot	Watery	Soggy
Moist	Juicy	Warm	Sour
Mouth-watering			Spicy
Smooth			Stale
Soggy			Sweet
Tasty			Watery
			Wet
			Tasteless
			Tasty
			Undercooked

USES OF SENSORY ANALYSIS IN FOOD INDUSTRY

- food product development
- studying effects of ingredients, formulation, and process on final product
- measuring, predicting shelf life
- quality control and quality assurance
- competitor benchmarking
- investigation and prediction of taints