RESOURCES

FOOD TECHNOLOGY YR 12 HSC: FOOD PRODUCT DEVELOPMENT
Area: Reasons for and types of food product development
Outcomes assessed:

- H1.3 justifies processes of food product development and manufacture in terms of market, technological and environmental considerations
- H4.1 develops, prepares and presents food using product development processes. **:**

Resource 1: Introduction: "Food trends analysis"
Focus points: To activate prior knowledge and introduce drivers and types of product development
Stage: Introduction + Diagnostic task

ICT : interactive jamboard or padlet
Directions:

1. Students open the shared jamboard and respond to prompts
- "What are some new food products you have seen around lately (e.g advertised, in food markets)"
- "Why do you think companies create new products?"
2. In pairs, students are to categorise real-world products under types of product development (e.g me-too, line extensions or innovative/new)

Teacher questioning:

- Can you identify if this is a line extension or innovative product?
- What is the main reason you think influenced this product's development? (E.g convenience, cost, health)

Modifications:

- Use images with simplified descriptors for EAL/D or lower literacy students

Pedagogy link: Prior knowledge (constructivist approach), incorporates visible thinking skills and routine.

Resource 2: Practical and Explicit teaching: "Reverse engineer a product"
Focus points: understanding the steps in product development and learning key terms
Stage: Explore and explain
Materials: Instructional slide deck + worksheet

Directions:

1. Students are given a common commercial product (e.g cereal, healthy bars)
2. In groups, students complete a scaffolded worksheet that breaks down the product in the following
- Who is the target market?
- What needs does it meet?
- How does it meet cost,and shelf life requirements?

3. Use a teacher-led slide show to explicitly teach step-by-step for idea generation, screening, prototyping etc.

Questioning:
- At what point do you think a product is tested for a sensory appeal?
- What external factors could cause a product to fail at the marketing stage?

Syllabus: Identifies the steps in food product development and evaluates their significance
- drivers of the development of food products:

Modifications:
- Provide sentence starters
- Visual scaffold showing flowchart and development stages

Pedagogical link: Direct instruction (explicit teaching) Paired with inquiry (social constructivism, collaborative learning)

Resource 3: Collaborative task : "pitch your product"
Focus points: Application of steps of product development and evaluation
Stage: Consolidate + formative assessment
Materials: Canva, docs, slideshow

Directions:
1. In small groups, students design their own food product ideas
2. They must complete a digital pitch addressing
- Target market
- Product development type
- Outline of development stages
- Justification for choices
3. Present to peers and receive feedback using a peer rubric

Questioning:
- What step in your product development process is most challenging and why?
- How did you ensure your product aligned with current consumer demands?

Modifications:
- Provide pre-made template slides
- Pair lower literacy students with peers for collaborative writing

Pedagogical link: Project-based learning, formative assessment through peer and teacher feedback

Resource 4: Summative assessment - "development to delivery : case study analysis"
Focus points: integration of evaluation of drivers, types, the steps and success in food product development.
Stage: Summative assessment
Materials: scaffolded written task + success criteria / rubric

Directions:

1. Students select a real-world food products (or assigned)
2. Complete a written report 500-800 words addressing the following:
- Identify the type and contextual drivers (cost, convenience, health etc.)
- Describe product development process stages
- Evaluate products success or failure

3. Use a scaffold that includes:
- Structured paragraph frames
- Key vocabulary bank
- Success criteria/checklist

Questioning:
;- how did consumer trends influence the development of this product?
- in what ways did the company successfully or unsuccessfully manage risk and quality assurance?

Modifications:
- Shorten report length
- Provide structured graphic organiser
- Allow oral presentation with mindmap / slides
- Include glossary in home language for EAL/D

Pedagogical link: summative assessment (aligned with learning outcomes), supports, differentiations (universal design for learning UDL)

DESIGN AND TECHNOLOGIES:Designing for a purpose: User-centred product innovation

<u>Resource 1: Ideation task - “what problem are we solving?”</u>
Focus points: Activate prior knowledge and introduce the concept of effective design
Stage: Introduction + diagnostic
Syllabus dot point: Students learn about design theory, success and failure in design, and the influence of innovation and creativity.

Materials: “Miro” website / projected / padlet or jamboard + class discussion

Activity: students use an interactive online whiteboard (Miro) to brainstorm current design challenges (e.g., urban living, accessibility, climate adaptation). They categorise problems under user types (elderly, students, remote workers, etc.). Each student selects a challenge to focus on throughout the unit.

Directions:

- Students are drag their ideas to the quadrant that best represents the end-user they

are considering
- Students are to add a comment “how might we…?” problem based statement beside the idea

Modifications:

- existing sample “How might we…” starters for students needing scaffolds
- Use icon or image-based stimulus for visual learners or EAL/D students
- Pair students for oral brainstorming before digital submission

Pedagogical link: Constructivism learning, digital collaboration, user empathy

Resource 2: Explicit teaching and case study dissection “ Inside the design process”
Focus points: Understanding design theory and the stages of the design process
Stage: Consolidating learning
Syllabus dot point: Students learn about project analysis, product development cycles and the nature of design problems.

Activity: Students are to read a **case study** of a successful innovative product (NIKE, IKEA flatpacks or dyson / or self chosen). They then complete a **design process flowchart** with key decisions, constraints and user needs highlighted.

Case studies:
IKEA: https://paulshepherd.co/successful-innovation-case-study/
NIKE: https://paulshepherd.co/successful-innovation-case-study/
DYSON: https://www.cascade.app/studies/dyson-strategy-study

Directions:
- Students are to read and take notes on their chosen case study, identifying relating factors to the design process flowchart and specific example of the products journey

Modifications:

- Flowchart with visual cues and simplified language for supported learners
- Option to complete the task as a digital mind map (e.g., using MindMeister)

Pedagogical link: Explicit instructions, inquiry-based learning, modelled examples

Resource 3: Collaborative workshop “Prototype sketch + user feedback “
Focus points: Apply design process to solve a real-world need
Stage: Consolidating learning and formative assessment
Syllabus dot point: Students learn to plan and communicate design ideas, manage resources, and evaluate ideas critically.

Activity:

Students work in pairs to:

- Sketch and create a rough prototype on a poster
- Test with classmates for usability
- Record a reflection on the feedback received and chang es planned

Directions

- In pairs students sketch a basic concept that solves the chosen problem. Add labels and highlight materials needed and functions
- Once completed place poster on a wall
- Students will then go around with a sticky note and write their feedback on each poster
- End of activity students will reflect on their learning and thoughts for improvement

Modifications:
- Provide a sketch template for students needing visual guidance
- Option to respond orally rather than in writing
- Use sentence starters for recorded reflection

Pedagogical link: Design thinking, collaborative learning, formative peer assessment

Resource 4: Summative project pitch " Present your process"

Focus points: Evaluate design process and outcomes using real-world or individual created projects

Stage: Summative assessment

Syllabus dot point: Students learn to evaluate design solutions and justify their decisions in a design context.

Activity:

Students present a 10-slide digital portfolio or live pitch detailing:

- Their identified problem
- Design iterations
- Constraints and decisions
- User-centred feedback
- Final proposal and evaluation

use a rubric that covers clarity, innovation, process evidence, and presentation quality as a guide.

Directions:
- Students present in their pairs, the presentation must show the products purpose, design thinking and decisions made in response to peer feedback and constraints
- Must use images, sketches of 3D visuals (fusion360) to showcase solution
- Presentation must include justification using terminology from the design process

Modifications:
- Option to present as a pre-recorded walkthrough using Canva or PowerPoint
- Provide presentation scaffold and visual checklist

- Use peer-assessment with simplified feedback form for reflection

Pedagogical: Authentic assessment, project-based learning, metacognition

RESOURCES MADE:

FOOD PRODUCT DEVELOPMENT:

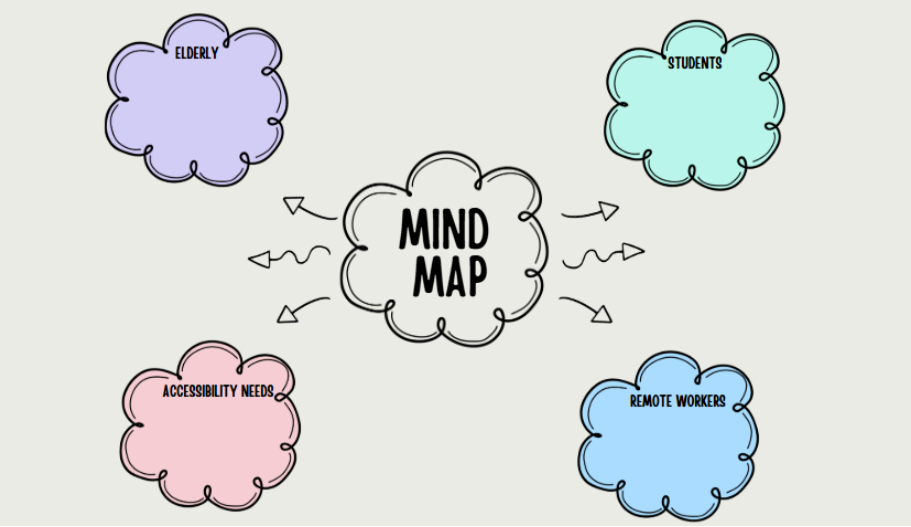
Resource 4: Summative assessment - "development to delivery : case study analysis"

INTRODUCTION (150-200 Words)
Your paragraph must include… - The food product that has been selected - Who developed it? (company / brand name) - Target market for this product - Evaluation of overall success or failure
INFLUENCES (150-200 Words)
The development of: Was influenced by these drivers: (list 4) One major driver was: This means the consumers were looking for: Another driver was: This is relevant to: These factors reflect broader trends in society such as:
PRODUCT DEVELOPMENT PROCESS: (200-300 Words)
Your paragraph must include the following: - Idea generation : Research market trends, data, surveys, competitors - Screening: What kind of market potential?Any alignment with company goals / motto? - Prototype development: Packaging types, portion sizes, flavourings, colours etc. - Product testing: How was this carried out? Promotions? Advertising? feedback?

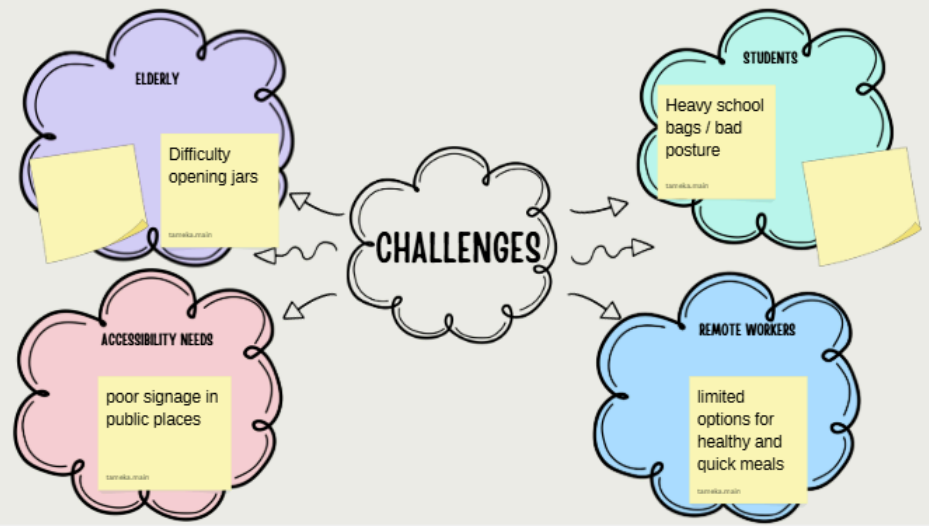
- Commercialisation: How was the product launched? What marketing strategies were used?

DESIGN AND TECHNOLOGIES:

<u>Resource 1: Ideation task - “what problem are we solving?”</u>



Poster: can be printed and used in classroom for physical purpose, as well as online in either a padlet, jamboard, miro or projected onto screen with physical sticky notes.



(What it looks like in use)