



DESIGN

ATAR course examination 2024

Marking key

Marking keys are an explicit statement about what the examining panel expect of candidates when they respond to particular examination items. They help ensure a consistent interpretation of the criteria that guide the awarding of marks.

Section One: Short answer

30% (32 Marks)

Question 1

(4 marks)

Interpret at least **two** psychological effects of colour in Figure 1.

Description	Marks
Interprets at least two psychological effects of colour in Figure 1	4
Describes at least two psychological effects of colour in Figure 1	3
Outlines at least two psychological effects of colour in Figure 1	2
Identifies a psychological effect and/or colour	1
Total	4
<p>Answers could include:</p> <p>Interpreting the psychological effects of the colours used in this children's playroom involves understanding how different colours can influence mood, behaviour and ambiance. The selection of these colours creates a psychologically supportive environment that is both calming and stimulating. The colour choices promote emotional wellbeing, encourage creativity, and provide a balanced space that caters to the diverse needs of children during play and learning activities.</p> <ul style="list-style-type: none"> • blue is known for its calming and soothing effects. It can help reduce feelings of anxiety and promote a sense of tranquillity. This makes it an excellent choice for a children's playroom, where a peaceful environment can help children feel more secure and relaxed in their space • blue is also associated with enhancing concentration. This can be beneficial in a playroom where children might engage in activities that require focus, such as reading or creative problem solving • painting the ceiling a light blue can create the illusion of greater height, making the room feel more spacious and open. It also mimics the feel and colour of the sky, which makes the room feel more connected to an outdoor play space • the speckled blue pattern adds an element of playfulness and visual interest. Patterns can stimulate curiosity and engagement, encouraging children to interact with their space • the natural wood tones provide a warm and inviting atmosphere. It grounds the room and adds a natural element that creates a sense of stability and safety. It also acts as a balancing element, allowing other colours in the room to stand out • pink is often associated with nurturing and gentle emotions. It can evoke feelings of love, kindness, and comfort. Pink can also stimulate creativity and playfulness, encouraging imaginative play as seen in the miniature kitchen • the beanbag and circular cushion are bright green which can be linked to feelings of energy, growth, and renewal. It can invigorate the space and add a lively, dynamic element. This colour can help stimulate physical activity and play, which is crucial in a children's playroom • the bean bag and ball also act as vibrant accent pieces in the room. They provide a pop of colour that stands out against the more neutral and pastel background. This draws the eye and creates visual interest. 	
Accept other relevant answers.	
<p>Note:</p> <ul style="list-style-type: none"> • a colour must be applied to a component of the playroom for response to reach the 4th shelf. • either two different psychological effects of one colour, or two different colours must be mentioned to achieve more than one mark. 	

Question 2

(8 marks)

- (a) Explain **one** registered design, patent or trademarking law that may need to be considered. (4 marks)

Description	Marks
Explains one registered design, patent or trademarking law that may need to be considered	4
Describes one registered design, patent or trademarking law that may need to be considered	3
Outlines one registered design, patent or trademarking law that may need to be considered	2
Identifies one patent, trademarking and/or registered design concern	1
Total	4
<p>Answers could include:</p> <p>The 'Nuud' brand name is likely trademarked and therefore the client cannot name their new product Nuud especially if it were a chewing gum (or mouth freshening) related product. Although the client could make an alternate product such as 'Nuud shoes' in another country (provided Nuud was not a global brand), without any repercussions.</p> <p>It is possible for the plant-based formula of the chewing gum to be patented stopping the client from duplicating the formula via reverse engineering the recipe. Patents are temporary dependent on the amount of time Nuud has its ownership protected for, after which the client may create a completely identical gum formula/recipe.</p> <p>The blue box with flip-top lid and Nuud label printed horizontally forming a 'pearly whites' smile shape on the packaging could be a registered design. This would hinder the client from making similar design choices such as identical box dimensions, lid style, colour schemes and packaging typographic choices.</p> <p>Other possible trademarks include:</p> <ul style="list-style-type: none"> • slogan choices • pantone colour selected • typeface • gum shape. <p>Other possible patents include:</p> <ul style="list-style-type: none"> • box lid mechanics • box fold printer die cuts. <p>Other possible registered design include:</p> <ul style="list-style-type: none"> • photo shoot layout • image artwork • product layout for advertising campaign. 	
Accept other relevant answers.	
Note: responses around copyright are not accepted.	

Question 2 (continued)

- (b) Recommend **two** ergonomic considerations to make your design compatible with consumer needs. (4 marks)

Description	Marks
For each ergonomic consideration (2 x 2 marks)	
Recommends an ergonomic consideration to make the design compatible with consumer needs	2
Recommends an ergonomic consideration	1
Total	4
<p>Answers could include:</p> <p>The design of the gum should easily fit into the consumer's mouth to provide comfort when chewing ideally between 1–2 cm³ to ensure it's not too small to be easily swallowed or trapped in the mouth and not too big to cause early jaw fatigue.</p> <p>The dimension of the container (box) should easily fit into a pocket, handbag or even a vehicle compartment. It should be large enough to fit an appropriate quantity of gum that does not over oxidise the product, ensuring it does not expire before the consumer finishes the product.</p> <p>Other considerations could include:</p> <ul style="list-style-type: none"> • the smoothness/shape of the gum in the mouth • popular flavours • safe for the environment/disposal • not sticky, should it get stuck on shoe or in hair • one hand, easy to flick open lid. 	
Accept other relevant answers.	

Question 3

(6 marks)

Explain how **two** gestalt principles have been used to create meaning in Figure 3.

Description	Marks
For each principle (2 x 3 marks)	
Explains a gestalt principle, demonstrating a strong understanding of its application in the photograph to create meaning	3
Describes a gestalt principle, with some discussion of its application in the photograph to create meaning	2
Makes a statement about a gestalt principle, with minimal or no discussion of its application in the photograph to create meaning	1
Total	6
<p>Answers could include:</p> <p>Photographer intended meaning: Photographer Andrew Rovenko captures a moment of solitude in a barren landscape through the eyes of his daughter, who plays the role of an astronaut. In the photograph, the young girl, dressed in astronaut attire, sits among the overgrown roots and trees of a deserted stadium. The yellow seats, hinting at decay, contrast with her contemplative expression, reflecting the disparity between her dreams of exploration and the harsh reality of her surroundings. Holding a cup of lemonade, she symbolises innocence and resilience, finding solace amid desolation.</p> <p>Gestalt principles are employed to craft this meaning, with the composition emphasising the contrast between the girl's small, vulnerable figure and the vast, neglected environment, highlighting her isolation and the power of imagination to find hope in solitude.</p> <p>Figure/Ground</p> <ul style="list-style-type: none"> the little girl in the astronaut outfit serves as the figure, standing out against the background of the bright yellow stadium seating the contrast between the girl and the surrounding seating helps establish her as the focal point of the image. <p>Proximity</p> <ul style="list-style-type: none"> the rows of yellow seating are arranged closely together, emphasizing their proximity the girl's placement three rows up on the right side of the frame suggests a deliberate positioning within the composition, creating a sense of balance or asymmetry. <p>Similarity</p> <ul style="list-style-type: none"> the rows of yellow seating share a similar colour and shape, contributing to their perceived unity as a group the repetition of the seating pattern creates a sense of rhythm and continuity throughout the image. <p>Closure</p> <ul style="list-style-type: none"> while the stadium seating appears empty and abandoned, the repetition of the rows implies a continuation beyond the frame, allowing the viewer to mentally complete the pattern the enclosed space created by the rows of seating enhances the focus on the girl, enclosing her within the frame. <p>Continuation</p> <ul style="list-style-type: none"> the rows of seating create a sense of continuity and flow, leading the viewer's gaze from one row to the next the diagonal lines formed by the rows add dynamic movement to the composition, guiding the viewer's eye towards the focal point. <p>Accept other relevant answers.</p>	

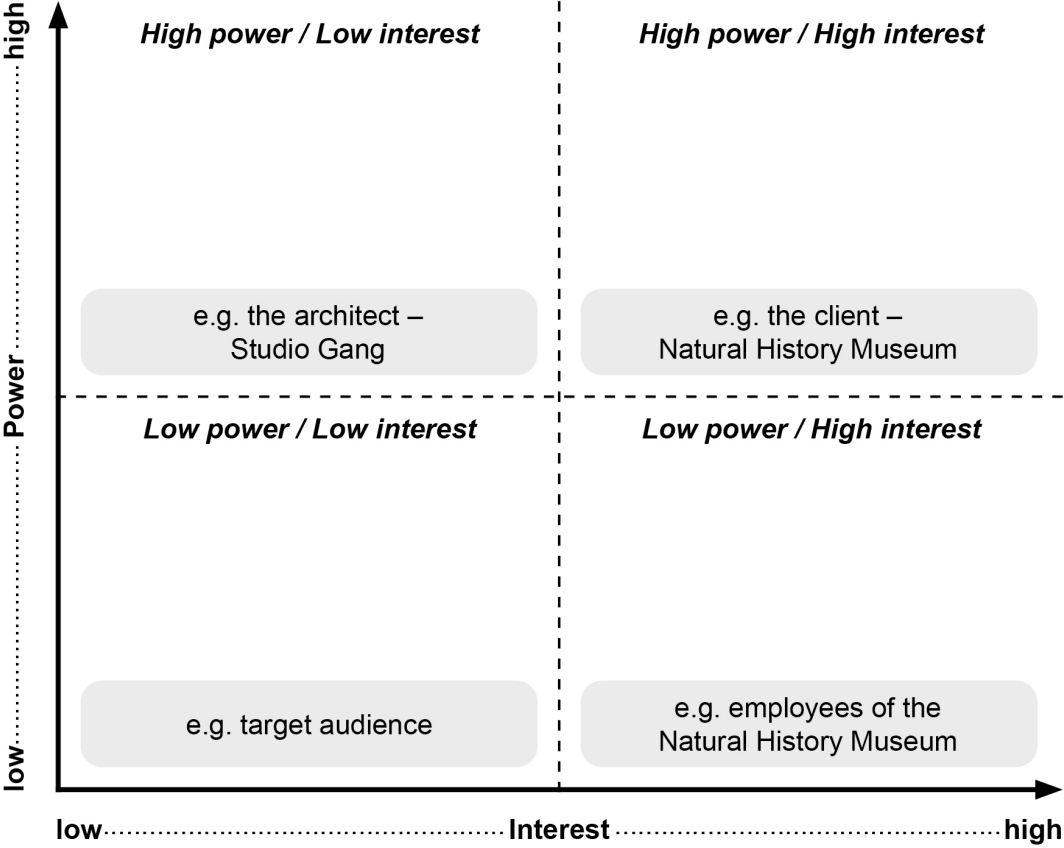
Question 4

(14 marks)

- (a) State **two** advantages of the application of an iterative design process with reference to Figure 4. (2 marks)

Description	Marks
For each advantage (2 x 1 mark)	
States an advantage of an iterative design process referencing Figure 4	1
Total	2
<p>Answers could include:</p> <p>Refinement of design concepts</p> <ul style="list-style-type: none"> • an iterative approach allows for experimentation and refinement of ideas as seen in the prototyping in Figure 4 based on feedback from stakeholders and design experts • an iterative design process allows Studio Gang to refine and evolve design concepts over multiple iterations. With each iteration, the design team can explore different ideas, experiment with various architectural forms, and refine details based on feedback from stakeholders. This is evident in both the low and high-fidelity prototyping used in Figure 4 • Studio Gang conducts site visit to rock formations, allowing for repeated observations and analyses of geological forms and processes. The site visit informs and inspires new design directions, influencing the evolution of architectural forms, spatial configurations, and material selections. <p>Optimisation of performance and sustainability</p> <ul style="list-style-type: none"> • iterative design allows Studio Gang to optimise the performance and sustainability of the Natural History Museum by testing and refining environmental strategies, building systems, and material choices throughout the design process • Studio Gang may have used 3D modelling and simulation tools to analyse the building's energy performance and daylighting strategies at various stages of design development. Through iterative testing and refinement, they can identify opportunities to improve energy efficiency, optimise natural light levels, and reduce environmental impact • inspired by the structural integrity and thermal mass properties of rock formations, Studio Gang utilises advanced 3D modelling software to explore innovative design strategies that enhance the performance and sustainability • by refining design concepts and optimising performance through iterative testing and refinement as seen in both high fidelity and low fidelity prototyping, Studio Gang ensures that the final architectural solution is both visually compelling and functionally efficient, meeting the needs of its users while minimising its environmental footprint. 	
Accept other relevant answers.	
<p>Note: advantages of an iterative design process include:</p> <ul style="list-style-type: none"> • open ended • endless variations are possible • flexible and adaptable • problems are resolved and lots of refinement. 	

- (b) Complete the power vs interest grid below by identifying a stakeholder and their level of influence for each quadrant of the matrix that Studio Gang would have considered in creating its architectural concept. (4 marks)

Description	Marks
For each stakeholder (4 x 1 mark)	
Identifies a stakeholder and their influence on the power vs interest grid	1
Total	4
<p>Answers could include:</p> <ul style="list-style-type: none"> • Manhattan city council (high power to approve construction, low interest) • the client, Natural History Museum have the most power and interest as consumer participation will directly impact them • the architect has a lot of power as they decide the validity and feasibility of the design, but little interest past the completion of the building • employees of the Natural History Museum have little power, but a lot of interest as decisions may impact their daily wellbeing and therefore may influence smaller components of the design • the target audience has little influence over the design with no power and interest. Should the design fail, the audience will just go elsewhere. <p>Other stakeholders: the company who supplied the ice block.</p>  <p>Accept other relevant answers.</p>	

Question 4 (continued)

- (c) Identify
- two**
- methods of prototyping evident in Figure 4. (2 marks)

Description	Marks
For each prototype (2 x 1 mark)	
Identifies a method of prototyping	1
Total	2
Answers could include:	
Lower fidelity	
<ul style="list-style-type: none"> sketches and diagrams ice experiment with boiling water. 	
Higher fidelity	
<ul style="list-style-type: none"> digital 3D models and advanced rendering axonometric illustration. 	
Accept other relevant answers.	
Note: candidates can choose options from the same fidelities e.g. sketching and ice experimentation.	

- (d) Evaluate how the
- two**
- methods of prototyping identified in part (c) have been utilised and for what purpose. (6 marks)

Description	Marks
For each method of prototyping (2 x 3 marks)	
Evaluates a method of prototyping that has been implemented utilised purposefully	3
Outlines how the identified method of prototyping has been utilised purposefully	2
Makes a statement about the identified method of prototyping, with minimal or no discussion of their application and purpose	1
Total	6
Answers could include:	
Low fidelity	
<ul style="list-style-type: none"> sketches and diagrams – low fidelity prototyping in architecture often begins with hand-drawn sketches and diagrams, where architects quickly sketch out design ideas and concepts using pen and paper or digital drawing tools ice experiment with boiling water – the activity provides a simple and inexpensive way to explore spatial relationships, test design concepts and generate ideas related to form and structure. 	
High fidelity	
<ul style="list-style-type: none"> digital 3D models and advanced rendering – advanced rendering techniques are applied to the digital models to produce photorealistic visualisations that simulate real-world lighting conditions, materials, and textures. Studio Gang has use sophisticated 3D modelling software such as AutoCAD or SketchUp to create high fidelity digital models of their designs wireframe illustration – a wireframe illustration is a type of architectural drawing or representation that depicts a three-dimensional object or space in a two-dimensional format, typically using parallel lines to convey depth and perspective. Studio Gang have used this to create the illusion of depth and spatial recession as a schematic that helps communicate the structure of the building to their client. 	
Accept other relevant answers	

Section Two: Extended answer

70% (64 Marks)

Question 5

(28 marks)

(a) Examine the use of semiotics in Figure 5 to complete the table below.

- (i) Identify a symbol, an index and an icon (signs). (3 marks)
 (ii) Interpret how each identified sign functions as a symbol, index and icon. (6 marks)
 (iii) Describe what is signified by the signifiers. (9 marks)

	Symbol	Index	Icon	Marks
Identified sign	Any one of <ul style="list-style-type: none"> • open palm • melting/ disintegrating matter • town • green • wind turbine 	Any one of <ul style="list-style-type: none"> • disintegration • objects falling • open palm • infrastructure • wind turbine 	Any one of <ul style="list-style-type: none"> • hand • cows • sheep • buildings • wind turbine 	1–3
Interpretation	The open palm is a symbol as it is unrealistic in scale/depiction and its connotation must be taken into consideration to understand its greater meaning.	The disintegration i.e. the falling away of the land mass functions as an index as it enables us to derive solid conclusions about the sign.	The wind turbine functions as an icon as we are able to easily identify what it is based on its shape and form.	1–6
Description	Open palm – pink, has five fingers with green line segments to represent the joints (on the opposite side of the knuckles) which portrays it as open. Connotes (hu)man’s decision to either help/support or to crush.	Disintegration – lines directly vertical, following the continues of the hand ‘leaking’ from the land mass. Indicates that damage over time is taking place to the land.	Wind turbine – tall white pole with 3 blades in a circular formation at the top attached to a motor. A machine that provides sustainable power.	1–9
Total				18
Accept other relevant answers.				

Question 5 (continued)

- (b) Explain how these signs work together to create meaning in the image. (4 marks)

Description	Marks
Explains how the three signs work together to create a holistic meaning	4
Describes how the three signs work together to create meaning	3
Outlines how signs create meaning	2
Identifies some signs and/or meaning	1
Total	4
Answers could include:	
The image conveys how humans via the open palm have complete control over their ability to lead sustainable lives as we can see that the city is powered by renewable energy with the wind turbines. However, humans are not choosing this option and instead letting it slip away (the disintegration) and are happy to destroy this option as a method to save our environment.	
Accept other relevant answers.	

- (c) Consider how audiences composed of different demographics and psychographics might interpret the signs identified in Figure 5. (6 marks)

Description	Marks
Evaluates how different audiences might interpret the signs based on their demographics and psychographics	6
Discusses how different audiences might interpret the signs based on their demographics and psychographics	5
Explains how different audiences might interpret the signs based on their demographics and psychographics	4
Describes how different audiences might interpret the signs based on their demographics and psychographics	3
Outlines how different audiences might interpret the signs	2
Identifies how audiences might interpret the signs	1
Total	6
Answers could include:	
There are those who do not believe in climate change and Figure 5 could affirm their beliefs as a climate change denier. Someone of this viewpoint may see the image as crushing such a fragile idea of a renewable future. Therefore, after closing their fist and destroying this town, can then focus on more conservative approaches to climate change such as existing policies around power like coal and natural gas. With this more aggressive viewpoint, such audiences see this image as it being only a matter of time before people stop caring about renewable energy.	
Demographic characteristics:	
<ul style="list-style-type: none"> • age • gender • income. 	
Psychographic segmentation, for example:	
<ul style="list-style-type: none"> • attitudes and values • lifestyle • personality • priorities and motivations • social status • VALS™ model. 	
Accept other relevant answers.	

Question 6

(17 marks)

Refer to **one** historical and/or contemporary design you investigated this year for all parts of this question.

- (a) Identify a design/er that has influenced your design process. (1 mark)

Description	Marks
Identifies a design/er that has influenced their design process	1
Total	1
Answers could include:	
Identification of designs and/or designers	
<ul style="list-style-type: none"> the title and/or a description of the work the name of the designer/s the date and/or period of creation. 	
Accept other relevant answers.	
Note: if candidates only referred to an art movement and not a specific design/er, responses are deemed incorrect	

- (b) Explain the design/er's key visual motifs, features and/or concepts. (4 marks)

Description	Marks
Explains key visual motifs, features or concepts distinctive to the design/er	4
Describes key visual motifs, features or concepts distinctive to the design/er	3
Outlines key visual motifs, features or concepts distinctive to the design/er	2
Identifies key visual motifs, features or concepts with limited detail	1
Total	4
Answers could include:	
Description of:	
<ul style="list-style-type: none"> the visual motifs, features and/or concepts codes/conventions appearance selection of materials. 	
Identify and interpret semiotic concepts evident in design, including:	
<ul style="list-style-type: none"> sign – symbol, index, icon signifier signified. 	
Analysis and synthesis of the elements of design:	
<ul style="list-style-type: none"> line (directional, organic, implied) shape (two-dimensional, geometric, abstract) tone (tonal scale, high key, low key) form (three-dimensional, proportion) space (positive, negative, organised) colour (psychological effects, additive, subtractive, RGB and CMYK) texture (visual, tactile). 	
Accept other relevant answers.	
Note: if candidates only referred to an art movement and not a specific design/er, responses are deemed limited	

Question 6 (continued)

- (c) Explain how the design/er reflects social, cultural and/or political context/s. (4 marks)

Description	Marks
Explains how the design/er reflects social, cultural and/or political context/s	4
Describes how the design/er reflects social, cultural and/or political context/s	3
Outlines how the design/er reflects social, cultural and/or political context/s	2
Identifies the social, cultural and/or political context/s with limited detail	1
Total	4
Answers could include:	
Explanation of social, cultural and/or political contexts:	
<ul style="list-style-type: none"> • summary of relevant issues/events of the time • the impact or inspiration for the design/designer. 	
Accept other relevant answers.	
Note: if candidates only referred to an art movement and not a specific design/er, responses are deemed limited	

- (d) (i) Describe
- one**
- design outcome you proposed this year. (2 marks)

Description	Marks
Describes a design outcome	2
Identifies a design outcome	1
Total	2
Answers could include:	
<ul style="list-style-type: none"> • clear description of a design proposed this year that enables markers to visualise/understand work created • candidates may include sketches if these support their description. 	
Accept other relevant answers.	

- (ii) Evaluate how your design was influenced by the design/er. (6 marks)

Description	Marks
Evaluates how the design was influenced by the design/er	6
Discusses how the design was influenced by the design/er	5
Explains how the design was influenced by the design/er	4
Describes how the design was influenced by the design/er	3
Outlines how the design was influenced by the design/er	2
Identifies how the design was influenced by the design/er	1
Total	6
Answers could include:	
Evaluation of how their design was influenced by the work/designs of others:	
<ul style="list-style-type: none"> • how the investigation of historical and/or contemporary designs influenced the design process • how knowledge of the visual motifs, features and/or concepts were inspiring or helpful • how the selection of materials, techniques and/or technologies were inspiring or informative • changes/decisions made based on designer research. 	
Accept other relevant answers.	

Question 7

(19 marks)

- (a) Discuss **one** communication strategy the designers of Birdie® may have considered when marketing their product to consumers. (3 marks)

Description	Marks
Discusses a communication strategy the designers may have used when marketing Birdie® to consumers	3
Outlines a communication strategy the designers may have used when marketing Birdie® to consumers	2
Makes a statement about a communication strategy the designers may have used	1
Total	3

Answers could include:

Strategies used by a designer to engage or persuade a specified audience, often referred to as those that create an emotional response or grab attention to enhance the communication of a design solution, include:

- shock tactics
- humour
- metaphor
- emotion.

Shock tactics

- Birdie® employs a unique shock tactic by physically dropping down when air quality is poor. This unexpected movement grabs the user's attention and creates a sense of urgency. Upside down bird symbolises sickness or death. The sudden action and change of position prompts users to take notice, emphasising the seriousness of indoor air quality issues
- by physically reacting to changes in air quality, Birdie® provides an immediate indication of when intervention is needed, encouraging users to respond promptly
- the instructions show an image of a hand bursting through the ground, covered in coal, holding the clean Birdie® employs shock tactics to grab the viewer's attention. This visually striking imagery emphasises the importance of indoor air quality. By visually contrasting the dirty, coal-covered hand with the clean Birdie®, Birdie® effectively shocks the audience into recognising the need for cleaner air, prompting them to consider using Birdie® as a solution.

Humour

- Birdie® incorporates dark humour by adopting the metaphor of a "canary in a coal mine." This metaphorical reference adds a playful and whimsical element to the device, making it more approachable and memorable for users
- despite addressing a serious topic, the association with a canary lightens the mood and reduces the perceived severity of the issue, making users more receptive to the message
- by framing Birdie® as if it were a view to the outside world, the packaging playfully suggests that Birdie® offers a breath of fresh air even when indoors.

Question 7 (continued)

Metaphor

- Birdie® utilises the metaphor of a 'canary in a coal mine' to represent air quality. This metaphor simplifies the complex concept of air quality monitoring, making it more relatable and understandable for users
- by likening Birdie® to a canary, which historically served as an early warning system for dangerous gases in mines, the device conveys its role as an early indicator of indoor air quality issues
- the use of a brown cardboard box for packaging can be seen as a metaphor for Birdie®'s function as an environmental solution.
- the use of internal packaging which incorporates a white card window frame that holds the Birdie® in place creates a metaphorical connection between Birdie and the concept of fresh air.

Emotion

- Birdie® appeals to users' emotions by stressing the importance of indoor air quality for health and well-being.
- the device's visual cues, such as dropping down when air quality is poor, evoke a sense of concern and urgency in users.
- by connecting with users on an emotional level, Birdie® motivates them to take action to improve air quality in their homes, emphasising the impact on their health and the health of their loved ones.

Accept other relevant answers.

(b) The designers of Birdie® would have used a range of Design Thinking strategies during the development of the product.

- Describe **two** Design Thinking strategies the designers may have used. (6 marks)
- Justify the Design Thinking strategy you consider to be the most beneficial to the development of Birdie®. (4 marks)

Description	Marks
For each Design Thinking strategy (2 x 3 marks)	
Describes a Design Thinking strategy the designers may have used	3
Outlines a Design Thinking strategy the designers may have used	2
Identifies a Design Thinking strategy the designers may have used	1
Subtotal	6
Justification	
Justifies the most beneficial Design Thinking strategy to the development of Birdie®	4
Explains the most beneficial Design Thinking strategy to the development of Birdie®	3
Outlines the most beneficial Design Thinking strategy to the development of Birdie®	2
Makes a statement about a beneficial Design Thinking strategy	1
Subtotal	4
Total	10

Answers could include:

SCAMPER vs Six Thinking Hats® System

SCAMPER

Substitute – could have been used to identify alternative materials or technologies to make Birdie® more accessible or cost effective

Combine – integration of various functions (e.g., medication reminders and emergency alerts) into a single device

Adapt – adapting existing technologies to better suit the demographic

Modify – enhancing design features to improve user-friendliness for users

Put to another use – exploring additional applications for Birdie® within a different demographic

Eliminate – removing complex features to simplify the device for easier use

Reverse/Rearrange – rethinking the user interface to better match a range of users' needs.

Six Thinking Hats® System

White Hat – gathering data on the end users needs and daily challenges

Red Hat – considering the emotional responses of users to ensure the product is comforting and trustworthy

Black Hat – identifying potential risks such as safety concerns or ease of use

Yellow Hat – highlighting the benefits of Birdie® for end users

Green Hat – generating creative ideas to enhance Birdie®'s functionality and appeal

Blue Hat – overseeing the development process to ensure all aspects are considered and integrated cohesively.

While both strategies are valuable, the Six Thinking Hats® system may have been more suitable for developing Birdie® due to its comprehensive approach in examining the problem from multiple perspectives. SCAMPER could have also played a significant role, particularly in the ideation and iterative improvement phases. Its focus on specific prompts for innovation might have been useful in brainstorming various features for Birdie®. The Six Thinking Hats® system however, with its emphasis on holistic and balanced thinking, likely provided a strong framework for developing a well rounded and user centred product like Birdie®.

Question 7 (continued)

Synectic Triggers vs Forced Associations

Synectic Triggers

(Add/subtract/repeat/transfer/empathise/parody/substitute/analogue/hybridise/mythologise/symbolise/fantasise/etc.)

Parody – rethinking common household objects (air quality monitor) in novel ways to integrate Birdie®'s functionalities

Analogue – using analogies like comparing Birdie® to a friendly companion to inspire design features

Fantasise – imagining extreme scenarios (e.g., Birdie® performing extraordinary tasks) to push the boundaries of its capabilities.

Forced Associations

- introducing unrelated elements (e.g. objects, images) to brainstorm unique features for Birdie®
- combining ideas from different fields like technology, healthcare, and social sciences to develop comprehensive solutions
- merging concepts like simplicity with advanced technology to ensure Birdie® is user friendly yet innovative
- allowing free flow of ideas to explore various possibilities without constraints, leading to unexpected design features.

While both strategies could be applied, Forced Associations may have been more suitable for developing Birdie® due to its emphasis on creating unexpected connections and rapidly generating ideas. This method encourages lateral thinking and innovation, which is crucial for developing a product that integrates various functionalities to assist end users effectively.

Bloom's Action Verbs vs Concept Maps

Bloom's Action Verbs

Remembering – recalling information about the needs and preferences of end users in daily activities

Understanding – comprehending the factors influencing the design and usability of assistive devices like Birdie®

Applying – applying design principles and user centred approaches to develop intuitive interfaces and functionalities for Birdie®

Analysing – breaking down user feedback and data to identify areas for improvement in Birdie®'s design

Evaluating – assessing the effectiveness of Birdie® in meeting the needs of end users through user testing and feedback

Creating – generating innovative features and designs for Birdie® to enhance its usability and functionality.

Concept maps

- organising Birdie®'s features and functionalities hierarchically based on importance and interrelation
- visually mapping connections between Birdie®'s features, user needs, and design considerations
- labelling concepts and relationships to describe Birdie®'s functions, interactions, and user experience
- using colours, shapes, and spatial arrangement to create visually appealing maps of Birdie®'s design
- allowing for the flexible addition, rearrangement, and revision of Birdie®'s features and design elements.

For the development of Birdie®, Concept maps may have been more suitable due to their visual representation, hierarchical structure, and flexibility. Concept maps provide a visual overview of Birdie®'s features, functionalities, and user interactions, helping to organise ideas, identify relationships, and prioritise design elements effectively.

Accept other relevant answers.

Note: any combination of any Design Thinking strategies could be used.

Question 7 (continued)

- (c) Evaluate the design conventions used to meet the design outcome in Figure 6. (6 marks)

Description	Marks
Evaluates the design conventions required to meet design outcomes in Figure 6	6
Discusses the design conventions required to meet design outcomes in Figure 6	5
Explains the design conventions required to meet design outcomes in Figure 6	4
Describes the design conventions required to meet design outcomes in Figure 6	3
Outlines the design conventions	2
Identifies a design convention	1
Total	6
<p>Answers could include:</p> <p>Conventions are the established and long accepted way of applying codes for specific purposes or to create meaning in design. These might include industry standards as applied to technical drawings; formats to make a design suitable for manufacture such as 300dpi, CMYK, PDF or camera angles and lighting set ups. The responses should relate specifically to the Birdie® product and associated marketing/designs. For example:</p> <ul style="list-style-type: none"> • 3D modelling and CAD – Birdie® was likely designed using computer-aided design (CAD) software to create precise technical drawings and 3D models. This would ensure accuracy in dimensions and manufacturing • design files for Birdie® would adhere to industry standards like 300 dpi (dots per inch) for print quality and CMYK colour mode for accurate colour reproduction in marketing materials • prototyping – using 3D printing for creating initial prototypes allows for quick iterations and testing of the Birdie® design, ensuring that any issues can be identified and resolved early in the development process • the use of recycled plastic adheres to industry conventions for sustainable design, aligning with environmental standards and consumer expectations • ensuring that Birdie® is easy to mount and use would involve ergonomic testing to determine optimal size and shape • using recycled or recyclable materials for packaging, in line with sustainable design practice and ensuring the packaging is designed to protect the product during shipping • for Birdie®'s marketing, photography using industry-standard lighting techniques to highlight features and design in a studio setting would have been used. Further to this using standard camera angles that best showcase Birdie®'s functionality and aesthetics (e.g. eye level or high angle) ensure the product is appealing and clearly understood in their marketing materials. <p>Accept other relevant answers.</p>	

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