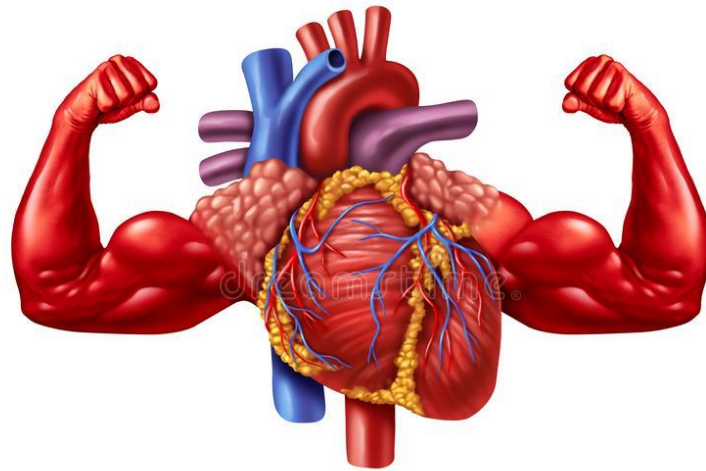


Bloodheart



Year Group: 5/6

Cycle A

Science

- Animals, including humans

Climate/Environment

- Impact of single use plastic packaging on the environment

Design and Technology:

- Product packaging: Investigate and analyse a range of existing products
- Evaluate ideas against own criteria
- Consider views of others to improve work.

Science

National Curriculum (Knowledge and Skills): Pupils should be taught to:

Animals, including humans

- identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
- recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
- describe the ways in which nutrients and water are transported within animals, including humans

Working Scientifically

- record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations

Suggested Investigation Focus:

Dissecting Sheep's Heart

<https://www.instructables.com/id/Heart-Dissection/>

Prior Learning

Forever Firs children working at ARE should already be able to:

Animals, Including Humans

- identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat
- identify that humans and some other animals have skeletons and muscles for support, protection and movement
- describe the simple functions of the basic parts of the digestive system in humans
- identify the different types of teeth in humans and their simple functions

Working Scientifically

- ask relevant questions and use different types of scientific enquiries to answer them
- set up simple practical enquiries, comparative and fair tests
- make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- gather, record, classify and present data in a variety of ways to help in answering questions
- identify differences, similarities or changes related to simple scientific ideas and processes
- report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- use straightforward scientific evidence to answer questions or to support their findings
- use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions

Key Vocabulary

Tier 1		Tier 2		Tier 3	
Heart		Waste	Diagram	Blood vessels	Pulse
Blood		Exercise	Label	Veins	Heart rate
Water		Drugs		Arteries	Dissect
Healthy		Alcohol		Nutrients	Valves
Unhealthy		Diet		Oxygen	Ventricles
		Lifestyle		Circulatory	Atrium
		Function		system	
		Circulate		Cigarettes	

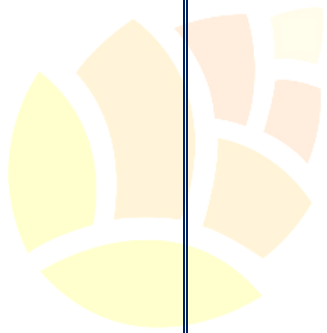
Science Assessment

Children working below ARE

Children working towards
ARE

Children working at ARE

Children working above ARE



Firs
Primary
— School —

Design and Technology

National Curriculum:

Pupils should be taught to:

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design
- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

Key Line of Enquiry:

- Children will investigate and analyse a range of existing food and drinks packaging, considering materials, sustainability, attractiveness and information provided on the label.
- They will develop design criteria and then design their own packaging for an imaginary food product, using computer aided design techniques.
- They will evaluate their final design against the design criteria given.

Climate/Environment Link

- Children will learn about the impact that single use plastics have on the environment and explore a range of alternative materials which can be used for product packaging instead of plastic (teacher resource - <https://packhelp.co.uk/plastic-packaging-alternatives/>)

Age Related Subject Skills (Progression Guidance):

Design

- Carry out research, using surveys, interviews, questionnaires and web-based resources
- Identify the needs, wants, preferences and values of particular individuals and groups
- Develop a simple design specification to guide their thinking
- Recognise when their products have to fulfil conflicting requirements
- Generate innovative ideas, drawing on research
Make design decisions, taking account of constraints such as time, resources and cost
- Develop prototypes

Make

- Select tools and equipment suitable for the task
- Explain their choice of tools and equipment in relation to the skills and techniques they will be using
- Select materials and components suitable for the task
- Explain their choice of materials and components according to functional properties and aesthetic qualities
Order the main stages of making
- Produce detailed lists of tools, equipment and materials that they need
- Follow procedures for safety
- Accurately measure to nearest mm, mark out, cut and shape materials and components

Evaluate

- Identify the strengths and weaknesses of their ideas and products
- Consider the views of others, including intended users, to improve their work
- Refer back to their design criteria as they design and make
- Use their design criteria to evaluate their completed products
- Investigate - how well products have been designed, how well products have been made, why materials have been chosen, what methods of construction have been used, how well products work, how well products achieve their purposes and how well products meet user needs and wants
- Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make
- Compare their ideas and products to their original design specification
- Investigate - how much products cost to make, how innovative products are and how sustainable the materials in products are

- Accurately assemble, join and combine materials/ components
- Accurately apply a range of finishing techniques, including those from art and design
- Use techniques that involve a number of steps
- Demonstrate resourcefulness, e.g. make refinements

Prior Learning

Forever Firs children working at ARE in Year 5 and 6 should already be able to:

Design

- Gather information about the needs and wants of particular individuals and groups
- Develop their own design criteria and use these to inform their ideas
- Research designs
- Share and clarify ideas through discussion
- Model their ideas using prototypes and pattern pieces
- Use annotated sketches, cross-sectional drawings and diagrams
- Use computer-aided design

Make

- Measure, mark out, cut and shape materials and components with some accuracy
- Assemble, join and combine materials and components with some accuracy apply a range of finishing techniques, include those from art and design, with some accuracy

Evaluate

- Identify the strengths and weaknesses of their ideas and products
- Consider the views of others, including intended users, to improve their work
- Investigate - who designed and made the products, where products were designed and made, when products were designed and made and whether products can be recycled or reused

Key Vocabulary

Tier 1

Tier 2

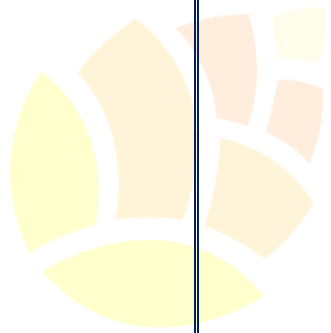
Tier 3

investigate
analyse
research
packaging
materials
sustainability
aesthetic
appeal/appealing
design
evaluate
information
labelling
sustainable
recyclable
cost effective

design criteria
computer aided design (CAD)

Design and Technology Assessment

Children working below ARE	Children working towards ARE	Children working at ARE	Children working above ARE



Firs
Primary
— School —



Firs
Primary
— School —



Firs
Primary
— School —



Firs
Primary
— School —