

HOLY TRINITY CATHOLIC ACADEMY MEDIUM TERM CURRICULUM PLANNER

Subject: DESIGN & TECHNOLOGY

INTENT:

- To offer children the chance to use creative thinking and design within purpose and outcome.
- To provide a variety of creative and practical activities to teach pupils the knowledge, understanding and skills needed to engage in a process of designing and making.
- For pupils to be creative and imaginative in designing and making products
- For pupils to learn how to take risks and to be resourceful and innovative
- Through the evaluation, to develop a critical understanding of its impact on daily life and the wider world.

EYFS – Our DT curriculum learning journey begins in the Early Years' Foundation Stage's 'Expressive Arts and Design' curriculum and all subsequent learning is built upon these foundations. (Please refer to separate EYFS Medium Term Plans for further detail)

During Nursery, children will be able to:

Take part in simple pretend play, using an object to represent something else even though they are not similar.

Begin to develop complex stories using small world equipment like animal sets, dolls and dolls houses etc.

Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.

Explore different materials freely in order to develop their ideas about how to use them and what to make

Develop their own ideas and then decide which materials to use to express them

Join different materials and explore different textures

Create closed shapes with continuous lines, and begin to use these shapes to represent objects.

Draw with increasing complexity and detail, such as representing a face with a circle and including details.

During F2, children will be able to:

- Explore use and refine a variety of artistic effects to express their ideas and feelings
- Return to and build on their previous learning, refining ideas and developing their ability to represent them
- Create collaboratively, sharing ideas, resources and skills

ELG Creating with materials:

- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function
- Share their creations explaining the process they have used

The children will have explored this through a variety of means – weekly Forest School sessions, different learning themes, stories and links to the Book of the Week, outdoor learning opportunities, continuous provision, visits etc. Links also will have been made to other aspects of the EYFS curriculum. Refer to the separate EYFS section on the website for further information.

KS1 NATIONAL CURRICULUM:

Know and follow the structure of a Design Brief process as follows:

1) Explore and Evaluate

- Explore and evaluate a range of existing products.

2) Design

- Design purposeful, functional, appealing products for themselves and other users based on design criteria.
- Generate, develop, model and communicate their ideas through talking, drawing, templates, mock ups and, where appropriate, ICT.

3) Make and Technical Knowledge

- Select from and use a range of tools and equipment to perform practical tests (for example, cutting, shaping, joining and finishing.)
- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.
- Build structures, exploring how they can be made stronger, stiffer and more stable.

4) Evaluate

Evaluate their ideas and products against design criteria.

KS2 NATIONAL CURRICULUM:

1) Explore and Evaluate

- Understand how key events and individuals in design and technology have helped shape the world.

2) Design

- Generate, develop, model and communicate ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and computer aided design.

3) Make

- Select from and use a wider range of materials and components, functional properties and aesthetic qualities.
- Understand and use electrical systems in their products (for example, series circuits, incorporating switches, bulbs, buzzers and motors).

4) Evaluate

- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.

Cooking and Nutrition:

- Understand and apply principles of a healthy and varied diet
- Prepare and cook a savoury dish using a range of cooking techniques

Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed

DT KSI and 2 Overview

	Advent 1	Advent 2	Lent 1	Lent 2	Pentecost 1	Pentecost 2
Y1/2 Year A		Design and Make a House (Linked to History Great Fire of London Topic) (Construction unit)				Design and make a Castle (Mechanisms focus) (linked to History/Geography unit)
Y1/2 Year B		Design and Make a Puppet (Linked to History Toys Unit) (Sewing unit)				Design and Make a Healthy Sandwich (linked to Science unit) (Food & Nutrition link)
Y3/4 Year A			Design and Make an Egyptian Pulley (Linked to History Topic) (Construction unit)		Design and Make a Healthy Dish (Food & Nutrition link)	
Y 3/4 Year B		Design and make a magnetic toy (linked to the Science curriculum) Construction Unit		Design and Make an Anglo-Saxon Purse (Linked to History Topic) Sewing Unit		
Y5/6 Year A		Design and make an electrical game (linked to science Electricity Curriculum) Electrical Systems unit				Design and Make an Aeroplane (linked to History unit) (Construction unit)
Y5/6 Year B		Design and Make a Mars Rover (Linked to Science Earth & Space topic) (Construction unit)				Design and Make a Healthy Dish (Food & Nutrition link)

YEAR	DESIGN BRIEF	KEY VOCABULARY	DESIGN BRIEF KNOWLEDGE
F1 YEAR A BY THE END OF THE ADVENT TERM	To build and create presents for the Hungry Caterpillar / Postman Bear		To know how to explore a variety of construction materials
F2 YEAR A BY THE END OF THE ADVENT 2 TERM	DESIGN BRIEF: Big Build with parents: To design and make a firework/Catherine Wheel	Label Plan Build List	To begin to know about planning and making stages within a Design Brief process: <ul style="list-style-type: none"> I know how to make a simple labelled plan and write a list I know how to use various construction materials linked to the Design Brief I know how to construct, stacking blocks vertically and horizontally, making enclosures and creating spaces. I know how to join construction pieces together to build and balance, such as using glue or masking tape
F2 YEAR B BY THE END OF THE ADVENT 2 UNIT	DESIGN BRIEF: Big Build with parents: To design a house to keep the wolf away	Brick Thatch Stone Glass Cement Brick Waterproof Durable Strong Design Build	
	KEY KNOWLEDGE: I know that houses can be made of brick, thatch, stone, glass, cement, brick I know that roofs need to be waterproof I know that houses need to be strong and durable		
F2 YEAR B BY THE END OF THE LENT 1 UNIT	DESIGN BRIEFS: see separate MTP for further details To design a star catcher Big Build with parents: To design and build a rocket To design a pancake topping	Label Plan Build List Variety of other related topic vocabulary – see EYFS MTP	
F2 YEAR B BY THE END OF THE PENTECOST TERM UNIT	DESIGN BRIEFS: see separate MTP Pentecost 1: Big Build with parents – Design and Make a dragon Design and build a shelter for a woodland animal Pentecost 2: To make a fish finger sandwich To investigate the best shape and materials to make a boat Big Build – with parents – design and build a vehicle	Label Plan Build List Variety of other related topic vocabulary – see EYFS MTP	

YEAR	DESIGN BRIEF:	KEY VOCABULARY	DESIGN BRIEF KNOWLEDGE
Y1/2 YEAR A BY THE END OF THE ADVENT TERM UNIT	Home Context To design and make a house linked to the Great Fire of London (History topic link)	Design Tools Cut Join Plan Model Build Structure Materials Make Evaluate Strong Waterproof Safe Secure	To begin to know the basic sequence of a design brief: - Explore, design, make, evaluate Explore - To know how to explore a range of house and evaluate what a successful house will look like and be like – strong, safe, secure etc Design – To know how to draw on their own experience to help generate ideas To know how to suggest ideas and explain what they are going to do. To know how to develop their ideas through talk and drawings. To know how to draw and label their designs Make - To know how to build structures, exploring how they can be made stronger, stiffer and more stable. To know how cut and shape a range of materials. To know how to use tools e.g. scissors safely. To join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape. To use simple finishing techniques to improve the appearance of their product Evaluate To know how to evaluate their products as they are developed, identifying strengths and possible changes they might make To know how to evaluate their product by discussing how well it works in relation to the purpose (design criteria), saying what they liked and disliked

YEAR	DESIGN BRIEF:	KEY VOCABULARY	DESIGN BRIEF KNOWLEDGE
Y1/2 YEAR B BY THE END OF THE ADVENT TERM UNIT	Home Context To design and make a puppet (History link – how Toys have changed within living memory Science link – which materials are suitable for a puppet)	Design Tools Cut Join Plan Model Build Structure Materials Make Evaluate Sew Thread Design Needle Puppet Fabric Flexible Decorative	To know the basic sequence of a design brief: - Explore, design, make, evaluate Explore – To evaluate a range of different puppets To know what a successful puppet will look like and be like using key vocabulary – flexible, soft, decorative etc Design – To know how to draw on their own experience to help generate ideas To know how to suggest ideas and explain what they are going to do. To know how to develop their ideas through talk and drawings. To know how to draw and label their designs Make - To know how to join fabric using a basic running stitch To know how to thread a needle by passing the thread through the eye To know how cut and shape a range of materials. To know how to use tools e.g. scissors safely. To use simple finishing techniques to improve the appearance of their product, such as gluing decorations to make the puppet more appealing Evaluate To know how to evaluate their products as they are developed, identifying strengths and possible changes they might make To know how to evaluate their product by discussing how well it works in relation to the purpose (design criteria), saying what they liked and disliked

YEAR	DESIGN BRIEF:	KEY VOCABULARY	DESIGN BRIEF KNOWLEDGE
Y1/2 YEAR A BY THE END OF THE PENTECOST TERM UNIT	Mechanisms Context Design & make a Castle with a moving drawbridge	Design Make Build Evaluate Safety Features Strong Secure Mechanism Drawbridge Castle	To begin to know the basic sequence of a design brief: - Explore, design, make, evaluate Explore – To know what a successful castle will look like and be like – strong, secure, giving protection; To know how to explore mechanisms to open and close a drawbridge, and understand how they work Design – To know how to draw on their own experience to help generate ideas To know how to suggest ideas and explain what they are going to do. To know how to develop their ideas through talk and drawings. To know how to draw and label their designs Make - To know how to create a castle with a drawbridge, exploring the best materials and structures, and which mechanism to use To know how to use tools safely. To join and combine materials and components together using a variety of temporary methods Evaluate To know how to evaluate their products as they are developed, identifying strengths and possible changes they might make To know how to evaluate their product by discussing how well it works in relation to the purpose (design criteria), saying what they liked and disliked

<p>Y1/2 Year A</p> <p>BY THE END OF THE PENTECOST TERM UNIT</p>	<p>DESIGN BRIEF:</p> <p>Home/School/Garden/Wider Environment Context</p> <p>Year B: Design and make a healthy sandwich (linked to PSHE Healthy Week)</p>	<p>Design Tools Plan Make Evaluate Improve</p> <p>Taste Texture Healthy Fruit Vegetable</p> <p>Vocabulary specific to linked topic on Knowledge Organiser</p>	<p>To begin to know the basic sequence of a design brief:</p> <ul style="list-style-type: none"> - Explore, design, make, evaluate <p>Explore – To know how to explore a range of healthy sandwich fillings To know that everyone should eat at least five portions of fruit and vegetables every day, To know how to name and sort foods into the five groups in 'The Eat well plate' To know that all food comes from plants and animals</p> <p>Design – To know how to draw on their own experience to help generate ideas</p> <p>To know how to suggest ideas and explain what they are going to do.</p> <p>To know how to develop their ideas through talk and drawings.</p> <p>To know how to draw and label their designs</p> <p>Make - To know how to create a suitable healthy sandwich, and complete tasks in the right order</p> <p>To know how to use tools safely to create the healthy sandwich</p> <p>Evaluate To know how to evaluate their products as they are developed, identifying strengths and possible changes they might make</p> <p>To know how to evaluate their product by discussing how well it works in relation to the purpose (design criteria), saying what they liked and disliked</p>
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YEAR	DESIGN BRIEF:	KEY VOCABULARY	DESIGN BRIEF KNOWLEDGE
Y3/4 YEAR A BY THE END OF THE ADVENT TERN UNIT	Home context To design and make an electrical Christmas Decoration (Linked to Science Electricity Topic)	Design criteria Tools Cutting Joining Shaping Finishing Planning Evaluating Scientific vocabulary linked to the topics as per the Knowledge Organiser	<p>To develop their knowledge of the design brief sequence:</p> <ul style="list-style-type: none"> - Explore, design, make, evaluate <p>1) Explore and evaluate:</p> <p>To know how to evaluate a range of different electrical Christmas decorations, expressing their views and preferences To know how electrical Christmas decorations have been designed, made, what materials have been used and the construction technique To know what a successful Christmas decoration needs to be like, generating design criteria – bright, colourful, exciting etc</p> <p>2) Design</p> <p>To know how to apply knowledge in linked topics and within the Explore and Evaluate phase to generate their designs.</p> <p>To know how to develop ideas through discussion and labelled sketches, with increasing detail considering its purpose and the user/s.</p> <p>To know how to order the main stages of making a product.</p> <p>To know how to explain their choice of materials and components</p> <p>3) Make</p> <p>To know how to select appropriate tools and techniques for making their product and explain the technique they will use and why</p> <p>To know how to cut and assemble components with more accuracy.</p> <p>To know how to use simple electrical systems</p> <p>4) Evaluate</p> <p>To know how to evaluate their product against original design criteria e.g. how well it meets its purpose,</p> <p>To know how to explain how well their product met the brief and evaluate what they might do differently another time</p>

YEAR	DESIGN BRIEF	KEY VOCABULARY	DESIGN BRIEF KNOWLEDGE
<p>Y3/4</p> <p>YEAR A</p> <p>BY THE END OF THE LENT TERM UNIT</p>	<p>Wider Environment and Culture Context</p> <p>Design and make an Egyptian Pulley System (linked to History topic)</p>	<p>Design criteria</p> <p>Tools</p> <p>Cutting</p> <p>Joining</p> <p>Shaping</p> <p>Finishing</p> <p>Planning</p> <p>Evaluating</p> <p>Pulley</p> <p>Function</p> <p>Movement</p> <p>Range of History vocabulary as per the Knowledge Organiser</p>	<p>To develop their knowledge of the design brief sequence:</p> <ul style="list-style-type: none"> - Explore, design, make, evaluate <p>1) Explore and evaluate:</p> <p>To know that a pulley is a type of wheel that can lift heavy objects.</p> <p>To know that the wheels are joined by a belt or rope that loops between them. To know that a downwards pull creates an upwards pull at the other end which lifts the weight.</p> <p>To know how to evaluate a range of different pulleys, expressing their views and preferences</p> <p>To know how pulley systems have been designed, made, what materials have been used and the construction technique</p> <p>To know what a successful pulley system needs to be like, generating design criteria – bright, colourful, exciting etc</p> <p>2) Design</p> <p>To know how to apply knowledge in linked topics and within the Explore and Evaluate phase to generate their designs.</p> <p>To know how to develop ideas through discussion and labelled sketches, with increasing detail considering its purpose and the user/s.</p> <p>To know how to order the main stages of making a product.</p> <p>To know how to explain their choice of materials and components</p> <p>3) Make</p> <p>To know how to select appropriate tools and techniques for making their product and explain the technique they will use and why</p> <p>To know how to measure, cut and assemble components with more accuracy.</p> <p>To know how to adapt and change their design based on their evaluation of how well the making process is going</p> <p>To know how to articulate the changes that they made in the making phase and give reasons for this</p> <p>4) Evaluate</p> <p>To know how to evaluate their product against original design criteria e.g. <i>how well it meets its purpose</i>,</p> <p>To know how to explain how well their product met the brief and evaluate what they might do differently another time</p>

YEAR	DESIGN BRIEF:	KEY VOCABULARY	DESIGN BRIEF KNOWLEDGE
<p>Y3/4</p> <p>YEAR B</p> <p>BY THE END OF THE LENT TERM UNIT</p>	To design and make a purse	<p>Design criteria</p> <p>Tools</p> <p>Cutting</p> <p>Joining</p> <p>Shaping</p> <p>Finishing</p> <p>Planning</p> <p>Evaluating</p> <p>Pulley</p> <p>Function</p> <p>Movement</p> <p>Sew</p> <p>Thread</p> <p>Needle</p> <p>Stiches – running stitch</p> <p>Fabric</p> <p>Range of material vocabulary</p>	<p>To develop their knowledge of the design brief sequence:</p> <ul style="list-style-type: none"> - Explore, design, make, evaluate <p>1) Explore and evaluate:</p> <p>To know how to evaluate a range of different purses, expressing their views and preferences</p> <p>To know how a range of purses have been designed, made, what materials have been used and the construction technique</p> <p>To know what a successful purse needs to be like, generating design criteria</p> <p>To know that there are different types of stitches including running stitch, back stitch and oversewing stitch.</p> <p>To know that purses can come with a range of different fastenings.</p> <p>2) Design</p> <p>To know how to develop ideas through discussion and labelled sketches, with increasing detail considering its purpose and the user/s.</p> <p>To know how to order the main stages of making a product.</p> <p>To know how to explain their choice of materials and components</p> <p>3) Make</p> <p>To know how to select appropriate tools and techniques for making their product and explain the technique they will use and why</p> <p>To know how to measure, mark out, cut, score and assemble components with more accuracy.</p> <p>To know how to work safely and accurately, to know how to thread a needle and use appropriate stitches</p> <p>To know how to adapt and change their design based on their evaluation of how well the making process is going</p> <p>To know how to articulate the changes that they made in the making phase and give reasons for this</p> <p>4) Evaluate</p> <p>To know how to evaluate their product against original design criteria</p> <p>To know how to explain how well their product met the brief and evaluate what they might do differently another time</p>

YEAR	DESIGN BRIEF:	KEY VOCABULARY	DESIGN BRIEF KNOWLEDGE
<p>Y3/4 YEAR B</p> <p>BY THE END OF THE PENTECOST TERM</p>	<p>Design and make a healthy vegetable soup</p> <p>To design and make a vegetable Soup – carrot, potato and onion base with seasoning and a vegetable stock cube; adding one other vegetable ingredient</p> <p>(Linked to Science and PSHE Healthy Week curriculum)</p>	<p>Design criteria Tools/Utensils Recipe Healthy balanced diet Peeling chopping Chopping board knife safety Planning making Evaluating</p>	<p>To develop their knowledge of the design brief sequence:</p> <ul style="list-style-type: none"> - Explore, design, make, evaluate <p>1) Explore and evaluate:</p> <p>To know what a healthy diet consists of – balanced/5 a day To know how to explore a range of soups and their ingredients To know how to evaluate a range of different vegetables used in soups, expressing their views and preferences To know how a basic vegetable soup has been made, what ingredients have been used and the recipe</p> <p>2) Design</p> <p>To know how to apply knowledge in linked topics and within the Explore and Evaluate phase to generate their own recipe – eg adding another choice of vegetable to the basic soup recipe. To know how to develop ideas through discussion To know how to order the main stages of making the soup To know how to explain their choice of ingredients</p> <p>3) Make</p> <p>To know how to use different techniques for making their dish and explain the technique they will use and why – peeling, chopping, boiling and how to do this safely To know how to combine ingredients To know how to work safely and accurately with a range of simple kitchen tools</p> <p>4) Evaluate</p> <p>To know how to evaluate their soup dish To know how to explain how well their dish met the brief and evaluate what they might do differently another time</p>

YEAR	DESIGN BRIEF:	KEY VOCABULARY	DESIGN BRIEF KNOWLEDGE
Y5/6 YEAR B BY THE END OF THE ADVENT TERM UNIT	Industry Context Year B: To design and make a Mars Rover vehicle (linked to Earth and Space Science unit of work)	<u>Earth and Space vocabulary:</u> Sun Star Solar System Orbit Rotation Moon Heliocentric Geocentric Axis Day <u>Above vocabulary plus:</u> Design Brief Disassembly Prototype Sketch Components Diagram Function Research Mock-up Motor Drive Belt System	To embed their knowledge of the design brief sequence: - Explore, design, make, evaluate 1) Explore and evaluate To know the key facts about Curiosity and how the developments in this technology shapes the world To know how to explore and investigate prototypes of vehicles and know how to explain what worked effectively and what did not; to know the key features of a successful mechanism and how it can work effectively To know how to generate and articulate design criteria for a successful Mars Rover 2) Design To know how to use their research in Stage 1 to inform the design of a functional and appealing Mars Rovers which is fit for purpose. To know how to make labelled diagrams of the Mars Rover taking their research into account To know how to plan the order of their work, choosing appropriate materials, tools and techniques 3) Make To know how to use tools safely and accurately To know how to suggest alternative methods of making if the first attempts fail. To know how to demonstrate when make modifications as they go along. To know how to construct products using permanent joining techniques. To know how to reinforce and strengthen a 3D framework. To know how to accurately apply a range of finishing techniques to make the product look appealing, selecting appropriate materials. To know how to make a quality product To know how to identify the strengths and areas for development in their ideas and products. 4) Evaluate To know how to evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. To know how to evaluate their work both during and at the end of the assignment. To evaluate against their original criteria and suggest ways that their product could be improved.

YEAR	DESIGN BRIEF:	KEY VOCABULARY	DESIGN BRIEF KNOWLEDGE
Y5/6 YEAR B BY THE END OF THE PENTECOST TERM UNIT	Home, School, Industry, Leisure Context Design and make a healthy meal – a Frittata	Spice Herbs Fat Sugar Carbohydrate Protein Vitamins Nutrients/Nutrition Healthy Varied Dairy Allergy Intolerance Savoury Source Seasonality Utensils Combine Stir Pour Mix Whisk Chop Peel	<p>To embed their knowledge of the design brief sequence:</p> <ul style="list-style-type: none"> - Explore, design, make, evaluate <p>1) Explore and evaluate: To know how to evaluate a range of healthy dishes, expressing their views and preferences To evaluate ingredients used in a Frittata and express preferences; (eggs, cheese, vegetables, seasonings etc) To know why a Frittata is a healthy option</p> <p>2) Design To know how to design their own frittata, deciding upon which ingredients they will add to the egg base, explaining preferences (selecting from a choice of cheeses, cooked meat such as ham, salami, chorizo and vegetables such as tomatoes, peppers, onions) To know how to order the main stages of making the dish To know how to explain their choice of ingredients</p> <p>3) Make To know how to select appropriate tools and techniques for making their dish and explain the technique they will use and why To know how to measure out, combine ingredients etc with accuracy. To know how to work safely and accurately with a range of simple kitchen tools To know how to adapt and change their design based on their evaluation of how well the making process is going To know how to articulate the changes that they made in the making phase and give reasons for this</p> <p>4) Evaluate To know how to evaluate their dish identifying strengths and areas for development, and carrying out appropriate tests. To know how to evaluate their work both during and at the end of the assignment. To evaluate against their original criteria and suggest ways that their product could be improved.</p>

<p>Y5/6</p> <p>YEAR A</p> <p>BY THE END OF THE PENTECOST TERM UNIT</p>	<p>DESIGN BRIEF:</p> <p>Industry and Leisure Link</p> <p>Year A: Design & Make an aeroplane</p> <p>(linked to History Battle of Britain unit)</p>	<p>Battle of Britain vocabulary: Air raid Air raid siren Air raid shelter Allies Blitz Blackout Luffwaffe Spitfire Warden Royal Air Force Bombing Evacuation Above vocabulary plus: Design Brief Disassembly Prototype Sketch Components Diagram Function Research Mock-up Frame Structure, Stiffen, Strengthen, Reinforce, Triangulation, Stability Shape, Join Temporary Permanent</p>	<p>To embed their knowledge of the design brief sequence:</p> <ul style="list-style-type: none"> - Explore, design, make, evaluate <p>1) Explore and evaluate To know the key facts about the Spitfire, that it was designed by R J Mitchell and how the developments in this technology shapes the world and the outcome of the War. To know how to explore and investigate prototypes of aeroplanes and know how to explain what worked effectively and what did not; to know the key features of a successful aeroplane To know how to generate and articulate design criteria for a successful aeroplane</p> <p>2) Design To know how to use their research in Stage 1 to inform the design of a functional and appealing aeroplane which is fit for purpose. To know how to make labelled diagrams of the aeroplane taking their research into account To know how to plan the order of their work, choosing appropriate materials, tools and techniques</p> <p>3) Make To know how to use tools safely and accurately To know how to suggest alternative methods of making if the first attempts fail. To know how to demonstrate when make modifications as they go along. To know how to construct products using permanent joining techniques. To know how to reinforce and strengthen the framework To know how to accurately apply a range of finishing techniques to make the product look appealing, selecting appropriate materials. To know how to make a quality product Identify the strengths and areas for development in their ideas and products.</p> <p>4) Evaluate To know how to evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. To know how to evaluate their work both during and at the end of the assignment. To evaluate against their original criteria and suggest ways that their product could be improved.</p>
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