

# AT THE BEACH

100 years of summer fashion in New Zealand



 fashion NEW ZEALAND Museum

 New Zealand  
Maritime Museum  
HUI TE ANANUI A TANGAROA

Learning Resource

WONDER | EXPLORE | INSPIRE | TRANSFORM



## Welcome to *At The Beach* at the Maritime Museum

Most New Zealanders love going to the beach in summer. As an island nation our love for the water hasn't changed over time. What we wear to the beach in and on the water however has changed a lot. When bathing became fashionable back in early 1900's social norms dictated the body should be covered. As men and woman started to be more active in the water they started to wear long woollen thermal-like bathing suits. Then came the one-piece, the two-piece, and the bikini and now we are covering up again with the rash shirt.

*Did you know people used to swim in long woollen thermal-like clothing many years ago?*

*Did you know they can now wire swimsuits and towels to tell us to get out of the sun?*

*What will you wear to the beach this summer?*

*What do you think beachwear will look like in the future?*

## PROGRAMME OVERVIEW

When you visit *At The Beach* this summer at the New Zealand Maritime Museum your students will have the chance to explore how differing social, cultural, and environmental influences have changed what we wear at the beach. We will focus on materials used to make different swimming attire and will involve testing and exploring materials and items that could be worn or used at the beach or in the water.

Prior to your visit:

Students will have the chance to explore the properties of materials using paper dolls to ask questions about differing fabrics used to make beach wear.

You might ask:

**Why was this material chosen?**

**What fabrics are suitable for swimsuits?**

During your visit:

Students will be able to experience the exhibition '*At The Beach*' to discover how swimming costumes and accessories have changed over time and to consider how differing factors have influenced different design outcomes.

You might consider:

**Why have swimming costumes become smaller over time?**

**Why has covering up with a rash shirt become popular today?**

An educator workshop will allow students to explore the different functional and physical attributes of different materials and objects asking why and who might use them.

A self-guided trail to discover the rest of the museum including other water related accessories will enable the students to discover the rest of the museum's amazing collection.

Post visit:

Your students have the exciting opportunity to enter a competition to design some new beachwear!

## Our Made World At *The Beach*- In And On The Water

When exploring our made world, social, cultural and environmental influences change what, why, when and how we develop artifacts (technological outcomes) in response to differing needs. All beach wear and accessories worn at the beach in and on the water are designed in response to identified needs and have been made for a variety of purposes.

Key Ideas:

**The dominant social, cultural, political and environmental factors within a particular time or era influence what is designed and made.**

*Why did people cover up their arms and legs at the beach (early 1900's)?*

**As people we evaluate and select made items based on whether they work (functional nature), what materials they are made of (physical nature) and on the way they look (form/aesthetics)**

*What shoes do you think you will wear to the beach this summer and why did you select them?*

**Understand that materials are selected based on their performance properties**

*Why are many swimming costumes made from Lycra?*

**Understand that modeling is used to test on-going design ideas and prototyping is used to evaluate fitness for purpose- Does the product work the way you want it to do?**

*Why are sample clothes made before they are manufactured?*

<http://technology.tki.org.nz/Technology-in-the-NZC/Indicators-of-progression>



Otaki Beach (between Wellington and Levin) - December 1926, Te Papa Collections



## CURRICULUM LINKS:

*Technology Education is learning about our made world and how humans develop products and systems (technological outcomes) that shape our everyday living environments.*

### **The Nature of Technology Strand:**

<http://technology.tki.org.nz/Technology-in-the-NZC/Nature-of-technology>

The component Characteristics of Technology (COT) explores how different technological outcomes have been developed in response to changes in time, social attitudes, cultural influences and issues related to the environment. It examines how different technological outcomes have been developed in response to differing needs and values. Often referred to as the social dimension it examines how society (large groups of people) either drive technological change or change is driven by technological products produced.

The component Characteristics of Technological Outcomes (CoTO) examines the relationship we as individuals have in response to the way different products are designed to look (aesthetics), work (functional nature) and the materials (physical nature) they are made of regarding their fitness for purpose. Often referred to as the human dimension it examines how we as individuals respond everyday to our made world. Attributes are broad descriptors that describe what the product can do (functional attribute), what material it is made of (physical attribute) and how it looks (aesthetic attribute). We use attributes to evaluate a product's fitness for purpose.

AO (Level 3 example) Understand how society and environments impact on and are influenced by technology in historical and contemporary contexts  
Learning outcome: Explain why swimming costumes beach wear have changed over time  
Technological products (TP)

### **The Technological Knowledge strand:**

<http://technology.tki.org.nz/Technology-in-the-NZC/Technological-knowledge>

The component Technological products (TP) examines how materials are made and used to make products (technological outcomes). All products are made from some sort of material. A huge range of materials both natural and synthetic are used make products. Materials are selected for an intended purpose. Selection depends on the materials performance qualities regarding fitness for purpose. Materials can either be formed manipulated or transformed.

The component Technological modelling (TM) uses a range of modelling tools to test whether something will work. Prototypes are used to evaluate a products fitness for purpose. A variety of modelling tools, drawings, patterns, and mock-ups are used in industry to test and evaluate potential designed outcomes

AO (Level 3 example) understand the relationship between the materials used and their performance properties in technological products.  
Learning outcome: Explain why different materials were selected based on their performance properties to make different swimming costumes over time.



## CURRICULUM LINKS:

**For planning and assessment purposes refer to the following progression indicators:**

Characteristics of Technology	Level 1: Understand that technology is purposeful intervention through design.
	Level 2: Understand that technology both reflects and changes society and the environment and increases people's capability.
	Level 3: Understand how society and environments impact on and are influenced by technology in historical and contemporary contexts.
Characteristics of Technological Outcomes	Level 1: Understand that technological outcomes are products or systems developed by people and have a physical nature and a functional nature
	Level 2: Understand that technological outcomes are developed through technological practice and have related physical and functional natures.
	Level 3: Understand that technological outcomes are recognisable as fit for purpose by the relationship between their physical and functional natures.
Technological Products	Level 1: Understand that technological products are made from materials that have performance properties.
	Level 2: Understand that there is a relationship between a material used and its performance properties in a technological product.
	Level 3: Understand the relationship between the materials used and their performance properties in technological products.
Technological Modelling	Level 1: Understand that functional models are used to represent reality and test design concepts and that prototypes are used to test technological outcomes.
	Level 2: Understand that functional models are used to explore, test, and evaluate design concepts for potential outcomes and that prototyping is used to test a technological outcome for fitness of purpose.
	Level 3: Understand that different forms of functional modelling are used to inform decision-making in the development of technological possibilities and that prototypes can be used to evaluate the fitness of technological outcomes for further development.

**Key Competencies:** Thinking, Relating to others, Participating & contributing

**Values:** Innovation, inquiry, and curiosity

## BACKGROUND INFORMATION

### Bathing beauties

When selecting what to wear to the beach this summer you will not only respond to social, cultural, and environmental influences to make your decisions but you will also think about whether your bathing costume will fit you, whether the materials will stretch in the right places and whether you feel you look good in the colour you have chosen.

From the monokini to the burqini, bathing suits are barometers of societies and their mores. They are also a showcase of scientific and technological advancement.

We have not always had garments specifically for bathing. In Ancient Rome

and Greece a person would simply throw off their toga in order to bath naked, unencumbered by the constraints of cloth. Swimming and bathing were engaged in for sport and leisure as well as for hygiene.

Then, for a long time within European culture, bathing for pleasure largely fell from favour and bathing was only seen as therapeutic with visits to spa baths to soothe physical and nervous disorders. There was a period too when bathing, even in the pursuit of personal hygiene, was seen as unhealthy, water being seen as a carrier of germs and disease and hence best avoided, with contact restricted to the occasional washing of exposed skin such as the hands and face.

When bathing and water sports again found favour with those who had leisure time at their disposal, the morality of the day dictated that the body should be covered. For men this generally meant wearing simple loose short trousers and a vest and for women an opaque and voluminous dress and bloomers that did not cling to or reveal the body beneath.

Do you want to more about how swimming costumes have changed over time? Explore these different time periods ...while you are looking you might also identify the reasons for changes.

***To view wonderfully nostalgic images from our summers past go to the [NZ Fashion Museum blog](#) [Bathing Beauties](#), or discover more on the [NZFM Facebook page](#) and the [online museum](#)***



Women with surf boards - Photograph by Leslie Adkin at Otaki Beach, 26 December 1927. Gift of G. L. Adkin family estate, 1964. Te Papa (B.022122)



1870s bathing costumes from Fuzzylizzie Vintage Clothing, NZ Fashion Museum blog

## AT THE BEACH- SWIMSUIT MATERIALS AND TECHNOLOGY

Woven materials; cotton, wool, linen



Image courtesy NZ Fashion Museum



Dorothea and Maryal Knox in the surf at Rye, NY, ca.1900. Schlesinger Library, RIAS, Harvard University via Consuming Cultures

<b>Title</b>	<b>Now for a dip</b>
<b>Date</b>	1900s -1910s
<b>Garment Type</b>	2 piece Women's Bathing Costume
<b>Material</b>	Plainweave cotton
<b>Colour</b>	Black trimmed with fine white braiding.
<b>Features</b>	2 pieces made up of a combination [that is a sailor collared blouse and bloomers joined together into a one piece which today we might call a onesie] and an overskirt which is held in place by being buttoned on to the combination.
<b>Credit</b>	Nellie L Hexton (label stitched to inside) loan courtesy of Dion Coleman
<b>Story</b>	We have not always had garments specifically for bathing. In ancient Rome and Greece a person would simply throw off their toga in order to bath or swim - naked. When bathing and beach promenading became popular as a healthy way of exercising in the 19 <sup>th</sup> century revealing any part of the body or even hinting at it was thought immodest and so anyone who wanted to swim had to cover up. For men this meant baggy shorts and a long vest like the sleeved singlet they wore under their clothes and for women a "Princess cut" suit like the one in the picture. These "bathing costumes" were usually made of woven cotton, linen or wool fabric and needed to be thick enough not to become see-through when they were wet and for the same reason they were made in dark colours. Women often also wore a bonnet, stockings and canvas shoes as part of their bathing costume. Can you imagine what would happen when a person gets into the water in this much clothing - would they be able to swim?



## AT THE BEACH- SWIMSUIT MATERIALS AND TECHNOLOGY

Knitted Material; cotton, silk



Image courtesy NZ Fashion Museum



Image courtesy NZ Fashion Museum

<b>Title</b>	<b>His and Hers at Castlecliff Beach</b>
<b>Date</b>	1910s - 1940s
<b>Garment Type</b>	2 piece Bathing Costumes 1 piece swim suit
<b>Material</b>	Knitted Wool
<b>Colour</b>	Black with white bands Red
<b>Features</b>	2 pieces made up of a long vest or tunic over knee length shorts 1 piece with underbust seam and modesty skirt.
<b>Credit</b>	Eric and Gwen Melody 1925. Roslyn label
<b>Story</b>	<p>In New Zealand swimming was recognised as a pleasurable, healthy form of exercise and was introduced into school curriculums in the early 1900s. Swimming was also on the modern Olympic programme and in that recognition as an international sport helped develop the bathing costume into a swimming suit.</p> <p>Heavy woven fabrics were replaced with knitted fabrics which, as the result of the knitting process, had a natural mechanical stretch making them more form-fitting and less weighty.</p> <p>When Violet Walrand represented us at the London Olympics in 1920 she wore a functional swimsuit, a sleeveless knitted one piece with short legs. At the public pools and on the beaches however there were strict dress codes, for example setting out that men and women had to wear regulation neck to knee costumes and that the crotch area should be covered by the top of a two piece costume as in the image on the left or if a one piece then by wearing trunks over the suit or an overskirt or a modesty panel as in the image on the right. Over the next couple of decades, as swimming became an even more popular leisure-time activity, beach goers saw more arms, legs, and necks as the swimsuits got smaller.</p> <p>Having a mechanical stretch to allow for movement was a big improvement on the woven bathing costume but it still had its drawbacks. When any fabric gets wet it gets heavy and but when knitted fabric gets wet the result of the stretch is probably more like saggy. What would a wet woollen knitted suit look like?</p>

## AT THE BEACH- SWIMSUIT MATERIALS AND TECHNOLOGY

Introducing elastic



Image courtesy NZ Fashion Museum



Image courtesy NZ Fashion Museum

<b>Title</b>	<b>Shaping Up</b>
<b>Date</b>	1940s - 1960s
<b>Garment Type</b>	1piece Bathing suit
<b>Material</b>	Cotton with shirring elastic Ribbed sateen with elasticising
<b>Colour</b>	White with pink and green printed design and leaf green piping trim Black and white stripe with white piping trim
<b>Features</b>	Panelled suit with ruching and shirring, with modesty panel Tailored suit with back zip and removable straps
<b>Credit</b>	Canterbury label Jantzen label
<b>Story</b>	As well as reflecting social change the evolution in bathing suit history is also a story of the innovation in fabric technology. While wool was heavy and saggy when wet, cotton which could be shaped to fit, had little give to allow movement, so there was a lot of experimentation with materials such as rubber and latex. Dunlop Rubber Company chemists were able to transform natural rubber latex into reliable elastic thread which was wrapped with other materials like cotton, rayon or wool and could then be knitted or woven into stretch fabrics. One important version of the new elasticated thread was known as Lastex, wet or dry it retained its shape. Similarly shirring [the gathering of the fabric of a garment by means of elasticized threads in parallel rows] was used to make cotton swimsuits form-fitted while still allowing movement. Swimsuits for swimming, but also shaping the body and creating a strong silhouette. Elastic was the material responsible for the smooth and shapely Pin Up girl look of the post war era. As the Jantzen ad at the time said <b><i>“Elastic, stretch, ease of wear and ease of care are all hallmarks of the materials in this new era”</i></b>

## AT THE BEACH- SWIMSUIT MATERIALS AND TECHNOLOGY

Nylon



Image courtesy NZ Fashion Museum

<b>Title</b>	<b>Surf style</b>
<b>Date</b>	1960s
<b>Garment Type</b>	2 piece
<b>Material</b>	Bri Nylon
<b>Colour</b>	Red with white vinyl trim Yellow towelling texture
<b>Features</b>	2 pieces made up of a supported bra top with back closure and a fitted brief
<b>Credit</b>	Slix label Jantzen label
<b>Story</b>	The bikini as we know it now first came to prominence in the 1960s, as fashion trends became more active and youth-oriented. A more natural silhouette was championed by designers and the material of choice was easy-care nylon. Nylon is an oil by-product and as such is the first truly synthetic fibre. Developed in 1938 by DuPont as a substitute for silk it was used extensively during World War II by the military in parachutes, ropes and tyres. It was also used for making sheer, durable, elastic and wrinkle resistant stockings for women. In the post war years it was used for carpets, upholstery and for every type of garment including swimwear and came to represent prosperity, hopefulness and fashionable modernity. In 1958 the British Nylon Spinners trademark their brand of nylon as Bri-Nylon and this became the material of choice for swimwear in New Zealand in the 1960s. With its quick drying properties, it's durability and colour fastness, the variety of textures, patterns and rich colours that could be achieved with this material meant that Bri Nylon surpassed anything that had come before.



## AT THE BEACH- SWIMSUIT MATERIALS AND TECHNOLOGY

UPF and more science



Image courtesy of Moontide NZ



Image courtesy of Covertogs

<b>Title</b>	<b>Full circle</b>
<b>Date</b>	2016
<b>Garment Type</b>	One piece swimsuit with long sleeves Separates – below the knee tankini pant, zip front tankini top
<b>Material</b>	Nylon lycra
<b>Colour</b>	Black and white Black and pattern
<b>Features</b>	Both looks are selected from a mix and match collection offered by the manufacturer
<b>Credit</b>	Moontide New Zealand label Covertogs label
<b>Story</b>	<p>At the Beach today you might be forgiven for thinking that some of the swimsuits look a lot like those worn 100 years ago with the whole body, arms and legs covered up but now the reasons for this are varied. The Burkini and Covertogs are chosen for reasons of modesty but the use of modern fabric technology makes them nothing like the heavy and cumbersome vintage original from a century ago. The modern coverall swimsuit is made from lightweight quick drying nylon and is opaque because of the close knit of the fabric rather than by being thick. Rash vests and swim shirts are worn for their protective qualities, whether guarding the skin from rub rash from a surf board or by providing a barrier to the harsh sun. The rise in awareness of the harmful effects of prolonged sun exposure that gave us the Cancer Society Sun Safe campaign Slip (on a shirt), Slap (on a hat) and Slop (on some sunscreen) has also led to scientists measuring and developing the ultra violet protective factor (UPF) rating system for textiles. They have shown that lycra/elastane fabrics have the highest UPFs, followed by nylon and other synthetic fabrics while covering up with a light cotton T-shirt offers almost no protection at all and even less when wet. Science is applied to all aspects of swimsuit manufacturing and is constantly trying to solve new challenges. One of the least surprising is how swimsuits can make competitive swimmers go faster. The answer was the full body suits developed by Speedo known as Sharkskins – they were so good they have now been banned. What will be the new challenges of the future?</p>



## AT THE BEACH– how things have changed!

What you now wear to the beach is nothing like it was in the past.

### Why do you think beach-wear/swim wear has changed over time?

People have bathed for many reasons over time. In the 4th century the Ancient Romans and Greeks bathed for hygiene, leisure and sport. Men and woman bathed separately and often in the nude or minimal clothing.

In Europe bathing was purely therapeutic. Swimming for pleasure was unheard of. Indeed bathing in water was seen as potentially dangerous to your health.

In the 18th century bathing became a mode of maintaining hygiene. Bathing gowns and bathing machines maintained modesty as the swimmer was submerged fully clothed in relative privacy.

Australian underwater ballerina and swimmer Annette Kellerman wore a suit, fitted and with short sleeves, legs ,an open neck and stockings. When she was touring America in 1907 she was arrested – for indecency.

Our swimwear has changed in response to changes in societal attitudes and progress in science and technology.

Check out these clips to get an idea of how swimwear and fashion have changed.

### Why do your think swimwear has changed?

[1930's Swimwear Fashion](#)   [100 Years of Fashion in 2 minutes](#)

[Umbrella Styles \(1950s\)](#)   [Womens Swimwear History](#)   [Swimming Cap Fashions \(1950s\)](#)

Look at the images on the opposite page. Discuss what decades/centuries these images are from. Using the images provided can you explain what social attitudes influenced changes and why different materials were used at different times to make swimming costumes.

Answers:

**Women with surf boards, 26 December 1927**

**Models on the beach , 1940's**

**Lunch on the sands, 1909**

**Teenagers , 1960s**

**Bikini girls, Ancient Rome, 753 BC- 476 AD**

### Family History of Beachwear

What we wear now may be very different to what your family have worn over time. Ask students to collect images of what their families have worn to the beach over time.

Where possible they should collect information from their family about who is in the picture, when it was taken, what the swimwear was made from, any memories of days at the beach from parents, grandparents or great grandparents. They may wish to display these as a family tree or in a time line. Make extra copies and create a whole class timeline. Discuss what social attitudes influenced changes and why different materials were used at different times to make swimming costumes.

### Future Predictions

Of course the big question is what will we be wearing next? Check out these clips of past predictions of future clothing.

[1920's future predictions](#)

[1939 future predictions](#)

[1960's future predictions](#)

### Were any of these predictions correct?

Ask your students to consider the beach experience in the future. What changes do they predict? Consider changes to environment, technology, fashion, societal attitudes, needs etc. Students may design swimwear they predict we will be wearing in 5 years, 20 years, 50 years, 100 years etc. Have the class decide on the best prediction for each time period. Display these on windows to spark discussion at school.



### Bathing Over Time



Women with surf boards - Photograph by Leslie Adkin at Otaki Beach, Gift of G. L. Adkin family estate, Te Papa (B.022122)



Models on the beach , by Clifton Firth



Lunch on the sands, Leslie Adkin. Te Papa Collections



Teenagers Photographer Paul Champion, Sir George Grey Special Collections, Auckland Libraries, 1055-178



"Bikini girls" mosaic archeological from excavation of ancient Roman villa near, Piazza ,Wikimedia Commons



## WHAT TO WEAR TO THE BEACH IN OR ON THE WATER

People wear different clothes and use different accessories at the beach in or on the water for different purposes.

Why do you think these people/children chose to wear the following outfits?  
What are the functional and physical attributes that make these garments fit for purpose?

**Identify Functional and physical attributes that make these outfits fit for purpose**



## WHAT TO USE AT THE BEACH IN OR ON THE WATER- ACCESSORIES

What are these accessories used for at the beach in or on the water (functional attributes) and what materials are they made of (physical attributes)  
Why do think these materials were selected (Material properties)



**SEA, SUN, SWIM, SURF, SAILING– Fun and Safety at the Beach**

**At the Beach Swimming Accessories...**

In your visit to the beach at the Maritime Museum, the exhibition and education workshop you will also discover many accessories used when swimming at the beach in or on the water.

Here are some teaching & learning ideas related to at the beach, in or on the water...

Collect a range of beach accessories to use for discussion e.g. Goggles, sunglasses, hats, sun block sun screen, bathing cap/flotation devices, lilo, rash shirts cover, sand water shoes, kick boards, beach umbrellas beach tents...



**Understand that people make things. ... (These are called technological outcomes or artefacts)**

- Draw, cut out, or colour and name accessories that have been made to use at the beach. Sort and compare these.
- Have children design/invent a useful accessory for a range of people at the beach e.g. infant, elderly person, disabled person etc.
- Write about your experience at the beach. What things did you take with you/use? Why? (English)

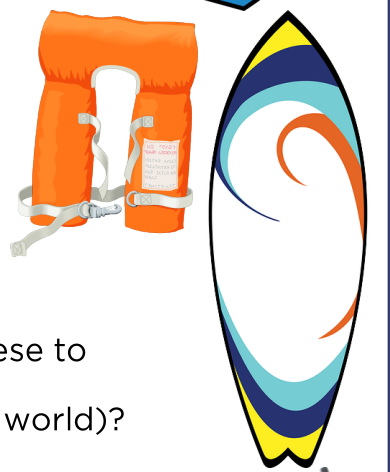
**Understand that technology is purposeful intervention through design (Technology COT)**

- Try to find a range of hats for differing purposes and materials. Discuss these.
- Sunglasses have become essential to wear today why do you think this? (COT L2) Who invented sunglasses? Why? Research and discuss.
- Try to find a range of sunglasses or protective eyewear for differing purposes and materials.
- Have children match up images of hats for different purposes with images of people who might use them. Who would wear these hats and why? You could do the same with many of the accessories.
- Why are different surf boards different sizes...a math's investigation (mathematics)



**Understand that technological products are made from materials that have performance properties (Technology TP).**

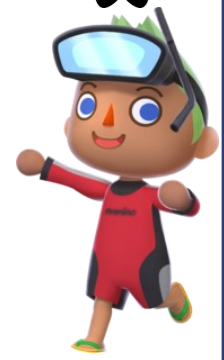
- Find out about the common materials used to make accessories at the beach or what lives at the beach
- Find out about the uses of common materials and relate these to their observed properties (Science Chemistry & Society)
- What material are sunglasses made from (science material world)?
- Group accessories according to materials and discuss



**Understand that all living things have needs/requirements so they can stay alive**

**Understand that belonging to groups is important for people (Social Sciences)**

- Look at different living things from the beach and identify their needs/environment and their subsequent adaptations.
- Discuss how and why different groups of people use the beach. What are their needs?
- Write (Teacher) and or Read together a big book about the Beach







### My Design of an Accessory for the Beach or on the Water

Name of Designer:

Name of Accessory:

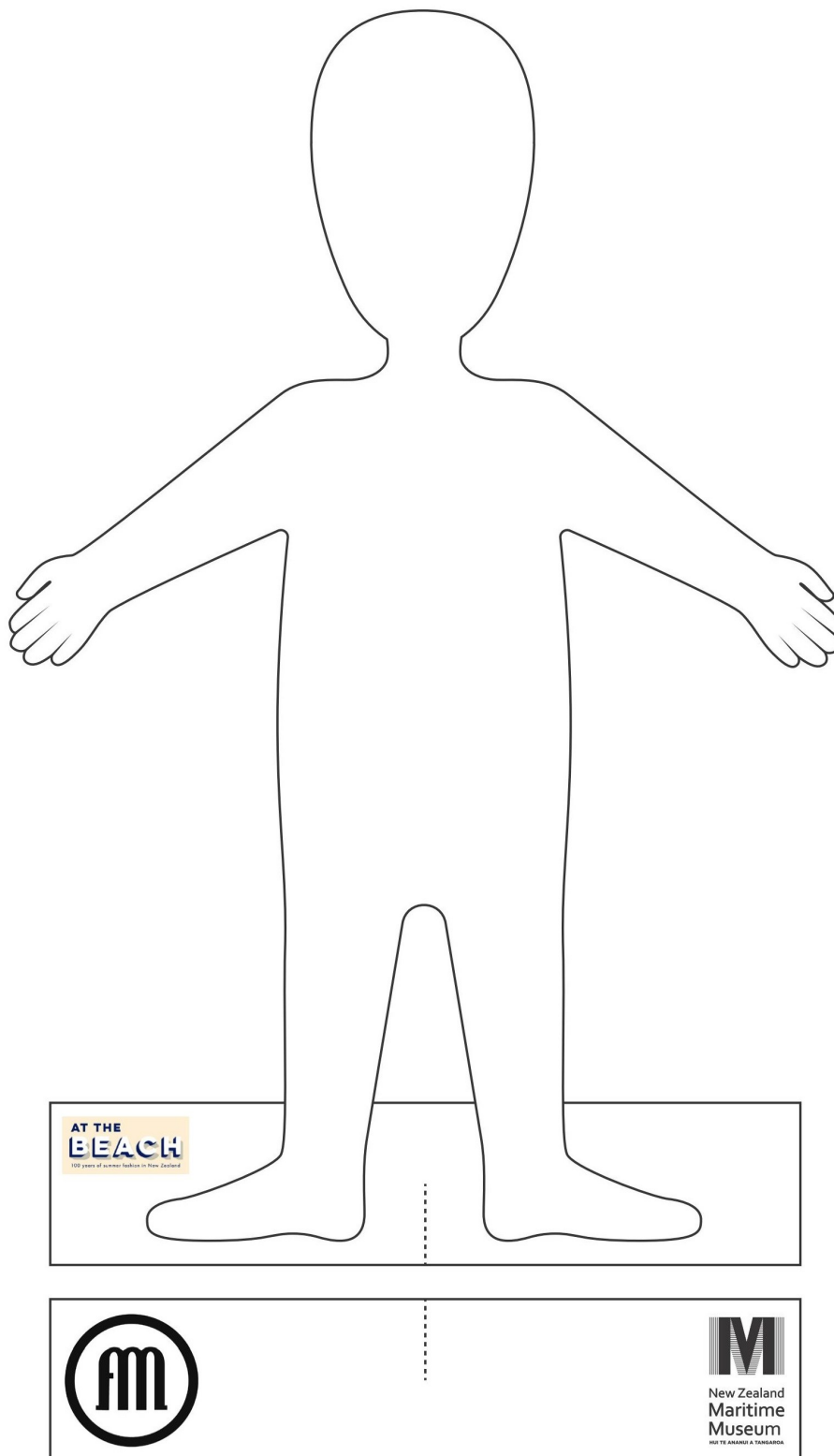
**Design Brief-** Who is it for and what is its purpose?

**Design Sketch-** Labelled drawing of my design. Name 3 attributes and reasons for your selection.

**Evaluation-** Fitness for purpose:  
What materials do you think would work best for your accessory?

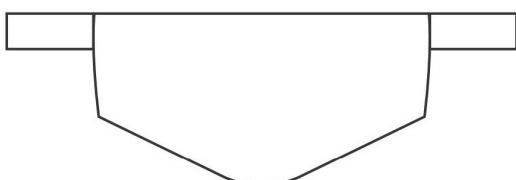
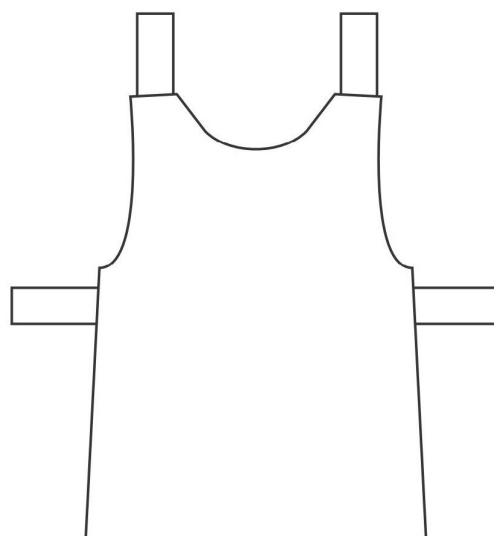
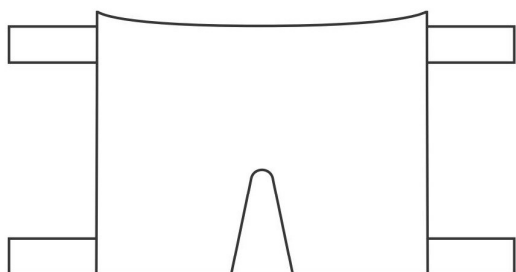
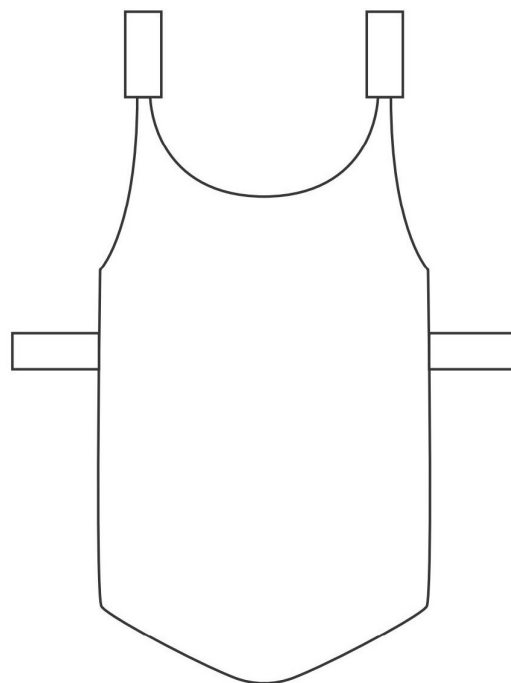
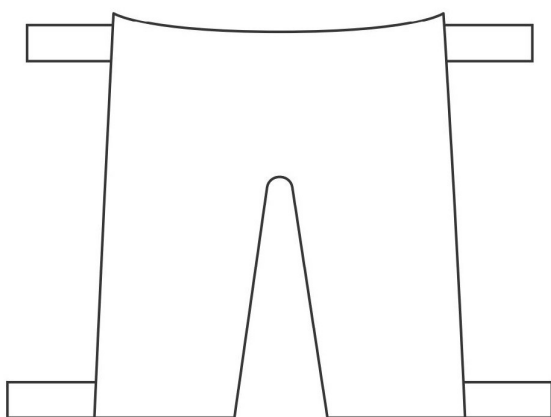
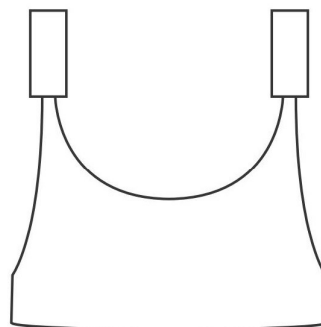
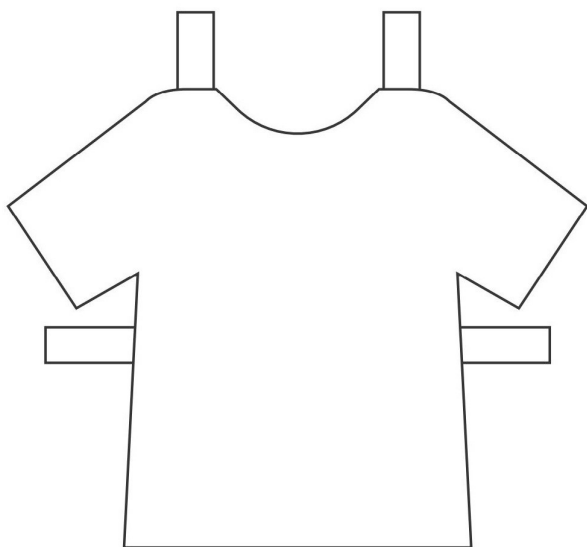
### PAPER DOLLS BY DESIGN

Cut out your paper doll following the lines on the outside only. Cut the base and snip the dotted line on the paper doll and the base. Slot them together along the dotted lines. Give your doll a face.



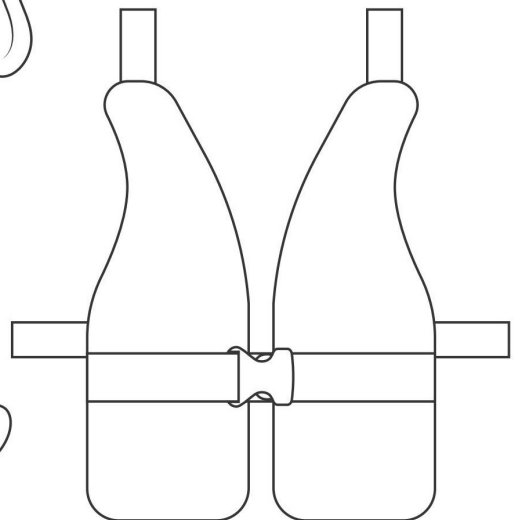
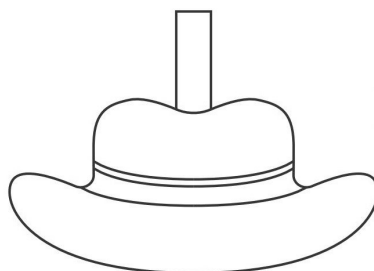
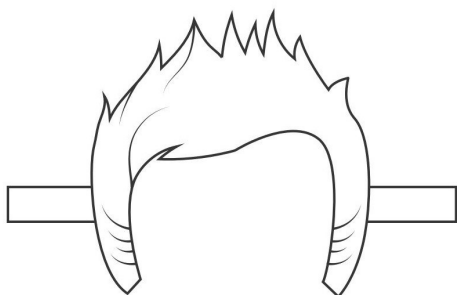
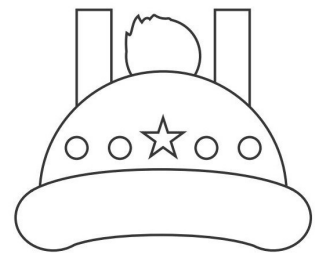
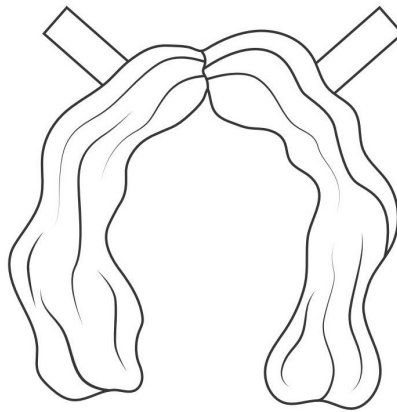
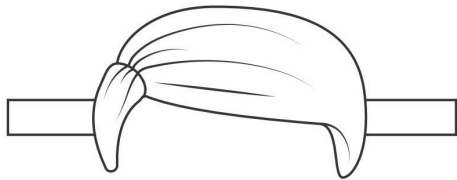
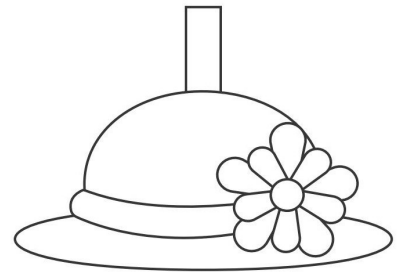
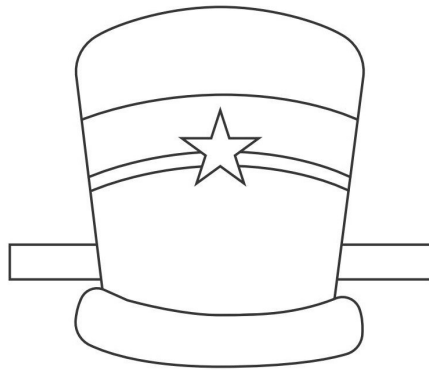
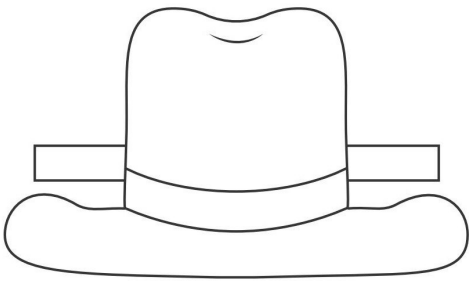
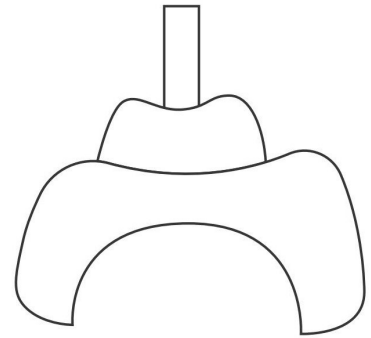
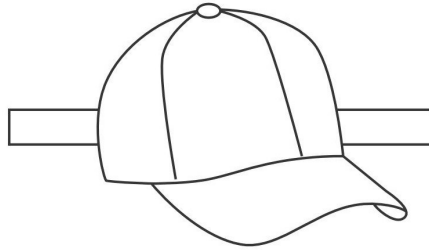
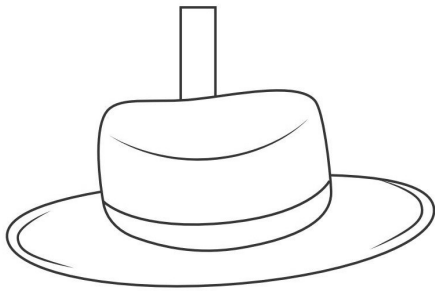
### PAPER DOLLS BY DESIGN- BEACHWEAR

Cut out the beachwear on this and the accessories page- do not cut the tabs off!  
Design a pattern or accessories for them e.g. pockets, zips, belts etc. dress your paper doll with these. Dress your dolls by folding the tabs behind the doll. Can you design more beach wear or clothing?





PAPER DOLLS BY DESIGN- ACCESSORIES



## WHAT SAILORS ARE WEARING NOW!

This is what sailor's wore during the 2013 America's cup challenge...  
What do think the accessories were designed to do?

### EMIRATES TEAM NEW ZEALAND SAILING UNIFORM

34TH AMERICA'S CUP, SAN FRANCISCO, 2013

Racing the large and fast AC72 yachts can be hazardous. Each member of the Emirates Team New Zealand sailing team was issued with a set of technical gear for use on the water.

The air tank fits into a pocket on the back of the life jacket and is held in place with straps on the left shoulder.

On the back of the life jacket is an emergency locator beacon which is activated if the sailor falls into the sea.

A knife with a serrated edge is attached to the front of the life jacket.

### HELMET NO. 13, LIFE JACKET AND SHOES

worn by Richard Meacham

### AIR TANK

worn by Rob Waddell

2014.5 Gifted by Emirates Team New Zealand



Image courtesy NZ Maritime Museum

Using the image above what are all the various items used for and why do you think they were needed when sailing in the 2013 America's cup.  
Design an outfit for the future. Consider what equipment may be needed. What environmental factors may we have to consider in the future e.g. UV rays

## Materials- Natural versus synthetic fabrics

### Do you know how fabrics are made? Where they come from?

A wide-range of materials are used to make beachwear, and in and on-the-water accessories.

Natural materials are derived from our natural world. For example cotton grows on bushes, silk is made from the threads of silk worms and linen comes from flax.



Harvesting flax linen making. Wallander (1821-1888), Linberedning, 1864



Cotton ready to harvest. Image by Michael Bass-Deschenes

Cotton and wool were used in early swimwear.

**Cotton:** Cotton is a natural material. Cotton comes from cotton plants. It appears as a fluffy white ball before being harvested. Lots of beachwear and accessories contain elements of cotton.

### Do you know how cotton material is made?

To know more about its different properties and how cotton fabric is made follow the link... [The Story of Cotton](#)

**Wool:** Wool is a natural material. Wool comes mainly from sheep, although other animals also produce wool. The shorn wool is spun into thread and then used to create different wool based fabrics. In the past some swimming costumes were made of wool.

### Do you think wool is a good material to wear in the water?

Why?



Sheep from Ambury Park, NZ. Image by Chris Gin

**Synthetic fabrics** are made from man made fibres rather than natural fibres. Some examples of synthetic fabrics are polyester, rayon and nylon.

**Elastic:** Elastic was first derived from natural rubber latex however today it is synthetically produced. The creation of elastic enabling the development of elastic stretch fabrics revolutionized the way some garments could be made.

### What changes to clothes did elastic enable?

To know more about its different properties follow the link <https://www.youtube.com/watch?v=CKq42J7SaWw>

**Nylon:** Nylon is a synthetic material and is man made. It is a type of plastic more accurately a synthetic polymer. When first produced in the 1930's Nylon and other polymer materials changed the way we make certain products. Nylon is a strong, waterproof and allows fabric to stay dry.

### Can you think of different clothes or accessories made from nylon used in or on the water?

To know more about its different properties follow the link... <http://www.explainthatstuff.com/nylon.html>



**Synthetic fabrics cont...**

**Lycra/spandex or elastane:** Spandex or Lycra (a brand name) is a synthetic material. When invented it transformed the way some areas of the clothing industry- especially active wear. Spandex is strong but stretchy. It can be stretched and when you let it go it returns to its original shape. It can be combined with other materials and transfers its stretch to them.

**What clothes do you have that have Lycra in them?**

(A GOOD OPPORTUNITY TO CHECK CARE LABELS INSIDE TO SEE IF THEY SAY LYCRA, SPANDEX OR ELASTANE)

**Why do you wear them?**

**Why do you think clothing designers started to use this material to make swimwear?**



Elastane-By Luigi Chiesa

**Materials and Hats**

**What has changed our attitudes towards wearing hats to the beach?**

**Can you think of other materials that are used make sun hats?**



**Rubber:** many accessories associated with beachwear are made from rubber. Bathing caps and wetsuits are made from this super strong stretchy material. Natural rubber latex comes from rubber trees but today synthetic rubber is used to make a huge range of products. Wetsuits are made from neoprene a type of synthetic rubber. Why do think this material is selected to make wetsuits?

To know more about its different properties follow the link...

[How It's Made- Natural Rubber](#)

Sir George Grey Special Collections, Auckland Libraries 1207\_1192  
photographer Ron Clark

**Straw:** Straw is a natural material. It is used to make hats to wear at the beach. Straw hats are designed to keep the sun off our heads. Nearly everyone today wears a hat to the beach, this wasn't always the case.

**What has changed out attitudes towards wearing hats to the beach?**

**Can you think of other materials that are used make sun hats?**

To know more about its different properties follow the link...

[https://en.wikipedia.org/wiki/Straw\\_hat](https://en.wikipedia.org/wiki/Straw_hat)



Sunhat Image courtesy  
NZ Fashion Museum

[To see how a straw hat is made click here The Hat Makers - An Italian Study \(1933\)](https://www.youtube.com/watch?v=OzGGd-s4Fmk#t=81)

<https://www.youtube.com/watch?v=OzGGd-s4Fmk#t=81>

Today a combination of natural and synthetic fibers can be used to develop different materials and fabrics.

**Some people think natural materials are the best what do you think?**

## Manufacturing fabrics and textiles

Materials can be manipulated, formed or transformed.

### How they are manipulated?

**Forming:** Both composition & properties change, e.g.. Fabric...cotton + synthetic elastic fibre = stretch cotton

**Transforming:** Composition remains same but properties change : e.g. wool fleece spun into balls of wool; leather cured to make bags, tapa cloth; beating cream to butter

**Manipulation:** Both composition and properties remain the same but are joined bent shaped etc to give different outcome, e.g. making a dress.

Manufacturing materials to make swim wear starts in a lab...

To know more follow the link... [How Bikinis Are Made](#)

**New and future materials:** new materials are constantly being developed in response to different needs.

In 2009 a new controversial material was developed to help swimmers swim faster. [https://en.wikipedia.org/wiki/High-technology\\_swimwear\\_fabric](https://en.wikipedia.org/wiki/High-technology_swimwear_fabric)

Recently a material to tell you when to get out of the sun was reported on [http://www.nzherald.co.nz/lifestyle/news/article.cfm?c\\_id=6&objectid=11464235](http://www.nzherald.co.nz/lifestyle/news/article.cfm?c_id=6&objectid=11464235)

**Why do you think new materials are developed?  
What new materials for beach wear or accessories do you think would be useful or fun to develop?**

To know more about its different properties follow the link...

<http://www.scientificamerican.com/slideshow/9-materials-that-will-change-manufacturing/>  
<http://www.treehugger.com/sustainable-fashion/10-awesome-innovations-changing-future-fashion.html>

[https://en.wikipedia.org/wiki/High-technology\\_swimwear\\_fabric](https://en.wikipedia.org/wiki/High-technology_swimwear_fabric)

And the bizarre!  
<https://www.youtube.com/watch?v=vvv7nJePZA4>

**Jantzen**  
OURS ALONE

SEE OUR EXCITING RANGE OF JANTZEN SWIM SUITS IN A WIDE RANGE OF GLORIOUS NEW STYLES, FABRICS AND COLOURS. AVAILABLE AT SIZES TO SUIT, AND CUT TO ENHANCE EVERY FIGURE. A WIDE RANGE OF PRICES TO FIT EVERY POCKET.

Our store is a wonderful range of Colours and Styles for you to choose from in Material, Length, Colour, Length, Full, Elastic, Lace, Buttons, Cotton, Ray, etc.

— All Sizes Available —

Stripes, Plaids, Spots and Prints, in the most glamorous shades. Styles include Front Fasten, Backless, Low Choline, Sleeveless, One Piece, Two Piece, etc.

**BATHING CAPS**—Lined, Trim, Rubber, Sewing, Cap, available in White.

**SPORTS BRIDES**—Ladies' Party Net Brides for under Skirts, Suits, Shorts, and Slacks.

**BREEN & WANDEN LIMITED**  
MAIN STREET — UPPER HUTT  
— Phone 4233 —

Advertisement for Jantzen, Hutt News, 1956, Papers Past, National Library of New Zealand



### For sea lions and sea sirens



★  
He wears the manly minimum. But that little is slick. Brevities of brilliance . . . in the new "random" dyes. In a choice of four colours—enough to put any 'lion' at sea!

THE BRUNETTE . . . just 5 ft. of appeal in a satin lastex one-piece, like deep satiny water on a summer's day. Clasps the torso beautifully, and ruched panel **slims**. Five other shades, two other styles.

THE BLONDE troops the colours for her suntan. Her choice out of 12 colours . . . all new and perfect . . . and eight styles! Wool with a raised 'waterwave.' Models waist and bosom, slims the hips.

*They fit and cling like nicknames*



LANE, WALKER, RUDKIN LTD.  
CHRISTCHURCH & ASHBURTON

The Ladies Mirror Dec 1939

Use this image to challenge your students to identify the era this advertisement may have come from. Your students could find more advertising over time to create a timeline challenge. A great place to look is Papers Past through the National Library.



## RESOURCES

### Books and Reading Resources

- **At The Beach- 100 Years of Summer Fashion in New Zealand.** New Zealand Fashion Museum, 2015. To purchase go to the [NZ Fashion Museum site](#)
- **The Dress Circle- New Zealand Fashion Design Since 1940.** Douglas Lloyd-Jenkins, Claire Regnault and Lucy Hammonds, 2010
- **At The Beach- Explore & discover the New Zealand seashore.** Ned Barraud & Gillian Candler, 2012
- **At The Beach.** Janice Marriot, Ready to Read,
- **The Sands of St Clair - Connected 1 2006.** Learning Media
- **Making Clever Clothes - Connected 1 2010,** Learning Media
- **A Passion for Fashion (TKI33471) School Journal Story Library titles, "Readalong Five"** (item 31044). One of a series of easy-reading titles on individual topics, designed to appeal to 9- to 14-year-olds reading at the 7- to 9-year-old level.
- **Andrea Moore: At the Cutting Edge** (TKI38485) from the Applications series
- **Connected 1- Staying Warm- Keeping Cool-** levels 1-2, Learning Media
- **Clothes to suit. (TKI 8549) Learning Media.** This resource looks at the language of clothing, how effects can be created by using colour and style, and how people make decisions about clothing
- **At the Beach-Ready to Read, Learning Media** <http://literacyonline.tki.org.nz/Literacy-Online/Teacher-needs/Instructional-Series/Ready-to-Read/Guided-reading-texts/Magenta>
- **Wool and Waves** Ellesmere Guardian, Volume LX, Issue 50, 27 June 1939, Page 6Papers Past [www.paperspast.natlib.govt.nz](http://www.paperspast.natlib.govt.nz)

### Online resources

- New Zealand Fashion Museum [www.nzfashionmuseum.org.nz](http://www.nzfashionmuseum.org.nz)
- New Zealand Maritime Museum [www.maritimemuseum.co.nz](http://www.maritimemuseum.co.nz)
- Te Ara - The Encyclopedia of New Zealand <http://www.teara.govt.nz>
- Ministry for Culture and Heritage [www.mch.govt.nz](http://www.mch.govt.nz)
- Auckland City Libraries [www.aucklandlibraries.govt.nz](http://www.aucklandlibraries.govt.nz)
- Te Kete Ipurangi [www.tki.org.nz](http://www.tki.org.nz)
- Digistore- for digital content <http://digistore.tki.org.nz/ec/p/home>
- Papers Past [www.paperspast.natlib.govt.nz](http://www.paperspast.natlib.govt.nz)
- How It's Made Cotton yarn [www.youtube.com/watch?v=kH\\_b3Heo48I](http://www.youtube.com/watch?v=kH_b3Heo48I)
- How Bikinis Are Made [www.youtube.com/watch?v=TGLrotwPKck](http://www.youtube.com/watch?v=TGLrotwPKck)
- Nylon and Rayon Manufacture 1949 [www.youtube.com/watch?v=Qos7E7dDMyo](http://www.youtube.com/watch?v=Qos7E7dDMyo)
- 1930's Swimwear Fashion [www.youtube.com/watch?v=VEzMjs8PJSA](http://www.youtube.com/watch?v=VEzMjs8PJSA)
- Swimming Cap Fashions (1950s) [www.youtube.com/watch?v=FtZJMIou0Sw#t=104](http://www.youtube.com/watch?v=FtZJMIou0Sw#t=104)
- Umbrella Styles (1950s) [www.youtube.com/watch?v=4HZ1TZ1PcDI](http://www.youtube.com/watch?v=4HZ1TZ1PcDI)
- Womens Swimwear History [www.youtube.com/watch?v=vzA925hAFvA](http://www.youtube.com/watch?v=vzA925hAFvA)
- 100 Years of Fashion in 2 min [www.youtube.com/watch?v=M4z90wlwYs8](http://www.youtube.com/watch?v=M4z90wlwYs8)
- The Hat Makers - (1933) [www.youtube.com/watch?v=OzGGd-s4Fmk#t=81](http://www.youtube.com/watch?v=OzGGd-s4Fmk#t=81)
- How its made Recycled Polyester Yarn [www.explainthatstuff.com/](http://www.explainthatstuff.com/)
- How It's Made Fabrics [www.youtube.com/watch?v=YYWlevX7KwO](http://www.youtube.com/watch?v=YYWlevX7KwO)
- How Plastic Bottles Are Recycled Into Polyester [www.youtube.com/watch?v=Aa9mxD8jDqk](http://www.youtube.com/watch?v=Aa9mxD8jDqk)
- 1920's Future predictions [www.youtube.com/watch?v=czr-98yo6RU](http://www.youtube.com/watch?v=czr-98yo6RU)
- 1939 predictions [www.youtube.com/watch?v=NvtxFFj6eDY](http://www.youtube.com/watch?v=NvtxFFj6eDY)
- 1960's future predictions [www.youtube.com/watch?v=ukGeajfrt\\_Q](http://www.youtube.com/watch?v=ukGeajfrt_Q)
- Young Designer Awards <http://technology.tki.org.nz/Resources/Teaching-snapshots/Middle-Years-7-10/Young-Designer-Awards>
- Jum Nakao <http://technology.tki.org.nz/Resources/Teaching-snapshots/Senior-Years-12-13/Jum-Nakao>
- Swimsuit History <http://www.consumingcultures.net/swimming-history-2/>
- Bathing Beauties, <http://nzfm.tumblr.com/post/71825040343/bathing-beauties#sthash.mBOY3ka0.dpuf> or discover more
- The Facekini <https://www.youtube.com/watch?v=vvv7nJePZA4>
- Hightech Swimwear [http://www.nzherald.co.nz/lifestyle/news/article.cfm?c\\_id=6&objectid=11464235](http://www.nzherald.co.nz/lifestyle/news/article.cfm?c_id=6&objectid=11464235)
- Environmentally Friendly Materials of the future <http://www.treehugger.com/sustainable-fashion/10-awesome-innovations-changing-future-fashion.html>
- 9 Materials that will change Manufacturing [www.scientificamerican.com/slideshow/9-materials-that-will-change-manufacturing/](http://www.scientificamerican.com/slideshow/9-materials-that-will-change-manufacturing/)



## KWLM investigation

Complete columns 1 and 2 before the museum visit or to evaluate your own programme of learning

Complete columns 3 and 4 after the visit or your own programme of learning

What I KNOW	What I WANT to find out	What I now UNDERSTAND	What I would like to learn MORE about