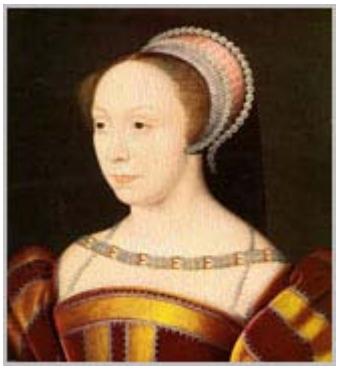
Pearls in History



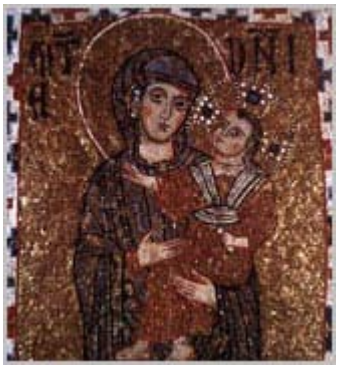
Since the earliest times people have been enchanted by pearls and the shells of the molluscs that produce them. Pearls are the oldest known gem, and have, for centuries been considered one of the most valuable. In many cultures, pearls were worn as a declaration of wealth and power, and used as talismans to bring good fortune, to ward off evil spirits and to cure illnesses. Ancient kings gave pearls as gifts and were buried with them as a symbol of their status, while their serfs paid taxes, settled debts and bartered with them. The pearl has long been associated with "charity" and the hope of a pearl after death was an incentive for living a good life.

"If in life you gave no alms, in death how do you deserve a pearl?"
Chuang Tzu, China, c. 2350-625 B.C.

Pearls were symbolic of purity, chastity and feminine charm. The pearl has been considered a symbol of unblemished perfection in many cultures. Pearls symbolize purity and innocence and are often associated with weddings for this reason. In the Hindu religion, the presentation of an undrilled pearl and its piercing has formed part of the marriage ceremony.

Pearls, unlike other gems, are the product of living beings. Molluscs found in the lakes, rivers, and oceans of the world all naturally produce "pearls". Some produce unattractive lumps while others yield the stunning spheres man has coveted throughout history. A natural pearl is formed when a small irritant (rarely a grain of sand) lodges in the mantle tissue of a mollusc. In response, the mollusc secretes a substance called nacre, and a pearl begins to be created. Nacre is a combination of crystalline and organic substances. The nacre builds up around the irritant in layers to protect the mollusc. After a few years, this build up of nacre forms the pearl. Most natural pearls only produce one pearl at a time while cultured pearls are "nucleated" to produce multiple pearls in each mollusc.

Learn About **Pearl Culturing**



Madonna and Child
13th century Mosaic
Chapel of the Crucifix
San Paolo fuori le Mura, Rome

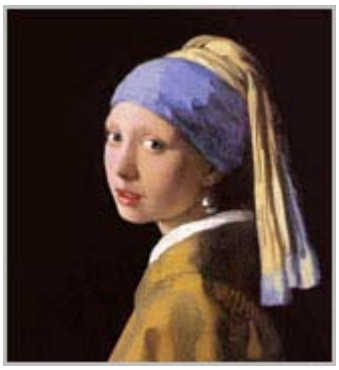
As early as 3500 BC, pearls were worn in civilized Middle Eastern and Asian societies. In fact, the oldest surviving pearl necklace was found in the sarcophagus of a Persian Princess. Pearls continued to grow in popularity through Roman times. In classical Rome, only free persons above a certain rank were allowed to wear pearl Jewelry. It is thought that a single pearl earring paid for one Roman general's political campaign and that Julius Caesar may have invaded Britain in 55 B.C. to obtain freshwater pearls. After the fall of Rome, Constantinople became the centre of wealth and the centre of pearl trade because of its strategic position between the source and the consumer.

During the Christian era pearls retained both their monetary and symbolic value. The language of symbolism was commonly used around the time of Jesus Christ. Most people were familiar with the symbolic meanings including the circle as a symbol of God, because it has no beginning and no end. The pearl was considered to represent "Love, Knowledge and Wisdom". There are many references to the pearl in the Bible. In this passage Holy things are compared to pearls.

"Give not that which is holy unto the dogs, neither cast ye your pearls before swine, lest they trample them under their feet, and turn again and rend you."
Matthew 7:6

In the thirteenth and fourteenth centuries, pearls were still very fashionable in Europe as embellishments for clothing and as personal ornaments. During this period the Church was all-powerful and most European countries had implemented Sumptuary Laws in an effort to do away with the extravagance of the time. These laws prohibited people of lower incomes and lower estates to wear certain things. These laws even dictated who could wear pearls. For example, teachers and lawyers could not wear fringes or chains with pearls.

Girl with the Pearl Earring
Johannes Vermeer
1665



By the early 1700s the demand for pearls declined because the discovery of diamonds in Brazil made diamonds more affordable. Pearl supplies became inconsistent, and pearl imitations began to appear on the market. The late 1700s saw a reversal in fortune. Good harvests from several established pearl sources and the discovery of new sources gave the pearl industry a much-needed boost.

The desire for pearls eventually resulted in demand exceeding supply. The early 1900s saw trade affected by a supply shortage and the appearance of cultured pearls on the market. Cultured pearls were not accepted immediately; it took several years for consumers and the industry to accept this new kind of pearl. Entrepreneurs intervened by stimulating pearl production with a process called culturing.

Learn About **Types of Pearls**

For more information of the History of Pearls visit the **American Museum of Natural History**

Sources:
Pearls: A Natural History by Landman, Mikkelsen, Bieler and Bronson
Pearls *by Fred Ward*

Shells

For thousands of years, human beings have adorned themselves with shells. Many cultures of the world have believed that delicate shell shapes bring fertility, good fortune and safe travel. In today's urban world, shells represent the essence of summer with their organic, curving forms reminding us of ocean waves and sandy beaches.

Many shells have natural perforations and can simply be strung the way they are, while others require modification to enhance their best features and to make them wearable. Shells with iridescent inner layers are often ground into thin veneers and used for mosaic-like inlay, while thick shells are often carved with cameos or patterns. Most shells are porous and accept dyes and varnishes well, which can enhance their natural beauty.

Creatures called molluscs produce shells to protect their soft invertebrate bodies. The mollusc group is very diverse, with over 100,000 species alive today. Molluscs that produce wearable shells include univalves: those with a single shell, like snails, and bivalves: those with a hinged shell like clams, mussels, scallops and oysters. All molluscs have specialized organ tissue called mantle, which secretes calcium carbonate to produce the protective shell. The inner lining of the shell is especially smooth to protect the delicate invertebrate body from irritation.

The most popular univalve shells used for personal adornment include cowry, abalone, cones, turbo, olive and everlasting shell. Cowry shells are especially well known as they

can be found all over the world. These naturally glossy shells come in many colours; one familiar variation is a speckled brown on creamy white. A cowry shell starts out looking like a traditional snail shell and develops into its unique shape as the mollusc matures. These shells are often drilled and strung whole or the backs of the shells are sliced off so the beads will lie flat. Since they were portable, durable and difficult to replicate, cowry shells were used as currency by ancient Chinese, Indian and African cultures.

Another popular univalve shell used for personal adornment is abalone. The scientific name for abalone, "Haliotis" means "ear of the sea" and refers to the flattened shape of the shell. The rough outer portion of the abalone is ground down to reveal the stunning inner layers of the shell. The nacreous inner surface is a silvery blue-green that sometimes contains swirls of pink, orange and lavender. The most vibrantly coloured species of abalone is called "paua" and comes from the waters around New Zealand.

Other bivalve mollusc shells used for personal adornment include species of mussel and clam. Many mussels and clams have brightly coloured shells and are simply drilled and worn. One famous bivalve mollusc is the "quahog clam" that's white and purple shell are carved into Wampum by North-eastern Native Americans.

The most popular part of many bivalve shells is "mother-of-pearl"- the nacreous inner lining. As the mollusc matures, the inner surface of the shell becomes coated with iridescent or pearly-coloured nacre, the same material that forms pearls. The rough, plain outer coating of the shell is ground down or cut off, leaving only the luminescent inner layer. Thick layers of mother-of-pearl may be formed into beads, while thinner layers are cut into small pieces and fitted into mosaic beads and pendants. Some mother-of-pearl comes from marine pearl-bearing oysters such as Silver Lip, Black Lip or Gold Lip, but the vast majority comes from freshwater pearl-bearing mussels.

Content provided in part by:
Pearls: A Natural History by Landman et al., www.pauashell.co.nz, www.marinefriends.com

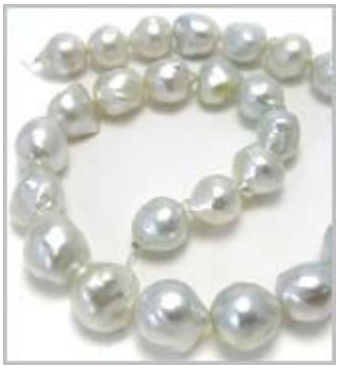
Types of Pearls

Virtually every pearl on the market today is a cultured pearl, grown in either a range of molluscs including salt-water oysters and freshwater mussels. The following is interesting information on each type of cultured pearl on the market today.

There are three types of salt-water or marine cultured pearls; South Sea Pearls, Tahitian Pearls and Akoya Pearls. Marine culturing involves seeding a marine oyster's reproductive organ with a bead nucleus and a small piece of mantle tissue. Marine pearls are left to grown for several years before the pearls are harvested.

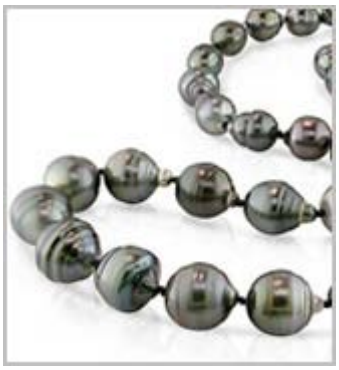
The majority of pearls used for beading today are cultured freshwater pearls. Freshwater pearls are grown in freshwater mussels and are seeded with the fleshy mantle tissue of a donor mussel. Each mussel is seeded with 12 to 16 insertions per valve resulting in 24 to 32 pearls per mussels after being left to grow for 2 to 6 years. Since freshwater pearls are not seeded with a bead nucleus these pearls are rarely perfectly round.

Learn About **Pearl Culturing**



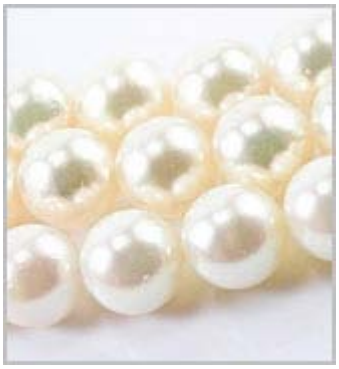
Salt-Water Pearls **South Sea Pearls**

There are two groups of South Sea cultured pearls: white and black. Pearls from the white group are primarily cultured in the waters of northern Australia, the Philippines and Indonesia. Their colours range from gold or light-yellow; varieties primarily from the Philippine and Indonesian waters and white or silvery hues; varieties that occur mainly in Australian waters. Pearls from the black group, including the legendary black pearl of the South Pacific, are found over a wide area from the Cook Islands to the Gambier Islands in French Polynesia



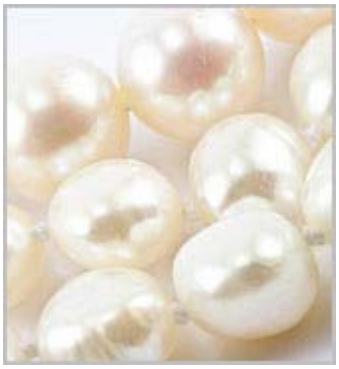
Tahitian Pearls

Tahitian Pearls are some of the most beautiful and most unique pearls in the world. They produced by the black-lipped oyster around Tahiti and the French Polynesian Islands. There are no actual pearl farms on Tahiti but many are found in the islands of French Polynesia. The oyster itself is quite large, as much as 12 inches across and up to 10 pounds, which results in larger than average pearls. Tahitian Pearls are unique for their naturally dark colours from charcoal to dark green blacks.



Akoya Pearls

Considered to be the classic cultured pearl, Akoya Pearls are cultured in south-western Japan and China. The Akoya oyster is the smallest pearl-producing oyster used in pearl culturing. The resulting pearls also tend to be smaller, ranging in size from 2mm to 11mm and are consistently round or nearly round making them extremely desirable. Akoya Pearls are known for their lustre and their soft pinkish white to creamy silver colours. Chinese Akoya pearl farming has surpassed Japanese production and now rivals Japanese Akoya pearls in quality and quantity.



Freshwater Pearls **Freshwater Pearls**

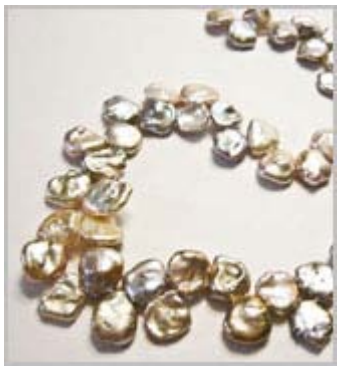
Freshwater pearls come from molluscs that live in the fresh waters of ponds, lakes and rivers. China, the world leader in freshwater pearl production has been involved with freshwater pearl harvesting since the 13th century. Recently over-harvesting and pollution in China has reduced the number of pearl farming mussels. The availability of good quality and affordable freshwater pearls has been impacted by this environmental disaster. Freshwater pearls come in an astonishing array of sizes, shapes, and colours.

Biwa Pearls

Biwa Pearls are small, uniquely shaped cultured pearls from the freshwater mussels of Lake Biwa in Japan. They were first produced in the 1930's and at that time the quality of the Biwa Pearl rivalled both natural and cultured saltwater pearls.

For many years any freshwater pearl was called a "Biwa" regardless of where it came from. Today this name is often used to describe cultured freshwater pearls of this shape.

Other Types of Pearls **Keishi Pearls**



Keishi pearls form when the mollusc rejects and spits out the implanted nucleus before the culturing process is complete. Keishi pearls form in either saltwater or freshwater pearls. Sometimes the implanted tissue breaks up and a separate pearl sac forms without a nuclei. These small freeform pearls are solid nacre and range in colour from silvery white to silvery grey. They are generally small in size and, because they do not have a nucleus to shape the pearl, the resulting shapes vary widely.

Mabé Pearl or Blister Pearl

The Mabé Pearl was named after the mabé pearl oyster which is found in the seas of Southeast Asia and in the Japanese islands around Okinawa. These "half pearls" grow against the wall of the oyster's shell rather than in the tissue and are also called blister pearls. Once the pearl is fully developed the Mabé is made by cutting the blister from the shell, removing the nucleus, filling the pearl with resin and finishing the back with a piece of mother-of-pearl. Mabé Pearls are used for setting rather than stringing and are much less expensive than other cultured pearls.

Learn About **Pearl Care**

Pearl Culturing

Natural Pearls vs. Cultured Pearls

Natural pearls, are pearls formed by chance. The shape, size, and quality of natural pearls vary widely. Cultured pearls have been given a helping hand by man and are consistent in shape, size and quality. Cultured pearls can also be mass produced. Naturally occurring pearls develop when an irritant, usually a parasite, accidentally finds its way into a pearl oyster or other mollusc. The mollusc reacts by coating the irritant with layer upon layer of a substance known as 'nacre'. Nacre is an organic secretion that gives the pearl its iridescent beauty. This unique relationship gives birth to the natural pearl.

Cultured pearls are created by inserting a foreign object into a saltwater oyster or freshwater mollusc. The same process of natural pearl creation then takes place. Cultured pearls can only be distinguished from natural pearls through the use of x-rays, which reveals the nucleus of the pearl. Today, nearly all pearls are cultured.

Learn About **Pearl Types**

The History of Pearl Culturing

The cultured pearl was developed to guarantee a steady supply of pearls and to satisfy the ever increasing demands of the consumer. Modern-day cultured pearls are the result of discoveries made in the late 19th and early 20th centuries, by Japanese researchers Tatsuhei Mise, Tokishi Nishikawa, and Kokichi Mikimoto. Early in Mikimoto's career he focused on saltwater mabé pearl production. He eventually perfected his technique for producing round cultured saltwater pearls. This technique involved inserting tissue into the gonad of an Akoya mollusc. He patented this technique in 1916.

Mikimoto's technique revolutionized the pearl industry by allowing consistent production of a large number of pearls. High quality, round pearls could now be produced by the millions; making them available and affordable to everyone. Today, the cultured pearl industry has essentially replaced the natural pearl industry with production of cultured freshwater pearls and cultured saltwater pearls including South Sea, Tahitian, and of course Mikimoto's original Akoya pearls.

By the 1980's the Chinese had entered the free-market and the demand for Chinese pearls exploded. Today China is the predominant commercial producer of freshwater pearls on pearl farms.

Learn About **Pearls in History**

Pearl Farming

Today cultured pearls are grown by the thousands on pearl farms. The first step in the process is to obtain the molluscs that will be nucleated. The original practice was to simply collect the molluscs from their natural habitat. Today many pearl farms have an extensive breeding program. After fertilization and the initial growth period baby molluscs are moved to a "nursery" bed and tended for 1 to 2 years until they are large enough to be nucleated.

Thousands of molluscs are nucleated and then cultivated for 2-5 years, the time required for a pearl to develop. Saltwater pearls are nucleated using a "bead" made of mother-of-pearl. This bead is covered with a piece of donor oyster tissue and implanted in the oyster's reproductive organ called the gonad. The pearl will develop in the shape of the "bead" that was implanted. The result of this process is very uniform pearls.

Freshwater pearls are grafted with mantle tissue only. The implants are placed in the valves rather than in the gonad of the mussel. Each mussel can accept 12 to 16 grafts per valve and will produce 24 to 32 pearls per culturing cycle. After the pearls have been nucleated they are returned to the beds to grow for several additional years.

Once the pearls are fully developed, they are harvested. The shell and meat of the saltwater Akoya and freshwater mussel are discarded after harvesting. South Sea and Tahitian oysters are carefully hand harvested. For each fully developed pearl that is removed a new nucleus is implanted in the already formed pearl sac. The oysters are then returned to the bed to grow another pearl. These particular oysters can be recultivated several times during their life cycle. After the pearls are harvested they are washed and sorted. Some pearls are then bleached, heat-treated or dyed.

Learn About **Pearl Treatments**

Like other farming, pearl farming depends as much on luck as on skill. A pearl farm can be devastated by water pollution, storms, excessive heat or cold, disease and other natural and man-made factors. In recent years Chinese pearl farms have been impacted negatively by severe storms, pollution and over production. This will lead to a decrease in availability and an increase in price of freshwater pearls.

Sources:
Pearls: A Natural History by Landman, Mikkelsen, Bieler and Bronson
www.pearl-guide.com/pearl-farms.shtml
www.costellos.com.au/pearls/cultivation.html
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Pearl Treatments

When buying or selling pearls, the question of treatment often arises. Pearl treatments are defined as any process other than polishing that alters a pearl's appearance. These processes may include; irradiation, bleaching, heating, filling, waxing, drilling, cutting and working. After harvesting, pearls are always cleaned and polished and almost also treated in one way or another. Pearl farmers have several options for dealing with inferior quality cultured pearls. The pearls can be discarded, sold at a deep discount, or treated to improve its appearance. Treatment is the most cost effective approach for selling lesser quality cultured pearls.

The following important product knowledge is offered to help educate you about the common and acceptable types of pearl treatments encountered in the marketplace today.

- **Pre-Treatment**
  Most culture pearls, including saltwater, freshwater, and South Sea pearls are bleached to even out even dark area under the surface of the nacre. This is a permanent treatment that provides a more uniform appearance and prepares the surface of the pearls for other treatments.

- **Dyeing**
  Silver nitrate or other organic dyes are used to darken the nacre of freshwater pearls. The chemical reacts with light and hydrogen gas when penetrating the nacre and produces a rich black colour. Because pearls are very porous organic and chemical dyes are easily used to produce colours in freshwater pearls. Pearl dyeing is a popular freshwater pearl treatment. Over time dyed pearls can fade, especially if exposed to sunlight or water for long periods of time.

- **Irradiation**
  Another common method of treatment is irradiation. This process involves exposing the pearls to gamma rays. This process darkens the nucleus of saltwater pearls and the nacre of freshwater pearls. Some irradiated freshwater pearls will develop an intense metallic sheen or iridescence after the process. Irradiation is a permanent and irreversible treatment.

- **Lustre Enhancement**
  Some pearls are coated with a coating similar to clear nail polish. This is not an acceptable practice. The lustre will appear to be as smooth as glass, but with time will chip and peel leaving a low lustre pearl.

The value of a pearl is impacted by the type of treatments it is subjected to. Since most pearls on the market today are treated in some way, it is important to look for the tell-tale signs of treatment, especially if the cost seems out of line with the quality of the strand of pearls you are considering.

The string, dyed pearls are strung on will be the same colour as the surface of the pearl and often the edges of the drilled holes in the dyed pearl will be a darker hue of the surface colour. Irradiated pearls are hard to detect, but an intense metallic sheen is often an indication of irradiation.

Learn About **Pearl Quality**

Sources:
Pearlsby Fred Ward, Gem Book Publishers, Bethesda, Maryland
:http://gemologyonline.com/treatment.html
http://jewelry.about.com/od/gemstonetreatments/Gemstone_Treatments_Procedures_that_Enhance_Gemstone_Appearance.htm
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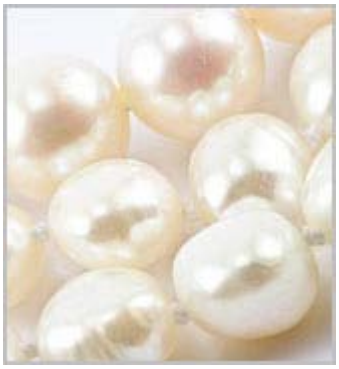
Pearl Care & Handling



Cultured saltwater and freshwater pearls are more fragile than most other gemstones so they must be handled with the utmost care to keep them in their best condition.

Remember that natural body oils help enhance your pearl's lustre, but that perfumes, soaps, hairspray and makeup can damage a pearl's lustre and stain the silk the pearls are knotted on.

Pearls also scratch easily so always store them very carefully.

Learn About **Pearl Quality**

Care

- **Re-knot** your pearl necklaces periodically to ensure that the silk or nylon cord holding them is in good shape. Knotting between pearls prevents loosing pearls if the strand should break.
- Always put your pearls on after you've applied your makeup, perfume and hairspray.
- Take your pearl rings off before applying lotions or creams.

Cleaning

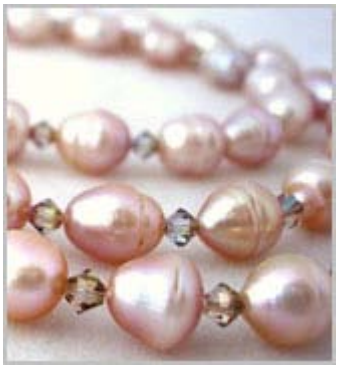
- Gently wipe your pearls with a soft, lint-free cloth each time you take them off. The cloth may be dry or damp. If damp, allow the pearls to air dry before putting them away.
- Dirty pearls may be cleaned with a mild soap and water solution or a specialty pearl cleaning solution. Never clean your pearls with solutions that contain ammonia or harsh detergents.
- Don't use an abrasive cleaner or wipe pearls with an abrasive cloth as both can scratch the nacre coating.
- Don't use an ultrasonic cleaner to clean pearl jewellery.

Storage

- Store your pearls separately from other jewellery. Pearls can be easily scratched when metal or gemstones rub against them.
- Place your pearls in a special slot in your jewellery box, or keep them in a soft bag made from a non-abrasive material.

Pearl Quality

- Because pearls are naturally occurring organic gemstones, created by living creatures, the factors that impact quality and value vary widely. The value of a pearl is measured by several factors.



- **These factors include:**

  • Pearl Type
  • Nacre
  • Lustre
  • Surface
  • Shape
  • Colour
  • Size

- **Pearl Type**
  The type of pearl is the most basic factor to consider. The common varieties of cultured pearls include freshwater pearls, and saltwater Akoya, South Sea and Tahitian pearls. Each type of pearl is created by a different species of oyster, living in a different area of the world, under a variety of climatic conditions. South Sea and Tahitian pearls are generally larger than Akoya and freshwater pearls, and each type tends to have its own distinctive range of colours.

Learn About **Pearl Types**

- **Nacre**
  Nacre is the organic substance, secreted by the mollusc, from which the pearl is formed. Colour and lustre are actually characteristics of the nacre itself. Usually the thicker the nacre is the more valuable the pearl.

- **Lustre**
  A pearl's lustre is a measure of its brilliance and reflectivity. High-quality pearls are bright and shiny - you should be able to see your reflection in them. Lower-quality pearls have a chalkier or dull appearance. In general, saltwater pearls have a greater lustre than freshwater pearls.

- **Surface**
  The surface appearance of a pearl is a critical characteristic. Pearls should be smooth and shiny, without bumps, lines, spots, or discolorations. The surface should be shiny and reflective not dull and chalky.

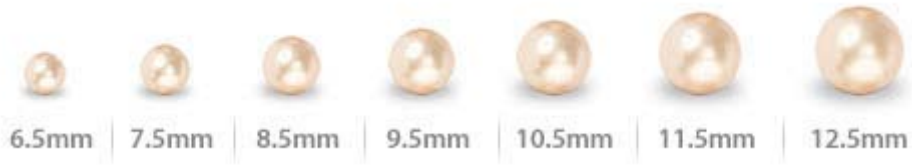
- **Shape**
  The shape of a pearl is where "value" and personal taste may differ. Perfectly round pearls are extremely rare, and therefore very expensive. Pearls come in a wide variety of interesting and unique shapes.

- **Some examples include:**

•**Round** - perfectly spherical
•**Near or Semi Round** - slightly flattened or elongated
•**Button** - slightly flattened into a disk-like "button" shape
•**Pear** - elongated teardrop-shaped
•**Drop** - teardrop shaped
•**Oval** - egg-shaped
•**Baroque** abstract and asymmetrical
•**Ringed** concentric indentations or rings

- **Colour**
  Pearl colour ranges across almost the entire spectrum from white to black. Naturally occurring colours include silver, cream, champagne, green, and blue. A pearl's reflective overtones are different from its basic colour. This reflectivity gives pearls in the same colour category, a variety of looks and hues. Although some colours less common than others, and therefore more expensive, colour is another area where “value” and personal taste may vary.

- **Size**
  The size of pearls is measured in millimetres. Pearls today range in size from less than 1mm (seed pearls) to 14mm or larger. The average size of pearls on the market today, range in size from 6.5mm to 8mm. The size of a pearl directly impacts its quality and price. Larger pearls are generally more expensive.



- Other factors come into play when evaluating a pearls quality and value. Natural pearls are the most valuable, but most pearls on the market today are treated in some way or another. Some treatments do not impact the value of pearls while others do.

Learn About **Pearl Treatments**

- **Sources:**
  Pearls by Fred Ward, Gem Book Publishers, Bethesda, Maryland
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