

MYSTIQUE OF THE PEARL

STUDY NOTES prepared by Patricia Kelly

Subject Areas: Gemology, Work & Business Studies, Science and Environmental Technology, History, SOSE, Asian Studies, Marine Studies

Levels: Upper Primary, Secondary, VET and Tertiary

Synopsis

Few fashion trends have endured like pearls. For centuries, humans puzzled over the mystery of how one of nature's most lowly creatures - the oyster - could produce perhaps the most beautiful and perfect of nature's creations. *Mystique of the Pearl* reveals how these lustrous, sensual gems are produced in a mysterious collusion between man and nature.

Executive Producers: Chris Oliver and Paula S. Apsell

Producer: Megan McMurchy

Directors: Megan McMurchy and Trevor Graham

Writers: Andrew Waterworth and John Patterson

Duration: 55 minutes

Year of Production: 1996

After Watching

This video uses several interweaving narratives to tell the story of pearls and the pearl industry from ancient times to today. In the process, it considers many aspects of the roles of science and technology in changing an industry and the lives of the people who work within it. It also offers several potential case studies in water pollution, transfer of technology and business practice.

1. The Natural Story

Pearls are created by molluscs - one of oldest and most successful species on the planet, having survived for over 135 million years. The largest pearl-producing mollusc is the *Pinctada maxima* of Australia.

Find out the distinguishing facts about this phylum and discuss why it has been so successful.

Draw and explain the anatomy of the oyster, using the information given and any other information you can find. Essential terms include 'filter feeders', 'nacre', 'muscle', 'adductor muscle'.

Describe the various natural causes of pearls and the process by which a pearl forms. Essential terms include 'irritant', 'parasites', 'secretes'.

Identify the differences between the process involved in forming a natural pearl and the 'nucleation' process involved in forming a cultured pearl. Draw a diagram of one of these processes and present your findings.

All pearls vary in colour according to the type of oyster or mollusc producing them, or the combination of minerals in the water and any other environmental factors.

- Which pearls are known as 'baroques'? Other types of pearl include 'button', 'blister' and 'mabe'.
- Investigate the term 'baroque' and give another example of the 'baroque' style in an area such as music or architecture. Prepare a talk on your choice.

2. Pearls, History and Cultures

Pearls are regarded as mysterious, pure, beautiful and sexy. They have come to symbolise wealth and power. Is there a clash between these images and the reality?

Pearls mean different things in different cultures. The examples given in the video are that they are used for medicine in India but are a sign of wealth in Western countries. They are revered as the 'jewel of Japan'. Follow up one of these examples or investigate a culture of your choice and the significance and use of pearls within it.

Are there any significant differences between natural pearls and cultured pearls?

How can modern methods disguise the effects of pollution on cultured pearls?

Define the differences between culture methods for the various species of pearl producing molluscs e.g. pearl culturing times, shell densities on farms.

Is there a difference between the longevity of the pearls producing by the different species of pearl shell? If there is, what is the defining physical characteristics that establishes such a difference in longevity?

What is the size ranges for the pearls produced by the different species of pearl shell?

What are the characteristics of the Australian South Sea pearl that distinguishes it from all other South Sea pearls and pearls generally, thus making them the most valuable pearls on the market?

3. The Pearl Industry: People

Divers and their families

Regardless of which culture is involved, there have always been divers who have risked their lives to get the pearls. According to the video, thousands have died in the process.

Research the work habits and customs associated with pearl divers in a country of your choice. What were the working conditions and rewards one hundred years ago? Compare them with those of today in the same culture.

The video refers to famous 'girl divers'. Discuss their choice of the word 'girl' and its connotations.

What were the 'good old days' really like for divers and their families?

Investigate the health risks of diving:

- without any equipment
- with simple equipment
- with modern equipment

What innovations in diving techniques have the Australian pearl divers introduced to the world? What implications have these techniques had in regard to diver safety and productivity?

Scientists, technologists and merchants

Although the technology of pearls was known in 5th century China, the early technology did not leave China. Discuss and try to explain why this was so and why it remained a mystery elsewhere in the world for hundreds of years.

Kokichi Mikimoto worked hard to create perfect, round 'cultured' pearls. Investigate how pearls are graded. What are the factors which determine the value of a pearl?

Japan tried to keep the cultured pearl process a Japanese secret. Japanese technicians did the actual process of nucleation. Australian companies used Japanese techniques, but the systems used on 'Akoya' oysters in Japan, failed on the much larger *Pinctada Maxima* oysters which occur naturally in Northern Australian waters. Discuss what went wrong. Can such an expensive failure teach us lessons in order to avoid similar mistakes in adopting other technologies?

What is involved in a 'floating intensive care unit' for oysters?

Oysters are processed on specially designed ships. From June to November crews work at sea. Become a reporter for a science program, investigating life on the ship at sea from June to November. Would you have asked different questions and looked at different aspects of the industry from those examined in this video? What effects do you think such long absences from home have on the workers and their families?

Scientists are trying to control everything - even genes - in the quest for perfection. Is guaranteed perfection a good thing for the pearl industry or any other industry? Investigate another genetically manipulated product. What are the key issues in gene modification? What ethical issues most concern you?

4. The Pearl Industry: Japan and Australia

Two case studies

The Japanese industry innovator and entrepreneur, Kokichi Mikimoto, after many years of research, revolutionised the industry in the 20th century by perfecting the cultured pearl technique.

From the detailed information on the video and from any other sources, including an Internet search if possible, prepare an annotated time line of the development of the pearl industry in Japan, Australia, the Pacific, China, India, Europe and North and South America. Note any key developments and explain their significance. South Sea pearls now occupy the top end of the market.

Investigate one of the areas involved in pearling: Ago Bay, Tahiti, or Australia, where the Kimberley Reefs produce the largest and best quality pearls. The pearls, from the *Pinctada Maxima* oyster, fetch the highest price per pearl on the international market.

5. Ecological Issues

There is always a question to ask about any activity. Is it sustainable? Investigate the concept of 'sustainability'. What does it mean and how does it impact on our lives?

In the mid 19th century, the introduction of diving equipment pushed pearl beds to extinction. What are the 20th century dangers facing the pearl industry in Japan and elsewhere? These key words will help: 'high mortality rates', 'industrial and domestic waste', 'barometer of health', 'red tide', 'algal bloom', 'population limit'. Use any of these key words to begin an investigation.

Identify the many effects of pollution on the oysters. Do a case study of Ago Bay or of any other area affected by pollution. Can we learn from these case studies to avoid future disasters?

Most problems are caused by human action. Human and industrial waste is bad for pearling. An oil wreck could wipe out production of years. Research the Exxon Valdez oil spill disaster off the coast of Alaska. Are there any plans in place to avoid a similar disaster happening in Australia?

What is the key difference between Australian pearl farm management systems and Japanese pearl farm management systems that ensures a minimal impact on the environment from the culturing of pearls.

A quota system has been used as a management method to ensure the sustainability of the resource in Australia. Investigate other reasons for the use of quotas.

If it is not a sustainability issue, why have Western Australia and Northern Territory introduced quotas for hatchery-produced pearl shell?

The Paspaley pearl company is a personal story of a migrant's perseverance and success. Paspaley's passion for pearls inspired his pioneering work into cultured pearls.

Investigate why migrants from many backgrounds, including Greece, Japan, Indonesia, Malaysia, China and Japan became involved in Australia's early pearling industry.

Investigate another immigrant success story in an area of your choice (business, the arts, science etc.)

What personal and professional qualities do you think you need to succeed in a new country in a business venture?

From the video, what do you identify as key factors in the success of the Paspaley company?

What are some other key centres for cultured pearl production in Australia?

Quotas have been imposed to protect the Australian pearl industry. How many companies currently hold quotas to fish for pearl oysters in Australia?

Investigate the quota system in the pearl industry and in any other industry. Does the quota system ensure the sustainability of Australia's pearl industry?

What does a 'sustainable' industry mean in this context?

Does the increasing volume of cheaply produced pearls now being cultivated in China and Indonesia challenge the viability of Australia's high quality pearl industry?

The narration states that humans destroy what they value most. Do you agree? Does it have to be this way? What do you think we need to change about our behaviours in order to bring about a sustainable future?

6. Buying and Selling

There is a gender issue in the good girl/bad girl image of pearls. Collect advertisements from magazines or television which advertise pearls.

What are the hidden messages or 'connotations' of the advertisements? What section of the market are they aimed at? What methods do they use to get their message across? Do you think they are effective?

References & Further Reading

Surfing the Net

Use the Internet search engines to find out more information on the pearl industry, past and present. You may be able to make contact with people involved in the pearl industry or students who live in pearling towns in Australia and elsewhere.

<http://library.advanced.org/10236/index.htm>

<http://www.tahiti-blackpearls.com/>

<http://www.wa.gov.au/westfish/index.html>

Issues to consider

Identify and discuss the skills you need for effective Internet communication. If you are communicating with someone outside Australia, brainstorm the attitudes and behaviours that you will need to communicate effectively and sensitively, and appropriate ways of dealing with any misunderstandings that may arise.

About the Author

Patricia Kelly BA, Dip ed, B Ed, Grad Dip Media, (AFTRS), MA is Lecturer in Cross Cultural Curriculum Development, Queensland University of Technology. Over the course of her career, she has worked a diverse range of media related activities and projects. From 1983 to 1987 she was involved in numerous international projects for the Australia China Council, since then she has served as consultant and adviser to numerous Government bodies including the Australia Council, the SA Multicultural and Ethnic Affairs Commission, the AFI and the Festival of Television for Australian Children, in the areas of multicultural affairs, children's literature, adult literacy, women's issues and education. From 1986 to 1992 Pat was Education Officer of the SA Film and Video Centre and editor of its quarterly publication. She has written an extensive number of resource and study guides for film, television and multimedia.

Additional notes on the Australian Pearl industry kindly supplied by Mick Buckley, Pearl Producers Association Inc. WA.

A Film Australia National Interest Program in association with NOVA/WGBH Boston and the Australian Broadcasting Corporation.

For information about Film Australia's programs, contact:

National Film and Sound Archive of Australia

Sales and Distribution
PO Box 397 Pyrmont NSW 2009
T +61 2 8202 0144 | F +61 2 8202 0101
E: sales@nfsa.gov.au | www.nfsa.gov.au

