

The Canoe Is The People TEACHER'S MANUAL



United Nations
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LiNS

Local and Indigenous
Knowledge Systems



***The Canoe Is the People* educational Resource Pack: Teacher's Manual**

The Resource Pack also includes: Learner's Text, CD-ROM and Poster.

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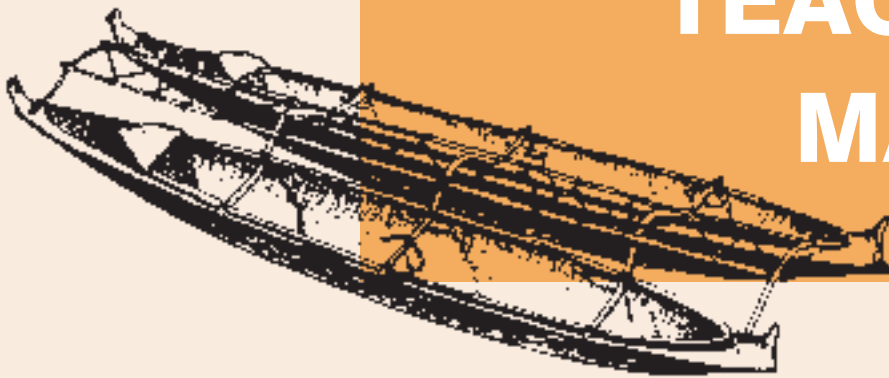
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TEACHER'S MANUAL





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It is from Manihiki, Northern Cook Islands. Made of wood, coconut fibre, pearl shell. 430 x 8860 mm. Purchased 1907.

Source: *Icons from Te Papa Pacific* pp.106–107



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‘I THINK,’
SAYS NAVIGATOR TUA PITTMAN,
‘OUR CHILDREN NEED TO KNOW
WHO THEY ARE
AND WHERE THEY COME FROM.
SO WHEN THEY GROW UP,
THEY CAN TALK ABOUT
KARIKA AND TANGIIA FIRST
AND THEN COLUMBUS LATER.
AND THAT A LOT OF THEM
WHEN THEY DO GROW UP,
HOPEFULLY WILL LOOK BACK AT US
AND WHAT WE DO
AND SAY THANK YOU.
THANK YOU VERY MUCH
FOR LETTING US KNOW WHO WE ARE.
THAT’S WHY WE’RE HERE.’

Wayfinders: A Pacific Odyssey, 1998.





Introduction

Indigenous navigation in the Pacific, or wayfinding as it is sometimes known today, is an ancient craft, which has come very close to being lost forever in parts of the Pacific.

The educational Resource Pack called *The Canoe Is the People: Indigenous Navigation in the Pacific* has been developed by UNESCO's Local and Indigenous Knowledge Systems (LINKS) Programme as a voluntary addition to the timetables of schools, colleges and other learning institutions in the Pacific. It contributes to one of the main goals of the LINKS Programme, which is to bring indigenous knowledge into the formal education system.

This educational Resource Pack includes:

- an interactive multimedia resource called *The Canoe Is the People: Indigenous Navigation in the Pacific*, which is available as a CD-ROM (enclosed) as well as via the Internet at www.canoeisthepeople.org;
- a Teacher's Manual with suggested curriculum frameworks, marking schemes, lesson plans and evaluation forms;
- a Poster and Map; and
- a Learner's Text.

The interactive resource (via CD-ROM or the website) provides a large amount of information in the form of texts, maps, videos and animations, and features master canoe builders and navigators from across the Pacific. However, if the technology to use this resource is not available, a teacher or a facilitator can still teach the curriculum using materials provided in this Resource Pack. The additional assistance and contribution of local members of Pacific communities who are knowledgeable about traditional non-instrument navigation, and who are willing to pass this on to younger people, will make it possible to provide an exciting and stimulating addition to the timetables of schools and colleges throughout the Pacific Region.

A review by UNESCO's LINKS Programme of the curriculum of secondary schools in the Pacific revealed that indigenous knowledge of navigation is consistent with, and complementary to, many of the objectives of existing subjects. Social studies, cultural studies and social science all have objectives focusing on traditional culture and knowledge, but have few, if any, direct reference to the seafaring history of the Pacific Island Peoples. The teaching of science also provides many opportunities to compare and contrast traditional indigenous knowledge of seafaring and non-instrument navigation with Western theories and ideas about how the natural world works.





The review also identified many other areas of possible integration, particularly with English, but also with maths, geography, history and industrial arts. Many of the objectives of these subjects can be achieved through the delivery of the curriculum frameworks outlined in *The Canoe Is the People Resource Pack*. These frameworks have been designed to ensure that, wherever possible, learning objectives are referenced to curriculum entry points in these subject areas. This will allow teachers to reinforce learning and develop skills that are relevant to subjects that are already being taught.

The content of this educational Resource Pack therefore provides many practical examples and real life applications that will enrich and complement the existing curriculum and therefore assist and reinforce learning in these other subject areas.

The introduction of the educational Resource Pack on *The Canoe Is the People* into schools and colleges will mean that the subject might sit alongside and be integrated with other subjects concerned with indigenous knowledge, including:

- Agriculture and horticulture
- Architecture and construction
- Arts and crafts
- Celebrations and special occasions
- Food and diet
- Health and medicine
- History and cultural achievements
- Law
- Literature
- Natural phenomena
- Politics and systems of governance
- Religion, spiritual beliefs and rituals
- Social relationships and social obligations
- Sports

It is believed that the best way to approach the teaching of indigenous knowledge is one which is practical, participatory and empowering. Such teaching involves the learner and members of the community who have knowledge and experience of the subject matter in a way that engages their mutual interest and ongoing involvement and curiosity. The learning activities in this resource are examples of approaches to learning that are likely to stimulate the interest of learners and to develop a lifelong interest in indigenous knowledge and its place in contemporary society.





The rationale

The *Canoe Is the People* educational Resource Pack aspires to trigger a process of learning and discovery. It aims to encourage young people to seek out knowledgeable individuals in their own communities and to create opportunities for sharing this knowledge between elders and youth. It is hoped that in this manner, indigenous knowledge of voyaging and navigation will remain a dynamic, creative and productive resource that continues to be highly valued throughout the Pacific Region.

This educational resource does not claim nor aspire to produce trained indigenous navigators. It takes many years of observation, memorisation and very hard work, under the guidance of a recognised master, to train a navigator. In addition to the complex technical knowledge about the natural world and, for example, the movement of the stars, wind and ocean currents which must be memorised and put into practice during long voyages at sea, there is also a strong spiritual component which must be experienced, felt and followed.

Much of what is taught in Pacific Island schools and colleges has been developed within a Western pedagogical framework with employment and higher education as the main aims or outcomes of education. The introduction of a subject such as indigenous knowledge of navigation will allow learners and teachers throughout the Pacific to gain an in-depth understanding of the complexity of indigenous knowledge of voyaging and navigation and to become aware of an intellectual tradition that predates and arguably surpasses many Western scientific models and assumptions about the art of navigating.

The teaching of indigenous knowledge about canoe building and non-instrument navigation will also enable elders and others in the community who are repositories of this knowledge to have their knowledge recognised and valued, and where they see it as appropriate, to have knowledge passed on by them directly, in the classroom, and other learning environments.

Furthermore, the increase in the number of canoe building and voyaging initiatives in recent years in the Pacific helps to ensure that a study of Pacific navigation is relevant and significant to modern day projects and initiatives involved with cultural revival and the perpetuation of indigenous knowledge and practice. Indeed, studying indigenous knowledge of navigation in the Pacific may be a gateway to participating, contributing and even gaining employment in such projects.





Aims and objectives

AIMS

- To enable the teaching and learning of indigenous knowledge of navigation within Pacific secondary schools and colleges and the wider learning environment.
- To enable young people to recognize that the seafaring knowledge of Pacific peoples is a sophisticated and comprehensive intellectual tradition.
- To contribute to the preservation and development of indigenous knowledge of non-instrument navigation, canoe building and open-ocean voyaging in the Pacific.

OBJECTIVES

Students will be able to demonstrate:

Knowledge and understanding

- Acquire and demonstrate concepts and principles that are relevant to the knowledge and understanding of indigenous non-instrument navigation and canoe-building, and of the ocean world in general.
- Acquire and demonstrate the concepts, principles and abilities needed to compare and contrast traditional Pacific non-instrument navigation with Western instrument-based navigation.

Application and problem solving

- Analyse and solve simulated navigational problems.
- Apply problem solving skills in a wide range of real life contexts.
- Understand the effect of culture, environment and learning on the development of problem-solving skills.





Practical skills

- Observe, measure and record accurately.
- Construct scale models of different types of canoe and their component parts e.g. sails and ropes.
- Construct simple indigenous navigational tools and artefacts.

Attitudes

- Demonstrate an awareness of, and respect for, Pacific Islander seafaring and navigational knowledge and skills.
- Develop and express a curiosity about their own seafaring heritage and an interest and enjoyment in studying indigenous knowledge of navigation.
- Value their own historical and cultural seafaring and navigational heritage.





Organisation and teaching

The organisation and teaching of the *The Canoe Is the People* educational Resource Pack

This curriculum is divided into four major strands:

- Beginnings and Origins
- Canoe Building and Sailing
- Becoming a Navigator and Navigation
- Voyages and Revival

The order of the four strands presented here is a suggestion designed to allow each learning experience to build on the previous section and link thematically to the next. However, the order is not fixed, and strands may be taught independently and in accordance with existing curricula.





Level of entry

The curriculum has been designed to start at upper elementary/primary level, and to progress in stages to middle secondary level. It may also be used by adults re-entering learning. It is suggested, therefore that the strands be introduced as follows:

STRAND	EDUCATIONAL LEVEL
Beginnings and Origins	Form 2/Year 7/Grade 9
Canoe Building and Sailing	Form 3/Year 8/Grade 10
Becoming a Navigator and Navigation	Form 4/Year 9/Grade 11
Voyages and Revival	Form 5/Year 10/Grade 12

However, the curriculum is very flexible, and it could be covered over one, two, three or four years depending on timetabling considerations and time constraints.

Among the subject areas with the broadest scope for integration and linkage are social/cultural studies, as well as geography, history and science. However, there are many other possible curriculum entry points, particularly in English and industrial arts. In order to be applicable to the great variety of Pacific countries' school curricula, this section has been kept broad so that it can be easily adapted to national learning objectives. Additionally, the list of curriculum entry points should not be considered as obligatory and exhaustive. Rather, curriculum developers and teachers should decide where lessons from *The Canoe Is the People* educational Resource Pack can best be integrated into the teaching.





The teaching resources

The *Teacher's Manual* includes the following resource materials for each of the four strands:

- Curriculum Framework
- Marking Scheme
- Lesson Plans with Blackline Masters
- Further Activities
- Evaluation Form

A teacher with an interest in the subject and access to *The Canoe Is the People* interactive resource (CD-ROM or website) and the educational Resource Pack will be well placed to be able to teach the contents of all four strands. Other references and sources of information are given at the end of the *Teacher's Manual*. Wherever possible, learning should be supplemented by the learner's own research and the involvement of knowledgeable people from the local community. Additionally, community centres, libraries and tourist offices can be valuable sources of information.





Curriculum framework

The aim of the curriculum framework is to guide educators in the introduction of the four strands of study. Each strand is prefaced by an overview table summarising the topics, sub topics and suggested points of entry in the curriculum.

The Canoe Is the People
Curriculum Framework

TEMPLATE

STRAND X: TITLE OF STRAND

Lesson		Objectives	Suggestions for Curriculum Entry Points:
Topic	Sub topic	Students will be able to:	
1.X	1.1 X	[...] [...] [...]	[...] [...] [...]





Marking schemes

Overview

The marking schemes are one example of how learning might be assessed. Schools and individual teachers may have their own formats for assessing learning, to complement school and national assessment expectations. Teachers are welcome to apply or adapt the following scheme, to record learning and provide the most effective feedback to their students.

An explanation of the scheme is provided, along with the tables for completion. The tables comprise:

- The learning objectives for each objective as identified in the Curriculum Framework;
- A space for feedback on individual student or group learning in relation to the objective; and
- A column for a summary achievement mark. This grade could be transferred to class lists of achievement grades.

The scheme has been designed to be as flexible as possible so that the teacher can design the order in which the tasks are completed.

In some cases the teacher may wish the student or student group to complete the assessment template. This too can be a useful form of recording, learning, providing feedback and self-assessment.





Explanation of marking scheme

LEARNING OBJECTIVES	FEEDBACK ON LEARNING DEMONSTRATED	ACHIEVEMENT
1.1.1. Describe the origins of the Pacific Islands	<p>Example: This objective was demonstrated in Assignment A1.1, Task X (name the task).</p> <p>In that task some/all students were able to describe the origins of the Pacific Islands through the following task: (provide details of the task completed and if by some only, name the students who demonstrated the learning objective).</p>	<p>There is a range of ways of summarising achievement of a learning objective, including:</p> <ul style="list-style-type: none"> • Not achieve/Achieve/ Merit/ Excellence; or • Numerical or letter grade.
	<p>Some students were challenged by this task and did not demonstrate the learning objective. Feedback provided included: (provide details of what action has been taken to reduce barriers).</p> <p>Next steps: To advance learning further the student(s) (name(s)) could explore the following: (provide details of learning activities that would extend knowledge, or outcomes in affective or psychomotor skills).</p>	<p>This summary of achievement can be transferred directly into class assessment tables.</p>





Lesson plans

The lesson plan section of each strand shows how the broad curriculum framework might be developed into lessons. In addition to the objectives of the lessons and the suggestions for curriculum entry points, they include ideas for learning experiences. These should be understood as suggestions for classroom activities and neither as compulsory nor as exhaustive. Some activities might not be feasible in a particular context, while in other situations, teachers might have ideas for other activities that may be more suitable for their students. This is encouraged by this Teacher's Manual. References to learning resources that can be used by teachers and students are also given in the lesson plans. As a complement to the lesson plan table, a study guide is provided for each lesson, with ideas on how to introduce the topic, spur discussion or facilitate the choice of teaching methods to improve learning.

Additionally, for some activities, blackline masters are provided after the respective lesson plan to be copied by the teacher and filled out by the students. The blackline masters should be considered as an offer to facilitate teaching and lesson preparation – teachers are not obliged to make use of them.





Further activities

The Further Activities section lists other teaching methods and learning experiences that could be used in the teaching of each Strand.





Evaluation

This is a new subject that will be a challenge to teachers and learners. The developers of this educational Resource Pack believe that there is always room for improvement, and we welcome all comments and suggestions as to how it can be improved and developed. To this end, an evaluation form is included for each strand.

Please complete and return to the UNESCO Office in Apia as soon as possible after the completion of the first teaching of any of the topics.

UNESCO Office in Apia
SC/LINKS Programme
P.O. Box 615
Matautu-Uta
Samoa

You can also scan the evaluation form and send by email to:
links@unesco.org

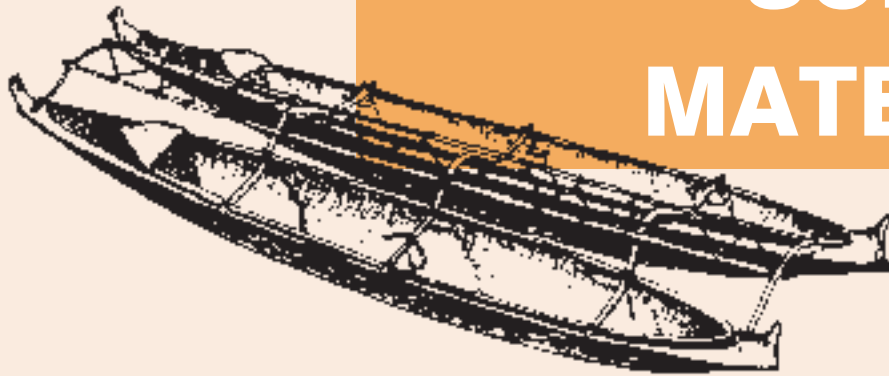
Marshall Islands sailing canoe



Source: Haddon, A. C., & Hornell J. (1975). p.363



CURRICULUM SUPPORT MATERIALS



- Using *The Canoe Is the People* interactive resource
- What helps Pacific students learn
- How teachers can link community knowledge with the curriculum.
- Teaching and learning methods in this resource
- Further activities





USING THE INTERACTIVE RESOURCE

This section examines how you might work with the interactive multimedia resource called *The Canoe Is the People: Indigenous Navigation in the Pacific*. This resource can be accessed using the enclosed CD-ROM or, if you have access to Internet, from the website at www.canoeisthepeople.org.

You will find two sections here – the first contains information about CD-ROM care and usage, as well as an example lesson plan to show how the interactive resource might be used in regular teaching. The second section provides information about E-Learning and pedagogy to transform classrooms. The latter closes with some suggested sites and references should you wish to learn more about e-learning and teaching approaches.

Section 1: The CD-ROM as a teaching and learning tool

What does a CD-ROM do?

A CD-ROM holds a large amount of digital information and can be used by teachers and students for storing information. You will find that the information on *The Canoe Is the People* has been saved permanently and cannot be adjusted or changed. The information on the CD-ROM can be copied onto as many computers as you like, so that many students can have access to the interactive resource at the same time.

The Canoe Is the People interactive resource has a variety of QuickTime video footage. This means you can use selected videos from the CD-ROM or the website to get a better understanding of how Pacific people travelled from island to island. The CD-ROM and the website are important resource tools for independent learning coupled with quality teaching.



How to care for the CD-ROM

Caring for *The Canoe Is the People* CD-ROM is the same as caring for a new music CD that you have just brought from the music store. Keep the underside (with no label) clear of scratches and finger prints. The oil from fingers and scratches are likely to damage the information that has been stored on the disc.

How to use *The Canoe Is the People* interactive resource in classroom practice

To assist in planning the use of the interactive resource, we have prepared a sample lesson plan. This plan assumes that the teacher has some experience in using Information Technology (IT) and has the appropriate facilities in the classroom or school (computer access, web access, DVD player, a projector, etc.). In addition, prior to this lesson, the students would have had lessons on using the computer. Tasks in previous lessons such as small group discussions, group debates, and small teamwork activities will have readied the students for this sample lesson. They would have also been working individually on activities to enable them to work independently when they need to.





The focus here is on how to enable teachers to use *The Canoe Is the People* interactive resource, incorporating other digital and online resources as well as to help students learn about indigenous navigation in the Pacific.

It is important to remember that *The Canoe Is the People* interactive resource is one tool among many available to you as a teacher. In effect the CD-ROM and the website are ‘digital books of information’. Quality curriculum development and implementation, including the use of this interactive resource, will help increase knowledge and understanding about indigenous navigation in the Pacific.

Example lesson template

Level: Form 4/Year 9/Grade 11

The student will be able to demonstrate knowledge and understanding of one of the topic areas from *The Canoe Is the People* interactive resource and

will be able to share their learning through a group presentation to the class.

Learning Outcomes (LOs)

- LO1. Identify skills relevant to indigenous navigation in the Pacific.
- LO2. Demonstrate communication skills incorporating IT capabilities by presenting their findings to the rest of the class.
- LO3. Demonstrate the ability to work with others in group activities.
- LO4. Demonstrate the ability to use PowerPoint presentation software to present to class.

Duration

3–4 hours (if your class runs for only 1 hour then you may wish to use 3 to 4 class lessons).

TIME	DESCRIPTION	LEARNING OUTCOME	RESOURCE
5 minutes	<p>Warm Up</p> <p>Warm Up activity that encourages group interaction and cooperation – e.g. collaborative solving of a riddle as a group; using the people in their group to spell out a word associated with indigenous navigation in the Pacific.</p>	LO3	
8-10 minutes	<p>Direct Instruction</p> <p>The teacher has set up the class so that students will be able to start their group tasks immediately after the teacher has given direct instructions. Computer/s is set up with CD-ROM and/or website ready to use. The teacher gives instructions about the work to be done. The instructions are also available in writing on the board or posters:</p> <p>Instructions</p> <p>Each group is to prepare a PowerPoint presentation to share information about one of the following tasks. Your group assessment will not focus on information copied from your resources but what the group can explain without reading word for word, and communicate about the value of indigenous navigation in the Pacific:</p>	LO1	





TIME	DESCRIPTION	LEARNING OUTCOME	RESOURCE
	<p>Group 1: Using the interactive resource, along with online research and articles and contact with community members, identify and discuss the navigation skills and knowledge that have traditionally been of great value to Pacific Islanders.</p> <p>Group 2: Using the <i>The Canoe Is the People</i> as a resource, along with online research and articles and contact with community members, gather and analyse information about the value of traditional methods of becoming a navigator.</p> <p>Group 3: Using <i>The Canoe Is the People</i> as a resource, along with online research and articles and contact with community members, gather and analyse information about the value of traditional methods of navigation.</p> <p>Group 4: Using <i>The Canoe Is the People</i> as a resource, along with online research and articles and contact with community members, describe initiatives in their own countries and around the Pacific to revive and preserve traditional navigation.</p> <p>Group 5: Using <i>The Canoe Is the People</i> as a resource, along with online research and articles and contact with community members, compare and contrast Micronesian and Polynesian non-instrument navigation.</p>		<p>Computers</p> <p>interactive resource (from the CD-ROM or the website www.canoeisthepeople.org)</p>
<p>Teaching Point: Make sure that as a teacher you will be guiding the students towards learning. This means that you will have strategies for groups to work towards their goals e.g. give each student in their group a role, such as CD-ROM or website information gatherer, library researcher, and community information seeker. Remember that you as the teacher should have a clear idea of what you expect the students to have learned by the end of this lesson. You are the glue that helps hold the lesson's curriculum together.</p>			
<p>2 hours</p>	<p>Group work activity</p> <p>In 5 groups where the teacher has given them instructions.</p> <p>Set fundamental ground rules so that students know the procedure when working in groups e.g. take turns speaking, ensure everyone has a role and has a say, be respectful towards each other.</p> <p>Each group must have a fono (meeting). The reason for a fono is to establish what everyone is doing in his or her group. It sets up structure and gives everyone an idea of what he or she is doing.</p>	<p>LO3</p>	<p>interactive resource (from the CD-ROM or the website www.canoeisthepeople.org)</p>





TIME	DESCRIPTION	LEARNING OUTCOME	RESOURCE
	<p>Set small timeframes for groups to master. Every half an hour the groups can meet and discuss what they have got in terms of research.</p> <p>Teacher will coordinate and do check-ups on each group to encourage work.</p> <p>Quality learning happens in the group discussions. Teachers need to be having dialogue with students getting them to share their findings with each other in their groups.</p>	<p>LO3</p> <p>LO2</p>	
1 hour	<p>Assessment Information that has been gathered should now be transferred to a PowerPoint presentation.</p> <p>The emphasis is not about information copied from their given resources but more about what they have learnt and understood and can communicate without reading word for word.</p>	<p>LO1</p> <p>LO2</p>	Computer PowerPoint

Assessment

In this lesson plan, assessment will be done through the means of presentations. This provides an excellent opportunity for feedback – peer-to-peer, student-to-teacher, and teacher-to-students. It is important to let students

know from the beginning that their group work investigation will be assessed through presentations at the conclusion of the class. This means that each group will be presenting their work to the rest of the class.

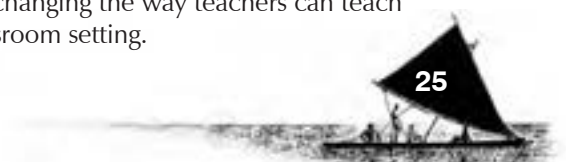
Section 2: E-learning and pedagogy to transform classrooms

What is e-learning?

E-learning is another form of learning that has reshaped ideas about learning in a classroom. E-learning can be defined as learning through an electronic/digital medium whereby delivery of information is done through websites, intranet, CD-ROM and DVDs (Smaldino et al., 2005).

E-learning allows you to learn anywhere and usually at any time, as long as you have the right tools to access this medium and can include text,

video, audio, animation and virtual environments. E-learning can be done individually or in groups, and is often self-paced, hands-on learning. The emergence of E-learning shows that classroom practices have evolved from the 19th Century classroom setting towards a digital era whereby the classroom literally loses its walls and you engage your learning through cyberspace. Digital capability is changing the way teachers can teach within a classroom setting.





Yet, the importance of good teaching remains essential to high quality learning through digital technologies. Although E-learning offers a new generation of approaches to teaching and learning, it still has the same shortfalls as traditional classroom learning, such as boring slides, monotonous digital speech and also little interaction between learners. The reality for all teachers is that digital hardware is only a tool. E-learning is just another tool for teaching and learning. It is how you apply this tool in your teaching that will make the difference.

What do you need to be 'E-learning' capable?

If you have the following IT equipment available then you are already becoming entrenched in the technology wave. If you have at least four of the IT tools listed below then you are technically in the digital era and can use these tools to increase your discourse in teaching in the classroom using ICTs:

1. Computer
2. Internet access
3. CD-ROM
4. Memory stick
5. Cell phone
6. Digital still camera
7. Digital movie camera
8. DVD player
9. Television

Computer

This is the main hub that helps join all other IT equipment. Computers have rapidly become one of the key instructional hardware technologies in education. It can be used for a number of tasks related to teaching and learning. Computers have the ability to integrate and control a variety of IT equipment.

Internet Access

Electronic information that is accessible through computers. Internet connects networks of computers together right across the world. *The Canoe Is the People* website is on the Internet and can be accessed by anyone who has Internet access.

CD-ROM

Digital information that is stored on a disk that is specific to the topic. For example, *The Canoe Is the People* CD-ROM has specific information that allows the user to gain knowledge about indigenous navigation in the Pacific.

Cell phone

The cell phone can be used in a number of ways within a classroom environment. For example, as a warm up activity to promote in-group communication and cooperation: using cell phones to communicate answers via text messages only, create a treasure hunt around the school; group members use the cell phone camera as evidence that they were at a given location. Further activities include using the cell phone calendar for group project planning, plus internet searching.

Memory stick

A memory stick stores and carries digitised information, such as photographs, PowerPoint presentations, video footage, music and interviews. The memory stick is like an electronic filing cabinet of information that can be integrated into lessons about indigenous navigation in the Pacific. Information can be uploaded and downloaded.





Digital still camera

Digital photos can help tell a story about navigation, promote in-depth analysis of navigation tools, or record a group's journey in learning about indigenous navigation in the Pacific. With certain programmes, the pictures can be enhanced. Many digital cameras have video capability.



Video movie

Using digital video movies it is possible to capture and record footage that will help evaluate the students' learning about indigenous navigation in the Pacific (e.g. community interviews, role playing important historical events in indigenous navigation). The video movie gives students the capability to communicate with others across international boundaries via the internet.

Some useful papers/references

E-Learning pedagogy programme

www.jisc.ac.uk/whatwedo/programmes/elearning_pedagogy.aspx

Effective practice case studies for e-Learning

www.jisc.ac.uk/whatwedo/programmes/elearning_pedagogy/elp_casestudies.aspx

Innovative e-Learning practice case studies

www.jisc.ac.uk/whatwedo/programmes/elearning_pedagogy/elp_innov_casestudies.aspx

Paper: 'e-Learning pedagogy in the third millennium the need for combining social and cognitive constructivist approaches'

<http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=305554>

eLearning the hype and the reality.

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WHAT HELPS PACIFIC STUDENTS LEARN

Pacific canoe builders test the merits of their work by the buoyancy of the *vaka* (canoe) when it is in the water. Buoyancy depends on the builder's selection of wood and how they hollow-out the canoe. In many ways this is the task of the teacher – to choose their teaching materials wisely and with care; and then to craft each lesson with a desire to help learning grow and be 'buoyant'.

As teachers, we have many ideas about what makes a difference in helping students learn. Sometimes our conviction that a certain approach works is based on our teaching experience; other times it is based on research evidence. While it is difficult to generalise, we can look to syntheses and meta-analyses of education research to tell us about how students learn best. This information can help promote good linkages between teaching and learning with *The Canoe Is the People* resource.

This section draws on findings from the *Best Evidence Iterative Synthesis* (Ministry of Education, New Zealand, Dr Adrienne Alton-Lee) and possibly the most comprehensive analytical education overview, completed by Professor John Hattie. This latter work draws on over 750 meta-analyses of 50,000 studies, involving more than 200 million students.

Our hope is that you will find information here that will help you design effective, challenging learning activities for your students, using *The Canoe Is the People Resource Pack*.

Best evidence of what helps student learn

Quality Teaching for Diverse Students in Schooling: Best Evidence Synthesis (Alton-Lee, 2003) contains ten characteristics generated out of a synthesis of research into what helps students from diverse backgrounds to learn and succeed in school education. The report¹ is one of a series of *Best Evidence Syntheses* commissioned by the Ministry of Education, New Zealand, drawing upon a worldwide search of research into student learning. It draws together in a systematic way the available evidence about what works to improve education outcomes, how to make a momentous difference in the education of children and young people.

Quality teaching helps students learn during *The Canoe Is the People* lessons

The quality of our teaching will be a key influence on outcomes for students learning during *The Canoe Is the People* lessons. Research evidence reveals that up to 59% of variance in student performance is attributable to differences among teachers and classes, while only 21%, but generally less, is attributable to school level variables, such as school location, school size or principal. Evidence shows teaching that is responsive to student diversity can have very positive impacts on low and high achievers at the same time. The following section describes ten characteristics of teaching that could be used when teaching *The Canoe Is the People* lessons, to maximise learning.

Ten research-based characteristics of quality teaching

The ten research-based characteristics of quality teaching derived from the research are generic in that they reflect principles derived from research across the curriculum and for students across the range of schooling years (age five to eighteen). How the principles apply in practice is, however, dependent on the curriculum area, and the experience, prior knowledge and needs of the learners in any particular context.

If you are thinking about how to create the most interesting stimulating experiences from *The Canoe Is the People* resource, the Alton-Lee synthesis suggests that good teaching would do the following:

1. Focus on student achievement (including social outcomes) and help each student achieve high levels of learning outcomes (e.g. choose from the full range of learning objectives in the curriculum frameworks and lesson plans of *The Canoe Is the People Resource Pack*).
2. Use teaching practices that help students to work as members of caring, inclusive, and cohesive learning communities (for example, establish protocols for group work such as ensuring every group member gets to be heard, promoting and sharing responsibility, (such as group leader), focusing on problems and tasks that can be solved together (not as individual personalities), and valuing questioning and investigation).



3. Make links between school and other contexts in which students live and learn, for example, to help support learning in schools (e.g. hold class meeting with parents, encourage use of e-mail or newsletters, inform parents and community members about the upcoming study of indigenous navigation in the Pacific. Seek their involvement in collaborative sessions, negotiate opportunities for supervised outings to view artefacts, relevant historical sites, or contemporary *waka*. Share *The Canoe Is the People* CD-ROM and interactive resource with the parents and keep them informed about progress with the lessons. Invite parents to a final session where students share their learnings from studies of indigenous navigation in the Pacific. You can find more information about how to link school and home in the section *Aligning community knowledge with curriculum*.
4. Be attentive to how students learn and process information (i.e. consider the different ways in which the information in *The Canoe Is the People* might be presented in written, oral, aural, or kinaesthetic formats).
5. Provide opportunities to learn that are meaningful to the students and meet their needs as learners (e.g. relate stories and history to real events and places that are known to the students).
6. Support learning cycles by using a variety of tasks (such as small group work, independent study, role play, the Arts).
7. Ensure that curriculum goals, resources (including ICT usage), tasks, and school practices operate from the same values base and with the shared objective to support student learning about indigenous navigation in the Pacific.
8. Use teaching techniques that help your students to be independent, thoughtful learners. For example, as part of *The Canoe Is the People* lessons hold a debate into the relevance of indigenous navigation in the modern world. Ask the team members to

allocate responsibility for different aspects of the debate, research their aspect and present it to the class. Establish a judging panel from the class who must develop evaluation criteria for judging each team member's case.

9. Help your students to take part in assessment that is goal-oriented. For instance, state the lesson's objectives at the beginning of a lesson, as well as the planned assessment task. Ask the students at the end of the lesson to assess how well they have met the lesson's objectives.
10. Use teaching approaches that encourage 'cognitive stretch' and challenge for the students, and provide useful feedback to each student. Why 'feedback' is important and how it might take place has been a key finding of the Hattie meta-analysis. Read on, if you are interested in how you as a great teacher might incorporate feedback into your *Canoe Is the People* lessons.

So what practices should teachers use, to help students learn during *The Canoe Is the People* lessons? The Hattie meta-analysis provides some useful insights.

What a meta-analysis does

Meta-analysis is a statistical technique for reviewing existing quantitative research or studies on a particular issue, and combining them to get an overall result. An effect size of '1' indicates that a particular approach to teaching advanced the learning of the students in a study by one standard deviation above the mean. What this means is that a teaching practice with an effect size of '1' is very good. Anything above is well worth considerable effort to achieve. An effect size less than '1' deserves less effort, and is of marginal benefit to students' learning.

As you can see in the following table, feedback and instructional quality are two very good teaching techniques, worthy of integration into *The Canoe Is the People* lessons. You may be surprised at some of those listed at '0.38' effect size or lower, which research suggests are significantly less effective teaching methods.





Table 1: What has the greatest effect on student’s learning: Summary of Hattie’s findings (2009).

INFLUENCE	EFFECT SIZE	SOURCE OF INFLUENCE
Feedback	1.13	Teacher
Students’ prior cognitive ability	1.04	Student
Instructional quality	1.00	Teacher
Direct instruction	0.82	Teacher
Remediation/feedback	0.65	Teacher
Students’ disposition to learn	0.61	Student
Class environment	0.56	Teacher
Challenge of Goals	0.52	Teacher
Peer tutoring	0.50	Teacher
Mastery learning	0.50	Teacher
Homework	0.43	Teacher
Teacher Style	0.42	Teacher
Questioning	0.41	Teacher
Peer effects	0.38	Peers
Advance organisers	0.37	Teacher
Simulation & games	0.34	Teacher
Computer-assisted instruction	0.31	Teacher
Testing	0.30	Teacher
Instructional media	0.30	Teacher
Affective attributes of students	0.24	Student
Physical attributes of students	0.21	Student
Programmed instruction	0.18	Teacher
Audio-visual aids	0.16	Teacher
Individualisation	0.14	Teacher
Finances/money	0.12	School
Behavioural objectives	0.12	Teacher
Team teaching	0.06	Teacher
Physical attributes (e.g., class size)	0.05	School

A few things for the teacher and the learner to focus on when teaching *The Canoe Is the People*

Hattie’s analyses show that 30% of what makes a difference to students learning is in the hands of teachers. Hattie emphasises that teachers do make a difference. Based on the analyses, Hattie (2007)

suggests that an ‘expert teacher’ using *The Canoe Is the People* would do the following things well and often when helping their students to learn:

- Provide clear learning intentions
- Provide challenging success criteria





- Teach for a range of learning strategies
- Know when students are not progressing
- Provide feedback
- Visibly learn themselves

In turn, active learners in *The Canoe Is the People* lessons will:

- Understand learning intentions
- Are challenged by success criteria
- Develop a range of learning strategies
- Know when they are not progressing
- Seek feedback
- Visibly teach themselves

But the teaching approach that will have the highest effect size when teaching *The Canoe Is the People* will be feedback. Feedback from teachers to students has almost three times the average effect size. This is an essential, but also diverse teaching approach:

... the most powerful single moderator that enhances achievement is feedback. The most simple prescription for improving education must be 'dollops of feedback'. The effect-sizes for reinforcement is 1.13, remediation and feedback .65, mastery learning (which is based on feedback) .50; more specifically, homework with feedback is much more effective than homework without feedback, and recent reviews point to the power of feedback as a discriminator between more and less effective uses of computers in classrooms. This does not mean using many tests and providing over-prescriptive directions, it means providing information how and why the child understands and misunderstands, and what directions the student must take to improve.

(Hattie, 1992:4)

While as teachers we may think that feedback is simply about the conversation a teacher has with the student, Hattie's analysis shows that the priority is to maximise feedback to the teacher. Including feedback in *The Canoe Is the People* lessons will help the you as the teacher to know:

- Whether your teaching methods have been successful or not

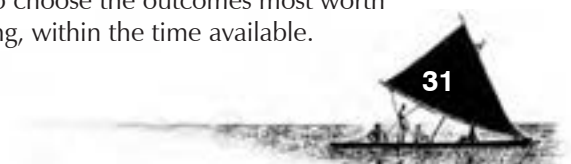
- Whether your learning intentions are worthwhile and challenging
- Whether your students are attaining their desired success criteria
- Which students have learnt or not learnt
- Where you can capitalize on student strengths and minimize gaps
- Where students are on the learning ladder
- Whether you as the teacher and your student(s) have a shared conception of progress
- What is optimal for you to teach next

Hattie (2007) proposed five key characteristics that should compromise quality, highly effective feedback: provide correct feedback; about previous attempts; related to more difficult goals; that does not discourage; or threaten the learner's self-esteem. High quality feedback then, between the teacher and student is a dynamic, learner- and learning-centred process that helps answer the learner's questions about: Where am I going? How am I going? Where to next?

Conclusion

Teaching lessons from *The Canoe Is the People* is complex and creative. Every day, you will be working with groups of students from different backgrounds and cultures. If you are an expert teacher you will focus on the needs of individual students and make sure that the others in the class continue to be engaged in their learning. Effective teaching in *The Canoe Is the People* lessons is based on you continually asking and answering these questions in relation to students' learning:

- **Where are my students at now, and where do I want them to go?** You use available information to find out what is known about your students and what they need to learn about indigenous navigation in the Pacific. You then use this information, your knowledge of what the community expects, and curricula goals to choose the outcomes most worth pursuing, within the time available.





- **What might I try?** You pull together all the evidence you have from formal and informal research (from your own practice and the experience of colleagues) to design and carry out a course of action based on the outcomes.
- **What happened for my students as a result?** You look at the impact of your teaching on the students' learning about indigenous navigation in the Pacific, measured against the outcomes. You think about what you might need to do differently, if necessary.

How do students learn best?

TEACHERS NEED TO:	STUDENTS NEED TO:
Create a supportive learning environment for all students.	Accept one another and form positive relationships with students and teachers.
Deliver effective instruction based needs and feedback.	Individual learning goals and monitor their on the student help to set progress.
Encourage reflective thought action.	Stand back from the information or ideas and action. that they have engaged with, think about these objectively and translate thought into action.
Enhance the relevance of new learning.	Understand what they are learning, why they of are it, and how they will be able to use their new learning.
Facilitate shared learning (including that of the teacher-as-learner).	Take part in shared activities and conversations with other people, including family members and people in the wider community.
Make connections.	Integrate new learning with what they already understand.
Provide enough opportunities to (including through direct teaching).	Have enough time and opportunity to engage with, learn practise, and transfer new learning.

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HOW TEACHERS CAN LINK COMMUNITY KNOWLEDGE WITH THE CURRICULUM

One of the areas identified as being crucial to achieving the long-term goals of education across the Pacific is increased effective communication between teachers and Pacific families and communities. This section provides advice on how teachers might align community knowledge with the curriculum in *The Canoe Is the People* educational resource. We begin with some general principles before looking at how to link community and curriculum.

Some general principles

IT IS IMPORTANT TO THINK CAREFULLY ABOUT THE PEOPLE OF THE PACIFIC

Pacific peoples, families and communities are not a homogeneous group. There are inter- and intra-ethnic variations in the cultures of the peoples from the different Pacific Nations. Pacific statistical data and research needs to be disaggregated into ethnic specific and intra-ethnic specificities. This means there is no generic 'Pacific community' but rather peoples of the Pacific who align themselves variously, and at different times, along ethnic, geographic, church, family, school, age/gender-based, youth/elders, occupational lines, or a mix of these. Therefore, it is important that these various contexts of 'Pacific communities' are clearly defined and demarcated when developing curriculum that is relevant and responsive to local populations.

IT IS IMPORTANT TO THINK CAREFULLY ABOUT THE ROLE OF CURRICULUM IN THE PACIFIC

The role of curriculum in the Pacific has at least two important purposes. In the first instance it is to identify and promote Pacific nation worldviews, which should begin by identifying Pacific nation values, and the way in which Pacific nation societies create meaning, structure and construct reality. Secondly, and in a complementary way, the purpose of curriculum in the Pacific is to claim, reclaim, and acclaim Pacific nation knowledges and values for the peoples of Pacific nations; in ways that help meet indigenous aspirations and needs – both local and international. In this way, *The Canoe Is the People* curriculum is enabling and empowering, educative and practical, holistic and specific, responsive and inclusive to changing Pacific contexts.





IT IS IMPORTANT TO THINK AND ACT CAREFULLY IN RELATION TO THE WAYS OF THE PEOPLES OF THE PACIFIC

While it is problematic to generalise across such a diverse demographic and geographic region, some recurring themes about being from the Pacific have been documented. Teachers can align curriculum with community knowledge by integrating features of the 'Pacific Way' (Crocombe, 1975) when seeking community knowledge about indigenous navigation, and when teaching. General features of the 'Pacific Way', when adapted to teacher-community interaction would include:

- talking things over rather than taking rigid stands,
- being prepared to negotiate, being flexible,
- adaptation and compromise,
- oratory and verbal negotiation in ways that complement deep traditional roots in Pacific cultures. Therefore the Pacific way can be spoken rather than written,
- connecting with kinship networks, which can be very wide allowing literally thousands of people to claim kinship or affinity,
- demonstrating universal Pacific notions of generosity with time, labour and property,
- working with Pacific perceptions of 'time', leisure, dress, food, dancing,
- respecting the inseparable dynamics of church and culture, and indigenisation of Christianity.

More specifically, as Anae et al (2001) have suggested it is generally felt that there may exist some common Pacific values such as:

- respect
- reciprocity
- communalism
- collective responsibility
- gerontocracy
- humility
- love
- service
- spirituality

However it should be recognised that these values may be practised differently amongst the different Pacific groups, as well as within these groups.





ALIGNING COMMUNITY KNOWLEDGE WITH *THE CANOE IS THE PEOPLE* CURRICULUM THROUGH COMMUNITY-TEACHER PARTNERSHIPS

Effective partnerships between teachers and their communities can help lift student achievement and learning outcomes from *The Canoe Is the People*. When based on principles of cultural inclusion and partnership in schools, community-teacher partnerships can lead to the development of curriculum directly linked to better learning experiences and outcomes:

'Positive synergies between the home and school environments is an area where schools can make a difference. Therefore it is important that schools work with parents in order to facilitate their interaction with their children and their schools in ways that may enhance their children's learning.'
(PISA (Programme for International Student Assessment) 2000).

If you are interested in using Community-Teacher Partnerships as part of your teaching with *The Canoe Is the People* you could anticipate the following kinds of outcomes:

- reinforcement of the role of parents, families and communities as the greatest influences on children's learning and development, essential to their success at school;
- endorsement of what families and teachers are already doing for children's learning;
- creating ways for families and teachers to work together to make an even greater impact on student's learning, including cultural identity, history, literacy and languages development;
- increasing parents' and families' understanding of practical ways of helping children learn;
- increasing the integration of community knowledge into curriculum design and delivery, including inviting community members to be speakers, interviewed, reviewers of student assignments about indigenous navigation in the Pacific;
- establishing a caring, working partnership between teachers and the community.

Your community-teacher partnership could take many forms. These might include: informal and regular networking between community and yourself as the teacher, a series of workshops aimed at increasing understanding of the importance of teacher-home linkages for studying indigenous navigation in the Pacific, ways in which community knowledge, waiata, dances, artefacts about navigation and canoe building can be so important for children's learning, new technologies being used to help children learn (e.g. *The Canoe Is the People*





CD-ROM and website, web-based learning communities), regular school-community meetings in which performances by children and upcoming curriculum themes are shared, web-based communications between the teacher and community, sharing student work and current study themes; and exchanging ways in which parents and communities might help with children's learning about indigenous navigation in the Pacific.

You may already feel well connected to your community and have these links as part of your personal and professional practices. Our hope is that you will continue to look for ways to use and grow these links when leading lessons from *The Canoe Is the People*.

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TEACHING & LEARNING METHODS IN THIS RESOURCE

The lesson plans in this resource encourage students to be actively involved with their learning and to take part in group and cooperative learning. The following list of possible learning activities describes methods used in the lesson plans.

Exposition/short lectures

Although most of the approaches to learning recommended by this Teacher's Manual are learner centered and cooperative, the new, unfamiliar and sometimes technical content will at times require direct input and explanation by the teacher. It is suggested that these micro lectures are short, 10-15 mins, and come at the beginning and end of a class or when the need arrives and that good use is made of questions and answers.

Questioning

Almost every lesson plan includes questioning. Good, clear, well focused questions are a very good way of establishing what learners already know and where the gaps in their knowledge are.

Below are some guidelines to help you to ask effective questions

- Encourage your students to ask questions. Tell them that we learn from asking good questions
- Always use simple, easy to understand language, and only ask one question at a time
- Make sure that the questions are consistent with the lesson topic and objectives
- Vary the degree of difficulty of the questions. Make some easy, especially at the start of the class and some more difficult especially at the end. This will make your learners think about and process the answers
- Try to ensure that most of the questions can not be answered with only one word or 'Yes' or 'No'
- Make sure that all class members have a chance to answer, don't direct all of your questions to the same learners.
- Give your students time to think about the answer to the question, do not be afraid of a few seconds silence, ask the question again and if necessary rephrase and repeat it.
- Listen carefully to the answer, ask if anyone else in the class would like to add to the answer.





- If you are asked a question that you do not know the answer to, just say, 'I don't know, how we can find out?'. Do not give an inaccurate answer. You are not an expert on Non Instrument Navigation.

Group work

Small group work is an excellent way of actively involving students in their learning and many of the learning objectives can be achieved by students working on projects together in small groups, but the learning process has to be well planned and well managed.

- Keep the groups small, ideally no more than 3 or 4 in a group
- Make sure that the groups know what they have to do and how much time they have to do it
- Monitor and supervise the groups closely to ensure that all members are engaged with and participate fully in the task
- Try to mix the groups up so that there are boys and girls and mixed ability levels. The more able will learn by explaining to their colleagues.
- Get the group to evaluate their performance. Did they achieve their objectives? How well did the group work together? Was the quality of their work good? Could it have been improved? How could it have been improved?

Guest speakers

Guest speakers are a rich source of information, especially for this subject. Involving people who have specialist knowledge about non instrument navigation, especially community elders, is an excellent way of ensuring that their knowledge is recognized, valued and passed on. However, you will need to make the time and effort to find out who these people are and to contact them well in advance. The speaker and the class must be well prepared in order to ensure a successful class.

- Make sure that you give the speaker enough notice and that the speaker knows exactly why they are being asked to talk to your class and what you would like them to talk about. If possible you should spend some time with them before the class explaining what you have already covered and how their input fits in.
- Prepare your students by telling them about the visit and helping them to prepare some relevant questions





Research projects

Encourage your students to carry out their own research into the subject area, as individuals or in small groups. Your more able students may particularly enjoy doing their own research and have their own ideas about how their research could be extended, encourage them to do this, it will help them to learn more from the activity. This research may involve them interviewing members of their family and community.

- The research will need to be directed by the teacher, so make sure that the students have written guidelines about how to conduct the research and that they write a research plan.
- Ensure that you discuss the research plan with your students and that you are aware of and approve all research activities
- Ensure that you give the students guidance as to how to write a research report
- Encourage them to reflect and evaluate their research and to identify how it could be improved.

Class trips

Taking your class on a trip or visit to a place or site of interest can be a stimulating and exciting experience for students. But, it needs careful planning in order to ensure that it is conducted safely and that it is a learning activity and not just a day off school or college.

- If you are unfamiliar with the site yourself, make sure that you visit it ahead of time to check location, safety and relevance and ensure that you obtain any necessary permission
- See if an outside speaker who is more knowledgeable than you about the site could join you there
- Make sure that the students have a note book with them to record their learning and observations
- Have a follow up discussion as soon as possible in the class room about the trip and what was learnt from it
- Ensure that each learner has a written record of the field trip and what was learnt from it.

Debates

Debates can be informal or formal and are an excellent way of developing communication and critical thinking skills.

- Randomly assign students to one side of the debate
- Give some time for students to think about their positions and what they are going to argue
- Give each side the same amount of time to put forward their case and to offer a rebuttal





- Finish the debate by taking a poll of the class
- Ask the class what they thought were the most convincing arguments and why?

Ethnomathematics

The study of indigenous navigation of the Pacific involves the use of ethnomathematics and also ethnoscience.

First referred to in 1977, ethnomathematics is the study of the relationship between mathematics and culture. It refers to a broad cluster of ideas ranging from distinct numerical and mathematical systems to multicultural mathematics education. Ethnomathematics aims to help understand and appreciate links between culture and mathematics. *The Canoe Is the People* has many examples of ethnomathematics – from both the Western world (e.g. the size of an angle, the names for numbers, counting systems) and the Pacific nation worlds (the charting of wind and currents on stick charts, number groupings, addition, subtraction). A key principle is that mathematics systems of different cultures have inherent logic and importance.

As students work through the learning activities in this resource the teacher may wish to consider the following aspects that profile the presence and relevance of ethnomathematics:

- How is maths used in western and Pacific systems to teach how to sail a boat? What are the similarities and the differences?
- Analyse the design features and community explanations of traditional canoe design and decoration.
- How do maths concepts feature in traditional stories about indigenous navigation in the Pacific?

'Ethnoscience' has a range of meanings, but for our purposes we're thinking of ethnoscience as being a culture's system of classifying knowledge. Classification might be in files, microchips, English, Samoan, Tongan, Cook Island Maori, Fijian; it might be classified in chants, on charts, in designs on rock walls, or the carvings on a boat. A key principle is that understanding of cultural knowledge is only possible when seeing the world from the perspective of that culture. Observation is insufficient. True and actual understanding is necessary. This means that in studying navigation the following elements of ethnoscience could consider:

- What is the science of canoe building, sailing and navigation from the perspective of this culture?
- How do culture and fact combine usefully to help good navigation happen?
- What are the similarities and differences, benefits and losses of western and Pacific science systems?





Glossary

Archaeology: The study of ancient living places and artifacts.

Aruruwow: A secret method from the Caroline Islands of remembering star paths.

Backsighting: Using a landmark such as an island, stone or fire as a reference point when starting out.

Ballast: Heavy weights such as rocks or sand which is placed in the hull of a boat to stop it capsizing.

Bow: The front of the canoe.

Course made good: The course that the canoe actually travels.

Currents: The movement of water in a horizontal direction. Ocean currents vary in their speed and depth and may be temporary, and caused by winds and tides, or more permanent, such as the equatorial currents.

Dead reckoning: Estimated position of the canoe.

Deep phosphorescence: Light seen in the ocean at night which is caused by glowing organisms.

Diffract: The bending of waves around obstacles in their path.

Estimate: A rough guess.

Etak system: A traditional belief from the Caroline Islands that the canoe remains stationary and that stars and islands move past it.

Dugouts: Canoes made by digging out the centre of a log using fire or an adze.

Geology: The study of study of how the planet Earth and its land and oceans were formed.

GPS: Global Positioning System: A hand held computer that uses a satellite to identify the position at sea of a boat or ship.

Heading: The direction the canoe is sailing in.

Indigenous peoples: The first people to inhabit a continent or country.

Instinctual navigation: Guiding the direction and estimating the position of a boat or canoe by using the senses of sight, smell, sound and touch.





Instrument navigation: Guiding the direction and estimating the position of a boat or ship by using mechanical equipment such as a magnetic compass.

Intellectual navigation: Guiding the direction and estimating the position of a boat or canoe by using observation, knowledge and memory.

Interrupted swells: Waves affected by reflection off and refraction around islands.

Knot: The speed at which a vessel travels at sea. 1 knot = 1.15 miles per hour.

Landfall: Arriving at the destination.

Latitude: The distance north or south of the equator measured in degrees. One degree is equal to 60 nautical miles.

Leeway: The sideways movement of a canoe caused by the wind.

Line of position: An imaginary line along which a canoe can be located based on the location of a sky or land based object.

Longitude: The distance east or west of the prime meridian, expressed in degrees or time.

Ocean swells: Waves caused by wind.

Outrigger: A side float to balance or stabilize a canoe. Can be single (on one side) or double (on both sides).

Navigation stones: Large stones used for back sighting and land fall.

Nautical mile: The standard unit for a nautical mile is 6,080 feet or 1.15 statute miles (statute mile = 5,280 feet. There are 60 nautical miles in each degree of latitude).

Non-instrument navigation: Traditional navigation which relied on observation, memory and the senses of sight, hearing, touch and smell.

Ofanuw: A Caroline Islands method of remembering star paths.

Pole chart: A mental image of a bamboo pole which lists reefs, islands and other reference points.

Pwo ceremony: A four day initiation ceremony for navigators recently reintroduced in the Caroline Islands.

Rafts: Floating Platforms made from logs tied together.

Reference course: An imaginary line heading generally in the direction of the navigator's destination that helps him to keep a mental track of his daily progress. It is a line to remember not a course to be sailed.





Reflection: The action of waves when they are bounced back off on an island to create a swell.

Rigging: Ropes used to raise and set sails.

Satellite: Electronic machines that orbit the Earth.

Sawei voyages: Special religious and trading voyages between the Caroline Islands.

Sea life inventories: Secret knowledge about the position of sea life such as sharks, whales and octopus.

Seaworthy: A well built canoe that is safe and reliable at sea.

Sensory navigation: Using the senses of sight, hearing, touch and smell to navigate a canoe.

Sidereal compass: The horizon points where stars rise and set.

Shunting: Changing the direction of the canoe by moving the steering oar or rudder to the front or back of the canoe.

Star compass: A mental map of the night sky held in the navigator's memory showing star positions.

Star path: A succession of stars which the bow and stern of a canoe are lined up with to steer a course.

Star pit: The clear night sky immediately below the last star to rise above the horizon.

Steering stars: See Star path.

Stern: The back of the canoe.

Stick chart: A form of ocean map made out of sticks and shells that could show islands and ocean swells.

Trade winds: Well known and relatively predictable winds with a regular annual cycle.

Tacking: Changing the direction of the canoe when sailing into the wind by changing the side of the sails.

Wayfinding: A term used to describe non instrument navigation which uses natural phenomena such as the stars, wind, ocean swells and sea life and the senses of sight, sound, smell and touch to determine direction in which to sail in order to find land.

Wind compass: The names of up to 32 wind directions known to Pacific Island Navigators and used as a secondary indicator of position.

Zenith star: A star which passes directly over the destination island.





Outrigger canoe (*camakau*) from Fiji



Source: *Icons from Te Papa: Pacific* p.38





Strand A

Beginnings and Origins





STRAND A: BEGINNINGS AND ORIGINS – CURRICULUM FRAMEWORK

Lesson		Objectives	Suggestions for curriculum entry points
Topic	Sub topic	Learners will be able to:	
1. Beginnings	1.1. Island Stories	1.1.1. Describe the origins of the Pacific Islands as told in myths and legends.	Social/Cultural Studies History
		1.1.2. Remember and tell at least one myth or legend which explains the origin of their country/island.	Social/Cultural Studies English
		1.1.3 Remember and tell at least one myth or legend which explains the origin of one other Pacific Island country.	Social/Cultural Studies English
	1.2. Archaeological Stories	1.2.1. Name and describe at least three significant archaeological sites in their country.	Social/Cultural Studies History
		1.2.2. Name and describe at least one significant archaeological site in one other Pacific Island country.	Social/Cultural Studies History English
	1.3. Traditional Seafaring Knowledge and Beliefs	1.3.1. Identify and list the core knowledge, beliefs and skills about seafaring which have traditionally been of great value in their culture and other Pacific Island countries.	Social/Cultural Studies English
2. The Origins of Pacific Island Peoples	2.1. Early Migrations	2.1.1. Identify and explain the likely origins of Pacific Island peoples.	Social/Cultural Studies History Geography
		2.1.2. Identify the likely point of origin of their ancestors.	Social/Cultural Studies History Geography
		2.1.3. List three reasons for early migration in the Pacific.	English Social/Cultural Studies History Geography
	2.2. Pre-European Voyages	2.2.1. Identify the most likely route taken by their ancestors.	Geography History Maths/Geometry
		2.2.2. Describe the likely conditions on board the canoe.	English
		2.2.3 Describe the difference between intentional and drift voyages.	English Geography History





STRAND A: BEGINNINGS AND ORIGINS – MARKING SCHEME

LEARNING OBJECTIVES	FEEDBACK ON LEARNING DEMONSTRATED	ACHIEVEMENT
1.1.1. Describe the origins of the Pacific Islands as told in myths and legends.	<ul style="list-style-type: none"> • Task undertaken • Students challenged by the task • Student performance • Next steps 	
1.1.2. Remember and tell at least one myth or legend which explains the origin of their country/island.		
1.1.3. Remember and tell at least one myth or legend which explains the origin of one other Pacific Island country.		
1.2.1. Name and describe at least three significant archaeological sites in their country.		
1.2.2. Name and describe at least one significant archaeological site in one other Pacific Island country.		
1.3.1. Identify and list the core knowledge, beliefs and skills about seafaring which have traditionally been of great value in their culture and other Pacific Island countries.		





LEARNING OBJECTIVES	FEEDBACK ON LEARNING DEMONSTRATED	ACHIEVEMENT
2.1.1. Identify and explain the likely origins of Pacific Island peoples.		
2.1.2. Identify the likely point of origin of their ancestors.		
2.1.3. List three reasons for early migration in the Pacific.		
2.2.1. Identify the most likely route taken by their ancestors.		
2.2.2. Describe the likely conditions on board the canoe.		
2.2.3. Describe the difference between intentional and drift voyages.		



STRAND A: BEGINNINGS AND ORIGINS

Lesson 1.1. Beginnings: Island Stories	Suggestions for Curriculum Entry Points	Learning Experiences	Learning resources
<p>Objectives Learners will be able to:</p>			
<p>Understand the reasons for studying the subject area and Strand A.</p>		<p>Verbal explanation Questions & answers</p>	<p>Learner's Text (pp.7–10) Interactive resource (The Canoe Is the People CD-ROM or website): Beginnings</p>
<p>1.1.1. Describe the origins of the Pacific Islands as told in myths and legends.</p>	<p>Social/Cultural Studies History</p>	<p>Verbal exposition: telling of myths and legends which explain the origins of the Pacific Islands Questions & answers</p>	<p>Learner's Text (pp.10–12) Interactive resource: Beginnings – Islander Accounts</p>
<p>1.1.2. Remember and tell at least one myth or legend which explains the origin of their country/island.</p>	<p>Social/Cultural Studies English</p>	<p>Verbal exposition: two local myths and legends Questions & answers Group work: read and discuss examples of local myths and legends, retell summary of one to whole class Individual work: Assignment A1.1: write a short summary on a local myth or legend</p>	<p>Interactive resource: Beginnings – Islander Accounts Handout prepared by the teacher Myths and legends written on board Blackline Master Assignment A1.1</p>
<p>1.1.3. Remember and tell at least one myth or legend which explains the origin of one other Pacific Island country.</p>	<p>Social/Cultural Studies English</p>	<p>Verbal exposition: myths and legends from three different countries Questions & answers</p>	<p>Learner's Text (pp.10–12) Interactive resource: Beginnings – Islander Accounts</p>
<p>Recap and summary of sub topic.</p>	<p>Review and consolidate learning</p>	<p>Summary of content Questions & answers</p>	

Features of this lesson

Purpose, supports and challenges in the lesson

This lesson aims to grow awareness of traditional stories about historical and cultural beginnings.

Students are supported to value their ancestry, and story-telling.

Some students may find there are differences in stories about the same things & will have to think about 'truth'. A further challenge is over western ways of thinking of origins stories as 'legends' or 'myths'.

Introducing the lesson

Links to students' prior knowledge and vocabulary

Help the students to reach further & further back into their history. Ask them what their earliest memory is. If we were to tell a story about the earliest times for this island, what do you think would be in that story? Use this time to introduce the word 'origins' (and 'original').

There are traditional stories that tell us about the origins of our islands here in the Pacific. Use this time to introduce the words 'taonga' (Maori. Meaning: 'treasure'), 'indigenous', 'migration', 'pre-historic', 'ancestors' and 'legends'.

Can you tell me a story about the very earliest times, a story about our origins?

Discussion

Sample questions to promote critical thinking and link to the purpose

What questions do you think students your age need to be able to answer about the origins of the Pacific Islands?

What was life like in the early days in the Pacific?

What do you think was the most likely route, canoe and conditions experienced by ancestors crossing the Pacific? Why?

Why are there different perspectives on life, migration, and settlement in pre-historic Pacific times? Is it important?

Teaching to help students learn

Opportunities for feedback

Ask the students to write down 'The Three Somethings': *Something new* that I learned from this lesson.

Something more I would like to know. *Something else* I would like to tell you about this lesson. Feedback is anonymous, summarised and shared with the students at the next lesson. If it is about teaching techniques ('Sometimes you talk & write on the blackboard at the same time. I can't hear you') then let the students know what will be done to improve matters. If it is about content, then share solutions to these requests also.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Connecting with the community

After seeking support from your Principal meet with community leaders to brief them about the purposes of this study and this lesson. Seek their advice on community knowledge that can be linked with this part of the school curriculum.

Where to next?

Progression levels

Generate a range of solutions to help groups live together while sailing for a long period, migrating across the Pacific.

Collect information from a range of sources about life in pre-European Pacific.

Further resources

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online)



STRAND A: BEGINNINGS AND ORIGINS – LESSON 1.1. BEGINNINGS: ISLAND STORIES

ASSIGNMENT A1.1

Write a short summary of one well-known myth or legend that explains the origins of your country and your ancestors.

Who is the main character in the story?

Why are they important to your country's history and culture?





STRAND A: BEGINNINGS AND ORIGINS

Lesson 1.2. Beginnings: Archaeological Stories			
Objectives <i>Learners will be able to:</i>	Suggestions for Curriculum Entry Points	Learning Experiences	Learning resources
Recall and review learning in previous class.		Exposition Questions & answers	
1.2.1. Name and describe at least three significant archaeological sites in their country.	Social/Cultural Studies History	Brainstorming of known archaeological sites Guest speaker from Visitors' Bureau or tour company Creation of a classroom display using brochures and leaflets Group work: Assignment A1.2: produce a poster about an archaeological site in own country which has a connection with seafaring (ex where canoes were built or where voyages started) Field trip to an archaeological site Questions & answers	Books and articles on local archaeology Tourist information booklets, brochures and posters Guest Speaker Blackline Master Assignment A1.2
1.2.2. Name and describe at least one significant archaeological site in one other Pacific Island country.	Social/Cultural Studies History English	Brainstorming Exposition Individual work: write a 100 word description of one significant archaeological site, explaining the cultural significance for the country chosen Questions & answers	Books and articles on Pacific archaeology Tourist information booklets, brochures and posters if available
Recap and summary of sub topic.	Review and consolidate learning	Summary of content Questions & answers	

Study Guide

STRAND A: BEGINNINGS AND ORIGINS – LESSON 1.2. BEGINNINGS: ARCHAEOLOGICAL STORIES

Features of this lesson

Purpose, supports and challenges in the lesson

The purpose of this lesson is to introduce students to archaeological evidence and sites of historical and cultural significance in relation to indigenous navigation in the Pacific.

This is an opportunity to help students appreciate their local environment.

Intellectual and indigenous property, respect for others, and respect for culture may be challenging matters for students.

Introducing the lesson

Links to students' prior knowledge and vocabulary

Vocabulary: archaeology, site.

Introduce the term 'archaeology' and ask the students write down five things to come to mind about 'archaeology'. Collect these lists. Ask the students to identify known archaeological sites. Distinguish between private and public access; sacred and common knowledge, places and items. Listen to a speaker about local archaeology. Announce the upcoming visit to an archaeological site. Invite the students to prepare a list of what they expect to see and do; how they should behave when there; what will be needed to take.

Discussion

Sample questions to promote critical thinking and link to the purpose

How do you think archaeologists should behave around ancient materials and places? Why?

How should we behave around ancient materials and places?

How can archaeology help us understand indigenous navigation in the Pacific?

Connecting with the community

After seeking support from your Principal meet with community leaders to brief them about the purposes of this study and this lesson. Seek their advice on community knowledge that can be linked with this lesson. Seek community member assistance with the site visit – to support learning and cultural sensitivity.

See also the section *How teachers can link community knowledge with the classroom*

Where to next?

Progression levels

Process information, using appropriate conventions (community and western) and establishing the relevance and accuracy of the information.

Further resources

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online)

Teaching to help students learn

Opportunities for feedback

Having set aside the original lists of five things that come to mind about archaeology, at the end of this lesson, ask the students to repeat this task, Return the original responses to the students. Ask them to comment on differences, if any, between the first and second lists.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)



STRAND A: BEGINNINGS AND ORIGINS – LESSON 1.2. BEGINNINGS: ARCHAEOLOGICAL STORIES

ASSIGNMENT A1.2

Name of the archaeological site:

Date when it was built:

Location of the site:

Builders of the site:

Reason why it was built:

Connection of this site to seafaring and navigation:

Reason why it is important to our culture and history:

This is what it looks like:

Poster made by:





STRAND A: BEGINNINGS AND ORIGINS

Lesson 1.3. Beginnings: Traditional Seafaring Knowledge and Beliefs

Objectives

Learners will be able to:

Recall and review learning in previous class.

1.3.1. Identify and list the core knowledge, beliefs and skills about seafaring which have traditionally been of great value in their culture and in other Pacific Island countries.

Suggestions for Curriculum Entry Points

Social/Cultural Studies
English

Learning Experiences

Exposition
Question and answers

Invitation of guest speaker with appropriate knowledge
Recap and summary of guest speaker's talk: list as many examples of your country's/island's traditional knowledge, beliefs and skills as you can think of
Question & answers
Group work: production of a poster for classroom display providing visual information about either the core knowledge, beliefs or skills about seafaring in your culture
Homework: write a 150 word summary of the talk

Learning Resources

Guest speaker

Recap and summary of sub topic.

Review and consolidate learning

Summary of content
Questions & answers
Display posters

Study Guide

STRAND A: BEGINNINGS AND ORIGINS – LESSON 1.3. BEINNINGS: TRADITIONAL SEAFARING KNOWLEDGE & BELIEFS

Features of this lesson

Purpose, supports and challenges in the lesson

Through this lesson students will have increased awareness of and value for local and regional seafaring culture and traditions.

This lesson may help develop pride in one's culture, heritage, creative arts and languages; and commitment to their continuation. There may be some hesitation to ask questions however of visiting elders, as a sign of respect.

Introducing the lesson

Links to students' prior knowledge and vocabulary

Vocabulary: heritage, culture, seafaring, traditions, regional, beliefs, knowledge, skills.

Tell a story from your childhood that illustrates how and what you have learned about seafaring – beliefs, skills, traditions. Ask the children to share stories where they have learned a cultural and/ or practical skill associated with seafaring. After preparing the students for respectful behaviour and reciprocity, welcome a guest speaker on the topic of core knowledge, beliefs and skills for seafaring in the Pacific. Arrange for a student to thank the speaker.

Discussion

Sample questions to promote critical thinking and link to the purpose

What are the three most important skills for you to have to sail in traditional times?

What traditions remain important to today for Pacific seafaring?

How have local knowledge, skill and belief traditionally been of great value in your own culture and in other Pacific nations?

Teaching to help students learn

Opportunities for feedback

After the class has identified essential skills, beliefs and knowledge, create an inventory of these. Ask the students to rate themselves against each of the items on the inventory, using a scale of 1-5 (1 = novice, 5 = expert). Ask them then to record what they could do to either improve their self-rating (if less than 3) or maintain it.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Connecting with the community

After seeking support from your Principal meet with community leaders to brief them about the purposes of this study and this lesson. Seek their advice on community knowledge that can be linked with this part of the school curriculum.

See also the section *How teachers can link community knowledge with the classroom*

Where to next?

Progression levels

Generate a range of solutions to help groups live together while sailing for a long period, migrating across the Pacific.

Collect information from a range of sources about life in pre-historic Pacific.

Further resources

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).

STRAND A: BEGINNINGS AND ORIGINS

Lesson 2.1. The Origins of Pacific Island Peoples: Early Migrations			
Objectives	Suggestions for Curriculum Entry Points	Learning experiences	Learning resources
<p><i>Learners will be able to:</i></p> <p>Recall and review learning in previous class.</p>		Exposition Questions & answers	
<p>2.1.1. Identify and explain the likely origins of Pacific Island peoples.</p>	<p>Social/Cultural Studies History Geography</p>	Exposition Explanation and discussion of a map Questions & answers	<p><i>Learner's Text (pp.12–13)</i> <i>Map</i> <i>Interactive resource (The Canoe Is the People CD-ROM or website):</i> <i>Beginnings – Archaeological Account</i></p>
<p>2.1.2. Identify the likely point of origin of their ancestors.</p>	<p>Social/Cultural Studies History Geography</p>	Pair work: Assignment A2.1: work on a map to show the origin of local indigenous peoples	<p><i>Learner's Text (pp.12–13)</i> <i>Interactive resource: Beginnings – Archaeological Account</i> <i>Blackline Master Assignment A2.1</i></p>
<p>2.1.3. List three reasons for early migration in the Pacific.</p>	<p>English Social/Cultural Studies History Geography</p>	Exposition Questions & answers Individual work: write a 250 word summary of the reasons for early migration in the Pacific	<p><i>Learner's Text (pp.14–15)</i> <i>Interactive resource: Beginnings – Archaeological Account</i></p>
<p>Recap and summary of sub topic.</p>	<p>Review and consolidate learning.</p>	Summary of content Questions & answers	

Study Guide

STRAND A: BEGINNINGS AND ORIGINS – LESSON 2.1. THE ORIGINS OF PACIFIC ISLAND PEOPLES: EARLY MIGRATIONS

Features of this lesson

Purpose, supports and challenges in the lesson

This lesson aims to help students to describe migration, settlement, life and interaction in various areas of the Pacific overtime. Students will develop regional map-reading skills. They may also be introduced to accounts of historical encounters between nations and within nations, resulting in conquest.

Introducing the lesson

Links to students' prior knowledge and vocabulary

Vocabulary: migrations, settlement, voyage, ancestors, canoe.

Using the interactive resource (CD-ROM or online) introduce the students to stories about the origins of Pacific Island peoples, and the journeys across the Pacific by ancestors. Help the students to imagine the length of the journeys, conditions, challenges, courage and exceptional skill to undertake such voyages. Some in the class will map the likely journeys of the ancestors; some will prepare a short poster and text describing the origins of their ancestors. A third group will investigate and prepare information about the likely life experiences while on the canoe and after landing.

Discussion

Sample questions to promote critical thinking and link to the purpose

(At the beginning of the lesson, before specific content)
Can you list three reasons for these early migrations?
Can you describe the type possibly used?

Based on what you know and have been told through traditions and other sources, where is the most likely place of origin for Pacific peoples?

What type of canoe and voyaging techniques do you think were used for migrations?

Teaching to help students learn

Opportunities for feedback

Ask the students to talk with family members about the origins of their own ancestors. The student records these accounts and shares them with other students. In addition, the student prepares a reflective statement in which they describe what it meant to them to be able to find out something more about their origins. In sharing times note level of understanding and use of social studies concepts, maths skills, English and science in relation to early migrations.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Connecting with the community

Using the interactive resource, online resources, and other community information sources, gather information and prepare maps which show the likely route of travel. Share these with community members and peers.

See also the section *How teachers can link community knowledge with the classroom*.

Where to next?

Progression levels

Communicate findings about migration, settlement and interaction in Pacific areas, from a range of sources, using community and scholarly conventions.

Further resources

Howe, K. (2007). *Vaka Moana: Voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Salesa, D. (2004). *Discovering Our Ancestors' Hawaiki*. Wellington, New Zealand: Learning Media Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).

ASSIGNMENT A2.1



- Identify and mark with an X the most likely point of origin for the indigenous people who live in your country. Indigenous people are the first people who found and settled a country or an island.
- Mark on the map the most likely route that they would have taken to get to your country.
- On the map, mark two other countries that your ancestors may also have reached.

What is the name of the point of origin of the indigenous people?	
Why do you think that they came from this place? What is the evidence for this belief?	
Give three reasons why your ancestors may have left this place.	1. 2. 3.
Using the scale of the map, estimate approximately how far your ancestors travelled to get to your island.	
Estimate how long it would have taken them to get to your island.	
How far away from your country are the places they may also have reached?	



STRAND A: BEGINNINGS AND ORIGINS

Lesson 2.2. The Origins of Pacific Island Peoples: Pre-European Voyages

Objectives <i>Learners will be able to:</i>	Suggestions for Curriculum Entry Points	Learning experiences	Learning resources
Recall and review learning in previous class.		Exposition Questions & answers	
2.2.1. Identify the most likely route taken by their ancestors.	Geography History Maths/Geometry (<i>calculating distance</i>)	Whole class: exposition, explanation and demonstration Questions & answers Complete Assignment A2.1	Learner's Text (pp.12–13) Interactive resource (The Canoe Is the People CD-ROM or website): Beginnings – Archaeological Account Map Blackline Master Assignment A2.1
2.2.2. Describe the likely conditions on board the canoe.	English	Group work: brainstorming on conditions aboard a voyaging canoe Individual work: Assignment A2.2: write a description of one day on the canoe Organize a field trip to see a traditional voyaging canoe and talk to crew members	Blackline Master Assignment A2.2 Local navigator or person with knowledge of traditional navigation Field Trip
2.2.3. Describe the difference between intentional and drift voyages.	English Geography History	Exposition and explanation Questions & answers Group work: Assignment A2.3: prepare and read aloud a paper which explains the difference between intentional and drift voyaging	Learner's Text (pp.14–15) Blackline Master Assignment A2.3
Recap and summary of Strand A.	Review and consolidate learning.	Summary of content Questions & answers	

Study Guide

STRAND A: BEGINNINGS AND ORIGINS – LESSON 2.2. THE ORIGINS OF PACIFIC ISLAND PEOPLES: PRE-EUROPEAN VOYAGES

Features of this lesson

Purpose, supports and challenges in the lesson

This lesson will help students differentiate between canoe types, identify those attributes of a canoe best suited to voyaging, imagine life on board a voyaging canoe, and identify the benefits of intentional voyaging. A key challenge in this lesson is to integrate Western and traditional information sources (e.g. speed, distance, travel mode).

Introducing the lesson

Links to students' prior knowledge and vocabulary

Vocabulary: intentional, drift, estimate, calculate, speed, navigator, crew.

Ask the students to estimate the distance from one end of the classroom to the other, from one end of the school to the other, from home to school. Show the students how to estimate the voyaging distances for journeys described in the previous lesson. Define and calculate speed estimates for voyaging canoes.

Ask the students to work in groups to come up with a job description for a navigator, and crew member, based on what they believe to be the likely conditions for voyaging and the skills, knowledge and personal and cultural attributes required to undertake these roles.

Discussion

Sample questions to promote critical thinking and link to the purpose

Can you describe the features of a canoe that is built for voyaging. Compare this with a canoe for lagoon travels and local fishing.

If you could interview a crew member on a voyaging canoe, what do you think they would say happens in an average day and night?

What are the important features of intentional voyaging?

Teaching to help students learn

Opportunities for feedback

Ask the students to picture themselves in a time where their ancestors lived, and to imagine they are about to take a long voyage to migrate to another island.

What five things would they as an individual take with them and why?

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Connecting with the community

Where possible, visit places with different canoe types and with speakers to describe their uses, limitations and strengths.

See also the section *How teachers can link community knowledge with the classroom*.

Where to next?

Progression levels

Generate a range of possible solutions to problems that could arise for groups sailing for a long period migrating across the Pacific.

Make a choice about a preferred action and justify that choice.

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Salesa, D. (2004). *Hawaiki-nui*. Wellington, New Zealand: Learning Media Limited

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).



**STRAND A: BEGINNINGS AND ORIGINS – LESSON 2.2. THE ORIGINS OF PACIFIC ISLAND PEOPLES:
PRE-EUROPEAN VOYAGES**

ASSIGNEMENT A2.2

Imagine you were a member of the crew on board a canoe, travelling to your island

- **Describe in detail one day (24 hours) on the canoe. Describe what you can see inside and outside the canoe. How do you spend your time? What do the other crew members do?**

- **What is the role of the navigator and what does he do?**





FURTHER ACTIVITIES

STRAND A: BEGINNING AND ORIGINS

Topic	Sub topic	Further learning activities
1. Beginnings and Origins	1.1. Island Stories	<p>Write a short story to describe life in Pre- European Pacific. In groups of four, write and perform a short drama based on a myth or legend. In pairs, rewrite and retell a myth or legend in their own words to the class.</p> <p>As a whole class, use leaflets, brochures and photographs to make a classroom display.</p> <p>In groups of four, produce a poster for display in the classroom.</p>
	1.2. Archaeological Stories	<p>As a whole class, use leaflets, brochures and photographs to make a classroom display.</p> <p>In groups of four, produce a poster for display in the classroom.</p>
	1.3. Traditional Seafaring Knowledge and Beliefs	<p>Invite Guest Speaker</p> <p>In groups of four, produce a classroom display.</p>
2. The Origins of Pacific Island Peoples	2.1. Early Migrations	<p>Identify places of origin on a map.</p>
	2.2. Pre-European Voyages	<p>Write a short text to explain origins.</p> <p>Write a short text to explain the origins of their own ancestors.</p> <p>Following input from their teacher write a list</p> <p>Describe and plot on a map the likely route taken by their ancestors.</p> <p>Label an example of the most likely canoe used to undertake these voyages. Identify places of origin on a map.</p> <p>Write a short text to explain origins.</p> <p>Write a short text to explain the origins of their own ancestors.</p> <p>Following input from their teacher write a list.</p>





Topic	Sub topic	Further learning activities
		<p>Describe and plot on a map the likely route taken by their ancestors.</p> <p>Label an example of the most likely canoe used to undertake these voyages.</p> <p>Write a diary page entry for a member of the crew.</p> <p>Listen, question & answer. In groups of 3, prepare and take turns to read aloud a paper which takes a positive stance on intentional voyaging.</p>



The Canoe Is the People: Indigenous Navigation in the Pacific

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STRAND A: BEGINNINGS AND ORIGINS

FOCUS AREA	STRENGTHS OF THE RESOURCE	SUGGESTIONS FOR IMPROVING THE RESOURCE
Teacher's Manual: Aims and objectives, curriculum framework		
Teacher's Manual: Curriculum support materials		
Teacher's Manual: Lesson plans		
Teacher's Manual: Marking schemes		
Teacher's Manual: Poster		
Learner's Text pp.10–15: Content & learning activities		
Any other comments:		





Strand B Canoe Building and Sailing

Canoe figure from the Marquesas Islands



Source: *Icons from Te Papa: Pacific* p.40





STRAND B: CANOE BUILDING AND SAILING – CURRICULUM FRAMEWORK

Lesson		Objectives	Suggestions for curriculum entry points
Topic	Sub topic	<i>Learners will be able to:</i>	
1. Boats and Canoes	1.1 Types	1.1.1. Describe a simple raft construction.	English Industrial Arts Maths
		1.1.2. Describe a simple dugout construction.	English Industrial Arts
		1.1.3. Describe single and double outrigger canoe construction.	English Industrial Arts
	1.2. Pacific Island Canoes	1.2.1. Recognise and describe at least one type of voyaging canoe from their country/island.	Social/Cultural Studies English
		1.2.2. Recognise and describe a voyaging canoe from at least one other Pacific Island country.	Social/Cultural Studies English
		1.2.3. Understand the concepts of speed, velocity, time and weight.	Maths
2. Building a Canoe	2.1. Canoe Materials and Parts	2.1.1. Describe the materials and construction methods of different types of hulls.	Social/Cultural Studies English
		2.1.2. Describe the materials and construction methods used in sail making.	Social/Cultural Studies Industrial Arts
		2.1.3. Describe the materials and construction methods used in rope making.	Social/Cultural Studies Industrial Arts
	2.2. Preparations for Canoe Building	2.2.1. Describe the practical and ritual preparations and procedures for the construction of a canoe.	Social/Cultural Studies English
3. Sailing a Canoe	3.1. Tacking and Shunting	3.1.1. Describe the reasons and procedures for tacking.	Maths Science
		3.1.2. Describe the reasons and procedures for shunting.	Science
	3.2. Balance	3.2.1. Explain the importance of balancing a canoe in order to equalise forces.	Science
	3.3. Canoes of the Pacific	3.3.1. Describe the main differences in the design, construction and sailing of Pacific Island canoes and Western ship design.	Social/Cultural Studies English





STRAND B: CANOE BUILDING AND SAILING – MARKING SCHEME

LEARNING OBJECTIVES	FEEDBACK ON LEARNING DEMONSTRATED • Task undertaken • Students challenged by the task • Student performance • Next steps	ACHIEVEMENT
1.1.1. Describe a simple raft construction.		
1.1.2. Describe a simple dugout construction.		
1.1.3. Describe single and double outrigger canoe construction.		
1.2.1. Recognise and describe at least one type of voyaging canoe from their country/island.		
1.2.2. Recognise and describe a voyaging canoe from at least one other Pacific Island country.		
1.2.3. Understand the concepts of speed, velocity, time and weight.		
2.1.1. Describe the materials and construction methods of different types of hulls.		
2.2.2. Describe the materials and construction methods used in sail making.		
2.1.3. Describe the materials and construction methods used in rope making.		





STRAND B: CANOE BUILDING AND SAILING – MARKING SCHEME

LEARNING OBJECTIVES	FEEDBACK ON LEARNING DEMONSTRATED	ACHIEVEMENT
2.2.1. Describe the practical and ritual preparations and procedures for the construction of a canoe.		
3.1.1. Describe the reasons and procedures for tacking.		
3.1.2. Describe the reasons and procedures for shunting.		
3.2.1. Explain the importance of balancing a canoe in order to equalise forces.		
3.3.1. Describe the main differences in the design, construction and sailing of Pacific Island canoes and Western ship design.		



STRAND B: CANOE BUILDING AND SAILING

Lesson 1.1. Boats and Canoes: Types

Objectives	Suggestions for Curriculum Entry Points	Learning experiences	Learning resources
Learners will be able to:			
Understand the reasons for studying the subject area and Strand B.		Verbal explanation Questions & answers Assignment B1.1: label figure on different types of boats and canoes	Learner's Text (pp.7–9 and p.16) Interactive resource (The Canoe Is the People CD-ROM or website): Canoes and Sailing Blackline Master Assignment B1.1
1.1.1. Describe a simple raft construction	English Industrial Arts Maths (Understanding scale models)	Explanation and demonstration Classroom display: pair work: build a simple scale model of a raft	Learner's Text (pp.16–17) Interactive resource: Canoes and Sailing – Pacific Canoes Building materials brought from home
1.1.2. Describe a simple dugout construction	English Industrial Arts	Explanation and demonstration Classroom display: pair work: build a simple scale model of a dugout	Learner's Text (pp.16–17) Interactive resource: Canoes and Sailing – Pacific Canoes Building materials brought from home
1.2.3. Describe single and double outrigger canoe construction	English Industrial Arts	Explanation and demonstration Classroom display: pair work: build a simple scale model of an outrigger canoe	Learner's Text (pp.16–17) Interactive resource: Canoes and Sailing – Pacific Canoes Building materials brought from home
Recap and summary of sub topics.	Review and consolidate learning.	Summary of content Questions & answers	

Features of this lesson

Purpose, supports and challenges in the lesson

Purpose, supports and challenges in the lesson
This lesson starts off the wider study into canoe building and sailing by exploring types of canoes. Students will be able to describe construction of raft, dug out, outrigger canoe. Some students may find the process of constructing models to scale challenging. This is an opportunity to develop competencies of persistence, attention to detail and pride in efforts.

Introducing the lesson

Links to students' prior knowledge and vocabulary

Vocabulary: raft, dugout, single/double outrigger.

Determine the students' existing ideas about canoe types through mind pictures and concept drawings. Use the ideas from the Learner's Text and interactive resource of *The Canoe Is the People* (section: 'What did the first canoes look like?') for exploratory studies, leading to correctly labeled drawings of at four different types of canoes. Using building materials brought from home enable the students to build a model of each canoe type in scale to the drawings. Establish and closely monitor safety standards for making the models.

Discussion

Sample questions to promote critical thinking and link to the purpose

- What did the first canoes look like?
- What were the canoes made out of?
- How did the canoe develop and change over the last three or four thousand years?
- What do you think are the three most important features of a long distance canoe?

Teaching to help students learn

Opportunities for feedback

Several opportunities are available for feedback to help student learning:

- At the start of the lesson, gather information about students' prior knowledge about canoes
- During the information search, which students have learnt or not learnt
- While making the scale models where students are on the learning ladder
- After finishing the model canoes, what is optimal to teach next.

In this way feedback is both formative (during the lesson) and summative (by way of evaluation at the end of the lesson).

More information about expert teaching methods can be found in the section *What helps Pacific students learn (p.28)*

Connecting with the community

Meet with parents and community members prior to the start of this unit, to provide information about upcoming studies into canoe building and sailing. Seek ideas about how the community might be involved. Seek support to provide resource materials from home.

See also the section *How teachers can link community knowledge with the classroom.*

Where to next?

To move a student to the next learning step the teacher could help them focus on:

- convincing others of the relative merits of different canoe types (collect & record information, communicating findings).

The teacher could:

- encourage students to suggest and explore the merits of a variety of ways of building canoes.

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource The Canoe Is the People (CD-ROM or online).



STRAND B: CANOE BUILDING AND SAILING – LESSON 1.1. BOATS AND CANOES: TYPES

ASSIGNEMENT B1.1

- Look at the drawings in Figure 1. What kind of boat or canoe is each one? Put the correct label in the box underneath the drawing.
 - A single hull with sail?
 - A double hull outrigger canoe with sail?
 - A single hull dugout?
 - A raft?

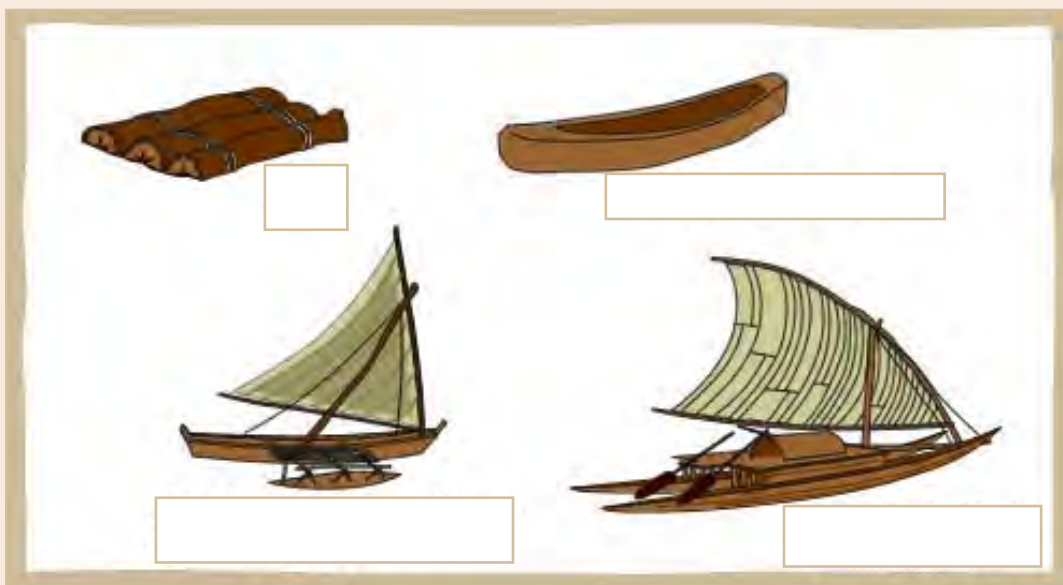


Figure 1. Types of boats and canoes





STRAND B: CANOE BUILDING AND SAILING

Lesson 1.2. Boats and Canoes: Pacific Island Canoes

Objectives

Learners will be able to:

Recall and review learning in previous class.

1.2.1. Recognise and describe at least one type of voyaging canoe from their country/island.

1.2.2. Recognise and describe a voyaging canoe from at least one other Pacific Island country.

1.2.3. Understand the concepts of speed, velocity, time and weight.

Recap and summary of sub topic.

Suggestions for Curriculum Entry Points

Social/Cultural Studies

Social/Cultural Studies

Maths

Review and consolidate learning.

Learning experiences

Exposition
Questions & answers

Class trip to voyaging canoe, village, wharf, museum, cultural centre or library and/or
Work with photographs, drawings or diagrams of local craft
Questions & answers

Exposition and explanation
Questions & answers

Questions & answers
Pair work: Assignment B1.2: calculating speed, time, weight

Summary of content
Questions & answers
Assignment B1.3 and B1.4: traditional names and drawings of voyaging canoes

Learning resources

Field Trip
Photographs, drawings or diagrams of local craft

Learner's Text (pp.19–21)

Learner's Text (pp.16–21)
Interactive resource (The Canoe Is the People CD-ROM or website): Canoes and Sailing – Pacific Canoes
Blackline Master Assignment B1.2

Blackline Master Assignments B1.3 and B1.4

Study Guide

STRAND B: CANOE BUILDING AND SAILING – LESSON 1.2. BOATS AND CANOES: PACIFIC ISLAND CANOES

Features of this lesson

Purpose, supports and challenges in the lesson

In this lesson students will recognise types of canoe used for voyaging from their own country.
A key benefit is that students will increase awareness of traditional means of transport and their effectiveness.

Introducing the lesson

Links to students' prior knowledge and vocabulary

Vocabulary: voyaging canoe.
Introduce the students to the pictures of Pacific Island canoes in the Learner's Resource Pack, using the discussion questions to assist learning.

With community members hold a class trip to the village, wharf, museum or cultural centre to learn about voyaging canoes from their own country. Prepare students to ask questions respectfully about traditional means of transport and their effectiveness. Provide clear learning intentions by setting the task of drawing a diagram of a voyaging canoe with correct.

Discussion

Sample questions to promote critical thinking and link to the purpose

Sample questions to promote critical thinking and link to the purpose

1. (a) Can you describe the features of a canoe that is built for voyaging.
(b) Compare the features of voyaging canoes from different nations. What features do they have in common, or unique features?
(c) How far could the voyaging canoes travel? What place is that distance away from your country?
2. Who are the master canoe builders in your country? What is the name for master canoe builder in the language of your country?

Teaching to help students learn

Help students to teach themselves & to self-assess by using study reading – SQR3. The instructions to students are as follows:

To read effectively you need to read actively. SQR3 is another method to help you do this: **Survey Question Read Recall Review.**

Survey: Look quickly through the reading to see what it is about. Use headings and first sentence of paragraphs to help you.

Continued ...

Connecting with the community

Where possible, visit places with different canoe types and with speakers who can describe their uses, limitations and strengths.

See also the section *How teachers can link community knowledge with the classroom.*

Where to next?

Progression levels

Generate a range of possible solutions to problems that could arise for groups sailing for a long period migrating across the Pacific.

Make a choice about a preferred action and justify that choice.

Further resources

Howe, K. (2007). *Vaka Moana: Voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).

Continued ...

Study Guide

STRAND B: CANOE BUILDING AND SAILING – LESSON 1.2. BOATS AND CANOES: PACIFIC ISLAND CANOES

Features of this lesson

Teaching to help students learn

Connecting with the community

(... continued from previous page).

Question: Write down the questions you want to answer.

Read: Read and find where the answers to your questions are. Make some notes. Once you have found your answers, stop reading.

Recall: Look again at your questions and your notes. Do you have full answers?

Review: If need better answers, you may need to re-read the article/ pages again.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)





STRAND B: CANOE BUILDING AND SAILING – LESSON 1.2. BOATS AND CANOES: PACIFIC ISLAND CANOES

ASSIGNMENT B1.2

A nautical mile is a unit of length. It corresponds approximately to one minute of latitude along any meridian. One nautical mile converts to

- 1,852 metres
- 1.15 miles

A 'knot' is a unit of speed, equal to one nautical mile per hour (that is, 1.15 miles per hour).

If a canoe travels an average speed of 1 knot, how many nautical miles would it travel in one 24-hour day?

If a canoe took 3 days to travel 750 nautical miles, what was its average speed in knots?

If a canoe needs to travel a distance of 2500 miles to an island, and expects to be sailing at an average speed of 12 knots, approximately how many days would it take for the canoe to reach its destination?

There are 4 men on board this canoe. Roughly estimate how much food (in kilos) and water (in litres) would they have needed to take with them for each of the 24 hour days?

If they are sailing for 4 days, what sort of food would they have on board the canoe?





STRAND B: CANOE BUILDING AND SAILING – LESSON 1.2. BOATS AND CANOES: PACIFIC ISLAND CANOES

ASSIGNMENT B1.4

Draw and label one of the voyaging canoes from your country

A large, empty rectangular box with a thin orange border, intended for the student to draw and label a voyaging canoe from their country.





STRAND B: CANOE BUILDING AND SAILING

Lesson 2.1. Building a Canoe: Canoe Materials and Parts

Objectives <i>Learners will be able to:</i>	Suggestions for Curriculum Entry Points	Learning experiences	Learning resources
Recall and review learning in previous class.		Exposition Questions & answers	
2.1.1. Describe the materials and construction methods of different types of hulls.	Social/Cultural Studies English	Exposition and explanation Guest speaker (could be combined with lesson sub topic 2.2.) Questions & answers Writing up a short account of the talk	Guest Speaker <i>Learner's Text</i> (p.18) <i>Interactive resource</i> (The Canoe Is the People CD-ROM or website): Canoes and Sailing – Building a Canoe
2.1.2. Describe the materials and construction methods used in sail making.	Social/Cultural Studies Industrial Arts	Exposition and explanation Classroom display: collect materials and weave a small section of sail	Mat-making materials brought from home <i>Learner's Text</i> (p.18) <i>Interactive resource</i> : Canoes and Sailing – Building a Canoe
2.1.3. Describe the materials and construction methods used in rope making.	Social/Cultural Studies Industrial Arts	Exposition and explanation Classroom display: collect materials and make a small section of rope	Rope-making materials brought from home <i>Learner's Text</i> (p.18) <i>Interactive resource</i> : Canoes and Sailing – Building a Canoe
Recap and summary of sub topics.	Review and consolidate learning	Summary of content Questions & answers Assignment B2.1: review questions on building a canoe	Blackline Master Assignment B2.1

Study Guide

STRAND B: CANOE BUILDING AND SAILING – LESSON 2.1. BUILDING A CANOE: CANOE MATERIALS AND PARTS

Features of this lesson

Purpose, supports and challenges in the lesson

To further develop understanding of types of canoes, this lesson explores the hull, sail and rope features of Pacific Islands canoes. Students will increase understanding and awareness of challenges their ancestors face by attempting to make sail matting and rope.

Discussion

Sample questions to promote critical thinking and link to the purpose

Can you describe the features of a sails used for voyaging canoes?
 What is a local name for the rope making material 'coconut husk'?
 Are there any trees in your country that have wood hard enough to make the hulls of a large canoe? What is the name of the tree and where does it grow?

Introducing the lesson

Links to students' prior knowledge and vocabulary

Vocabulary: hull, sail, rope.

With community members and the interactive resource material, ask the students to gather information about the construction of different types of hulls; the reasons for different types of hulls; and materials used for sail and rope making.

Refer students to the Learner's Text ('What were canoes made out of?') and a set of comprehension questions such as: - how was respect shown for the environment when collecting materials?

- What types wood were used for canoes?
- Where was the wood sourced?
- What were the features of sails?
- Why were ropes important for canoe building?

Connecting with the community

Where possible, involve speakers and community members with hull-making, weaving and rope making skills speakers; as well as opportunities to examine examples of each.

See also the section *How teachers can link community knowledge with the classroom.*

Where to next?

The students use a range of information sources to explore 'other nations' approaches to hulls, sails and ropes.

The teacher can provide students with the opportunity to explain what they have learned to community members.

Further examples of progressive learning objectives can be found in the section *Progressive achievement objectives.*

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).

Teaching to help students learn

Opportunities for feedback

At the beginning of the lesson make explicit the learning goals: understanding and expertise in traditional waving (sailmaking) and rope techniques; and the ability to describe the construction different hull types, and composition.

The classroom display of sail mats and ropes prepared by the students will provide opportunities for summative feedback.

During the lesson provide feedback to the students through acknowledging what that have done well, and describing how to improve.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)



**STRAND B: CANOE BUILDING AND SAILING – LESSON 2.1. BUILDING A CANOE:
CANOE MATERIALS AND PARTS**

ASSIGNMENT B2.1

What are the best materials for making:

- **Hulls?**

- **Sails?**

- **Ropes?**

Why are these the best materials for outrigger canoe construction?





STRAND B: CANOE BUILDING AND SAILING

Lesson 2.2. Building a Canoe: Preparations for Canoe Building

Learning resources

Learning Experiences

Suggestions for Curriculum Entry Points

Objectives

Learners will be able to:

Recall and review learning in previous class.

2.2.1. Describe the practical and ritual preparations and procedures for the construction of a canoe.

Exposition
Questions & answers

Guest speaker (could be combined with lesson sub topic 2.1. and/or Work with interactive resource Assignment B2.2: summary of traditional rituals before building a canoe

Social/Cultural Studies
English

Guest Speaker
Interactive resource (The Canoe Is the People CD-ROM or website); Canoes and Sailing – Building a Canoe
Blackline Master Assignment B2.2

Recap and summary of sub topic.

Review and consolidate learning

Summary of content
Questions & answers

Study Guide

STRAND B: CANOE BUILDING AND SAILING – LESSON 2.2. BUILDING A CANOE: PREPARATIONS FOR CANOE BUILDING

Features of this lesson

Purpose, supports and challenges in the lesson

This lesson introduces the ritual and practical preparations involved in the construction of a canoe. Through their investigations with community members, written and on-line resources, the students should be able to present a short account of these practical and ritual preparations.

Students may be challenged by the need to distinguish between what knowledge can be shared in a school setting and what remains within the community.

Introducing the lesson

Links to students' prior knowledge and vocabulary

Vocabulary: ritual, spirituality, traditions.

With community members, the Learner's Text ('What are canoes made out of?'), and interactive resource, the students are learning enough about ritual and practical preparations that they can present a short account of these aspects.

Help the students to focus on the learning they are meant to gain through this lesson:

- to describe rituals and practical preparations.

In addition, some students may consider the role of males and females in these preparations and compare actions in one country with another.

Discussion

Sample questions to promote critical thinking and link to the purpose

How were rituals and spirituality incorporated into canoe making?

What practical preparations and procedures were undertaken for the construction of the canoe?

Are rituals part of the practical preparations? Could you complete practical preparations without the rituals?

Teaching to help students learn

Opportunities for feedback

As the teacher you are seeking to develop an appreciation of and interconnections between ritual and practical preparations; both are valued.

In conversations with students, encourage them to explain the rituals and practical preparations. Ask them to explain the link between the two; and if relevant the link between what was done in earlier times and modern life.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Connecting with the community

Seek the advice from community members on what might be shared about ritual and practical preparations; and involve them in the lesson.

See also the section *How teachers can link community knowledge with the classroom*.

Where to next?

Develop a set of protocols for seeking and sharing information about rituals for canoe building. Through collecting and recording information from a range of sources, prepare a presentation about ritual and practical presentations, comparing and analysing approaches.

Explain reasons for and consequences of rituals.

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).



STRAND B: CANOE BUILDING AND SAILING – LESSON 2.2. BUILDING A CANOE: PREPARATIONS FOR CANOE BUILDING

ASSIGNMENT B2.2

What are the traditional rituals in your culture that canoe builders must do before they start to build a canoe?





STRAND B: CANOE BUILDING AND SAILING

Lesson 3.1. Sailing a Canoe: Tacking and Shunting

Objectives <i>Learners will be able to:</i>	Suggestions for Curriculum Entry Points	Learning experiences	Learning resources
Recall and review learning in previous class.		Exposition Questions & answers	
3.1.1. Describe the reasons and procedures for tacking.	Maths (<i>speed, velocity, distance and time/tables and graphs</i>)	Exposition and demonstration	<i>Learner's Text (p.22)</i> <i>Interactive resource (The Canoe Is the People CD-ROM or website): Canoes and Sailing – Sailing</i>
3.1.2. Describe the reasons and procedures for shunting.	Science (forces)	Exposition and demonstration	<i>Learner's Text (p.23)</i> <i>Interactive resource: Canoes and Sailing – Sailing</i>
Recap and summary of sub topics.	Review and consolidate learning	Summary of content Questions & answers Begin working on Assignment B3.1: review questions on tacking and shunting (to be finished in lesson on Balance)	<i>Blackline Master Assignment B3.1</i>

Features of this lesson

Purpose, supports and challenges in the lesson

This lesson moves the students into sailing technique. As a result of this lesson students will be able understand and demonstrate two sailing methods – tacking and shunting. A challenge for students may be to integrate indigenous language into the descriptions, names, and rationale. This could also be seen as a learning opportunity.

Introducing the lesson

Links to students' prior knowledge and vocabulary

Vocabulary: tacking, shunting.

Revise the principle of wind-filled sails creating forward momentum for the canoes. Through a series of questions on wind and sail angle help the students to identify the 'no go zone' for sailing, i.e. when attempting to sail directly into the wind. Introduce the students to the methods of tacking and shunting. Signal that understanding and demonstrating these concepts are the learning goals for this lesson. Introduce the students to the material in the Learner's Text ('How were the canoes sailed?') and interactive resource. Provide the students with time to study the material and prepare a demonstration of how each method worked.

Discussion

Sample questions to promote critical thinking and link to the purpose

- When was it necessary to sail by tacking or shunting? Describe each method.
- What were the difficulties associated with shunting and particular conditions needed to make it a successful sailing method?
- Explain the difference between tacking and shunting without using the words, and as if you are talking to someone who has never been sailing.

Teaching to help students learn

Opportunities for feedback

Using a checklist, that provides space for student self-assessment and teacher comment, ask the students to self-assess learning from this lesson:

- Did I studyread (SQR3) the Learner's Text for information on shunting and tacking?
- Did I record the information accurately?
- Did I view the interactive resource using the SQR3 approach?
- Did I prepare an effective demonstration of tacking and shunting?

The teacher's assessment should provide informative feedback that encourages deep learning ('Imagine you had to sail directly into the wind in a storm. Would you change anything about this method?) and learner resourcefulness (Where could you go to learn more about these?).

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Connecting with the community

Where possible, include speakers who can describe different sailing methods, including their uses, limitations and strengths; and names and explanations in indigenous languages.

See also the section *How teachers can link community knowledge with the classroom*.

Where to next?

Collect and record (digitally or in hardcopy) information from a range of sources about the sailing of canoes in the Pacific; including traditional names for different sailing methods used by the voyaging canoes, and mathematical explanations for angles of 'go' and 'no go' zones.

Further examples of progressive learning objectives can be found in the *Progressive achievement objectives* section.

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).



STRAND B: CANOE BUILDING AND SAILING – LESSON 3.1. SAILING A CANOE: TACKING AND SHUNTING
ASSIGNMENT B3.1

What is the difference between ‘tacking’ and ‘shunting’ a canoe?

What is meant by the ‘no go zone’?

What is meant by balance?

How does the construction of outrigger Pacific Island canoes ensure that they are balanced?





STRAND B: CANOE BUILDING AND SAILING – LESSON 3.1. SAILING A CANOE: TACKING AND SHUNTING
ASSIGNMENT B3.1 (Contd)

What is meant by ‘force’?

What effect does the force of the wind have on the canoe?

What is the difference between how Western boats and Pacific canoes balance the forces of wind and water?



STRAND B: CANOE BUILDING AND SAILING

Lesson 3.2. Sailing a Canoe: Balance

Objectives <i>Learners will be able to:</i>	Suggestions for Curriculum Entry Points	Learning experiences	Learning resources
Recall and review learning in previous class.		Exposition Questions & answers	
3.2.1. Explain the importance of balancing a canoe in order to equalise forces.	Science (forces, balance)	Exposition and demonstration Continue working on Assignment B3.1: review questions on balance and forces	Learner's Text (p.24) Interactive resource (The Canoe Is the People CD-ROM or website): Canoes and Sailing – Sailing
Recap and summary of sub topic.	Review and consolidate learning	Summary of content Questions & answers	Blackline Master Assignment B3.1

Features of this lesson

Purpose, supports and challenges in the lesson

Through content in the Learner’s Text and interactive resource the students will be able to explain the importance of balancing a canoe in order to equalise forces. This lesson has a science focus.

Introducing the lesson

Links to students’ prior knowledge and vocabulary

Vocabulary: balance, force

Share with the students the learning goals for this lesson – to explain the importance of balancing a canoe in order to equalise forces; to define forces and list different types of force; to describe the effect of force on a sail, and the effect of a change in wind direction in terms of the force exerted on the sail.

Introduce the material in the Learner’s Text (‘What is meant by ‘balance’? What is meant by ‘force?’) and interactive resource.

Facilitate exploration of these materials for 15 minutes and sharing of findings through demonstration in groups.

Discussion

Sample questions to promote critical thinking and link to the purpose

Name four things that might happen to a canoe if it is unbalanced?

If the forces of the wind and ocean currents on a canoe are balanced they will cancel each other out and have no effect on its movement. Complete these sentences:

- (a) If the canoe is stationary it will...
- (b) If the canoe is moving, the direction and speed will...

Teaching to help students learn

Opportunities for feedback

Using a checklist, that provides space for peer self-assessment and teacher comment, ask the students to peer-assess learning from this lesson:

- Did my peer gather useful information from the Learner’s Text and the interactive resource using the SQR3 approach?
- Did my peer work well in our group to prepare an effective demonstration of tacking and shunting?

The teacher’s assessment should provide informative feedback that encourages deep learning, positive group interaction, and learner resourcefulness for information gathering and group participation.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Connecting with the community

Where possible involve local canoe sailing experts in the sharing of stories involving balance and force.

See also the section *How teachers can link community knowledge with the classroom*.

Where to next?

Generate a range of possible solutions to the balancing of a canoe, using traditional and/or contemporary approaches. Compare and discuss the relative merits of each new approach.

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).

STRAND B: CANOE BUILDING AND SAILING

Lesson 3.3.3. Sailing a Canoe: Canoes of the Pacific

Objectives

Learners will be able to:

Recall and review learning in previous class.

3.3.1. Describe the main differences in the design, construction and sailing of Pacific Island canoes and Western ship design.

Suggestions for Curriculum Entry Points

Social/Cultural Studies
English

Learning Experiences

Exposition
Questions & answers

Exposition and demonstration
Finish working on Assignment B3.1: review questions on differences
Group work: produce an information leaflet with drawings and diagrams to show the differences in the design and construction of Pacific Island voyaging canoes and Western ships and boats

Learning resources

Learner's Text (p25)
Interactive resource (The Canoe Is the People CD-ROM or website): Canoes and Sailing
Blackline Master Assignment B3.1

Recap and summary of Strand B.

Review and consolidate learning.

Summary of content
Questions & answers

Features of this lesson

Purpose, supports and challenges in the lesson

This lesson concludes the topic study on canoe building and sailing. Through this lesson students will develop a pride in their own heritage, culture, language; traditional means of transport and associated skills and knowledge. A challenge may be about how to value culture and traditions in contemporary settings, without seeing each as mutually exclusive.

Introducing the lesson

Links to students' prior knowledge and vocabulary

Vocabulary: western ship design, heritage, traditional, transport.

Share with the students the learning goals for this lesson (as described in the lesson summary) and that the learning is to be shared through the production of an information leaflet that explains the differences between western and Pacific approaches to design, construction, and sailing.

Review the material in the Learner's Text and interactive resource. Discuss and list sources of information about western ship design.

Facilitate exploration of these materials for and sharing of findings through the leaflets produced.

Discussion

Sample questions to promote critical thinking and link to the purpose

Name four things that differ between western and Pacific approaches to boat design, construction and sailing. Identify four things in common.

How does knowledge of Pacific indigenous approaches to boat design, construction and sailing build pride in one's heritage, culture, language and artistic expression?

Teaching to help students learn

Opportunities for feedback

At the beginning of the lesson ask each student to identify in writing their own learning goals for this lesson. They may include those stated by the teacher, as well as others (such as self-management, peer interaction, competent use of online and book-based information sources). During the lesson check in with student on how they are progressing with their list of learning goals. At the end of the lesson check in again. Provide feedback that states what the goal was, performance in relation to the goal and next learning challenges.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Connecting with the community

Involve local canoe sailing experts in the sharing of stories about sailing canoes, that encourage pride in one's heritage, expansion of language, and understanding of how these traditional approaches have real value in a modern world.

See also the section *How teachers can link community knowledge with the classroom*.

Where to next?

Progression levels

Using a range of sources, explore other customs and traditions associated with boat design, construction, and sailing. Describe the differing perspectives about what matters most?

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).

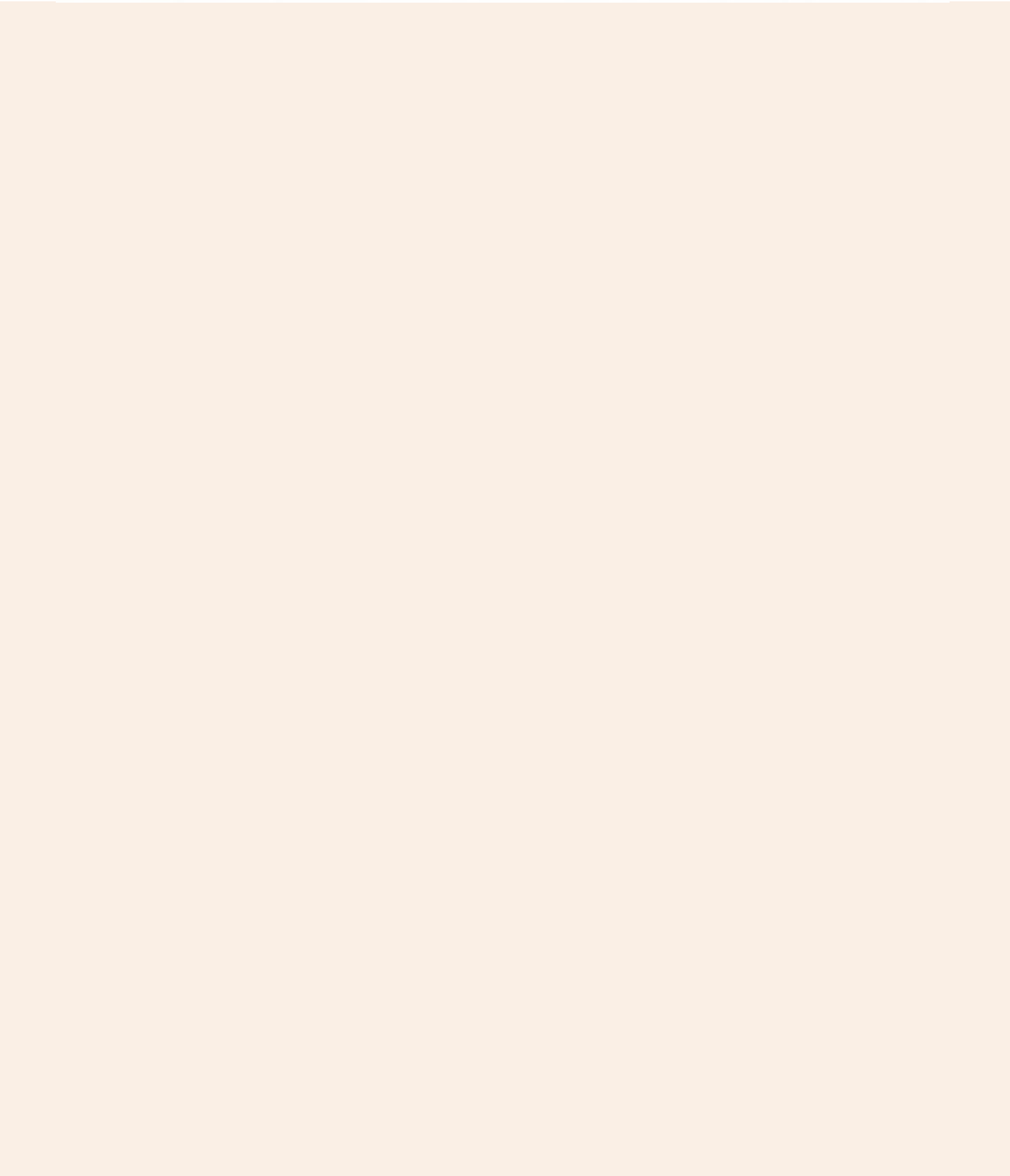


FURTHER ACTIVITIES

STRAND B: CANOE BUILDING AND SAILING

Topic	Sub topic	Further learning activities
1. Boats and Canoes	1.1. Types	Correctly label drawings, diagrams or photographs.
	1.2. Pacific Island Canoes	Correctly label drawings, diagrams or photographs.
2. Canoe Building	2.1. Canoe Materials and parts	Draw diagrams and construct a poster for classroom display
	2.2. Preparations for Canoe Building	Invite a local canoe builder to give a talk about the selection of materials Collect materials and weave a small section of sail Collect materials and make a short section of rope
3. Sailing a Canoe	3.1. Tacking and Shunting	Write an article for a newspaper
	3.2. Balance	Listen to an explanation given by the teacher.
	3.3. Canoes of the Pacific	Produce an information leaflet. Demonstrate using models made in industrial arts.





The Canoe Is the People: Indigenous Navigation in the Pacific

Completed by (your name):.....

School:..... Date:.....

Contact details (postal):
.....

Contact details (e-mail):

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STRAND B: CANOE BUILDING AND SAILING

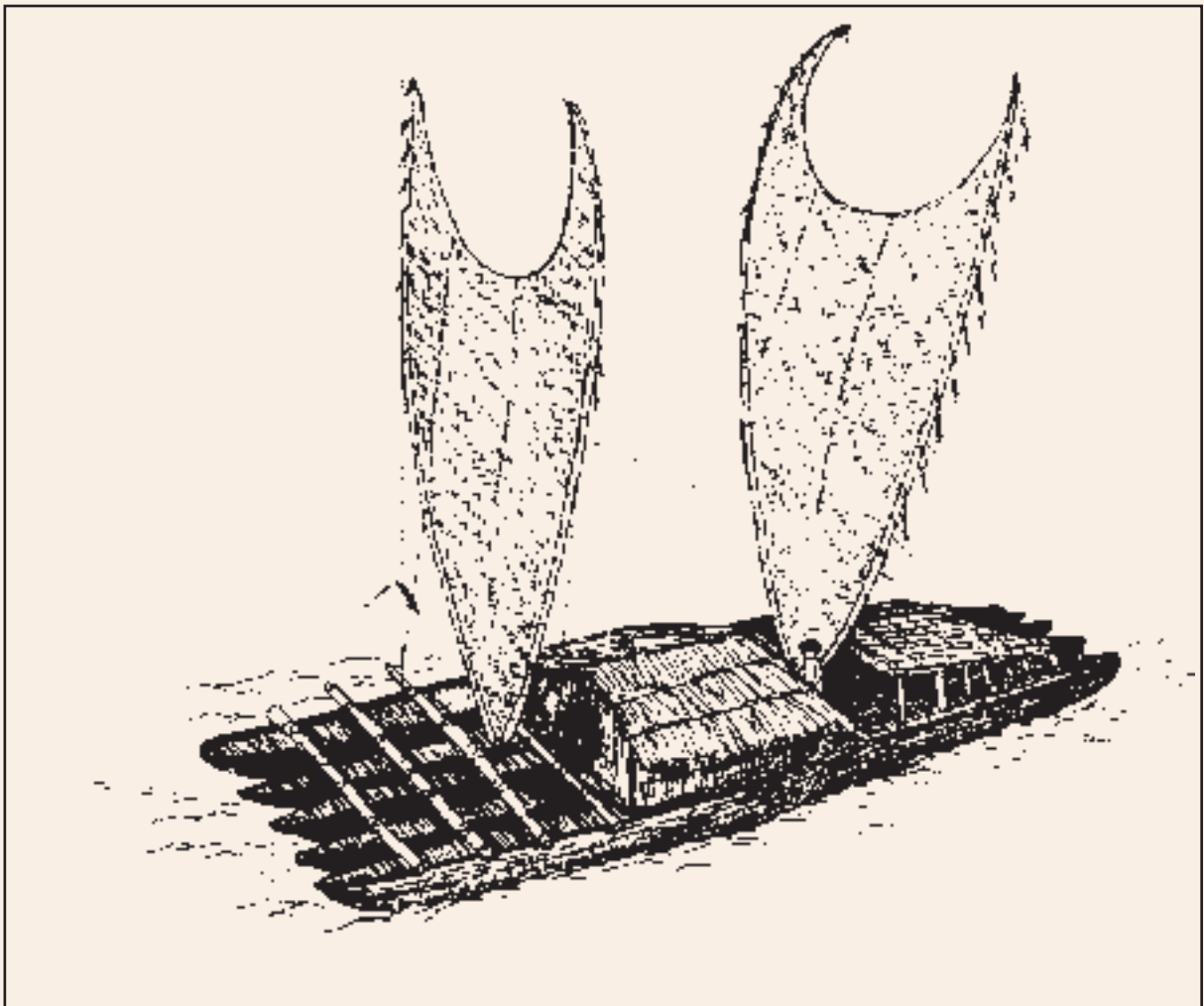
FOCUS AREA	STRENGTHS OF THE RESOURCE	SUGGESTIONS FOR IMPROVING THE RESOURCE
Teacher's Manual: Aims and objectives, curriculum framework		
Teacher's Manual: Curriculum support materials		
Teacher's Manual: Lesson plans		
Teacher's Manual: Marking schemes		
Teacher's Manual: Poster		
Learner's Text pp.16–26: Content & learning activities		
Any other comments:		





Strand C: Becoming a Navigator and Navigation

A sailing raft (Lakatoi) from the Gulf of Papua



Source: Oliver, D. L. (1989). p.367





STRAND C: BECOMING A NAVIGATOR AND NAVIGATION – CURRICULUM FRAMEWORK

Lesson		Objectives	Suggestions for curriculum entry points
Topic	Sub topic	Learners will be able to:	
1. Introduction to Pacific Navigation	1.1. Non-Instrument Navigation or Wayfinding.	1.1.1. Explain the main differences between Pacific Island and Western methods of navigation.	Social/Cultural Studies English
		1.1.2. Explain the similarities and differences between Polynesian and Micronesian methods of navigation.	Social/Cultural Studies
		1.1.3. Explain the significance of ritual, spiritual and secret knowledge such as Aruruwow.	Social/Cultural Studies
2. Becoming a Navigator	2.1. Ways of Learning and Remembering.	2.1.1. Describe and explain the experiences and procedures for becoming a navigator in their country/island.	Social/Cultural Studies English
		2.1.2. Explain the significance of poetry, songs and chants in memorizing and recording knowledge about navigation.	Social/Cultural Studies English
		2.1.3. Demonstrate expertise at performing traditional songs and chants.	Social/Cultural Studies English
		2.1.4. Explain the procedure for becoming a navigator in at least one other Pacific Island country.	Social/Cultural Studies English
	2.2. Initiation and Rank	2.2.1. Explain the importance of initiation and rank in becoming a navigator in their country.	Social/Cultural Studies English
		2.2.2. Describe and explain the pwo ceremony in the Caroline Islands.	Social/Cultural Studies English
	2.3. The Role of the Navigator	2.3.1. Explain the significance of knowledge, respect, patience and modesty in becoming a navigator.	Social/Cultural Studies English
		2.3.2. Explain the part played by women in traditional navigation.	Social/Cultural Studies English
	2.4. Indigenous Navigators and Master Canoe Builders	2.4.1. Name and discuss historical and contemporary navigators and canoe builders.	Social/Cultural Studies History English





Lesson		Objectives	Suggestions for curriculum entry points
Topic	Sub topic	Learners will be able to:	
3. Navigation	3.1. Preparing and Starting Out	3.1.1. Explain examples of rituals and procedures which must be carried out before a voyage.	Social/Cultural Studies English
		3.1.2. Describe the different types of traditional foods used on voyages.	Social/Cultural Studies Maths
		3.1.3. Estimate the amount of provisions needed for a voyaging canoe and its crew.	Social/Cultural Studies Science
		3.1.4. Explain the important part played by knowledge of: weather and cloud formations, seasons, time of day, back sighting.	Science
	3.2. Steering by the Stars	3.2.1. Describe and explain the use of: star compass, sidereal compass, star paths, star pits, zenith star, pole charts, navigation stones, stone canoe.	Science Social/Cultural Studies
	3.3. Steering by the Sea	3.3.1. Describe and explain the use of: ocean swells, ocean currents, depth and colour of the ocean, stick charts, sea marks.	Science Social/Cultural Studies
	3.4. Steering by the Sun and Wind	3.4.1. Describe and explain the limitations of using the sun for course setting and checking.	Science Social/Cultural Studies
		3.4.2. Describe and explain the use of: trade winds, wind compass.	Science/Geography Social/Cultural Studies
	3.5. Knowing and Adjusting Position	3.5.1. Describe and explain procedures for dead reckoning, estimating position, estimating speed, estimating leeway, reading currents.	Maths /Geography Social/Cultural Studies
		3.5.2. Describe and explain an example of using stars to estimate position: the <i>etak</i> system.	Science Social/Cultural Studies
		3.5.3. Compare and contrast the <i>etak</i> system with other non-instrument methods of estimating position.	Science Social/Cultural Studies
	3.6. Finding Land	3.6.1. Describe and explain the use of sealife inventories, birds, interrupted swells, clouds, deep phosphorescence, sounds and smells, temperature variations.	Science Social/Cultural Studies



STRAND C: BECOMING A NAVIGATOR AND NAVIGATION – MARKING SCHEME

LEARNING OBJECTIVES	FEEDBACK ON LEARNING DEMONSTRATED <ul style="list-style-type: none"> • Task undertaken • Students challenged by the task • Student performance • Next steps 	ACHIEVEMENT
1.1.1 Explain the main differences between Pacific Island and Western methods of navigation.		
1.1.2 Explain the similarities and differences between Polynesian and Micronesian methods of navigation.		
1.1.3 Explain the significance of ritual, spiritual and secret knowledge such as Aruruwow.		
2.1.1. Describe and explain the experiences and procedures for becoming a navigator in their country/island.		
2.1.2. Explain the significance of poetry, songs and chants in memorizing and recording knowledge about navigation.		
2.1.3. Demonstrate expertise at performing traditional songs and chants.		
2.1.4. Explain the procedure for becoming a navigator in at least one other Pacific Island country.		





LEARNING OBJECTIVES	FEEDBACK ON LEARNING DEMONSTRATED	ACHIEVEMENT
2.2.1. Explain the importance of initiation and rank in becoming a Navigator in their own country.		
2.2.2. Describe and explain the two ceremony in the Caroline Islands.		
2.3.1. Explain the significance of knowledge, respect, patience and modesty in becoming a navigator.		
2.3.2. Explain the part played by women in traditional navigation.		
2.4.1. Name and discuss historical and contemporary navigators and canoe builders.		
3.1.1. Explain the rituals and procedures which must be carried out before a voyage.		
3.1.2 Estimate the amount of provisions needed for a voyaging canoe and its crew.		
3.1.3 Explain the important part played by knowledge of: weather and cloud formations, seasons, time of day, back sighting.		
3.1.4. Explain the important part played by knowledge of: weather and cloud formations, seasons, time of day, back sighting.		





STRAND C: BECOMING A NAVIGATOR AND NAVIGATION – MARKING SCHEME (CONTD.)

LEARNING OBJECTIVES	FEEDBACK ON LEARNING DEMONSTRATED <ul style="list-style-type: none"> • Task undertaken • Students challenged by the task • Student performance • Next steps 	ACHIEVEMENT
3.2.1. Describe and explain the use of: star compass, sidereal compass, star paths, star pits, zenith star, pole charts, navigation stones, stone canoe.		
3.3.1. Describe and explain the use of: ocean swell, ocean currents, depth and colour of the ocean, stick charts.		
3.4.1. Describe and explain the limitations of using the sun for course setting and checking.		
3.4.2. Describe and explain the use of: trade winds, wind compass		
3.5.1. Describe and explain procedures for: dead reckoning, estimating position, speed and leeway, reading currents.		
3.5.2. Describe and explain an example of using stars to estimate position: the <i>etak</i> system.		
3.5.3 Compare and contrast the <i>etak</i> system with other non-instrument methods of estimating position.		
3.6.1. Describe and explain the use of: sealift, sealift inventories, birds, interrupted swells, clouds, deep phosphorescence, sounds and smells, temperature variations.		



STRAND C: BECOMING A NAVIGATOR AND NAVIGATION

Lesson 1.1. Introduction to Pacific Navigation: Non-Instrument Navigation or Wayfinding

Objectives <i>Learners will be able to:</i>	Suggestions for Curriculum Entry Points	Learning experiences	Learning resources
Understanding the reasons for studying the subject area and Strand C.		Verbal explanation Questions & answers	<i>Learner's Text (pp.7–8 and p.27)</i> <i>Interactive resource (The Canoe Is the People CD-ROM or website): Navigating</i>
1.1.1. Explain the main differences between Pacific Island and Western methods of navigation.	Social/Cultural Studies	Exposition and explanation Questions & answers Guest speaker Working with <i>Learner's Text</i> Class activity: compile a list of the main differences between instrument and non-instrument navigation Assignment C1.1: write a 200-word essay describing the main differences or Research project – group work: in groups of three, complete a research project on 'The methods of traditional navigation in the Pacific: A comparison with modern instrument-based methods'	<i>Learner's Text (p.27)</i> <i>Interactive resource: Navigating</i>
1.1.2. Explain the similarities and differences between Polynesian and Micronesian methods of navigation.	Social/Cultural Studies	Exposition and explanation Questions & answers Guest speaker	<i>Learner's Text (pp.27–29)</i> <i>Interactive resource: Navigating</i> <i>Blackline Master Assignment C1.1</i>
1.1.3. Explain the significance of ritual, spiritual and secret knowledge such as Aruruwow.	Social/Cultural Studies	Exposition and explanation Questions & answers	<i>Learner's Text (p.29–30)</i> <i>Interactive resource: Navigating</i>
Recap and summary of sub topic.	Review and consolidate learning.	Summary of content Questions & answers	

Features of this lesson

Purpose, supports and challenges in the lesson

This lesson introduces an 11-lesson study of Pacific Navigation. In Lesson 1, students look at similarities between Pacific and other methods of navigation. Students will benefit from increased awareness and appreciation of local and regional systems. Some may be challenged by the need to compare and contrast Pacific systems with others and find relative value in all.

Introducing the lesson

Links to students' prior knowledge, and vocabulary

Vocabulary: navigation, technology, skills, knowledge. Share with the students the learning goals for this lesson – to be able to explain the main differences between Pacific and Western, Polynesian and Micronesian methods of navigation; and to be able to explain the relevance of ritual and secret knowledge to Pacific navigation. Define key vocabulary. Increase awareness of understandings of 'skills' and 'knowledge', and the ability to identify technology in navigation methods. Help the students to link these concepts to past experiences of their own. Introduce the material in the Learner's Text ('What is indigenous navigation?') and interactive resource. Facilitate exploration of these materials to develop questions to ask a guest speaker.

Discussion

Sample questions to promote critical thinking and link to the purpose

What are the differences between Pacific and Western navigation methods? And Polynesian and Micronesian methods? What natural signs are used by traditional Pacific navigators? When and how do you think these signs were used?

What navigational skills and knowledge have traditionally been of great value to Pacific peoples?

Teaching to help students learn

Opportunities for feedback

To help the students self-assess their learning progress a checklist of all learning objectives for Strand C: Becoming a Navigator and Navigation could be prepared. Alongside each objective insert a rating scale (0: I have no understanding of this area; 3: I have some understanding of this area; 5: I understand this area very well). At the start of the series of Strand C lessons students could complete the rating scales. Alternatively they might complete rating scales progressively as the series continues. At the conclusion of either the lesson or the series the students complete a new copy of the same checklist, then compare their responses. A final self-assessment of learning can then be made.

Students could also circle an objective that especially interests them, to signal interest and motivation to the teacher.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Connecting with the community

Where possible involve local traditional navigation experts in the sharing of stories about navigation, and responding to the students' questions.

See also the section *How teachers can link community knowledge with the classroom*.

Where to next?

Using a range of sources (online, hardcopy, community) gather information about ocean swells, currents, winds, reefs, phosphorescence, stars in the local area. Share this information with the class.

Using evidence from a range of sources explain ways in which technological changes have affected the ways in which people maintain and pass on their heritage.

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).



STRAND C: BECOMING A NAVIGATOR AND NAVIGATION – LESSON 1.1. INTRODUCTION TO PACIFIC NAVIGATION: NON-INSTRUMENT NAVIGATION OR WAYFINDING

ASSIGNMENT C1.1

Write a 200 word essay to describe the main differences between instrument and non-instrument navigation.

A large, empty rectangular box with a thin orange border, intended for the student to write their 200-word essay.





STRAND C: BECOMING A NAVIGATOR AND NAVIGATION

Lesson 2.1. Becoming a Navigator: Ways of Learning and Remembering

Objectives <i>Learners will be able to:</i>	Suggestions for Curriculum Entry Points	Learning experiences	Learning resources
Recall and review learning in previous class.		Exposition Questions & answers	
2.1.1. Describe and explain the experiences and procedures for becoming a navigator in their country/island.	Social/Cultural Studies English/Drama	Guest speaker (could be combined with lesson sub topic 2.2) Group work: in groups of four, prepare and present to the class a 10 minute drama or skit to demonstrate the procedures	Learner's Text (pp.28–29) Learner's own research in family and community
2.1.2. Explain the significance of poetry, songs and chants in memorizing and recording knowledge about navigation.	Social/Cultural Studies English	Exposition Questions & answers	Local poetry, songs and chants
2.1.3. Demonstrate expertise at performing traditional poetry, songs and chants.	Social/Cultural Studies English	Exposition Pair work: Assignment C2.1: find or compose and recite a poem, song or chant to the class Optional: based on the pair work, organise a competition within or between classes	Blackline Master Assignment C2.1
2.1.4. Explain the procedure for becoming a navigator in at least one other Pacific Island country.	Social/Cultural Studies English	Exposition and explanation Questions & answers	Learner's Text (pp.28–29) Interactive resource (The Canoe Is the People CD-ROM or website): Becoming a Navigator
Recap and summary of sub topic.	Review and consolidate learning	Summary of content Questions & answers	

Features of this lesson

Purpose, supports and challenges in the lesson

Through this lesson students will be able to demonstrate some understanding of what is involved in becoming a navigator; using role play, chants, song, exposition. A wider objective is that students will develop pride in their own heritage, culture, language and artistic expression and a belief in their preservation, promotion and maintenance. A necessary challenge is that the depth of knowledge explored in the school setting about the procedures may be limited out of respect to local community wishes.

Introducing the lesson

Links to students' prior knowledge and vocabulary

Vocabulary: observation, memory, *mana*.

Share with the students the learning goals for this lesson – to describe and explain the experiences and procedures for becoming a navigator in their own country and at least one other Pacific country.

Ask the students about experiences they have had using a canoe and finding their way from one place to another. Identify the navigational skills they have used. Introduce the material in the Learner's Text ("Becoming a navigator") and interactive resource. Facilitate exploration of these materials and sharing of findings in groups.

Discussion

Sample questions to promote critical thinking and link to the purpose

- How did young people learn about navigation?
- How do they learn about navigation today?
- What traditional poetry, songs and chants are used to record information about navigation?
- How is traditional navigation knowledge protected? Why are the rituals important?
- What was and is the role of women and girls in navigation?

Teaching to help students learn

Opportunities for feedback

Having completed different tasks using a range of modes to demonstrate understanding work with individual students to gather and give feedback:

- One to one with a student:
- Student chooses 'best' pieces and says what s/he likes most and least.
 - Teacher does the same, choosing key criteria, according to the substance of the work.
 - Discuss differences in teachers' and student's perception (metacognitive reflection) generalisation of knowledge and skills to other activities.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Connecting with the community

Seek the involvement of master navigators and community leaders about the scope of this series of lessons and what best belongs in community learning settings or school settings. Where possible involve local experts in the sharing of information and enabling students to learn how to receive knowledge respectfully as a *taonga* (te reo Maori: treasure).

Where to next?

Using a range of sources, explore the role of observation and memory to enhance learning. Share findings with the class through a poster.

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).



**STRAND C: BECOMING A NAVIGATOR AND NAVIGATION – LESSON 2.1. BECOMING A NAVIGATOR:
WAYS OF LEARNING AND REMEMBERING**

ASSIGNMENT C2.1

Find or compose a poem, chant or song about navigating a canoe and recite or sing it to your teachers and classmates.





STRAND C: BECOMING A NAVIGATOR AND NAVIGATION

Lesson 2.2. Becoming a Navigator: Initiation and Rank

Objectives

Learners will be able to:

Recall and review learning in previous class.

2.2.1. Explain the importance of initiation and rank in becoming a navigator in their country.

2.2.2. Describe and explain the *pwo* ceremony in the Caroline Islands.

Recap and summary of sub topic.

Suggestions for Curriculum Entry Points

Social/Cultural Studies
English

Social/Cultural Studies
English

Review and consolidate learning

Learning experiences

Exposition
Question and answers

Guest speaker (could be combined with lesson sub topic 2.1) and/or
Exposition and explanation by the teacher
Group work: compose a letter to thank the guest speaker

Exposition and explanation
Individual work: write a short summary of the *pwo* ceremony

Summary of content
Questions & answers

Learning resources

Learner's Text (p.30)
Interactive resource (The Canoe Is the People CD-ROM or website): *Becoming a Navigator* – Initiation and Rank

Interactive resource: *Becoming a Navigator* – Initiation and Rank

Features of this lesson

Purpose, supports and challenges in the lesson

Through this lesson students will further develop understanding of what is involved in becoming a navigator. A wider objective is that students will understand and value traditional methods of becoming a navigator.

A necessary challenge remains that of how much knowledge will be able to be explored in the school setting about the procedures.

Introducing the lesson

Links to students' prior knowledge and vocabulary

Vocabulary: *pwo* ceremony, Caroline Islands.

Share with the students the learning goals for this lesson – to be able to explain the important of initiation and rank in becoming a navigator in their own country; and to be able to describe and explain the *pwo* ceremony in the Caroline Islands. Help the students to identify demanding experiences they have had which have helped them meet a goal. Link this with the challenges of learning to be a navigator. Introduce the material in the Learner's Text ('Becoming a navigator') and interactive resource. Facilitate exploration of these materials for 15 minutes and preparation of questions for a guest speaker.

Discussion

Sample questions to promote critical thinking and link to the purpose

How was knowledge passed down? How and why was it protected?

How were students of navigation helped to remember their lessons?

Teaching to help students learn

Using feedback

At this stage in the series of lessons check in with your own teaching skills to see if you are using feedback in a formative way to enhance student learning:

- How well do you:
 - Share learning goals with students?
 - Involve students in self assessment?
 - Provide timely focused feedback?
- Do you have confidence that every student in your class can improve?

Take time to think about some of the things that prevent us from assessing in a formative manner; and changes we could make to our practices so that feedback is used in a dynamic, ongoing manner.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Connecting with the community

Where possible involve local traditional navigation experts in the sharing of stories about becoming a navigator.

See also the section *How teachers can link community knowledge with the classroom*.

Where to next?

Consider the challenges of learning to become a navigator and how different people react to success or failure in this challenge. Having researched accounts of success and failure in reaching goals, what advice can you provide about how to cope with challenging learning situations.

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).

STRAND C: BECOMING A NAVIGATOR AND NAVIGATION

Lesson 2.3. Becoming a Navigator: The Role of the Navigator

Objectives <i>Learners will be able to:</i>	Learning experiences	Learning resources
Recall and review learning in previous class.	Exposition Question and answers	
2.3.1. Explain the significance of knowledge, respect, patience and modesty in becoming a navigator.	Exposition Questions & answers Pair work/individual homework: start working on a two-page leaflet for visitors to your country explaining (to be continued and complemented in section 2.3.2) <ul style="list-style-type: none"> the role, rank and status of navigators in your country the importance of knowledge, respect, patience and modesty in becoming a navigator 	Learner's Text (pp.28–29) Interactive resource (The Canoe Is the People CD-ROM or website): <i>Becoming a Navigator</i>
2.3.2. Explain the part played by women in traditional navigation.	Exposition Questions & answers Pair work/individual homework: finish working on a two-page leaflet for visitors to your country explaining <ul style="list-style-type: none"> the part played by women in traditional navigation in your country 	Learner's Text (pp.30–33) Interactive resource: <i>Becoming a Navigator – Role of Women</i>
Recap and summary of sub topics.	Summary of content Questions & answers	

Study Guide

STRAND C: BECOMING A NAVIGATOR AND NAVIGATION – LESSON 2.3. BECOMING A NAVIGATOR: THE ROLE OF THE NAVIGATOR

Features of this lesson

Purpose, supports and challenges in the lesson

Through this lesson students will further develop understanding of what is involved in becoming a navigator. A wider objective is that students will understand and value traditional methods of becoming a Navigator.

Challenges in this lesson include learning to show patience, modesty and respect; as well as open discussion about the different and shared roles of males and females in society.

Introducing the lesson

Links to students' prior knowledge, and vocabulary

Vocabulary: respect, patience, modesty, roles.

Share with the students the learning goals for this lesson – to be able to explain;

- significance of knowledge, respect, patience and modesty in becoming a navigator; and
- the part played by women in traditional navigation. Help the students to identify experiences they have had where respectful behaviour has been important, and why. Also consider times when males and females have had different roles and why. Consider the impact of those differences and the outcomes. Introduce the material in the *Learner's Text* (Becoming a navigator) and Interactive resource. Facilitate exploration of these materials and sharing of findings in groups.

Discussion

Sample questions to promote critical thinking and link to the purpose

How do we show respect, patience and modesty, and when?

How are women and men valued in traditional methods of becoming a navigator?

Connecting with the community

Where possible involve local navigation experts in the sharing of stories involving virtues, and also about the role of women in traditional navigation.

See also the section *How teachers can link community knowledge with the classroom*.

Where to next?

Using a range of sources, explore the role of women and girls in navigation, and reasons for any differences from the role of men and boys. Share the findings through a presentation to the class.

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).

Teaching to help students learn

Using feedback

Using the following cooperative learning technique gather information and give feedback to students on their achievement of the lesson's objectives:

Inside / Outside Circle: Two circles facing each other, talk in pairs, rotate one circle. Can be used as a structure for:

- introductions, class building;
- personal news, sharing experiences reviewing work (questions on cards or teacher calls out).

The teacher asks questions relating to the lesson's objectives, including the questions in the Discussion section above, and asking the students to share what are their remaining questions at the end of this lesson. Information from this feedback can be used to guide future lesson planning.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

STRAND C: BECOMING A NAVIGATOR AND NAVIGATION

Lesson 2.4. Becoming a Navigator: Indigenous Navigators and Master Canoe Builders			
Objectives <i>Learners will be able to:</i>	Suggestions for Curriculum Entry Points	Learning experiences	Learning resources
Recall and review learning in previous class.		Exposition Questioning and answers	
2.4.1. Name and discuss historical and contemporary navigators and canoe builders.	Social/Cultural Studies History English	Exposition Questions & answers Assignment C2.2: write a biography of a well-known navigator or canoe builder from their own country (to be compiled in a class book)	<i>Interactive resource (The Canoe Is the People CD-ROM or website): Becoming a Navigator & Navigating Blackline Master Assignment C.2.2</i>
Recap and summary of sub topic.	Review and consolidate learning	Summary of content Questions & answers	

Study Guide

STRAND C: BECOMING A NAVIGATOR AND NAVIGATION – LESSON 2.4. BECOMING A NAVIGATOR: INDIGENOUS NAVIGATORS AND MASTER CANOE BUILDERS

Features of this lesson

Purpose, supports and challenges in the lesson

Through the group and individual activities in this lesson students will compile a class book of short biographical profiles about noted historical and contemporary navigators and canoe builders.

Introducing the lesson

Links to students' prior knowledge, and vocabulary

Vocabulary: historical, contemporary, navigators.

Share with the students the learning goals for this lesson – to be able to name and discuss historical and contemporary navigators and canoe builders. Explain that this will involve individual and group work; the outcome being a class book. Work with the class to identify key features of a useful biography. Agree on these as the structure to guide research and writing. Possibilities include:

- name, place and date of birth, tribal affiliations, family tree.
- Experiences in becoming a navigator (major learning events, key teachers, major voyages).

Discussion

Sample questions to promote critical thinking and link to the purpose

Name one historical and one contemporary indigenous navigator from your own country.

What can be covered in a short biography so that the class can learn about these important navigators?

Teaching to help students learn

Using feedback

Using a checklist, that provides space for peer self-assessment and teacher comment, ask the students to peer-assess learning from this lesson:

- Did my group members gather useful information?
- Did I apply myself well to the writing of a short biographical outline of one well know navigator from their own country? What did I find challenging? What more would I like to know?

The teacher's assessment should provide informative feedback that encourages deep learning, positive group interaction, and learner resourcefulness for information gathering and group participation.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Connecting with the community

Where possible involve local canoe sailing experts in the sharing of stories involving balance and force.

See also the section *How teachers can link community knowledge with the classroom.*

Where to next?

Progression levels

Using a range of sources, explore the role of women. Using a range of sources develop a set of short biographies about navigators from nations other than you own. Identify common characteristics and unique ones across nations. Develop explanations as to why these difference and commonalities might exist.

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

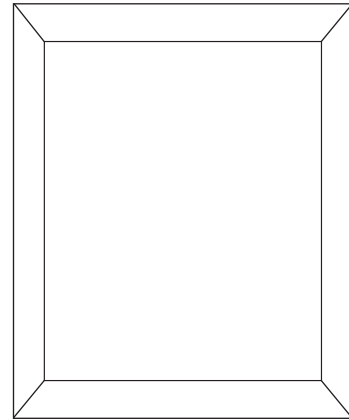
Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).



STRAND C: BECOMING A NAVIGATOR AND NAVIGATION – LESSON LESSON 2.4. BECOMING A NAVIGATOR: INDIGENOUS NAVIGATORS AND MASTER CANOE BUILDERS

ASSIGNMENT C2.2

NAME:



Add a picture of the navigator/canoe builder!

Biography written by:





STRAND C: BECOMING A NAVIGATOR AND NAVIGATION

Lesson 3.1. Navigation: Preparing and Starting Out			
Objectives <i>Learners will be able to:</i>	Suggestions for Curriculum Entry Points	Learning experiences	Learning resources
Recall and review learning in previous class		Exposition Questioning and answers	
3.1.1. Explain examples of rituals and procedures which must be carried out before a voyage.	Social/Cultural Studies English	Questions & answers Group work: in groups of four, discuss and plan preparations for a voyage	<i>Learner's Text (pp.34–36)</i> <i>Interactive resource (The Canoe Is the People CD-ROM or website): Navigating – Preparing and Starting Out</i>
3.1.2. Describe the different types of traditional foods used on voyages.	Social/Cultural Studies Science (preservation, fermentation)	Exposition and explanation Questions & answers Bring food from home or prepare together	<i>Learner's Text (pp.34–35)</i> <i>Interactive resource: Navigating – Preparing and Starting Out</i> <i>Food/ingredients brought from home</i>
3.1.3. Estimate the amount of provisions needed for a voyaging canoe and its crew.	Social/Cultural Studies Maths (calculations)	Exposition and explanation Questions & answers Group work: in groups of four, discuss and plan preparations for a voyage and work on Assignment C3.1: calculating provisions for a voyage	<i>Blackline Master Assignment C3.1</i>
3.1.4. Explain the important part played by knowledge of: weather and cloud formations, seasons, time of day, back sighting.	Science (weather, seasons, climate)	Exposition and explanation Questions & answers Observe and discuss weather, cloud formations etc. outside the school building	<i>Learner's Text (pp.35–36)</i> <i>Interactive resource: Navigating – Preparing and Starting Out</i>
Recap and summary of sub topic	Review and consolidate learning	Summary of content Questions & answers	

Features of this lesson

Purpose, supports and challenges in the lesson

Using social and cultural studies and mathematics during this lesson students will develop understanding of what must be done in order to prepare for a long canoe journey in the Pacific. This lesson is a positive example of the integration of curriculum areas for a single thematic study.

Introducing the lesson

Links to students' prior knowledge and vocabulary

Vocabulary: spiritual cleansing, knot divination, provisions, weather, cloud formation, seasons, time of day, back sighting.

Share with the students the learning goals for this lesson – to be able to:

- Explain the rituals and procedures which must be carried out before a voyage;
- Estimate the amount of provisions needed for a voyaging canoe and its crew; and
- explain the important part played by knowledge of: weather and cloud formations, seasons, time of day, back sighting. Help the students recall preparations they and their family have undertaken before a long trip and how they decide what is necessary to take. Introduce the material in the Learner's Text ('Starting out on a voyage') and interactive resource. Facilitate exploration of these materials and the development of questions for the speaker. Share findings in groups.

Discussion

Sample questions to promote critical thinking and link to the purpose

What rituals and procedures must be carried out before a voyage?

What provisions are needed for a voyaging canoe and its crew?

How do seasonal and meteorological features affect when a canoe trip commences?

Teaching to help students learn

Using feedback

Using a **Three-step interview** provide students with the opportunities to provide feedback, and for the teacher to give feedback in relation to this lesson's objectives.

Method: Groups of four, two pairs. Individuals in pairs interview each other about each of the three learning goals for this lesson. Four students share information in round robin. This method can be used as structure for:

- Sharing opinions
- Establishing prior knowledge of the topic
- Reviewing learning etc.

The teacher's assessment should provide informative feedback that encourages deep learning, positive group interaction, and learner resourcefulness for information gathering and group participation.

Connecting with the community

Where possible involve a local navigation expert in the sharing of stories about preparing for a trip.

See also the section *How teachers can link community knowledge with the classroom.*

Where to next?

Progression levels

Explain how people prioritise provisions in order to come to a decision about action to take in relation to preparing for a trip to be undertaken by traditional navigation in the Pacific.

Further resources

Howe, K. (2007). Vaka Moana: voyages of the ancestors. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).



**STRAND C: BECOMING A NAVIGATOR AND NAVIGATION – LESSON 3.1. NAVIGATION:
PREPARING AND STARTING OUT**

ASSIGNMENT C3.1

A voyage of a canoe with 14 persons aboard is foreseen to take 30 days. In order to be certain to have enough provisions, they are calculated for 35 days. It is estimated that each crew member consumes the following amounts of water and food each day:

- 3,8kg of drinking water
- 2 kg of foods:
 - 200g dried breadfruit
 - 400g cooked pandanus
 - 400g dried taro
 - 1 coconut (giving about 500g of meat)
 - 500g of dried or cooked fish

How much of each element does one crew member need for the whole voyage?

What is the total weight of provisions for one crew member for the whole voyage?

What is the total weight of provisions for the whole crew?





**STRAND C: BECOMING A NAVIGATOR AND NAVIGATION – LESSON 3.1. NAVIGATION:
PREPARING AND STARTING OUT**

ASSIGNMENT C3.1 (Contd.)

The fisherman on board is able to make an exceptional catch of 20 kg fish on the 15th day of the journey. For the lasting 20 days of the voyage, how much more fish can be eaten by each crew member on each day?

Due to bad weather, the voyage ends up taking 38 days. How much rain water would have to be collected to ensure that enough drinking water is available for the whole journey without having to ration the amount of drinking water for each crew member?

STRAND C: BECOMING A NAVIGATOR AND NAVIGATION

Lesson 3.2. Navigation: Steering by the Stars

Objectives <i>Learners will be able to:</i>	Suggestions for Curriculum Entry Points	Learning experiences	Learning resources
<p>Recall and review learning in previous class</p>		<p>Exposition Question and answers</p>	
<p>3.2.1. Describe and explain the use of: Star compass Sidereal compass Star paths Star pits Zenith star Pole charts Navigation stones Stone canoe</p>	<p>Science (astronomical observations) Social/Cultural Studies</p>	<p>Exposition and explanation Pair work: begin working on Assignment C3.2: report on Pacific navigation methods – Question 1 (also worked on in lessons on sub topics 3.3, 3.4 and 3.6) Night time fieldtrip: identify and name zenith stars and set navigation stones for own island or Students observe the night sky from home and discuss their observations in class</p>	<p>Learner's Text (pp.36–38) Interactive resource (The Canoe Is the People CD-ROM or website): Navigating – Steering by the Stars Blackline Master Assignment C3.2 – Question 1</p>
<p>Recap and summary of sub topic</p>	<p>Review and consolidate learning</p>	<p>Summary of content Questions & answers</p>	

Features of this lesson

Purpose, supports and challenges in the lesson

During this lesson students will increase understanding and knowledge of star-based navigation methods through integrated studies in Social and Cultural Studies and Science. A new dimension in this lesson is a night field trip. There may be some additional challenges in organising this trip, including an expert in star navigation and identification where needed.

Introducing the lesson

Links to students' prior knowledge and vocabulary

Vocabulary: spiritual cleansing, knot divination, provisions, weather, cloud formation, seasons, time of day, back sighting.

Share with the students the learning goals for this lesson – to be able to describe and explain the use of: Star compass, sidereal compass, star paths, star pits, zenith star, pole charts, navigation stones, Stone Canoe.

Work with the students to identify their familiarity with the night sky and astronomy. Introduce the material in the Learner's Text ('The stars') and interactive resource.

Facilitate shared planning for the night field trip. This may include: learning tasks, parent support, behaviour expectations, safety, equipment and clothing, timetable and transport.

Discussion

Sample questions to promote critical thinking and link to the purpose

How does memory play a role in navigation by the stars?

Can you describe star navigation systems for at least two Pacific nations?

Where would you place the navigation stones for own island?

What are the important star patterns and constellations

Teaching to help students learn

Using a checklist, that provides space for peer self-assessment and teacher comment, ask the students to peer-assess learning from this lesson:

- Did my peer gather useful information about navigation by the stars?
- Did I work well in my group and individually to gather, process and present information about celestial objects and steering by the stars?

The teacher's assessment should provide informative feedback that encourages deep learning, positive group interaction, and self-management as a learner.

Connecting with the community

Consult with parents and local experts in navigation to plan the night field trip. In addition to learning content, safety and timing should be considered.

See also the section *How teachers can link community knowledge with the classroom*.

Where to next?

Progression levels

Recognise star patterns and constellations and explain stellar evolution.

Generate a range of possible solutions to problems that could arise amongst groups educating new navigators for navigation by the stars.

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).



**STRAND C: BECOMING A NAVIGATOR AND NAVIGATION – LESSON 3.2. NAVIGATION:
STEERING BY THE STARS**

ASSIGNMENT C3.2

Describe two ways that non-instrument navigators would use the stars to know where they are and how to find land.

Describe two ways that non-instrument navigators would use the ocean swells and ocean currents to know where they are and how to find land.

Explain why non-instrument navigators do not rely on the sun to work out where they are at sea.

Explain how non-instrument navigators use the wind to know where they are and how to find land.

Give three other signs that non-instrument navigators would use to work out what direction to sail in order to find land.





STRAND C: BECOMING A NAVIGATOR AND NAVIGATION

Lesson 3.3. Navigation: Steering by the Sea

Objectives
Learners will be able to:

Learning experiences

Learning resources

Recall and review learning in previous class

Exposition
Question and answers

3.3.1. Describe and explain the use of:

Ocean swells

Ocean currents

Depth and colour of the ocean

Stick charts

Exposition and explanation

Pair work: continue working on Assignment C3.2: report on Pacific navigation methods – Question 2 (also worked on in lessons on sub topics 3.2, 3.4 and 3.6)

Learner's Text (pp.39–42)

Interactive resource (The Canoe Is the People CD-ROM or website):
Navigating – Steering by the Sea, Sun and Wind

Blackline Master Assignment C3.2 – Question 2

Recap and summary of sub topic

Summary of content
Questions & answers

Review and consolidate learning

Study Guide

STRAND C: BECOMING A NAVIGATOR AND NAVIGATION – LESSON 3.3. NAVIGATION: STEERING BY THE SEA

Features of this lesson

Purpose, supports and challenges in the lesson

This lesson develops understanding of navigation methods using signals from the sea. There may be some challenges in identifying with ocean swells, currents, colour of the sea. As a result of this lesson students will have an increased awareness of nature of the ocean.

Introducing the lesson

Links to students' prior knowledge, and vocabulary

Vocabulary: ocean swells, currents, stick charts.

Share with the students the learning goals for this lesson – to be able to describe and explain the use of: Ocean swells, ocean currents, depth and colour of the ocean, stick charts.

Introduce the material in the *Learner's Text* and interactive resource.

Facilitate exploration of these materials for and sharing of findings in groups. Prepare questions for a visiting expert who will talk about steering by sea.

Discussion

Sample questions to promote critical thinking and link to the purpose

Can you construct a stick chart to show how to navigate between two or more islands?

What questions do you need to ask the visiting expert in navigation by the sea, in order to meet the learning goals for this lesson?

Teaching to help students learn

Using feedback

- Revisit the 'pre-test' used at the beginning of Strand C: Becoming a Navigator and Navigation.

The teacher's assessment should provide informative feedback that encourages deep learning, positive group interaction, and self-management as a learner.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Connecting with the community

Where possible involve local navigation experts in the sharing of stories involving steering by sea.

See also the section *How teachers can link community knowledge with the classroom*.

Where to next?

Progression levels

Collect and record information from a range of sources reflecting a variety of perspectives about life as someone learning to be a navigator.

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).

STRAND C: BECOMING A NAVIGATOR AND NAVIGATION

Lesson 3.4. Navigation: Steering by the Sun and Wind

Objectives <i>Learners will be able to:</i>	Suggestions for Curriculum Entry Points	Learning experiences	Learning resources
<p>Recall and review learning in previous class</p>		<p>Exposition Question and answers</p>	
<p>3.4.1. Describe and explain the limitations of using the sun for course setting and checking.</p>	<p>Science (astronomical observations: the sun) Social/Cultural Studies</p>	<p>Exposition and explanation Pair work: continue working on Assignment C3.2: report on Pacific navigation methods – Question 3 (also worked on in lessons on sub topics 3.2, 3.3., 3.5. and 3.7)</p>	<p><i>Learner's Text (p.38)</i> <i>Interactive resource (The Canoe Is the People CD-ROM or website): Navigating – Steering by the Sea, Sun and Wind</i> <i>Blackline Master Assignment C3.2 – Question 3</i></p>
<p>3.4.2. Describe and explain the use of: Trade winds Wind compass</p>	<p>Science/Geography (wind, compasses) Social/Cultural Studies</p>	<p>Exposition and explanation Pair work: continue working on Assignment C3.2: report on Pacific navigation methods – Question 4 (also worked on in lessons on sub topics 3.2, 3.3., 3.4 and 3.6)</p>	<p><i>Learner's Text (pp.38–39)</i> <i>Interactive resource: Navigating – Steering by the Sea, Sun and Wind</i> <i>Blackline Master Assignment C3.2 – Question 4</i></p>
<p>Recap and summary of sub topic</p>	<p>Review and consolidate learning</p>	<p>Summary of content Questions & answers</p>	

Features of this lesson

Purpose, supports and challenges in the lesson

During this lesson students will expand their understanding of the skills of traditional navigators, by learning about the use of wind and the sun. This lesson confirms the importance of the star methods of navigation. It may be challenging for some students to recognise the importance of the dark hours for steering.

Introducing the lesson

Links to students' prior knowledge and vocabulary

Vocabulary: trade winds; wind compass.
Share with the students the learning goals for this lesson – to be able to describe and explain

- (a) the limitations of using the sun for course setting and checking; and
- (b) the use of trade winds and wind compass.

Ask the students to point out and name the direction in which the sun rises and sets. Languages other than English might be used. See if the students have noticed stars that are first noticeable at dusk, and last to disappear from view at dawn. Ask them also to describe prevailing winds and their direction. Link to the role of the navigator and the key vocabulary for this lesson. Introduce the material in the Learner's Text ('The Sun', 'The Wind') and interactive resource. Facilitate exploration of these materials and sharing of findings in pairs.

Discussion

Sample questions to promote critical thinking and link to the purpose

- Why do non-instrument navigators not rely on the sun to work out where they are at sea?
- How do non-instrument navigators use the wind to know where they are and how to find land?

Teaching to help students learn

Using feedback

At this stage in this course of study it would be worthwhile to find out what is working well or otherwise for the students. Distribute blank index cards during the last five or ten minutes of class. Pass out cards to students and ask them to respond anonymously to two questions, one on the front of the card, the other on the back. You can pose general questions about what is going well in the course and what needs to be improved or changed.

Other general questions: 'What do you want more of? Less of?' 'How are you finding this study?' 'Any suggestions for improving the course?' Make sure feedback is provided to the class and to individuals (where relevant).

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Connecting with the community

Where possible involve local canoe sailing experts in the sharing of stories involving steering by the sun and wind.

See also the section *How teachers can link community knowledge with the classroom*.

Where to next?

Progression levels

Using a range of sources, gather information about non-instrument navigation (community and western), checking for relevance and accuracy before sharing with the class through a 'digital essay' (e.g through Powerpoint) or oral presentation.

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).

STRAND C: BECOMING A NAVIGATOR AND NAVIGATION

3.5. Navigation: Knowing and Adjusting Position

Objectives

Learners will be able to:

Recall and review learning in previous class

3.5.1. Describe and explain procedures for:

Dead reckoning

Estimating position

Estimating speed

Estimating leeway

Reading currents

3.5.2. Describe and explain an example of using stars to estimate position: the etak system.

3.5.3. Compare and contrast the etak system with other non-instrument methods of estimating position.

Recap and summary of Sub topic

Suggestions for Curriculum Entry Points

Maths/Geography
(drift, leeway, speed, distance)
Social/Cultural Studies

Science
(astronomical observations)
Social/Cultural Studies

Science
(astronomical observations)
Social/Cultural Studies

Review and consolidate learning

Learning experiences

Exposition
Question and answers

Exposition and explanation

Plot a course on a graph and predict time, speed and distance

Exposition and explanation

Pair work: produce a poster to describe the etak system of indigenous knowledge of navigation used in the Caroline Islands

Exposition and explanation

Questions & answers

Summary of content Questions & answers

Learning resources

Interactive resource (The Canoe Is the People CD-ROM or website): Navigating – Knowing and Adjusting Position

Learner's Text (p.42)

Interactive resource: Navigating – Knowing and Adjusting Position

Learner's Text (pp.36–42)

Interactive resource: Navigating – Knowing and Adjusting Position

Study Guide

STRAND C: BECOMING A NAVIGATOR AND NAVIGATION – LESSON 3.5. NAVIGATION: KNOWING AND ADJUSTING POSITION

Features of this lesson

Purpose, supports and challenges in the lesson

This lesson will be crucial for developing student understanding of navigational position and estimation. Students will be challenged to learn one system (the etak system) and contrast it with other systems.

Introducing the lesson

Links to students' prior knowledge and vocabulary

Vocabulary: etak, reckoning, estimation, drift, leeway, wave reflection and refraction.

Share with the students the learning goals for this lesson, associated with knowing and adjusting position. Introduce the material in the Learner's Text ('The etak system') and interactive resource.

The students listen to an account given by the teacher. Divide the class in half. The first group in pairs will design a poster which explains the etak system. Group 2 in pairs design a poster which compares and contrasts the etak system with other non-instrument methods of estimating position.

Discussion

Sample questions to promote critical thinking and link to the purpose

What are the procedures for dead reckoning, estimating position, estimating speed, estimating leeway, reading currents?

What is the etak system? How does it compare with positioning systems used by other nation?

Teaching to help students learn

Using feedback

To assist the teacher to understand the extent to which the students can apply knowledge covered in this lesson, guide the students in using a Categorising Grid. In this task students are given a grid containing two or three main categories plus a scrambled list of terms from this lesson. The students work on their own to sort the terms into the categories, and share results either with the teacher, or in pairs with the teacher observing and providing advice that is positive yet identifies further learning points.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Connecting with the community

Where possible involve local canoe experts in the sharing of stories involving position and course finding.

See also the section *How teachers can link community knowledge with the classroom*.

Where to next?

Progression levels

Plot a course on a graph and estimate time, speed and distance of a hypothetical voyage. Make a choice about a preferred course and justify that choice.

Further resources

Howe, K. (2007). Vaka Moana: voyages of the ancestors. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).

STRAND C: BECOMING A NAVIGATOR AND NAVIGATION

Lesson 3.6. Navigation: Finding Land

Objectives

Learners will be able to:

Recall and review learning in previous class

3.6.1. Describe and explain the use of:

Sea life

Sea life inventories

Birds

Interrupted swells

Clouds

Deep phosphorescence

Sounds and smells

Temperature variations

Recap and summary of Strand C

Suggestions for Curriculum Entry Points

Science
(biology, meteorology, oceanography etc.)

Social/Cultural Studies

Learning experiences

Exposition
Question and answers

Exposition and explanation

Pair work: finish working on Assignment C3.2: report on Pacific navigation methods
– Question 5 (also worked on in lessons on sub topics 3.2, 3.3 and 3.4)

Group work: in groups of four, produce a part of a class exhibition about the end of a voyage for classroom display

Learning resources

Learner's Text (pp.43–46)

Interactive resource (The Canoe Is the People CD-ROM or website):
Navigating – Finding Land
Blackline Master Assignment C3.2
– Question 5

Learner's text (p.47)

Summary of content
Questions & answers

Review and consolidate learning

Features of this lesson

Purpose, supports and challenges in the lesson

This lesson is the final stage in the Navigation topic: Finding land. Essential skills and features are covered in this lesson, enabling students to explain and describe the complete navigational journey and to value traditional methods of navigation. Students will be challenged to complete a presentation to students from other classes, teachers, parents and family members.

Introducing the lesson

Links to students' prior knowledge, and vocabulary

Vocabulary: inventories, variations, interruption, deep phosphorescence.

Share with the students the learning goals for this lesson – to be able to describe and explain natural features used by traditional navigators to find land.

Introduce the relevant material in the Learner's Text and interactive resource and facilitate exploration of these materials. Working as a class, produce a class story, in text and graphics, for classroom display about the end of a voyage with individual students each contributing at least one part.

Finally, prepare a presentation of Topic 3 – Navigation.

Discussion

Sample questions to promote critical thinking and link to the purpose

Can you describe and explain the navigational use of sea life, sea life inventories, birds, interrupted swells, clouds, deep phosphorescence, sounds and smells and temperature variations, to help find land?

Connecting with the community

Where possible involve local canoe navigation experts in the sharing of stories involving finding land. On completion of lesson activities prepare a display and presentation covering Strand C: Becoming a Navigator and Navigation. Invite other students, teachers, parents and family members to view the display.

See also the section *How teachers can link community knowledge with the classroom.*

Teaching to help students learn

Using feedback

To assist the teacher understand the extent to which the students can apply knowledge covered in

Strand C: Becoming a Navigator and Navigation, facilitate the students as they take part in the following activity:

Student-generated Test Questions.

Students write questions that they think are likely to be on a test about the material covered in this class. Those questions are compiled (removing duplications) into a class quiz sheet and used for a quiz in pairs. Each student takes a turn in asking a question of their peer. The 'winner' is the first to score ten correct answers.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Where to next?

Progression levels

Generate a range of possible solutions to problems that could arise amongst groups educating new navigators.

Make a choice about a preferred action in relation to one of these problems and justify that choice.

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).



FURTHER ACTIVITIES

STRAND C: NAVIGATION

Topic	Sub topic	Further learning activities
1. Introduction to Pacific Navigation	1.1. Non-instrument Navigation or Wayfinding	<p>Form a panel to explain and discuss the differences.</p> <p>Listen to an explanation given by the teacher.</p> <p>Listen to a talk given by a local navigator.</p> <p>Write an account of the talk.</p>
2. Becoming a Navigator	2.1. Ways of Learning and Remembering	<p>Listen to a talk given by a local navigator</p> <p>Write an account of the talk</p> <p>Listen to a talk given by a local navigator.</p> <p>Write an account of the talk</p> <p>In pairs write a poem about the importance of memory in non instrument navigation.</p> <p>Construct an Ofanuw chant for own island.</p> <p>Sing a traditional song or chant.</p>
	2.2. Initiation and Rank	<p>In pairs, write and perform a script for a radio broadcast.</p>
	2.3. The Role of the Navigator	<p>Listen to a talk given by a local navigator.</p> <p>Write an account of the talk.</p> <p>Listen to an explanation given by the teacher.</p> <p>Individually write a letter to a local newspaper</p>
	2.4. Indigenous Navigators and Master Canoe Builders	<p>Compile a class book of short biographical profiles about noted historical and contemporary navigators and canoe builders.</p> <p>Write a short biographical sketch of the life of one historical navigator form their own country.</p>





Topic	Sub topic	Further learning activities
3. Navigation	3.1. Preparation and Starting out	<p>Listen to a talk given by a local navigator.</p> <p>Write an account of the talk.</p> <p>In groups of 4, discuss and plan the preparations for a voyage.</p> <p>Listen to a talk given by a local navigator.</p> <p>Write an account of the talk.</p>
	3.2. Steering by the Stars	<p>Draw and label a star compass.</p> <p>Draw and label a sidereal compass.</p> <p>Draw the star path for their own island.</p> <p>Write an explanation of a star pit.</p> <p>Identify and name the Zenith Star for their own island.</p>
3.2 Becoming a Navigator	3.3. Steering by the Sea	<p>Construct a pole chart.</p> <p>Go on a night time fieldtrip to identify Zenith star and set navigation stones for guiding stars for own island.</p> <p>Listen to a talk given by a local navigator.</p> <p>Construct a stick chart.</p>
	3.4. Steering by the Sun and Wind	<p>Listen to an account given by the teacher.</p> <p>Listen to a talk given by a local navigator.</p>
	3.5. Knowing and Adjusting Position	<p>Listen to an account given by the teacher. Half of the class in pairs design a poster which explains the <i>etak</i> system.</p> <p>Listen to an account given by the teacher. Half of the class in pairs design a poster which compares and contrasts the <i>etak</i> system with other non instrument methods of estimating position.</p>
	3.6. Finding land	<p>Listen to an account given by the teacher. Produce a class story, in text and graphics, for classroom display about the end of a voyage with individual students each contributing at least one part.</p> <p>Invite other students, teachers, parents and family members to view the display.</p>



The Canoe Is the People: Indigenous Navigation in the Pacific

Completed by (your name):.....

School:..... Date:.....

Contact details (postal):
.....

Contact details (e-mail):

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Matautu-Uta
Samoa

You can also scan the evaluation form and send by email to: links@unesco.org

STRAND C: BECOMING A NAVIGATOR AND NAVIGATION

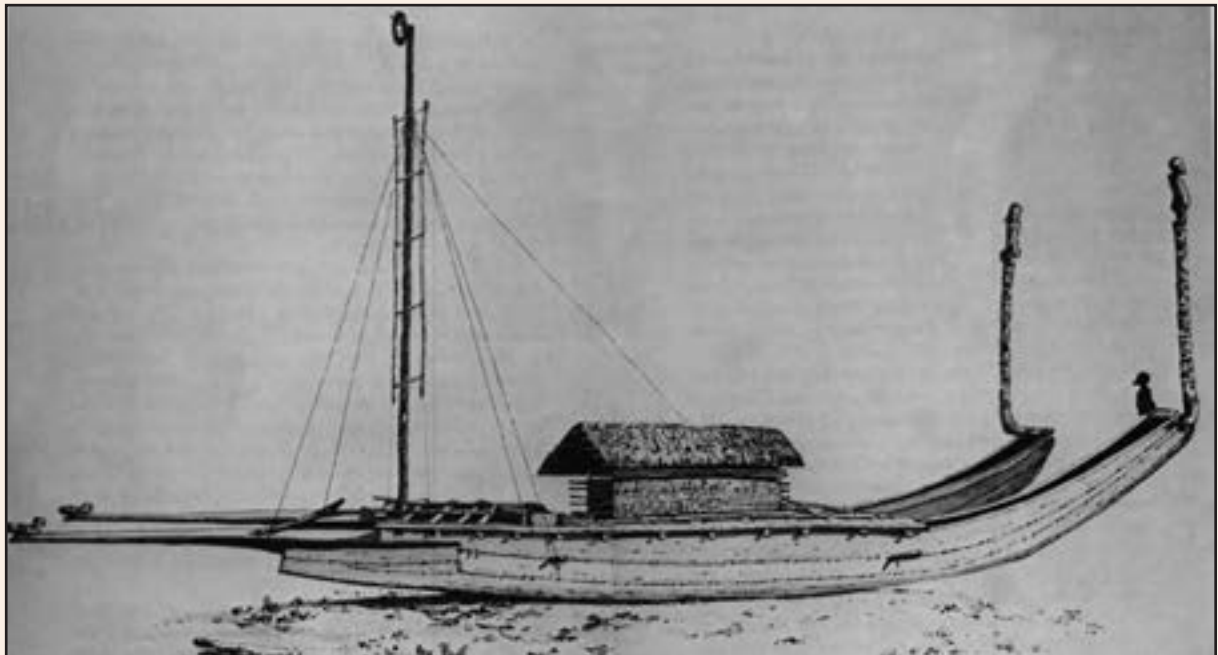
FOCUS AREA	STRENGTHS OF THE RESOURCE	SUGGESTIONS FOR IMPROVING THE RESOURCE
Teacher's Manual: Aims and objectives, curriculum framework		
Teacher's Manual: Curriculum support materials		
Teacher's Manual: Lesson plans		
Teacher's Manual: Marking schemes		
Teacher's Manual: Poster		
Learner's Text pp.27–47: Content & learning activities		
Any other comments:		





Strand D Voyages and Revival

Double travelling canoe (*tipairua*) Tahiti.



Source: Haddon, A. C., & Hornell J. (1975). p.41





STRAND D: VOYAGES AND REVIVAL – CURRICULUM FRAMEWORK

Lesson		Objectives	Suggestions for curriculum entry points
Topic	Sub topic	<i>Learners will be able to:</i>	
1. Voyages and Revival	1.1. Traditional Voyages.	1.1.1. Describe and explain traditional open ocean voyages e.g. Sawai voyages.	Social/Cultural Studies History
		1.1.2. Describe the survival skills needed for open ocean voyaging.	Social/Cultural Studies Science (biology/medicine)
	1.2. Modern Voyages	1.2.1. Explain the role of voyaging societies such as the Polynesian Voyaging Society.	Social/Cultural Studies
		1.2.2. Describe initiatives in their country and around the Pacific to revive and preserve traditional navigation and canoe building.	Social/Cultural Studies
		1.2.3. Describe at least one modern open ocean voyage.	English Social/Cultural Studies
	2. Valuing Traditional Pacific Navigation	2.1 Key Features of Indigenous Pacific Wayfinding	2.1.1. Justify the reasons for preserving traditional seafaring and navigational knowledge and skills.
2.1.2. Understand and evaluate traditional knowledge, beliefs and skills and their place in modern life.			Social/Cultural Studies English

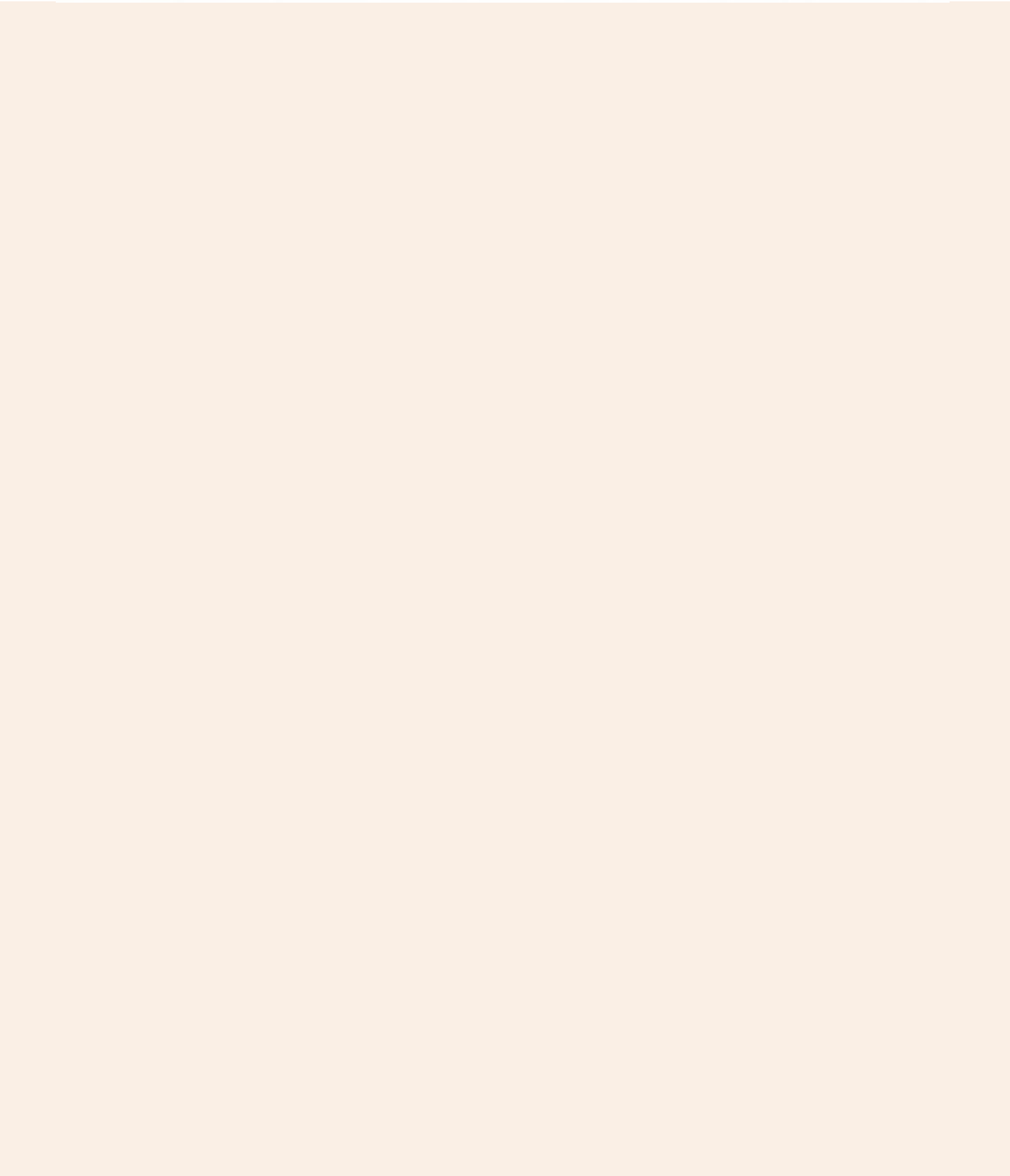




STRAND D: VOYAGES AND REVIVAL – MARKING SCHEME

LEARNING OBJECTIVES	FEEDBACK ON LEARNING DEMONSTRATED <ul style="list-style-type: none"> • Task undertaken • Students challenged by the task • Student performance • Next steps 	ACHIEVEMENT
1.1.1. Describe and explain traditional open ocean voyages e.g. Sawai voyages.		
1.1.2. Describe the survival skills needed for open ocean voyaging.		
1.2.1. Explain the role of voyaging societies such as the Polynesian Voyaging Society.		
1.2.2. Describe initiatives in their own countries and around the Pacific to revive and preserve traditional navigation and canoe building.		
1.2.3. Describe at least one modern open ocean voyage.		
2.1.1. Justify the reasons for preserving traditional seafaring and navigational knowledge and skills.		
2.1.2. Identify and discuss the core knowledge, beliefs and skills about seafaring which have traditionally been of great value in their own culture.		





STARND D: VOYAGES AND REVIVAL

Lesson 1.1. Voyages and Revival: Traditional Voyages

Objectives

Learners will be able to:

Suggestions for Curriculum Entry Points

Learning experiences

Learning resources

Understand the reasons for studying the subject area and Strand D

Verbal Explanation
Question & answer

Learner's Text (pp. 7–8 and p.48)
Interactive resource (The Canoe Is the People CD-ROM or website): Voyages and Revival

1.1.1. Describe and explain traditional open ocean voyages e.g. Sawai voyages

Social/Cultural Studies
History

Exposition and explanation
Questions & answers

Learner's Text (p.48)
Interactive resource: Voyages and Revival – Traditional Voyages

1.1.2. Describe the survival skills needed for open ocean voyaging

Social/Cultural Studies
Science
(biology, medicine)

Pair work: write a list of essential survival skills
Collect medicinal plants and plants traditionally used to make seawater drinkable

Plants collected at home

Recap and summary of sub Topic

Review and consolidate learning

Summary of content
Questions & answers

Features of this lesson

Purpose, supports and challenges in the lesson

In this lesson students will increase understanding of traditional voyages and associated survival skills. They will complete the challenge to find survival materials (e.g. plants) in their modern world.

Introducing the lesson

Links to students' prior knowledge, and vocabulary

Vocabulary: open ocean voyages, survival skills

Share with the students the learning goals for this lesson: to be able to describe and explain (a) traditional open ocean voyages; and (b) the survival skills needed for open ocean voyaging.

Ask the students if they have ever been on a open ocean voyage and how the skills required differ from those needed for sailing in a lagoon. Introduce the material in the *Learner's Text* ('Voyages and Revival: Traditional voyages') and interactive resource and facilitate study of this material. The students listen to an account given by the teacher before writing a list of essential survival skills, and drawing and labelling graphics of plants used traditionally to enable crew members to drink seawater.

Discussion

Sample questions to promote critical thinking and link to the purpose

Can you describe and explain traditional open ocean voyages?

Can you describe the survival skills needed for open ocean voyaging?

Can you identify plants which traditionally could be used to enable the crew to drink seawater?

Teaching to help students learn

Using feedback

To assist the teacher understand the extent to which the students can apply knowledge covered in this lesson, guide the students in using a Categorizing Grid. In this task students are given a grid containing two or three main categories plus a scrambled list of terms from this lesson. The students work on their own to sort the terms into the categories, and share results either with the teacher, or in pairs with the teacher observing and providing advice that is positive yet identifies further learning points.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Connecting with the community

Where possible involve local canoe sailing experts in the sharing of stories involving traditional voyages. Ensure students are able to receive this knowledge and the speaker in a respectful, culturally appropriate way.

See also the section *How teachers can link community knowledge with the classroom*.

Where to next?

Progression levels

Collect and record information about traditional deep water voyages. Identify possible problems relating to survival on traditional deep sea voyages. Make a choice about a preferred action in relation to one of these problem and justify that choice.

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).

STRAND D: VOYAGES AND REVIVAL

Lesson 1.2. Voyages and Revival: Modern Voyages

Objectives

Learners will be able to:

Recall and review learning in previous class

1.2.1. Explain the role of voyaging societies such as the Polynesian Voyaging Society

1.2.2. Describe initiatives in their country and around the Pacific to revive and preserve traditional navigation and canoe building

1.2.3. Describe at least one modern open ocean voyage

Recap and summary of sub topic

Suggestions for Curriculum Entry Points

Social/Cultural Studies

Social/Cultural Studies
English

Social/Cultural Studies

Review and consolidate learning

Learning experiences

Exposition
Question and answers

Guest speaker

Exposition and explanation
Questions & answers

Report writing: describe the voyage of the Hokule'a in 1980 or a voyage undertaken by a canoe from their country

Summary of content Questions & answers

Learning resources

Guest Speaker
Learner's Text (p.49)

Interactive resource (The Canoe Is the People CD-ROM or website):
Voyages and Revival – Modern Voyages

Learner's Text (pp.49–52)
Interactive resource: Voyages and Revival – Modern Voyages

Features of this lesson

Purpose, supports and challenges in the lesson

This lesson focuses on modern voyages aimed at reviving and preserving local and regional culture and traditions. Growing awareness of these efforts will help develop a pride in heritage, culture, language. Some students may be challenged by the activity to complete and report on a research project using correct structure, grammar, etc. Guidance on research and presentation may be needed.

Introducing the lesson

Links to students' prior knowledge, and vocabulary

Vocabulary: voyaging societies, revival, preservation. Share with the students the learning goals for this lesson, associated with modern voyages. Ask the students if any have seen or heard about modern open ocean voyages by Pacific navigators. Ask them why these might be important. Introduce the role of voyaging societies such as the Polynesian Voyaging Society and describe initiatives in their own countries and around the Pacific to revive and preserve traditional navigation and canoe building. Highlight the materials in the Learner's Text and interactive resource and ask the students to consider this material in order to prepare a set of questions for a visiting speaker who will talk about regional and/or national initiatives.

Discussion

Sample questions to promote critical thinking and link to the purpose

Can you explain the role of voyaging societies such as the Polynesian Voyaging Society?
Can you describe initiatives in your own country and around the Pacific to revive and preserve traditional navigation and canoe building?

Can you describe at least one modern open ocean voyage?

Teaching to help students learn

Using feedback

To assist the teacher understand the extent to which the students know and understand material covered in this lesson, use the Minutes and Muddy activity:

Minutes: Take the last five minutes of class and have the students summarise the main ideas they got from this lesson.

Muddiest Point: Similar to the Minute Paper, but they write about the point they had the most difficulty understanding.

This information is shared in writing with the teacher, who provides feedback to the student.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Connecting with the community

Where possible involve local canoe navigation experts in the sharing of stories involving finding land. On completion of lesson activities prepare a display and presentation covering Strand D: Becoming a Navigator and Navigation. Invite other students, teachers, parents and family members to view the display.

See also the section *How teachers can link community knowledge with the classroom*.

Where to next?

Progression levels

Explain reasons for and consequences of differing values positions about the importance of modern voyages to revive and preserve traditional navigation and canoe building. Identify ways of resolving these issues.

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).

STRAND D: VOYAGES AND REVIVAL

Lesson 2.1. Valuing Traditional Pacific Navigation: Key Features of Indigenous Pacific Wayfinding

Objectives <i>Learners will be able to:</i>	Suggestions for Curriculum Entry Points	Learning experiences	Learning resources
Recall and review learning in previous class		Exposition Question and answers	
2.1.1. Justify the reasons for preserving traditional seafaring and navigational knowledge and skills	Social/Cultural Studies English	Questions & answers Work with interactive resource and Learner's Text Debate: 'Indigenous navigation in the Pacific, although it is an important part of the Pacific Island countries' historical and cultural heritage, has no place in modern life.' (two debating teams of four and interventions by the rest of the class)	<i>Learner's Text (p.49)</i> <i>Interactive resource (The Canoe Is the People CD-ROM or website): Voyages and Revival</i>
2.1.2. Understand and evaluate traditional knowledge, beliefs and skills and their place in modern life	Social/Cultural Studies English	Guest speaker Summary of content Questions & answers Group work: in groups of three, plan and prepare a short oral presentation about traditional beliefs and seafaring and their place in modern life	<i>Guest speaker</i> <i>Learner's Text (p.47 and 49–52)</i> <i>Interactive resource: Voyages and Revival</i>
Recap and summary of Strand D	Review and consolidate learning	Questions & answers Assignment D2.1: individual report about modern day indigenous navigation in the Pacific	<i>Blackline Master Assignment D.1</i>

Study Guide

STRAND D: VOYAGES AND REVIVAL – LESSON 2.1. VALUING TRADITIONAL PACIFIC NAVIGATION: THE KEY FEATURES OF INDIGENOUS PACIFIC WAYFINDING

Features of this lesson

Purpose, supports and challenges in the lesson

This lesson is the final stage in this strand.

A new area of study is the role of sensory and intellectual navigation in Pacific navigation. A challenge will be to maintain the balance between school-based and community-based sources and 'ownership' of these knowledge bases.

Introducing the lesson

Links to students' prior knowledge and vocabulary

Vocabulary: sensory, intellectual, debate

Share with the students the learning goals for this lesson – to be able to describe and explain the key features of indigenous Pacific wayfinding, and justify the reasons for preserving traditional seafaring and navigational knowledge and skills.

Introduce the relevant material in the Learner's Text and interactive resource and facilitate exploration of these materials. Some discussion on debating rules may be needed.

Discussion

Sample questions to promote critical thinking and link to the purpose

What are reasons for preserving traditional seafaring and navigational knowledge and skills?

How do sensory and intellectual navigation play a part in Pacific navigation?

What are the core knowledge, beliefs and skills about seafaring which have traditionally been of great value in your own culture?

Teaching to help students learn

Using feedback

1. Strand D: Classroom Opinion Polls: Students respond to a survey or by hand-raising and quick counts to items presented by the teacher in this lesson (e.g. 'that traditional seafaring and navigation should be preserved'). The teacher can note who chose each alternative and in individual interviews ask for reasoning behind the choice to check knowledge base of critical thinking.

2. Strand A-D: Annotated Portfolios: Students provide a sampling of their work for each of the four strands along with brief analyses of how each demonstrates their grasp of a given concept covered in each topic.

More information about expert teaching methods can be found in the section *What helps Pacific students learn* (p.28)

Connecting with the community

Where possible involve local canoe navigation experts in the sharing of stories involving traditional and modern voyages. On completion of lesson activities prepare a display and presentation covering Strand D. Invite other students, teachers, parents and family members to attend the debate and view the display.

See also the section *How teachers can link community knowledge with the classroom*.

Where to next?

Progression levels

Generate a range of possible solutions to problems that could arise amongst groups exploring the reasons for preserving traditional seafaring and navigational knowledge and skills. Identify ways of resolving issues arising from differing value positions.

Further resources

Howe, K. (2007). *Vaka Moana: voyages of the ancestors*. Auckland, New Zealand: David Bateman Ltd.

Additional resources can also be found on the interactive resource *The Canoe Is the People* (CD-ROM or online).



**STRAND D: VOYAGES AND REVIVAL – LESSON 2.1. VALUING TRADITIONAL PACIFIC NAVIGATION:
THE KEY FEATURES OF INDIGENOUS PACIFIC WAYFINDING**

ASSIGNMENT D2.1

Carry out individual research, share information with other students and write an individual report about modern day indigenous navigation in the Pacific including information on:

- What is non-instrument navigation/indigenous navigation?
- Recent attempts to preserve and revive indigenous navigation.
- The role of voyaging societies. Is there one in your country?
- Something that is happening in your own country.

NOTES:





FURTHER ACTIVITIES

STRAND D: VOYAGES AND REVIVAL

Topic	Sub topic	Further learning activities
1. Voyages and Revival	1.1. Traditional Voyages	<p>Listen to an account given by their teacher.</p> <p>Collect plants which traditionally could be used to enable the crew to drink seawater.</p> <p>Invite a guest speaker from a national organisation (e.g. a Traditions Committee) to give a talk about regional initiatives.</p> <p>Invite a guest speaker to give a talk about local initiatives.</p>
	1.2. Modern Voyages	<p>Listen to an account given by their teacher.</p> <p>Write a short report to describe the voyage of the Hokule'a in 1980 or a voyage undertaken by a canoe from their country.</p> <p>Organise and conduct a class debate.</p> <p>Form a panel to discuss views.</p> <p>Write an essay on the similarities and differences between Micronesian and Polynesian non instrument navigation.</p>
2. Valuing Traditional Pacific Navigation	2.1. The Key Features of Indigenous Pacific Wayfinding	<p>Write a report on Non Instrument navigation in the Pacific. Make a short oral presentation about traditional beliefs and seafaring practices and their place in modern life.</p> <p>Do a team project that promotes the preservation and maintenance of their own seafaring heritage, culture and artistic expression, and which demonstrates a strong sense of self worth and an openness and respect for the customs, values and beliefs of other people in the Pacific Region.</p>



The Canoe Is the People: Indigenous Navigation in the Pacific

Completed by (your name):.....

School:..... Date:.....

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.....

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STRAND D: VOYAGES AND REVIVAL

FOCUS AREA	STRENGTHS OF THE RESOURCE	SUGGESTIONS FOR IMPROVING THE RESOURCE
Teacher's Manual: Aims and objectives, curriculum framework		
Teacher's Manual: Curriculum support materials		
Teacher's Manual: Lesson plans		
Teacher's Manual: Marking schemes		
Teacher's Manual: Poster		
Learner's Text pp.48–52: Content & learning activities		
Any other comments:		





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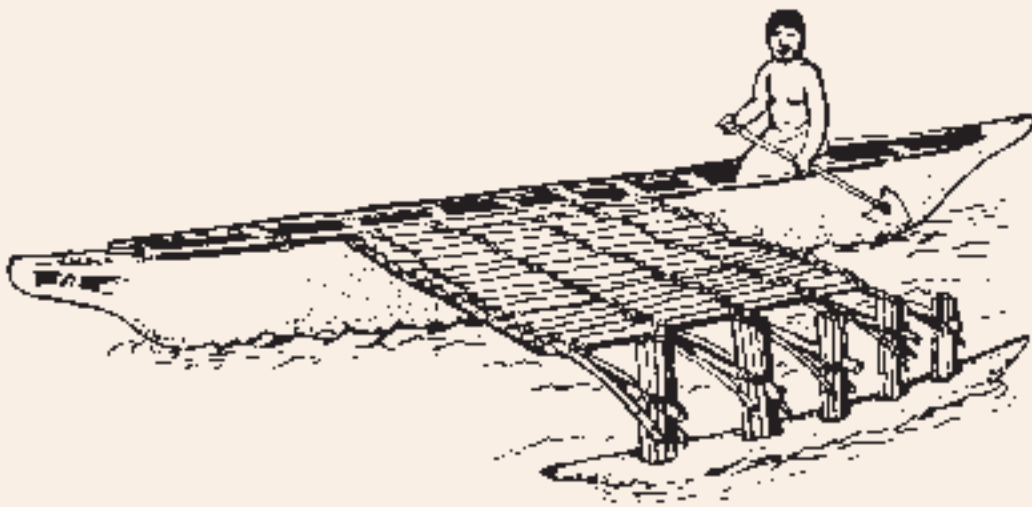


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Single outrigger canoe from Anchorite Island

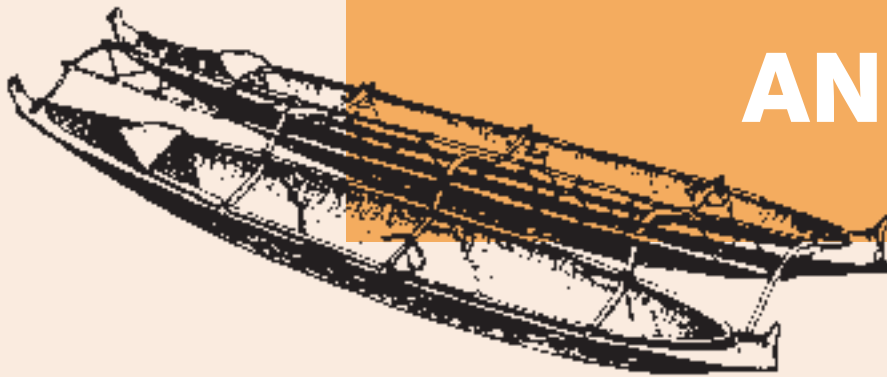


Source: Oliver p.372





POSTER AND MAP





The LINKS project recognises the importance of providing curriculum materials to help support learning about indigenous navigation in the Pacific. With this in mind, a poster has been developed that illustrates key concepts and practices described in the interactive resource, *Teacher's Manual* and *Learner's Text for The Canoe Is the People*.

Learning about aspects of indigenous navigation would also be enhanced by reference to a map of the Pacific region. Key items for highlighting with a map include:

- Naming of likely points of origin.
- Naming of other places referred to in the interactive resource and *Learner's Text*.
- Showing the likely migration of Pacific people.
- Showing the direction of the trade winds and equatorial currents.
- Showing the routes of at least three modern voyages.
- Showing examples of sea marks/sea life – e.g. major reefs, migratory routes of whales and tuna.

The map of the Pacific region and the poster showing aspects of indigenous navigation are important visual learning aids and teaching resources.

Please find the map and poster in the plastic pocket inserted after the *Teacher's Manual*.





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