

PA SITE

An Archaeological Simulation

By Vince Ham

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SECTION 1.
INTRODUCTION

1.1 CONTENTS OF THE KIT.

The kit contains the following:

- 1 PROGRAM / FINDS DISK
- 1 DATA DISK containing ready made DIGS.
- 1 TEACHERS MANUAL.
- 1 Photocopy MASTER. SITE MAP.
- 1 Photocopy MASTER. SITE RECORDS SHEET - Level.
- 1 Photocopy MASTER. SITE RECORDS SHEET - Small Finds.
- 1 Photocopy MASTER. RESEARCH RECORDS SHEET.
- 1 Photocopy MASTER. SITE MAP for Dig "The Great Fleet Theory"

1.2 DISK DRIVE REQUIREMENTS.

- The simulation can be RUN on *either* a single *or* a double Disk Drive system.
- **EDITING the DIG currently stored on the PROGRAM DISK** can be done with only 1 Disk Drive; but Editing operations involving a DATA DISK require 2 Disk Drives.

1.3 COPYRIGHT & MAKING BACK-UP COPIES

The programs and documentation are copyright. They are sold on a 'Site Licence' basis. Purchasers, whether individuals or schools, may make back-up copies for their own individual/school use; **but may not lend, sell, or otherwise transfer copies to other individuals /Schools.**

- If a group of pupils is using a 2 Disk Drive system, copy the PROGRAM and FINDS Disks onto separate Disks. PROGRAM Disk in Drive 1; FINDS Disk in Drive 2.
- If a group is using a single Disk Drive it is recommended that the FINDS Disk is copied onto the reverse side of the PROGRAM Disk.
- Making a back-up copy of Side 1 of the DATA DISK is also advisable. Side 2 of the DATA DISK has no ready-made DIGS stored on it and may be copied to make spare 'blank' DATA DISKS for new DIGS. NB: simply formatting a Pascal disk is not enough to make a blank DATA DISK.

SECTION 2.
RATIONALE

2.1 OVERVIEW

PA SITE has been designed for use as a cooperative class project for Primary, Intermediate, and Secondary Schools. It could be used as part of a unit on Maori culture in Social Studies or Maori Studies (eg: as preparation/follow-up for a museum/Marae visit); or as an introduction to archaeological techniques in Sixth Form Certificate Liberal Studies; or as part of a Maori Language programme. By means of the EDITOR included in the program, teachers may adapt the language level and complexity of the Sites to suit the learning abilities of different age groups, different classes, or even different ability groups within a class.

PA SITE is a simulation of an archaeological dig. The class becomes a team of archaeologists with groups 'excavating' different parts of an ancient Pa Site. By 'finding' artefacts they can explore and draw conclusions about pre-European Maori history and culture.

"Finds" are displayed as Hi-res graphics, and a "Research" option is included to allow students to find out more about particular sites or artefacts or to stimulate further research off the computer.

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When the program is running most of the pupils' time is spent either **EXCAVATING** or doing **RESEARCH**:

EXCAVATING

The class takes on the role of an archaeological team made up of up to 10 groups (the number of computers available & the size of the class will determine the number of groups). Up to 10 SITES are located on a SITE MAP and each group is responsible for excavating and recording information on one SITE. Each Site consists of a 16 square metre piece of land divided according to common archaeological custom into 1x1 metre PLOTS. As each PLOT is excavated any artefacts found are recorded by the pupils in the form of a scaled sketch and a written description. When all 16 PLOTS at the first LEVEL have been excavated, the pupils move on to the next LEVEL. There are 3 LEVELS, each LEVEL representing a certain age span. The actual length of this age span, as well other information such as the locations of FINDS, their descriptions, and information found through the RESEARCH option, can be entered and edited by the Teacher using the built-in EDITOR. As each group completes its excavations the general picture of the DIG is built up.

DIG

SITE 1

SITE 2

SITE 3etc

LEVEL 1: PLOTS 1-16	LEVEL 1: PLOTS 1-16	LEVEL 1: PLOTS 1-16 ...
LEVEL 2: PLOTS 1-16	LEVEL 2: PLOTS 1-16	LEVEL 2: PLOTS 1-16 ...
LEVEL 3: PLOTS 1-16	LEVEL 3: PLOTS 1-16	LEVEL 3: PLOTS 1-16 ...

RESEARCH:

Instead of EXCAVATING a PLOT, a group may choose to do RESEARCH, which gives them the opportunity to find out more about the artefacts they are finding. They can choose from 5 general areas of RESEARCH, and within each general area there are 5 items of information that can be accessed. The item of research information which is accessed by the pupils is determined randomly by the computer from lists pre-programmed by the teacher. By holding regular CLASS MEETINGS or by recording RESEARCH items on a general DIG NOTICE BOARD, groups can exchange RESEARCH knowledge and help each other draw conclusions and make hypotheses about the FINDS. The RESEARCH option can be used in several ways:

- To provide stimulus or direction for further activities and enquiries away from the computer related to the culture they are investigating. (eg: DIG 2. on the DATA DISK)
- To provide details on specific FINDS which may not be given in their descriptions. (eg: DIG 1. on the DATA DISK)
- To provide information or 'clues' related to some specific hypothesis that is being tested or some 'mystery' that has to be unravelled. (eg: DIG 1. on the DATA DISK)

Most important, though, it forces the groups to cooperate with each other in order to 'decypher' the clues to the culture that they are unearthing. Any group finding out information by RESEARCH might be finding the answers to questions being asked by other groups.

2.2 TEACHING STRATEGIES.

There are two ready-made DIGS on the DATA DISK, each representing a possible teaching approach.

DIG 1. An example of the 'Detective' or 'hypothesis testing' approach. It is the most 'self-contained' of the DIGS, in the sense that work away from the computer is not necessary in order to 'solve' the mystery (though teachers may feel such work is desirable or useful). The aim here is to use the Sites to find evidence for and against the validity of 2 of the popular theories about Maori prehistory. First, the notion of the Moriori, and secondly, the Theory of the Great Fleet of 1350. There are fewer FINDS in this DIG, most of them providing evidence either supporting or opposing the 2 theories. The Research options provide either specific information about some FINDS explaining how they relate to the theories, or further evidence which could be used in testing them. Pupils could be encouraged to group their findings under headings such as: Evidence supporting the theory; Evidence opposing the theory; and Finds or information irrelevant to the enquiry.

- This is the CURRENT DIG (ie: the DIG on the PROGRAM DISK) sent to you.

DIG 2. Rather than testing specific hypotheses, this DIG could be used more as a 'project' approach, with the class simply collecting information and making generalisations about early Maori lifestyles under the RESEARCH topic headings. It has the same SITE set-up as DIG 1, except that there are FINDS in all 10 SITES. However, it will require more enquiry by the pupils away from the computers. The descriptions of the FINDS are all in Maori, and instead of information in the Research option there are a series of topic headings or specific questions for the pupils to investigate. This should encourage them to work away from the computer consulting Dictionaries, library books etc.

Since whole sections of these DIGS can be transferred from one to the other, new DIGS can easily be created that combine elements of both approaches. (See Section 4. THE EDITOR below)

2.3 PA SITE AND "TAHA MAORI".

The role of the content material in terms of promoting 'Taha Maori' is obvious. Moreover, its editing capability also allows it to be used to promote aspects of the Maori language. Although the prompts and instructions in the program are in English a teacher could enter descriptions of FINDS and RESEARCH information in Maori. DIG 2 on the DATA DISK has its descriptions of FINDS in Maori.

More important, however, it is hoped not only that the program deals with bi-cultural content, but also that it is consistent with bi-cultural **values**. One example of this in the program's structure is the necessity the pupils face of adhering to appropriate protocol to remove a Tapu on the DIGS before excavating. Another is the inclusion of the oral tradition and the local Maori community as a valuable source of RESEARCH information in all of the DIGS on the DATA DISK. Most of all, though, it is hoped that bi-cultural values can be inherent in the teaching methodology and classroom 'atmosphere' fostered by running the simulation. A consideration of the key principles of Maoritanga brings to mind parallel key concepts in teaching methodology. Thus principles of the Maori values system such as:

- Aroha (sharing, caring, supporting, helping)
- Mauri (personal uniqueness, self esteem, pride)
- Tangata Mauri (consensus decision making)
- Whanaungatanga (working together, cooperation, responsibility to the group)
- Hinengaro (things of the mind, conscience, the heart)

all lead to thoughts of group projects, contract or consensus approaches; non-competitiveness, creative work, and peer teaching.

Clearly none of these teaching strategies is exclusive either to the computer or to Bi-cultural education. They are, or should be, the common currency of the classroom already. But a teacher adopting them may *ipso facto* contribute positively to the 'Taha Maori' principle. PA SITE assumes such a co-operative, non-competitive, consensus problem solving approach, and there is growing anecdotal and research evidence to indicate that using such software and strategies with computers can benefit both the Hinengaro and Mauri of pupils; that they can promote not only high level thinking processes but also a sense of self esteem and motivation.

SECTION 3.

RUNNING THE SIMULATION *****

3.1 TEACHER PREPARATION

One copy of the PROGRAM Disk and one copy of the FINDS Disk is needed for each group.

With single Disk Drives it is a good idea to have the PROGRAM on one side of the disk and the FINDS on the other. With a double Disk Drive system the PROGRAM Disk should be in Drive 1, and the FINDS Disk in Drive 2.

ENSURE ALL PROGRAM DISKS HAVE BEEN CLEARED OF THE PREVIOUS CLASS'S RECORDS BY USING THE 'RESET' UTILITY. (See below. No. 9)

The SITE MAP.

The SITE MAP photocopy Master included in the kit contains some land features archaeologists have found fruitful in New Zealand Digs. It is a river estuary site with a prominent hill suitable for fortification, and some easy slopes suitable for gardening. The swamp and caves are included as these can be rich in finds such as wooden artefacts which would have quickly decomposed in soil.

On the background SITE MAP the Teacher may add up to 10 numbered SITES for groups to dig. Some details from a surface survey could be added at this stage ("hollow in the ground", "a ridge of stones", "some small pieces of obsidian on SITE 2" etc). These, combined with the first set of RESEARCH items the groups get from the computer, could be useful in deciding on which SITES are the most promising (See below: Section 3.2 PRELIMINARY RESEARCH). The sample SITE MAP for the "Great Fleet Theory " DIG provides an example of a SITE MAP.

The class is divided into groups (maximum 10) and copies of the SITE MAP and the 3 RECORDS SHEETS distributed. Each group of archaeologists is to excavate one SITE, with a central record of finds being kept, and/or regular CLASS CONFERENCES held to share RESEARCH information.

3.2 UP AND RUNNING.

NB: Throughout the simulation pupil selections are made by following prompts on the PROMPT LINE at the bottom of the screen.

THE PROCEDURES.

1. THE TITLE PAGE.

When the Program first starts a Title Page will appear, which includes the name of the DIG currently on the disk. The PROMPT LINE should read:
School?

Pupils type the name of their School then press <RETURN>

NOTE: It is at this point that Teachers may enter the EDITOR and other UTILITIES. (See Procedure 9 below)

2. PRELIMINARY RESEARCH.

The first time a group goes to a computer they are asked to do some RESEARCH before choosing which SITE they want to excavate. The class should ensure that all RESEARCH options are covered at this stage. Call a class meeting could discuss the information collected, and to decide which groups are to excavate which SITES.

3. TAPU INFORMATION.

On returning to their computers the groups enter a phase of the program highlighting the need to obtain the full backing of the local Maori community before excavating a Pa Site. Pupils may proceed without lifting the Tapu, but those who do so run a grave risk of alienating both the Maori community and the local museum authorities and will eventually have to abandon the Dig (Start again).

4. WHAKA NOA. (Lifting a Tapu).

Those who go back to the Tangata Whenua to get the Tapu lifted will be able to continue the excavation without disruption.

5. MAIN MENU.

This gives pupils the choice:

D)ig R)esearch S)ave

6.DIG

When this is chosen from the MAIN MENU, a PLOT MAP is displayed showing the SITE and LEVEL at which the group is currently working. Excavated PLOTS are displayed as blanks, PLOTS yet to be dug display their numbers. The group digs a PLOT by typing its NUMBER then pressing <RETURN>. The Plot map is adjusted, and the message DIGGING is displayed while the computer searches its files to see if there are any FINDS in that PLOT.

If there are no artefacts in the PLOT, a message to that effect is displayed and the program returns to the MAIN MENU.

If there are artefacts in the PLOT then the program retrieves it/them from the FINDS DISK and shows it/them on screen, along with descriptions. FINDS are displayed initially on the standard 1x1 metre scale. Many FINDS, however, would be too small to see on that scale, so these small FINDS are first displayed as an asterisk (*). The student can 'zoom' in on these FINDS by pressing <RETURN> when prompted.

A maximum of TWO FINDS can be located in any one PLOT.

The students should sketch the FINDS onto their record sheets, noting the appropriate scale, and enter any written descriptions that may be displayed. Large FINDS can be entered direct on the Levels RECORDS SHEET; small FINDS are entered in a section on the Small FINDS RECORDS SHEET. Pupils will need to note carefully the Site, Level, and Plot numbers for small FINDS. (These could be pasted onto poster paper around the Levels RECORDS SHEETS for display.)

All FINDS information may be reviewed during the digging procedure itself, but once the students have selected to return to the MAIN MENU after emptying a PLOT, the FINDS in that PLOT are deemed to have been dug up and cannot easily be reviewed. Should a group genuinely need to go through the FINDS again a LEVEL can be restored using the 'RESTORE' Utility. Re-digging the LEVEL is a time consuming activity, however. Careful record keeping is thus important; as it would be on a real Dig. (See No.9 below)

NOTE: With a 2 Disk Drive system the display of FIND information happens automatically. But with a SINGLE Disk Drive system, the pupils first have to insert the FINDS DISK and press <RETURN> in order to see the artefacts. When the FINDS have been recorded they will then have to change back to the PROGRAM DISK. Prompts are clearly given for this operation.

7. DOING RESEARCH.

When this option is selected from the MAIN MENU, students are offered 5 categories/headings/sources of information to investigate. When they make a choice (by NUMBER) the computer then selects a piece of information/ question etc at random from the pre-programed files within each heading and displays that information/question etc on screen. Pupils should note the information and share it with other groups, either through some kind of bulletin board or through periodic class meetings. The class will know it has covered all RESEARCH information/topics when 5 different items (not counting any PRELIMINARY RESEARCH) have been recorded for each heading.

On leaving the RESEARCH menu students are returned to the MAIN MENU.

8. SAVE.

In order to keep a record of which SITE, LEVELS, and PLOTS have been dug by a particular group, a group must choose the S)ave option from the MAIN MENU. This should be done at the end of each session at the computer, and periodically during the lesson. **Failure to Save will mean the group has to redig Plots next time.**

9. UTILITIES.

There are various utilities built into the program. They can be accessed in two ways:

- By typing **GOTO UTILITIES** <return> instead of a school name in the TITLE PAGE.

- By typing the letter **U** in the MAIN MENU. (This option is not displayed on the prompt line)

The UTILITIES Menu provides the following options:

- 1 = RETURN to current Site.
- 2 = RESTORE Site Level(s).
- 3 = CHANGE to a new Site.
- 4 = RESET for next class.
- 5 = Enter EDITOR.

Selections are made by typing the appropriate **number**.

1 RETURN. Returns to the program without making any changes.

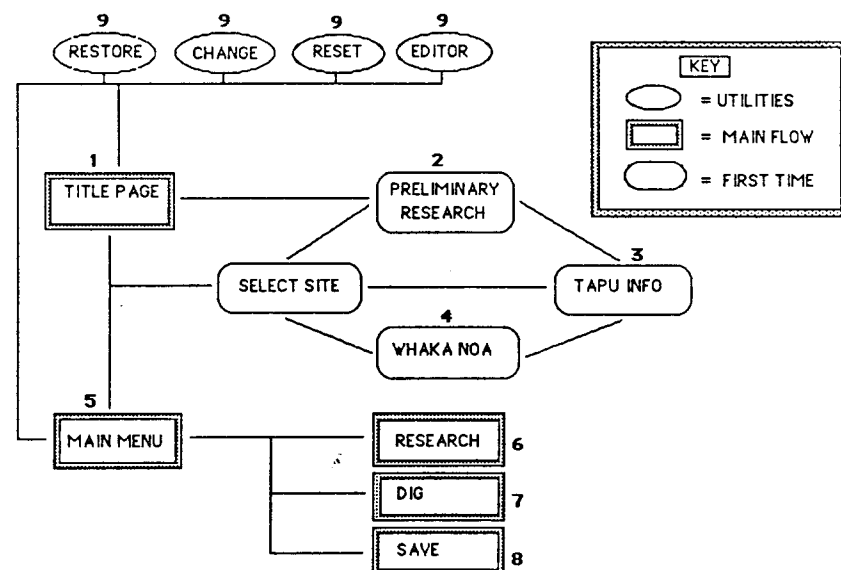
2 RESTORE. Allows user to restore a SITE (one LEVEL at a time). It is useful, for example, if the records of a SITE excavation were to be lost and the group needed to see the FINDS again.

3 CHANGE Erases the computer's records of a group's progress through a Site, and asks the user to select another Site.

4 RESET Erases the computer's records of the current group's activities, including the memory of having Tapu raised. IT SHOULD BE USED BEFORE BEGINNING WITH A CLASS SO THAT NEW USERS DO NOT INHERIT THE POSITIONS OF THE PREVIOUS CLASS.

5 Enter EDITOR Allows the teacher to enter the EDITOR, where DIGS can be edited, transfered to or from DATA DISK, printed to paper etc. (See below. Section 4. THE EDITOR)

FLOW CHART OF PROCEDURES



SECTION 4.

THE EDITOR

The Editor permits you to change various aspects of the simulation in order to create new Digs or to tailor an existing Dig to the specific needs of your own class.

NB: 1. Selections in the Editor are usually made by NUMBER. Typing the number 0 will take you back one step.

2. The term "Current Dig" throughout this manual refers to the Dig currently stored on the PROGRAM DISK, as opposed to Digs stored on a DATA DISK.

The MAIN EDITOR MENU provides the following options.

0 = Quit Editor

1 = Rename Current Dig.

2 = Edit Current Dig.

3 = Print out Current Dig.

4 = Delete a Dig from Data Disk.

5 = Transfer a Dig from Data Disk.

6 = Save Current Dig to Data Disk.

0 = Quit Editor

Typing the number 0 in the Main EDITOR Menu will return you to the TITLE PAGE of the program.

4.1 Renaming a Dig.

- This procedure renames the Current Dig.
- The current name of the Dig on the Program Disk will be displayed.
- If you wish to change it, type in a new name for the Dig then press <return>. The new name will be stored on the Program Disk.
- Pressing <return> (and no other text) or typing 0 (zero) will take you back to the MAIN EDITOR MENU without changing the current name.
- If you are preparing a new Dig to be stored on a Data Disk, it is not necessary to change the name of the Current Dig first. You will be asked to give the new Dig a name within the SAVE option.

4.2 Editing the Current Dig.

- Use these procedures if you wish to change individual sections of the Current Dig.
- Creating a new Dig from scratch is a time consuming process. It would be quicker to change aspects of an existing Dig using the Edit procedures (No. 2), or to transfer whole sections of Digs on a Data Disk using the Transfer option (No. 6).
- There are basically 3 aspects of a Dig that can be edited:

1 = Edit Site information (to change the locations of Finds in any SITE)

2 = Edit Research information (to change Research items)

3 = Edit Descriptions of Finds (to change the descriptions of Finds)

4.2.1 Editing Site information.

On selecting this option you will be asked to type the number of the Site you wish to change. There is a maximum of 10 SITES in any one Dig. (See the SITE MAP for an example)

Having chosen a SITE you will then be given the chance to:

1 = Empty site # (a fairly drastic measure, but useful if you have fewer than 10 groups working and you want to concentrate the Finds)

2 = Empty a level

3 = Change finds (Most of your editing will be done from this option)

Changing the location of individual Finds.

Select the '*Change Finds*' option. The current status of Finds in Level 1 of the chosen Site will be displayed in the form of a PLOT Map.

Below the numbers of each Plot there is a four digit number representing the numbers of the Finds located in that Plot. Consult the Graphics printouts in the Appendix to see the number applicable to each Find.

NOTES:

- A maximum of **two** Finds can be placed in any one Plot.
- Each Find has a **double digit number** to identify it.
- Each Plot must have **two double-digit numbers** entered in it.

For example: 3122 locates Find no. 31 and Find no. 22 in that Plot.

- If you only wanted one of these Finds in a Plot it would be entered as: 3100
- Completely empty Plots are entered as: 0000
- Copies of the Levels Records Sheets could be used in order to plan the locations of Finds in a Dig.
- Certain combinations of Finds can be put in adjacent Plots or Sites in order to build up large scale discoveries. Each Plot represents a 1 by 1 metre area, and

each Site a 4 by 4 metre area. Finds such as sleeping huts, storage pits, meeting houses, long stone walls for garden protection, large middens, pallisading, and so on, can thus be built up over a number of Plots using the various post hole finds. Similarly, placing Sites at different points around the hill could outline defensive pallisades.

- Note that certain combinations of Finds in adjacent Plots make up distinct pictures. For example: I3800I3700I has the prow and middle section of a war canoe.

Similarly: I4600I

I4500I displays the top and bottom sections of a ladder pole.

Typing N when asked: *Change any Plots?(Y/N)* will cause the program to save that Level and display the Plot Map for the next Level.

Typing 0 (zero) when asked: *Change any Plots?(Y/N)* will cause the program to save that Site and exit without going down to the next Level.

4.2.2 Editing Research Information.

Selecting the option 2 = *Edit Research information* from the main Edit Menu then leads to the choice:

1 = *Edit Preliminary Research info.*

2 = *Edit Research info.*

Editing Preliminary Research involves changing the items pupils receive on their first session with the program (See Section 3.2 PRELIMINARY RESEARCH above). One item for each of the five headings. These items may be supplemented by further information on the Site Map.

Editing Research information involves changing the bank of items pupils may look at from the MAIN MENU of the program. (See Section 3.2 RESEARCH above). There are 5 headings in ordinary Research, each with a bank of 5 items. During the running of the program when pupils choose to Research they select a heading and the computer selects one of the 5 items at random to display. The random selection is in order to encourage the free exchange of Research items among groups.

NOTES:

- The Headings for Preliminary Research cannot be changed, but the headings for ordinary Research can.
- The Preliminary Research item for the Tangata Whenua cannot be changed. This informs the pupils that there is a Tapu on the Dig site.
- Select which item to change by number.
- Research items can be up to 104 characters long (2.5 lines). The cursor will appear to 'stick' once the limit has been reached.

- Do not worry about words which appear 'broken' at the end of a line during the entering phase. Word wrap around will be automatic when the item is displayed by the rest of the program.
- After a new Research item has been added it will be filed and the revised bank of items displayed.

4.2.3 Editing Descriptions of Finds.

This subroutine allows you to change the descriptions displayed with the Finds Graphics during the Dig. Descriptions may be changed individually, or all descriptions may be blanked at once.

NOTES:

- Descriptions, like the Graphics they refer to, are numbered 11-75.
- When you select a numbered Description to change, the current description is displayed, and you are able to type in a new entry.
- Pressing <return> without any text will blank an entry.
- Typing 0 (zero) then <return> will leave the current description unchanged.
- Descriptions can be up to 104 characters long (2.5 lines). The cursor will appear to 'stick' once the limit has been reached.
- Do not worry about words which appear 'broken' at the end of a line during the entering phase. Word wrap around will be automatic when the item is displayed by the rest of the program.
- Descriptions are saved to disk immediately after entry.

4.3 Printing out the Current Dig.

- Only the Current Dig may be printed. Digs on Data Disks should first be transferred to the PROGRAM DISK using the Transfer option (No. 5) in the MAIN EDITOR MENU.
- Printing will be continuous, so ensure to use tractor fed continuous computer paper, not single sheets.

4.4 Deleting a Dig from a Data Disk.

- This procedure assumes that the Data Disk is in Drive 2 of a double disk drive system.
- On entering the Delete a Dig procedure a Catalog of the Digs on the Data Disk is displayed. Select the Dig to be deleted by number.

NOTES:

- The catalog of a Data Disk will display 4 positions for Digs to be saved. If a Dig occupies a position its Title will appear. If a number has no Title alongside it then that space is blank and a new or revised Dig may be saved to that position using the Save procedure in the MAIN EDITOR MENU (No. 6).

4.5 Transferring a Dig from a Data Disk.

The procedure opens with a catalog of Digs on the Data Disk. On selecting a Dig to be transferred you will be presented with the following options:

1. Transfer whole Dig.
2. Transfer SITE information only.
3. Transfer FINDS Descriptions only.
4. Transfer RESEARCH info only.

Selecting any of no.s 2-4 allows 2 or more Digs to be merged to form a new Dig. You may, for example, wish to create a Dig which has all the SITE information from the Current Dig but to have all Descriptions of Finds in Maori as on Dig 2 on the Data Disk. Selecting option 3 from this menu will replace the existing Descriptions with the new ones from the Data Disk without affecting the locations of Finds or the bank of Research items. The new hybrid Dig can then be saved under a new name using the Save option from the MAIN EDITOR MENU (No. 6).

NOTES:

- Since all or part of the Current Dig is replaced by the Transfer option it is important that a copy of the Current Dig exists on a Data Disk before it is changed.

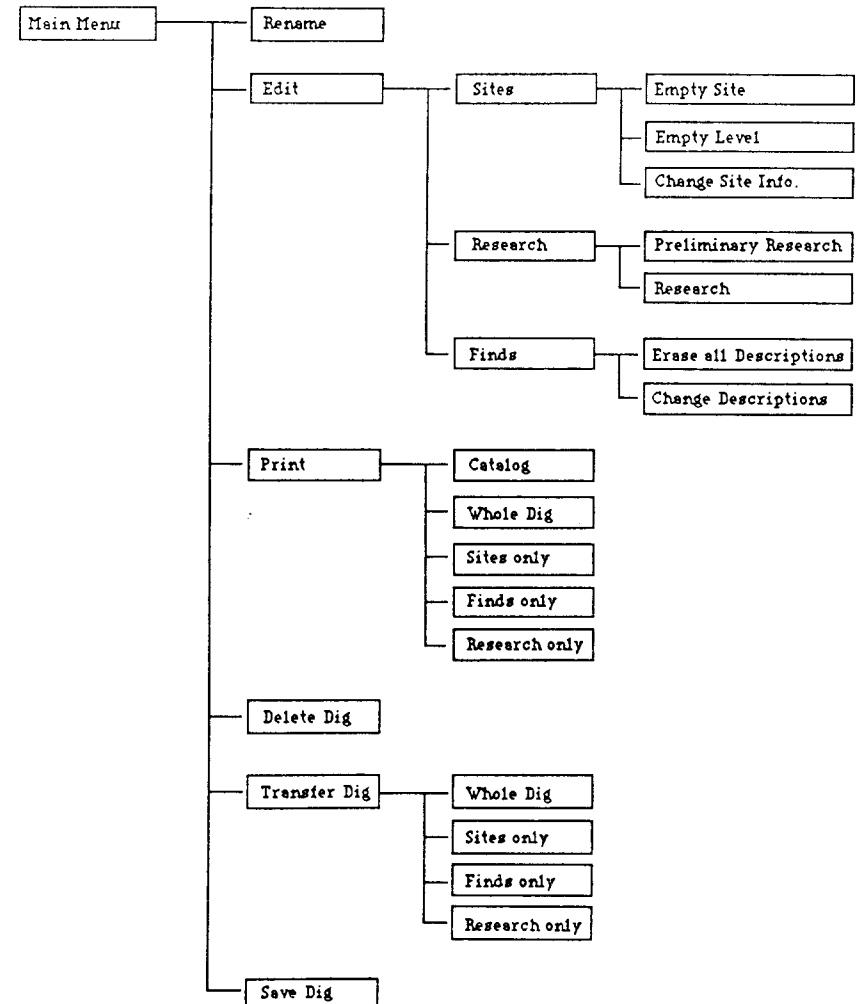
4.6 Saving a Dig onto a Data Disk.

New Digs created on the PROGRAM DISK can be saved onto Data Disk by selecting No. 6 from the MAIN EDITOR MENU. You will be given the chance to rename the Dig before it is saved.

NOTES:

- Digs may not be saved to places on a Data Dig where a Dig already exists. The Dig occupying that position on the Data Disk should first be deleted using the Delete option from the MAIN EDITOR MENU.
- There is one spare place on Side 1 of the Data Disk supplied with the kit. Side 2 is an empty Data Disk with room for 4 more. Extra 'empty' Data Disks may be created by copying side 2 of this Data Disk before saving any new Digs onto it.
- Spare Data Disks cannot be created by formatting a Pascal Disk in the usual way. Copy the existing Data Disk.

Flowchart of Editor Procedures



Appendix.

(NB: No's 11-36 are 'small finds'.

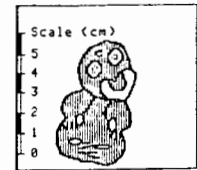
See Section 3.2 No. 6)

Hints for making new Digs.

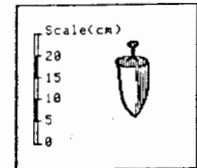
- **Use of levels.** Finds can be placed in any of three levels in order to allow pupils to investigate the chronology of Maori settlement and to make historical interpretations. However, it is important that any Digs created this way are as historically accurate as possible. If each of the three levels are made to represent c.400 years (as is the case with the ready-made Digs) this allows you to create Sites of a realistic vintage, and the levels will coincide approximately with the main stages of cultural development (800-1300 AD, 1300-1800 AD, 1800 - Present day). A quick, 'survey of Classical Maori culture' type of Dig could be set up by concentrating the Finds all on Level 1 of the various Sites and telling the pupils to ignore lower Levels.
- **Greenstone.** Note that greenstone was a feature of Maori culture only from about 14th Century on, once they had discovered methods of cutting and drilling it using greywacke and pahautane flint.
- **Moas.** Although sightings of the Moa were reported even into the C18th and C19th, their significance as a staple of Maori diet and culture should be kept to the earliest levels. By the middle era the Moa was already becoming scarce. The exhaustion of local resources by the C14th meant that the middle period Maoris concentrated more on conservation-conscious gardening and hunting methods.
- **Buildings.** Inter-tribal wars were a feature of the middle and later periods. Fortification of villages, large numbers of weapons of war etc, should be kept to later levels.

For more hints on the placement of specific Finds see the NOTES ON FINDS on the following pages.

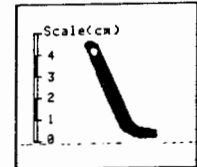
11. Greenstone Tiki. Tiki of this quality and intricacy are likely to be fairly recent.



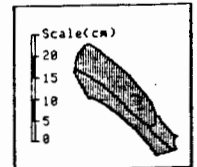
12. Spinning top. These could be made of bone, wood or stone.



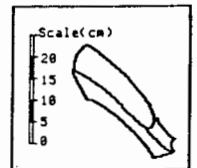
13. Neck or ear pendant. Bone, wood, or stone.



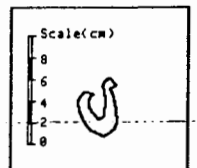
14. Greenstone adze. Shape very common throughout the centuries of Maori settlement. In areas furthest away from the greenstone rivers of the West Coast of the South Island, the rarity of greenstone meant that finely polished adze heads and weapons would be for ceremonial purposes.



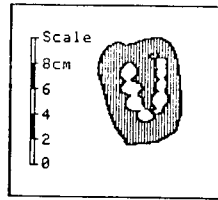
15. Stone adze head. Likely to be common at all levels. Large ones like this were made often of argillite, greywacke or flint.



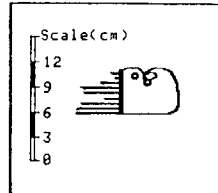
16. Bone (or stone) fish hook.



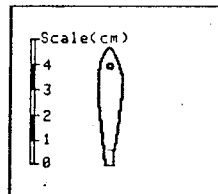
17. Piece of drilled bone. This is a partly made fish hook like No. 16 showing manufacturing method. Fine drill points of flint, obsidian etc on a wooden shank would be used to drill the holes.



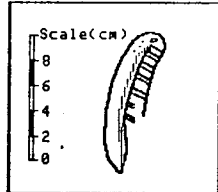
18. Top knot comb. Copied from a very early example but of a style common through all levels. Carving may indicate 'dress' comb or chiefly rank.



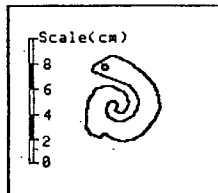
19. Fish lure. Sites abound with such finds. in a variety of sizes. Made of shell, bone or stone. See No. 35.



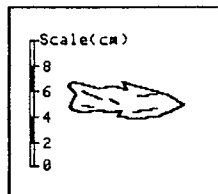
20. A rare "Moa hunter" amulet. Early period (750-1300).



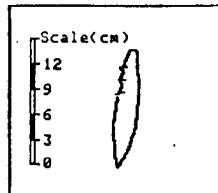
21. Stylised fish hook pendant. Very common style at all levels. Usually bone.



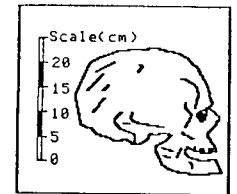
22. Spear head. Stone or bone. Either for animal hunting or as harpoon head.



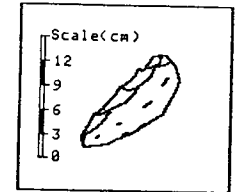
23. Ridged stone adze head, side view. Common style at all levels. A rougher example for everyday use.



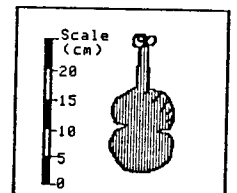
24. Human skull. Excavated skulls of all vintages have been of similar racial type, part of the evidence against the theory that the earliest native culture ('Moiriori'?) was overrun by a racially different and technologically superior Maori culture in the 14th Century.



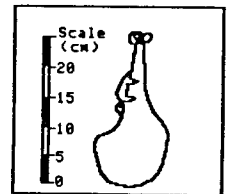
25. Flint knife. Could also be argellite. A useful small find for the quarry (No. 51)



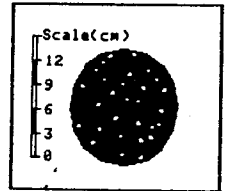
26. Patu onewa (war club).



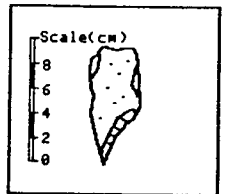
27. Wahaika (war club). Polished and sharpened whalebone or wood. Not a 'mere', which would not be carved.



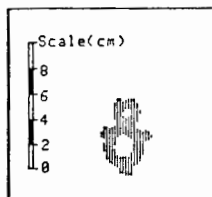
28. Argellite hammer stone, hand sized. Pits in the stone created by constant use for breaking off flakes of stone during the making of adzes, knives etc. See also No. 51.



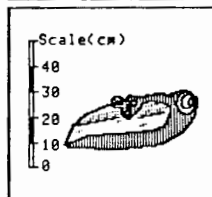
29. Flint or obsidian drill bit or rowel. Note that obsidian occurs naturally only in a small part of the North island. Its presence in South Island Sites could indicate trade, conquest, or migration. Obsidian shards were excellent small cutting tools.



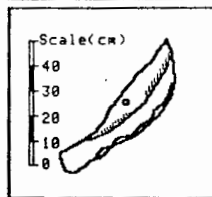
30. Poria kaka. Leg ring for tame birds (lures). Made of bone or greenstone.



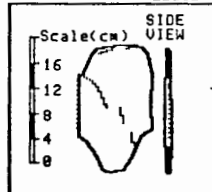
31. Wooden canoe bailer.



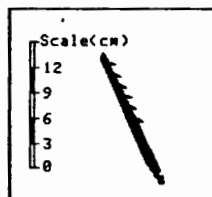
32. Patu tuna. Eel club.



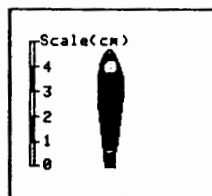
33. Greenstone cutter. Greywacke or 'knotted' greenstone.



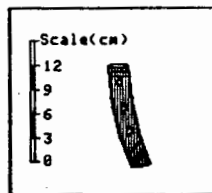
34. Barbed bird spear point. Bone.



35. Fish lure. An alternative to No. 19. Mother of pearl samples found at Level 3 could be indicators of Pacific origins, since mother of pearl is not native to NZ.

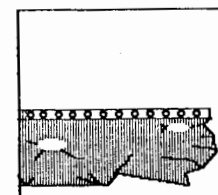


36. Bone flute. eg: wing bone of albatross.

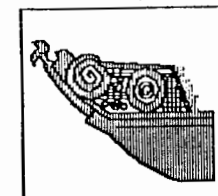


(Finds 37 - 75 are drawn & displayed on-screen on a 1 metre by 1 metre scale.)

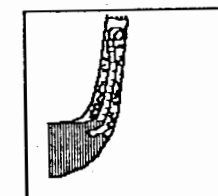
37. Centre part of small carved canoe. Use in combination with 38.



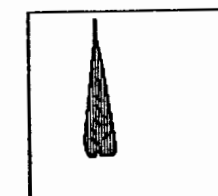
38. Carved prow of war canoe. Use in combination with 37.



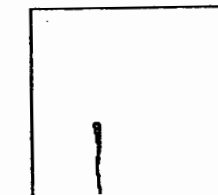
39. Carved stern of a war canoe. Use with No.s 37 & 38 to indicate length (up to 15 metres)



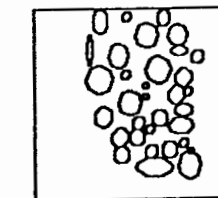
40. Bottom part of a shovel. Use with No. 41 above it to indicate length.



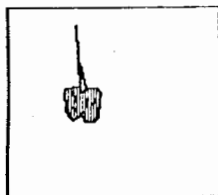
41. Remains of a wooden handle. Use with No.s 39, 40, 43.



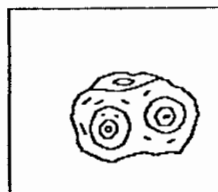
42. Stones and boulders closely stacked in a line. Part of a protective garden wall.



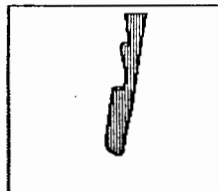
43. Bottom part of a wooden shovel. Use with No. 41 above it to indicate length.



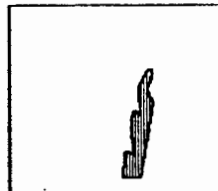
44. Large anchor stone with spiral patterns. Hole drilled in top part of stone.



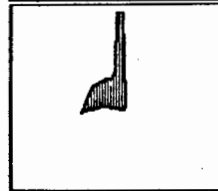
45. Bottom part of wooden stepped ladder. Used for access to raised store houses or as ladders to fortification platforms. Use with No. 46. See also No.63.



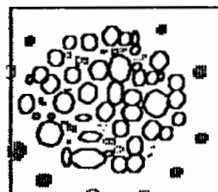
46. Top half of wooden stepped ladder. Use with No. 45.



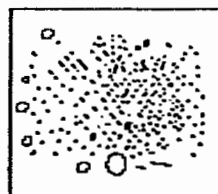
47. Bottom half of a Tewhatewha (weapon). Note hole for tying on feathers to distract an enemy. Use with No.41 above it to indicate length.



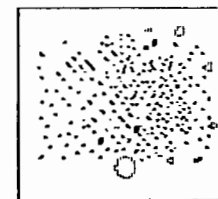
48. Remains of an umu, or earth oven. Stones, charcoal. Outer ring of post holes could indicate a covering.



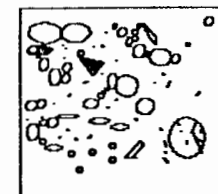
49. Rua kumara (store pit for kumara). Mass of small pebbles laid on the floor of a rounded pit up to 2 metres across. Outer ring of posts indicate the pit would have had walls and a covering. Use with No. 50.



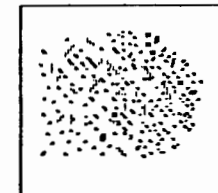
50. The other half of the Rua kumara. See No. 49.



51. Part of a stone quarry. Rocks of various sizes, some hammer stones, and part made adzes. Repetitions of this could delineate the size of the quarry or tool making site.



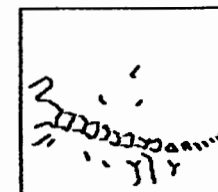
52. A midden; a mass of small shells, bones, rubbish etc. Use in combination with various small finds. Repetitions of this could delineate the size of the midden.



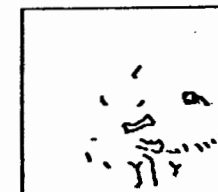
53. Legs and torso of middle-sized to large (2 metre) Moa. Use with No. 54.



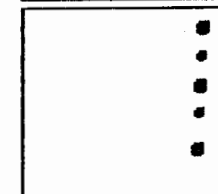
54. Upper torso and neck of Moa. Use with No. 53.



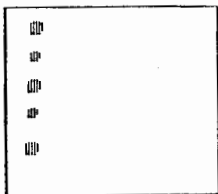
55. Remains of small (1 metre) Moa, including skull. Could be added to midden.



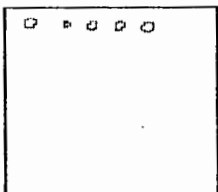
56. Post remnants (right), Wall of house or fortifications. See No. 69.



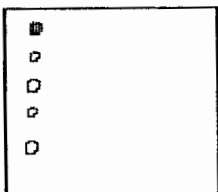
57. Post remnants (left). Wall of house or fortifications. See No. 69.



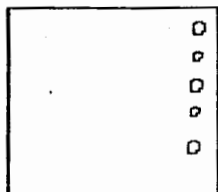
58. Charcoal post remnants (Top). Wall of house or fortifications. See No. 36.



59. Charcoal post remnants (Left). Wall of house or fortifications. See No. 36.



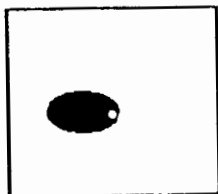
60. Charcoal post remnants (Right). Wall of house or fortifications. See No. 36.



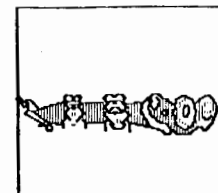
61. Partly made greenstone adze. A block with a polished face partly hewn through along its length. Rounded hammer stones alongside.



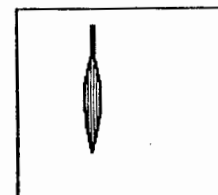
62. Large Moa's egg with hole pierced in it. A container.



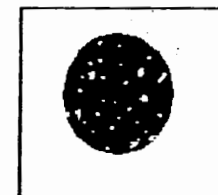
63. Maihi (barge board) from a Pataka or raised storehouse. These could have 1, 2 or 4 supporting posts depending on size. Note: Personal possessions were not kept in sleeping huts, but in Pataka. Use with No.s 45, 46.



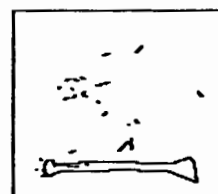
64. Canoe paddle. Use with No. 41 above it to indicate length.



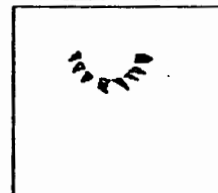
65. Large hammer stone. Larger rocks were broken with such large hammer stones dropped from outcrops above the quarry. Use with No. 51.



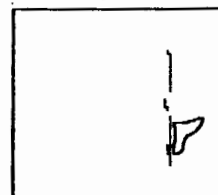
66. Thigh bone of a Giant Moa. Pupils could estimate the size (c. 3 metres) of the Giant Moa by comparing the size of this thigh bone with that in No. 53.



67. Shark tooth necklace.



68. Stone ko (digging stick) foot-rest with remnants of the wooden ko.



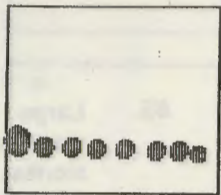
69. Single large post hole. (Left). Could be a centre post for a house, a pole supporting a store-hut, or part of a fortification. Shaded post holes indicate remnants of post wood.



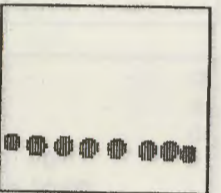
70. Single large post hole. (Right). See No.30.



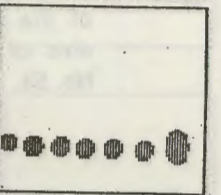
71. Line of post remnants. (Bottom). House corner? See No. 69.



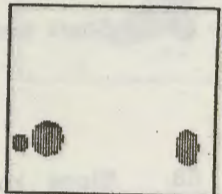
72. Line of post remnants. (Bottom). See No. 69.



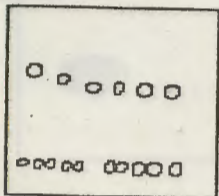
73. Line of post remnants. (Bottom). House corner. See No. 69.



74. Post remnants. House door opening or fortification gate. See No. 69.



75. Post holes / remnants. Unshaded post holes indicate charcoal remains. Part of alleyway or platform in fortifications.



Acknowledgements

My sincere thanks go to the following for their help and advice.

- Hone Karaitiana
- Fred Rakuraku
- Barry Brailsford
- Kenni Johanni

References.

The following books are available in most school libraries and should provide useful resources for use in conjunction with the Simulation.

- | | |
|------------------|--|
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| • Brailsford B. | The Tattooed Land. The Frontiers of the Southern Pa Maori. (Reed. 1981) |
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