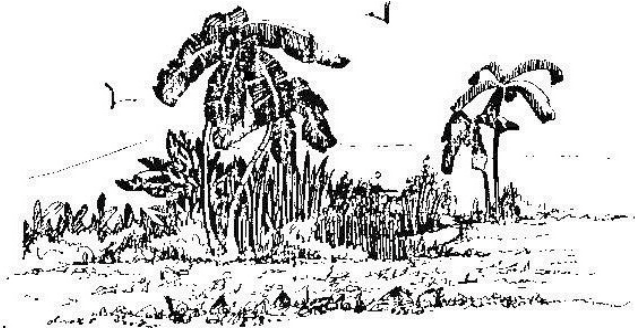


3.1A



LANDING SITE: EPSILON

Description



Terrain:

Island of volcanic rock, with low hills. Small streams but no large rivers. The beaches are mainly of pebbles of a black, glassy rock and there are a number of different kinds of sea shells .

Climate:

Hot and sunny (60 - 90 degrees F, 16 - 32 degrees C). Regular heavy rainfall every evening for about half an hour.

Plant Life:

Semi-tropical, with a wide variety of fruits, flowers, shrubs and palms.

Animal Life:

Many small forms of animal life, particularly birds, reptiles and insects.

3.1B



LANDING SITE: EPSILON

Survival

Your store of food is going mouldy, and you will soon run out of fuel and water on your spaceship. You will have to rely on what you can find on this new planet. You will also need to find or build some kind of shelter. What can your landing site offer?

How could it provide you with a regular supply of food?

What would you use for fuel for cooking?

How would you plan to produce electricity in the future?

How would you make sure you had a regular supply of drinking water?

What kind of shelter would you be able to provide?

What things are plentiful at your landing site?

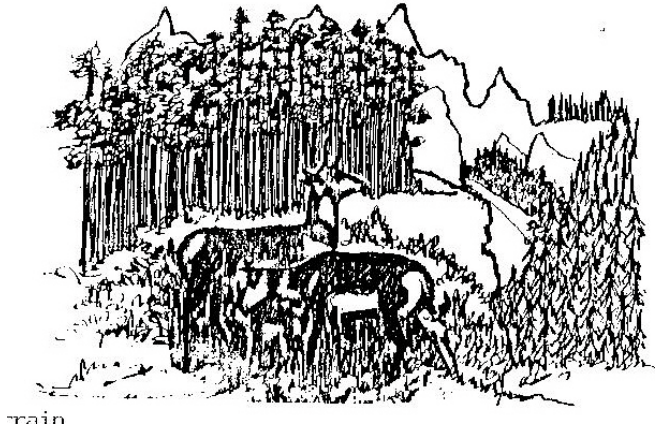
Are there any things you would need which you have not got or are very scarce at your landing site?

3.1A



LANDING SITE: THETA

Description



Terrain:

Mountains, steep-sided valleys and fast flowing rivers.

Climate:

Fairly cool (40 to 60 degrees F, 3 to 16 degrees C) due to high altitude. High rainfall at all times of the year (200 to 250 inches per year).

Plant life:

Heavily forested, with many kinds of pine but with some broad leaf trees on the lower slopes.

Animal life:

Many small furry animals and some deer like creatures.

3.1B



LANDING SITE: THETA

Survival

Your store of food, fuel and water on your spaceship will only last for a short time, and you will soon have to rely on what you can find on this new planet. You will also have to find or build some shelter as your spaceship has been damaged. What can your landing site offer?

How could it provide you with a regular supply of food?

What would you use for fuel for cooking?

How would you plan to produce electricity in the future?

How would you make sure you had a regular supply of drinking water?

What kind of shelter would you be able to provide?

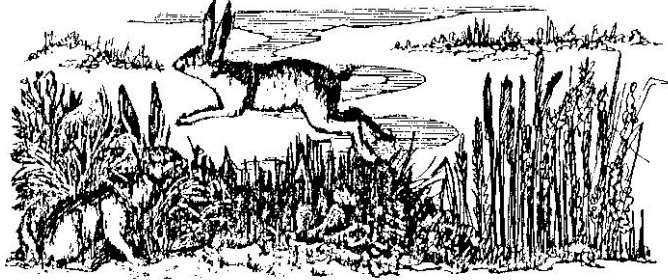
What things are plentiful at your landing site?

Are there any things you would need which you have not got or are very scarce at your landing site?

3.1A



LANDING SITE: DELTA Description



Terrain:

A flat, fertile coastal plain through which a wide river meanders into a tidal estuary with mud flats and sand banks.

Climate:

Temperate to warm (50 to 75 degrees F, or 10 to 24 degrees C). Fairly low rainfall (20 to 30 inches per year), mostly in the first half of the year.

Plant life:

Many types of grasses, small bushes and other small plants. Few trees.

Animal life:

No animals larger than rabbits.

3.1B



LANDING SITE: DELTA Survival

Your store of food, fuel and water on your spaceship will only last for a short time, and you will soon have to rely on what you can find on your new planet. You will also need to build some kind of shelter as the spaceship is not very comfortable. What can your landing site offer?

How could it provide you with a regular supply of food?

What would you use for fuel for cooking?

How would you plan to produce electricity in the future?

How would you make sure you had a regular supply of drinking water?

What kind of shelter would you be able to provide?

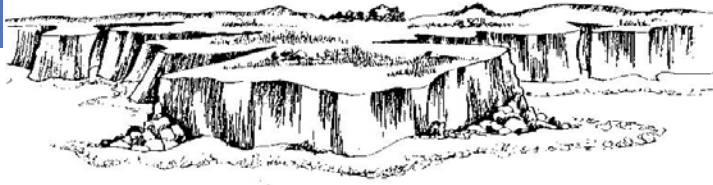
What things are plentiful at your landing site?

Are there any things you would need which you have not got or are very scarce at your landing site?

3.1A



LANDING SITE: OMEGA Description



Terrain:

Low plateau broken by narrow valleys leading down to inlets in a rocky coastline with steep cliffs. Rocky outcrops of limestone are found over the surface of the plateau.

Climate:

Very windy. Great seasonal variation in temperature (26 to 70 degrees F, or -3 to 21 degrees C). Moderate rainfall (80 to 100 inches per year) mostly in the cold season. It may fall as snow.

Plant life:

Mostly rough grassland, with a few trees in the sheltered valleys. Beaches often covered with seaweed.

Animal life:

Small grazing animals with thick hairy coats, and some wild horse-like animals.

3.1B



LANDING SITE: OMEGA Survival

Your store of food, fuel and water will soon run out and you will have to rely on what you can find on this planet. You will also need to find or build some kind of shelter as your spaceship was damaged on landing. What can your landing site offer?

How could it provide you with a regular supply of food?

What would you use for fuel for cooking?

How would you plan to produce electricity in the future?

How would you make sure you had a regular supply of drinking water?

What kind of shelter would you be able to provide?

What things are plentiful at your landing site?

Are there any things you would need which you have not got or are very scarce at your landing site?

) DELTA E EPSILON



z THETA e OMEGA

DECISION MAKING AND GOVERNMENT

You have already had to make some decisions about how your group will survive on the new planet. It may have been quite easy to agree about how to provide food, fuel, etc. but in forming a new community you will have to make many more decisions about your way of life. Some of these decisions will be difficult to make.

Discuss how decisions about your community will be made in the future.

Some possible ways of making decisions are:

1. Majority vote amongst the community members
2. Election of one (or more) persons to make decisions on behalf of the whole community.
3. One (or more) persons taking control and giving orders to the rest of the community.
4. Some other way.

Is it necessary to have a leader?

One person should fill in sheet 3.2B

) DELTA E EPSILON



z THETA e OMEGA

OUR WAY OF MAKING DECISIONS:

..... **COMMUNITY**

Is it easier or more difficult to make decisions with a large group of people than with a small group? Why?

Is it necessary to have a leader? Give reasons for your answer.

What method of decision making or 'government' will be used in your community?

Who (if anybody) will be the leader? What name will you give to this position?

Write down the names of every person at your landing site. Note also whether any of them has been given a position of special responsibility.

Sheet completed by

) DELTA E EPSILON



LAW AND ORDER

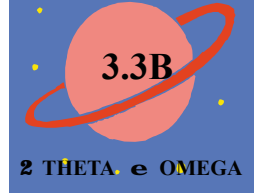
It is possible that not all members of your community will agree with community decisions, or with the way in which the decisions are made.

You will need to consider the following questions:

1. How will your community deal with difficult or dissenting members?
2. What rules or laws will be needed to ensure the orderly running of your community?
3. Do you need to make any rules at all ?
4. Are the rules fair to all members of your community?
5. What would happen to anyone in your community who broke the rules?
6. How would you explain the reason for your rules to a visitor from another community? What would you do if a visitor broke your rules?

Use sheet 3.3B for your answers.

) DELTA E EPSILON



RULES OF THE COMMUNITY

.....

What are the important rules of your community? (List up to 10 rules in order of importance< or, if there are no rules, give up to 10 reasons why rules will not be necessary).

What will happen to someone from your community who breaks any of the rules, or disagrees with the rules?

How can a visitor from another community expect to be treated?

3.4A



OMEGA TRADITIONS AND WAY OF LIFE

Many years have passed since you first landed on Terra Nostra. You have had no contact with any of the other communities, although you are aware of their existence. Your isolation, however, has caused you to develop some customs, behaviour and words which are likely to be quite different from those in the other communities.

You are disappointed and bitter that you originally landed on what you believe to be a bleak and hostile part of the planet.

You are usually jealous of strangers and not readily willing to trust them. Even among yourselves you avoid any kind of body contact in public, and avoid eye contact at any cost.

Consider the following points:

How will you greet strangers to show that you mean them no harm?

How will you greet them if you do not trust them?

What signs will you use to show that you agree or disagree?

What signs will you use to show anger or peace?

Have you any other special dialect words or customs?

3.4B



OMEGA CUSTOMS AND LANGUAGE

If we meant no harm to strangers we would greet them by:

If we did not trust strangers we would greet them by :

Our sign to show that we agree would be:

Our sign to show that we did not agree is:

Our sign to show that we were angry is:

Our sign to show peace is:

Our other special words or customs are:

3.4A



EPSILON TRADITIONS AND WAY OF LIFE

Many years have passed since you first landed on Terra Nostra. You have had no contact with any of the other communities, although you are aware of their existence. Your isolation, however, has caused you to develop some customs, behaviour and words which are likely to be quite different from those in the other communities.

Yours is a very contented and friendly community.

You enjoy meeting and talking with other people. Body contact is very important to you in showing friendship but you are deeply offended if you are offered gifts, since you believe that you already have everything you need on your island.

Consider the following points:

How will you greet strangers to show that you mean them no harm?

How will you greet them if you do not trust them?

What signs will you use to show that you agree or disagree?

What signs will you use to show anger or peace?

Have you any other special dialect words or customs?

3.4B



EPSILON CUSTOMS AND LANGUAGE

If we meant no harm to strangers we would greet them by:

If we did not trust strangers we would greet them by :

Our sign to show that we agree would be:

Our sign to show that we did not agree is:

Our sign to show that we were angry is:

Our sign to show peace is:

Our other special words or customs are:

3.4A



THETA TRADITIONS AND WAY OF LIFE

Many years have passed since you first landed on Terra Nostra. You have had no contact with any of the other communities, although you are aware of their existence. Your isolation, however, has caused you to develop some customs, behaviour and words which are likely to be quite different from those in the other communities.

You are finding it difficult to keep up a basic standard of living.

You worship trees as gods since they provide almost all your food and shelter. It is a serious offense against your religion to cut down trees. Only fallen trees can be used for timber or fuel.

You are shy when meeting strangers and men always cover their face in public. The women make most of the important decisions.

Consider the following points:

How will you greet strangers to show that you mean them no harm?

How will you greet them if you do not trust them?

What signs will you use to show that you agree or disagree?

What signs will you use to show anger or peace?

Have you any other special dialect words or customs?

3.4B



THETA CUSTOMS AND LANGUAGE

If we meant no harm to strangers we would greet them by:

If we did not trust strangers we would greet them by :

Our sign to show that we agree would be:

Our sign to show that we did not agree is:

Our sign to show that we were angry is:

Our sign to show peace is:

Our other special words or customs are:

3.4A



DELTA TRADITIONS AND WAY OF LIFE

Many years have passed since you first landed on Terra Nostra. You have had no contact with any of the other communities, although you are aware of their existence. Your isolation, however, has caused you to develop some customs, behaviour and words which are likely to be quite different from those in the other communities.

Your community has generally thrived and prospered.

You are proud to be 'Deltan' and always wear your Deltan badge to show that you belong to the best community. You respect material possessions as an indication of a person's wealth in society - the more a person owns, the more important that person is. You expect to be listened to with respect because your opinions are important. If anyone interrupts you point at them and try to stare them out.

Consider the following points:

How will you greet strangers to show that you mean them no harm?

How will you greet them if you do not trust them?

What signs will you use to show that you agree or disagree?

What signs will you use to show anger or peace?

Have you any other special dialect words or customs?

3.4A



DELTA CUSTOMS AND LANGUAGE

If we meant no harm to strangers we would greet them by:

If we did not trust strangers we would greet them by :

Our sign to show that we agree would be:

Our sign to show that we did not agree is:

Our sign to show that we were angry is:

Our sign to show peace is:

Our other special words or customs are:

) DELTA E EPSILON



THOUGHTS ON WHAT WE'VE LEFT BEHIND

Having taken steps to provide yourself with food, fuel, and shelter you do not have to worry about your survival for the time being. You now have time to think about the world you left behind on Earth, and your new life on Terra Nostra.

Talk among yourselves about the things you most liked about your way of life on earth, and then talk about things which may have made you unhappy.

You can decide what changes to make in your way of life on Terra Nostra.

What customs from your old way of life on earth would you want to keep?

What customs from your old way of life on earth would you want to change?

) DELTA E EPSILON



THOUGHTS ON WHAT WE'VE LEFT BEHIND

Things we liked about our way of life on Earth

Things which made us unhappy about our way of life on Earth

Customs from our old way of life that we would want to keep

Our reasons for keeping these customs

Customs from our old way of life that we would want to change

Our reasons for changing or banning these customs

DELTA E EPSILON



EXPLORATION

Earlier on (3.1) you noted that some things were very plentiful at your landing site but other things were very scarce. You now feel it might be a good idea to make contact with the other communities to see if some exchange of resources is possible. A Trade Council may be set up. Resource tokens may be issued.

Choose some members of your community to explore the planet. You will need one explorer for each community to be visited.

Each explorer will visit only one other community, and will try to find out as much as possible about what the other community is like and what it has to offer. The explorers should be careful to give away as little as possible about his or her own community.

Your community will be visited by explorers from other communities. Try to find out about their resources without giving away your own secrets.

REMEMBER your own special customs, signs and words when you visit or receive strangers.

When your visitors and your explorers have all returned, talk about what you have found out, and make notes that could be useful in future negotiations.

DELTA E EPSILON



SETTING UP TRADING LINKS

To set up a Trade Council the following posts must be filled:

PRIME MINISTER
TRADE MINISTER
DEPUTY TRADE MINISTERS
FOREIGN MINISTER

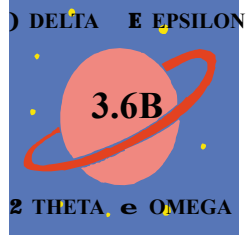
Our PRIME MINISTER will be

Our TRADE MINISTER will be

Our DEPUTY TRADE MINISTERS will be

Our FOREIGN MINISTER will be

Our aims in taking part in the Trade Council are



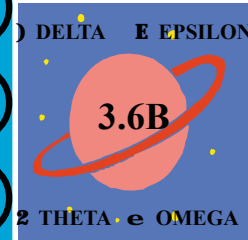
SECRET REPORT ON

.....

Customs & signs

Strange words

Natural resources



SECRET REPORT ON

.....

Customs & signs

Strange words

Natural resources

) DELTA E EPSILON



2 THETA e OMEGA

RULES FOR TRADING

(elementary level)

Resource tokens will be issued. At various times cards will be issued for some new resource, or to bring in a problem that must be dealt with.

1. Everyone must always try to do the best for their own group
2. Only the Trade Minister (or Deputy) can sit at the Trade Council
3. Only a Deputy Trade Minister can visit the Resource Bank to get or take back tokens or resource cards
4. Tokens can only be swapped at the Trade Council. Tokens must not be taken to a home base.
5. Cards must only be taken to a home base never to the Trade Council
6. Only the Foreign Minister can visit other groups at their home base.
7. The Foreign Minister cannot visit the Trade Council or Resource Bank, and must not carry tokens
8. The Prime Minister must stay at his/her home base and lead talks with others in the group. The Prime Minister must tell other Ministers clearly what they are to do.
9. The Prime Minister may change any Minister once in the game but must tell the Resource Bank Director about the change.
10. Ministers should keep notes of what they say and do.
11. The Resource Bank Director can ask everyone to stop trading and go back to home base at any time in the game.

) DELTA E EPSILON



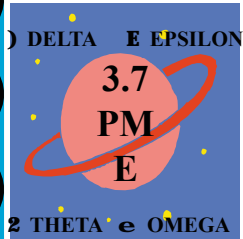
2 THETA e OMEGA

RULES FOR TRADING

(standard level)

Resource tokens will be issued. At various times cards will be issued for some new resource, or to bring in a problem that must be dealt with.

1. The aim is for your community to survive and prosper
2. Only the Trade Minister (or Deputy) can sit at the Trade Council. The Trade Minister can exchange resource tokens with other Trade Ministers
3. Only a Deputy Trade Minister can visit the Resource Bank to get or take back tokens or cards. Tokens must never be taken to home base. Resource cards must only be taken to a home base, never to the Trade Council.
4. Only the Foreign Minister can visit other groups at their home base. The Foreign Minister cannot visit the Trade Council or Resource Bank, and must not carry tokens.
5. The Prime Minister must stay at his/her home base and lead talks with others in the group. At the start he/she will have some blank tokens on which any resource in the group that may be used for trading can be written. Each token represents one unit of the resource, and is given immediately to the Deputy Trade Minister. The Prime Minister chairs discussions about any issues raised on resource cards, and must give clear instructions to other Ministers. The Prime Minister may sack any Minister once in the game but must tell the Resource Bank Director about the change.
6. The Resource Bank Director may suspend trading at any time and ask all Ministers to return to their home base.



YOU ARE PRIME MINISTER (elementary level)

You will stay at your home base

You will lead talks with other people in your group. They will help you decide what to do.

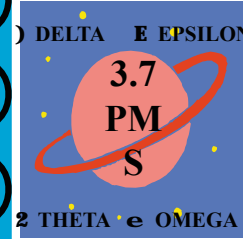
You will be given cards telling you about things found or taking place in your part of the planet. You will have to decide what to do about them.

You must tell your Deputy Trade Minister what you want your group to do. He or she will pass on your message to the Trade Minister.

You can ask your Foreign Minister to visit other groups to find out what they are doing, ask for help or offer help.

Listen carefully to what you are told. Keep a note of what you say and do.

You can change any minister once during the game.



THE PRIME MINISTER (standard level)

Your job is to act as Chairperson in your community discussions and make final decisions about any action. Other members of the community are your advisers.

At the start you will be given some blank tokens on which you may write down the name of any natural resource in your area that you wish to trade. Each token represents one unit of the resource. The tokens will be taken by a Deputy Trade Minister to the Trade Minister at the Trade Council.

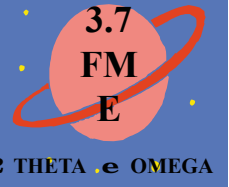
Your Deputy Trade Ministers will act as messengers. They will bring you messages from the Trade Minister and cards from the Bank.

When you get a card from the Resource Bank, read it out to the rest of the group. You will need to talk about it and make some decisions, which you should note down. Tell your Deputy Trade Minister what has been decided, so that he/she can tell the Trade Minister how to carry on trading.

You can ask your Foreign Minister to visit other communities to talk about possible trade deals and common problems. You may receive visits from other Foreign Ministers.

You may change each of your ministers once during the game, if you wish.

DELTA E EPSILON



YOU ARE FOREIGN MINISTER (elementary level)

You may be asked to visit other groups.

You may have to find out what they are doing, ask for help or offer help.

You will have to tell your own group what you have found out.

You must not swap any tokens on your visits.

Listen carefully to what you are told. Keep a note of what you say and do, and what you are told.

DELTA E EPSILON



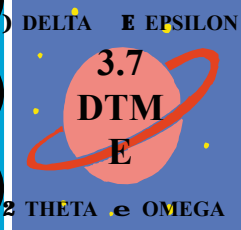
THE FOREIGN MINISTER (standard level)

Your job is to visit, at the Prime Minister's request, other communities to talk about possible trade links, common problems, and ways of helping each other.

You should always try to get the best deal for your community.

You are not allowed to visit the Trade Council, or to exchange tokens with any other community. Exchange of tokens can only take place at the Trade Council

Before you visit another community, look at any notes that have been made about them, and when you return write down anything else that you have found out.



YOU ARE A DEPUTY TRADE MINISTER (elementary level)

Your job is to help your Trade Minister and to take messages to and from your Prime Minister.

You will also have to visit the Resource Bank to:

1. Collect resource cards and take them to your Prime Minister.
2. Return resource cards from your Prime Minister
3. Collect tokens and taken them to your Trade Minister.
4. Return tokens from your Trade Minister.

You may be asked to sit at the Trade Council table to help your Trade Minister.

Listen carefully to what you are told. Keep a note of any tokens you are given.



DEPUTY TRADE MINISTER (standard level)

Your job is to help the Trade Minister and act as an important link between the Trade Minister and the Prime Minister.

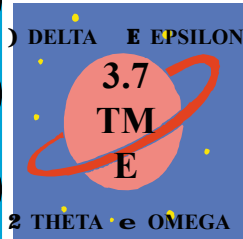
At the start you may be asked to collect some blank tokens from the Resource Bank and take them to the Prime Minister.

At various other times you will be asked to:

1. Collect resource cards and take them to your Prime Minister.
2. Return resource cards from your Prime Minister
3. Collect tokens and taken them to your Trade Minister. (The Resource Bank Director may ask to see a Resource card before giving you any tokens).
4. Return tokens from your Trade Minister
5. Relay messages between the Trade Minister and the Prime Minister.

You may be asked to sit at the Trade Council to help your Trade Minister, and to keep a record of tokens that your community holds whenever trading is suspended.

Whenever you receive trading tokens make a note of how many of each resource you are given. Likewise whenever you hand over any tokens.



YOU ARE TRADE MINISTER (elementary level)

You will sit at the Trade Council table.

Your deputy will bring you tokens, which you can swap for tokens told by other Trade Ministers. You may be told which tokens to swap or try to get.

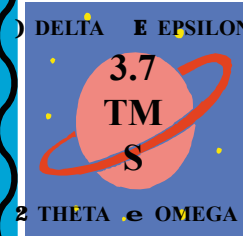
Try to do the best for your group.

Listen carefully to what you are told. Keep a note of what you saw and do.

You can send messages to your Prime Minister with your deputy. Your deputy may also bring messages from the Prime Minister.

You must do what the Prime Minister tells you.

You can ask your deputy to join you at the table to help with the trading of tokens.



THE TRADE MINISTER (standard level)

Your job is to talk and bargain with the other Trade Ministers to get the best deal for your community.

You will normally stay at the Trade Council table.

At the start, and at other times, one of your Deputy Trade Ministers will bring you tokens which you can use for trading by exchanging them (bartering) for tokens from other Trade Ministers.

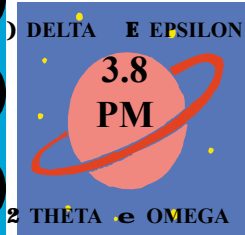
Each token represents one unit of the resource.

You must keep a careful record of any exchanges that you make.

Your deputies will also bring you messages from your Prime Minister. You must obey the instructions of the Prime Minister. Do not let anyone else see or hear the messages.

You can send messages back to the Prime Minister with one of your deputies.

You may ask one of your deputies to sit at the table with you to help with the trading.



PRIME MINISTER'S NOTES

Resource card discussed

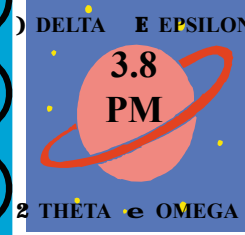
Notes about main points raised in discussion

Record of decisions made, including instructions to Ministers

Resource card discussed

Notes about main points raised in discussion

Record of decisions made, including instructions to Ministers



PRIME MINISTER'S NOTES

Resource card discussed

Notes about main points raised in discussion

Record of decisions made, including instructions to Ministers

Resource card discussed

Notes about main points raised in discussion

Record of decisions made, including instructions to Ministers

DELTA E EPSILON



REVIEW OF RESOURCES

You have returned to your community to discuss your progress so far.

Was your community successful in trading with the others? Does the future of your community look good, uncertain or poor?

What might have happened if you had been allowed to carry on trading?

Do you feel that your community had any special advantages?

Did you feel that the trading game was unfair to your community in any way?

Most of the Resource Cards required you to make decisions. How easy was it to come to a decision about what to do? Were there any cards in particular for which it was very difficult to come to a decision?

You may have a chance to talk with the other communities all together about common problems. Which two cards or topics would your community be particularly keen to discuss?

DELTA E EPSILON



REVIEW OF RESOURCES

Thoughts about our success at trading

Advantages that we had over the other communities

Reasons we thought the trading was unfair

Things we might do differently if we carried on trading

Things that were difficult to decide

The two cards or topics we would most like to talk about would be



CO-OPERATION AND CONFLICT

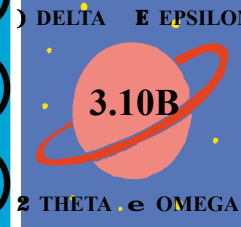
In your journey to Terra Nostra there will have been times when each of you will have worked well with someone else and times when you will have worked well as a group. Can you think of some examples of working well together?

There may have been other times when you have disagreed, argued, felt frustrated or angry with each other or with members of another community.

Can you think of any such conflicts within your group? Or with another group? What made you feel that way? How was the conflict sorted out?

In everyday life we meet situations where we may be as individuals in conflict with another person, and also where, as a member of a group, we may be in conflict with another group. Can you think of any examples from your own experience? How were the conflicts resolved?

Whereas our own personal conflicts may only affect a few people around us, larger group conflicts can have far more serious consequences. When nations are in conflict with each other, our whole world may be at risk.



CO-OPERATION AND CONFLICT

Examples of working well together

Examples of conflict within our group

How was the conflict resolved?

Example of conflict with another group

How was this conflict resolved?

Why do nations go to war?

How might war be avoided in the future?



3.11A

A CHOICE OF FUTURES ?

Some people have compared the Planet earth to a giant spaceship with all of us as crew on a life-long journey. We are likely to face many problems during that journey, and we have the power to make decisions that can affect not only our own future but that of our spaceship as well.

You will have decisions to make about your own future.

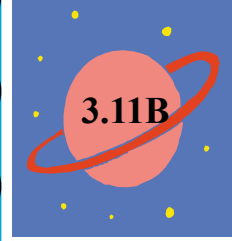
You will be involved in decisions which affect your community and you will have to make decisions which will affect other people.

Leaders throughout the community, in industries and in governments make decisions that affect large numbers of people and the future of the planet we all share.

You are, each one of you, an individual but also part of a local, national and world-wide community.

"Think globally - act locally" is a slogan you may possibly have come across before. What do you think it means ?

Do we have a duty to keep our spaceship in good condition for future crew members - our children and grandchildren ?



3.11B

A PERSONAL VIEW OF THE FUTURE

The biggest threat I see to my future is

The kind of future in which I would prefer to live would be

My most important aims in life are

Some ways in which I can affect my own future are

Some ways in which I can make people more sympathetic to my point of view are

Some things I would teach my children to prepare them for the future would be



SEEING INTO THE FUTURE

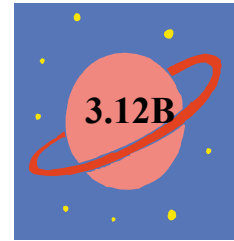
Lasers, colour television, instant global communications, test-tube babies, moon landings, and nuclear submarines are among many things that were 'predicted' in science fiction long before they became facts of modern life.

Some prophecies in the Bible have already come true. Other prophets and astrologers have forecast events far into the future. Nostradamus, writing in the 16th Century, is supposed to have predicted the Great Fire of London, the French Revolution, the First and Second World Wars (including the rise of Hitler), and cast his last horoscope for the year 3797.

The Mayans predicted the end of the world on 21st December 2012. It didn't happen.

We all make predictions about the future, often not being aware that we do so. It is the job of some people - not only fortune tellers - to make forecasts about the future.

If it is possible to predict the future ... do we have any choice in deciding our own future, or is our future mapped out for us from birth?



SEEING INTO THE FUTURE

Do you believe in horoscopes? Do you think that your life could be affected by the position of planets and stars?

Have you seen or read any science fiction story recently? Did the story seem possible or very far-fetched?

In what way do you make predictions or assumptions about your future?

What people must make predictions or forecasts about the future as part of their job?



GUIDE TO MINERAL RESOURCES

DIAMOND

Chemical composition: carbon. Hardest known natural substance. Uses include cutting and drilling rocks, and as a gemstone

LIMESTONE

Chemical composition: calcium carbonate. Formed from sea shells over millions of years. Also occurs as chalk and marble. Uses include building stone, cement, iron & steel making, glass making, and, as lime, for treating acid soil and sewage.

SANDSTONE

Chemical composition: silicon oxide (silica). Very common sedimentary rock. Uses include building & glass making. Silicon is also used in water-repellant oils & waxes, and in computer chips.

ROCK SALT

Chemical composition: sodium chloride. Very versatile chemical. Used for putting on icy roads & fertiliser for sugar beet. Purified, used for flavouring and preserving food. Using electricity can be converted into caustic soda (strong alkali, soap making), hydrogen gas (fuel) and chlorine (poison gas, bleach, and with oil products, PVC and pesticides)

GOLD

Known as precious metal for very long time. Largely used as symbol of wealth. Resistant to corrosion.

URANIUM

A radioactive metal. Used as the main 'fuel' in nuclear power stations.

ALUMINIUM

Extracted from bauxite (aluminium oxide ore) with electricity. Light non-poisonous metal, used for 'silver' foil, cooking utensils & electricity cables. Alloyed with copper, makes a strong but light metal for construction.

COPPER

Sometimes found as a metal in nature but more often as its ores, copper pyrites and malachite. Pure copper is extracted electrically or by heating with carbon (charcoal, coke). Used for electrical wire, pipes. Good resistance to corrosion.

IRON

Main ore is haematite (iron oxide). Formerly extracted by heating with charcoal but now heated in a blast furnace with limestone and coke. Can rust easily unless protected. Mostly converted into steel (an alloy with carbon), widely used in machinery and buildings.

OIL (PETROLEUM)

Formed millions of years ago from remains of tiny sea creatures. Usually found trapped underground or beneath the sea bed in porous rocks such as sandstone. When refined, it is widely used as a fuel, and as the starting material for many plastics, man-made fibres, paints, drugs and fertilisers.

COAL

Formed millions of years ago from remains of tropical forests. Useful solid fuel. Can be converted into coke (a form of carbon) for use as a fuel or in extraction of some metals. Also an alternative to oil as a source of many chemicals for plastics, etc.

NATURAL GAS

Chemical composition: methane. Found in association with coal or petroleum. Similar uses.