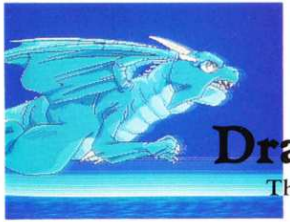
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The Legend Of Heroes

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SimEarth

The Living Planet

HUDSON SOFT

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THANK YOU for buying this Advanced TurboGrafx™-CD Game, "SimEarth™"



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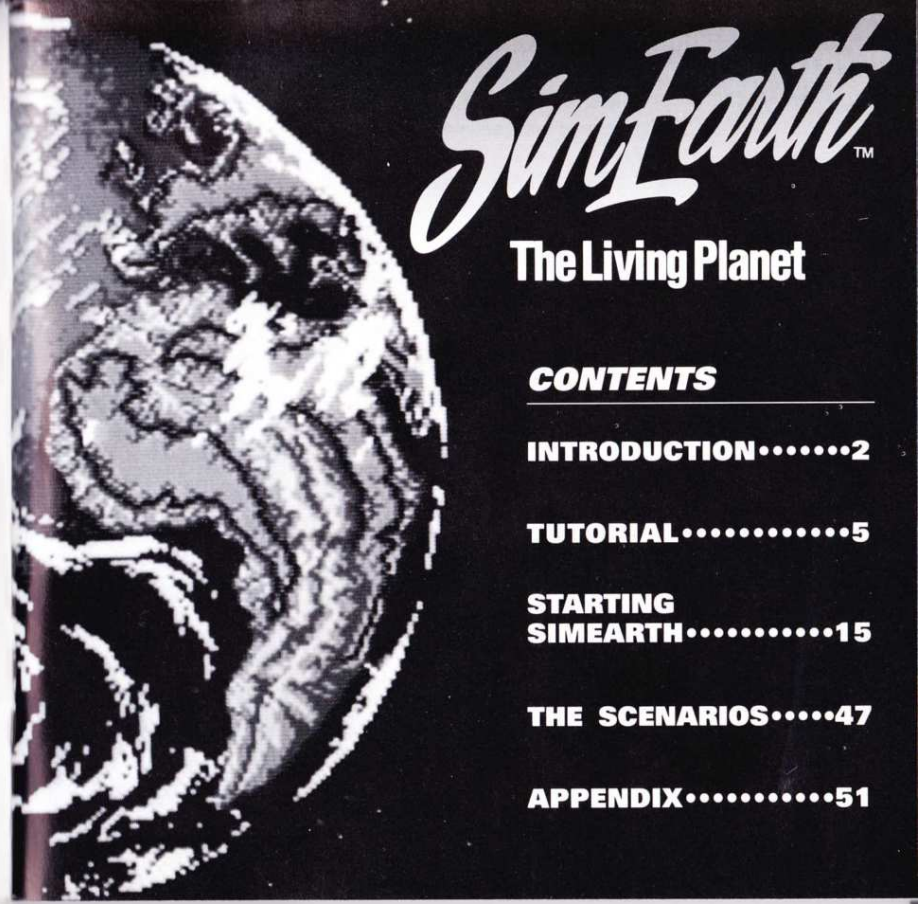
TurboGrafx™-CD Player
TurboDuo™

WARNINGS

1 This is a precision device and should not be used or stored under conditions of excessive temperature or humidity.
2 Do not use this CD game with ordinary CD players. The computer data may damage your audio equipment. In addition, prolonged use of this disc with headphones in a "regular" CD player could cause hearing impairment.
3 Never open the CD player's cover while the CD is spinning. This may damage both the disc and the system.
4 Never pull the System Card out while the TurboGrafx-16 switch is in the "on" position, as this may damage both the SuperSystem and the CD Interface Unit.
5 Do not wipe your Entertainment SuperSystem, TurboGrafx-CD player or TurboGrafx-CD with volatile liquids such as paint thinner or benzene.
6 Read this instruction book carefully and keep it in a safe place for future reference.

TurboGrafx-CDs are made especially for use with the TurboGrafx-16 Entertaiment SuperSystem, TurboGrafx-CD player and TurboDuo™. They will not operate on other systems.

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SimEarth™

The Living Planet

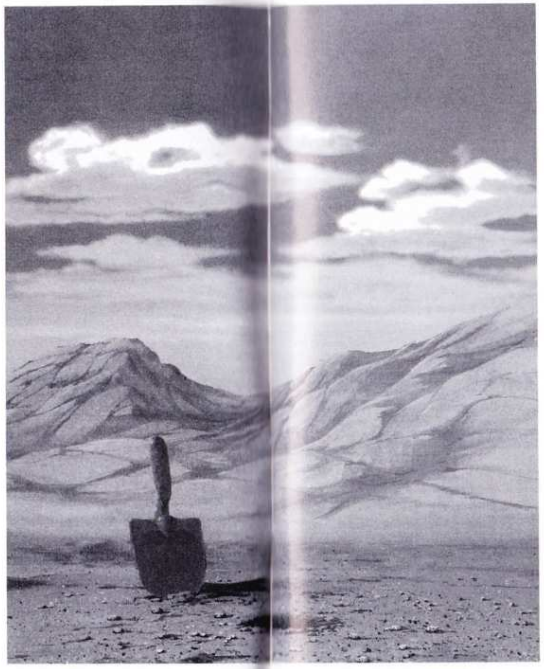
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INTRODUCTION

WHAT IS SIMEARTH?

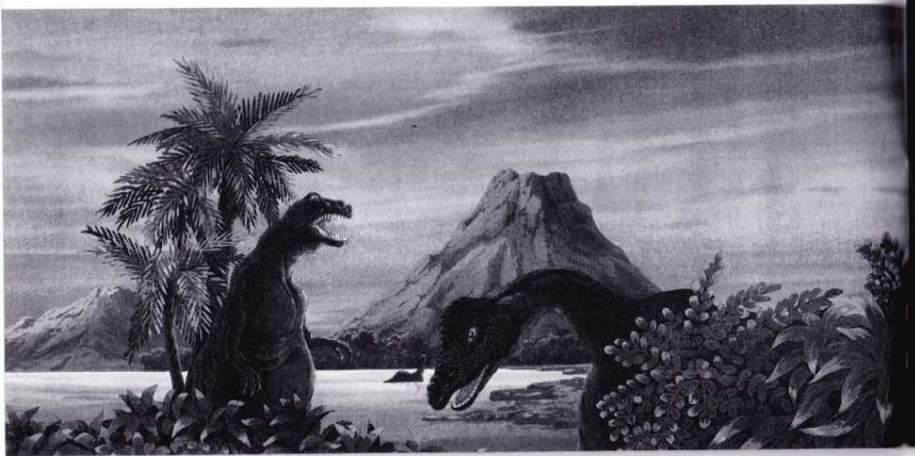
SimEarth is a planet simulation game, and an excellent learning tool. You have the option of choosing from a set of pre-selected planet scenarios, or designing and creating your own. SimEarth is based on the Gaia theory by James Lovelock, which says that we can look at our planet as one unit rather than a bunch of seperate pieces. This is because the Earth's atmosphere, biomes and land all affect each other.



WHAT IS GAIA?

Gaia theory talks about the evolution of the Earth. Species of organisms are chosen by natural selection and events like the development of rocks, air and oceans happen in a process that links them closely together. In this theory the living organisms work with the environment around them to form a system that is able to control climate and atmospheric composition. The Earth, in fact, becomes a living organism.

SimEarth™





TUTORIAL

SimEarth™

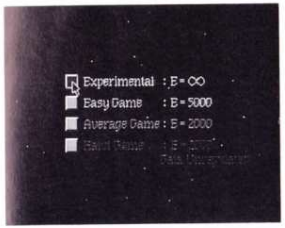
SIMULATIONS



Because SimEarth is a simulation game, you are given a set of rules and tools that describe, create and control a system. The system in this case is a planet. You are free to do whatever you like as long as it's within the rules. This means that you can create some really cool scenarios.



THE LEVELS



There are four levels of play to choose from in SimEarth. Experimental mode gives you unlimited energy so you can do just about anything you want. Easy mode gives you a maximum of 5000 EUs (energy units) to work with. In Average mode you only get 2000 EUs. And in Hard mode, you get your 2000 EUs, but Gaia isn't there to give you a hand. You, the player, create the planet with the energy provided. A good place to start is in the Experimental mode.

THE PLANETS



You can choose from eight planets on the Planet screen. Each of these planets is unique because they have different time scales, environments and features. Swim around on Aquarium or fry on Venus.

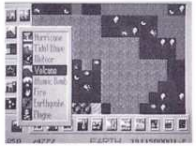
CREATING CONTINENTS

DISASTER BUTTON



Select the Disaster Button from the left Control Panel. Choose Volcano, then move the cursor onto the screen and press Button I. Colored squares pop up. This is the land that your volcanic blast made. Keep this up until you have as much land as you want.



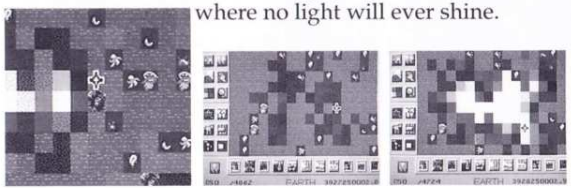


CHANGING CONTINENTS

ALTITUDE BUTTON



Raise or lower your land. Mold it like clay into any shape you want. Try making mountains that reach to the sky, or ocean trenches where no light will ever shine.

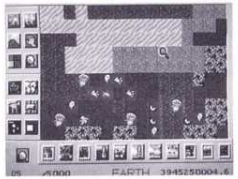


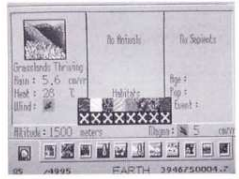
OBSERVING YOUR PLANET

EXAMINE BUTTON



The magnifying glass gives you the goods on many interesting and useful things. If you are interested in finding out what is going on at any location, move the glass over the square and access the Examination screen.





SELECTING THE SCREENS

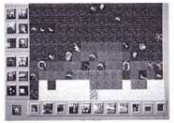
SCREEN BUTTON



There are four main screens in SimEarth - Edit, Map, Globe and Gaia. Use the Main Screen Menu to access Edit, Map, and Globe screens, or Select Button to move through all screens. Information from the Data Display Buttons can appear on all screens except Gaia.



SELECTING THE SCREENS



Edit screen



Map screen



Globe screen



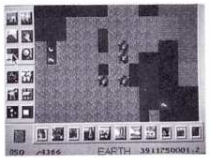
Gaia screen (with Select Button)

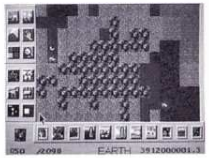
PLACING PLANT AND ANIMAL LIFE

BIOME BUTTON 

Ice cold, boiling hot or just right. The biomes (ecological communities) on your planet will change drastically depending on their environment. If your biomes feel comfortable with their surroundings they grow like crazy. If not, they will shrivel, melt or blow away.

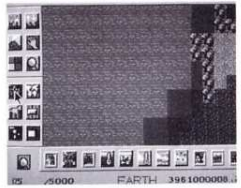




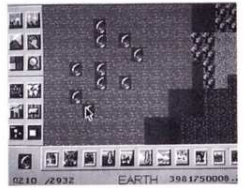


Call up the Life Menu. The first column contains sea life; the second column land life. The life forms must adapt to their surroundings or they will become extinct. For example, throwing a dinosaur into the middle of the ocean might not be too good for its health.

LIFE BUTTON 







THE ENVIRONMENT

MODEL BUTTON



You have four selections to choose from when the Model Menu is accessed. These screens allow you to make changes to your planet in the following areas: Geosphere, Atmosphere, Civilization and Biosphere.







GRAPH BUTTON



There are six graph screens that can be accessed through the Graph Button. These graphs are an excellent way to analyze different kinds of information because they give a clear picture of what is occurring on your planet.



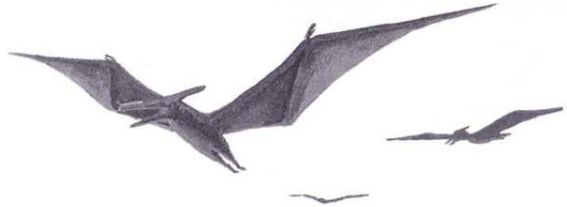




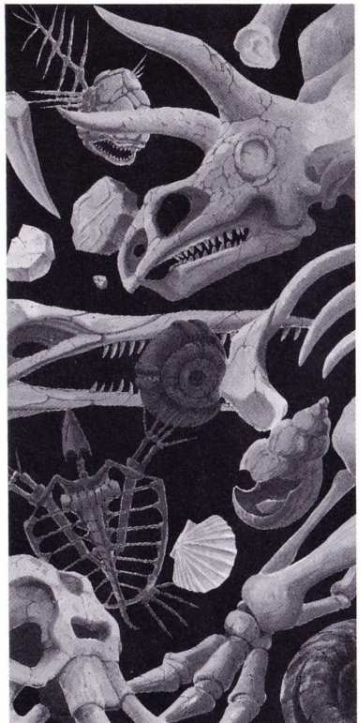
ENJOYING SIMEARTH

There are eight great scenarios to choose from, each of them offering something special in the way of SimEarth entertainment. Even though there are goals, there is no actual 'end' to the scenarios. In other words, there is no 'victory'. In SimEarth you can do whatever you want.... but have fun doing it!





SimEarth™



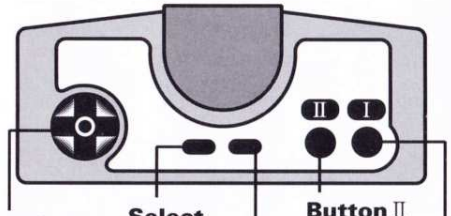


STARTING

SimEarth™

STARTING SIMEARTH

JOYPAD CONTROLS



Direction Key
Press to move cursor

Select
Main screen cycle

Button II
Cancel command

Run
Pause

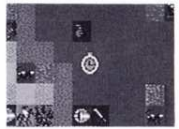
Button I
Start action

THE WATCH

A watch pops up on the screen when the CD is reading data or in Pause Mode.

PAUSE

The watch doesn't blink.



READING

The watch blinks on and off.



STARTING SIMEARTH

To start the game press 'Run' on the Title screen. If there is a game saved you will have the option of continuing that game.



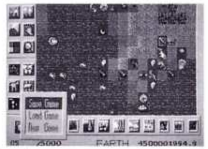
OPENING SEQUENCE

To view the opening sequence leave the Title Screen alone. In other words - Don't press anything! A sweeping, panoramic vision of the world from prehistoric to modern times moves across the screen. It's like a movie!



SAVE/LOAD

Call up the SAVE/LOAD Menu to save or load your game. You can call this window up from any main screen and save one planet.



One planet takes up all the file Cabinet memory.



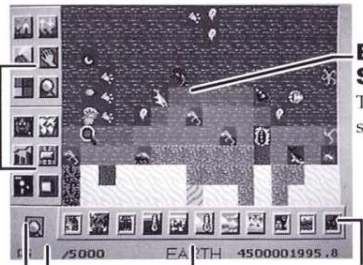
*If you have data from other games and you save SimEarth, the data from the other games will be erased.

SimEarth

DISPLAY SCREENS

SimEarth uses a total of four main screens. The following pages give examples of these screen types.

EDIT SCREEN



Edit Screen
The action screen!

Edit Buttons

Currrent Tool
Tool currently in use .

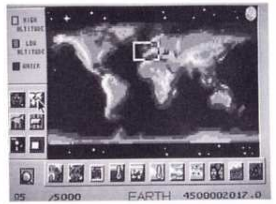
Planet Name
Name of selected planet.

Data Display Buttons
These buttons determine what data will appear on your screen.

Energy Cost/Total Energy
Left - how much the tool costs to use.
Right - total amount of energy available.

MAP SCREEN

This screen gives you an overall picture of your planet.

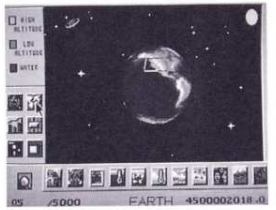


THE EDIT RECTANGLE

Drag the edit rectangle with Button II, then press Button I to access Edit screen.

GLOBE SCREEN

This is it! The whole show is right before your eyes. And it even spins around.

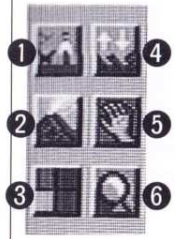


GAIA SCREEN

Is your planet happy or sad? Healthy or sick? Find out on the Gaia screen.



EDIT BUTTONS



Further explanations and uses of the buttons will be given in these pages.

1. LIFE TOOLS



Choose the life tool you want to place on your planet. There are four groups that can be divided as follows: Sea life, Land life, Cities and Terraformers. The amount of energy each one costs is different.

2. DISASTER TOOLS

When you want something catastrophic to occur on your planet choose one of these tools. They are capable of building or destroying large sections of your planet. The EUs used are the same for each tool.

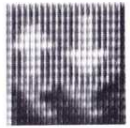


3. BIOME TOOLS



Rocks? Ice? Swamp? Choose from these and many more in the Biome Menu.

4. ALTITUDE TOOL



Haul out the shovel and start piling up the dirt. Or how about digging down deep into the sea? Make sure the arrow is pointing in the direction you want to go.

5. MOVE TOOL



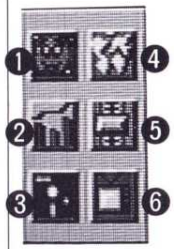
You can carry life-forms, plant life and cities to anyplace you wish. And when disaster strikes use it to move things out of the danger zone.

6. EXAMINE TOOL



Get tons of in-depth information about any area you put the magnifying glass on. The Examine screen pops up and tells you lots of things about that location.

SYSTEM CONTROL BUTTONS



These buttons access screens and menus.

1. GAIA SCREEN

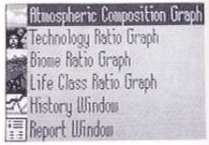


Gaia loves to give advice. He will tell you how he is feeling and what makes him tick. Listen and learn.

Note: After seeing his advice, use Select Button or Main Screen Menu to return to one of the main screens.

2. GRAPH MENU

To get specific information on your planet call up one of the graphs. They show the present state of the planet in real time (ie. the graph changes when conditions change).



3. SAVE/LOAD MENU

You can quit the game you are playing and change to a new planet, but you must 'Save' first if you want to continue later.

Note: Only one planet can be saved at a time.



4. MAIN SCREEN MENU

There are a total of four main screens. Use this menu to access one of these screens, or if you are in one of the four main screens and you want to access another one, just press Select Button.



5. MODEL CONTROL MENU

Each model screen has important variables which affect how your planet functions. Adjust solar input, reproduction rate, etc.



6. OPTION MENU

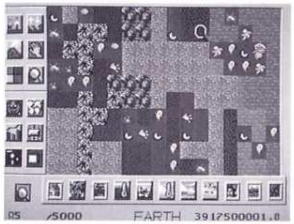
You can set three types of options.
- change screen position
- set speed (fast, moderate, slow or pause)
- turn sound effects/music on or off



THE BUTTONS

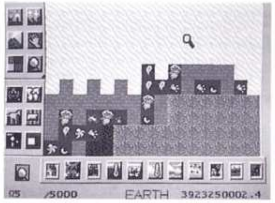
You need to use the buttons in SimEarth to progress with the game. The following are explanations for each button.

MAKE IT HAPPEN



The left-hand side of your screen is full of buttons that can be accessed for information or anything that works on the screen. They are a perfect way to get things done in a hurry.

EXAMINATION BUTTON

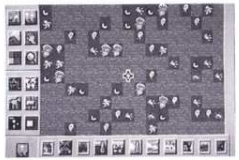


Call up information from the Edit screen using the magnifying glass. Move the glass over the area you want to know about and press Button I to call up the Examination screen. Try it anywhere you want.

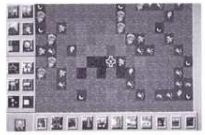


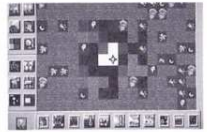


ALTITUDE BUTTON

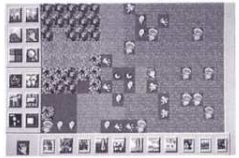


Raise or lower land with the Altitude Tool. Choose from the 'raise' and 'lower' modes using Button I. Move the cursor over the screen and press Button I to see your land change. The brighter the land the higher it is; the darker the land the lower it is.

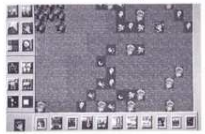




MOVE BUTTON



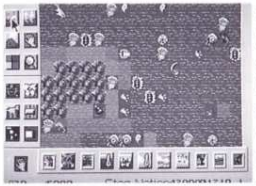
Pick up life-forms, plants, or cities and move them wherever you want. It might be a good idea to take a look at the surroundings of the new area before transplanting anything. And one more thing: In case of fire....run!!





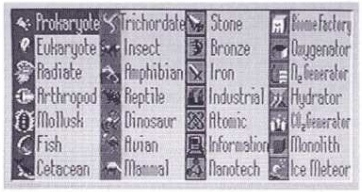
THE BUTTONS

LIFE BUTTON



Place life-forms, cities, and terraformers (for Mars and Venus) on your planet. Call up the Life Menu and choose a tool. Lay it on the screen and observe the results (if there are any, that is). Remember: the EUs used for each choice are different.

THE FOUR GROUPS



A Sea Life

Put your sea life in the oceans and lakes and watch them take off. (Check table for EUs.)

B Land Life

Hopefully, these life-forms will grow and prosper in the wonderful, all-natural land you created.

C Cities

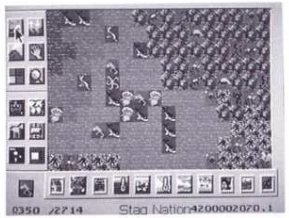
There are a total of seven kinds of cities. The time scale must be right in order for some of them to make it.

D Terraformers

These are used to change conditions on Mars and Venus into an Earth-like paradise. They keep working until you blast them with meteors, fires or volcanos.

LIFE-FORM SURVIVAL

If the life-form adapts to its surroundings it will begin to multiply. If not, it will die off. Sometimes life-forms cannot be placed because they are out of their time scale.



THE MONOLITH

The Monolith is like a super evolution machine. Place it on an animal or city and if the conditions are right there's a chance the life-form will advance right away.



Prokaryote	35	**Trichordate**	280	**Stone**	500	**Biome Factory**	500
Eukaryote	70	**Insect**	315	**Bronze**	1000	**Oxygenator**	500
Radiate	105	**Amphibian**	350	**Iron**	1500	**N2 Generator**	500
Arthropod	140	**Reptile**	385	**Industrial**	2000	**Hydrator**	500
Mollusk	175	**Dinosaur**	420	**Atomic**	2500	**CO2 Generator**	500
Fish	210	**Avian**	455	**Information**	3000	**Monolith**	2500
Cetacean	245	**Mammal**	490	**Nanotech**	3500	**Ice Meteor**	500

DISASTER BUTTON

DISASTER BUTTON



To get things moving on your planet use the choices from the Disaster Menu and choose your destructive force. They all cost 50 EUs.

A Hurricane

Rip things up and dump tons of water with the hurricane.

B Tidal Wave

Cause damage with a massive wall of water. It occurs naturally along with hurricanes and earthquakes.

C Meteor

Smash the Earth with this big rock from the sky. When it hits the Earth it makes a crater; when it hits the water it causes a tidal wave.

D Volcano

Spew molten lava all over and help to build more land and continents. Be careful, since the ash in the atmosphere blocks sunlight, and could cool your planet.

E Atomic Detonation

Blow things up big time and then watch things disappear from radiation fallout. You can even start a nuclear winter.

F Fire

When this scorching fire is used the O_2 levels are affected. It destroys plants and life-forms.

G Earthquake

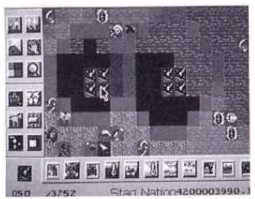
Split the Earth. Choose the direction of your earthquake to form mountain ranges or supercontinents.

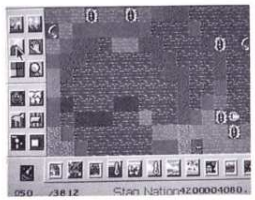
H Plague

A killer disease. Wipe out all life-forms and civilizations that get in your way.

HOW TO USE DISASTERS

You can use disasters as many times as you like to either build up or utterly destroy the planet. Other disasters include war and pollution. This is a great opportunity to learn about the power of nature.





BIOME BUTTON

BIOME BUTTON



Use this button to place biomes on the Edit Screen. For the biome to survive and grow it must be placed in a suitable environment. Call up the Biome Menu, choose a biome and see what happens.

A Rock

Just solid rock, but if the biomes in the area are strong enough they can take the rock space over.

B Arctic

This biome likes cold, dry surroundings. No animals can survive on it.

C Boreal

Lots of rain and low temperatures help boreal thrive. Many types of animals can survive in this area.

D Desert

Scorching hot and almost zero rain. This is the desert biome.

E Grass

Grass spreads well in moderate climates with average rainfall. Great for the development of civilizations.

F Forest

This forest grows best in moderate climates with major amounts of rain. Most life-forms like the forest atmosphere.

G Jungle

Hot and wet is what the jungle is all about. It holds lots of important nutrients that the Earth needs.

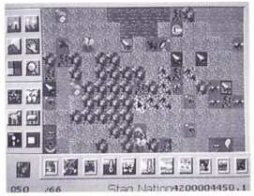
H Swamp

It came from the swamp! This biome likes hot climates with moderate rainfall. Some sea-life can even survive here.

HOW TO USE BIOMES

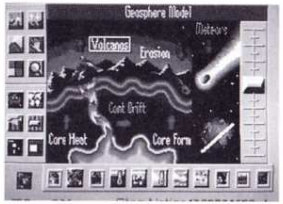
Make sure that the area you want to place your biome is suitable for the biome. Maybe checking the temperature would help. If, however, the biome doesn't adapt to its surroundings it will fade away to oblivion.





GEOSPHERE MODEL

GEOSPHERE MODEL



This Model Control Panel deals with all the factors relating to the Geosphere, Meteor Impacts, and the Axial Tilt of your planet. Choose an element, then press and hold Button I and use the Direction Key to slide the Control Bar up or down. The arrow located beside the element grows larger or smaller, indicating an increase or decrease in that element's activity level.



1.VOLCANIC ACTIVITY

On the high setting you can use volcanos to shape continents. It's up to you, but at the beginning of your planet it may help if you put it on full power.

2. EROSION

This setting deals with the forces that break down the surface of the Earth (eg. rain and wind). Increasing erosion also increases the amount of CO_2 in the atmosphere and builds up continental shelves.

3. CORE HEAT

You can change the temperature of your planet's core. If you want really big volcanos just turn the Core Heat up.

4. CONTINENTAL DRIFT

Get your continents to either creep along at a snail's pace or split apart quickly.

5. CORE FORMATION

With Core Formation turned up you can slow down the rate at which your continents drift. If it's turned down then your continents will slide right along.

6. METEORS

Smash apart your planet and help build up your continents. As your planet advances they'll be needed less and less.

7. AXIAL TILT

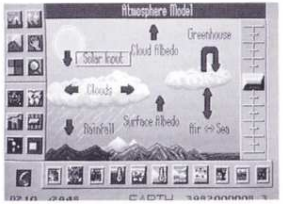
This setting affects how severe your seasons will be. The greater the tilt, the greater the seasonal extremes.

ADVICE

Magma (molten rock) is very important in the formation of your planet. In order for the magma to flow freely you can turn up the Core Heat, the Volcanos or both!



ATMOSPHERE MODEL



There are many ways that your atmosphere can be affected. Using this Control Panel lets you change variables that make the Earth a lush, green planet or a barren wasteland.



1. SOLAR INPUT

By controlling the heat rays from the sun, you can freeze your land or burn it to a crisp. It all depends on where you put the Control Bar.

2. CLOUDS

Nobody really likes clouds, but they serve a purpose: blocking sun-rays to keep the Earth cool.

3. RAINFALL

Increase rainfall or turn the taps right off and the soil will dry up and blow away.

4. CLOUD ALBEDO

This element is like a reflector sheet. At a high setting your clouds reflect more sunlight; at a low setting they let more shine through.

5. SURFACE ALBEDO

The surface of your planet can reflect or absorb any solar radiation that reaches it.

6. GREENHOUSE EFFECT

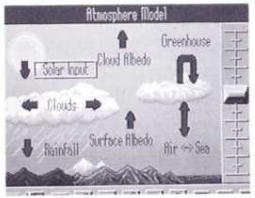
Reflected infrared radiation can be trapped by certain gases in the atmosphere causing the Greenhouse Effect (atmospheric warming). Use this setting to control the 'Effect'.

7. AIR-SEA TRANSFER

The vast water masses on earth help to stabilize the global climate by releasing or retaining heat. When this setting is turned up air temperatures become more stable.

ADVICE

The air temperature of your planet depends on the amount of CO_2 and the Greenhouse Effect setting. Keep an eye on CO_2 levels so that your planet does not overheat.



CIVILIZATION



Controlling your sentient (thinking) species is the key to success in SimEarth. You must make decisions on how to generate energy (Investment) and how to use the energy (Allocation).

ENERGY INVESTMENT



BIOENERGY
This energy is a product of burning wood, animal power, farming and the physical labor done by the sentient species.



SOLAR-WIND
Energy forever! Windmills, sailing ships, solar heating, wind-powered generators, solar electric cells, etc. Pump up the power!



HYDRO-GEO
Harness the Earth's forces. Waterwheel, geothermal, hydroelectric and many other types of energy are included in this group.



FOSSIL FUEL
Great for energy but bad for the planet. This energy comes from the remains of ancient animals.



NUCLEAR
Use nuclear reactors and take your chances on melt down or nuclear war.

ENERGY ALLOCATION



PHILOSOPHY
People who study philosophy have fewer wars. So for a more peaceful society slide up 'Philosophy'.



SCIENCE
Investing in science is crucial to advance to higher technological levels, but if you want to produce a stable civilization then spend some energy in other areas as well.



AGRICULTURE
More agricultural production means more food. Grow tons and the population may explode.



MEDICINE
If you want your people to survive plagues and diseases then put some energy into 'Medicine'. In fact, the higher the setting is the less plagues there will be.

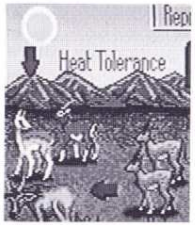


ART-MEDIA
Be free and creative and improve the quality of life of your sentient species.

BIOSPHERE MODEL

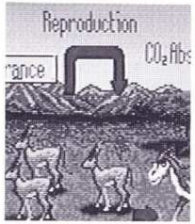


In order to survive on Earth all life-forms need certain conditions. This Control Model lets you adjust the variables that affect the living conditions of your life-forms.



1. HEAT TOLERANCE

In this model you can get your life-forms used to the heat (or cold) so that they can adapt to it. Higher settings equal greater adaptability.



2. REPRODUCTION

Have your animals reproduce quickly or slowly. And one reminder: they reproduce very quickly on the high setting, so beware of overpopulation.

3. ADVANCE RATE

This is the 'intelligence' setting. Slide the bar up to reach more advanced levels of evolution faster.

4. CO_2 ABSORPTION

Your plants have the ability to draw out CO_2 (carbon dioxide) from the atmosphere. Lower CO_2 levels equal lower temperatures; higher CO_2 levels equal higher temperatures.

5. MUTATION RATE

Mutate your life-forms so that they jump ahead to a new life class.

Warning : too much mutation can be dangerous.



GRAPH BUTTON

GRAPH BUTTON



Use the Graph Menu to access the graphs and report windows. These give important information on exactly how your planet is getting along (in real time).

ATMOSPHERIC COMPOSITION GRAPH



This is what your planet's atmosphere is composed of. The different bar colors indicate percentage levels for each element.

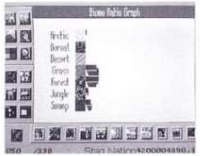
Red = above 10% Blue = 1%-10% Green = 1% or less.

TECHNOLOGY RATIO GRAPH



Check out the different levels of civilization on your planet. Stone age peoples can live with Atomic Age and Information Age people, but because the higher level civilizations spread quickly the lower level civilizations will be kicked off their land.

BIOME RATIO GRAPH



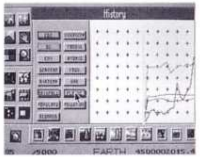
Find out which biomes are dominant by checking this graph. Remember that biomes are affected by climate and temperature.

LIFE CLASS RATIO GRAPH



What's living and what isn't? Some species will dominate while others will become extinct.

HISTORY WINDOW



Check out this graph to find out the details of your planet's progress. It's really useful because you can see exactly what is happening almost right away.

ELEMENTS

CO_2	Carbon Dioxide levels in the atmosphere.
O_2	Oxygen levels in the atmosphere.
CH_4	Methane levels in the atmosphere.
SEATEMP	Average sea temperature.
AIRTEMP	Average atmospheric temperature.
RAINFALL	Average planetary rainfall.
POPULATE	Population of sentient species.
BIOMASS	Total weight of plant and animal matter.
DIVERSITY	Number of different species of life.
FOSSIL	Fossil fuel reserves.
ATOMIC	Atomic fuel reserves.
FOOD	Total amount of food production.
WAR	Level of armed conflict.
PLAGUE	Number of plagues happening.
POLLUTION	Total amount of toxins and pollutants.

REPORT WINDOW



This window gives an excellent summary on what the conditions are like on your planet. You can use this information to make decisions about the future of your planet.

CIVILIZATION REPORT

SENTIENT TYPE Life class that is dominant and intelligent.

HIGHEST TECH Highest level of civilization.

MEDIAN TECH Average level of technology.

POPULATION Current population of your sentient species.



LIFE QUALITY

An overall rating on the quality of life for your sentient species. It is related to the Art/Media setting and amount of hours worked.

LIFE QUALITY Heavenly, Marvelous, Good, Pleasant, Tolerable, Unpleasant, Bad, Miserable and Hellish.

HABITATS Shows the ability of your sentient species to adapt to the environment and live in the various biomes.

 Can't live here.

 Hates it here.

 Not bad.

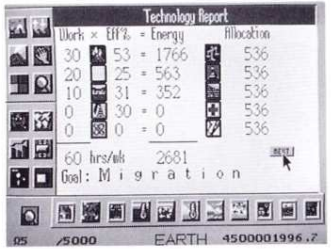
 Paradise!

GOAL

This is the level you must reach in order to advance to the next time scale.

ENERGY REPORT

This section shows how work is changed into available energy. The energy sources are listed, as well as the number of weekly work hours put into the sources and how much energy you get from them.



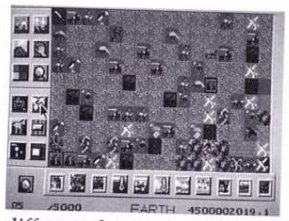
WORK This is the number of hours per week that your sentient life-forms are working. The less they work the happier they are, but it'll take them a long time to get anywhere. Adjust the work hours by changing 'Energy Investment' in the Civilization Model Control Panel.

EFF% Shows you how much energy you get back for the amount of work you put in. The efficiency level changes depending on which technology level you are in.

ENERGY Gives the amount of each kind of energy produced, along with a total for all energy sources. Power to the people!

THE DATA DISPLAY BUTTONS

WHAT'S UP



See what your planet is up to. Every element can be checked out closely using the different buttons from the Data Display Buttons. To select an element just press Button I over a button. In the Map and Globe screens different data values have different colors which you can check out in the Legend Box.



①Event - Shows global events like wars, hurricanes, etc.
②Continental Drift - Displays direction and speed of continental drift.
③Sea Level - Check out the elevation of the ocean floor.
④Sea Temperature - Gives the sea temperature.
⑤Sea Currents - See the seas' currents ebb and flow.
⑥Air Temperature - Find out the air temperature.
⑦Rainfall - Shows the amount of rainfall.
⑧Air Currents - Watch the winds blow.
⑨Civilizations - Keep an eye on your civilizations.
⑩Biomes - Shows the distribution of biomes.
⑪Life-forms - Check out the kinds of animals on your planet.

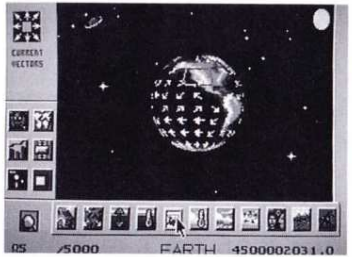
LOOK AT ALL THE SCREENS!

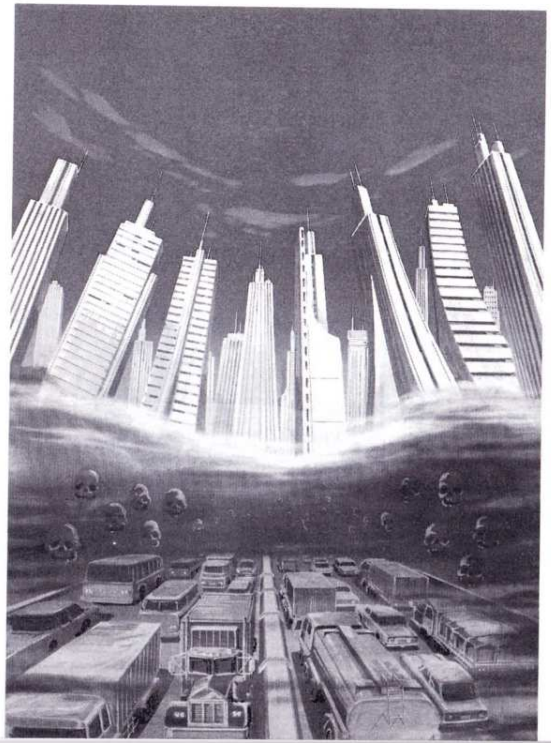
Data appears on lots of different screens. To get different views on the same information just switch from EDIT to MAP to GLOBE screens.



LEGEND BOX

The Legend Box (in the Map and Globe screens) gives you the specifics on the data selected from the Data Display Panel. Watch biomes spread or civilizations collapse.







THE SCENARIOS

SimEarth™

THE SCENARIOS

MODE SET SCREEN

There are eight scenario planets in SimEarth. You can play them in Easy, Medium, Hard or Experimental modes. Each scenario has a goal for you to reach, but keep in mind that there are no real 'winners' or 'losers'.



☐Experimental
☐Easy Game
☐Average Game
☐Hard Game

Use this screen to select the level you want to play in. Each level has a different amount of maximum EUs that can be used in your scenario. In Experimental Mode, however, you get an unlimited amount of EUs.

1.RANDOM

Start a different planet everytime you choose 'RANDOM'. The results of each game will vary because each planet is different from the one you played before. You also have four time scale options to pick from.

2.AQUARIUM

If you like swimming with fish, dolphins or sharks then this is the planet for you. But you have to create continents so civilizations can grow and advance. Maybe you'll have to forget about your aquatic sports for a while.

3.STAG NATION

Help! Help! Your civilization is trapped in the Stone Age on a small island. They have to get to bigger chunks of land in order to leap ahead with technology. Why not use the Altitude icon to build a land bridge for them to travel on? Try other methods too.

4.EARTH- THE CAMBRIAN ERA

Go way, way back to 550 million B.C. and watch the continents drift apart and zillions of new life-forms come into existence. Sit back and see the action happen or jump in and help evolution on its way.

5.EARTH- MODERN DAY

Ow! We're in real trouble nowadays. War, famine, pollution, disease, greenhouse warming and maybe a nuclear winter around the corner. Don't worry, be happy. All you have to do is solve the world's problems first.

TIME SCALES

Here are the four time scales to choose from. Start way back in time with the Geologic Scale or go high-tech in the Technology Scale. Of course, in-between there are the Evolution and Civilization scales too.



6. MARS

You've reached 'Nanotech' but your home planet is overcrowded. Your mission is to terraform Mars and turn it into a place to be proud of. But your Model Control Panels are turned off in this mode! AAGH!! Never fear - use a few meteors and lots of terraformers.

7. VENUS

This is a tough one. Venus is usually 477°C and you have to get people to live on it. What to do? Try using an Oxygenator to draw CO_2 out of the atmosphere and then slap down some biomes. Keep a close eye on the graphs for any major changes.

8. DAISYWORLD

This scenario is very different from the others. The idea, based on the Gaia Theory, is that life-forms and environment together control the climate. If the theory is true then the daisies should help stabilize the planet's temperature.

GAIA THEORY IN ACTION

You have to test Gaia's ability to regulate temperature. To do this try filling the world with daisies. If the theory works then the planet's temperature should stay about the same.



APPENDIX

SimEarth™

THINGS TO TRY

1 Try terraforming Mars and Venus without using biome factories.
2 There is a 'secret' life-form. Can you find it? Try to 'mutate' one of your most advanced civilizations. Can you then nuture this new life-form to sentience and blast off to the stars?
3 Can you develop a planet dominated by whales? To do it, you may need to 'exterminate' their competition.
4 Can you get the empty space on Daisyworld below 10% in Hard Mode?
5 What happens to the Sun after 10 billion years? There is a quick way to see. The trick is to keep your planet in the Geological Time Scale. But it's not so easy!
6 Can you control the planet's temperature with only the CO_2 absorption setting?
7 Can you bring about the end of civilization on modern Earth? There are more than a few ways to do it.
8 Can the Stagnates make it to the large continent without a land bridge?

HOW SOCIETIES ADVANCE

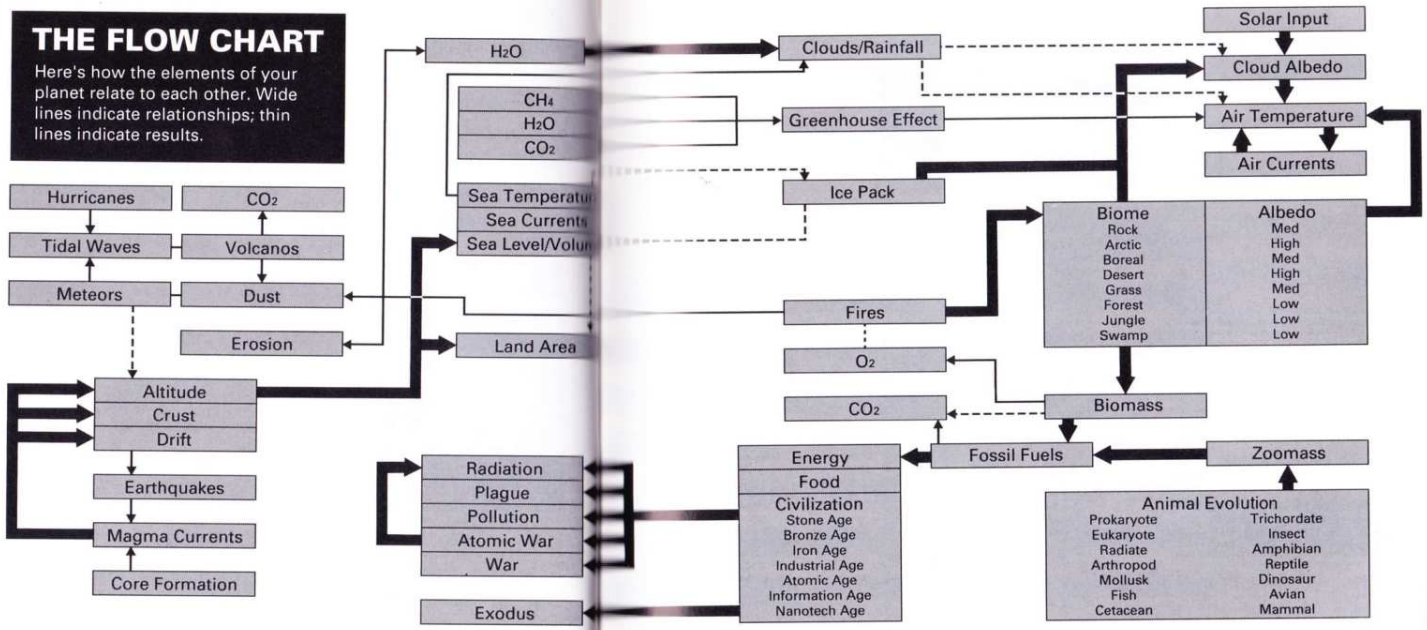
A civilization's advancement depends on the total amount of energy it is producing and the amount of energy allocated to Science. If you want your civilization to advance quickly, you should give Science the largest allotment of energy in the Civilization Model. You can get some idea of how close your civilization is to advancing to the next step by watching the total energy output found in the Report Window.

TECH. LEVEL	APPROX. ENERGY NECESSARY
Bronze	200
Iron	600
Industrial	2000
Atomic	6000
Information	40000
Exodus	60000

If your society does not advance even though it seems to be producing plenty of energy, try turning up Science energy allocation in the Civilization Model.

THE FLOW CHART

Here's how the elements of your planet relate to each other. Wide lines indicate relationships; thin lines indicate results.



BUTTON LIST

This is a quick-find list for the buttons.



Life

- Prokaryote (35)
- Eukaryote (70)
- Radiate (105)
- Arthropod (140)
- Mollusk (175)
- Fish (210)
- Cetacean (245)
- Trichordate (280)
- Insect (315)
- Amphibian (350)
- Reptile (385)
- Dinosaur (420)
- Avian (455)
- Mammal (490)
- Stone Age (50
- Bronze Age (100
- Iron Age (150
- Industrial Age (200
- Atomic Age (250
- Information Age(300
- Nanotech Age (350
- Biome (500)
- Oxygenerator (500)
- N_2 Generator (500)
- Hydrator (500)
- CO_2 Generator (500)
- Monolith (2500)
- Ice Meteor (500)



Disaster

- Hurricane (50)
- Tidal Wave (50)
- Meteor (50)
- Volcano (50)
- Atomic Bomb (50)
- Fire (50)
- Earthquake (50)
- Plague (50)



Land

- Raise (50)
- Lower (50)



Biome

- Rock (50)
- Arctic (50)
- Boreal (50)
- Desert (50)
- Grass (50)
- Forest (50)
- Jungle (50)
- Swamp (50)



Examination (5)

MODEL CONTROL PANELS

Model Control Panels

Geosphere
- Volcanic Activity
- Erosion
- Core Heat
- Continental Drift
- Core Formation
- Meteor Impact
- Axial Tilt

Atmosphere
- Solar Input
- Cloud Albedo
- Greenhouse Effect
- Cloud Formation
- Rainfall
- Surface Albedo
- Air-sea Thermal Transfer

Biosphere
- Heat Tolerance
- Advance Rate
- Reproduction
- Mutation Rate
- CO_2 Absorption

Civilization
- BioEnergy
- Solar-wind
- Hydro-Geo
- Fossil Fuel
- Nuclear
- Philosophy
- Science
- Agriculture
- Medicine
- Art-Media

Graphs
- Atomospheric Composition
- Biome Ratio
- Life Class Ratio
- Technology Ratio
- History Window
- Report Window

Screens
- Edit
- Map
- Globe

Options
- Display
- Speed
- Sound

Call the TurboTeam at 1-900 FUN-TG16 for additional game tips and information.
Please note: The first 30 seconds of this call are free, but you will be charged 99 cents for each minute after that (up to 5 minutes). The charge for this call will appear on your next phone bill.

Please be sure to ask your parents' permission before you call!

Care of Your CD Game and Getting Started

Care of Your CD Game

1 Keep your CD game clean.
2 Make sure the shiny "signal reading" side of your CD is clean at all times.
3 If your CD does become dirty, wipe it clean with a soft cloth.
4 Make sure that the surface of your CD does not get scratched.
5 Take the CD carefully in and out of its case.
6 Never write on your CD. Writing on it may damage its surface or interfere with its operation.
7 Never bend your CD.
8 Do not try to make the hole in your CD larger!
9 Place your CD back in its case when you have finished playing.
10 Avoid high temperature and humidity.

Getting Started

<When you use TurboGrafx™-CD Player>

1 Make sure your TurboGrafx-CD Player, Game interface, television and audio system are properly connected (refer to your TurboGrafx-CD Player's instruction manual).
2 Plug your TurboGrafx-CD Power Adaptor into a wall outlet and slide the Game interface power switch (the lower switch) to the right ("ON" position). Turn on your television and make sure that it is on the correct channel.
3 Carefully insert the TurboGrafx *Super CD System card into the TurboGrafx-16 game-card port and slide the upper power switch to the right ("ON" position).
4 Open the TurboGrafx-CD player cover by lifting the handles. Avoid touching the inside of the unit. Never operate your CD player with the cover open.
5 With the game-title side of your CD game facing upwards, set your disc into position. Make sure that the hole is centered on the spindle and close the cover. The initial TurboGrafx-CD screen should appear.

<When you use TurboDuo™>

1 Make sure your TurboDuo™, Game interface, television and audio system are properly connected (refer to your TurboDuo™ instruction manual).
2 Plug your TurboDuo™ Power Adaptor into a wall outlet and slide the power switch to the right ("ON" position). Turn on your television and make sure that it is on the correct channel.
3 Open the TurboDuo™ CD player cover by pressing the button. Avoid touching the inside of the unit. Never operate your CD player with the cover open.
4 With the game-title side of your CD game facing upwards, set your disc into position. Make sure that the hole is centered on the spindle and close the cover. The initial TurboGrafx-CD screen should appear.

Setting your CD disc

1 Take the CD disc carefully out of its case.
Note: NEVER bend your CD disc.
2 Open the TurboGrafx-CD player cover by lifting the handles.
Note: Avoid touching the inside of the unit. NEVER operate your CD player with the cover open.
3 Set your CD disc into position with the title side up.
4 Make sure that the hole is centered on the spindle and close the cover.
Note: Be sure to reset by pressing [SELECT] while holding down [RUN] before turning power OFF. Place your CD disc back in its case after you have finished playing.

* Super CD System card available through 1-800-366-0136

TurboGrafx™-CD Game Disc 90-Day Limited Warranty

Turbo Technologies, Inc.("TTI") warrants to the original consumer purchaser that this product shall be free from defects in material and workmanship under the following terms:

HOW LONG IS THE WARRANTY
This product is warranted for 90 days from the date of the first consumer purchase.

WHO IS PROTECTED
This warranty may be enforced only by the first consumer purchaser. You should save your proof of purchase, and be prepared to present it in case of a warranty claim.

WHAT IS COVERED
Except as specified below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:
1. Any product that is not distributed in the U.S.A. by TTI, or that is not purchased in the U.S.A. from an authorized TTI dealer, or that is sent for warranty service from outside the U.S.A.
2. Damage,deterioration or malfunction resulting from;
   a) accident, negligence misuse, abuse, neglect, impact, fire, liquid, lightning or other acts of nature, commercial or industrial use, product modification or tampering, failure to follow instructions supplied with the product;
   b) repair or attempted repair by anyone not authorized by TTI;
   c) any shipment of the product (claims must be submitted to the carrier);
   d) removal or installation of the product; and
   e) any other cause that does not relate to a defect in material or workmanship
3. Any product on which the TTI serial number has been altered, defected, or removed.

HOW TO OBTAIN WARRANTY SERVICE
For warranty information, call 1-800-366-0136 Monday-Friday 8:00 A.M. to 7:00 P.M. Central Time.

LIMITATION OF IMPLIED WARRANTIES
ANY APPLICABLE IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE LENGTH OF THIS WARRANTY, AND ARE SUBJECT TO ALL CONDITIONS HEREIN.

EXCLUSION OF DAMAGES
TTI'S LIABILITY FOR ANY PRODUCT IS LIMITED TO THE REPAIR OR REPLACEMENT OF THE PRODUCT AT OUR OPTION. TTI SHALL NOT BE LIABLE FOR :
1. Damage to other property caused by this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or
2. Any other damages, whether incidental, consequential or otherwise.

SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS AND/OR DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION AND EXCLUSIONS MAY NOT APPLY TO YOU.

HOW STATE LAW RELATES TO THE WARRANTY
This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Turbo Technologies, Inc.
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