QUICK~CARTAGE COMPANY

Teacher's Manual

Jacaranda
Software

A product of Jacaranda Software

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Microbee versions programmed by Jeff Tutticci

Preface

Quick-Cartage Company is one of a suite of computer programs that have been written to accompany *Moving into Maps*, the pre-atlas activity book in the Jacaranda Atlas Programme. Designed for use by students from 7 to 13 years of age, *Quick-Cartage Company* complements the "How Big?" section of *Moving into Maps*. However, as the program is entirely self-contained and self-explanatory, it will be useful in any classroom where basic map concepts are being taught. It is not necessary for schools to be using other materials from the Jacaranda Atlas Programme in order to use *Quick-Cartage Company*.

Aim of the program

Quick-Cartage Company is a simulation for up to four players which provides students with an opportunity to practise using linear scales to measure distances on two maps of different scales.

About the program

In *Quick-Cartage Company* players must travel around a city and its local area. They must drive trucks to supply yards where they purchase goods to sell to construction sites. In doing so, they must use two maps that the computer will display. One of these is a map of a city. The other is a map of the surrounding area. The two maps are drawn to different scales.

There are six construction sites, three located on the city map and three on the local area map. Construction sites are labelled with the numbers 1 to 6. At the beginning of the game, three items (building materials) are needed at each site. Once a particular item has been delivered to a site, it is no longer needed at that site. The game will finish when all needs are satisfied at each construction site.

In order to sell building materials to construction sites, students must first purchase the items from the supply yards, of which there are six, labelled A to F. All supply yards are on the local area map. Each supply yard sells two different items, and supply yards never run out, however much they sell. By positioning their trucks

alongside a supply yard, students will be given the option of buying either or both of the particular items sold by that yard.

When the game starts, each construction site needs three items; because each truck can carry only two items at a time, each site will need more than one visit before all its needs are filled. Therefore, early in the game it is fairly easy to make deliveries. However, as the game progresses, students will have to drive further to find construction sites that need the particular items they have picked up. Players also have to think carefully about which items they will pick up as some items may no longer be needed at any of the sites. (The players can dump unwanted items at any supply yard.)

A delivery is possible when a truck is positioned alongside a construction site. However, no delivery is possible if a truck is empty, or if the construction site doesn't need what the truck is carrying.

Play begins on the city map, where a truck for each player is positioned at the garage near the centre of the map. To move his or her truck, each player must nominate a compass direction (north, south, east or west) and a distance to be travelled (in kilometres). Students must use the linear scale displayed in the bottom right corner of the map to calculate how many kilometres to travel. All streets are marked with central dots corresponding to the scale shown. On the city map the distance between dots represents one kilometre; on the local area map the distance between dots represents three kilometres.

To help students practise interpreting maps of different scales, play in *Quick-Cartage Company* frequently switches from one map to the other. At the start of the game, players must make their way to the local area map, as that is where all the supply yards are found. However, certain conditions exist which make it necessary to return to the city map.

Apart from there being three construction sites on the city map, it is necessary to return to the garage at times to refuel the trucks. During each player's turn the fuel level in his or her truck is displayed in the bottom left corner of the map. There is a penalty if a player's truck runs out of fuel.

Trucks may also get punctures during their travels. Punctures are repaired at the garage on the city map.

Trucks will be involved in crashes if their drivers fail to make correct calculations and try to travel further in a straight line than a road will permit. In addition, trucks that end a trip on the same dot as another truck will crash. If a crash occurs, the vehicle that has been the cause of the crash is towed to the repair shop on the city map and the driver will be penalised. (*Note:* It is permissible for any truck to overtake or pass another truck.)

Further descriptions of each point that students must take into consideration and diagrams of the screen are given in the Student's Guide.

For students, the objective is to sell as many items as possible to construction sites, while avoiding penalties, and thus make as much money as possible. Therefore, students need to plan a fast route around the maps, deal quickly with fuel problems and punctures, and avoid crashing. *Quick-Cartage Company* stimulates discussion amongst students, and encourages planning and problem-solving skill development.

Prerequisite understanding

To use this program successfully, students should understand how to use a linear scale and be able to calculate straight-line distances accurately from a scale. The program is not designed to *teach* students how to do this. Instead, *Quick-Cartage Company* will allow students to practise using this basic map skill in an original and entertaining manner.

Time required to use this program

Completing the program may take from 30 minutes to an hour or more, depending on the travelling strategies evolved by each student. Normally the program continues until all six construction sites have received everything they need. Teachers can, however, end the program by pressing CTRL-P at certain stages during the running time. (Please refer to the operating instructions on page 9 for information on the use of CTRL-P.)

How the scores are determined

Each player begins the game with $5000. The only way to increase funds is to sell goods to construction sites. Each sale is worth $400.

Money can be used up in several ways. Each purchase from a supply yard costs $50. The other ways in which money may be lost are generally avoidable if students plan efficient routes and behave responsibly in the control of their vehicle. Penalties that may be incurred are as follows:

- *Crashing* — either by driving beyond the end of a road, or by ending a move on top of another truck.
  Penalty $500.
- *Running out of fuel* — a driver should return to the garage before the fuel runs out. If a truck does run out of fuel, it will be supplied with enough for just 90 kilometres of further travel. This is enough to get the truck back to the garage and refuel.
  Penalty $290.
- *Receiving a second puncture if the first has not been repaired* — each truck carries a spare wheel, so the first time a truck gets a puncture, there is no penalty. If a truck visits the garage, any puncture will be repaired automatically. However, if a truck gets a second puncture before the first one has been repaired, the driver is penalized.
  Penalty $370.

If a player makes so many errors that all his or her money is spent, a special grant of $200 is made to enable that player to stay in the game. Thus students having difficulty in understanding and using scales are not penalized to such an extent that they are excluded from the game.

The HELP routine

By asking the computer for HELP, a student can find out about the following:

- His or her current status, i.e.
  what (if anything) is loaded on the truck,
  whether the spare tyre is good or punctured, and
  how many kilometres of travel are possible with the fuel that is left.
- How much money each player has.
- What each supply yard sells.
- What each construction site needs (if anything).

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Teacher involvement

It is usually unnecessary for the teacher to supervise students to any great extent when they are playing *Quick-Cartage Company*. The program is easy to use and students will get greater educational benefit from correcting their own errors. However, it is important to ensure that they understand

- when to use the RETURN key,
- what the SPACE BAR is, and
- how to ask the computer for HELP.

Noises?

You can cancel all the various tunes and noises that are produced in *Quick-Cartage Company* by pressing "Q" instead of the SPACE BAR at the very beginning of the program. The operating instructions (page 6) give full details.

Conclusion

In *Quick-Cartage Company* we have tried to embody the Jacaranda Software philosophy:

- Students drive the computer, not the other way round.
- The computer doesn't replace teachers, blackboards, playgrounds or books — it complements them.
- Activities that may be inaccessible, time consuming or expensive can, through computer simulation, be made readily available in the classroom.
- Education should be fun, exciting and effective.

Operating instructions

Getting started on the Apple

1. Insert the *Quick-Cartage Company* disk (label side up) in the disk drive. (Do not shut the door of the drive yet.)
2. Switch on the monitor.
3. Switch on the computer.

4. When the red light on the disk drive is glowing, shut the door of the drive.
5. The Jacaranda Software logo will appear on the screen. Pressing any key will cause the *Quick-Cartage Company* title screen to appear; otherwise, if no key has been pressed, the title screen will load automatically after a short pause.
6. Once the title screen has appeared, press the SPACE BAR to start the program.
   If you wish the program to run silently (that is, with no music or error noises), press "Q" to start the program instead of pressing the SPACE BAR.

Getting started on the BBC

1. Switch on the monitor.
2. Switch on the computer.
3. Insert the *Quick-Cartage Company* disk in the disk drive and shut the drive door.
4. Hold down the SHIFT key and press the BREAK key, then release the BREAK key *before* taking your finger off the SHIFT key.
5. The Jacaranda Software logo will appear on the screen. Pressing any key will cause the *Quick-Cartage Company* title screen to appear; otherwise, if no key is pressed, the title screen will load automatically after a short pause.
6. Once the title screen has appeared, press the SPACE BAR to start the program.
   If you wish the program to run silently (that is, with no music or error noises), press "Q" to start the program instead of pressing the SPACE BAR.

Getting started on the Commodore 64 Cassette:

1. Switch on the computer.
2. Switch on the monitor.
3. Put the tape into the cassette drive (label up).
4. Rewind the tape, then stop.

5. Hold down the computer's SHIFT key and tap the RUN/STOP key.
6. Press play on the cassette drive.
7. The screen will go blank for several minutes.
8. When the program is loaded, the Jacaranda Software logo will appear. Soon after, the title screen will appear. Press the SPACE BAR to start the program. If you wish the program to run silently (that is, with no music or error noises), press "Q" to start the program instead of pressing the SPACE BAR.

Disk:

1. Switch on the computer.
2. Switch on the monitor.
3. Switch on the disk drive.
4. After the light goes out, insert the disk (label side up) and shut the door of the disk drive.
5. Type   LOAD "QUICK*",8:   (Don't forget the colon.)
6. Hold down the SHIFT key and tap the RUN/STOP key.
7. Wait for the program to load. When it has loaded, the Jacaranda Software logo will appear. Soon after, the title screen will appear. Press the SPACE BAR to start the program. If you wish the program to run silently (that is, with no music or error noises), press "Q" to start the program instead of pressing the SPACE BAR.

Getting started on the Microbee Cassette:

Important: The cassette has the program recorded on both sides, but at different speeds. Side A is at 1200 baud, which is the normal speed. Side B is at 300 baud, or four times slower. The program should normally load from side A; however, some cassette recorders do not work reliably at 1200 baud. If you have any difficulty loading from side A, try loading at 300 baud from side B.
1. Turn on the monitor.
2. Turn on the computer.
3. Type NEW and then press the RETURN key.

4. Type LOAD and then press the RETURN key.
5. Start the tape.
6. Wait until the computer beeps to indicate it has loaded the program (2–3 minutes at 1200 baud).
7. Turn off the cassette and rewind the tape.

Disk:

1. Turn on the monitor.
2. Turn on the computer.
3. Put the MASTER disk into the disk drive (label side up). If you have a dual disk drive, put it into the one with the light on.
4. Type BASIC and then press the RETURN key. Wait until the computer beeps.
5. Take out the MASTER disk and insert the *Quick-Cartage Company* disk in the same drive, label side up.
6. Type RUN "QUICK" and press the RETURN key.

Note

Students should be aware that, whenever they see the ⟶ sign on the screen, they will be required to type an answer and press the RETURN key (the ⤶ key on the Apple IIe). See page 9 of the Student's Guide.

Introduction

1. The program begins with an introductory screen that advises students to read the notes in the Student's Guide. It is important that they do this before they try to play the game.
2. Next, students are asked to enter the number of players (1–4). (If a mistake is made, use the DELETE key or the ← key on the Apple.)
3. The players' names must be entered one by one. Press the RETURN key at the end of each name.
4. The computer will display a list of items sold in each of the six supply yards. It is advisable that students copy this list down.

5. The computer will display a list of the needs of each of the six construction sites. Again, students should copy this list down before pressing the SPACE BAR to start the game. (**Note:** The information on items sold and items needed can also be obtained during the game by asking for HELP.)

Playing the game

1. The city map appears on the screen and this message is shown at the bottom of the screen:

   IT IS YOUR TURN, (*name of player will appear here*).
   YOU HAVE $5∅∅∅ (*this will change as the game progresses*).
   WHICH WAY DO YOU WANT TO TRAVEL?
   (N) NORTH   (S) SOUTH   (E) EAST   (W) WEST
   (H) HELP →

   Note: Whenever the screen shows this text, you may end the program. If you hold down the CTRL key and press the P key, this message will appear at the bottom of the screen:

   TYPE END TO FINISH THE GAME NOW, OR ANYTHING ELSE TO CONTINUE . . . →

2. By choosing a direction and pressing the RETURN key, a player will then be asked:

   HOW MANY KILOMETRES DO YOU WANT TO GO?
   TYPE ∅ IF YOU CHANGE YOUR MIND. →

3. By asking for HELP, a student will be provided with information on his or her truck — what (if anything) it is carrying, whether it has a punctured tyre or not and how many kilometres it can travel on the remaining fuel.
   HELP also tells players how much money each of them has.
   In addition, the items sold by each supply yard are listed, and the goods required at each construction site are shown. (This list is updated as the game progresses.)
4. Students should know how to travel from one map to another. This is fully explained in the Student's Guide.
5. By positioning his or her truck alongside a supply yard, a player can buy what that yard is selling if there is space on

the truck. (If a player doesn't want what is on his or her truck, it can be dumped at any supply yard.)

6. By positioning the truck alongside a construction site, a player will be told what that site needs — if the truck is carrying one or two such items, the player can sell either or both to the construction site.

End

1. The game will end once all construction sites have received all the goods that they need. The game can also end if the CTRL-P option is used.

2. At the end of the game, players should follow the instructions given on the screen.