

Dirichlet Enrichment Stage

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Chapter 1

Mission Possible - Logic

It was 6:00 pm sharp when the team of four, Joanne, Leon, Andrew and Philippa, gathered to receive their new assignment. Joanne pressed the satellite-connected non-buggable speaker phone to connect them to their headquarters.

‘We’re all ready Bruce, fire away!’ They turned their attention to Bruce.

‘Good evening, my champion problem solvers! Your mission should you choose to accept, is to save the Naccio Cephalopoda! It is a rare and exclusive marine mollusc, one of the last in the world and almost extinct. It has been used in a special breeding program and the research has shown it can be used to fight deadly viruses. It is worth millions and it was stolen two days ago. You will learn more during this assignment. The first part of the assignment is to find a certain secret undercover agent who has details of the mullusc’s whereabouts. The agent you are looking for will arrive as an international guest at a dinner being held to-night in town. The agent has worked as a deep sea diver on the Naccio Cephalopoda research program.

‘The dinner is being organised by a prominent person in the town - we do not know who, nor do we know exactly where it is to be held. Our agents have narrowed down the possibilities to the Governor General, the Mayor, a businessman named Platt, and Captain Smythe, the captain of the research vessel in the port. The possible locations of the dinner are Government House, the Pier Mansion, the Hotel Savoy or the Banquet Room of the Town Hall.

‘This mission is Top Secret, you must find this guest without making it obvious that you are looking for him or her. It is vital you do not reveal yourselves to the wrong person as we don’t know who they really are! Your cover is as follows . . .’

‘OK, let’s spread out around the town and learn what we can. Be back here in an hour,’ said Andrew, who usually led.

An hour later, they shared the information they had. ‘I checked out the Hotel Savoy. I went to the kitchen with a false delivery and they told me there was no dinner there to-night,’ said Philippa.

‘I chatted to Mr. Platt’s secretary, said Joanne. ‘He is going out to-night – he had asked her to check the tram times, so it must be at Government House or the Pier Mansion – there is no tram near the others. She also said she overheard his wife asking who would be hostess, so it cannot be him organising the dinner.’

‘If Captain Smythe was the organiser of a dinner, he would use my cousin Charley for chef – I rang him and he is not working to-night, so it is not the Captain,’ said Leon.

‘I talked to some people in the park. It is common knowledge that if the Mayor organises a dinner, it will be in the Banquet Hall at the Town Hall, and that the Governor General never has functions at Government House if he has to be the host,’ said Andrew.

‘I think we have enough information,’ said Joanne, writing on a white-board for all to see:

1. Not the hotel.
2. Not the Town Hall or the Hotel Savoy.
3. Not Mr. Platt.
4. Not Captain Smythe.
5. If the Mayor, then the Town Hall.
6. If the Governor, then not Government House.

‘We need a grid,’ said Andrew, and drew one on the whiteboard:

	Pier M	Hotel S	Gov. House	Town H
Governor General				
Mr. Platt				
Mayor				
Capt. Smythe				

‘Now put the number of a statement in the grid where it prevents that person organising the dinner at that location. Let’s start with 1s down the Hotel column – Statement 1 says it is not the hotel.’

	Pier M	Hotel S	Gov. House	Town H
Governor General		1		
Mr. Platt		1		
Mayor		1		
Capt. Smythe		1		

‘Keep going, Andrew. I think we can make it,’ said Joanne excitedly. ‘If there is a number there already, we don’t need to add another.’

	Pier M	Hotel S	Gov. House	Town H
Governor General		1	6	2
Mr. Platt	3	1	3	2
Mayor	5	1	5	2
Capt. Smythe	4	1	4	2

‘So the Governor General is organising the dinner at the Pier Mansion!’

Later that evening, as the first guests arrived, Leon stood at the beautiful ornate doors of the Pier Mansion. He had never looked as crisp as he did right then dressed in the butler’s suit. As the guests arrived he welcomed them and took their coats. His ears however were honed in to the Governor’s assistant who announced their arrival to the Governor General. A special announcement was made for the international guests.

Once all the guests had arrived he hurried back to the kitchen to share the information with Andrew who was assistant chef for the evening.

‘Okay Andrew, the first international guest to arrive was Miss Manego from Argentina, then Mr Jordan from France, followed by Mr Lee from Cambodia and Mrs Singh from India,’ said Leon. Then he rushed back to the guests.

‘Dinner is served’ announced Leon in his most butlerish of butler voices and the dining room doors opened as the guests were shown to their seats in the dining room. Of the international guests, the two ladies sat opposite each other as did the two men, sitting next to the two ladies. Joanne swiftly served the soup, watching carefully to pick up anything she could.

As she returned to the kitchen she whispered to Andrew, ‘I’ve spotted four items on the international guests, sure to be used by secret agents. I saw a pen in a shirt pocket, which I identified as being a miniature camera. There was a satellite linked watch, which identifies your location at all times and can also be worn under water. Then one of the men had glasses which when adjusted allow you to see in the dark. Oh, and there was a mobile telephone, which looked like it had a bugging device and allowed you to tap into other peoples phone calls.’

Joanne gathered the refreshments and rushed back to the guests.

Philippa was hidden above the ceiling. She could hear the guests’ conversations through the powerful microphone in the flower arrangement. She too relayed information to Andrew through their micro-speakers and headset. ‘Okay Andrew, I have learnt that among the international guests we have a doctor, a deep-sea diver, a computer programmer who is constantly answering calls on her mobile and annoying the journalist sitting next to her.’

‘Great, we only need to find the deep-sea diver. Who is it?’ asked Andrew.

‘Andrew the line is breaking up, I’m losing cont ...’ Philippa’s voiced was slowly lost over the line as some technical problem broke their line of communication.

‘Well, I’ve got to put the pieces together and see if I can work it out myself,’ thought Andrew. He looked at the information and found it wasn’t connecting together. ‘Time to set up a grid – it worked pretty well this afternoon,’ he decided. ‘Then as more information comes in I can match up the clues!’

Andrew quickly set up a grid on which he could link each guest with an object, the guest with an occupation and the object with a person’s occupation.

	Pen Camera	Satellite Watch	Night Glasses	Mobile Phone	Doctor	Deep-sea diver	Journ -alist	Computer Prog.
Miss Manego Argentina								
Mr. Jordan France								
Mr. Lee Cambodia								
Mrs. Singh India								
Doctor								
Deep-sea diver								
Journalist								
Computer programmer								

As he finished the grid, he remembered that Phillipa said the computer programmer was constantly on the mobile. He decided to place a Y (for yes) in the box connecting the programmer with the mobile and an N (for no) in the other boxes connecting the other occupations to the mobile. He also eliminated the option of the programmer having the other items, again using the letter N.

	Pen camera	Satellite watch	Night glasses	Mobile phone	Doctor	Deep-sea diver	Journ -alist	Computer prog.
Miss Manego Argentina								
Mr Jordan France								
Mr Lee Cambodia								
Mrs Singh India								
Doctor				N				
Deep-sea diver				N				
Journalist				N				
Computer programmer	N	N	N	Y				

‘Philippa also said SHE is always on the phone. This means the computer programmer is a female, and she annoyed the journalist next to her; this means the journalist is male’ he thought. On the grid he eliminated both male guests as being the computer programmer and having the mobile, and eliminated both female guests as being the journalist.

	Pen camera	Satellite watch	Night glasses	Mobile phone	Doctor	Deep-sea diver	Journ -alist	Computer prog.
Miss Manego Argentina							N	
Mr Jordan France				N				N
Mr Lee Cambodia				N				N
Mrs Singh India							N	
Doctor				N				
Deep-sea diver				N				
Journalist				N				
Computer Programmer	N	N	N	Y				

At that moment Leon entered the kitchen.

‘Leon, when the guests were introduced did you hear their occupations?’ Andrew asked with eagerness.

‘The guest from Cambodia is a doctor’ said Leon as he hurried out the door.