

# The Pharmaceutical Business

Audience:

VCE Business

Intermediate GNVQ Business

GCSE Applied Business

HNC Pharmaceutical Sciences

HNC Biotechnology

# Teachers' Notes

**These notes are divided into three sections.**

- 1. Vocational Reference Grid**
- 3. Additional Resources**
- 7. Assignment Triggers.**



Vocational specification references have not been included in the main web resource. This has been done to try to avoid problems if specifications change. However, it is clear that specification reference is an important requirement for both staff and students. The Vocational reference grid attempts to meet this need. It relates the material in the web resource to the Compulsory Units, providing detailed references to Units. The grid has been designed as a stand alone item which can be printed for students to use with the e-source. It is also hoped that the grid will help teachers integrate the material in the web resource with their Vocational schemes of work.

The Additional Resources section provides a range of extra material to support different sections of the web resource. This includes tables of data, and examples of documentation used by actual pharmaceutical companies. It is hoped that the inclusion of this extra primary material will provide more opportunities for students to process and manipulate information.

The Responses to Assignment Triggers section provides some suggested answers to the questions in the web resource.

The Pharmaceutical Business is primarily a resource for teachers and students engaged in VCE Business. The information and data it contains will also provide valuable supporting information and material for GCSE Applied Business, especially Unit 2, and for some of the work carried out for Intermediate GNVQ Business.

Whilst The Pharmaceutical Business may not provide an exact fit with the GCSE and GNVQ Units, some of the case study examples and resources can be applied to whatever business is chosen for study on these courses. Use them as examples of good practice and compare with the real-life examples that are found through your own research and investigation.

# The Pharmaceutical Business reference grid for VCE Business

<b>VCE Business</b>	
Compulsory Unit references What you need to learn	The Pharmaceutical Business web resource material
<b>Unit 1: Business at work</b>	Chapter 2: Making Pharmaceuticals Chapter 3: Is Pharmaceutical Manufacturing like other industries? Chapter 3: Is Pharmaceutical Manufacturing like other industries? "Added value," page 6 "How to retain market share" page 7 Figure 18 – Shape and colour are used to make the product look unique "Regulation and Quality Assurance" page 8 Figure 20 – The manufacture of medical creams at Capsulike "What is meant by high quality?" page 8 "Controlling the quality" Figure 22 – An extract from the Rules and Guidance for Pharmaceutical Manufacturers and Distributors 1997, a code for good manufacturing practice Assignment Trigger page 6 Assignment Trigger page 8
Business objectives	Chapter 3: Is Pharmaceutical Manufacturing like other industries? "Added value," page 6 "How to retain market share" page 7 Figure 18 – Shape and colour are used to make the product look unique "Regulation and Quality Assurance" page 8 Figure 20 – The manufacture of medical creams at Capsulike "What is meant by high quality?" page 8 "Controlling the quality" Figure 22 – An extract from the Rules and Guidance for Pharmaceutical Manufacturers and Distributors 1997, a code for good manufacturing practice Assignment Trigger page 6 Assignment Trigger page 8
Types of business	n/a
Organisational functions	Chapter 4: Human Resources – Recruitment "Getting the personnel" page 9 Figure 24 – Departments and jobs at Plco page 10 "Recruitment procedures" Chapter 5: Human Resources – Training
Organisational structures	n/a
Communications	n/a
Production and quality	Chapter 2: Making Pharmaceuticals "R&D Primary and Secondary Manufacture" page 4 Figure 13 – The different stages in the production of tablets page 5 "Biotechnology" page 5 "Making biopharmaceuticals" page 5 Chapter 3: Is Pharmaceutical Manufacturing like other industries? "Added value," page 6 Figure 16 – Developing a new medicine "Regulation and Quality Assurance" page 8 Figure 20 – The manufacture of medical creams at Capsulike "What is meant by high quality?" page 8 "Controlling the quality" Figure 22 – An extract from the Rules and Guidance for Pharmaceutical Manufacturers and Distributors 1997, a code for good manufacturing practice Assignment Trigger Page 8
Assessment evidence E1	n/a

Assessment evidence E2	Chapter 3: Is Pharmaceutical Manufacturing like other industries? "Added value," page 6 Figure 16 – Developing a new medicine "How to retain market share" page 7 Figure 18 – Shape and colour are used to make the product look unique "Regulation and Quality Assurance" page 8 Figure 20 – The manufacture of medical creams at Capsulike "What is meant by high quality?" page 8 "Controlling the quality" Figure 22 – An extract from the Rules and Guidance for Pharmaceutical Manufacturers and Distributors 1997, a code for good manufacturing practice Assignment Trigger page 6 Assignment Trigger page 8
Assessment evidence E3	Chapter 4: Human Resources – Recruitment "Getting the personnel" page 9 Figure 24 – Departments and jobs at Plco page 10 "Recruitment procedures" Chapter 5: Human Resources – Training
Assessment evidence E4	n/a
Assessment evidence E5	n/a
Assessment evidence E6	Chapter 2: Making Pharmaceuticals "R&D Primary and Secondary Manufacture" page 4 Figure 13 – The different stages in the production of tablets "Biotechnology" page 5 "Making biopharmaceuticals" page 5 Chapter 3: Is Pharmaceutical Manufacturing like other industries? "Added value," page 6 Figure 16 – Developing a new medicine "Regulation and Quality Assurance" page 8 Figure 20 – The manufacture of medical creams at Capsulike "What is meant by high quality?" page 8 "Controlling the quality" Figure 22 – An extract from the Rules and Guidance for Pharmaceutical Manufacturers and Distributors 1997, a code for good manufacturing practice Assignment Trigger page 8
<b>Unit 2: The competitive business environment</b>	
How competition in the market affects business	Chapter 1: The Market Chapter 3: Is Pharmaceutical Manufacturing like other industries? Chapter 1: The Market "How big is the market?" page 2 Figure 3 – Growth of UK market for medicines "Keeping ahead of the game" page 2 Figure 4 – R&D spending "How does the economy benefit?" page 2 Figure 5 – UK industry trade balances Figure 6 – Balance of Payments Figure 10 – UK pharmaceutical exports - % share by region Figure 11 – UK pharmaceutical exports – UK pharmaceutical exports to the EU "A competitive success story" page 3 Figure 8 – Exports per employee Figure 9 – Change in the size of the UK manufacturing and pharmaceutical workforce Assignment Trigger page 3

<p>Assessment evidence E2</p>	<p>Chapter 1: The Market          "How big is the market?" page 2          Figure 3 – Growth of UK market for medicines          "Keeping ahead of the game" page 2          Figure 4 – R&amp;D spending          "How does the economy benefit?" page 2          Figure 5 – UK industry trade balances          Figure 6 – Balance of Payments          Figure 10 – UK pharmaceutical exports - % share by region          Figure 11 – UK pharmaceutical exports – UK pharmaceutical exports to the EU          Assignment Trigger page 2          Resource 2 – UK Pharmaceuticals home market          Resource 3 – World drug purchases – by area          Resource 4 – World drug purchases – by category</p>
<p>Assessment evidence E3</p>	<p>Chapter 1: The Market          "How big is the market?" page 2          Figure 3 – Growth of UK market for medicines          "Keeping ahead of the game" page 2          Figure 4 – R&amp;D spending          Assignment Trigger page 2</p>
<p>Assessment evidence E4</p>	<p>Chapter 1: The Market          "How does the economy benefit?" page 2          Figure 5 – UK industry trade balances          Figure 6 – Balance of Payments          Figure 10 – UK pharmaceutical exports - % share by region page 3          Figure 11 – UK pharmaceutical exports – UK pharmaceutical exports to the EU page 3          Chapter 3: Is Pharmaceutical Manufacturing like other industries?          "How to retain market share" page 7          Figure 18 – Shape and colour are used to make the product look unique          "Regulation and Quality Assurance" page 8          Figure 20 – The manufacture of medical creams at Capsulike          "What is meant by high quality?" page 8          "Controlling the quality"          Figure 22 – An extract from the Rules and Guidance for Pharmaceutical Manufacturers and Distributors 1997, a code for good manufacturing practice</p>
<p>Assessment evidence E5</p>	<p>Chapter 1: The Market          "A competitive success story" page 3          Figure 8 – Exports per employee          Figure 9 – Change in the size of the UK manufacturing and pharmaceutical workforce          Assignment Trigger page 2 and 3</p>
<p>Assessment evidence E6</p>	<p>Chapter 3: Is Pharmaceutical Manufacturing like other industries?          "Regulation and Quality Assurance" page 8          Figure 20 – The manufacture of medical creams at Capsulike          "What is meant by high quality?" page 8          "Controlling the quality"          Figure 22 – An extract from the Rules and Guidance for Pharmaceutical Manufacturers and Distributors 1997, a code for good manufacturing practice</p>
<p>Assessment evidence E7</p>	<p>Resource 1 – UK Pharmaceutical Exports – by area          Resource 3 – World drug purchases – by area</p>

<p>How business is affected by government policy</p>	<p>Chapter 3: Is Pharmaceutical Manufacturing like other industries?          "How to retain market share" page 7          Figure 18 – Shape and colour are used to make the product look unique          Resource 1 – UK Pharmaceutical Exports – by area          Resource 2 – UK Pharmaceuticals home market          Resource 3 – World drug purchases – by area          Resource 4 – World drug purchases – by category          Assignment Trigger page 8</p>
<p>How businesses are affected by international competitors</p>	<p>Chapter 3: Is Pharmaceutical Manufacturing like other industries?          "Regulation and Quality Assurance" page 8          Figure 20 – The manufacture of medical creams at Capsulike          "What is meant by high quality?" page 8          "Controlling the quality"          Figure 22 – An extract from the Rules and Guidance for Pharmaceutical Manufacturers and Distributors 1997, a code for good manufacturing practice</p>
<p>Assessment evidence E1</p>	<p>Chapter 1: The Market          "Keeping ahead of the game" page 2          Figure 4 – R&amp;D spending          "How does the economy benefit?" page 2          Figure 5 – UK industry trade balances          Figure 6 – Balance of Payments          Figure 10 – UK pharmaceutical exports - % share by region          Figure 11 – UK pharmaceutical exports – UK pharmaceutical exports to the EU          "A competitive success story" page 3          Figure 8 – Exports per employee          Figure 9 – Change in the size of the UK manufacturing and pharmaceutical workforce          Assignment Trigger page 3          Resource 1 – UK Pharmaceutical Exports – by area          Resource 3 – World drug purchases – by area          Resource 4 – World drug purchases – by category</p>

<b>Unit 3: Marketing</b>	Chapter 1: The Market Chapter 3: Is Pharmaceutical Manufacturing like other industries? n/a Chapter 3: Is Pharmaceutical Manufacturing like other industries? Assignment Trigger Page 6 Resource 1 – UK Pharmaceutical Exports – by area Resource 2 – UK Pharmaceuticals home market Resource 3 – World drug purchases – by area Resource 4 – World drug purchases – by category n/a Chapter 3: Is Pharmaceutical Manufacturing like other industries? "Added value" page 6 Figure 16 – Developing a new medicine "Medicine life cycle" page 7 Figure 17 – Product lifecycle for a typical medicine "How to retain market share" page 7 Figure 18 – Shape and colour are used to make the product look unique Assignment Trigger page 6 Assignment Trigger page 7 Chapter 1: The Market Resource 1 – UK Pharmaceutical Exports – by area Resource 2 – UK Pharmaceuticals home market Resource 3 – World drug purchases – by area Resource 4 – World drug purchases – by category Chapter 3: Is Pharmaceutical Manufacturing like other industries? Assignment Trigger page 6 Chapter 1: The Market Resource 1 – UK Pharmaceutical Exports – by area Resource 2 – World drug purchases – by area Resource 3 – World drug purchases – by area Resource 4 – World drug purchases – by category Chapter 3: Is Pharmaceutical Manufacturing like other industries? Assignment Trigger page 6 Chapter 3: Is Pharmaceutical Manufacturing like other industries? "Added value" page 6 Figure 16 – Developing a new medicine "Medicine life cycle" page 7 Figure 17 – Product lifecycle for a typical medicine "How to retain market share" page 7 Figure 18 – Shape and colour are used to make the product look unique Assignment Trigger page 6 Assignment Trigger page 7 Chapter 3: Is Pharmaceutical Manufacturing like other industries? Assignment Trigger page 6 Assignment Trigger page 7 n/a Chapter 4: Human Resources – Recruitment Chapter 5: Human Resources – Training
Assessment evidence E1	
Assessment evidence E2	
Assessment evidence E3	
Assessment evidence E4	
Assessment evidence E5	
<b>Unit 4: Human resources</b>	Chapter 4: Human Resources – Recruitment Chapter 5: Human Resources – Training

Human resources planning	Chapter 4: Human Resources – Recruitment "Getting the personnel" page 9 Figure 24 – Departments and jobs at Pilco "Recruitment procedures" page 10 "Legal obligations and ethical responsibilities in recruitment procedures" page 10 Figure 29 – Avoiding discrimination Assignment Trigger page 9 Assignment Trigger page 9 Assignment Trigger page 10 Assignment Trigger page 10 Resource 8 – Standard operating procedure for recruitment and selection Chapter 5: Human Resources – Training "Reasons for changes in working conditions" page 11 "Business strategies intended to improve competitiveness" page 11 "Specially developed training programmes" page 12 Figure 34 – The Caps Programme Figure 33 – An example of how the Caps Programme operates "Managing without hierarchy" page 12 Figure 36 – The effects of teamwork in the packaging department at Pilco Figure 37 – The effects of teamwork in the primary production areas at Pilco Assignment Trigger Page 9
Recruitment and selection	Chapter 4: Human Resources – Recruitment "Getting the personnel" page 9 Figure 24 – Departments and jobs at Pilco "Recruitment procedures" page 10 "Interviews" page 10 Figure 27 – Interview planning guide Figure 28 – Training manual on interviews "Legal obligations and ethical responsibilities in recruitment procedures" page 10 Figure 29 – Avoiding discrimination Assignment Trigger page 9 Assignment Trigger page 9 Assignment Trigger page 10 (i) Resource 5 – Job description Resource 6 – Person specification Resource 7 – Job analysis questionnaire Resource 8 – Standard operating procedure for recruitment and selection
Training and development	Chapter 5: Human Resources – Training "Business strategies intended to improve competitiveness" page 11 "Specially developed training programmes" page 12 Figure 34 – The Caps Programme Figure 33 – An example of how the Caps Programme operates "Managing without hierarchy" page 12 Figure 36 – The effects of teamwork in the packaging department at Pilco Figure 37 – The effects of teamwork in the primary production areas at Pilco Assignment Trigger page 9 Assignment Trigger page 12 Assignment Trigger page 12

<p>Assessment evidence E3</p>	<p>Chapter 4: Human Resources – Recruitment          "Getting the personnel" page 9          Figure 24 – Departments and jobs at Pilco          "Recruitment procedures" page 10          "Interviews" page 10          Figure 27 – Interview planning guide          Figure 28 – Training manual on interviews          "Legal obligations and ethical responsibilities in recruitment procedures" page 18          Figure 29 – Avoiding discrimination          Assignment Trigger page 9          Assignment Trigger page 9          Assignment Trigger page 10          Resource 5 – Job description          Resource 6 – Person specification          Resource 7 – Job analysis questionnaire          Resource 8 – Standard operating procedure for recruitment and selection</p>
<p>Assessment evidence E4</p>	<p>Chapter 5: Human Resources – Training          "Specially developed training programmes" page 12          Figure 34 – The Caps Programme          Figure 33 – An example of how the Caps Programme operates          Assignment Trigger Page 12</p>
<p>Assessment evidence E5</p>	<p>Chapter 5: Human Resources – Training          "Reasons for changes in working conditions" page 11          "Managing without hierarchy" page 12          Figure 36 – The effects of teamwork in the packaging department at Pilco          Figure 37 – The effects of teamwork in the primary production areas at Pilco          Assignment Trigger page 10          Assignment Trigger Page 9          Assignment Trigger Page 12          Assignment Trigger Page 12</p>
<p>Assessment evidence E6</p>	<p>Chapter 5: Human Resources – Training          "Managing without hierarchy" page 12          Figure 36 – The effects of teamwork in the packaging department at Pilco          Figure 37 – The effects of teamwork in the primary production areas at Pilco          Assignment Trigger page 9          Assignment Trigger page 12          Assignment Trigger page 12</p>
<p>Assessment evidence E7</p>	<p>n/a</p>
<p><b>Unit 5: Business finance</b></p>	<p>n/a</p>
<p><b>Unit 6: Business planning</b></p>	<p>Chapter 1: The Market          Chapter 2: Making Pharmaceuticals          Chapter 3: Is Pharmaceutical Manufacturing like other industries?</p>

<p>Performance management</p>	<p>Chapter 5: Human Resources – Training          "Business strategies intended to improve competitiveness" page 11          "Specially developed training programmes" page 12          Figure 34 – The Caps Programme          Figure 33 – An example of how the Caps Programme operates          "Managing without hierarchy" page 12          Figure 36 – The effects of teamwork in the packaging department at Pilco          Figure 37 – The effects of teamwork in the primary production areas at Pilco          Assignment Trigger page 9          Assignment Trigger page 12          Assignment Trigger Page 12</p>
<p>Assessment evidence E1</p>	<p>Chapter 4: Human Resources – Recruitment          "Getting the personnel" page 9          Figure 24 – Departments and jobs at Pilco          "Recruitment procedures" page 10          Assignment Trigger page 9          Assignment Trigger page 9          Chapter 5: Human Resources – Training          "Reasons for changes in working conditions" page 11          "Managing without hierarchy" page 12          Figure 36 – The effects of teamwork in the packaging department at Pilco          Figure 37 – The effects of teamwork in the primary production areas at Pilco          Assignment Trigger page 9          Assignment Trigger page 12          Assignment Trigger Page 12</p>
<p>Assessment evidence E2</p>	<p>Chapter 4: Human Resources – Recruitment          "Getting the personnel" page 9          Figure 24 – Departments and jobs at Pilco          "Recruitment procedures" page 10          "Legal obligations and ethical responsibilities in recruitment procedures" page 10          Figure 29 – Avoiding discrimination          Assignment Trigger page 9          Assignment Trigger page 9          Assignment Trigger page 10          Resource 8 – Standard operating procedure for recruitment and selection          Chapter 5: Human Resources – Training          "Reasons for changes in working conditions" page 11          "Managing without hierarchy" page 12          Figure 36 – The effects of teamwork in the packaging department at Pilco          Figure 37 – The effects of teamwork in the primary production areas at Pilco          Assignment Trigger Page 9          Assignment Trigger Page 12</p>

<p>Market analysis and marketing planning</p>	<p>Chapter 3: Is Pharmaceutical Manufacturing like other industries?                  "Medicine life cycle" page 7                  Figure 17 – Product lifecycle for a typical medicine Resource 1 – UK                  Pharmaceutical Exports – by area                  "How to retain market share" page 7                  Figure 18 – Shape and colour are used to make the product look unique                  "Regulation and Quality Assurance" page 8                  Figure 20 – The manufacture of medical creams at Capsulike                  "What is meant by high quality?" page 8                  "Controlling the quality"                  Figure 22 – An extract from the Rules and Guidance for Pharmaceutical                  Manufacturers and Distributors 1997, a code for good manufacturing                  practice                  Resource 2 – UK Pharmaceuticals home market                  Resource 3 – World drug purchases – by area                  Resource 3 – World drug purchases – by area                  Resource 4 – World drug purchases – by category                  Resource 4 – World drug purchases – by category                  Assignment Trigger Page 6                  Assignment Trigger Page 7</p>	<p>Assessment evidence E3</p> <p>Chapter 2: Making Pharmaceuticals                  "R&amp;D, Primary and Secondary Manufacture" page 4                  Figure 13 – The different stages in the production of tablets                  "Biotechnology" page 5                  "Making biopharmaceuticals" page 5                  "Added value" page 6                  Figure 16 – Developing a new medicine                  "Medicine life cycle" page 7                  Figure 17 – Product lifecycle for a typical medicine                  Assignment Trigger page 8</p>
<p>Production and resource requirements</p>	<p>Chapter 2: Making Pharmaceuticals                  "R&amp;D, Primary and Secondary Manufacture" page 4                  Figure 13 – The different stages in the production of tablets                  "Biotechnology" page 5                  "Making biopharmaceuticals" page 5                  "Added value" page 6                  Figure 16 – Developing a new medicine                  "Medicine life cycle" page 7                  Figure 17 – Product lifecycle for a typical medicine                  Assignment Trigger page 8</p>	<p>n/a</p>
<p>Financial analysis and planning</p>	<p>n/a</p>	<p>n/a</p>
<p>Evaluating your business plan</p>	<p>n/a</p>	<p>n/a</p>
<p>Assessment evidence E1</p>	<p>Chapter 1: The Market                  Resource 1 – UK Pharmaceutical Exports – by area                  Resource 2 – UK Pharmaceuticals home market</p>	<p>Assessment evidence E4                  Assessment evidence E5                  Assessment evidence E6</p>
<p>Assessment evidence E2</p>	<p>Chapter 3: Is Pharmaceutical Manufacturing like other industries?                  "Medicine life cycle" page 7                  Figure 17 – Product lifecycle for a typical medicine                  "How to retain market share" page 7                  Figure 18 – Shape and colour are used to make the product look unique                  "Regulation and Quality Assurance" page 8                  Figure 20 – The manufacture of medical creams at Capsulike                  "What is meant by high quality?" page 8                  "Controlling the quality"                  Figure 22 – An extract from the Rules and Guidance for Pharmaceutical                  Manufacturers and Distributors 1997, a code for good manufacturing                  practice                  Assignment Trigger page 6                  Assignment Trigger page 7</p>	<p>n/a</p>

<b>GCSE Applied Business</b>	
Compulsory Unit references	
What you need to learn	The Pharmaceutical Business web resource material
<b>Unit 1: Investigating Business</b>	Chapter 2: Making Pharmaceuticals
Aims and objectives	Chapter 3: Is Pharmaceutical Manufacturing like other industries? "Added value" page 6 Figure 16 – Developing a new medicine "How to retain market share" page 7 Figure 18 – Shape and colour are used to make the product look unique "Regulation and Quality Assurance" page 8 Figure 20 – The manufacture of medical creams at Capsulike "What is meant by high quality?" page 8 "Controlling the quality" Figure 22 – An extract from the Rules and Guidance for Pharmaceutical Manufacturers and Distributors 1997, a code for good manufacturing practice Assignment Trigger page 6 Assignment Trigger page 8
Ownership	n/a
Business location	n/a
Business activity	Chapter 2: Making Pharmaceuticals "R&D Primary and Secondary Manufacture" page 4 Figure 13 – The different stages in the production of tablets "Biotechnology" page 5 "Making biopharmaceuticals" page 5 "Added value" page 6 Figure 16 – Developing a new medicine "Medicine life cycle" page 7 Figure 17 – Product lifecycle for a typical medicine Assignment Trigger page 8
Functional areas within the business	Chapter 4: Human Resources – Recruitment Chapter 5: Human Resources – Training
Human resources	Chapter 4: Human Resources – Recruitment "Getting the personnel" page 9 Figure 24 – Departments and jobs at Plico page 10 "Recruitment procedures"
Finance	Chapter 5: Human Resources – Training
Administration and IT support	n/a
Operations	n/a
	Chapter 3: Is Pharmaceutical Manufacturing like other industries? "Regulation and Quality Assurance" page 8 Figure 20 – The manufacture of medical creams at Capsulike "What is meant by high quality?" page 8 "Controlling the quality" page 8 Figure 22 – An extract from the Rules and Guidance for Pharmaceutical Manufacturers and Distributors 1997, a code for good manufacturing practice

Marketing and sales	Chapter 3: Is Pharmaceutical Manufacturing like other industries? "Added value" page 6 Figure 16 – Developing a new medicine "Medicine life cycle" page 7 Figure 17 – Product lifecycle for a typical medicine "How to retain market share" page 7 Figure 18 – Shape and colour are used to make the product look unique Assignment Trigger page 6 Assignment Trigger page 7 Resource 1 – UK Pharmaceutical Exports – by area Resource 2 – UK Pharmaceuticals home market Resource 3 – World drug purchases – by area Resource 4 – World drug purchases – by category
Customer service	n/a
Research and development	Chapter 1: The Market "Keeping ahead of the game" page 2 Figure 4 – R&D spending Chapter 3: Is Pharmaceutical Manufacturing like other industries? "Added value" page 6 Figure 16 – Developing a new medicine "Medicine life cycle" page 7 Figure 17 – Product lifecycle for a typical medicine Assignment Trigger page 6
The use of IT	n/a
Business communication	n/a
External influences	Chapter 1: The Market "How big is the market?" page 2 Figure 3 – Growth of UK market for medicines "How does the economy benefit?" page 2 Figure 5 – UK industry trade balances Figure 6 – Balance of Payments Figure 10 – UK pharmaceutical exports – % share by region Figure 11 – UK pharmaceutical exports – UK pharmaceutical exports to the EU "A competitive success story" page 3 Figure 8 – Exports per employee Figure 9 – Change in the size of the UK manufacturing and pharmaceutical workforce Assignment Trigger page 3 Resource 1 – UK Pharmaceutical Exports – by area Resource 2 – UK Pharmaceuticals home market Resource 3 – World drug purchases – by area Resource 4 – World drug purchases – by category

Business competitors	<p>Chapter 1: The Market</p> <p>"How does the economy benefit?" page 2</p> <p>Figure 5 – UK industry trade balances</p> <p>Figure 6 – Balance of Payments</p> <p>Figure 10 – UK pharmaceutical exports - % share by region</p> <p>Figure 11 – UK pharmaceutical exports – UK pharmaceutical exports to the EU</p> <p>"A competitive success story," page 3</p> <p>Figure 8 – Exports per employee</p> <p>Figure 9 – Change in the size of the UK manufacturing and pharmaceutical workforce</p> <p>Chapter 3: Is Pharmaceutical Manufacturing like other industries?</p> <p>"Medicine life cycle" page 7</p> <p>Figure 17 – Product lifecycle for a typical medicine</p> <p>page 7 "How to retain market share"</p> <p>Figure 18 – Shape and colour are used to make the product look unique</p> <p>"Regulation and Quality Assurance" page 8</p> <p>Figure 20 – The manufacture of medical creams at Capsulike</p> <p>"What is meant by high quality?" page 8</p> <p>"Controlling the quality" page 8</p> <p>Figure 22 – An extract from the Rules and Guidance for Pharmaceutical Manufacturers and Distributors 1997, a code for good manufacturing practice</p>
Economic conditions	<p>Resource 1 – UK Pharmaceutical Exports – by area</p> <p>Resource 2 – UK Pharmaceuticals home market</p> <p>Resource 3 – World drug purchases – by area</p> <p>Resource 4 – World drug purchases – by category</p> <p>n/a</p>
Environmental constraints	n/a
<b>Unit 2: People and Business</b>	
Stakeholders	<p>Chapter 1: The Market</p> <p>Chapter 4: Human Resources – Recruitment</p> <p>Chapter 5: Human Resources – Training</p>
Rights and responsibilities of employers and employees	
Investigating job roles	<p>Chapter 4: Human Resources – Recruitment</p> <p>"Getting the personnel" page 9</p> <p>Figure 24 – Departments and jobs at Plico</p> <p>Assignment Trigger page 9</p> <p>Resource 5 – Job description</p> <p>Resource 6 – Person specification</p> <p>Resource 7 – Job analysis questionnaire</p> <p>Chapter 5: Human Resources – Training</p> <p>"Reasons for changes in working conditions" page 11</p> <p>"Managing without hierarchy" page 12</p> <p>Figure 36 – The effects of teamwork in the packaging department at Plico</p> <p>Figure 37 – The effects of teamwork in the primary production areas at Plico</p> <p>Assignment Trigger page 12</p>
Working arrangements	

Rights of employers and employees	<p>Chapter 4: Human Resources – Recruitment</p> <p>"Legal obligations and ethical responsibilities in recruitment procedures" page 10</p> <p>Figure 29 – Avoiding discrimination</p> <p>Chapter 4: Human Resources – Recruitment</p> <p>Assignment Trigger page 10</p> <p>Chapter 4: Human Resources – Recruitment</p> <p>"Getting the personnel" page 9</p> <p>Figure 24 – Departments and jobs at Plico</p> <p>Chapter 4: Human Resources – Recruitment</p> <p>"Recruitment procedures" page 10</p> <p>"Interviews" page 10</p> <p>Figure 27 – Interview planning guide</p> <p>Figure 28 – Training manual on interviews</p> <p>Assignment Trigger page 9</p> <p>Assignment Trigger page 10</p> <p>Assignment Trigger page 10</p> <p>Resource 5 – Job description</p> <p>Resource 6 – Person specification</p> <p>Resource 7 – Job analysis questionnaire</p> <p>Resource 8 – Standard operating procedure for recruitment and selection</p> <p>n/a</p>
Resolving disagreements	
Recruitment and training	
Recruitment	
Personal job applications	n/a
Staff development and training	<p>Chapter 5: Human Resources – Training</p> <p>"Reasons for changes in working conditions" page 11</p> <p>"Business strategies intended to improve competitiveness" page 12</p> <p>"Speciality developed training programmes" page 12</p> <p>Figure 34 – The Caps Programme</p> <p>Figure 33 – An example of how the Caps Programme operates</p> <p>Assignment Trigger page 12</p> <p>n/a</p>
Customer service	n/a
Why customers are important	n/a
Customers and their expectations	<p>Chapter 3: Is Pharmaceutical Manufacturing like other industries?</p> <p>"Added Value" page 6</p> <p>Figure 16 – Developing a new medicine</p> <p>"Medicine life cycle" page 7</p> <p>Figure 17 – Product lifecycle for a typical medicine</p> <p>"How to retain market share" page 7</p> <p>Figure 18 – Shape and colour are used to make the product look unique</p> <p>Assignment Trigger page 6</p> <p>Assignment Trigger page 7</p> <p>n/a</p>
Customer satisfaction	n/a
Investigating customer service	n/a
Protecting the customer	<p>Chapter 3: Is Pharmaceutical Manufacturing like other industries?</p> <p>"Regulation and Quality Assurance" page 8</p> <p>Figure 20 – The manufacture of medical creams at Capsulike</p> <p>"What is meant by high quality?" page 8</p> <p>"Controlling the quality" page 8</p> <p>Figure 22 – An extract from the Rules and Guidance for Pharmaceutical Manufacturers and Distributors 1997, a code for good manufacturing practice</p> <p>Assignment Trigger page 8</p>

<b>Intermediate GNVQ Business</b>	
Compulsory Unit references	
What you need to learn	
<b>Unit 1: Investigating how businesses work</b>	
	<p>The Pharmaceutical Business web resource material</p> <p>Chapter 1: The Market</p> <p>Chapter 2: Making Pharmaceuticals</p> <p>Chapter 3: Is Pharmaceutical Manufacturing like other industries?</p> <p>Chapter 4: Human Resources – Recruitment</p> <p>Chapter 5: Human Resources – Training</p> <p>Chapter 1: The Market:</p> <p>"How big is the market?" page 2</p> <p>Figure 3 – Growth of UK market for medicines</p> <p>"Keeping ahead of the game" page 2</p> <p>Figure 4 – R&amp;D spending</p> <p>"How does the economy benefit?" page 2</p> <p>Figure 5 – UK industry trade balances</p> <p>Figure 6 – Balance of Payments</p> <p>Figure 10 – UK pharmaceutical exports - % share by region</p> <p>Figure 11 – UK pharmaceutical exports – UK pharmaceutical exports to the EU</p> <p>"A competitive success story" page 3</p> <p>Figure 8 – Exports per employee</p> <p>Figure 9 – Change in the size of the UK manufacturing and pharmaceutical workforce</p> <p>Assignment Trigger page 3</p> <p>Resource 1 – UK Pharmaceutical Exports – by area</p> <p>Resource 2 – UK Pharmaceuticals home market</p> <p>Resource 3 – World drug purchases – by area</p> <p>Resource 4 – World drug purchases – by category</p> <p>Chapter 2: Making Pharmaceuticals</p> <p>"R&amp;D, Primary and Secondary Manufacture" page 4</p> <p>Figure 13 – The different stages in the production of tablets</p> <p>"Biotechnology" page 5</p> <p>"Making biopharmaceuticals" page 5</p> <p>Chapter 3: Is Pharmaceutical Manufacturing like other industries?</p> <p>"Added value" page 6</p> <p>Figure 16 – Developing a new medicine</p> <p>"Medicine life cycle" page 7</p> <p>Figure 17 – Product lifecycle for a typical medicine</p> <p>"How to retain market share" page 7</p> <p>Figure 18 – Shape and colour are used to make the product look unique</p> <p>"Regulation and Quality Assurance" page 8</p> <p>Figure 20 – The manufacture of medical creams at Capsulike</p> <p>"What is meant by high quality?" page 8</p> <p>"Controlling the quality" page 8</p> <p>Figure 22 – An extract from the Rules and Guidance for Pharmaceutical Manufacturers and Distributors 1997, a code for good manufacturing practice</p> <p>Assignment Trigger Page 6</p> <p>Assignment Trigger Page 7</p> <p>Assignment Trigger Page 8</p>
Aims and objectives	
Functional areas within the business	

	<p>Chapter 4: Human Resources – Recruitment</p> <p>"Getting the personnel" page 9</p> <p>Figure 24 – Departments and jobs at Pilco</p> <p>"Recruitment procedures" page 10</p> <p>"Interviews" page 10</p> <p>Figure 27 – Interview planning guide</p> <p>Figure 28 – Training manual on interviews</p> <p>"Legal obligations and ethical responsibilities in recruitment procedures" page 10</p> <p>Figure 29 – Avoiding discrimination</p> <p>Assignment Trigger Page 9</p> <p>Assignment Trigger Page 9</p> <p>Assignment Trigger Page 10</p> <p>Assignment Trigger Page 10</p> <p>Assignment Trigger Page 10</p> <p>Resource 5 – Job description</p> <p>Resource 6 – Person specification</p> <p>Resource 7 – Job analysis questionnaire</p> <p>Resource 8 – Standard operating procedure for recruitment and selection</p> <p>Chapter 5: Human Resources – Training</p> <p>"Reasons for changes in working conditions" page 11</p> <p>"Managing without hierarchy" page 12</p> <p>Figure 36 – The effects of teamwork in the packaging department at Pilco</p> <p>Figure 37 – The effects of teamwork in the primary production areas at Pilco</p> <p>Assignment Trigger Page 12</p>
Human resources	<p>Chapter 4: Human Resources – Recruitment</p> <p>"Getting the personnel" page 9</p> <p>Figure 24 – Departments and jobs at Pilco</p> <p>"Recruitment procedures" page 10</p> <p>"Interviews" page 10</p> <p>Figure 27 – Interview planning guide</p> <p>Figure 28 – Training manual on interviews</p> <p>"Legal obligations and ethical responsibilities in recruitment procedures" page 10</p> <p>Figure 29 – Avoiding discrimination</p> <p>Assignment Trigger Page 9</p> <p>Assignment Trigger Page 9</p> <p>Assignment Trigger Page 10</p> <p>Assignment Trigger Page 10</p> <p>Assignment Trigger Page 10</p> <p>Resource 5 – Job description</p> <p>Resource 6 – Person specification</p> <p>Resource 7 – Job analysis questionnaire</p> <p>Resource 8 – Standard operating procedure for recruitment and selection</p> <p>n/a</p> <p>n/a</p>
Finance	
Administration	
Production	<p>Chapter 2: Making Pharmaceuticals</p> <p>"R&amp;D, Primary and Secondary Manufacture" page 4</p> <p>Figure 13 – The different stages in the production of tablets</p> <p>"Biotechnology" page 5</p> <p>"Making biopharmaceuticals" page 5</p> <p>"Added value" page 6</p> <p>Figure 16 – Developing a new medicine</p> <p>Assignment Trigger Page 8</p>

<p>Marketing and sales</p>	<p>Chapter 3: Is Pharmaceutical Manufacturing like other industries?                  "Medicine life cycle" page 7                  Figure 17 – Product lifecycle for a typical medicine                  "How to retain market share" page 7                  Figure 18 – Shape and colour are used to make the product look unique                  "Regulation and Quality Assurance" page 8                  Figure 20 – The manufacture of medical creams at Capsulike                  "What is meant by high quality?" page 8                  "Controlling the quality" page 8                  Figure 22 – An extract from the Rules and Guidance for Pharmaceutical Manufacturers and Distributors 1997, a code for good manufacturing practice                  Assignment Trigger Page 6                  Assignment Trigger Page 7                  n/a</p>
<p>Customer service</p>	<p>n/a</p>
<p>Other functions of the business</p>	<p>n/a</p>
<p>Organisational structure</p>	<p>Chapter 5: Human Resources – Training                  "Reasons for changes in working conditions" page 11                  "Managing without hierarchy" page 12                  Figure 36 – The effects of teamwork in the packaging department at Pilco                  Figure 37 – The effects of teamwork in the primary production areas at Pilco                  Assignment Trigger Page 9                  Assignment Trigger Page 12                  n/a</p>
<p>Working together – business communications</p>	<p>n/a</p>
<p>Assessment evidence P1</p>	<p>Chapter 1: The Market:                  "How big is the market?" page 2                  Figure 3 – Growth of UK market for medicines                  "Keeping ahead of the game" page 2                  Figure 4 – R&amp;D spending                  "How does the economy benefit?" page 2                  Figure 5 – UK industry trade balances                  Figure 6 – Balance of Payments                  Figure 10 – UK pharmaceutical exports - % share by region                  Figure 11 – UK pharmaceutical exports – UK pharmaceutical exports to the EU                  "A competitive success story" page 3                  Figure 8 – Exports per employee                  Figure 9 – Change in the size of the UK manufacturing and pharmaceutical workforce                  Assignment Trigger page 3                  Resource 1 – UK Pharmaceutical Exports – by area                  Resource 2 – UK Pharmaceuticals home market                  Resource 3 – World drug purchases – by area                  Resource 4 – World drug purchases – by category</p>

<p>Assessment evidence P2</p>	<p>Chapter 2: Making Pharmaceuticals                  "R&amp;D, Primary and Secondary Manufacture" page 4                  Figure 13 – The different stages in the production of tablets                  "Biotechnology" page 5                  "Making biopharmaceuticals" page 5                  Chapter 3: Is Pharmaceutical Manufacturing like other industries?                  "Added value" page 6                  "Medicine life cycle" page 7                  Figure 17 – Product lifecycle for a typical medicine                  "How to retain market share" page 7                  Figure 18 – Shape and colour are used to make the product look unique                  "Regulation and Quality Assurance" page 8                  Figure 20 – The manufacture of medical creams at Capsulike                  "What is meant by high quality?" page 8                  "Controlling the quality" page 8                  Figure 22 – An extract from the Rules and Guidance for Pharmaceutical Manufacturers and Distributors 1997, a code for good manufacturing practice                  Assignment Trigger Page 6                  Assignment Trigger Page 7                  Assignment Trigger Page 8                  Chapter 4: Human Resources – Recruitment                  "Getting the personnel" page 9                  Figure 24 – Departments and jobs at Pilco                  "Recruitment procedures" page 10                  "Interviews" page 10                  Figure 27 – Interview planning guide                  Figure 28 – Training manual on interviews                  "Legal obligations and ethical responsibilities in recruitment procedures" page 10                  Figure 29 – Avoiding discrimination                  Assignment Trigger Page 9                  Assignment Trigger Page 9                  Assignment Trigger Page 10                  Assignment Trigger Page 10                  Assignment Trigger Page 10                  Resource 5 – Job description                  Resource 6 – Person specification                  Resource 7 – Job analysis questionnaire                  Resource 8 – Standard operating procedure for recruitment and selection                  Chapter 5: Human Resources – Training                  "Reasons for changes in working conditions" page 11                  "Managing without hierarchy" page 12                  Figure 36 – The effects of teamwork in the packaging department at Pilco                  Figure 37 – The effects of teamwork in the primary production areas at Pilco                  Assignment Trigger Page 12</p>
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Assessment evidence P3	<p>Chapter 4: Human Resources – Recruitment  “Getting the personnel” page 9  Figure 24 – Departments and jobs at Plco  “Recruitment procedures” page 10  “Interviews” page 10  Figure 27 – Interview planning guide  Figure 28 – Training manual on interviews  “Legal obligations and ethical responsibilities in recruitment procedures” page 18  Figure 29 – Avoiding discrimination  Assignment Trigger Page 9  Assignment Trigger Page 9  Assignment Trigger Page 10  Assignment Trigger Page 10  Assignment Trigger Page 10  Resource 5 – Job description  Resource 6 – Person specification  Resource 7 – Job analysis questionnaire  Resource 8 – Standard operating procedure for recruitment and selection</p> <p>Chapter 5: Human Resources – Training  “Reasons for changes in working conditions” page 11  “Managing without hierarchy” page 12  Figure 36 – The effects of teamwork in the packaging department at Plco  Figure 37 – The effects of teamwork in the primary production areas at Plco  Assignment Trigger Page 12</p>
Assessment evidence P4	Chapter 4: Human Resources – Recruitment Assignment Trigger Page 9
Assessment evidence P5	n/a
Assessment evidence P6	n/a
Assessment evidence P7	n/a
Assessment evidence P8	n/a
<b>Unit 2: How businesses develop</b>	n/a
<b>Unit 3: Business finance</b>	n/a

**RESOURCE 1 - UK Pharmaceutical Exports by area 1990-2002**

Month/Year	EU	Other W Europe	E Europe and USSR	N America	Other America	Middle East & N Africa
March 1990	90.6	16.8	3.6	24.6	5.9	25.6
March 1991	87.5	14.5	6.2	21.9	5.1	18.4
March 1992	118.5	17.1	8.4	44.8	7.1	23.3
March 1993	139.6	27.8	9.1	39.6	11.8	36.0
March 1994	156.5	26.4	12.9	46.3	12.3	41.4
March 1995	205.1	15.8	18.7	81.6	13.5	25.8
March 1996	266.3	10.5	14.2	71.8	10.5	31.0
March 1997	256.1	17.2	18.6	70.5	10.1	27.5
March 1998	264.0	21.0	20.8	93.2	18.3	43.8
March 1999	256.8	21.0	20.8	93.2	18.3	43.8
March 2000	299.3	24.5	17.6	161.0	16.4	26.0
March 2001	417.9	29.0	24.1	111.8	18.2	31.6
March 2002	395.6	27.0	28.8	194.2	22.2	30.4

Note: The figures in the table are for one months exports. In each case the figures refer to exports for the month of March. Source: Customs & Excise.

**RESOURCE 2 - UK Pharmaceutical Home Market**

Year	Sales to NHS £ million	Over the counter sales £ million	Home market as % of GDP
1960	61	33	0.36
1970	176	65	0.47
1980	1000	246	0.54
1985	1706	451	0.60
1986	1849	529	0.62
1987	2074	590	0.63
1988	2316	722	0.64
1989	2533	810	0.65
1990	2755	855	0.66
1991	3189	884	0.71
1992	3893	950	0.81
1993	4227	1091	0.84
1994	4583	1186	0.86
1995	4902	1256	0.87
1996	5243	1276	0.88
1997	5608	1296	0.88
1998	5902	1425	0.85
1999	6601	1608	0.91
2000	7073	1658	0.92
2001	7753	1711	0.95
2002	8601	1734	0.99

Note: Total home market is found by adding Sales to NHS and Over the counter sales.  
Sources: Sales to NHS-OHE; over the counter sales - PAGB

**RESOURCE 3 - World Drug Purchases - by area**

Area	Year to December 2002 (\$ millions)	Year to December 2001 (\$ millions)	% Growth at constant growth
North America	154,476	138,708	11
Europe (leading 5)	60,018	53,783	6
Japan (including Hospital)	46,892	47,517	1
Latin America (leading 3)	11,113	12,906	14
Australia & New Zealand	3,312	2,883	8

Source: IMS Health

**RESOURCE 4 - World Drug Purchases - by category**

Therapeutic category	Year to December 2002 (\$ millions)	Year to December 2001 (\$ millions)	% Growth at constant exchange
Cardiovascular	53,797	49,985	7
Central Nervous System	48,314	43,106	11
Alimentary/Metabolism	41,207	38,825	5
Respiratory	26,140	24,142	7
Anti-Infectives	23,804	22,902	3
Musculo-Skeletal	16,726	15,720	6
Genito-Urinary	15,662	14,693	6
Cytostatics	12,236	10,502	16
Dermatologicals	8,600	8,317	2
Blood Agents	8,841	7,948	11
Sensory Organs	5,568	5,275	5
Diagnostic Agents	4,851	4,553	7
Hormones	4,248	4,113	3
Miscellaneous	3,659	3,494	5
Hospital Solutions	1,758	1,855	(3)
Parasitology	399	387	2

## Resource 5 - Job Description

Job Title: **Laboratory Technician**

Division: **Manufacturing**

Reports to: **Section Head**

Department: **Quality Operations**

### MAIN PURPOSE OF THE JOB

The analysis of products and contribution to the overall Good Laboratory Practice (GLP) of the section. This will involve using the appropriate techniques and standard laboratory equipment, following departmental written procedures.

### REGULAR DUTIES

1. Analysis of products and materials following the written methods of the department.
2. To ensure all operations are carried out in line with GLP, Good Manufacturing Practice (GMP) and Health and Safety procedures.
3. Has responsibility for planning and prioritising their work.

### RESPONSIBILITY:

(Plant, equipment, staff and budgets. Special mention must be made where there is responsibility for initiating and/or implementing staff training)

1. To ensure analysis is performed following set guidelines and standard operating procedures and test methods.
2. To ensure all actions are performed in accordance with Health and Safety and GLP requirements.
3. To work on new procedures or test methods as required.
4. To recognise and report unusual results to the appropriate supervision.
5. To dispose of waste actives and solvents as set out in appropriate procedures.
6. To ensure equipment and instrumentation has been fully calibrated prior to use.

### PERSONAL RESPONSIBILITY:

(Specifically those aspects of the job which the holder must perform personally).

1. To ensure work is carried out in accordance with good laboratory practice and follows safety procedures.
2. To interact as part of a team and make suggestions on ways to improve working efficiency.
3. To give training and guidance to junior staff in the laboratory.
4. To have responsibility for undertaking in the department more complex activities.

### SPECIAL RELATIONSHIPS:

1. To provide good working relationships with all Quality Operations staff.
2. Liaise with production departments as appropriate.

### AUTHORITY:

(State what authority is delegated and what limits are imposed).

This experienced individual will have the ability to make informed analytical decisions and advise other less experienced technicians with problems solving and analytical methodology.

### EDUCATION AND PRIOR WORK EXPERIENCE REQUIRED:

Four years analytical experience with a formal academic qualification, normally BTEC National Certificate in a relevant subject. However, if the individual does not possess a formal qualification, they must have at least five years direct analytical work experience within the pharmaceutical industry. The majority of work associated to this role will require the ability to make any decisions based on experience, and with limited supervision. A mature and confident outlook is necessary to approach laboratory problems.

This individual will often be required to undertake more complex analytical tasks within the laboratory.

**Laboratory Technician**

	<b>Essential</b>	<b>Desired</b>
<b>Physical Attributes</b> ● →	Manual dexterity Clean, tidy appearance Low sickness level Pass Company Medical	Good physical hygiene
<b>Attainments</b> ● →	Clear communication written and verbal 5 GCSEs or above 4 or 5 years experience of analytical laboratory work in the pharmaceutical industry Knowledge of GLP, GMP and Health and Safety procedures.	BTEC/National Certificate in a relevant subject Computer literate
<b>Special Aptitudes</b> ● →	Good communicator Enthusiasm Persistence Hardworking Self-motivated Good Listener Self-improvement Planning Team worker Innovator Flexible	Analytical Independent worker
<b>Interests</b> ● →		Team Games
<b>Disposition</b> ● →	Meticulous Methodical Able to form working relationships Honest	

## Resource 7 - Job Analysis Questionnaire

### Decision Making

This section tries to establish how important taking decision is in the job concerned.

Read through the headings and select one for the job being analysed.

1. Decision making is very important in the job - significant risky decisions are made.
2. Decision making is important - made without reference to higher authority
3. Decisions are made but within a framework set out by organisation
4. Decision making is low level, routine
5. Decision making is an unimportant part of the job.

### Direction of others

This section tries to identify the extent to which the job involves supervising or directing other people.

Read through the headings and select one for the job being analysed.

1. Job involves directing and motivating people.
2. Job involves carrying some tasks personally and delegating others
3. Job involves overseeing others.
4. Job does not involve supervising others.

### Type of thinking

This section looks at whether thinking is important in the job and the kind of thinking required.

Read through the headings and select one for the job being analysed.

1. Thinking is not important in this job.
2. The work involves a great deal of abstract thinking - ideas, theorising and symbolic reasoning are all important.
3. The employee largely deals with the tangible, the immediate and the concrete. Thinking needs to be fast and pragmatic not abstract or symbolic.

### Problem Solving

This section evaluates the kind of problems that need to be solved in the job.

Read through the headings and select one for the job being analysed.

1. Job is not primarily a problem solving role.
2. Problem solving is part of the job but the solutions are developed within a clear existing framework.
3. The job involves considerable problem solving but the emphasis is on both speed and flexibility.
4. The job is one of 'trouble shooting'. The employee must be willing to try original and unconventional approaches.
5. The job is mainly involved in trying to solve problems but the goals are not readily apparent or quickly reached. Curiosity, persistence, tolerance to frustration and lack of success and singleness of purpose are very necessary.

### Organisation of Work

This section looks at the extent to which the job holder plans and controls time and activity.

Read through the headings and select one for the job being analysed.

1. The job requires skill in organising the details of the work or in arranging the elements of a schedule, programme or project. A systematic, methodical approach is necessary.
2. The job provides some opportunity for organising and implementing work in a systematic and orderly way but interruptions and unexpected changes to the plan of work do occur and require readjustments with little notice.
3. The job involves frequent interruptions, distractions and unexpected changes which require a speedy readjustment. The employee is likely to face a great deal of pressure from deadlines and demands of others.

### Other Questions

1. How many hours a week does the job involve?
2. Is travel important in the job?
3. Does the job offer opportunities for career progression?
4. How is the job rewarded.

## Resource 8 - Standard Operating Procedure for Recruitment and Selection

**Recruitment and selection is a joint task undertaken by the employing department and by the Personnel Department. Each has responsibilities to ensure that the company recruits the right person for the job. Recruitment mistakes are costly and can be reduced if systematic recruitment and interviewing processes are adopted.**

### 1. Vacancy

When a vacancy occurs the employing department should assess the need to replace and review job content if appropriate.

### 2. Raise Personnel Requisition

The employing department should state their requirements and gain the necessary authorisations.

### 3. Review/create Job Description

The job description should include the job title, duties and principle accountabilities required.

### 4. Review/create Person Specification

Give some idea of what characteristics and abilities you are looking for from recruits.

### 5. Agree Recruitment method

The employing department, with Personnel Department, should decide whether we advertise internally, externally, use employment agencies or a combination of these methods.

### 6. Review response

- a) Personnel Department will acknowledge the application forms/cv. The appropriate Personnel Executive will screen the applications and pass candidates meeting the recruitment criteria to the employing department. At this stage, applications should be retained in Personnel Department for no more than 2 days.
- b) The employing department will then do a further screening and select/reject candidates for interview.
- c) The employing department will return the application forms/cv to Personnel Department with appropriate notes advising which candidates should be interviewed or rejected. Applications should be retained in the employing department for no more than 3 days.
- d) Personnel Department will write to the unsuccessful candidates.

### 7. Interviews

- a) Personnel Department will liaise with the employing department and agree dates for first and second interviews.
- b) The employing department should advise at this time if they require any skills testing to be undertaken and agree with Personnel Department how these will be done.
- c) Personnel Department will invite candidates for first interview.
- d) Personnel Department will provide all interviewers with a schedule of interviews.
- e) Interviews should be conducted in private and to time.
- f) Following discussion, which should take place as soon after the interviews have been completed, the candidates should be evaluated and short-listed for second interview.
- g) Personnel Department will write to unsuccessful interview candidates.
- h) Personnel Department will arrange second interviews to include a medical examination.

## Resource 9 - More information on OEE - Overall Equipment Effectiveness

The formula is **OEE = Yield x Rate x Availability**. This is calculated as follows:

**Yield** or quality measures how much is produced compared to the maximum that could be produced theoretically.

The formula is:

$$\text{Yield} = \frac{\text{Actual Yield}}{\text{Theoretical Yield}} \times 100$$

**Rate** measures the flow of output. The formula is:

$$\text{Rate} = \frac{\text{Actual output per minute}}{\text{Theoretical output per minute}} \times 100$$

**Availability** measures the time machines are being used.

The formula is:

$$\text{Availability} = \frac{\text{Total hours machine operated}}{\text{Total hours machine could have been operated}} \times 100$$

Availability in pharmaceutical manufacturing is lower than in most industries due to the time spent cleaning machines because of the Good Manufacturing Practice requirements.

### Assignment trigger 1a

*Look at Figure 3. Approximately how much has the UK market in medicines grown between 1960 and 1997? What might explain these figures?*

Figure 3 shows that the UK market for medicine has grown from being worth £94 million in 1960 to being worth £10,335 million in 2002. This could be interpreted as showing a growth in the region of 10,995% over the period. However, this is misleading. The data is in £ million and so does not take inflation into account. So one explanation for the data is the impact of inflation over the time period. Resource 2 provides some additional data to help get a more realistic view of the growth of the market - it shows that the UK market for medicines represented 0.36% of GDP in 1960 but that this had grown to 0.99% by 2002. This suggests that the figures do reflect substantial real growth in the market for medicines. This could be explained by the growth in real incomes over the time period and perhaps by related changes in expectations which have been fed by the development of new medicines by the pharmaceutical companies. Also the changing age structure of the population might have had an impact since older people tend to consume more medicines.

*Look at the data contained in figures 4, 5 and 6. Take the data in figure 6 and draw a graph showing how pharmaceutical exports and imports have grown between 1981 and 1997. Try to explain what the data is saying. Think about how this data could be used to evaluate the success of the pharmaceutical industry? Does the data provide any ideas about why the pharmaceutical industry is successful? (Hint: look at figure 4 and think about what it is telling you).*

Figure 4 shows that the UK pharmaceutical industry spends far more on R&D than other manufacturing sectors. Pharmaceuticals spent £3,040 million compared to Machinery & Equipment which spent £977 million, TV, Radio and Communications which spent £1,044 million and Aerospace which spent £1,260 million in 2002. So the pharmaceutical industry spent 43% of the total R&D spend of £6,321 million.

Figure 5 shows that Trade Balance of the pharmaceutical industry is positive i.e. the industry exports more than it imports, that this positive balance has been growing and that the trade balance for the whole manufacturing sector is strongly negative.

The data suggest that there could be a link between the level of R&D spending and the external trade performance of the pharmaceutical industry. Both figures 5 and 6 suggest that the UK pharmaceutical industry is more competitive than other sectors of UK manufacturing - this could reflect the fact the pharmaceutical companies spend so much more on R&D. This could be developed further once students have looked at the later material on how value is added, the importance of quality control and how companies aim to improve productivity.

### Assignment trigger 1b

*Look at the data contained in figures 8, 9, and 10. Draw a graph to illustrate what has been happening to employment in pharmaceutical manufacturing and manufacturing generally. What does this data tell us about the contribution of pharmaceuticals to the performance of the UK economy?*

Figure 8 shows that pharmaceutical exports per employee are much higher than exports per employee in the rest of UK manufacturing. Figure 9 shows that the size of the pharmaceutical workforce has remained fairly stable while figure 10 shows that the size of the manufacturing workforce has declined quite significantly. The link between the graphs is that successful trade performance tends to result in employment in a sector being maintained. So by implication one could argue that the fall in UK manufacturing employment largely reflects the poor trade performance of the manufacturing sector.

*Look at figures 11 and 12. What might explain the pattern of trade shown in these graphs? Look at Resource 1. Turn the data into a graph. Which markets are expanding fastest?*

Figures 11 and 12 provide data on the pattern of UK pharmaceutical trade. Points to note are the fact that the main area we trade with is the European Union and that there is more trade with developed countries than with developing countries.

### Assignment trigger 2

This trigger is intended to get students to manipulate numerical data, draw conclusions from it and think about what is involved with the process of adding value in the pharmaceutical industry.

*Look at Resource 3 and Resource 4. Plot the information graphically. Imagine you are running a pharmaceutical company. Which diseases or treatment areas would you target? Which areas of the world would you aim to sell in?*

The data suggests that a pharmaceutical company should be aiming to produce medicines to treat the central nervous system and genito-urinary infections since these are the areas where the market is expanding fastest. It should target N America and Australia and New Zealand.

*How might added value be measured? What is the main source of added value in medicines? (hint - what is it that makes a medicine valuable?). What other manufacturing sectors depend upon ideas for their added value?.*

Added value is defined in the glossary. One way of measuring it would be to compare the selling price of the product against unit costs. This raises the question of how costs which are not directly related to the production are shared out.

For instance, how do you include R & D costs in production costs? What about overhead costs such as administration and advertising?

Sources of added value in pharmaceutical manufacturing mainly come from the ideas which have created the medicines - it is the discovery/design of the mixtures and combinations which creates the value. So for instance the raw materials which make up aspirin represent a small element of the final cost - the reason that aspirin is valuable is because the combination of chemicals helps to take away a headache.

Another manufacturing sector which depends upon ideas for its added value would be computer software.

### Assignment trigger 3

This trigger is intended to get students to use the glossary to explore some of the more technical terms introduced in the sections on intellectual property and also to think about how competition might affect a product.

*What are patents? Why are they important for pharmaceutical manufacturers? What is a generic product? Why are they such a threat to a new medicine? What is the difference between a patent and a trade mark?*

A patent provides legal protection for an idea or invention while a trade mark just protects a name or logo from being copied.

*Look at figure 17. Try to explain the shape of the curve in the last section of the diagram.*

The Product Life Cycle in figure 18 shows sales falling once the medicine come out of patent but it suggests that the fall in sales could be slowed down by the use of marketing techniques such as relaunching a “new improved” version.

*Evaluate the extent to which pharmaceutical manufacturing is different to the rest of UK manufacturing (you could relate back to fig 2 R&D expenditure of different manufacturing sectors)*

Pharmaceutical manufacturing could be seen as different in the following ways:

- High level of R&D expenditure (Figure 4 Page 3)
- Importance of ideas in adding value
- Stable levels of employment (Figures 9 & 10 Page 5)
- Growing trade surplus (Figure 5 Page 4)
- Rapidly growing productivity (Figure 8 Page 4)

### Assignment trigger 4

This trigger is intended to get students to think about the importance of quality control in the manufacture of medicines.

*Every stage of the production of a medicine is carefully documented. Why is this so important? Why are medicines made in batches rather than in a continuous stream? Why do you think that the pharmaceutical industry is so heavily regulated? Does regulation have any advantages for the pharmaceutical companies.*

Documentation is important because:

- mistakes could have disastrous results
- it is important to be able to identify where a problem has occurred.

Medicine are made in batches because it is easy to ensure effective quality control. If there was continuous production it would be almost impossible to pinpoint where a problem might have originated from. Regulation occurs because of the severe adverse effects which would result from unsafe medicines.

Regulation does have some advantages for the pharmaceutical companies. It helps protect them against aggrieved consumers since the government has passed a particular medicine as safe. It also helps to protect them from competition from low cost low quality firms.

*Explore the ways in which safety considerations and government regulation determine the production of a medicine.*

Safety considerations and government regulation have a number of significant effects on the production of a medicine

- Long lead time before a new product can be introduced.
- Difficult to respond quickly to changing costs or market conditions since any change in production methods needs to be approved.
- High set-up costs. Ensuring regulations are met involves considerable expense. This makes it far more difficult for small firms to compete in this market.
- Importance of investment in human resources particularly training to ensure that regulations are met.

*What do the terms Quality management and Good Manufacturing practice mean? Why are both so important in the Pharmaceutical industry?.*

Good Manufacturing Practice and Quality management are defined in the glossary. Again they are both important because of nature of medicines which makes the consequences of any mistake very serious.

### Assignment trigger 5

*All organisations involve a range of different jobs.*

*Choose an organisation you know well and try to draw up a table like figure 24 showing departments, jobs and qualifications or experience needed.*

*Draw up a detailed Job Description for one of the jobs.*

This trigger is intended to get students to use figure 24 and additional Resource 5. Hopefully, students will be able to use their own experience from their part-time jobs or their work experience in this exercise.

### **Assignment trigger 6**

*Work in groups to draw up job behavioural profiles for jobs you have had personal experience of. You could use part-time jobs you have had for this exercise. Use the job analysis questionnaire. Remember that you need to reach a consensus answer on each question. Once you have a complete set of answers try to work out a list of qualities which reflect your answers.*

*Use the information to draw up a person specification, using the same format as the one shown in Resource 5*

*Comment on the objectivity of the questionnaire.*

*Try making job specifications for different jobs. Is there much variety/overlap in the different specifications*

Again this trigger is intended to get students to use their own experiences. An important part of the process is for the students to work in groups and to reach consensus agreement. This is an actual exercise provided and used by a leading international pharmaceutical company as part of their recruitment procedures.

### **Assignment trigger 7**

*What is the difference between recruiting internally and recruiting externally?*

*How would you decide which method to use?*

Internal recruitment involves filling a position with somebody who already works for the company while external recruitment involves employing someone from outside the company. The choice of method will be affected by the extent to which suitable applicants exist within the company and the extent to which the employing department believes it is important to recruit someone from outside who may have different ways of looking at problems, new ideas etc.

*Critically evaluate the recruitment operating structure used by Capsulike. How could it be improved?*

Positive points - the standard operating procedure is clear, so everyone involved will know how to proceed. The operating procedure ensures that each stage in the process is carried out and this is likely to lead to less mistakes in the recruitment process.

Negative points - the procedure is very bureaucratic and long-winded. It would be difficult to respond quickly if a good candidate suddenly appeared. This might mean that on occasions good candidates might be lost.

Possible improvements might include arrangements for a fast track version of the procedure when exceptional candidates appear.

### **Assignment trigger 8**

*In groups, think up a range of different situations where, say, gender discrimination might occur.*

*Decide whether the discrimination you have identified is direct or indirect.*

*Try to write a set of guidelines to people involved with recruitment in an organisation to try and prevent such discrimination from occurring.*

Again this trigger is intended to give students the opportunity to explore some of the discrimination issues which might arise in different recruitment situations. A pattern for the guidelines is provided by Figure 30.

### **Assignment trigger 9**

*Questioning Skills Exercise*

This trigger is intended to give students the opportunity to practice some of the different kinds of questioning that can be used in interview situations. This is an actual exercise provided and used by a leading international pharmaceutical company as part of their recruitment procedures.

### **Assignment trigger 10**

This trigger is intended to encourage students to think about why companies need to train their employees and to give them a chance to put the OEE formula into practice..

*Explore the link between increasing competition, changing product methods/technology and the need for training and development programmes.*

Increasing competition and changing technology lead to the need for employees to be flexible, to be able to adapt to new situations and new challenges, to be able to use new technology effectively and creatively. This requires continuous training and development.

*What sort of qualities/skills do you think companies will need to develop in their employees to meet the demands of a*

**rapidly changing world.**

Some qualities that employees could need in the future - lateral thinking, ability to take the initiative, problem solving, self motivated, ability to work well in teams, open minded.

**Look at Resource 9. Suppose a pharmaceutical firm found that the following figures applied to one of its plants**

Actual yield = 5000; Theoretical yield = 5100; Actual output per minute = 50; Theoretical output per minute = 60; Total machine hours operated = 70; Total hours machine could have been operated = 120.

**Calculate the OEE for this plant.**

Yield =  $5000/5100 \times 100 = 98\%$

Rate =  $50/60 \times 100 = 83\%$

Availability =  $70/120 \times 100 = 58\%$

OEE =  $0.98 \times 0.83 \times 0.58 = 47\%$

**Assignment trigger 11**

**Why is Pillco prepared to invest large sums of money in its Learning Centre?**

**Capsulike is clearly keen to promote The Caps Programme. Why do you think this is so?**

Both Pillco and Capsulike are prepared to invest considerable sums into training schemes because they believe that developing their humans resources is the key to competitiveness in the future. This connects with many of the points raised earlier in the web resource such as:

- the value added in medicines comes from people's ideas and creativity
- the importance of high quality and good manufacturing which in turn depends on how people perform
- technology is constantly changing and pharmaceutical manufacturers have to respond

**Do training schemes just benefit the company? What are the differences between the two approaches to training outlined above.**

Training clearly does not just benefit the company - the employee benefits from increased skills and new knowledge which helps with career development.

The difference are:

- Pillco's Learning Centre is a stand alone facility created by the company outside the workplace, it makes considerable use of multi-media packages, it involves creating a "Learning Organisation".
- The Caps Programme is run in conjunction with a local University but works far more as part of the normal working life of the company. It focuses on providing ways in which employees and supervisors can jointly create action plans to work to improve communication and teamwork.

**Assignment trigger 12**

**Evaluate what determines whether teamwork will improve productivity or not.**

Figures 37 and 38 provide a lot of ideas. They suggest that planning is very important. That teams need to be fully involved with the process not added in later. So the successful teams in packaging were involved in choosing the machine, were responsible for writing the procedures and training manuals. This is summed up by the last paragraph of Figure 37. "By working closely with the operatives, senior managers, engineers and others involved in the project, has installed a feeling of ownership throughout and by sharing responsibility and recognition the team achieved their goal"

Whereas the attempt to introduce teamworking in the primary production areas suffered because the training was carried out away from the workplace and did not focus sufficiently on the team leader.

A key issue seems to be the extent to which existing company cultures can adapt easily to working in a team. Where they can teamwork is a success, where they cannot it is much less successful.

**Evaluate a change to teamwork in terms of costs to business, benefits to business, costs to individuals, benefits to individuals.**

*Costs to business.* Disruption to work - while the team is being created and trained; Cost of training

*Benefits to business.* Higher productivity; Better quality control; Team feeling ownership of process could result in more rapid implementation times; A more flexible department - teams could be better suited to responding to change;

*Costs to individuals.* Need to learn new ways of doing things; Possible loss of status as the hierarchy in the department is flattened.

*Benefits to individual.* Greater job satisfaction as part of a team,; Greater opportunity for developing new skills or new roles.