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Construction Upgrade. A Pack To Improve Communication, Numerical and IT Skills for NVQ.

Adult Literacy and Basic Skills Unit, London (England).

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Guides - Classroom Use - Teaching Guides (For Teacher) (052)

*Adult Basic Education; Arithmetic; Basic Skills; Building Trades; *Carpentry; *Communication Skills; Competency Based Education; Foreign Countries; *Information Technology; Instructional Materials; Job Skills; Learning Activities; *Mathematics Skills; Numbers; Postsecondary Education; *Reading Skills; Verbal Communication; Writing Skills

National Vocational Qualifications (England)

This pack of materials is designed to help students working to improve their basic skills as part of their carpentry and joinery course. An introduction lists relevant core skills units and basic skills standards. The six individual sections of the pack are divided into task sheets and fact sheets. The fact sheets give information and teaching material that are useful for students working toward the units and elements of competence detailed in the corner of worksheets. In some cases, the material focuses on the underpinning knowledge and understanding required for the unit. The task sheets can be used by students to demonstrate that they can perform the activity described in the relevant competence statement or statements, or they give practice in the underpinning knowledge and understanding for those statements. Students should read the fact sheets before undertaking the task sheets. Each main section has a self-assessment questionnaire that should be completed by the student and checked by the course tutor or basic skills specialist. The five sections cover oral communication, reading, writing, communication without words, application of number, and information technology. The material may be used in different teaching situations: open/flexible learning, group learning, distance learning. (YLB)
A Pack to Improve Communication, Numerical and IT Skills for NVQ
This pack of materials has been produced to help students working to improve their basic skills as part of their carpentry and joinery course. The pack will be useful for students working towards the following qualifications:

- NVQ Construction (Joinery and Carpentry) Levels 1&2
- GNVQ Construction.

Not all students in the group will need this support. Colleges and course tutors should have undertaken some form of 'screening' of new students in order to identify who needs support in reading, writing and maths. However, a recent survey by ALBSU found that 45% of construction students needed some kind of support in communication skills and a greater number needed help with basic maths. The ALBSU documents, 'Basic Skills in Further Education Colleges' and 'Basic Skills Support in Colleges: Assessing the Need' provide further information on screening procedures.

How the Pack is Structured

The individual sections of the pack are divided into:

- Task Sheets
- Fact Sheets.

The students should read the Fact Sheets before undertaking the Task Sheets. Each main section has a self-assessment questionnaire that should be completed by the student and checked by the course tutor or basic skills specialist.

The sections on reading and writing include material that will help students with some of the basic skills required in their coursework, notably in using reference systems and the library, note-taking and assignments.

How to Use this Pack

The material in this pack can be used in different teaching situations:

Open/flexible learning

The pack can be used by students working independently in workshops. The worksheets can be photocopied, divided into sections and given to students or accessed individually. Some of the tasks in the section on oral communication skills require conversation or discussion with one or more other people: these are probably better used in group situations. The material will be as useful in specialist English, Maths or basic skills workshops as in general College Learning Resource Workshops.
Group learning
The pack can be used by course tutors in group or class settings. The material is designed to relate to different occupational tasks. It gives specific teaching and practice in the basic skills needed to be able to perform those vocational activities competently. Tutors have used the material in classwork in a variety of ways:
- the material can be worked on by the class together
- individual worksheets can be given to students who have particular difficulty with, for example, note-taking, or measurement in centilitres
- individual worksheets can be given to students to work on at home or the study area, in order to reinforce some basic skill.

Distance learning
Some of the materials may provide a useful back-up to students on work placements. On site occupational trainers will be able to use individual worksheets as support material. In this situation liaison with a basic skills specialist staff member is essential. For example, the student on placement can be given this work to complete, using information gained during placement. The occupational trainer can check this work and feed comments back to the basic skills support staff.

The Competence Framework
The material in the pack has been developed so that it relates to:

NCVQ Core Skills Units:
- Application of Number
- Communication
- Information Technology

as well as:

ALBSU Basic Skills Standards:
- Communication Skills
- Numeracy.

The majority of the Communication worksheets relate to Levels 1 and 2 of the Core Skills Units and Foundation and Stage 1 of the Basic Skills Standards.

The majority of the Number/Numeracy worksheets relate to Level 1 of the Core Skills Units and Foundation and Stage 1 of the Basic Skills Standards. Again, there are individual exceptions, which are marked.
The worksheets in the Information Technology cover the three Elements at Level 1. They are intended as a guide to activities that should be undertaken by students in covering the Units, and provide simplified instruction sheets for exercises.

There is a ‘tag’ in the corner of worksheets that are relevant to specific units and elements of competence:

<table>
<thead>
<tr>
<th>Core Skills</th>
<th>Basic Skills Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>C:1.2</td>
<td>C:9</td>
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</tbody>
</table>

The Fact Sheets give information and teaching material that is useful for students working towards the Units and Elements of Competence detailed in the ‘tag’. In some cases this material focuses on the underpinning knowledge and understanding required for the Unit. The worksheets that give practice ‘Spelling’, for example, perform this function.

The Task Sheets can be used by students to demonstrate that they can perform the activity described in the relevant competence statement or statements, or give practice in the underpinning knowledge and understanding for those statements.

A list of the relevant Core Skills Units and Basic Skills Standards is given below:

**ALBSU Basic Skills Standards**

- Unit 1: Reading Textual Material
- Unit 2: Reading Graphical Material for Everyday Purposes
- Unit 3: Completing Forms and Preformatted Documents
- Unit 4: Communicating in Writing
- Unit 5: Conversing with One other Person
- Unit 6: Reading Textual Material
- Unit 7: Reading Graphical Material for Everyday Purposes
- Unit 8: Completing Forms and Preformatted Documents
- Unit 9: Communicating in Writing
- Unit 10: Conversing with One other Person
- Unit 11: Conversing with More than One Person
- Unit 12: Extracting Information from Audio Visual Material
- Unit 13: Reading Textual and Graphical Material
- Unit 14: Using Reference Systems
- Unit 15: Communicating in Writing
- Unit 16: Providing, Obtaining and Exchanging Information and Opinions
- Unit 17: Reading Textual and Graphical Material
- Unit 18: Using Reference Systems
- Unit 19: Communicating in Writing
- Unit 20: Making a Presentation
- Unit 21: Exchanging Information and Opinions.
Numeracy Standards

Unit 1: Using Money in Everyday Situations
Unit 2: Planning the Use of Money and Time in Everyday Situations
Unit 3: Measuring Lengths and Calculating Areas in Everyday Situations
Unit 4: Measuring Weights and Volumes in Everyday Situations
Unit 5: Setting Timing Devices and Timing Activities in Everyday Situations
Unit 6: Giving and Following Directions in Everyday Situations
Unit 7: Reporting Numerical and Graphical Information taken from Everyday Situations
Unit 8: Using Money in Everyday Situations
Unit 9: Selecting Goods and Services in Everyday Situations
Unit 10: Planning the Use of Money in Everyday Situations
Unit 11: Measuring Lengths and Calculating Areas in Everyday Situations
Unit 12: Measuring Weights and Volumes in Everyday Situations
Unit 13: Interpreting and Presenting Numerical and Graphical Information taken from Everyday Situations
Unit 14: Using Money in Everyday Situations
Unit 15: Selecting Goods and Services in Everyday Situations
Unit 16: Planning the Use of Money in Everyday Situations
Unit 17: Measuring Lengths and Calculating Areas in Everyday Situations
Unit 18: Converting Imperial Units of Length to Metric Units and Vice Versa in Everyday Situations
Unit 19: Interpreting and Presenting Numerical and Graphical Information taken from Everyday Situations.

City and Guilds 3793/3794 (Wordpower and Numberpower)

The basic skills standards have been grouped for the purpose of certification as follows:

Communication Skills:
Foundation Level: Units 1 to 5
Stage 1: Units 6 to 12
Stage 2: Units 13 to 16
Stage 3: Units 17 to 21

Numeracy Standards:
Foundation Level: Units 1 to 6
Stage 1: Units 7 to 12
Stage 2: Units 13 to 19
NCVQ Core Skills Units:

Communication

LEVEL 1:
1.1 Take part in discussions with known individuals on routine matters
1.2 Prepare written materials in pre-set formats
1.3 Use images to illustrate points made in writing and in discussions with known individuals on routine matters
1.4 Read and respond to written material in pre-set formats.

LEVEL 2:
1.1 Take part in discussions with a range of people on routine matters
1.2 Prepare written material on routine matters
2.3 Use images to illustrate points made in writing and in discussions with a range of people on routine matters
2.4 Read and respond to written material and images on routine matters.
(No material for this Element at this level is included in the pack).

Application of Number
1.1 Gather and process data using group 1 mathematical techniques
1.2 Represent and tackle problems using group 1 mathematical techniques
1.3 Interpret and present mathematical data using group 1 mathematical techniques.

Information Technology
1.1 Input data into specified location
1.2 Edit and organise information within individual applications
1.3 Present information in pre-set formats
1.4 Use operating routines which maximise efficiency.
(No material for this Element is included in the Pack).
## What is it?
- it's getting the message across using speech

## Where do you need to use them?

<table>
<thead>
<tr>
<th>At work</th>
<th>At home</th>
<th>At leisure</th>
</tr>
</thead>
<tbody>
<tr>
<td>• to boss</td>
<td>• family</td>
<td>• in shops/pubs/disco etc.</td>
</tr>
<tr>
<td>• to workmates</td>
<td>• friends</td>
<td></td>
</tr>
<tr>
<td>• to customers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• on telephone</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>At college</th>
</tr>
</thead>
<tbody>
<tr>
<td>• to tutors</td>
</tr>
<tr>
<td>• students.</td>
</tr>
</tbody>
</table>

## Why might you need these skills?
- to communicate: ideas
  - feelings
  - knowledge
- to ask questions
- to gain information
- to respond to questions
- to give information.

## They will help you to:
- listen carefully and understand what the other person is saying
- respond in turn
- play an equal part in conversation
- avoid being long-winded (be brief, keep to the point)
- use the right sort of language in the right situation (there is a difference between talking to a boss and talking to a mate)
- pay attention to other people's body language and be aware of your own.
Why might you speak about?

At work
- questions about jobs
- about materials/tools
- asking for directions
- procedures for jobs
- wages
- health and safety

At home
- food
- family matters
- television programmes
- music/hobbies
- money

Socially
- in politics
- music
- hobbies
- sport
- world news.

Ideas for Role Play – work with a partner – act out the roles

1. A new workmate joins your firm. You have to introduce him/her to the other workers. You need to ask him/her questions about him/herself so that you can tell you mates about him/her.

2. You go with your foreman to meet a client who is having an extension built. Discuss with your foreman how long the job will take, how much pay you will receive, what your hours will be and any other points concerning the work.
Your boss tells you how to lift a load in the correct way. Follow his instructions and practise lifting a load.

**Instructions:**

1. Ask yourself whether one person can manage or is help needed?

2. Wear suitable protection (gloves, helmet).

3. Place feet 450mm apart with one foot slightly forwards in the direction of the movement (to give good balance and a secure base for lifting).

4. Bend knees.

5. Keep back straight.

6. Keep arms as close to the body as you can. Keep elbows in too.

7. Keep your grip firm.

8. Keep the head erect with the chin in.

9. Lift load, straightening the legs without jerking.

10. Lean back slightly to counterbalance the weight of the load before straightening up.
Panel doors

Flush doors

**Study this diagram, and then:**

a. Describe to a friend how you would stain and varnish the doors.

OR

b. Write down the instructions in point form

**Answer:**
Choose one of the following and tell a friend how to...

1. sharpen a chisel
2. set up a mortice gauge
3. make a cross halving joint

Look at this example first:

How to set up a marking gauge (to assist in cutting a halving joint)

1. Select correct gauge
2. Twist thumbscrew to release guide
3. Measure required distance from pin to guide
4. Tighten thumbscrew
5. Re-check measurement

- Plan out what you want to say.
- Be brief but be clear. Give the instructions carefully.
- Give only the necessary information.
- Explain why – it will help to reinforce your instructions.
- Ask your friend if he/she has understood. Ask him/her to repeat the instructions to you to see if there is understanding.

Answer:

Be Aware of Safety
We ask questions in order to:

- find out information
  "which tools do I need for this job?"

- check information
  "are Thursday and Friday still OK for fitting your new window?"

- find out how other people feel or think about something
  "are safety helmets comfortable to wear?"
  "... what about dust respirators?"
  "do you feel silly wearing all that gear?"

- start and encourage a conversation
  (when someone new joins the firm or College.)

- put someone at ease
  (by asking simple questions about that person eg. where do they work, hobbies, music, likes and dislikes, sports, family etc.)

**Don't be afraid to ask questions. If you have not understood a point ask to have it explained again.**

Remember if you are unsure of how to operate machinery or of any safety aspect DO ask – your life or someone else's could depend on that knowledge.
Asking questions to gain information.

You are doing a project at College and need some information about the construction industry from the Health & Safety Executive.

There are 21 area offices in the South West, South, South East, London North, London South, East Anglia, Northern Home Counties, East Midlands, West Midlands, Wales, Marches, North Midlands, South Yorkshire, West and North Yorkshire, Greater Manchester, Merseyside, North West, North East, Scotland East and Scotland West.

Ask your boss for the address of the nearest one to where you live.

Ask him if he knows where it is.

Ask him if he has been there before.

Ask him how to get there.

Which bus or train to take.

How long it will take you to get there.

Ask for the telephone number. (If it is too far away to visit you may need to write or telephone to obtain the information you require)
Ask your supervisor/tutor for this information:

The nearest first aid box is situated

Person in charge

Telephone Number

- Write in the information on the chart
Health & Safety

Ask your supervisor/tutor/workmates the following questions:

When working in the Construction industry . . . .

- Why is it necessary to wear a dust respirator?

- Why is it necessary to wear goggles or a face shield?

- Why is it necessary to use barrier creams and wear gloves?

- Why is it necessary to wear earmuffs?

- Why is it necessary to wear head protection when working on site?

- Where and why might it be necessary to wear protective clothing?
These are skills we use a lot. How can we improve on them?

- Do you sometimes feel you've not got your message across?
- Do you feel someone has not understood you (your feelings etc.)?
- Do you feel you have not understood what someone was telling you?

Remember: There is a different way of talking to family/friends/workmates than you would use when talking to bosses/people working in shops/offices or people you don’t know.

This may require a more formal/polite approach and include words like please, thank you, would you, please may I, I would like, excuse me.

Look at these different examples:

<table>
<thead>
<tr>
<th>To mates</th>
<th>To a client/in a shop/business</th>
</tr>
</thead>
<tbody>
<tr>
<td>gimme . . .</td>
<td>I would like . . .</td>
</tr>
<tr>
<td>pass me the chisel, Jim</td>
<td>could you pass me the chisel please</td>
</tr>
<tr>
<td>ta for the nails, Sam</td>
<td>thank you very much for the nails, Mr Smith</td>
</tr>
<tr>
<td>What’s up Bill?</td>
<td>Is there anything the matter, Sir</td>
</tr>
<tr>
<td>Hang on, Tim!</td>
<td>Would you mind waiting a few minutes, Mr Jones</td>
</tr>
<tr>
<td>Shut up, you lot!</td>
<td>Would you mind being quiet for a moment, please, everyone</td>
</tr>
<tr>
<td>Get lost, Andy</td>
<td>I’m busy at the moment, would you mind coming back in a short while</td>
</tr>
</tbody>
</table>

Now try the task on the next page.
Study this conversation heard in the joiners' workshop:

"Hey up, Bert, I'm in a right old mess, old lad. The missus says I can't work over tonight because of the lasses' night out and I've gotta look after the kids. I'm gonna be a gonner when she finds out I've spent up this month. I'll get some right stick when I get home. I'll have to knuckle down on Thursday instead and earn more bread. See you, Bert."

Billy has to go and tell the tale to Mr Davis, the boss. He might use different language. Try putting this passage into more formal speech.

"Good morning, Mr Davis; I've got a problem, sir. My wife says I can't work overtime tonight because of the ladies' night out and I have to look after the children. I'm going to be in serious trouble when she finds out I've spent all the money this month. She's going to complain when I get home. I'll have to work overtime on Thursday instead to earn more money. Bye, Mr Davis."

Suggested speech.

"Good morning, Mr Davis; I've got a problem, sir. My wife says I can't work overtime tonight because of the ladies' night out and I have to look after the children. I'm going to be in serious trouble when she finds out I've spent all the money this month. She's going to complain when I get home. I'll have to work overtime on Thursday instead to earn more money. Bye, Mr Davis."
You are visiting Leeds and decide to call in at the T.R.A.D.A. office to obtain information on timber products, for example, roof trusses, suitability of timber species for specific purposes, fire tests, etc. You’re in the centre of Leeds and are not sure of the way to T.R.A.D.A. Stop a passer-by and ask for directions. Give him/her the full address. It is 18 Park Row, Leeds LS1 5JA.

- Plan here what you would say:

When you get to T.R.A.D.A. go in and request the information you need.

- Plan here what you would say:

- Practise this or any other situation with a friend to help you gain confidence
Tell a new workmate how to get from the office to the stores for small items.

Write down the directions you give to your workmate:
Work with a friend or in a group and discuss this task.

You have a client who is unsure as to which timber should be used for window frames. He asks your advice and wants you to recommend a suitable hardwood which is commercially available.

- **discuss** which hardwood would be suitable for the job.

- after discussion **state** the advantages of using **hardwood** rather than **softwood**.

- Use the information in this pack together with manufacturers' catalogues or **discuss** this with your tutor/ supervisor.
When we communicate we use the whole body not just speech. We often reveal our true feelings in the way our body responds to the other person or people.

We may slump in a chair when bored.

We may stand/move further away from someone we don’t like/or move closer to someone we do.

We may tap our foot up and down if bored.

We may avoid looking directly at someone (eg. the boss) if we’ve done something wrong.

We may wave our hands about a lot to get our point over.

We may fold our arms tightly across the chest (or cross our legs tightly if sitting) if we feel unsure of ourselves or are on the defensive.

These are just some of the signals our body sends out which reveal our true feelings.

DO YOU RECOGNISE YOURSELF IN ANY OF THESE?

By observing the person you are talking to you can tell how they really feel about what you are saying and whether they are interested in what you are saying.

Communicate confidently.

Think – which message am I giving out?

Stand or sit upright, walk tall.

Look the person in the eye.

Watch your hand movements.

Have the most suitable expression on your face.
Remember to follow these points:

When answering the telephone at work:

- pick up the receiver, say Good morning/afternoon and name of your firm (Good morning, Jones Joinery)
- when taking a message, write it down on the telephone pad and then repeat it again to the caller (Mr Jones is to meet the site manager Wednesday at 11 am)
- end the conversation politely (Thank you for calling, Mr Smith, Goodbye).

When making a telephone call yourself:

- plan in advance what you want to say
- have any information necessary on the desk in front of you
- speak clearly and confidently
- give all the relevant details.
Phone calls are expensive, so plan what you are going to say in advance. Planning will make you feel more confident and you won’t get confused and forget what you want to say.

Look at this example:

- Dial the number
- Give your name and name of firm
  *(Mick Jones here from Thompsons Joinery)*
- Ask for person you wish to speak to
  *(Could I speak to Mr Williams in the packing department please)*
- When he answers, repeat your name and firm
  *(Mick Jones here from Thompsons Joinery, Bedford)*
- Give your reason for calling
  *(There has been a mistake in the order sent on the 12th March. We’re short of 2 doors)*
- Ask when they can be sent – get a time/date. Repeat this to him
  *(Wednesday the 19th in the afternoon)*
- Thank him and say good-bye.

Plan your conversation in advance, include all the relevant details. Speak clearly and loudly enough to be heard. Speak at a suitable speed.
Making New Arrangements
You have to ring a client, Mrs Bradfield. Tell her you will be able to hang the door on Thursday 16th July around 11 am and that you’ve got the necessary door furniture. Find out if the time is convenient for her. End the conversation politely.

Plan your conversation carefully and make sure you have included all the details.

Making a Complaint
You have to telephone Timber Ltd. to make a complaint about a delivery of plywood which was found to be warped on arrival.

Plan your conversation carefully and make sure you include all the necessary information.
Chamber of Commerce Training
RUGBY LEAGUE FC
REQUIRE UNEMPLOYED VOLUNTEERS TO HELP WITH GROUND IMPROVEMENTS

Do you have experience in:
Carpentry/Joinery
Shuttering/Joinery
Bricklaying
Concreting
Painting & Decorating
General Ground Work
or just willing pair of hands.

Main projects include:
Preparations & installation of floodlights
Preparation & installation of a car park
Repairs to concrete stands
Installation of small corner shed

Volunteers on the project will receive full benefit plus £10 allowance and full support to find permanent employment

EMPLOYMENT ACTION • A COMMUNITY CONTRIBUTION
Help yourself back to work. Help your community. Maintain your work skills and Help the club, call the manager for information on: (0942) 78141

You have a friend who is an unemployed joiner and a keen rugby supporter. He has seen this advert and asks you to help. You agree to telephone the number and find out more for him.

• Plan your conversation before you ring:
  • say why you are ringing
  • give his name, address and telephone number
  • give details of his experience and what he is interested in doing
  • ask when the starting date is
  • does he need to write in or fill in a form?
  • get the relevant details
  • end the conversation politely.
Applying for a Job

You've seen this advert in the local paper.

Telephone Mrs Hill to find out more details.

**Experienced Joiner**

Required. Must have clean driving licence.

*Please apply to:*

Mrs A Hill on

(0532) 512456

Hill & Sons Builders Ltd.

Plan out what you need to say first, including:

- name, address, age
- work experience
- qualifications
- clean driving licence
- anything else?

Make notes here:

<table>
<thead>
<tr>
<th>Core Skills</th>
<th>Basic Skills Standards</th>
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<td>C:2:1</td>
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<td>C:10:1</td>
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<tr>
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<td>C:10:2</td>
</tr>
</tbody>
</table>

28
Oral Communications

Please tick a box.

I am able to listen carefully to other people

Please tick
Yes No

I am able to respond in turn

Yes No

I am able to ask questions

Yes No

I know how to use language to suit the person to whom I am speaking

Yes No

I am aware of my own body language and that of others

Yes No

I am able to play my part in a discussion

Yes No

I feel confident about making and taking a telephone call

Yes No

I am able to give clear instructions to others

Yes No

I am able to follow instructions

Yes No

I require further work on

If you have answered NO to any of these questions please read through the section again or ask your tutor for further help.
Think back over a typical day and make a note of all the things you've read – (eg. newspaper) At work, at College, at home.

<table>
<thead>
<tr>
<th>List them:</th>
<th>At work</th>
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<table>
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<th>At College</th>
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<th>At home</th>
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Any others?

<table>
<thead>
<tr>
<th>On the bus/in the street/in shops/at the library/in the pub</th>
<th></th>
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</table>
Look back to the last task and think about what you read in a day. Think about how you read some of the things on your list. Did you glance quickly at the paper before work and then read it more carefully when you got home after work?

There are actually **FOUR WAYS OF READING**

Depending on the reason **WHY** we are reading we may use these different ways, either separately or as a mixture of them.

### 1. Skimming

Look quickly over the text/book to get a general idea of the content. Ask yourself, “What is this book/text about?” Move your eyes **quickly** over the text, looking especially at the **titles**, the **beginning** and **end** (of chapter in a book), and the **first sentence** of every paragraph (where important information is often placed).

### 2. Scanning

Look quickly through the text searching for a particular piece of information or fact. Ask, “Has this text got the information I need, and if so, where is it?” Move your eyes swiftly over the text on the **look-out** for **specific items** (eg. **names**, **key words** or **figures**).

### 3. Light reading

Read the text/book/newspaper etc. fairly quickly without concentrating too much on it and without necessarily understanding every single word. This is what we do most of the time.

### 4. Detailed reading

Read more slowly and carefully in order to think about what we are reading so that we understand or can learn and remember (reading instructions, materials for study, documents etc). This is what we do when we are studying or completing an important form.
Why are you reading?
Before you start reading a book, magazine, article or passage ask yourself:

<table>
<thead>
<tr>
<th>WHY am I reading this?</th>
<th>WHAT do I hope to get out of it?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Am I reading to get a general ideal of what it's about?</td>
<td>(Use skimming)</td>
</tr>
<tr>
<td>Am I reading to get specific facts?</td>
<td>(Use scanning)</td>
</tr>
<tr>
<td>Am I reading for pleasure/to pass the time?</td>
<td>(Use light reading)</td>
</tr>
<tr>
<td>Am I reading for study purposes/for understanding?</td>
<td>(Use detailed reading)</td>
</tr>
</tbody>
</table>

- By answering these 2 questions you have given yourself an idea of how to read.
Skimming

When researching material or checking information you need to find books or magazines that will give you the right information. You won't have time to read every page of every book or magazine you choose so you need to skim.

What's that?

Think about the way you look through a book or a magazine when you're waiting for someone. What do you do?

- First of all you **pick** out one which **appeals** to you.
- Then you **leaf** through it until you see something **interesting**.
- You may start at the front and **look quickly** at each page until you find something of **interest** which you want to **read** more **carefully**.

**OR**

- You might **turn** straight away to a **particular** page – the letters page, gardeners page or sports page.

**OR**

- You might **look** at the **contents page** for a subject in which you have an **interest**.

**OR**

- If it's a book you might look at the **index** to see if there is a **reference** to the topic in which you are **interested**.

All of these examples involve **skimming**. It is a very **useful technique** which we do all the time without being aware.

Think about the above examples of **skimming** and use them to help you find the right books and magazines and the right information **quickly** and **efficiently**.
Aim to get the general idea. Look quickly over each passage to get an idea of the content. Match the number of each passage to a heading at the bottom of the page. You have a choice of five.

1. It is important to note that timber, especially thin machined cladding, is liable to shrink when taken from a warehouse environment to a warmer, drier, home environment. It is essential that any shrinkage occurs before the cladding is fitted indoors since the boards will tend to separate as they shrink, leaving gaps which will spoil the appearance. When you have bought your cladding, remember to store it in the room in which it is to be used for at least 2 weeks in order to allow it to adapt to the natural moisture content of the room. Open all packs, separate the boards, stack them in piles and rearrange the piles every few days so that all the boards are allowed to dry equally.

2. Remove the old door. Do it carefully to avoid damaging the frame. Open the door at 90 degrees to the frame and support it underneath with wedges. Slightly loosen all the the screws which hold the hinges to the frame jambs. Remove the screws holding the bottom hinge first, and then all but one of the top set. Remove this last one only when you are sure you can support the door sufficiently. Being careful not to damage the timber around the hinge housing remove the door and put it aside. If it was a good fit in the frame it can be used as a template if a new door has to be cut.

3. Wood is a material which is used extensively around the home both indoors and outdoors. It is used in the construction of the building, for decorative purposes and also for functional work. Because it is a natural product it has disadvantages: it can be affected by atmospheric changes, expanding and contracting as it absorbs and then loses moisture; it can be damaged by rot and woodworm attack; it can lose its colour; it can become dirty; it can support mould growth and can quickly begin to look unsightly.

- Fitting a new door
- Storing cladding
- Removing an old door
- Problems of using wood
- Using preservative

See how quickly you can match them up
Scan this contents page – glance quickly down the list to find the page for injuries by occupation.

<table>
<thead>
<tr>
<th>HEALTH &amp; SAFETY STATISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contents</td>
</tr>
<tr>
<td>Introduction</td>
</tr>
<tr>
<td>Section 1</td>
</tr>
<tr>
<td>Section 2</td>
</tr>
<tr>
<td>Section 3</td>
</tr>
<tr>
<td>Section 4</td>
</tr>
<tr>
<td>Section 5</td>
</tr>
<tr>
<td>Section 6</td>
</tr>
<tr>
<td>Section 7</td>
</tr>
<tr>
<td>Section 8</td>
</tr>
<tr>
<td>Section 9</td>
</tr>
<tr>
<td>Section 10</td>
</tr>
<tr>
<td>Section 11</td>
</tr>
<tr>
<td>Section 12</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Answer:**

Quickly scan down the contents page to find the correct page as your workmate has burnt himself by spilling a chemical onto his hand.

<table>
<thead>
<tr>
<th>FIRST AID</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>First Aid box</td>
<td>Unconsciousness</td>
</tr>
<tr>
<td>Dealing with accidents</td>
<td>Electric shocks</td>
</tr>
<tr>
<td>Resuscitation</td>
<td>Scalds &amp; burns</td>
</tr>
<tr>
<td>Mouth to mouth ventilation</td>
<td>Simple burns &amp; scalds</td>
</tr>
<tr>
<td>Cardiac arrest</td>
<td>Severe burns</td>
</tr>
<tr>
<td>Bleeding</td>
<td>Chemical burns</td>
</tr>
<tr>
<td>Major external</td>
<td>Electric burns</td>
</tr>
<tr>
<td>Internal bleeding</td>
<td></td>
</tr>
</tbody>
</table>

**Answer:**

- See how quickly you can get the information
Look at the table on the following page. Look quickly through the table to find the information required in the question. (Look for key words.)

1. The most suitable timber for a dance floor.

2. The best timber for sports equipment.

3. A useful timber for all internal joinery, whitish in colour; supply fair.

4. Which timber has irregular bark lines tending to brown?

5. A timber from South America and India which is not easy to work with.


7. This African and Far Eastern timber is renowned for its highly decorative appearance.

8. A timber used for mouldings and internal joinery which has a tendency to be pinkish in colour.

9. A European timber which is expensive, good to work with, but has a large moisture movement.

10. A West African timber used for curtain walling.

Check how long it takes you to do this exercise
<table>
<thead>
<tr>
<th>COLOUR</th>
<th>NAME AND COUNTRY</th>
<th>USES</th>
<th>TEXTURE</th>
<th>DENSITY Kg/M³</th>
<th>WORKING QUALITIES</th>
<th>MOISTURE MOVEMENT</th>
<th>SUPPLY</th>
<th>PRICE RANGE</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WHITISH GROUP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whitish</td>
<td>Ash</td>
<td>Internal Joinery</td>
<td>Medium</td>
<td>689</td>
<td>Good</td>
<td>Medium</td>
<td>Fair</td>
<td>Medium</td>
<td>Resistant to shock</td>
</tr>
<tr>
<td>Whitish</td>
<td>Birch</td>
<td>Flooring</td>
<td>Fine</td>
<td>657</td>
<td>Good</td>
<td>Large</td>
<td>Fair</td>
<td>High</td>
<td>Plywood</td>
</tr>
<tr>
<td>Whitish</td>
<td>Maple, Rock</td>
<td>Internal Joinery</td>
<td>Fine</td>
<td>721</td>
<td>Medium</td>
<td>Medium</td>
<td>Fair</td>
<td>Medium</td>
<td>Dance Floors</td>
</tr>
<tr>
<td>Whitish</td>
<td>Sycamore</td>
<td>Internal Joinery</td>
<td>Fine</td>
<td>609</td>
<td>Good</td>
<td>Medium</td>
<td>Fair</td>
<td>Medium</td>
<td>Chopping Boards, Draining Boards, Scrubs white</td>
</tr>
<tr>
<td>Whitish</td>
<td></td>
<td>Flooring Panelling</td>
<td>Medium</td>
<td>657</td>
<td>Medium</td>
<td>Large</td>
<td>Good</td>
<td>Low/Medium</td>
<td></td>
</tr>
<tr>
<td><strong>YELLOW GROUP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yellowish</td>
<td>African Walnut</td>
<td>Internal Joinery</td>
<td>Medium</td>
<td>657</td>
<td>Medium</td>
<td>Large</td>
<td>Good</td>
<td>Low/Medium</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Malaya</td>
<td>Flooring Mouldings</td>
<td>Medium</td>
<td>545</td>
<td>Medium</td>
<td>Small</td>
<td>Good</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td><strong>VARIEGATED GROUP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ebonies</td>
<td>Africa, Far East</td>
<td>Mouldings</td>
<td>Medium</td>
<td>849</td>
<td>Difficult</td>
<td>Small</td>
<td>Short</td>
<td>High</td>
<td>Black streaked with reddish brown markings</td>
</tr>
<tr>
<td>Rosewood</td>
<td>India, S. America</td>
<td>Internal Joinery</td>
<td>Medium</td>
<td>641</td>
<td>Medium</td>
<td>Medium</td>
<td>Fairly</td>
<td>High</td>
<td>Purplish brown with irregular markings, Decorative veneer</td>
</tr>
<tr>
<td>Walnut</td>
<td>European</td>
<td>Internal Joinery</td>
<td>Medium</td>
<td>849</td>
<td>Medium</td>
<td>Medium</td>
<td>Fairly</td>
<td>High</td>
<td>Decorative veneers, Shows considerable variation</td>
</tr>
<tr>
<td></td>
<td>Europe</td>
<td>Joinery, Cladding</td>
<td>Medium</td>
<td>849</td>
<td>Medium</td>
<td>Medium</td>
<td>Fairly</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td><strong>BROWN GROUP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Light Brown</td>
<td>Abura</td>
<td>Internal Joinery</td>
<td>Medium</td>
<td>561</td>
<td>Medium</td>
<td>Small</td>
<td>Good</td>
<td>Low</td>
<td>Variable in colour with a tendency to be pinkish</td>
</tr>
<tr>
<td>Light Brown</td>
<td>Afromosia</td>
<td>Internal Joinery</td>
<td>Medium</td>
<td>689</td>
<td>Medium</td>
<td>Small</td>
<td>Good</td>
<td>Medium/High</td>
<td>Tends to darken on exposure, will stain with iron under damp conditions</td>
</tr>
</tbody>
</table>

**USES**: Internal Joinery, External Joinery, Flooring, Curtain Walling, Mouldings, Body Building, Dance Floors, Plywood, Chopping Boards, Draining Boards, Scrubs white.
You glance at this newspaper article before you start work/college.

**TREE PLANTING**

Timber growers were told at a conference yesterday that fewer trees are being planted in Britain than at any time since the Second World War. An environmentalist said that trees were vital in the struggle against global warming. "More tree cover is needed", he told a meeting of the Timber Growers UK. The Timber Industry in Britain had collapsed in 1988 when tax incentives for tree planting were stopped. The Chairman of the Timber Growers UK Ltd. wanted the new government to re-introduce tax incentives for planting trees. There is no shortage of timber at present but the effects of the decline in tree planting would be felt in 20 years when the present crop of trees reach maturity.

- What's it about?
- Does it interest you?
- Would you want to read it again more carefully?
Try to make sense of this information. The sentences are in the wrong order. Sort them out and write them down in the correct sequence.

**Conversion**

When the tree has been felled, its branches are removed.

It may also be done when trees need thinning out.

Felling is the act of chopping down a living tree.

This leaves the trunk in the form of a log.

This is where the term 'conversion' comes from.

This part of the tree (the log) is then broken down by being sawn (converted) into timber.

It is done when trees have reached maturity and are of a commercially suitable size.

**Answer:**
Safety Check Card

1. On Joining the Company

Have you ...
- discussed your previous safety training/experience (if any) with your employer?
  Safety courses attended – certificates.
- read the company safety policy and had the safety organisation explained?
  Safety policy explains company’s aims and specifies persons with overall responsibility for safety.
- been shown the safety rules and received instruction in safety procedures?
  Fire, Accidents/First Aid, Transport/Plant, Electricity.
- been given the name and location of the Safety Adviser?
  Additional details will be given on site.
- been informed of the need to use protective clothing and equipment?
  Operations for which protective clothing and equipment is required.
- been told of your personal responsibilities for health and safety?
  Safety awareness – Safe methods of work.
- had explained the authorisation necessary for the use of plant, machinery, powered hand tools?
  Use of these items restricted to trained persons only.
- been told the need to report ‘near misses’ and defective plant and equipment?
  Your action may prevent future accidents or dangerous incidents.
- been told of the company’s procedure for dealing with grievances and disputes affecting health, safety and welfare?
  Consult with Supervisor or Safety Representative.
- been told or shown where notices relating to safety matters are displayed?
  Safety information displayed on noticeboard, Safety Bulletins.

Do you know ...
- the hazard areas where risk of injury exists?
  Fragile roofs, excavations, electricity, etc.
- the location of first aid and the person in charge?
  Your nearest first aid box. Name of trained first aider.
- when and where safety helmets must be worn?
  The need to wear avoiding head injury.
- what to do in the event of a fire?
  Means of raising alarm – where the fire extinguishers are, how you operate them. Location of the fire assembly point.
- what to do if you have an accident?
  Obtain first aid treatment. Report it, ensure entry into Accident Book.
- what type of protective clothing and equipment is required or available and how to obtain it?
  How to use and look after it. Where it is issued.
- your responsibility towards good housekeeping?
  Site tidiness, disposal of materials.
- what type of plant and equipment you are not permitted to use?
  All items upon which restriction of use is placed. Examples: dumpers, fork lifts, woodworking machines.
- the instructions regarding the use of scaffolding and other means of access?
- your responsibility to report defective plant and equipment, unsafe practices and methods of work?
  Serviceability of plant/equipment, and safe systems of work help prevent accidents.
- the location of all welfare facilities?
  Canteen, washroom and toilets, drying room.

CITB ... if not, ASK

2. For Employees on Site

Do you know ...
- the hazard areas where risk of injury exists?
  Fragile roofs, excavations, electricity, etc.
- the location of first aid and the person in charge?
  Your nearest first aid box. Name of trained first aider.
- when and where safety helmets must be worn?
  The need to wear avoiding head injury.
- what to do in the event of a fire?
  Means of raising alarm – where the fire extinguishers are, how you operate them. Location of the fire assembly point.
- what to do if you have an accident?
  Obtain first aid treatment. Report it, ensure entry into Accident Book.
- what type of protective clothing and equipment is required or available and how to obtain it?
  How to use and look after it. Where it is issued.
- your responsibility towards good housekeeping?
  Site tidiness, disposal of materials.
- what type of plant and equipment you are not permitted to use?
  All items upon which restriction of use is placed. Examples: dumpers, fork lifts, woodworking machines.
- the instructions regarding the use of scaffolding and other means of access?
- your responsibility to report defective plant and equipment, unsafe practices and methods of work?
  Serviceability of plant/equipment, and safe systems of work help prevent accidents.
- the location of all welfare facilities?
  Canteen, washroom and toilets, drying room.

... if in doubt, ASK YOUR SUPERVISOR

- Read carefully through the cards – made sure you have followed and understood all the points IF NOT ... ASK

It is important that you have read and understood this information
Read the passage carefully and complete the instructions which follow in point form.

LADDERS

It is extremely dangerous to use any ladders which have rungs which are split, missing or loose so check for damage first. When positioning a ladder it is necessary to place it at the right angle (approximately 75 degrees from horizontal) in the correct position and to make sure it cannot slip. Always have someone at the foot when securing the top of the ladder. While working from a ladder it is dangerous to lean over too far to one side. It is safer to come down from the ladder and move it into a better position. It is dangerous to have more than one person on a ladder at a time.

Do not use ladders

✓ Check for

✓ the ladder

✓ Make sure

✓ Always have someone at the foot

While working from a ladder do not

✓ Come down from the ladder and

Do not have more than one
Read the following newspaper article and then fill in the chart with the necessary information.

Up to 250 construction workers may have been saved from head injuries by wearing a hard hat in the first year of the Construction (Head Protection) Regulation 1989.

Provisional Health & Safety Executive statistics show there were 28 deaths from head injuries in 1990/91 compared to 42 in 1989/90.

Major head injuries also fell from 201 in 1989/90 to 142 in 1990/91.

The Chairman of the Health & Safety Commission said the figures were very encouraging, “Hard hats are cheap and effective – they save lives and prevent fractures and severe lacerations of the skull. Wear your hard hat – it could save your life.”

A construction worker told how his life had been saved when wearing a hard hat after a bracing tube fell 12 floors and struck him on the head. He suffered a jarred neck and a cut to the forehead but fortunately escaped serious injury.

The Construction (Head Protection) Regulations 1989 require all workers to wear safety helmets wherever there is a risk of injury.

<table>
<thead>
<tr>
<th>Fill in the correct information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number saved from head injuries by wearing hard hats in 1989/90</td>
</tr>
<tr>
<td>Deaths from head injuries in 1990/91</td>
</tr>
<tr>
<td>Deaths from head injuries in 1989/90</td>
</tr>
<tr>
<td>Major head injuries in 1990/91</td>
</tr>
<tr>
<td>Major head injuries in 1989/90</td>
</tr>
<tr>
<td>Hard hats are _____________ and effective.</td>
</tr>
<tr>
<td>Wear a hard hat it could _____________ your _____________ .</td>
</tr>
<tr>
<td>The Construction (_____________ ______________ ) Regulations 1989 require all workers to wear ______________ ______________ wherever there is risk of ______________.</td>
</tr>
</tbody>
</table>
Study this advert and answer the following questions:

**Suppliers to the trade of top quality Timber**

We offer a quick efficient service to save you money and time

*Free Local Delivery*

Stockists of: plywood, blockboard, MDF, chipboard, hardboard, sawn carcassing, joinery redwood, machined redwood, door blanks, doors, hardwoods, specialist softwoods including parana pine, hemlock and yellow pine

All types of sheet materials

*Ring or call in NOW*

Walker & Wood (Timber Merchants) Ltd.
Tel: Liverpool 051 3586150

1. Do you pay for delivery?
2. Will they deliver free to London?
3. Of what quality is their timber?
4. Do they supply to the public?
5. Name 3 types of board stocked
6. Name 3 softwood in stock
7. Name 2 types of redwood
8. Describe the carcassing
9. What types of sheet material are in stock?
10. Do they only stock softwoods?

---

**Core Skills**

C:1-4

**Basic Skills Standards**

C:6-1
Wood is a material that is very widely used in a variety of ways. It is fortunate for the human race that new growth replaces what is used although not always as quickly as we use it. Nature sometimes takes a wood out of use as in the case of Dutch Elm Disease. Today timber is easily transported to all corners of the earth and so the variety is much greater. This can pose problems with the newer woods as to their characteristics and suitability. This problem is made worse by the use of common names eg. 'Brazilian mahogany' which can be used to cover a group rather than refer to one type. There are thousands of different varieties of trees each having a botanical name. These names are vital if a certain wood is needed but the ordinary timberman is unlikely to be familiar with them. He will, however, have enough knowledge about a wood to inform you of its characteristics and suitability.

1. Is wood a popular constructional material?

2. Are supplies generally good?

3. Give one example of nature taking a wood out of use.

4. Why do you think it is much easier to transport timber today?

5. Why does the increased variety of wood present problems?

6. What can a common name describe?

7. Why might it be important to know the botanical name?

8. How can the timberman help the joiner and carpenter to choose suitable woods?

9. Do you know which ways he might use to identify woods?

10. Can you explain what these words mean? Use a dictionary to check their meanings.
    - characteristics
    - material
    - suitability
    - botanical name
Read the following passage:

Accidents in the Construction Industry
Every accident at work has to be reported and details recorded in the Accident book. Any accident must be reported to a person in authority such as the site agent or foreman who will make sure that it is officially reported as the law demands.

If an accident is not reported the injured person may have no evidence to support a compensation claim.

The details and facts learnt from the reporting of accidents can be very useful in improving safety at work.

- Can you tell someone what should happen if an accident occurs at work?
- Why is it important to record details?

Answer:
Softwoods and Hardwoods

Trees can be generally divided into hardwoods and softwoods. This is not always a true definition of relative hardness as a few softwoods are actually harder than some hardwoods. Most softwoods are from coniferous trees with needle leaves which they keep during the winter. Hardwoods have broad leaves which are usually shed in winter in the more severe climates. Generally speaking, softwood trees come from the colder areas of the world, while many hardwoods grow in the tropics. Softwoods grow quickly and mature in 20-50 years, whereas hardwoods are slow growing and may take hundreds of years to reach a suitable height for conversion to timber. The relative density of hardwoods is much greater than that of softwoods, for example – some hardwoods are so dense that they would not float in water making them unsuitable for a purpose such as boat building. The terms ‘softwood’ and ‘hardwood’ mainly refer to important botanical differences in cell structure and composition.

Look at this summary of points under the heading Softwoods. Can you write down the main points under the heading Hardwoods.

<table>
<thead>
<tr>
<th>Softwoods</th>
<th>Hardwoods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needle leaves</td>
<td>Important differences in cell structure and composition</td>
</tr>
<tr>
<td>From coniferous trees so keep leaves in winter</td>
<td></td>
</tr>
<tr>
<td>Grow in colder areas of world</td>
<td></td>
</tr>
<tr>
<td>Grow quickly</td>
<td></td>
</tr>
<tr>
<td>Mature in 20-50 years</td>
<td></td>
</tr>
<tr>
<td>Not as dense</td>
<td></td>
</tr>
</tbody>
</table>
If a workmate has just had an accident you should follow these instructions:

- remove the hazard if it is safe to do so
- call for help (someone with first-aid training)
- call an ambulance if necessary

But

- do not move the injured person unless there is immediate danger
- stay with the injured person and give comfort
- make as comfortable as possible
- do not give anything to eat or drink
- do not allow the injured person to smoke.

Read through the instructions.

Check through and make sure you understand and are able to act in an emergency.

Sort the information into the right column.

<table>
<thead>
<tr>
<th>Do</th>
<th>Don’t</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
Hand Protection
Skin complaints are a problem in the construction industry and are the reason for many lost days of work. Rough or sharp objects can cause injury as can contact with substances like cement and can lead to skin disease. The most common one is dermatitis.

The area most vulnerable (both to injury and to infection and disease) is the hand. Suitable protection should be used for example, gloves, barrier creams and frequent washing with soap and water. Help to reduce the risk of cuts, grazes and puncture wounds by the correct use of gloves. There are differing types of glove which provide protection against heat, water, chemicals, materials handling, for example.

Make brief notes:

What can cause injury to skin?

Most common skin disease?

Most vulnerable area?

Protection available
1. 
2. 
3. 

Gloves help to reduce risks of
1. 
2. 
3. 

Use correct gloves for protection against
1. 
2. 
3. 
4.
<table>
<thead>
<tr>
<th>Service</th>
<th>Information Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author’s catalogue</td>
<td>What form?</td>
</tr>
<tr>
<td>Bibliography service</td>
<td>Who to ask?</td>
</tr>
<tr>
<td>Books in foreign languages</td>
<td>Which languages?</td>
</tr>
<tr>
<td>Computerized lending service</td>
<td>How to use it?</td>
</tr>
<tr>
<td>Daily newspapers</td>
<td>Which ones?</td>
</tr>
<tr>
<td>Exhibition area</td>
<td>Where is it? What kinds?</td>
</tr>
<tr>
<td>Inter-library loan service</td>
<td>Local or nationwide?</td>
</tr>
<tr>
<td>Helpful librarians and staff</td>
<td>Any special skills?</td>
</tr>
<tr>
<td>Photocopying machine</td>
<td>Black/white or colour? Cost?</td>
</tr>
<tr>
<td>Reading room</td>
<td>Where? Size?</td>
</tr>
<tr>
<td>Reference only section</td>
<td>What subject variety?</td>
</tr>
<tr>
<td>Music/record lending service</td>
<td>Cost? Conditions of loan?</td>
</tr>
<tr>
<td>Translation service</td>
<td>Which languages?</td>
</tr>
<tr>
<td>Local information service</td>
<td>Who is it run by?</td>
</tr>
<tr>
<td>Any subject catalogues</td>
<td>What form?</td>
</tr>
<tr>
<td>Magazine/periodicals section</td>
<td>Reference or borrowing?</td>
</tr>
</tbody>
</table>

Use these questions to find out exactly what your library has to offer and then try to make use of the facilities.
For your course you will probably need to use the library. Librarians will be there to help you but you can save time if you can find your own way around a library and find the resources you need quickly and efficiently.

**NON-FICTION** books are usually arranged in a numerical order called the **DEWEY DECIMAL CLASSIFICATION** system, which divides all books into 10 main classes:

<table>
<thead>
<tr>
<th>Class Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>000-099.9</td>
<td>General works (eg bibliographies, journalism)</td>
</tr>
<tr>
<td>100-199.9</td>
<td>Philosophy (eg psychology, logic)</td>
</tr>
<tr>
<td>200-299.9</td>
<td>Religion (eg the Koran, Christianity)</td>
</tr>
<tr>
<td>300-399.9</td>
<td>Social sciences (eg politics, economics, law)</td>
</tr>
<tr>
<td>400-499.9</td>
<td>Languages (eg French, German)</td>
</tr>
<tr>
<td>500-599.9</td>
<td>Science (eg maths, physics, chemistry, biology)</td>
</tr>
<tr>
<td>600-699.9</td>
<td>Technology (eg engineering, farming, commerce)</td>
</tr>
<tr>
<td>700-799.9</td>
<td>Arts and recreation (eg music, sport)</td>
</tr>
<tr>
<td>800-899.9</td>
<td>Literature (eg poetry, drama)</td>
</tr>
<tr>
<td>900-999.9</td>
<td>History and geography (eg Middle Ages, Europe, Africa)</td>
</tr>
</tbody>
</table>

The Dewey Classification number is shown at the end of each shelf and is written at the bottom of the spine of each book.

**Which class would you need to look at for your course?**

You would need the **Technology class 600-699.9**

Each **main class** is divided into ten subject units which will enable you to find the **section** you need.

**THE UNITS WITHIN THE TECHNOLOGY CLASS 600-699 are:**

<table>
<thead>
<tr>
<th>Class Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>600-609</td>
<td>General applied science</td>
</tr>
<tr>
<td>610-619</td>
<td>Medicinal sciences</td>
</tr>
<tr>
<td>620-629</td>
<td>Engineering</td>
</tr>
<tr>
<td>630-639</td>
<td>Agriculture</td>
</tr>
<tr>
<td>640-649</td>
<td>Domestic science</td>
</tr>
<tr>
<td>650-659</td>
<td>Commerce</td>
</tr>
<tr>
<td>660-669</td>
<td>Chemical technology</td>
</tr>
<tr>
<td>670-679</td>
<td>Manufacturers</td>
</tr>
<tr>
<td>680-689</td>
<td>Miscellaneous manufacturers</td>
</tr>
<tr>
<td>690-699</td>
<td>Building construction</td>
</tr>
</tbody>
</table>

**Which numbers will you need to look for?**
HILTON FRANK
CRAFT TECHNOLOGY FOR CARPENTERS AND JOINERS
LONGMAN (Softback)
LONDON
1968 (first published)
1970 (reprinted)
SHELF 694
ISBN 0582 42526 3
242pp 20/- (£1) Index ✓ Bibliog ×

Study this reference card and see if you can identify all the information below:

1. Author's surname and first name or initials
2. Full title
3. Publisher
4. Type of edition (hardback/softback)
5. Dates of publication
6. Length (no. of pages)
7. Is there an index and/or a bibliography
8. Dewey Decimal Classification number
9. International Standard Book Number

Puzzle
Imagine you have to put back books on the shelves of the College library. You have to put them back one at a time. Books are different thicknesses of 10, 20, 30mm. How many books can you fit on the first empty shelf?

One, after that the shelf isn't empty.
Answer the following questions – use the card index, microfiche or take your query to the librarian.

Using the library –

1. When converting timber what does the term ‘cut through and through’ mean?
2. What types of cells are found in the cell structure of a softwood?
3. Name 12 softwoods.
4. How would you send for trade literature on plywood using only the library and the postal system?
5. Where would you look up information provided by trade literature on the subject of windows?
6. Find the BS number for stormproof windows.
7. Find the Health and Safety at Work Act
   a) for loan (give shelf number)
   b) for reference (give shelf number)
   N.B. Use card index
8. Find if ‘Carpentry and Joinery’ by Peter Brett 1 and 2 are available at the public library nearest your home. (Use the microfiche).
9. Find a book on woodturning using the subject index. Give the Title, Author and Shelf Number.
10. Give the O.S. (Ordnance Survey) grid reference for your college or place of work or your home.
11. Find the ‘Stanley Hand Tools Catalogue’. What is in Section 9, pages 6 & 7?
12. Sketch a vertical section through a storm-proof window.
13. What is the ‘Building Products Index’?
14. What does No. (30) 2 contain in the ‘Building Products Index’?
15. Find the BS number for Construction Drawing.
16. Which books are available on Construction Drawing? Make a list giving the author and publisher.
17. What is shown on the Contents page of the book – ‘Industrial Studies for Building Craft Students’ by R C Boucher’?
18. Find out how many and which books there are available on the subject of woodworking machinery.
19. What is the rise of a private stair case? Use the Buildings Regulations.
20. What does TRADA stand for?
You don't always need to go to the library for information.

Sometimes it isn't always necessary or practical to get information from a library. If you are working and have little free time you may find it more convenient to buy magazines at your local newsagent. Material, such as newsletters, samples and catalogues are often sent free to your firm, so you could always ask your boss to let you have a look at anything which is relevant to your studies at college. Another good source of information is trade literature. Many firms are only too pleased to send out information on their products and catalogues are usually well-illustrated and make very interesting reading.

You can buy magazines at your local newsagent. For example:

- Woodworker
- Practical Woodworker
- Traditional Woodworker
- Woodworking
- Fine Woodworking (American)
- Practical Do-It-Yourself
- New Builder
- Building
- Building Trades Journal (to order).

These will be sent to your firm:

- Woodworking News
- Wood & Equipment News
- Woodwork in Industry News.

A great deal of information can be obtained for projects or assignments by sending off for trade literature. For example:

- Door furniture, concealed door closers, hinges, security lock, overhead door closers, door systems, knobs and knockers etc.
- Hand tools, machinery.
- Safety footwear, insulated fire resistant panels, roofing systems, roof and wall linings for industrial buildings, complete range of DIY and home improvement products etc.
Books have certain **technical terms**. You need to be familiar with them in order to use books properly. Look at the task below and see if you can give each term its correct meaning. Number 3 has been done for you.

<table>
<thead>
<tr>
<th>Technical Terms</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Index</td>
<td>a An alphabetical list of topics in a book with page numbers for each</td>
</tr>
<tr>
<td>2 Bibliography</td>
<td>b A list of other books on the same subject</td>
</tr>
<tr>
<td>3 Reference</td>
<td>c An introduction explaining the title and content</td>
</tr>
<tr>
<td>4 Preface</td>
<td>d A list of chapter headings and their page numbers</td>
</tr>
<tr>
<td>5 Contents Page</td>
<td>e When the author makes reference to another author or book</td>
</tr>
</tbody>
</table>

If you are not sure then look at the next page
You may have to use text books as part of your course or your tutor may send you to the library to research information. In both cases you need to familiarise yourself with the layout of books.

Most text books are made up of the following different sections:

1. **The Preface** (called introduction or foreword)
   This will probably be the first piece of writing after the title page. Written by the author it usually states:

   a. The purpose of the book.
   b. The type of student (eg. Carpenters & Joiners) and the level of student (eg. NVQ level 2) it is aimed at.

2. **The Contents page**
   Always placed at the front of book after the preface.

   It lists the contents of the book in page order.

   The list is usually divided into sections/chapter headings (usually printed in bold type) and after each heading is a detailed list of what is in each chapter.

   This is very useful as it can show you how a topic is developed chapter by chapter.

3. **The main part of the book**
   This is made up of the subject information.

4. **The Index**
   This is placed at the back of the book. It lists the contents of the book in alphabetical order.
Study this contents page and find the right ones for you – carpenter and joiner, bench joiner and woodworking machines.

### Contents

<table>
<thead>
<tr>
<th>Page</th>
<th>Craft &amp; Operative Careers in Construction – An Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>What is the Construction Industry?</td>
</tr>
<tr>
<td>3</td>
<td>Personal qualities</td>
</tr>
</tbody>
</table>

**Occupational information for:**

<table>
<thead>
<tr>
<th>Page</th>
<th>Craft &amp; Operative Careers in Construction – An Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Bench joinery</td>
</tr>
<tr>
<td>5</td>
<td>Bricklayer</td>
</tr>
<tr>
<td>6</td>
<td>Built-up Felt Roofer</td>
</tr>
<tr>
<td>7</td>
<td>Carpentry &amp; Joinery</td>
</tr>
<tr>
<td>8</td>
<td>Ceiling fixer</td>
</tr>
<tr>
<td>9</td>
<td>Demolition operative</td>
</tr>
<tr>
<td>10</td>
<td>Demountable partition erector</td>
</tr>
<tr>
<td>11</td>
<td>Dry lining operative</td>
</tr>
<tr>
<td>12</td>
<td>Fencer</td>
</tr>
<tr>
<td>13</td>
<td>Floor layer</td>
</tr>
<tr>
<td>14</td>
<td>Formworker</td>
</tr>
<tr>
<td>15</td>
<td>General construction operative</td>
</tr>
<tr>
<td>16</td>
<td>Glazier</td>
</tr>
<tr>
<td>17</td>
<td>Mastic ashphalter</td>
</tr>
<tr>
<td>18</td>
<td>Painter &amp; Decorator</td>
</tr>
<tr>
<td>19</td>
<td>Plant Mechanic</td>
</tr>
<tr>
<td>20</td>
<td>Plant Operator</td>
</tr>
<tr>
<td>21</td>
<td>Plasterer</td>
</tr>
<tr>
<td>22</td>
<td>Plumber</td>
</tr>
<tr>
<td>23</td>
<td>Roof sheeter &amp; cladder</td>
</tr>
<tr>
<td>24</td>
<td>Roof slater &amp; tiler</td>
</tr>
<tr>
<td>25</td>
<td>Scaffold</td>
</tr>
<tr>
<td>26</td>
<td>Shopfitter</td>
</tr>
<tr>
<td>27</td>
<td>Steeplejack</td>
</tr>
<tr>
<td>28</td>
<td>Stonemason</td>
</tr>
<tr>
<td>29</td>
<td>Wall &amp; Floor tiler</td>
</tr>
<tr>
<td>30</td>
<td>Woodworking machinist</td>
</tr>
<tr>
<td>31</td>
<td>Health &amp; Safety Information</td>
</tr>
</tbody>
</table>

### Answers

- 
- 

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Basic Skills Standards

C:13

ERIC
Using text books or reference books

If you are researching a topic and find many books on the subject, first of all assess whether the book will be of any use to you.

How will you do this?

1. Read the Preface
   It will tell you if the book is aimed at the right level of study for you and will also tell you what the author has covered in the book.

2. Look at the Contents Page
   Carefully read the chapter headings so that you will have a good idea of all the areas covered in that particular book.

3. Look at the Index
   Turn to the back of the book to the Index. Find a subject or name of a person you are familiar with and look it up. You will be given page references – just choose one, then look it up and see what the author says about it. Doing this will let you see how the author writes and you will then be able to make a decision as to whether it is easy to read and understand. If not, then try the same method with another book.

Remember
If you want to know what sort of things the book tells you about … look at the contents page

If you want to find a specific piece of information use the index
Study this page and find the chapters you would need for information on:

1. planes
2. softwoods
3. mortice and tenon joint
4. drills
5. roof trusses
6. nails
7. the hollow chisel mortiser
8. screws

Contents

1. Timber and associated materials
2. Hand tools and workshop procedures
3. Portable powered hand tools
4. Types of woodworking machines
5. Basic woodworking joints
6. Suspended timber ground floors
7. Gable ended single roofs
8. Formwork
9. Door construction
10. Window construction
11. Moisture movement
12. Fixing devices

Answers:
They are books of information – they are there for you to dip into to find the necessary piece of information.

They are:

- Encyclopaedias
- Dictionaries
- Telephone books

Any more you can think of?

Most libraries have a reference section where you can browse.

Here are some examples:

- The British Coal Rugby League Yearbook
- The Penguin Dictionary of Modern Quotations
- The Complete Book of Home Decorating
- A History of England
- AA Motorists' Handbook
- The Manual of Family Health
- Atlas
- The Bikers' Handbook
- Roget's Thesaurus

Do you use reference books Which?
Study the following section of timber merchants

- Timber merchants

  A & C Timber New/Reclaimed Timber  
  Halifax (0422) 441258  
  Barwick (Timber) Ltd. Roof Trusses,  
  Carcassing, Joinery  
  Leeds (0532) 611335  
  Calvert Timber Ltd. Timber & Sheet Materials  
  Leeds (0532) 613829  
  Dale & Morgan Quality Softwood & Hardwood  
  Trade & Retail  
  Leeds (0532) 683581  
  Edward's Timber Ltd. Timber Specialists.  
  Plywood, Chipboard, Carcassing, T&G PSE  
  Wakefield (0924) 363177  
  England's Timber Dried UK & European  
  Hardwoods & Flooring  
  Dewsbury (0924) 358625  
  Fowler & Dickinson (Timber Merchants) Ltd.  
  Dewsbury (0924) 358616  
  Harrison & Smith (Timber) Ltd.  
  Castleford (0977) 447755  
  Hawes Timber (Leeds) Ltd.  
  Leeds (0532) 340452  
  Hawes Timber Sheet Materials Ltd.  
  Leeds (0532) 231112

- Find a timber merchant who will supply you with European Hardwood.  
  Give his name and phone number including the code for the town.

- Find a timber merchant who will supply softwoods to the trade.

- Find a timber merchant who will supply you with carcassing.

- Which companies would supply you with plywoods?
This can sometimes be quite difficult – if you can’t find what you are looking for or if you are not sure where to look!

An Index lists the contents of the book in \textit{Alphabetical order} and gives the page numbers you need.

Look at this example of part of an index:

- damp proof course 182-4
- dead knots 20-3
- deciduous trees 6
- degraded timber 24-6
- dimension saw 140-1
- disc sander 159
- doors 130-1
- double roof 210
- double tenon 171
- dovetail:
  - halving 178
  - joint 185-8
  - lapped 185
  - nailing 247
  - proportions 185
  - saw 58-9
  - template 49, 176
- dowel, bit 78, 79
- dowel, cradle 12
- dowel, joints 172, 174

- List the pages where you could find information on a dovetail joint
- How many pages give information on degraded timber?
- Which pages refer to a dovetail template?

\textbf{Why is it useful to have an index?}

- you can save a great deal of time when looking for information
- you can quickly see whether a book has the information you require
- you can build up a list of books which have the information you require.
Using any standard craft technology book for carpenters and joiners try to find out the following:

1. Study the contents page and find a chapter on **Plywood and Manufactured Boards**.
   Scan through the sub headings until you come to **Adhesives for Wood**.
   Find out what **PVA** stands for.

2. Study the index – find **Timber**.
   Find the full name of **TRADA** and mention one test carried out by this organisation.

3. Find a chapter on **Timber preservation**.
   Look under **dry rot** and find the name of the **fungus** which is responsible for most of the destruction of timber buildings.

4. Find a chapter on **Timber seasoning**.
   Find the section on **Air seasoning** and say how **hardboard boards** are stacked in air seasoning.

5. Find a chapter on **Insulation**, section **Heat Transfer**.
   Find and list **three ways of heat transfer**.

6. Find **saws** and describe the **plate saw**.

7. Answer this question – Could you carve **sycamore**?
Use a standard text book.

Look in the index to find the information you need and fill in the missing words.

**Manufactured Boards**

Examples of manufactured boards often used in joinery are p________ wood, b___________ board, f__________ board and c_________ board.

**Plywoods** are manufactured from ____________ peeled from a log, ____________ together up to the necessary and with the grain of each veneer at right ______________ to the next. There will usually be an odd number of ____________ in a ____________ so that the grain of ____________ faces will run the ____________ way and the board will be ____________ ‘b’ ____________.

**Blockboards** are meant to be a cheaper ____________ to the thicker _____________. They are likely to be ____________ slight ____________ stable than ____________ but are very useful for ____________ joinery which needs _______ unframed, rigid, flat ____________, as in cupboard carcass _____________.

Blockboards are ____________ suited to ____________ use since the cores are usually ____________ with UF resin and may be only spot

**Laminboards** are like ____________ but the cores are made _______ from ____________ 3-7 mm _______ , producing a heavier, ____________ stable ____________.

**Chipboards** are made from wood _______ or particles derived from forest thinnings or from ____________ production.

Answers on page 62
Manufactured Boards.

Examples of manufactured boards often used in joinery are plywood, blockboard, laminboard and chipboard.

**Plywoods** are manufactured from veneers peeled from a log, bonded together up to the necessary thickness and with the grain of each veneer at right angles to the next. There will usually be an odd number of veneers in a board so that the grain of both faces will run the same way and the board will be ‘balanced’.

**Blockboards** are meant to be a cheaper alternative to the thicker plywood. They are likely to be slightly less stable than plywood but are very useful for interior joinery which needs unframed, rigid, flat panels, as in cupboard carcass construction. Blockboards are not suited to external use since the cores are usually glued with UF resin and may be only spot glued.

**Laminboards** are like blockboard but the cores are made up from veneers 3-7 mm thick, producing a heavier, more stable panel.

**Chipboards** are made from wood chips or particles derived from forest thinnings or from joinery production.
Reading

Please tick a box

I now understand that there are different ways of reading
Yes No

I know which one to use to suit my purpose
Yes No

I know how to find information quickly
Yes No

I know how to make notes from a passage
Yes No

I require further work on

If you have answered NO to any of these questions try reading this section again or ask your tutor to help you.
The **AIM** of communicating by writing is:
**To Get the Message Across by**
- being clear
- being brief
- keeping it simple, straight forward
- getting the right tone
- using the most suitable words for the purpose
- keeping the reader's interest
- Having a clear and attractive layout (presentation).

Look at this note left for the milkman:

```
Dear Milkman
I'm just writing to tell you that we will need an extra pint as my aunty is coming over from America to stay for several weeks. We haven't seen her since 1979 so we're all really looking forward to seeing her. She likes orange juice too so if you could leave a carton sometime I'd be grateful.

Thanks
Mrs Smith
```

- Is it brief? Has the milkman got time to read all this?
- Is the message clear (when has he to leave the extra order)?
- Is it right for the purpose?
- Does the milkman need all of this information?

Does it get the message across?

**No!**
The milkman will now have to call back to Mrs Smith's and get all the details.
Matching your style of writing to the type of work you are doing.

Are you writing any of these?   yes   no

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>a postcard to a friend</td>
</tr>
<tr>
<td>2</td>
<td>a letter to a widowed relative</td>
</tr>
<tr>
<td>3</td>
<td>an assignment</td>
</tr>
<tr>
<td>4</td>
<td>a project</td>
</tr>
<tr>
<td>5</td>
<td>a letter to a friend</td>
</tr>
<tr>
<td>6</td>
<td>an essay</td>
</tr>
<tr>
<td>7</td>
<td>instructions for use of a machine</td>
</tr>
<tr>
<td>8</td>
<td>a report</td>
</tr>
<tr>
<td>9</td>
<td>notes for yourself</td>
</tr>
<tr>
<td>10</td>
<td>a memo</td>
</tr>
<tr>
<td>11</td>
<td>a Curriculum Vitae</td>
</tr>
<tr>
<td>12</td>
<td>a job application</td>
</tr>
</tbody>
</table>

1,5,9 can be chatty and as informal as you like
2 need to be thought about carefully
7,8,10 need to be brief but very clear
11,12 need to follow certain rules – consider layout etc.
3,4,6 you will have been told how to organise these – if not ASK!

Ask yourself – who’s going to read it?
What is it? • it's a series of marks eg. commas, full stops, question marks, capital letters which are put into writing.

What does it do? • it helps to make the sense clear and it helps the writer to organise his words.

FULL STOP
Shows the end of a sentence.
A sentence begins with a capital letter and ends with a full stop.
A sentence should be complete and make sense.
eg. Douglas fir is a very strong wood.

COMMA
Shows a pause and is used to:
- separate items in a list
  eg. Joiners & Carpenters lay floorboards, hang doors, fit windows and make staircases
- separate different parts of a sentence
  eg. This particular softwood, which comes from Brazil, is suitable only for joinery
- separate a name or a description within a sentence
  eg. One of the hardest of softwoods, Douglas fir, comes from Canada.

QUESTION MARK
Shows a question has been asked – it completes a sentence like a full stop.
eg. Where does Parana pine come from?

CAPITAL LETTERS
Are used at the beginning of sentences and for proper nouns (eg. town, countries, names and titles)
eg. Redwood comes from the Baltic countries and North Russia.

EXCLAMATION MARK
Shows an order “Turn the machine off!”
Used when shouting “Help!” “Fire!”
Used to show emphasis eg. “The accident was terrible!”
eg. “That scaffolding is incomplete so don’t use it!”
Without punctuation this passage would not make sense.

1. Look at this passage. It has no punctuation in it. Can you sort out the different words?

```plaintext
whats the difference between a joiner and a carpenter? A carpenter is the one who does everything to do with timber on a building site and a joiner is the one who makes cabinets, doors, windows and other things. Both of them have to choose the correct timber, cut it to size with saws and then fix it into the right position using the necessary tools they need to be able to read drawings and work quickly and accurately to given measurements. Some of the jobs they may do include laying floorboards, hanging doors, fitting windows, making and installing staircases, fitting fitted wardrobes and making and installing kitchen units. Physical strength and the ability to cope with poor weather conditions are vital.
```

2. This is the passage with the words sorted out. Can you put in full stops, commas and question marks?

```plaintext
What's the difference between a joiner and a carpenter? A carpenter is the one who does everything to do with timber on a building site and a joiner is the one who makes cabinets, doors, windows and other things. Both of them have to choose the correct timber, cut it to size with saws and then fix it into the right position using the necessary tools they need to be able to read drawings and work quickly and accurately to given measurements. Some of the jobs they may do include laying floorboards, hanging doors, fitting windows, making and installing staircases, fitting fitted wardrobes and making and installing kitchen units. Physical strength and the ability to cope with poor weather conditions are vital.
```
3. This is the passage with some **punctuation marks** in it – full stops, commas and questions marks. Can you put in capital letters?

What's the difference between a joiner and a carpenter? A carpenter is the one who does everything to do with timber on a building site and a joiner is the one who makes cabinets, doors, windows and other things. Both of them have to choose the correct timber, cut it to size with saws and then fix it into the right position using the necessary tools, they need to be able to read drawings and work quickly and accurately to given measurements. Some of the jobs they may do include laying floorboards, hanging doors, fitting windows, making and installing staircases, fitting fitted wardrobes and making and installing kitchen units, physical strength and the ability to cope with poor weather conditions are vital.

4. This is the passage with **capital letters** in it.

What's the difference between a joiner and a carpenter? A carpenter is the one who does everything to do with timber on a building site and a joiner is the one who makes cabinets, doors, windows and other things. Both of them have to choose the correct timber, cut it to size with saws and then fix it into the right position using the necessary tools, they need to be able to read drawings and work quickly and accurately to given measurements. Some of the jobs they may do include laying floorboards, hanging doors, fitting windows, making and installing staircases, fitting fitted wardrobes and making and installing kitchen units, physical strength and the ability to cope with poor weather conditions are vital.

We can now understand the passage
Have a go. Look at these three passages about wood.
Put in capital letters, commas and full stops.

1. **Douglas fir**
   one of the hardest of the softwoods douglas fir is found in the pacific coast region of the usa and canada a very strong wood reddish brown in colour it is available in long lengths and large sections there are no problems when working this wood either by hand or machine

   **Answer:**

2. **Parana pine**
   this softwood which comes from brazil in south america is suitable only for interior joinery its brittleness and lack of durability render it unsuitable for exterior use the timber is practically knot-free and comes in long lengths it is light to darkish brown in colour

   **Answer:**

3. **Redwood**
   this wood imported in large amounts from the baltic countries and north russia is also grown in scotland it is the softwood used the most in great britain a pale reddish brown in colour it is used for all classes of work in building being durable easy to work with and straight grained sometimes knots may be a nuisance some of its uses are for joists flooring beams windows doors and rafters.

   **Answer:**
Rewrite the following, putting in capital letters, full stops and commas.

The History of Sawing
1. The felling of trees took place in autumn and winter months not
   spring and summer because the sap was down at this time
2. Craftsmen thought that it made the timber more durable and that in
   the case of elm it gave the wood a better colour
3. The sawing of tree trunk into planks a very time-consuming business
   was still done by hand well into the twentieth century
4. The men worked over a sawpit often a permanent construction as
   deep as 6' and as long as 15'
5. The saw in use was a pit saw often of 7' tapering in width from 10'' at
   the top to about 3'' at the bottom end
6. Crosscut sawing a much easier process than pit sawing used a two
   handled crosscut saw
7. Some sawpits still in existence in the chiltern woods remind us of the
   pit sawyers at work
8. As the tannin is contained in the bast layer the bark was peeled fro; a
   the trees in cylindrical sections during april may and june when it
   was easily removed

Answers:
What is it?

Grammar is the science of the correct use of language.

It's about the structure of language and about obeying the rules of a language.

If we say:  
"It were shocking, that accident"  
or  
"Me and him was going to the match"

we are not obeying the rules of grammar.

Often we know if something doesn’t look or sound right and we can alter it or ask someone to help us.

Let’s look at some of the main parts of grammar.

<table>
<thead>
<tr>
<th>Sentence</th>
<th>Noun</th>
<th>Adjective</th>
<th>Verb</th>
</tr>
</thead>
</table>

**Sentence**  
This is words put together to make complete sense.  
A sentence must have a verb in it.  
eg. Some 40,000 accidents occur each year in the construction industry.

**Noun**  
The name of an object or person or place:-  
eg. timber, tool, Bill, Newcastle.

**Adjective**  
A word which describes a noun:  
eg. the tool is sharp, heavy timber, a long ladder.

**Verb**  
A word which describes an action:  
eg. he lifted the load, we will report the accident, I was wearing a safety helmet and gloves.

**Remember**  
am, are, is, have, has, had, was, were, would, could, should are all verbs.

Use Grammar well and you will get the message across. You will communicate well.
Try to complete these sentences with suitable words.

1. Felling is the process of cutting down

2. It is done when trees have reached

3. It is also done if trees need

4. When the tree has been felled, the branches are cut off and the trunk

5. The log is the part of the tree which is converted
Using Key Words to Form Sentences

Make up sentences from these key words.

Example:

<table>
<thead>
<tr>
<th>tree</th>
<th>three</th>
<th>roots, stem and crown</th>
</tr>
</thead>
<tbody>
<tr>
<td>A tree is made up of three main parts which are roots, stem and crown</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Most timber carpentry and joinery use softwood Sweden, Finland and USSR

2. Spruce known world Christmas

3. Parana Pine long lengths knot-free suitable interior joinery

4. Tropical hardwoods rain forests South America, Africa and S.E. Asia

5. Western red cedar durable immune insects or fungi
Using Key Words to Describe a Process

Use the jumbled words in the box to describe the process of conversion.

What is conversion?

sawn living trees

thinning out log removed

mature cutting down felling

branches converted

broken down timber

pieces for specific purposes

Answer:
It may seem that a dictionary is hard to use if you've no idea how to spell a word.

**Think** first how the word might be spelt. Let's imagine this situation.

You have been told to use phenol formaldehyde adhesive to glue a component (eg. window) which you are assembling. Certain adhesives can be harmful to the skin and before you start you wish to check this one using the Harmful Substance Guide.

What would you do?

1. Write down the word as you think it might be spelt – fenall
2. Use the dictionary to check the word.
3. It's not there.
4. Think how else it could be spelt. What about Phenall.
5. Check the dictionary and find the correct spelling – phenol

Keep trying – Don’t give up.
Do you ever have problems spelling certain words?

Yes  No

We all do. Here are some techniques to help you to improve your spelling.

- **Use spelling rules** – remember i before e except after c.
  (eg. the joiner gives the client a receipt for the meal)

- **Break down words into smaller bits** – it makes them easier to learn.
  (eg. syc a more – sycamore)

- **Try to see the word in your mind’s eye** as you write it.
  ![conversion]

- **Use trick ways of remembering.**
  (eg. bus is in business)

- **Say the word out loud sounding out any silent letters.**
  (eg. this wood has a lot of k-nots in it)

- **Write the word over and over** concentrating on the difficult bit.
  (eg. fungicide fungicide fungicide fungicide)

- **Look for any familiar bits within a word** which will help you to remember it.
  (eg. ma hog any)

- **Adding bits to a word.** If you know the word convert – you can make others from it.
  (eg. conversion, converting, converted)
Some words are difficult and need a bit of thought.

**Have a go at spelling the following words correctly:**

- **b u s ______** - a firm which employs people eg. Jones Joinery Firm
- **r e c ______ t** - trade suppliers give this piece of paper to show payment has been made
- **g _____ rd** - for safety's sake, you need to be on this when working in the construction industry
- **c a u _____** - your boss may give you a warning if you’re not wearing a hard hat on a building site
- **h a _____ d** - a danger (there are many in the construction industry)
- **h e a ____** - you need to be in good _____ when doing a physical job in the construction industry
- **e _____ p m e n t** - safety helmets, footwear, ear muffs and goggles are all part of this.

**Check in a Dictionary.**
These woods have been sawn up into pieces. Put them back together to find five hardwoods and five softwoods.

**Hardwoods** eg. Keruing

- ker
- ch
- ro
- more
- ing

**Softwoods** eg. Redwood

- las
- wood
- dar
- wood
- red
- doug
- a
- na

**Answers:**

- keruing, sycamore, beech, iroko, afrormosia
- whitewood, redwood, douglas fir, para, pine, western red cedar
<table>
<thead>
<tr>
<th>Timber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Douglas fir</td>
</tr>
<tr>
<td>Sapele</td>
</tr>
<tr>
<td>Redwood</td>
</tr>
<tr>
<td>Utile</td>
</tr>
<tr>
<td>Parana pine</td>
</tr>
<tr>
<td>Beech</td>
</tr>
<tr>
<td>Western hemlock</td>
</tr>
<tr>
<td>Elm</td>
</tr>
<tr>
<td>Western red cedar</td>
</tr>
<tr>
<td>Keruing</td>
</tr>
<tr>
<td>Whitewood</td>
</tr>
<tr>
<td>Meranti lauan</td>
</tr>
<tr>
<td>African mahogany</td>
</tr>
<tr>
<td>Oak</td>
</tr>
<tr>
<td>Afrormosia</td>
</tr>
<tr>
<td>Sycamore</td>
</tr>
<tr>
<td>Iroko</td>
</tr>
<tr>
<td>Teak</td>
</tr>
</tbody>
</table>

Check you can spell all these names of timber. Find ways to help you.
Match the 2 halves from these words connected with safety to form complete ones.

Example:

<table>
<thead>
<tr>
<th>hel</th>
<th>jury</th>
</tr>
</thead>
<tbody>
<tr>
<td>acci</td>
<td>ture</td>
</tr>
<tr>
<td>safe</td>
<td>ious</td>
</tr>
<tr>
<td>in</td>
<td>met</td>
</tr>
<tr>
<td>frac</td>
<td>ty</td>
</tr>
<tr>
<td>ser</td>
<td>tect</td>
</tr>
<tr>
<td>pro</td>
<td>dent</td>
</tr>
</tbody>
</table>

Write the complete words here:

Remember

1. Learn how to work safely.
2. Obey safety rules.
3. ASK your supervisor if you don’t understand any instruction.
4. Report to your supervisor anything that seems dangerous, damaged or faulty.
Some of these words are spelt incorrectly. If you are not sure of the correct spelling use a dictionary to help you.

Write out the correct spellings under each paragraph. Make sure you learn the correct spelling.

1. When working in the construction industry you must all-ways / always / allways ware / were / wear the correct saftey / safety clothing. Be on your gard / guard / gaurd at all times and antisipate / anticepate / anticipate hazzards / hazerds / hazards. Be prepared to act immediately / immeadiatly / immediatley if you see a danjerous / dangrus / dangerous situation.

2. Trees can be divided into hardwoods and softwoods. Most softwoods come from conniferus / coneifferus / coniferous trees whose needle – leaves / leaves / leafs are retained during winter. Hardwoods have brawd / brode / broad leaves which are usually / usally / usually shed in winter.

3. When the tree is feld / felt / felled and connverted / converted / conv...verted to boards the excess moisture / moysture / mosture must be removed. This prowces / process / proccess is called seasonning / seasoning / seesoning.

Use a dictionary to help you.
Form words:

1. __r__n__r  
   worker who does everything to do with timber on a building site.

2. o__e__  
   he makes cabinets, doors, windows etc.

3. __b__  
   the material you need to make cabinets...

4. __u__g/___e  
   the place where most joiners and carpenters work.

5. a__  
   you cut timber with this.

6. o__o_d__  
   you lay these.

7. t__o__  
   you use these to help you.

8. __n_s_r_c__  
   building.

9. c__o_o__  
   a preservative.

10. a__o__  
    trees that lose leaves are called...

11. __h__n__  
    a reddish brown wood from W. Africa.

12. __l_g____/___e_  
    Douglas fir is used to make these.

13. __l__  
    Ercol furniture is made of this.

14. __n_e_i__  
    the process of getting timber ready for use after felling.

15. __a_u_m____  
    you need to be good at figures to work these out.
Fill in the missing letters to form names:

1. A tree from Canada & USA used for interior/exterior joinery. \_o\_l\_i\_

2. A non-durable Brazilian timber used for plywood. \_r a\_e\_

3. A white European timber. \_u\_e\_r\_c\_

4. A West African timber which is very durable. \_f\_r\_o\_i\_

5. A reddish brown Malaysian timber. \_e\_u\_n\_

6. A white European perishable timber. \_y\_o\_

7. A very durable Burmese timber. \_e\_

8. This timber is produced in Malaysia, Indonesia and the Philippines. \_m\_a\_a\_

9. A yellowish timber from Indonesia. \_m\_

10. A timber with a coarse grain from East Africa. \_o\_o

Consult the table in this section – if you need help
- Write about why you decided to become a joiner/carpenter.
- What subjects were you good at in school?
- Did you enjoy these subjects?
- Can you explain why?
- Did anything else influence you in your decision to become a joiner/carpenter?
- Do you enjoy your job and the training you are receiving?
- Which are the most satisfying parts of the job/training?
- What plans have you got for the future?

**Remember**

- Think about the subject
- Plan what you want to write
- Write down any ideas or words
- Write out a rough version
- Read it through
- Check it
- Alter it, add to it if necessary
- Write it out neatly
Imagine you are Barry Smith and you witnessed the accident reported on the Accident Report form at the end of this section.

Write the details of the accident and include:

- where the accident happened
- what Andrew Cooper was doing at the time
- what happened
- what injuries Andrew Cooper received
- who the accident was reported to
- any other details

Plan carefully what you are going to write.

Make sure you have answered all the questions above and included all the necessary details.

Check:

- Have you answered the questions in a sensible order?
- Have you checked your writing for mistakes?
- Do you need to check spellings in a dictionary?
- Have you used the correct punctuation?
- Have you communicated well?
Some reasons for writing a letter:

- to ask for information/brochures for holidays
- to enter a competition
- to thank someone for a present
- to apply for a job
- to complain to a firm/manufacturer
- to express an opinion (letter to a newspaper)
- to invite a friend/relative to
- to accept a wedding/party invitation
- to order goods
- to send news to a friend/relative
- to send get well wishes to someone
- to congratulate someone (passing driving test)
- to send a present/photos etc.
- to send an excuse note.

Any others? Can you add some of your own?

<table>
<thead>
<tr>
<th>Which of these have you written?</th>
</tr>
</thead>
</table>
A business letter is written for a specific purpose – for example, sending for a catalogue or brochure, making a complaint or applying for a job.

**Remember**

- **be clear** – give all the relevant points and details so plan it out carefully beforehand.

- **be concise** – keep to the point so do not include unnecessary information.

- **be courteous** – write in a polite way and the recipient (the person you are writing to) will look favourably on your request.

Follow the layout of a letter given on the next page.
Dear Mr Williams

With reference to your delivery of interior doors made on 12 March, we have checked the order thoroughly and find that there are 2 doors missing. Could you look into this for us as soon as possible and let us know when we may receive the missing items.

I look forward to a reply by return of post if at all possible as we would like to sort this matter out quickly.

Yours sincerely

Mick Jones
Warehouse Manager

Remember to print (or type) your name and title under your signature.

If you started Dear Sir or Dear Madam you should end with Yours faithfully. If you have written to a named person eg. Dear Mr Williams then end with Yours sincerely.
I am writing to ask you for

I look forward to hearing from you

thank you for your letter

dated 13th March

I would like to request a copy of your

I enclose a stamped, addressed envelope

I am a student at ...........

in reply to your letter

I apologise for the delay in replying to your letter
You've seen this advert in the local paper.

Write a letter applying for the job.

<table>
<thead>
<tr>
<th>SITUATIONS VACANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bricklayers, Joiners, Plasterers, General Labourers, Ground Workers Urgently required</td>
</tr>
</tbody>
</table>

Please write to:
Mr R Thorpe
COMPACT BUILDERS
Ashgate Road
Lincoln
LN2 4GH

For more information phone:
Lincoln (0522) 323673

- Turn to page 94

"What do you need to put in your letter?" for help in planning it.
Youth Training Apprenticeships and Traineeships in Construction

The Building Services Department invites applications from school leavers and unemployed young people on their Construction Trades Youth Training Apprenticeship Programme.

Apprenticeships/Traineeships are available in the following craft skills.

Electrical Apprenticeships
Duration: Normally 4 years. Pay: Nationally agreed rates of pay apply commencing at £102.58 per week. Qualifications: 4 GCSE's Grade 'C' or better including Maths, English and a science subject.

Building/Building Services Apprenticeships
(Including Joiners, Bricklayers, Painters, Plasterers and Gas Fitters)
Duration: Normally 3.5 years or 4 years dependent upon trade. Pay: Training allowance will be £40 per week during the first year of training. Qualifications: GCSE passes in Maths, English and a craft subject would be an advantage.

General Construction/Roadworker Trainees
Duration: Normally 2 years. Pay: Training allowance will be £40 per week during the first year of training. Qualifications: No specific qualifications are required but GCSE passes would be advantageous.

Practical training will be undertaken throughout the district on sites/depots of the Departments and at local colleges of further education.

All apprentices and trainees will study in order to obtain nationally recognised vocational qualifications to NVQ levels II and III.

The training will commence in June 1992.

Protective Clothing and basic tools will be provided.

Applicants must be resident within the Metropolitan District Council and must be under 18 years of age as at 1st September, 1992. Applications from registered disabled persons up to 21 years of age will also be considered.

Application forms are available from Building Services Department, Town Hall (Telephone: Nuneaton 386143).

You have seen this advert in the newspaper and think it may suit a friend of yours who is unemployed. Your friend asks you to help him.

- Study it carefully.
- Write a letter to the address given asking for an application form.
Write to one of the addresses on the next page to obtain information on one of the following:

- types of doors
- types of windows
- plywoods

Look at the sheet of useful addresses on the next page. Select one and write a letter to that firm requesting trade literature for a project you are working on at College on:

- door furniture (handles, knobs etc.)
<table>
<thead>
<tr>
<th>Company Name</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Boddy Timber Ltd.</td>
<td>Riverside Sawmills</td>
</tr>
<tr>
<td></td>
<td>BOROUGHBRIDGE N Yorkshire YO5 9LJ</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Landau (Kitchen units and components)</td>
<td>Landau House</td>
</tr>
<tr>
<td></td>
<td>Broughton Avenue Hull</td>
</tr>
<tr>
<td></td>
<td>HU5 4BR</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>John Carr Sales Ltd.</td>
<td>Watchouse Lane</td>
</tr>
<tr>
<td></td>
<td>DONCASTER South Yorkshire DN5 9LR</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Knobs and Knockers</td>
<td>36-40 York Way</td>
</tr>
<tr>
<td></td>
<td>LONDON N1 9AB</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Sagar's and Co. Tools and Machinery</td>
<td>75a-79 Castle Road</td>
</tr>
<tr>
<td></td>
<td>SCARBOROUGH YO11 1BH</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Howarth Timber (Wakefield) Ltd.</td>
<td>Doncaster Road</td>
</tr>
<tr>
<td></td>
<td>WAKEFIELD West Yorkshire</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Scott &amp; Sargeant</td>
<td>24-26 East Street</td>
</tr>
<tr>
<td></td>
<td>HORSHAM Sussex RH12 1HL</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Health &amp; Safety Executive Library &amp; Information</td>
<td>Broad Lane</td>
</tr>
<tr>
<td>Executive</td>
<td>SHEFFIELD S3 7HQ</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Unilock</td>
<td>Latchmere Road</td>
</tr>
<tr>
<td></td>
<td>LEEDS West Yorkshire LS12 6EB</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Jewson</td>
<td>City Sawmills</td>
</tr>
<tr>
<td></td>
<td>Clarence Road LEEDS West Yorkshire</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>British Plywood Manufacturers</td>
<td>Wharf Road</td>
</tr>
<tr>
<td></td>
<td>Ponders End ENFIELD Middlesex EN3 4TS</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>T.R.A.D.A. (Timber Research and Development</td>
<td>18 Park Row</td>
</tr>
<tr>
<td>Association)</td>
<td>LEEDS LS1 5JA</td>
</tr>
</tbody>
</table>
What do you need to put in your letter?

- Name and Address of the firm or the person you are writing to
- Your address and postcode
- A reference number if there is one
- The date
- Dear Sir/Madam
- Dear Mr Jones/Mrs Smith

Remember:
- Dear Sir/Madam – ends with Yours faithfully
- Dear Mr Jones – ends with Yours sincerely

All the necessary points for the letter (planned out carefully beforehand)

Your name (signed and then printed underneath)

Remember:
- be clear
- be concise
- be courteous.
Start the address about halfway down, leaving plenty of room for the postmark.

Set the address well in from the left-hand side.

Put the stamp in the top right corner but not too near the edge.

The Manager
John Carr Sales Ltd.
Watchouse Lane
DONCASTER
South Yorkshire
DN5 9LR

18p

Line up the name and address to the left.

Place the postcode on the last line by itself. Use capital letters and no punctuation marks. Leave a space between the two parts.

Write the name of the town in capital letters.
Address the envelopes below to the firm you have selected from the useful address sheet.

Write the address here:
Remember to follow these points:

- a memo is only used inside an organisation/firm

- a memo is used for communicating short pieces of information

- you don’t need Dear Mr Jones/Mrs Smith or Yours sincerely

- a memo is normally brief but contains all the necessary information

- sign or initial the memo

- use the layout on the next page.
MEMORANDUM

To: E Simpson, Foreman
From: D White, Manager
Ref: DW/KLT Tel: Ext 123
Date: 12 March 1993

Subject: Complaint about new kitchen

Mrs Jones has telephoned to complain about her new kitchen. The doors are not hanging properly and are not staying shut. Would you please make sure this is dealt with.

D. White

Imagine you are the foreman.

Send a memo back to the manager telling him you have dealt with the problem and saying how you did it.
## Curriculum Vitae

<table>
<thead>
<tr>
<th>Name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Tel No.</td>
<td></td>
</tr>
<tr>
<td>Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Qualifications</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Exams to be taken</td>
<td></td>
</tr>
<tr>
<td>Work Experience</td>
<td></td>
</tr>
<tr>
<td>Interests</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>References</td>
<td></td>
</tr>
</tbody>
</table>

### Remember

to take note of these points:

- **Curriculum Vitae (CV)** is Latin for 'the course of one’s life'
- you are giving **details** of your **life** and **career** which are relevant to the **job** for which you are applying
- set the **CV** out **clearly** following the **layout** on the next page
- use **headings** and put **dates** in chronological order
- you should send a **handwritten letter** with your CV when applying for a job.

### Core Skills

| C:2:2 |

### Basic Skills Standards

| C:15:2 |
Curriculum Vitae

Name
Andrew James Cooper

Address
34 Newstead Avenue, Prestfield, Lancs PR2 5JS

Telephone No
0772 251954

Date of Birth
21.01.75

Age
18

Education
1986-1990
Middlethorpe High School
1990-1992
Prestfield College, Construction Sector

Qualifications
1991
GCSE
English grade D
Maths grade D

Exams to be taken
June 1992
NVQ Carpentry & Joinery
Level II

Work Experience
1990-1991
Jones Joinery Ltd.
Church Street
Prestfield

Interests
Stanford Rugby League Club, member of school
rugby team, swimming (gold medal, life saving),
cinema, making furniture, played trumpet in
school orchestra.

References
Mr D Smithson, Headmaster
Middlethorpe High School
Stafford Road, Prestfield PR2 3DE

Mr S West, Head of Construction Sector
Prestfield College
Prestfield, Lancs PR1 8TQ

Remember

• Write a Curriculum Vitae on a separate sheet
  of paper to your letter.

• Use the headings given in the example and
  fill in your own details.

• Remember to give details of your interests
  both at school and at home.

• Write the information clearly and neatly so
  that it can be easily read.

• Ask someone to check your spelling if you
  are unsure.

• If possible type it or get it typed.

• Take photocopies so you have them ready in
  case you apply for more jobs.
Fill in your own details on the CV:

<table>
<thead>
<tr>
<th><strong>Curriculum Vitae</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
</tr>
<tr>
<td><strong>Address</strong></td>
</tr>
<tr>
<td><strong>Telephone No</strong></td>
</tr>
<tr>
<td><strong>Date of Birth</strong></td>
</tr>
<tr>
<td><strong>Age</strong></td>
</tr>
<tr>
<td><strong>Education</strong></td>
</tr>
<tr>
<td><strong>Qualifications</strong></td>
</tr>
<tr>
<td><strong>Exams to be taken</strong></td>
</tr>
<tr>
<td><strong>Work Experience</strong></td>
</tr>
<tr>
<td><strong>Interests</strong></td>
</tr>
<tr>
<td><strong>References</strong></td>
</tr>
</tbody>
</table>
When might you need to fill in a form? – here are some suggestions:

- when joining a library
- when applying for a season ticket (rugby/football)
- when joining a night school class
- to get a doctor’s prescription
- to join a Union
- to book a holiday
- to apply for insurance
- to tax a car
- to order materials for work
- to report an accident at work.

Have you filled in any other forms recently?

Some forms are simple and can be filled in fairly quickly.
Some are more complicated and need thinking about.

Remember:

- Take your time and read through the form carefully.
- Search for information required eg. National Insurance Number.
- Look up words you are not sure of in a dictionary or ask for help.
- Write it out in rough and ask someone to check it for you.
- Follow any instructions such as PLEASE USE CAPITAL LETTERS.
We need to fill in a variety of forms in our daily life.

Here are some examples:

To send for information
- Send for our free brochure
- Mr/Mrs/Miss: ...........................................
- Address: ..................................................
- Quality and design is our trademark

To send a donation
- I am pleased to enclose £..........................
- as a donation to the HELP CHILDREN
- Please send me further information on
- the HELP CHILDREN SOCIETY
- Name: ..................................................
- Address: ..............................................
- HELP CHILDREN

To enter a competition
- **Win a holiday in Paris**
- Answer the following questions:
  - The Eiffel Tower is in  
    - Amsterdam
    - Paris
    - Madrid
  - The Champs Elysées is  
    - a road
    - a café
    - a meal
  - Complete this in less than 15 words:
    - I would love to go to Paris because:
      - ..................................................
- Name: ..................................................
- Address: ............................................

To order something by post
- Size | 14 | 14½ | 15 | 15½ | 16 | 16½ | 17 | 17½ |

- Please state colour: ..................................
- I enclose a cheque value £........................
- made payable to Classy Shirts of Northampton
- Signature: ...........................................
- Name: ..............................................
- Address: ...........................................

To join a library
- CENTRAL LIBRARY
- Name: ..............................................
- Address: ............................................
- Age: .................................................
- Tickets required: .................................

Core Skills
- C:1.2

Basic Skills Standards
- C:3
**Accident report form**

<table>
<thead>
<tr>
<th>Name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remember to take note of these points:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• think first, don’t rush into it</td>
</tr>
<tr>
<td>• read through the whole form first</td>
</tr>
<tr>
<td>• be sure you understand everything if not, ask</td>
</tr>
<tr>
<td>• do it in pencil first not ink</td>
</tr>
<tr>
<td>• make sure you have answered everything you can</td>
</tr>
<tr>
<td>• ask someone to check it with you</td>
</tr>
<tr>
<td>• write clearly in the space allowed.</td>
</tr>
</tbody>
</table>
Select a task and fill in the accident form on the next page with the required information.

**TASK 1**
You are digging on a building site when you disturb a rat which bites you. You have to go to the hospital to receive a tetanus injection. Fill in the accident report form with as much detail as you can.

**TASK 2**
You are working on a housing development site when a bull from a neighbouring field attacks you. You receive injuries to your leg, (fracture) and need hospital treatment. Fill in the accident report form with as much detail as you can.

**TASK 3**
You are working on a new house fitting windows to the upper storey. As you are climbing the ladder you overbalance and fall off breaking your right arm. You receive treatment at Casualty. Fill in an accident form in as much detail as possible.

**TASK 4**
You are boxing central heating pipes in an old house. There is a gas leak which causes an explosion. You receive burns to face and arms which need hospital treatment. Fill in the accident form in as much detail as possible.
Notice of Accident - Injury and Dangerous Occurrence

Full Name and Address of Injured Person: .................................................................

Date of Birth: .......................................................... Male/Female: ................................

Occupation: .............................................................................................................

Date of Commencement: .........................................................................................

<table>
<thead>
<tr>
<th>Was in the injured person in the employ of your department - YES/NO</th>
<th>Resident</th>
<th>Volunteer</th>
<th>Visitor</th>
<th>Client</th>
<th>Schoolchild</th>
<th>Specify Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>If not, please specify (tick the box)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When did the accident occur? Date: ........................................... Time: .................. a.m./p.m.

Hours worked: ............................................................................................

Hours normally worked: ............................................................................

Exact place where accident happened: ....................................................

When was the accident reported and to whom: ........................................

When accident was entered into accident book: ........................................

Are you satisfied that the accident occurred as stated: ................................

What injuries were received: ........................................................................

(please state left or right where appropriate) ............................................

What was person doing at the time of the accident: ....................................

Kind of Accident

Indicate what kind of accident led to the injury or condition (tick one box)

<table>
<thead>
<tr>
<th>Contact with moving machinery or material being machined</th>
<th>Injured whilst handling, lifting or carrying</th>
<th>Trapped by something collapsing or over-turning</th>
<th>Exposed to an Explosion</th>
<th>Contact with electricity or an electrical discharge</th>
<th>Injured by an animal</th>
<th>Exposure to fire</th>
<th>Other kind of accident (give details below)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>8</td>
<td>12</td>
<td>12</td>
<td>14</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>Struck by moving, including flying or falling objects</td>
<td>Slip, trip or fall on same level</td>
<td>Drowning or asphyxiation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Struck by moving vehicle</td>
<td>Fall from a height</td>
<td>Exposure to or contact with a harmful substance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Struck against something fixed or stationary</td>
<td>Distance through which person fell</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Core Skills

C:1.2

Basic Skills Standards

C:8
Agent(s) Involved
Indicate, which, if any, of the categories of agent or factor below were involved (tick one or more of the boxes):

<table>
<thead>
<tr>
<th>Category</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machinery/equipment for lifting and conveying</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portable power or hand tool</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any vehicle or associated equipment/machinery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other machinery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pathogen or infected material</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building, engineering structure or excavation/underground working</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any other agent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process plant, pipework or bulk storage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Live animal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ladder or scaffolding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any material, substance or product being handled used or stored</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas, vapour, dust fume or oxygen deficient atmosphere</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor, ground stairs or any working surface</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity supply cable wiring apparatus or equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction formwork, shuttering and falsework</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moveable container or package of any kind</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction formwork, shuttering and falsework</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas, vapour, dust fume or oxygen deficient atmosphere</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor, ground stairs or any working surface</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
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<td></td>
</tr>
<tr>
<td>Moveable container or package of any kind</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction formwork, shuttering and falsework</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Name and address of witnesses (if any): ..........................................................
..........................................................................................................................
..........................................................................................................................

Is incapacity likely to exceed three days? YES/NO
(not including the day of the accident)

What action has been taken to eliminate hazard? ..........................................
..........................................................................................................................
..........................................................................................................................

Does the incurrence involve a flammable gas incident? YES/NO

Describe what happened: ..................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................

Signature: (Head of Department or Section) ....................................................
Department: ..................................................................................................... Date: ................................

This form must be returned to your Personnel Department WITHOUT DELAY. All serious accidents, dangerous occurrences and gas incidents to be telephoned to the Department at the time of occurrence.

112
Complete the order form requesting the following materials:

- 3 mortice locks (£3.00 each)
- 3 sets of furniture (£1.75 each)
- 2 night latches (£3.50 each)

You require these within **2 weeks of order date**.

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Rate</th>
<th>Date required by</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 mortice locks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 sets of furniture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 night latches</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please supply or order for delivery to the above site the following:

Site manager/foreman

Note: Please advise site within 24 hours of request if order cannot be fulfilled by date required
When might you do these?

At College:
- When copying notes from the blackboard
- When taking dictated notes
- When making notes from textbooks
- When reading manuals/textbooks.

At Home:
- When taking phone messages
- When leaving messages
- When writing lists (of things to buy)
- When using a memory aid (Tel. Tom Tues.)
- When searching through the classified advertisements and comparing prices
- When looking at timetables/magazines, newspapers.

At Work:
- When taking telephone messages
- When making lists of materials for a job
- When making lists of prices for a job
- When looking through trade literature catalogues etc.
1. **MAKE SURE** you understand what you have to take **notes** about.
   Ask your tutor if you are uncertain.

2. **MAKE SURE** you get only the **mainpoints** of **information** down.
   Don't write in full sentences. Just write down **key words/points**.

3. **REMEMBER** you will have your **own** way of taking notes.
   No other person will have the same method. Only **YOU** need to be able to understand your notes.

4. **REMEMBER** not to **cram** notes onto a page or they will be very difficult to understand.
   **SO** – leave **spaces** between notes and leaves **lines** between each section or paragraph.
Objectives:

- In this section you will learn 4 different techniques which will help you when making or taking notes:
  
  1. **Abbreviations** (or shortening words)
  2. **Using symbols** (standard ones or your own)
  3. **Leaving out unnecessary words** (taking down key words)
  4. **Using numbers and letters** (numbering or lettering points help you to order your notes).

Benefits:

- You will save time
- You will be able to take down more information quicker
- Your work will be better organised and clearer
- You will have useful information for revision purposes.
To abbreviate means to reduce or cut short.

tel e

There are some standard abbreviations which may have been seen or used already. Do you know what these mean?

approx. refer. no. intro. v. p.m.

eg. min. equiv. tel. no. a.m.

Look at this example:

He will arrive in 5 mins. at approx. 8 p.m. means

He will arrive in 5 minutes at approximately 8 in the evening.

Try these four sentences. Abbreviate the words in bold print. Remember to put a full stop after the abbreviation.

1. The tree was felled at approximately six in the morning.

2. My brother did City and Guilds Part 1 Craft course in Carpentry and Joinery.

3. The introduction to fixed woodworking machines is very interesting.

4. I am doing a National Vocational Qualification in Joinery & Carpentry.

Answers on page 135
There are many standard abbreviations which will be used on your course, and in the timber trade. You will see them in catalogues and on timber price lists. It will help you if you are familiar with them and can use them easily. They will save you a great deal of time.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EX</td>
<td>sawn to nominal size</td>
</tr>
<tr>
<td>S1S</td>
<td>surfaced one side</td>
</tr>
<tr>
<td>P1S</td>
<td>planed one side</td>
</tr>
<tr>
<td>S1S1E</td>
<td>surfaced one side and one edge</td>
</tr>
<tr>
<td>P1S1E</td>
<td>planed one side and one edge</td>
</tr>
<tr>
<td>S1S2E</td>
<td>surfaced one side and two edges</td>
</tr>
<tr>
<td>P1S2E</td>
<td>planed one side and two edges</td>
</tr>
<tr>
<td>S4S</td>
<td>squared four sides</td>
</tr>
<tr>
<td>P4S</td>
<td>planed four sides</td>
</tr>
<tr>
<td>P.A.R.</td>
<td>planed all round</td>
</tr>
<tr>
<td>V P</td>
<td>vertical plane</td>
</tr>
<tr>
<td>S V P</td>
<td>side vertical plane</td>
</tr>
<tr>
<td>H P</td>
<td>horizontal plane</td>
</tr>
<tr>
<td>H. W.</td>
<td>hardwood</td>
</tr>
<tr>
<td>S. W.</td>
<td>softwood</td>
</tr>
<tr>
<td>INT</td>
<td>interior use only</td>
</tr>
<tr>
<td>BR</td>
<td>boil-resistant</td>
</tr>
<tr>
<td>WBP</td>
<td>weather and boil-proof</td>
</tr>
<tr>
<td>M R</td>
<td>moisture resistant</td>
</tr>
<tr>
<td>U F</td>
<td>urea formaldehyde</td>
</tr>
<tr>
<td>R F</td>
<td>Resorcinal formaldehyde</td>
</tr>
<tr>
<td>PF</td>
<td>Phenol formaldehyde</td>
</tr>
<tr>
<td>PVA</td>
<td>Polyvinyl acetate</td>
</tr>
</tbody>
</table>
Here are some more commonly used **abbreviations**.

Do you know any of these already?

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.d.</td>
<td>air-dried</td>
</tr>
<tr>
<td>k.d.</td>
<td>kiln-dried</td>
</tr>
<tr>
<td>m.c.</td>
<td>moisture content</td>
</tr>
<tr>
<td>p.t. &amp; g.</td>
<td>planed, tongued and grooved</td>
</tr>
<tr>
<td>s.e.</td>
<td>squared edged</td>
</tr>
<tr>
<td>t. &amp; g</td>
<td>tongued and grooved</td>
</tr>
<tr>
<td>t.g.b.</td>
<td>tongued, grooved and beaded</td>
</tr>
<tr>
<td>m.r.</td>
<td>moisture resistant</td>
</tr>
</tbody>
</table>

See if you can find out what these abbreviations mean?

Answers on page 135
Many trees have long names. It may be useful to abbreviate them if you are writing them down often in class or in your job.

Have a go at these:

1. Sycamore  
2. Douglas Fir  
3. Parana Pine  
4. European Redwood  
5. Baltic Whitewood  
6. Columbian Pine  
7. Western Red Cedar  
8. Western Hemlock  
9. African Mahogany  
10. Afrormosia  
11. Japanese Oak  
12. Hickory  
13. Chestnut  
14. Oregon Pine  
15. Meranti Luau

Answers on page 135
Air seasoning
This traditional method of seasoning timber takes place in open-sided sheds and exposes the timber to the joint action of circulating air and temperature. This process expels excess moisture through evaporation. An appropriate reduction in moisture content is a slow process and depends on the amount of exposure, the type of wood (hardwood or softwood) the species of wood and the cross-sectional size.

Write here:
Some **mathematical symbols** are very useful in note-taking.

Do you know what the following mean?

```
\[ \begin{array}{cccc}
\vdots & \vdots & \vdots & \vdots \\
\div & \div & \div & \\
+ & + & + & \\
\% & \% & \% & \\
\end{array} \]
```

ARROWS can also be used:-

- \( \uparrow \) – increase
- \( \downarrow \) – decrease
- \( \rightarrow \) – up to, until

**Try re-writing these sentences replacing words where possible with symbols:**–

1. Because of winter weather outdoor joinery work will decrease in January.

2. It will therefore start to increase in April.

3. Until fairly recently walnut was used extensively for furniture.

4. The percentage of wood from Indonesia has increased.

5. Ninety divided by three is equal to five multiplied by six.

Answers on page 136
This involves looking at the text or passage and making notes in point form.

- Have a look at the following passage.

**SOFTWOODS**

Generally speaking softwoods are not furniture woods, although they can be used internally and for parts that do not show. They are the woods for general carpentry and tend to be much cheaper than hardwoods. Such things as floors and roof trusses in ordinary buildings are made from softwoods, as is much domestic woodwork – usually painted, rather than given a clear finish. However, although softwoods suffer more from wear and tear than hardwoods do, it is possible to protect them with tough modern clear finishes. If the object being made has to be as light as possible, softwood should be used. Softwoods take nails more easily than hardwoods and can be used in situations where hardwoods would need joints cut or the parts screwed together.

- This is how we could present the information in point form.

**SOFTWOODS**

1. Not furniture wood.
2. Can be used internally and for parts that do not show.
3. For general carpentry.
4. Cheaper than hardwoods.
5. Floors and roof trusses made from them.
6. Domestic woodwork (usually painted).
7. They can be protected with modern clear finishes.
8. If object to be light then use softwoods.
10. Use in situations where hardwoods would need joints cut or parts screwed together.
Make notes in point form.

ASH
Ash has an open grain. It is not durable but because of its flexibility and springiness has been the most suitable wood for the shafts of hammers and carts. It can also be used for tools and farm equipment.

Description: 1. .................................................................
2. .................................................................

Ideal for: a) .................................................................
b) .................................................................
and also c) .................................................................
d) .................................................................

WALNUT
Walnut was once used a great deal for furniture – there are many antique pieces as evidence – but it is not so common today. It is brown or brownish – red with a close, fairly hard-textured grain and little prominent marking. It is a strong wood and fairly easy to work so surfaces can be brought to a good finish.

Description: 1. .................................................................
2. .................................................................
3. .................................................................

Qualities: a) .................................................................
b) .................................................................
used for c) .................................................................
Look at this passage and make notes using any or all of the techniques studied:

TIMBER STORAGE
Timber must be looked after before use, or it may be rendered useless by poor storage. It is an expensive material and it is good practice to store and use pieces including fairly small lengths and sections. How to store wood? Longer pieces should be kept straight. They should therefore, because of length, be supported at fairly close intervals. Boards should be stacked neatly on each other so there is no danger of twisting. Anything over 6' is better supported horizontally than left standing upright as there is a danger of it bowing.
Some pieces are not long enough to store horizontally and for these a rack is convenient. Pieces are stored on end and divisions can be made to prevent wood falling over when the rack is not full. Very small pieces which are still of a useful size may be kept on end in a box. Plywood and hardboard are best stored flat.

Write your answer here:
In this section you will be given:

- common instruction words used in assignments
- a clear explanation of their meaning
- assignment questions with sample answers.

Instruction words looked at in this section are:

- list
- state
- draw
- show by annotated sketches
- select
- describe the procedure
- briefly explain
- write a brief specification for
- enumerate
- determine.

Each instruction word will be explained separately with a definition, a sample question and a sample answer.
List – write the information requested in the form of a list. Firstly, look carefully at the questions and note how many things you are asked to list and what the list is about.

Question: • List 5 softwoods and 5 hardwoods used in joinery and carpentry.

Answer:

<table>
<thead>
<tr>
<th>Softwoods</th>
<th>Hardwoods</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Redwood</td>
<td>Mahogany</td>
</tr>
<tr>
<td>European Whitewood</td>
<td>Beech</td>
</tr>
<tr>
<td>Parana pine</td>
<td>Teak</td>
</tr>
<tr>
<td>Douglas fir</td>
<td>Ash</td>
</tr>
<tr>
<td>Hemlock</td>
<td>Oak</td>
</tr>
</tbody>
</table>

The question asks for 5 of each sort, do not list more. You won’t get extra marks!

Remember only list those used in joinery and carpentry.
State – if you are asked to state something you must give the relevant facts to the question. Keep your answer to the point and do not give a lot of description.

Question: 
- State a suitable timber for park benches and give reasons for your choice.

Answer: 
Teak
It is very durable under all conditions
It does not require preservative treatment.
**Question:** Draw a cross section through the trunk of an oak tree, naming the various parts.

**Answer:**

- **dark summerwood**
- **light springwood**
- **annual ring (growth ring)**
- **heartwood (matured timber)**
- **pith (original sapling)**
- **bark**
- **bast (new bark)**
- **sapwood (growing tree)**
- **cambium layer (new timber)**
- **medullary rays (food storage cells)**
**Show by Annotated Sketches** – this means that you have to answer the questions by means of brief notes and simple sketches.

**Question:**

Show by annotated sketches the correct arrangement of the grain when jointing the narrow boards shown in Fig. 1 when making a table top.

**Answer:**

The reason for this arrangement is that:

a) The annual rings tend to straighten creating a cupped board as in Fig. 3

b) If they were jointed with the boards all facing the same direction the result would be as shown.
Select – means to pick out the best or the most suitable from the list given.

Question:

- Select from the following timbers, two that would be suitable for

  a) a joiner’s mallet
  b) a hammer shaft.

Timbers

- European oak
- European beech
- African mahogany
- Teak
- European ash
- Hickory

Answer:

- Give reasons for your choices

  a) A joiner’s mallet – European beech. Beech is a very close, compact-grained timber. These characteristics enable it to withstand hard knocks with splitting.

  b) A hammer shaft – Hickory/European ash. Both these timbers are noted for their springiness and ability to absorb shock. Hence their suitability for hammer shafts etc.
Describe the Procedure – means describe each stage in order ... it could be a short summary of instructions.

Question:

Describe the setting-out procedure for the simple frame shown in Fig. 1.

Answer:

Procedure

1. Apply face marks on all timbers.
2. Mark out on the face edge of one stile the overall length allowing waste at either end.
3. Mark in from either end the overall width of the rails.
4. Mark out for the haunches.
5. Transfer the marks onto the opposite edge.
6. Set up the mortice gauge and working from the face side set out (gauge) for the mortice holes.
7. With face marks together set out the second stile from the first.
8. Mark out on the face edge of one rail the overall length allowing waste at either end.
9. Mark in from either end the overall width of the stiles.
10. Transfer the marks onto all faces.
11. Working from the face side gauge for the tenons.
Briefly explain - if you are asked to briefly explain it means that you have to give all the relevant facts but as briefly as possible.

Question: 

1. Briefly explain the differences between hardwood and softwood.

Answer:

1. Most hardwoods are deciduous – they shed their leaves in winter.
2. Most softwoods are evergreen and keep their leaves in winter.
3. The main difference is in the structure not in the texture and will show up under a microscope.
4. Hardwoods bear fruits eg. acorns, chestnuts, apples, pears, oranges etc.
5. Softwoods bear fir cones.
6. The structure of hardwoods is more complicated than softwoods and differs from hardwood to hardwood. Basically hardwoods stain and polish better and are used for furniture more so than softwoods.
7. Hardwoods tend to be more durable under most conditions.
Write a Brief Specification for – a brief specification is a precise description of all the essential information and job requirements of a particular item of construction that cannot be shown on a drawing, for example: construction of a stormproof window, a hardwood panelled door or a staircase.

Question:

• **Write a brief specification** for the laying of floor boards to the first floor in a building.

Answer:

Provide and lay, to the whole of the first floor, 18mm x 100mm prepared softwood tongued and grooved floor boarding, each board well-cramped up and surface nailed with two 50mm flooring brads to each joist. The heads to be well punched down.
Enumerate – if you are asked to enumerate points you should specify and list them. You could number them in the margin.

Question:

- **Enumerate** the chief points to be looked for in the selection of timber of good quality.

Answer:

1. Dry.
2. Straight-grained.
3. Free from large knots.
4. Free from shakes.
5. Should contain well-matured heartwood.
6. Should not contain an over-abundance of sapwood.
Determine – if you are asked to determine something you are being asked to work out the length or size etc. of that particular thing. What is important is that you show all the necessary workings in a clear, neat way.

- **Determine the size** of the plywood panels for the door shown in Fig. 1. The depth of the plough groove for the panel is 10mm. **Show all the necessary working out.**

![Diagram of a door with measurements and labels for top rail, stiles, middle rail, bottom rail, and muntin.]

Turn to the next page for the answer.
Size of Top Panel

Height

Height of panel + (twice depth of grooves)

= 600 + (2 x 10)

= 620

Width

Width of door – (twice width of stiles) + (twice depth of grooves)

= 760 – (2 x 95) + (2 x 10)

= 590

∴ SIZE OF PANEL = 620 x 590

Size of Bottom Panel

Height

Height of door – (Top rail) – (Height top (Width of middle + (Twice depth panel and bottom rail) of grooves)

= 1980 – 95 – 600 – (2 x 195) + (2 x 10)

= 1980 – 95 – 600 – 390 + 20

= 915

Width

Width of door – (twice width of stiles) – (Width of muntin) + (twice depth of grooves)

= \frac{760 – (2 x 95) – 70 + (2 x 10)}{2}

= \frac{760 – 190 – 70 + 20}{2}

= 520

∴ SIZE OF PANELS = 260 x 915
1. List 5 marking out tools.

2. State a tool suitable for forming a rebate.

3. Draw a simple line drawing of a hipped roof.

4. Show by annotated sketches the difference between plywood and blockboard.

5. Select from the following chisels the correct one for cutting a dovetail joint:
   - mortice chisel
   - firmer chisel
   - bevel edged chisel
   - paring chisel.

6. Describe the procedure for fitting rim lock.

7. Briefly explain the difference between a pad saw and a coping saw.

8. Enumerate the main safety points to be considered when using electric power tools.

9. Determine the area of plywood required by a 3-panel door:
   - 1 panel is 620mm x 590 mm
   - 2 panels are 260mm x 915mm

   Answer in square metres.

Answers on pages 136 and 137
<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>outline</td>
<td>briefly give all the main points</td>
</tr>
<tr>
<td>compare/contrast</td>
<td>show any similarities or any differences between the 2 named items</td>
</tr>
<tr>
<td>define</td>
<td>give an exact explanation</td>
</tr>
<tr>
<td>explain why</td>
<td>give reason for</td>
</tr>
<tr>
<td>sketch</td>
<td>do a free hand drawing but take care to do it neatly</td>
</tr>
<tr>
<td>by means of a sketch only show...</td>
<td>no written answer is required, only a sketch</td>
</tr>
<tr>
<td>draw to scale</td>
<td>do a fine-line ruled drawing to scale</td>
</tr>
<tr>
<td>describe</td>
<td>give a full account of what is being asked in the question</td>
</tr>
</tbody>
</table>

Add any others as you meet them:
Abbreviations

approximately for example
reference number minute
time introduction equivalent
very telephone number
ante meridian post meridian

1. The tree was felled approx. 6 a.m.
3. The intro. to fixed woc dwkg. mchnes, is v. interestg.
4. I am doing NVQ in J 7 C.

Using Abbreviations
t.g.v. tongue, grooved and veneered
T.R.A.D.A Timber Research And Development Association
wbp weather and boil proof
pva Polynvinyl acetate
u/s unsorted
S1S1E surfaced one side and one edge
B.S. 745 British standard 745
mm millimetre
C.I.T.B. Construction Industry Training Board
BR Boil-resistant
PF Phenol formaldehyde
UF Urea formaldehyde
MDF Medium density fibreboards
t. & t. through and through

These are suggestions and may not be the same for everyone.

plywood plywd.
joinery jny.
chipboard chpbd.
furniture fntr.
carpenter carptr.
veneering vng
manufactured mfd.
laminating lmtg.
carcassing crcssg.

Abbreviating Tree Names

Tree abbreviations – this is one version and you may have slightly different abbreviations.

Sycamore Syc.
Douglas Fir Doug. Fr.
Parana Pine Par. P.
European Redwood Eur. Red.
Baltic Whitewood Bal. Wht.
Columbian Pine Col. P.
Western red cedar W. r. c.
Western hemlock W. hk.
Afromosia Afrm.
Japanese oak Jap. o.
Hickory Hick.
Chestnut Chstnt.
Meranti Lauan Mer. Ln.

1 4 0
Air Seasoning Passage
This trad. meth. of seasng. timb. takes place in open-sided sheds & exps. timb. to the joint act. of circltg. air & temp. This proc. expels exc. m., thro. evap. An approp. reduct. in m.c. is a slow proc. & deps. on a. of exp., the type of wd. (H.W. or S.W.), the sp. of wd. & the crs.-sect. size.

Symbols
therefore = equals
because = minus
plus = divided by

1. therefore of winter weather joinery outdoor work will ↓ in Jan.
2. It will ↑ in April.
3. fairly recently walnut was used extensively for furniture.
4. % wood from Indonesia ↑.
5. $90 + 3 = 5 \times 6$

Using Letters & Numbers
Ash
Description
1. Open grain.
2. Not durable.
3. Flexibility & springiness.
ideal for
a) hammer shafts
b) shafts of a cart
& also
c) tools
d) farm equipment.

Walnut
A. Description
2. Close, fairly hard-textured grain.
3. Little prominent marking.
B. Qualities
1. Strong wood.
2. Fairly easy to work.
C. Used for
1. Furniture (but less today).

List
Rule, Pencil, Try Square, Marking gauge, Mortice gauge

State
Rebate plane

Annotated Sketches
Layers of veneers with grain placed at right angles
Strips of timber with a veneer facing

Select
Bevel edged chisel
Briefly Explain Difference
They both cut curves in timber, but because of its design the coping saw is limited to the size or position of the cut.
The coping saw blade is held in a metal frame. The pad saw blade is held in a handle.

Enumerate
i) check voltage
ii) check wiring
iii) consider any other safety equipment, eg. goggles, dust masks, etc.
iv) always discount tool when changing drill, blade etc.

Draw

Describe Procedure
i) place rim lock in position and mark position for keyhole and handle
ii) drill holes as required
iii) cut out recess for edge of lock
iv) screw lock in position
v) fit handle.

Determine Area
1 x 0.620 x 0.590 = 0.3658
2 x 0.260 x 0.915 = 0.4758
0.8416

Answer = 0.8416 m²
<table>
<thead>
<tr>
<th><strong>1 DATE, TIME AND LOCATION OF ACCIDENT</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>4.11.92 / 0.15 am / Hard outdoor play area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>2 INJURIES SUSTAINED</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a) CHILD</strong> Slight burns to back of neck.</td>
</tr>
<tr>
<td><strong>b) STAFF</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>3 NAME, AGE AND ADDRESS OF THOSE SUSTAINING INJURY</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Andrew Cooper, 3 years, 9 Green Close, Rington.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>4 NAME AND ADDRESS OF ANY WITNES TO THE ACCIDENT</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Wendy Smith, 52 Upland Crescent, Rington.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>5 BRIEF DESCRIPTION OF HOW THE ACCIDENT OCCURRED</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>An unknown boy of about 15 threw a lighted firework over the nursery fence and it touched Andrew's neck before going off in an empty part of the play area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>6 SUMMARY OF FIRST AID RENDERED/ACTION TAKEN</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Andrew's neck was held under cold running water for a few minutes. There was no blistering. A cold compress was applied for 10 minutes after which he returned to play with only a small red mark on his neck. The nursery manager, local police and the headmistress of the secondary school were informed.</td>
</tr>
</tbody>
</table>
SELF-ASSESSMENT QUESTIONNAIRE

Writing

Please tick a box.

I know how to use different styles of writing to suit different purposes

Please tick

I feel confident about using punctuation

Yes __ No ___

I feel confident about using grammar

Yes __ No ___

I know how to write sentences

Yes __ No ___

I know how to use a dictionary

Yes __ No ___

I know how to increase my vocabulary

Yes __ No ___

I feel confident writing about myself

Yes __ No ___

I feel confident writing letters

Yes __ No ___

memos

Yes __ No ___

CVs

Yes __ No ___

forms

Yes __ No ___

accident reports

Yes __ No ___

order/requisition forms

Yes __ No ___

I require further work on ____________________________________________________________

________________________________________________________________________________

________________________________________________________________________________

________________________________________________________________________________

________________________________________________________________________________

________________________________________________________________________________

________________________________________________________________________________

________________________________________________________________________________

________________________________________________________________________________

________________________________________________________________________________

If you have answered NO to any of these questions then read through the section again or ask a tutor to help you.
Why are they so useful?

- they attract people's attention
- they need few words to get their message across
- they are international (people of most languages can understand them)
- they are clear.

You might not be able to read these languages but we all recognise the symbols – there would be problems in this case if we didn’t!
These signs (which are white on a blue background) are mandatory.

That means you must do what they say.

You must carry out the action given by the sign.

Can you say what these signs mean?
Why are graphics so effective?

Graphics are used to give information in terms of **pictures, symbols** or **charts**. They can often present information more **clearly** and **quickly** than by writing alone.

Compare these two examples of the same information presented in different ways. Which would you rather study?

**Deaths at work in the Construction Industry**

Written

More fatal injuries occurred among labourers than in any other occupation during 1989-90. In all, 49 labourers died during the course of their work. The next highest group was maintenance personnel, with 29 fatalities. The construction industry also ranked high on the list, with roof workers being most at risk, with 10 deaths. Bricklayers suffered four fatalities, steel erectors 3, as did **carpenters & joiners**. Electricians were another high risk category, with 10 deaths among this group ...

<table>
<thead>
<tr>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deaths at Work 1989-90</td>
</tr>
<tr>
<td>Labourers</td>
</tr>
<tr>
<td>Maintenance personnel</td>
</tr>
<tr>
<td>Roof workers</td>
</tr>
<tr>
<td>Electricians</td>
</tr>
<tr>
<td>Bricklayers</td>
</tr>
<tr>
<td>Steel erectors</td>
</tr>
<tr>
<td>Carpenters &amp; Joiners</td>
</tr>
</tbody>
</table>

**Remember**

**Graphics** get the message across with **few words** or **no words** at all.
Apart from tables we can also use charts to present information.

There are different kinds.

**Pie Chart**

Each piece of information is shown as a section of the circle, like a piece of pie. The area taken up by each section is worked out as a percentage of the circle.

Look at this information:

<table>
<thead>
<tr>
<th>Injuries in Construction (rounded to nearest 1,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head</td>
</tr>
<tr>
<td>Body (torso)</td>
</tr>
<tr>
<td>Upper limbs</td>
</tr>
<tr>
<td>Lower limbs</td>
</tr>
<tr>
<td>General/unspecified</td>
</tr>
<tr>
<td>1,000</td>
</tr>
<tr>
<td>5,000</td>
</tr>
<tr>
<td>5,000</td>
</tr>
<tr>
<td>4,000</td>
</tr>
<tr>
<td>1,000</td>
</tr>
</tbody>
</table>

Presented in a Pie Chart

The area of the circle represents the total figure involved and each slice gives an approximate idea of distributions.

**Remember** Charts & graphs can be produced easily using computer packages.
Bar Chart

Each piece of information is shown as a column or bar. The length of the bar varies according to the figure it represents.

Look at this information:

<table>
<thead>
<tr>
<th>Kind of Accident (Construction)</th>
<th>Figures</th>
<th>rounded off to nearest 500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact with moving machinery</td>
<td>337</td>
<td>500</td>
</tr>
<tr>
<td>Struck by moving/flying/falling objects</td>
<td>3,711</td>
<td>3,500</td>
</tr>
<tr>
<td>Handling, lifting, carrying injuries</td>
<td>6,518</td>
<td>6,500</td>
</tr>
<tr>
<td>Falls, slips, trips</td>
<td>3,091</td>
<td>3,000</td>
</tr>
<tr>
<td>Exposure to contact with harmful substance</td>
<td>363</td>
<td>400</td>
</tr>
</tbody>
</table>

![Bar Chart Image]

**KEY**

A  Contact with moving machinery
B  Struck by moving/flying/falling objects
C  Handling, lifting, carrying injuries
D  Falls, slips, trips
E  Exposure to contact with harmful substance
Line Graphs

Line graphs are useful for showing how one piece of information relates to another, for example, progression (rise or fall) over a period of time.

Look at this information:

<table>
<thead>
<tr>
<th>Age</th>
<th>Injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-19</td>
<td>1324</td>
</tr>
<tr>
<td>20-24</td>
<td>1880</td>
</tr>
<tr>
<td>25-34</td>
<td>3323</td>
</tr>
<tr>
<td>35-44</td>
<td>2715</td>
</tr>
<tr>
<td>45-54</td>
<td>2436</td>
</tr>
<tr>
<td>55-59</td>
<td>1002</td>
</tr>
<tr>
<td>60-64</td>
<td>644</td>
</tr>
<tr>
<td>65+</td>
<td>70</td>
</tr>
</tbody>
</table>

OR
Major causes of accidents in the Construction Industry

- Present this information in a chart or graph.

Falls of persons from heights was recorded as 28% of all accidents. Handling goods was responsible for 26% and lifting equipment, machinery and transport accidents accounted for 12%. Using handtools was responsible for 7%, falls of materials for 8%, stepping on or striking against objects was 9% and other causes was recorded as 10%.

Graph/chart
This table shows the number of fatal accidents in the Construction Industry.

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1966</td>
<td>288</td>
</tr>
<tr>
<td>1967</td>
<td>195</td>
</tr>
<tr>
<td>1968</td>
<td>238</td>
</tr>
<tr>
<td>1969</td>
<td>265</td>
</tr>
<tr>
<td>1970</td>
<td>203</td>
</tr>
<tr>
<td>1971</td>
<td>196</td>
</tr>
<tr>
<td>1972</td>
<td>190</td>
</tr>
<tr>
<td>1973</td>
<td>230</td>
</tr>
</tbody>
</table>

- Show these figures in a graph.
A chart is useful to show the **structure** or **organisation** of a firm.

This is just one part of a building contractor’s organisation and structure.

- **Managing Director**
  - **Contracts Manager**
    - **Site Agent**
      - **Site Clerk**
      - **General Foreman**
        - **Site Engineer**
          - **Sub-Contractor**
          - **Craft Foreman**
            - **Charge Hand**
              - **Craftsmen**
                - Bricklayers
                - Carpenters
                - Electricians
                - Painters
                - Plasterers
                - Plumbers
                - Apprentices
                - Trainees
            - **Steel fixers**
            - **Concrete**
            - **Drain layers**
            - **Plant & General Operatives**
Using the map on the following page, answer these questions. Use an atlas to help you.

1. List of softwoods grown in Canada and USA.

2. List of hardwoods grown in USA.

3. Name the softwoods grown in Europe.

4. Name the softwoods grown in Brazil.

5. Name the timber grown in East Africa.

6. Name 4 hardwoods grown in West Africa.

7. State 3 hardwoods grown in Europe.

8. Name a hardwood grown in Burma.


10. Name the timbers grown in Japan.
Areas of timber production

- Western red cedar
- Western hemlock
- Douglas fir
- Elm
- Whitewood
- Redwood
- Beech
- Sycamore
- Oak
- Utile
- Iroko
- African mahogany
- Sapele
- Afrotimberosia
- Teak
- Meranti
- Iroko
- Lauan
- Keruing
- Ramin
- Parana pine
It is often easier to describe something by drawing a diagram or making a quick sketch, for example, a section through a traditional roof as shown here:

- Try to name each part (choose from these:)

<table>
<thead>
<tr>
<th>purlin</th>
<th>ridge</th>
<th>binder</th>
</tr>
</thead>
<tbody>
<tr>
<td>hip rafter</td>
<td>hanger</td>
<td>jack rafter</td>
</tr>
<tr>
<td>wallplate</td>
<td>ceiling joist</td>
<td>common rafter</td>
</tr>
</tbody>
</table>
Why do you need drawing techniques?

When you are a qualified joiner you will work from drawings. There are many first class tradesmen who cannot read drawings and this is a great disadvantage to them.

If you go to study to a higher level NVQ you will be required to do drawings to architect standards.

So it is very important to develop a technique of drawing and your own style. Remember: drawings can be recognised just as handwriting can be recognised.

What do you need to start?

2H pencil (anything softer will rub off as you move the T-square across the page)

3H pencil (you may need this for drawing fine lines but don’t press on too hard or you will make an indentation in the paper and you won’t be able to rub it out)

Drawing board, T-square, paper

How do you start?

Clip the drawing sheet to the drawing board and get your T-square.

Draw a margin around the sheet: on A0, A1 paper the minimum width should be 20mm and on A2, A3, A4 the minimum width should be 10mm.

Title strip: this can either be a box at the bottom of the drawing paper although this can be a disadvantage because the rectangular shape of the paper is lost OR it can be a strip running along the bottom of the paper above the margin.

Look at this example:

<table>
<thead>
<tr>
<th>Class</th>
<th>Subject</th>
<th>Title</th>
<th>Name</th>
<th>Date</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPCJIC</td>
<td>ASSOCIATED SUBJECTS</td>
<td>Introduction to Drawing</td>
<td>B Smith</td>
<td>5.1.90</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Office Practice</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

You do not put the headings for eg: subject, title etc. on your own title strip – they are just shown as examples.
Make sure you draw a line to rest on or your printing will not be neat. The maximum height of printing in the title strip would be 6mm, but in the actual drawing the printing could be as small as 3mm or even 2mm.

Look at these examples of different printing. Make sure your drawing is neat and worth looking at.

DRAWING

tall and narrow

DRAWING

stretch it out

DRAWING

widely spaced

DRAWING

a fancy style to distinguish you from anyone else

DRAWING

a fancy stroke to distinguish you from anyone else

If you require more information on any aspect of drawing office practice then consult the Drawing Office Practice British Standard Document (BS 1192) which will give you all the information you need on how to set out a drawing.
Construction lines – lines which aid in the construction of a drawing.

Finished lines – show the finished outline of the drawing.

- outline

Hidden details lines – are lines which are not normally in the view shown.

- hidden details

Centre lines – indicate the centre of an object (ie centre of a circle).

Broken lines – you might not be able to get all the detail on a drawing or you may not need to show a particular section.

- section of timber to show interruption of drawing

Dimension lines show how a drawing is dimensioned (measurements inserted). Dimension lines should be continuous. Measurements are placed above these lines.

- measurements in millimetres

Indication Dimension Lines

Arrowheads

- Open arrowhead
- Closed arrowhead
- Oblique stroke
- Dots or circles

Any of these may be used but arrowheads are preferred for general use. It is a matter of opinion whether you use the open arrowhead or the Short but don't make the head too big.
Blockwork

Brickwork

Timber

Softwood planed all round (P.A.R.)

Any sawn timber

NB. WROT TIMBER means planed timber

Stonework

Plaster/rendering

Concrete

Sand and cement SCREED

Reinforced concrete sub-floor

D.P.C. Membrane

Hardcore

Subsoil
B.S. 1192 details the standard procedure adopted by architects and builders when producing drawing.

**Orthographic Projection**

This method of drawing is used to illustrate the various views of a building and their arrangement with each other.

**First Angle** – This form of orthographic projection is shown below (Fig. 1). Here we see that the plan view of the object is placed directly below the front elevation and the side elevations placed at the opposite end to which they refer.

Fig. 1

```
End elevation --+----------+----------+----------+
|            |            |            |
|            |            |            |
|            |            |            |
|            |            |            |
|            |            |            |
End elevation

Front elevation
```

```
Plan
```

```
d c a
```

```
d b c
```

```
d a
```

**Third Angle** – In this angle (Fig. 2) we see the plan placed above the elevations with the side elevations placed adjacent to the sides to which they refer.

Fig. 2

![Diagram of Third Angle](image)

Combining 1st & 3rd – This method (Fig. 3) is favoured by many because it combines better method of the arrangements of elevations (third angle) with the plan placed below (first angle).

Fig. 3

![Diagram of Combined 1st & 3rd](image)
Pictorial Projection – This is a method of producing drawings in three dimensions. The main types of drawings are isometric, oblique and axonometric.

**Isometric** – This is the type of projection which is most used and follows the general principle that all vertical lines remain vertical while all horizontal lines are drawn at 30 degrees (Fig. 4).

**Oblique** – In this type of projection the front view is drawn as a normal elevation with the depth projected at either 45 degrees or 30 degrees. To avoid producing a distorted view the depth measurement can be reduced to $\frac{1}{2}$ or $\frac{2}{3}$ of the original size (Fig. 5).

**Axonometric** – This form of projection is most suitable for pictorial views of plans and interior for pictorial views of plans and interiors because the plan of the object is drawn true to size. The angles used in projection are either 45 degrees and 45 degrees or 30 degrees and 60 degrees. True measurements can be taken from lines which were originally horizontal or vertical (Fig. 6).

---

**Fig. 4**

- Isometric projection

**Fig. 5**

- Oblique projection

**Fig. 6**

- Axonometric projection
The illustrations below show the various methods used to draw objects: oblique, isometric, etc. by architects and builders. Complete the drawing by inserting the name of each type on the line provided.

A
B
C

A
B
C

A
B
C

45° or 30°

45° or (30°)
45° or (60°)
The drawing below shows a section through part of a building.

Place on the drawing the correct hatching for the materials indicated.
A large amount of the communication process, which occurs in workshops or on site in the Construction Industry, is carried out by means of sketching.

There are many occasions when details of work need to be passed on between workers in the easiest way is to use a sketch. This sketch does not have to be an 'artistic work' but can be a simple outline in pictorial form to get over a point.

Many students will find sketching comes naturally and there are a number who will possess an artistic flair. Others, however, find great difficulty in communicating in this way.

The technique used in producing good freehand sketches can be adapted from the pictorial form of drawing known as 'isometric projection'. This form of drawing views objects from one corner with the object tilted at 30 degrees. Using this information we quickly produce sketches of a decent quality.

The following drawings illustrate the technique in two stages used to sketch a mortice gauge.

**Stage 1**

We can see here that a boxed outline of the object's overall dimensions has been drawn. We can also construct the outline for the various components. Not all details need to be sketched at this stage, the object being to obtain a general layout and perspective of our mortice gauge.
Stage 2
We can now proceed with the filling in of details using light pencil work. We can round corners, shade in, place in more detail, etc. to obtain our finished work.

Using the technique described sketch one item from the following list:

1) Screwdriver
2) Chisel
3) T-square
4) Claw hammer.

If you are unsure about the appearance of any of these items, go to the workshops or consult your supervisor.
Communication without words

Please tick a box.

I understand the value of signs and symbols

I can present information clearly using:
- pie charts
- bar charts
- line graphs
- flow charts
- diagrams
- posters

I understand the importance of body language

I feel confident about technical drawing

I feel confident about freehand sketching

I require further work on:

If you have answered NO to any of these questions then read through this section again or ask your tutor to help you.
APPLICATION
OF NUMBER

CONSTRUCTION

UPGRADE

CONSTRUCTION

171
<table>
<thead>
<tr>
<th>Core Skills</th>
<th>Money - buying, saving etc. borrowing, writing cheques settling bills</th>
<th>Card games</th>
<th>Using a calculator</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Football pools</td>
<td>Playing darts</td>
<td>Driving a car</td>
</tr>
<tr>
<td></td>
<td>Using a credit card ACCESS, VISA etc.</td>
<td>Setting videos</td>
<td>Adding VAT to prices</td>
</tr>
<tr>
<td></td>
<td>Clocks digital clocks (24 hour)</td>
<td>Buying goods in a sale</td>
<td>Filling a car with petrol (litres)</td>
</tr>
<tr>
<td></td>
<td>Checking temperature (child, oven, greenhouse)</td>
<td>Comparison prices in a shop/supermarket</td>
<td>Mileage</td>
</tr>
<tr>
<td></td>
<td>Working out measurements for curtains, carpets and floor coverings, wallpaper etc.</td>
<td></td>
<td>Budgeting</td>
</tr>
<tr>
<td></td>
<td>Working out 10% service charge</td>
<td></td>
<td>Cooking (quantities)</td>
</tr>
<tr>
<td></td>
<td>Organising a trip out – 10% off for 10 bookings</td>
<td>Think about when you have used <strong>number skills</strong> today:</td>
<td></td>
</tr>
</tbody>
</table>

172
Look at these series of numbers.

Read one line to yourself. 
Then close your eyes and repeat the numbers.

How long a series can you hold in your mind?

2 6 1 9 3

5 8 7 2 5 1

1 6 3 8 8 0 2

7 4 8 0 4 3 6 1

3 5 7 4 8 1 2 3 6

1 2 5 1 9 7 5 2 8 1 1 8 7 6

It helps if you can make an association – make it real for you
for example in the last series of numbers –
someone's birthday may be 12.5.1975.
Your door number may be 28 etc.

Practise each day.
Your concentration span will improve.
When is it used?
- timetables, army, railway stations, airports

Why is it used?
- to avoid confusion between time am and time pm

Time to midday is written as normal but a 0 is put in front so 8 am becomes 08.00

<table>
<thead>
<tr>
<th>Time</th>
<th>AM</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 am</td>
<td>- 09.00</td>
</tr>
<tr>
<td>10 am</td>
<td>- 10.00</td>
</tr>
<tr>
<td>11 am</td>
<td>- 11.00</td>
</tr>
<tr>
<td>12 noon</td>
<td>- 12.00</td>
</tr>
</tbody>
</table>

continue counting from here

<table>
<thead>
<tr>
<th>Time</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 pm</td>
<td>- 13.00</td>
</tr>
<tr>
<td>2 pm</td>
<td>- 14.00</td>
</tr>
<tr>
<td>3 pm</td>
<td>- 15.00</td>
</tr>
<tr>
<td>4 pm</td>
<td>- 16.00</td>
</tr>
</tbody>
</table>

(An easy way to do it is to add 12 to this number so 4 + 12 = 16)

When we use these times in speech we say:-

- The next plane for Majorca leaves at fifteen hundred hours.
- The train for Edinburgh leaves at seventeen hundred hours.

Add minutes in the normal way – 14.05 (5 past 2)
Add minutes in the normal way – 19.15 (¾ past 7)
Study these examples then do the tasks:

1.30 pm  =  13.30
4.10 pm  =  16.10
9.05 pm  =  21.05
12.15 am =  00.15

Write out these using the 24 hour clock:

10.45 am  =
12.35 pm  =
1.50 pm   =
3.20 pm   =
5.16 pm   =
6.05 pm   =
8.29 pm   =
10.01 pm  =
12.00 midnight =
12.30 am  =

Convert back from the 24 hour clock:

18.15  =
13.05  =
22.05  =
00.07  =
16.50  =
14.45  =
20.55  =
15.02  =
23.50  =
17.10  =
- **Simple addition**

Add the units together, then the tens.

**Look at these examples:**

<table>
<thead>
<tr>
<th>tens</th>
<th>units</th>
<th>tens</th>
<th>units</th>
<th>tens</th>
<th>units</th>
<th>tens</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>+2</td>
<td>2</td>
<td>+3</td>
<td>4</td>
<td>+5</td>
<td>2</td>
<td>+4</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>5</td>
<td>9</td>
<td>9</td>
<td>6</td>
<td>7</td>
<td>9</td>
</tr>
</tbody>
</table>

- **What if the units add up to 10 or more?**

We then carry 1 ten over to the tens column and leave the units in the unit column.

eg. 2 9

+ 5 3

8 2

Units 9 + 3 = 12 (1 ten, 2 units)

carry 1 ten over.

Remember to add it in.

More examples:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>5</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>+2</td>
<td>8</td>
<td>+1</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

| 2     | 9     | 1     | 8     |
| +3    | 6     | +1    | 9     |
| 6     | 5     | 6     | 5     |

| 7     | 8     | 9     | 9     |
| +4    | 2     | +1    | 0     |
| 8     | 5     | 6     | 4     |
| 4     | 9     | 4     | 9     |

The tens carry over in the same way into the hundreds:

eg. 8 2

+ 3 5

1 1 7

Carry the 1 over into the hundreds leave the 1 ten behind.
**Simple subtraction**

**Look at this example:**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>-1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

3 from 5 is 2
1 from 2 is 1
Check your answer by adding 12 to 13 = 25

<table>
<thead>
<tr>
<th>-3</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>-8</td>
<td>8</td>
</tr>
<tr>
<td>-6</td>
<td>7</td>
</tr>
<tr>
<td>-7</td>
<td>6</td>
</tr>
<tr>
<td>-9</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>-3</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>-8</td>
<td>8</td>
</tr>
<tr>
<td>-6</td>
<td>7</td>
</tr>
<tr>
<td>-9</td>
<td>9</td>
</tr>
</tbody>
</table>

**What happens if the unit you are taking away is greater than the unit you are taking it from?**

eg. 56 5

8 is greater than 5 (65 is 6 tens & 5 units)
1 from 2 is 1 (28 is 2 tens & 8 units)

What do we do?

We borrow 10 from 60 (1 ten from 6 tens = 5 tens)
65 becomes 50 and 15

By adding one ten to 5 units we have 15

15 - 8 = 7
5 - 2 = 3 Answer = 37

<table>
<thead>
<tr>
<th>-1</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>-4</td>
<td>4</td>
</tr>
<tr>
<td>-2</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>-1</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>-4</td>
<td>4</td>
</tr>
<tr>
<td>-2</td>
<td>7</td>
</tr>
<tr>
<td>-1</td>
<td>9</td>
</tr>
<tr>
<td>-6</td>
<td>8</td>
</tr>
</tbody>
</table>
## How to use the table

Find the number along the top line and the number required down the left side. Move your finger across until it comes to the column which has the top line number in it eg. 6 \times 5 = 30

### Practise using the table:

<table>
<thead>
<tr>
<th></th>
<th>2 x table</th>
<th>3 x table</th>
<th>4 x table</th>
<th>5 x table</th>
<th>6 x table</th>
<th>7 x table</th>
<th>8 x table</th>
<th>9 x table</th>
<th>10 x table</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>16</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>15</td>
<td>18</td>
<td>21</td>
<td>24</td>
<td>27</td>
<td>30</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
<td>12</td>
<td>16</td>
<td>20</td>
<td>24</td>
<td>28</td>
<td>32</td>
<td>36</td>
<td>40</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>35</td>
<td>40</td>
<td>45</td>
<td>50</td>
</tr>
<tr>
<td>6</td>
<td>12</td>
<td>18</td>
<td>24</td>
<td>30</td>
<td>36</td>
<td>42</td>
<td>48</td>
<td>54</td>
<td>60</td>
</tr>
<tr>
<td>7</td>
<td>14</td>
<td>21</td>
<td>28</td>
<td>35</td>
<td>42</td>
<td>49</td>
<td>56</td>
<td>63</td>
<td>70</td>
</tr>
<tr>
<td>8</td>
<td>16</td>
<td>24</td>
<td>32</td>
<td>40</td>
<td>48</td>
<td>56</td>
<td>64</td>
<td>72</td>
<td>80</td>
</tr>
<tr>
<td>9</td>
<td>18</td>
<td>27</td>
<td>36</td>
<td>45</td>
<td>54</td>
<td>63</td>
<td>72</td>
<td>81</td>
<td>90</td>
</tr>
<tr>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>70</td>
<td>80</td>
<td>90</td>
<td>100</td>
</tr>
</tbody>
</table>

- 20 is \(10 \times 2\) or \(2 \times 10\) or \(4 \times 5\) or \(5 \times 4\)
- 72 is \(\underline{x} \underline{x}\) or \(\underline{x} \underline{x}\)
- 54 is \(\underline{x} \underline{x}\) or \(\underline{x} \underline{x}\)
- 40 is \(\underline{x} \underline{x}\) or \(\underline{x} \underline{x}\) or \(\underline{x} \underline{x}\) or \(\underline{x} \underline{x}\)
- 30 is \(\underline{x} \underline{x}\) or \(\underline{x} \underline{x}\) or \(\underline{x} \underline{x}\) or \(\underline{x} \underline{x}\)
Use the multiplication table when multiplying by up to 10.

This is how you multiply by more than 10.

**Example** Let’s multiply 13 by 12

\[
\begin{array}{c}
13 \\
\times 12 \\
\hline
26 \\
130 \\
\hline
156
\end{array}
\]

First multiply 13 \times 2 = 26

Add 0 and then multiply 13 \times 1 = 13

Add both answers together

Look at one more example:

\[
\begin{array}{c}
72 \\
\times 3 \\
\hline
216 \\
720 \\
\hline
936
\end{array}
\]

\[
\begin{array}{c}
63 \\
\times 4 \\
\hline
252 \\
48 \\
\hline
372
\end{array}
\]

\[
\begin{array}{c}
48 \\
\times 8 \\
\hline
372
\end{array}
\]

What do you do when multiplying by more than 100?

Follow the same procedure as above.

Look at this example:

\[
\begin{array}{c}
241 \\
\times 12 \\
\hline
482 \\
241 \\
2410 \\
\hline
26992
\end{array}
\]

First multiply 241 \times 2 = 482

Add 0 and then multiply 241 \times 1 = 241

Add 00 and then multiply 241 \times 1 = 241

Add the three answers together

Have a go at these:

\[
\begin{array}{c}
362 \\
\times 25
\end{array}
\]

\[
\begin{array}{c}
263 \\
\times 34
\end{array}
\]

\[
\begin{array}{c}
454 \\
\times 16
\end{array}
\]

\[
\begin{array}{c}
537 \\
\times 42
\end{array}
\]

\[
\begin{array}{c}
165 \\
\times 23
\end{array}
\]

\[
\begin{array}{c}
179
\end{array}
\]
Example of long division

We're going to divide 286 by 13:

13) 286
   How many 13s are there in 286?
   You could have a guess

or you could do it this way:-

13) 286
   13 into 2 won't go

2

13) 286
   so we try 13 into 28
   26
   we know 2 x 13 = 26. Then take 26 from 28
   26
   and that leaves 2
   bring down the 6

22

13) 286
   26
   26
   13 into 26 goes 2 with none remaining

Answer: \[ 286 \div 13 = 22 \]

• Have a go at these:

1. 14) 168
2. 15) 405
3. 11) 242

4. 16) 672
5. 13) 429
<table>
<thead>
<tr>
<th>Fractions</th>
<th>Decimals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parts of a whole</strong></td>
<td><strong>Number shown in tenths</strong></td>
</tr>
<tr>
<td>(\frac{1}{10})</td>
<td>0.1</td>
</tr>
<tr>
<td>(\frac{1}{100})</td>
<td>0.01</td>
</tr>
<tr>
<td>(\frac{1}{1000})</td>
<td>0.001</td>
</tr>
<tr>
<td>(\frac{1}{4})</td>
<td>0.25</td>
</tr>
<tr>
<td>(\frac{1}{2})</td>
<td>0.50</td>
</tr>
<tr>
<td>(\frac{3}{4})</td>
<td>0.75</td>
</tr>
<tr>
<td>(\frac{1}{8})</td>
<td>0.125</td>
</tr>
<tr>
<td>(\frac{1}{16})</td>
<td>0.0625</td>
</tr>
<tr>
<td>(\frac{1}{32})</td>
<td>0.03125</td>
</tr>
<tr>
<td>(\frac{1}{3})</td>
<td>0.333</td>
</tr>
<tr>
<td>(\frac{2}{3})</td>
<td>0.666</td>
</tr>
</tbody>
</table>

![Fraction and Decimal Models](image-url)
A quantity of 200 boxes of 1½" No 10 screws were purchased for a site.

a) ½ of this quantity would be required for one specific job. How many boxes would that be?:

Answer:

Now convert your answer to decimals: ½ =

b) Of the remainder ¼ is required for the workshop. How many boxes would that be?:

Answer:

Now convert your answer to decimals: ¼ =

c) Of the remainder ⅔ are to be kept in stock. How many boxes would that be?:

Answer:

Now convert your answer to decimals: ⅔ =
Look at this example:
The number 48.29 is correct to decimal places but is also
correct to 4 significant figures as the number contains 4
figures.

Follow this rule – if the figure to be discarded is 5 or more
the preceeding figure is increased by 1.

Look at this
example:

\[
\begin{align*}
5.2835 & = 5.284 \quad (\text{correct to 4 significant figures}) \\
& = 5.28 \quad (\text{correct to 3 significant figures}) \\
& = 5.3 \quad (\text{correct to 2 significant figures})
\end{align*}
\]

Remember to keep zeros to show the position of the decimal
point or to show that the zero is a significant figure.

\[
\begin{align*}
14.692 & = 14.69 \quad (\text{correct to 4 significant figures}) \\
& = 14.7 \quad (\text{correct to 3 significant figures}) \\
0.0468 & = 0.047 \quad (\text{correct to 2 significant figures}) \\
765.903 & = 765.90 \quad (\text{correct to 5 significant figures}) \\
& = 766 \quad (\text{correct to 3 significant sigures})
\end{align*}
\]

Write down the following numbers correct to the number of
significant figures indicated:

1. 54.97591
   a) to 6
   b) to 4
   c) to 2

2. 0.0094582
   a) to 4
   b) to 3
   c) to 2

3. 31.976
   to 2

4. 8.1039
   to 3

5. 4.14867
   a) to 5
   b) to 4
   c) to 3

6. 79.397628
   a) to 5
   b) to 2
When using a calculator it is a good idea to set out all the stages of your calculation on paper. It's easy for you to check your work and easy for someone else to check your method.

It is easy to make mistakes by pressing wrong buttons, so apart from being very careful not to do that it's a good idea to have an idea of the size of answer expected.

How to do this? **Do a rough check** – then you can spot any mistakes.

**Look at this example** – and do a rough check on the following calculation:

\[ 6.94 \times 5.8 = 40.252 \]

round the numbers up or down in order to carry out the check in this way:

\[ 7 \times 6 = 42 \]

**40.252** is in the region of the calculated answer of 42 so we can accept that answer as being correct.

Here is another example:

\[ 35.87 \div 2.6 = 13.8 \]

rounded up or down the check will be:

\[ 36 \div 3 = 12 \]

The rough shows there is a mistake – the decimal point being in the wrong position. The answer should be 13.8.
Have a go at these. Use rough checks to spot any answers which are incorrect. Don't use your calculator.

1. \(5.6 + 13.3\) = 18.9
2. \(203.4 + 56.12\) = 2595.2
3. \(49.6 - 26.4\) = 23.2
4. \(246.32 - 65.19\) = 18.113
5. \(5.2 + 8.8 - 4.6\) = 9.4
6. \(8.34 \times 4.19\) = 34.94
7. \(2.15 \times 0.1\) = 21.5
8. \(1.65 \times 0.05\) = 0.0825
9. \(378 + 13.3\) = 2.84
10. \(269 + 81.2\) = 0.33
• Switch on the calculator
• Remember to press the \( \text{AC} \) or \( \text{C} \) key.
   This will make sure that any figures entered before have been wiped out.

Study this example:
1. Evaluate \( 13.36 + 2.89 - 6.53 \)
   Rough check \( 13 + 3 - 7 = 9 \)
   We would use this sequence on the calculator:
   \[
   \text{AC} \quad 1 \quad . \quad 3 \quad 6 \quad + \quad 2 \quad . \quad 8 \quad 9 \quad - \quad 6 \quad . \quad 5 \quad 3 \quad =
   \]
   The display gives the answer 9.72 (correct to 2 decimal places)

2. Evaluate \( \frac{13.6 \times 26.83}{2.659} \)
   A rough check gives \( \frac{14 \times 27}{3} = 126 \)
   The sequence of operations is:
   \[
   \text{AC} \quad 1 \quad . \quad 3 \quad 6 \quad \times \quad 2 \quad . \quad 6 \quad \div \quad 8 \quad 3 \quad + \quad 2 \quad . \quad 6 \quad 5 \quad 9
   \]
   Answer = 137.23
   This answer confirms that the answer is of the correct order 137.23 not 13.723
Use your calculator to solve the following problems:

Show your rough checks for each one. working out for each one.

1. \(23.5 \times 6.421 - 15.32 - 4.69\)

2. \(41.83 - 12.29 + 19.68\)

3. \(\frac{4.7 \times 0.05}{3.4}\) to 3 significant figures

4. Find the value of \(\frac{4.7 \times 6.6}{5.2 \times 2.4}\) to 4 significant figures

5. Multiply 16.92 by 0.582 and give your answer correct to 3 significant figures

6. \(\frac{34.2 + 59.31 + 6.09}{51.2}\) to 4 significant figures

7. \(\frac{3.95 \times 0.00612 \times 0.58}{0.52 \times 0.716 \times 18.6}\) to 4 significant figures
The term 'per cent' is the same as saying 'per hundred' and is given the symbol %.

There are 100 squares in this diagram. 1 square = 1% or \( \frac{1}{100} \)

Therefore, 10 per cent means \( \frac{10}{100} \) and is written as 10%

8 per cent means \( \frac{8}{100} \) or 8%

In the construction industry allowances are often calculated as percentages, i.e. VAT, trade discounts, bonus payments, etc.
To calculate a percentage on a particular amount is a fairly easy problem. The procedure to calculate percentages is as follows:

**Example: Calculate 15% of £36.60**

1) 15% of £36.60 (Change the 'of' into 'x')
   \[ = 15\% \times 36.60 \]
2) 15\% \times 36.60 (Change '15\%' into \( \frac{15}{100} \))
   \[ = \frac{15 \times 36.60}{100} \]
3) This statement means 15 \times 36.60 divided by 100
4) 15 \times 36.60 = 549
5) 549 \div 100 = 5.49
6) Therefore, 15% of £36.60 is £5.49
You may be required to calculate the total cost of materials which includes, for example, V.A.T.
In this case remember to add the V.A.T. to the original cost.

Example:
You are working on a housing extension with a bricklayer.
If the price of bricks were £75.00 per 1000 plus 17½% V.A.T., what would be the total cost of 12,000?

Answer:
£75.50 per 1000
Therefore, 12,000 cost 12 x £75.50 = £906.00
17.5% of £906.00 = 17.5 x 906 = £158.55

Total cost = cost of bricks (£906.00) plus V.A.T. (£158.55)
= £1064.55

Calculate:

a) 12% of £284.60

b) 15% of £189.80

c) 8% of £18.50

d) 26% of £139.80

e) 42% of £334.70
1) If an apprentice joiner’s wage is £85.60 per week and he receives a bonus of 6%, what would his new total wage be?

2) If you calculated that the minimum amount of timber required for a specific job would be 284 linear metres and you then added 6% for a wastage, how much extra timber would you require?

3) If, by paying your bill in cash before delivery you were given a 5% trade discount, how much would a bill of £986.00 be reduced by?

4) If the price of labour and materials for a job was £4284.00, what would be the total cost if you added 18% for profit and overheads?
Study this pay slip and complete it by filling in the squares marked with a question mark.

<table>
<thead>
<tr>
<th>Rate per hour</th>
<th>No hours worked</th>
<th>Total pay</th>
<th>Deductions</th>
<th>Net pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>£5.60</td>
<td>40</td>
<td>?</td>
<td>20%</td>
<td>?</td>
</tr>
<tr>
<td>?</td>
<td>30</td>
<td>£183</td>
<td>15%</td>
<td>?</td>
</tr>
<tr>
<td>£5.60</td>
<td>?</td>
<td>£156.80</td>
<td>13%</td>
<td>?</td>
</tr>
<tr>
<td>?</td>
<td>28</td>
<td>£140</td>
<td>12.5%</td>
<td>?</td>
</tr>
</tbody>
</table>

Remember to check your answers.
Very few industries would exist without the use of 'measurement'. This is particularly true of the 'Construction Industry'.

It is difficult to visualise how buildings could be erected, components manufactured or skills performed without the use of measurement.

Skill in the use of measurement is vital to the industry and takes many forms. For example:

a) **Linear** – this is the measurement of length and would be used when we need to determine:
   i) perimeters of buildings, both lengths and heights
   ii) lengths of components, ie. skirting boards, architraves, joists, pipes, cables, etc.
   iii) dimensions of components, ie. heights and widths of doors, windows, etc.

b) **Areas** – this is the two dimensional measuring of spaces and will involve the calculation of areas of:
   i) floors
   ii) walls
   iii) ceilings
   iv) land
   v) roofs.

c) **Volumes** – this involves the measurement of three dimensional objects and the space they occupy and would be used to calculate volumes of:
   i) timber
   ii) concrete
   iii) bricks
   and many more.
To calculate the areas of rectangles we need to use the formula:

\[
\text{AREA} = \text{LENGTH (L)} \times \text{BREADTH (B)}
\]

*(breadth being the term used for width)*

If we look at Fig. 1 we see that a rectangle measuring 6 metres x 3 metres will contain 18 square metres.

![Fig. 1](image)

This applies equally to parts of units as well as whole units.

An example of this is shown in Fig. 2 for an area measuring 4½ metres x 2½ metres.

![Fig. 2](image)

\[
\text{AREA} = L \times B
\]

\[
= 4\frac{1}{2} \times 2\frac{1}{2}
\]

\[
= 11\frac{1}{2} \text{ square metres}
\]

Study the worksheet on Calculations of covering materials and do the task.
There will be many times where the joiner will be required to calculate the amount of covering materials for various jobs ie. floor coverings, wall coverings, etc.

To do this we need to be able to calculate areas and to perform division of numbers.

Example:

To calculate the number of floor tiles required to cover the floor area shown at Fig. 3 we must carry out the following operations:

1. Calculate the area of the floor
2. Calculate the area of one tile
3. Divide the area of the floor by the area of the tile.

\[
\text{AREA OF THE FLOOR} = 8 \times 7 = 56 \text{ sq metres} \\
\text{AREA OF TILE} = \frac{1}{2} \times \frac{1}{2} = \frac{1}{4} \text{ sq metres} \\
\text{No. of TILES} = 56 \div \frac{1}{4} = 224 \text{ tiles}
\]

This is a mathematical solution and assumes that the coverings will fit exactly into the area shown. This does not always work in a practical situation.
A dining room measures 6 m x 9 m and is to be covered with carpet tiles which measure 0.50 m x 0.50 m.

How many tiles would you need?

Show all calculations.

Answer:
Unlike squares and rectangles, not all the angles of a triangle are at 90°, therefore, a different formula has to be used.

If we appreciate that a triangle can be considered to be half of a rectangle then the formula is quite simple.

Formula = \((\text{Base} \times \text{Height}) ÷ 2\)

or \(\frac{\text{Base} \times \text{Height}}{2}\)

**Example:**

Find the area of a triangle with a height of 2.5m and a base of 2m.

\[
\text{Formula} = \frac{\text{Base} \times \text{Height}}{2}
\]

\[
= \frac{2 \times 2.5}{2} = \frac{5}{2} = 2.5\text{m}^2
\]

Find the areas of the following triangles:

1. Height – 6m  Base – 3m
2. Height – 9.8m  Base – 2.4m
3. Height – 3.6m  Base – 1.4m
4. Height – 12.4m  Base – 6.6m
5. Height – 4.8m  Base – 600mm

100mm is the same as 0.1m
1000mm is the same as 1m
To determine the area of a circle we need to use the formula which has been devised using the symbol $\pi$ (pi) which refers to the relationship between the areas and the circumference of a circle. Its value is:

\[ \frac{3\frac{1}{7}}{1} \text{ or } 22 \text{ or } 3.142 \]

The formula for the area of a circle is:

\[ \text{Area} = \pi r^2 = \text{p} \times r \times r \]
\[(r = \text{radius of circle})\]

**Example:**

Find the area of a circle with a radius of 5m.

\[
\text{Area} = \pi r^2 \\
= 3.142 \times 5 \times 5 = 78.55 \text{m}^2
\]

Find the areas of the following circles:

1. 8m radius
2. 12m radius
3. 6.2m radius
4. 9.6m radius
5. 28.4m radius
6. A large semi-circular bay window is built as an addition to a room. The diameter of the bay is 6.4m. Calculate the area.

A semi-circle is half a full circle.
The object above has a **length**, **width** and **thickness** (depth). The amount of space it occupies is known as its ‘volume’.

The volume of an object is found by multiplying its three linear measurements together and expressing the result in ‘cubic’ measure. If the unit of measure is metres, then the answer will be in cubic metres usually expressed as ‘m³’.

**Example:**
If the dimensions of the above figure were:
**length** 6 metres; **width** 2 metres; **thickness** 1 metre
then its volume would be: $6 \times 2 \times 1 = 12$ cubic metres = $12m^3$

It is always advisable to work out the volume using the same units. You cannot mix metres and millimetres together when multiplying, therefore, always convert to the units required before multiplying.

**Example:**
Find the volume of a piece of timber measuring 2.6m x 200mm x 60mm

$$\text{Volume} = L \times W \times Th$$
$$= 2.6 \times 0.2 \times 0.06$$
$$= 2.6 \times 0.2 \times 0.06$$

- Find the volumes of the following:

1. 6m long x 3m wide x 2m thick
2. 8.2m long x 2.9m wide x 1.6m thick
3. 3.4m long x 150mm wide x 100m thick
4. 6.6m long x 200mm wide x 50mm thick
You need to buy these goods.

Look at the prices and add them up.

How much does it all cost?  

+  

=  

How much change would you get from £25.00  

Change  

Remember To check the bill and make sure you’ve got the right change
Situation
You have just finished fitting a new lock for a client. Work out the bill.

Labour £7.50 per hour x 2 hours =
Materials £19.39 (mortice lock) =
£1.89 (security chain) =
Total =

Write a receipt:

Jones Joiners, Croft Street, Walsall

Labour
Materials
Total
You are buying these 3 doors for a client.

- Work out the total and write a cheque made payable to Anderson & Hill, Trade Suppliers Ltd.

```
Date       19

Pay ____________________________ or order

£______________________________

JONES JOINERY
```

- Now check the receipt.

```
Receipt
Kentucky door ........................................... 159.99
Windsor door ............................................. 159.99
Georgia door ............................................. 165.95
Balance .................................................. 485.93
Cheque ................................................... 485.93
Change ................................................... 0.00
```
Work out the bill for the following:

6m 46 x 19 P&E at £1.00 per metre = ______

6 boxes 1½" No. 10 screws at £1.80 per box = ______

3 mortice locks at £9.50 each = ______

Total = ______

• Now check the cheque

Pay Anderson & Hill, ___________________________ or order

Forty five pounds thirty pence only £ 45.30

JONES JOINERY

Mick Jones

• Now write a receipt

Anderson & Hill

No 123 19

Received from ____________________________

the sum of ____________________________

Signed ____________________________
You want to buy a door size 78" x 33" x 1½".

<table>
<thead>
<tr>
<th>Size</th>
<th>Elizabethan (Stained)</th>
<th>Windsor (Stained)</th>
<th>Carolina (Stained)</th>
</tr>
</thead>
<tbody>
<tr>
<td>78&quot; x 30&quot; x 1½&quot;</td>
<td>£69.95</td>
<td>£60.95</td>
<td>£68.95</td>
</tr>
<tr>
<td>78&quot; x 33&quot; x 1½&quot;</td>
<td>£74.95</td>
<td>£65.95</td>
<td>£73.95</td>
</tr>
<tr>
<td>80&quot; x 32&quot; x 1½&quot;</td>
<td>£79.95</td>
<td>£71.95</td>
<td>£78.95</td>
</tr>
</tbody>
</table>

Look at the above items and work out which is the cheapest.

**Answer:**

**Check**

Did you –

- Read the prices?
- Check the items were the same size?
- Choose the cheapest item?
**Situation:** You've got £25.00 to spend on improvements to your front door. You need a new Lever latch set, door knob and letter plate in **brass** or **brass effect**.

- Look at this price list of door accessories and decide how to spend the money.

<table>
<thead>
<tr>
<th>GEORGIAN STYLE BRASSWARE</th>
<th>VICTORIAN STYLE BRASSWARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 x 1½ in (203 x 48mm) oblong lever latch set</td>
<td>4½ in (114mm) oblong lever latch set</td>
</tr>
<tr>
<td>10.99</td>
<td>7.99</td>
</tr>
<tr>
<td>2½ in (57mm) round lever latch set</td>
<td>4½ in (114mm) lever latch set</td>
</tr>
<tr>
<td>8.99</td>
<td>3 pack 18.99</td>
</tr>
<tr>
<td>4½ in (114mm) square lever latch set</td>
<td>2 in (64mm) round lever latch set</td>
</tr>
<tr>
<td>8.49</td>
<td>7.99</td>
</tr>
<tr>
<td>4½ in (114mm) lever latch set 3 pack 21.49</td>
<td>5½ in x 1½ in (146 x 38mm)</td>
</tr>
<tr>
<td>6 in (152mm) oblong lever lock set</td>
<td>oblong lever lock set</td>
</tr>
<tr>
<td>8.99</td>
<td>9.49</td>
</tr>
<tr>
<td>8 x 1½ in (203 x 48mm) lever lock set</td>
<td>2 in (51mm) mortice knob set</td>
</tr>
<tr>
<td>10.99</td>
<td>7.59</td>
</tr>
<tr>
<td>2 in (51mm) mortice knob set</td>
<td>2 in (51mm) mortice knob set 3 pack 17.99</td>
</tr>
<tr>
<td>8.49</td>
<td></td>
</tr>
<tr>
<td>2½ in (51mm) mortice knob set</td>
<td>Door knob 1 in (25mm)</td>
</tr>
<tr>
<td>3 pack 19.99</td>
<td>2 pack 1.89</td>
</tr>
<tr>
<td>3/½ in (89mm) door knob 6.99</td>
<td>1 in (25mm)</td>
</tr>
<tr>
<td>8.49</td>
<td>10 pack 5.99</td>
</tr>
<tr>
<td>6½ in x ¾ in (159 x 79mm) door knocker 4.49</td>
<td>1½ in (38mm)</td>
</tr>
<tr>
<td></td>
<td>6 pack 5.69</td>
</tr>
<tr>
<td>8 x ¾ in (203 x 203mm) door knocker 5.89</td>
<td>½ in (38mm)</td>
</tr>
<tr>
<td>4.49</td>
<td>4 pack 4.69</td>
</tr>
<tr>
<td>10 x 3 in (254 x 76mm) letter plate 7.49</td>
<td>1½ in (38mm)</td>
</tr>
<tr>
<td>with knocker 9.99</td>
<td>2 pack 2.79</td>
</tr>
<tr>
<td>1 in (25mm) keyhole with cover 0.99</td>
<td>2½ in (64mm)</td>
</tr>
<tr>
<td>1.99</td>
<td>5.99</td>
</tr>
<tr>
<td>Cylinder rim pull 1.99</td>
<td>Door knocker 6½ in x 3 in (152 x 76mm) 3.99</td>
</tr>
<tr>
<td>Oblong door bell button 3.99</td>
<td>7½ in x ¾ in (197 x 102mm) letter plate 6.99</td>
</tr>
<tr>
<td>11½ in x ¾ in (299 x 70mm) finger plate 6.89</td>
<td>10 in x ¾ in (254 x 102mm) with knocker 9.99</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>ALUMINIUM RANGE FOR DOORS</td>
<td>VICTORIAN STYLE BRASSWARE</td>
</tr>
<tr>
<td>3 x 1 in (76 x 13mm) lever latch set white 4.99</td>
<td>4½ in (114mm) oblong lever latch set</td>
</tr>
<tr>
<td>3.39</td>
<td>7.99</td>
</tr>
<tr>
<td>3 x 1½ in (76 x 38mm) satin chrome 4.39</td>
<td>4½ in (114mm) lever latch set 3 pack 18.99</td>
</tr>
<tr>
<td>9.99</td>
<td>2 in (64mm) round lever latch set</td>
</tr>
<tr>
<td>5 x 1½ in (133 x 38mm) lever lock set white 5.59</td>
<td>7½ in x ¾ in (197 x 102mm) letter plate 6.99</td>
</tr>
<tr>
<td>5.59</td>
<td></td>
</tr>
<tr>
<td>5 x 1½ in (133 x 38mm) satin chrome 4.79</td>
<td>10 in x ¾ in (254 x 102mm) with knocker 9.99</td>
</tr>
<tr>
<td>1.99</td>
<td></td>
</tr>
<tr>
<td>2½ in (64mm) mortice latch</td>
<td></td>
</tr>
<tr>
<td>4.49</td>
<td></td>
</tr>
<tr>
<td>2½ in (64mm) mortice lock</td>
<td></td>
</tr>
<tr>
<td>4.49</td>
<td></td>
</tr>
<tr>
<td>10 x 3 in (254 x 76mm) letter plate white 5.69</td>
<td></td>
</tr>
<tr>
<td>5.69</td>
<td></td>
</tr>
<tr>
<td>10 x 3 in (254 x 76mm) letter plate back flap</td>
<td></td>
</tr>
<tr>
<td>6.89</td>
<td></td>
</tr>
<tr>
<td>10 x 3 in (254 x 76mm) letter plate back flap</td>
<td></td>
</tr>
<tr>
<td>1.89</td>
<td></td>
</tr>
<tr>
<td>Cylinder pull 1.29</td>
<td></td>
</tr>
<tr>
<td>Barrel bolt 1 in (25mm) 0.99</td>
<td></td>
</tr>
<tr>
<td>2 in (51mm) 0.99</td>
<td></td>
</tr>
<tr>
<td>3 in (76mm) 1.39</td>
<td></td>
</tr>
<tr>
<td>4 in (102mm) 1.89</td>
<td></td>
</tr>
<tr>
<td>Hat &amp; coat hook 0.99</td>
<td></td>
</tr>
<tr>
<td>Wardrobe hook 0.99</td>
<td></td>
</tr>
</tbody>
</table>

- Work out the total for the changes you decide upon
- Use this sheet to keep a record of the money you spent on improvements to your front door.

- Fill in the details on this form.

<table>
<thead>
<tr>
<th>Date</th>
<th>Item</th>
<th>Money £ p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total
Renovation of House

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>JULY 1992</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Wed</strong></td>
<td>14</td>
</tr>
<tr>
<td><strong>Thurs</strong></td>
<td>15</td>
</tr>
<tr>
<td><strong>Fri</strong></td>
<td>16</td>
</tr>
<tr>
<td><strong>Sat</strong></td>
<td>17</td>
</tr>
<tr>
<td><strong>Sun</strong></td>
<td>18</td>
</tr>
<tr>
<td><strong>Mon</strong></td>
<td>19</td>
</tr>
<tr>
<td><strong>Tues</strong></td>
<td>20</td>
</tr>
<tr>
<td><strong>Wed</strong></td>
<td>21</td>
</tr>
<tr>
<td><strong>Thurs</strong></td>
<td>22</td>
</tr>
<tr>
<td><strong>Fri</strong></td>
<td>23</td>
</tr>
<tr>
<td><strong>Sat</strong></td>
<td>24</td>
</tr>
<tr>
<td><strong>Sun</strong></td>
<td>25</td>
</tr>
</tbody>
</table>

Situation:
Your client requires the house renovations to be finished by Saturday 24 July as he is having his 40th birthday party on that day.

Your job is to fit windows and doors.

The windows will take 2 days and 4 hours
The doors (1 exterior and 4 interior) will take 1 day and 3 hours
(A working day is 7 hours)

- Work out your best starting date in order to complete the job in good time.
- Mark the starting date on the calendar.
Situation:
The room you are in at present requires to be fitted with new skirting boards.

- **Measure** the existing skirting boards as **one complete length**.
- Make a note of **individual lengths** and arrive at a total.

Answer:
Situation:
Go to the workshop – select a piece of timber 1.5m in length.

On this piece mark out the following lengths –

300 mm

1.005 m

Make sure your measurements are accurate
2.5 litres to cover
Approx 30m²

Wall

7m

Wood panelling

• Have you got enough varnish to cover the wood panelling?

Answer:
**Situation:**

A specified amount of nails is required for a job.

You are given a bag of nails taken from a 25 kilogram box of nails.

Weigh them and check that you have been given the required amount which is 3½ kilograms.
You are erecting a study partition which requires a selection of nails.

- Weigh out 1 kilogram of 100mm flat head round wire nails
  and
- 1½ kilograms of 75 mm oval nails.
MEASURING OUT REQUIRED QUANTITIES

Situation:
You are assembling framework.
You require a small quantity of powdered resin glue.

- Measure out 250 grams of powdered resin glue.

The instructions tell you to measure out 500g of powdered resin glue. Add 120 ml of cold water. Mix to a thick paste without any lumps.

- How much water would you need for the quantity (250 grams) you have already measured out for assembling framework.
• Work in pairs, 1 working, 1 recording time.

Situation:
Go to the workshop
Select a piece of timber
50 x 50mm – minimum length 1 metre.

You will also require a stop watch to record the time.

Mark off 4 pieces 50mm in length.
Set the stop watch to zero.
Select a sharp tenon saw and cut each of the 4 pieces in turn.

During each performance time how long it takes to saw each piece.

Fill in the information on the following chart.

<table>
<thead>
<tr>
<th>Timber</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piece 1</td>
<td></td>
</tr>
<tr>
<td>Piece 2</td>
<td></td>
</tr>
<tr>
<td>Piece 3</td>
<td></td>
</tr>
<tr>
<td>Piece 4</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>213</strong></td>
</tr>
</tbody>
</table>
Situation:
You and a friend are going to the

Building Exhibition at the
National Centre, Birmingham.

Your friend is going to drive you both there.
Give him/her directions on how to get there.
Use any up-to-date map.

Answer:

- Try to work out the distance from your home town.
Situation:
You need to get to your work on a building site in Garden Street, off Market Street.

This map and these directions are given to you by your boss:

"Go up Lower High Street, pass Bridge Street on your right. Go up the High Street, across the roundabout, Hill Road's on your left. You'll see a big DIY shop on your right. Pass that and watch out for the cinema. Turn right there. Go up Market Street, pass the swimming baths and take the first right into Garden Street. You'll see the site on your left".

- Indicate the route you took on the map.
**Situation:**
You've decided to decorate a room.

The distance round your room is 26m and your room height is 2.80m.

Use the table to work out **how much paint** you would need.

<table>
<thead>
<tr>
<th>MEASUREMENTS AROUND ROOM – METRES</th>
<th>26</th>
<th>24</th>
<th>23</th>
<th>22</th>
<th>21</th>
<th>19</th>
<th>18</th>
<th>17</th>
<th>16</th>
<th>15</th>
<th>14</th>
<th>13</th>
<th>12</th>
<th>10</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ROOM HEIGHT Metres</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.15 – 2.30m</td>
<td>5½</td>
<td>5</td>
<td>5</td>
<td>4½</td>
<td>4½</td>
<td>4</td>
<td>4</td>
<td>3½</td>
<td>3</td>
<td>3</td>
<td>2½</td>
<td>2½</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2.30 – 2.45m</td>
<td>5½</td>
<td>5½</td>
<td>5</td>
<td>5</td>
<td>4½</td>
<td>4½</td>
<td>4</td>
<td>4</td>
<td>3½</td>
<td>3½</td>
<td>3</td>
<td>2½</td>
<td>2½</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2.45 – 2.60m</td>
<td>6</td>
<td>5½</td>
<td>5½</td>
<td>5</td>
<td>5</td>
<td>4½</td>
<td>4½</td>
<td>4</td>
<td>4</td>
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<td>3½</td>
<td>3½</td>
<td>3</td>
<td>3</td>
<td>2½</td>
</tr>
<tr>
<td>2.60 – 2.75m</td>
<td>6½</td>
<td>6</td>
<td>5½</td>
<td>5½</td>
<td>5</td>
<td>5</td>
<td>4½</td>
<td>4½</td>
<td>4</td>
<td>4</td>
<td>3½</td>
<td>3½</td>
<td>3</td>
<td>3</td>
<td>2½</td>
</tr>
<tr>
<td>2.75 – 2.90</td>
<td>6½</td>
<td>6½</td>
<td>6</td>
<td>6</td>
<td>5½</td>
<td>5</td>
<td>5</td>
<td>4½</td>
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<td>3½</td>
<td>3½</td>
<td>3</td>
<td>3</td>
<td>2½</td>
</tr>
<tr>
<td>2.90 – 3.05</td>
<td>7</td>
<td>6½</td>
<td>6½</td>
<td>6</td>
<td>6½</td>
<td>6½</td>
<td>6½</td>
<td>6½</td>
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<td>5½</td>
<td>5½</td>
<td>5½</td>
<td>5½</td>
<td>5½</td>
<td>4½</td>
</tr>
<tr>
<td>3.05 – 3.20m</td>
<td>7½</td>
<td>7</td>
<td>6½</td>
<td>6½</td>
<td>6½</td>
<td>6½</td>
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<td>5½</td>
<td>5½</td>
<td>5½</td>
<td>5½</td>
<td>4½</td>
</tr>
<tr>
<td>CEILINGS</td>
<td>4</td>
<td>3½</td>
<td>3</td>
<td>3</td>
<td>2½</td>
<td>2½</td>
<td>2</td>
<td>2</td>
<td>1½</td>
<td>1½</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>½</td>
<td>½</td>
</tr>
</tbody>
</table>

Find the information you need and write your answer here:

**Answer:**

216
### SUPERLUX/MASTERBOARD

<table>
<thead>
<tr>
<th>Size</th>
<th>Thickness</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2440 x 1220</td>
<td>6mm</td>
<td>Masterboard</td>
<td>£19.40</td>
</tr>
<tr>
<td></td>
<td>9mm</td>
<td>Superlux</td>
<td>£30.40</td>
</tr>
<tr>
<td></td>
<td>12mm</td>
<td>Superlux</td>
<td>£40.08</td>
</tr>
</tbody>
</table>

### HARDBOARD 3.2mm Std.

<table>
<thead>
<tr>
<th>Size</th>
<th>Thickness</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2440 x 1220</td>
<td>3.2mm</td>
<td>White Faced</td>
<td>£6.13</td>
</tr>
<tr>
<td>2440 x 1220</td>
<td>3.2mm</td>
<td>Peg Board</td>
<td>£5.66</td>
</tr>
</tbody>
</table>

### DECORATIVE WALLBOARDS

<table>
<thead>
<tr>
<th>Size</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2440 x 1220</td>
<td>Hardboard backed</td>
<td>£4.30</td>
</tr>
<tr>
<td>2440 x 1220</td>
<td>Plywood backed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rosewood</td>
<td>£6.88</td>
</tr>
<tr>
<td></td>
<td>Olive Ash</td>
<td>£6.88</td>
</tr>
<tr>
<td></td>
<td>Shan Teak</td>
<td>£6.88</td>
</tr>
<tr>
<td></td>
<td>Redwood Cedar</td>
<td>£6.88</td>
</tr>
<tr>
<td></td>
<td>Italian Pine</td>
<td>£6.88</td>
</tr>
<tr>
<td></td>
<td>Cherry-Olive</td>
<td>£6.88</td>
</tr>
<tr>
<td></td>
<td>Figured Oak</td>
<td>£6.88</td>
</tr>
<tr>
<td></td>
<td>Kitayama Cedar</td>
<td>£6.88</td>
</tr>
<tr>
<td></td>
<td>Royal Oak</td>
<td>£6.88</td>
</tr>
<tr>
<td></td>
<td>London Cherry</td>
<td>£6.88</td>
</tr>
<tr>
<td></td>
<td>Montego Walnut</td>
<td>£6.88</td>
</tr>
<tr>
<td>2440 x 1220</td>
<td>Canfor Barge – 6mm</td>
<td>£4.30</td>
</tr>
<tr>
<td></td>
<td>Manor House Red Brick</td>
<td>£22.30</td>
</tr>
<tr>
<td></td>
<td>Manor House Gold Brick</td>
<td>£22.80</td>
</tr>
<tr>
<td></td>
<td>Rustic Stone Sudbury Gold</td>
<td>£22.80</td>
</tr>
</tbody>
</table>

### VENEERED PLYWOOD

<table>
<thead>
<tr>
<th>Size</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2440 x 1220</td>
<td>4mm Oak/Balancer</td>
<td>£21.04</td>
</tr>
<tr>
<td></td>
<td>6mm Oak/Balancer</td>
<td>£26.42</td>
</tr>
<tr>
<td></td>
<td>4mm Teak/Balancer</td>
<td>£20.52</td>
</tr>
<tr>
<td></td>
<td>6mm Teak/Balancer</td>
<td>£23.97</td>
</tr>
<tr>
<td></td>
<td>4mm Sapele/Balancer</td>
<td>£16.76</td>
</tr>
<tr>
<td></td>
<td>6mm Sapele/Balancer</td>
<td>£23.04</td>
</tr>
</tbody>
</table>

### MEDIUM DENSITY FIBREBOARD

<table>
<thead>
<tr>
<th>Size</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2440 x 1220</td>
<td>6mm</td>
<td>£11.32</td>
</tr>
<tr>
<td></td>
<td>8mm</td>
<td>£12.66</td>
</tr>
<tr>
<td></td>
<td>12mm</td>
<td>£16.80</td>
</tr>
<tr>
<td></td>
<td>15mm</td>
<td>£19.20</td>
</tr>
<tr>
<td></td>
<td>18mm</td>
<td>£22.22</td>
</tr>
<tr>
<td></td>
<td>25mm</td>
<td>£28.00</td>
</tr>
</tbody>
</table>

- Using the list of materials tell someone the price of the following:
  - 12mm Superlux
  - 1830 x 610 hardboard
  - Cherry Olive decorated wallboard
  - 12mm medium density fibreboard
Situation:
Go to the stock room in your College/Workshop.

Check on the number of full boxes (each box contains 10 packs) of different sizes of countersunk steel screws.

Record them on the check card below:

<table>
<thead>
<tr>
<th>Countersunk</th>
<th>Screw Size</th>
<th>No. of Boxes</th>
<th>No. of packs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total
### Situation:

You need 1 x 6 panel Internal Colonist door and 1 brass latch pack.

Find the total price after reduction.

### Answer:

### Fill in the cheque:

Date: 19

Pay: 

or order: £

JONES JOINERY

219
Check the cheque from a client for materials you have bought.

Write him a receipt.

10 sq ft Mahogany conti board at 60p per sq ft

9 sq ft Oak conti board at 81p per sq ft

8 sq ft White conti melamine chipboard at 43p per sq ft

Date June 26 1992

Pay Jones Joinery Ltd or order

Sixteen pounds 73p

£ 16.73

M C Donald

Receipt

Goods & description Quantity Price

Total amount due £

230
It's break time – you're sent to the shop for drinks and buns for 9 of you.

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Fanta Oranges</td>
<td>£1.80</td>
</tr>
<tr>
<td>2 Cokes</td>
<td>£1.30</td>
</tr>
<tr>
<td>4 Teas</td>
<td>£2.00</td>
</tr>
<tr>
<td>2 Iced buns</td>
<td>£0.70</td>
</tr>
<tr>
<td>2 Chocolate buns</td>
<td>£0.80</td>
</tr>
<tr>
<td>4 Eccles cakes</td>
<td>£1.40</td>
</tr>
<tr>
<td>1 Jam donut</td>
<td>£0.40</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>£8.40</strong></td>
</tr>
</tbody>
</table>

Your workmates are happy for the bill to be divided up equally.

- Work out to the nearest penny what everyone owes you
- If each one gives you £1.00 what change would you have for each person?

**Answer:**

**Change**

**Remember**
- Check the bill is correct.
- Check you've given each one the correct change.
<table>
<thead>
<tr>
<th>VARNISH</th>
<th>VARNISH</th>
<th>VARNISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 litre</td>
<td>£2.69</td>
<td>500ml</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 litre</td>
</tr>
</tbody>
</table>

- Look at the above tins of varnish – which is the best buy?
- Check sizes of items.
- Compare prices by changing items into the same unit where necessary.
- Choose the cheapest.

Answer:
### ACCOUNTS FOR SCHOOL LEAVERS

<table>
<thead>
<tr>
<th>Bank</th>
<th>Account</th>
<th>Special offers</th>
<th>Gross interest rate per annum</th>
<th>Cheque book</th>
<th>Overdraft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abbey National</td>
<td>Current</td>
<td>Free driving lesson and further discounted lessons, or £15 petrol vouchers</td>
<td>2.55</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Barclays</td>
<td>Plus</td>
<td>£20 worth of music vouchers</td>
<td>3</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Lloyds</td>
<td>Headway</td>
<td>Camera</td>
<td>5.5</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Midland</td>
<td>Livecash</td>
<td>Cheap CDs and tapes</td>
<td>5</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>NatWest</td>
<td>Card Plus</td>
<td>£30 worth of music vouchers</td>
<td>4.6</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>TSB</td>
<td>Interest Cheque</td>
<td>£15 worth of Olympus sports vouchers &amp; discount vouchers, plus one free driving lesson</td>
<td>2.5</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

- Select the account with the best interest
- Considering the special offers and other facilities – would you still make the same choice?

**Answer:**

223
**Situation:**
You’ve won first prize at work for being the best apprentice.
You have won £70.00 and you need to buy the following items:

- a claw hammer
- a hacksaw
- a coping saw
- a 22" handsaw
- a 10" tenon saw
- a 21" bow saw.

- Decide which of the items from this list you can afford to buy.

Bear in mind you need to buy the best you can afford and need to spend as much of the prize money as possible.

- Work out the total amount of money you will spend.

---

**HAMMERS**
- Stanley Steelmaster Professional Claw Hammer ST1. 20oz £19.45
- Stanley Nailmaster Claw Hammer H1 1/2, 16oz £12.25
- B&Q Steel Shaft Claw Hammer 16oz £6.12
- Estwing Hammer E3-20C £22.99
- Stanley Ash Hammer W1. Forged Everlite head. 10oz £9.10
- Draper Magnetic Tack Hammer TH7 £8.16
- B&Q Wooden Carpenters Mallet HWM45. 4 1/2 £7.15
- Thor Rubber Mallet 953B 400g £4.09
- Keen Brick Hammer KSP81 £9.99
- Sandvik Club Hammer 496-1250 £13.25
- Stanley Handyman Claw Hammer H201. Forged Everlite head. 20oz £12.65
- Black Forge Club Hammer Steel shaft. 2 1/2 lbs £10.49
- Black Forge Warrington Hammer Hickory handle. 8oz £6.15
- Black Forge Cross Pein Hammer Hickory handle. 3 1/2 oz £5.99

**HACKSAWS**
- Workman Junior Hacksaw £1.22
- Workman Junior Hacksaw Blades 6"x 1/4" For metal. Pack of 10 £1.28
- Spear & Jackson Handyman Hacksaw 70-400R. Blade can be angled at 90° to the frame. Ideal for awkward sawing positions. For cutting metal and plastics £9.49
- Spear & Jackson Professional Eclipse Hacksaw 70-20TR. Blade can be angled at 90° to the frame. Ideal for awkward sawing positions. For cutting metal and plastics £12.49
- Spear & Jackson Eclipse Professional Bimetal Hacksaw Blades 71-424R 300mm/12" Pack of 2 £3.19
- Plasplugs Junior Hacksaw JH207 Quick trigger-action blade change, metal and wood cutting blades £2.35

**COPING SAWS**
- Spear & Jackson Eclipse Coping Saw 70-CP1R. For cutting shapes in wood, plastics and soft metals £7.79
- Spear & Jackson Eclipse Coping Saw Blades 71-CP7R. Pack of 10 £2.69

**HAND SAWS**
- Spear & Jackson Work Horse Universal Handsaw B99. 550mm/22 £15.32
- Workman Hard Point Handsaw 550mm/22 £2.99
- Sandvik Hard Point Universal Handsaw 244.550mm/22 £11.49

**TENON SAWS**
- Spear & Jackson Universal Tenon Saw C41, 250mm/10 £8.02
- Spear & Jackson Work Horse Universal Tenon Saw B22.250mm/10 £15.60
- Workman Hard Point Tenon Saw 250mm/10 £5.61

**BOW SAWS**
- Sandvik Universal Tenon Saw 241.250mm/10 £12.99
- Sandvik Hard Point Bow Saw 331,533mm/21 £9.65
- Sandvik Bow Saw Blade 51.533mm/21 £3.99

---

**Total:**
Record the details of the items you bought with your prize money and the cost of each one.

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
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<tr>
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<td></td>
</tr>
</tbody>
</table>

Total

- Record each item and cost in a suitable way.
- Work out the total spent.
**House Renovation**

Your client requires the house renovations to be finished by **July 24**. Your job is to fit windows and doors. Windows take 2½ days, doors 1½. You must also work out when to order the materials necessary for the job. Work out your best starting date.

<table>
<thead>
<tr>
<th>June</th>
<th>July</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<tr>
<td>2</td>
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<td>22</td>
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- Order windows (Allow 3 weeks)
- Order special front door (Allow 2 weeks)

- Make notes on the calendar to remind you
1. A client required you to design a new kitchen layout. He has provided a sketch of the kitchen showing shape and dimensions. Your first task is to draw a plan view to a suitable scale.

2. On this sheet is shown the drawing of the kitchen.

3. Reproduce a plan of the inside dimensions of the kitchen to a scale 1:20.

Remember ➔ To scale measurements down accurately.
Crackafilla

Mixing

Use about 2 volumes interior Crackafilla to 1 volume of water for small cracks and normal surfaces. Use less water for very absorbent surfaces, for deep cracks and holes. Mix carefully to form a smooth paste.

Measure out the required volumes of Crackafilla and water to fill several small cracks.

Work out the quantities you need and use a suitable measure.

Remember ➔ To measure accurately.
A rectangular room measuring 3.200m x 4.350m is to be floored with tongued and grooved boarding which costs £9.90 per m².

**Calculate:**

a) The **amount of flooring** you would order while allowing for 10% wastage.

b) The **total cost** of the flooring.

**Answer:**
A quantity of softwood costs £1.35 per metre run.

How many metres are contained in a length costing £10.00?

Answer:
Metric equivalents for length
1 centimetre ...... 0.394 inches
1 inch .......... 2.540 centimetres
1 metre ............... 3.281 feet
1 foot ............ 0.305 metres
1 metre .......... 1.0936 yards
1 yard ............ 0.9144 metres
1 kilometre ......... 0.6214 mile
1 mile ............. 1.6094 kilometres

Metric equivalents for squares
1 sq centimetre ...... 0.1550 sq in
1 sq inch .......... 6.452 sq centimetres
1 sq metre ........... 10.764 sq feet
1 sq foot .......... 0.09290 sq metres
1 sq metre .......... 1.196 sq yards
1 sq yard .......... 0.8361 sq metres
1 sq kilometre ...... 0.386 sq mile
1 sq mile .......... 2.59 sq kilometres

• Look at the chart above showing the metric equivalent for linear (length) and square measure.

Consider the following problem:

If a room measures 8' x 6'.
How many square metres is this equivalent to?

Answer:
Write down the approximate equivalent sizes of the following timbers:

1. 6" x 1" =
2. 7" x 2" =
3. 9' x 2½" =
4. 8" x 3" =
5. 7" x 1⅛" =

TIMBER SIZES

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<th>Millimeters</th>
<th>Decimeter</th>
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<td>4mm</td>
<td>⅛&quot;</td>
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<tr>
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<td>6mm</td>
<td>¼&quot;</td>
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<tr>
<td>⅜&quot;</td>
<td>9mm</td>
<td>⅜&quot;</td>
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<tr>
<td>½&quot;</td>
<td>12mm</td>
<td>½&quot;</td>
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<tr>
<td>1.8m</td>
<td>5'10 ¾&quot;</td>
<td>3.9m</td>
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<td>8'10 ¼&quot;</td>
<td>4.8m</td>
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<tr>
<td>3.0m</td>
<td>9'10 ⅜&quot;</td>
<td>5.1m</td>
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<tr>
<td>3.3m</td>
<td>10' 9 ⅝&quot;</td>
<td>5.4m</td>
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<tr>
<td>3.6m</td>
<td>11' 9 ⅞&quot;</td>
<td>5.7m</td>
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</tbody>
</table>
Quality interior and exterior doors

All sizes shown are nominal.

All prices subject to V.A.T.

F & R DWOOD DOORS 'A' GRADE 40mm LAUAN DOWEL CONSTRUCTION &
HARDWOOD DOORS 45mm LAUAN MORTICE AND TENON CONSTRUCTION

Situation:

A client likes the following doors: Kentucky, Carolina, Georgia, Victoria.

Find the prices for each for both dowel construction and mortice and tenon construction.

Write them here:

- Report to the client the differences in prices.
Study these doors:

- Find the cheapest solid wooden door with no glass panels.

- Compare the prices of the stable nine light with the stable one light. Which would you recommend bearing safety in mind.

- Work out the prices of the following doors when VAT at 17½% is added:
  - Knightsbridge
  - Algarve
  - Dakota
### Application of Number

#### 24 hour clock

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<tr>
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<td>1.05 pm</td>
<td>20.29</td>
<td>8.55 pm</td>
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<td>10.05 pm</td>
<td>22.01</td>
<td>3.02 pm</td>
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<td>12.07 am</td>
<td>00.00</td>
<td>11.50 pm</td>
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<tr>
<td>17.16</td>
<td>4.50 pm</td>
<td>00.30</td>
<td>5.10 pm</td>
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#### Addition

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<td>120</td>
<td>109</td>
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#### Subtraction

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#### Multiplication Tables

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<td>56</td>
<td>9</td>
<td>80</td>
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<td>54</td>
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72 is 8 x 9 or 9 x 8
54 is 6 x 9 or 9 x 6
40 is 5 x 8 or 8 x 5 or 4 x 10 or 10 x 4
30 is 5 x 6 or 6 x 5 or 3 x 10 or 10 x 3

#### Multiplication

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#### Fun with Numbers

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<td>666</td>
<td>777</td>
<td>888</td>
<td>999</td>
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#### Number Magic

123456789 x 9 + 10 = 1111111111
769230 x 13 = 9999990

#### Division

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#### Fractions & Decimal

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<td>3</td>
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235
Application of Number

Significant figures
1. a) 54.9759  b) 54.98  c) 55
2. a) 0.009468  b) 0.00946  c) 0.01
3. 32
4. 8.10
5. a) 4.1487  b) 4.149  c) 4.15
6. a) 79.398  b) 79

How to use a calculator
Wrong answers are:  Correct answers are:
2. 2595.2  259.52
3. 18.113  181.13
7. 21.5  0.215
9. 2.84  28.4
10. 0.33  3.3

Using your calculator
1. 130.88  5. 9.85
2. 49.22  6. 1.945
3. 0.0691  7. 0.002025
4. 2.486

Percentages
a) £34.15
b) £28.47
c) £1.48
d) £36.35
e) £140.57

Percentages
1) £90.74
2) 17.04 linear metres
3) £49.30
4) £5055.12

Practise your skills
£224  £179.20
£6.10  £155.55
28  £136.42
5  £122.50

Calculations of covering materials
216 tiles  236
Application of Number

Areas of Triangles
1) 9m^2
2) 11.76m^2
3) 2.52m^2
4) 40.92m^2
5) 1.44m^2

Areas of Circles
1) 201.09m^2
2) 452.45m^2
3) 120.78m^2
4) 289.57m^2
5) 2534.21m^2
6) 16.09m^2

Volumes
1) 36m^3
2) 38.05m^3
3) 51m^3
4) 0.066m^3

Costing of Timber
7.41m

Metric equivalents
4.46m^2

Metric equivalents
1) 150mm x 25mm
2) 175mm x 50mm
3) 2.7m x 62mm
4) 200mm x 75mm
5) 175mm x 30mm

Door prices
Knightsbridge £76.63
Algarve £68.80
Dakota £56.42

237
Application of Number

Please tick a box.

I feel confident using: 24 hour clock

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addition/subtraction

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multiplication/division

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significant figures

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fractions and decimals

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calculations

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percentages

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measurement

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money

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directions (giving and following)

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measurement of weights

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charts/graphs

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scale drawings

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costing

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conversion tables

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I require further work on

---

If you have answered NO to any of these questions then read through the section again or ask your tutor for help.
What is it?

It's the input, storage, accessing and retrieving of information by the use of electronic methods.

What's the main method?

Computers (they process information very quickly).

What other method is there?

Telecommunications – telephonic means of transmitting information between the various parts of an organisation, or from one firm to another.

Where is it used?

On the shopfloor – data collection systems can be used to link production machinery in factory workshops to a central computer, transmitting messages which allow the computer to record output.

In warehouses – machinery can be computer controlled and so help the packing of goods on to pallets ready for sending off to customers.

In stock/store rooms – there is no need now to have store rooms full of materials. With new technology materials can be supplied direct from suppliers to the factory floor on demand.

Do you use I.T.?
Find out (ask your tutor or supervisor)

- What computers and printers are there for general use at your College or for your course or department.

- Is I.T. a part of your course of study?

- Find out exactly which computer skills you need for your course.

- Are there special times during the week when you can have access to computers? Write them here:

- Are there clear instructions for the use of computers and for the use of software?

- Are there software packages available including graphics packages available for use?

- Is there help available if you need it from tutors trained in computing skills?
I.T. is now an important part of our lives.

When do we use computers?

Here are some examples:
- in the library – information about books borrowed etc. is stored on computer
- at the doctor’s – regular medical tests – details stored on computer
- in banks – details stored on computer
- holidays – can find out what’s available where and when very quickly
- driving licence information
- car tax renewal
- stock records
- insurance records
- paying on easy terms
- poll tax payments (for the over 18’s)
- gas bills
- electricity bills
- water rates
- membership subscriptions.

In your firm:
- computer aided design
- costing
- wages
- staffing details
- stock records
- materials.

Any more?
How do they do it?
- they use television or telephone links

Where is the information displayed?
- on computer or television screens

What do you know about TELETEXT?
- Teletext displays screens of information on television sets which have teletext equipment.
  
The BBC's service is called CEEFAX
  
The ITV's service is called TELTEXT

What do you know about VIEWDATA?
- This is a two way information system where members can connect their computer through the telephone system to the central computer. Then the subscriber can access the central store of information and use any of the services provided such as electronic mail, telebanking and teleshopping.
Before commencing the following exercises you should consult your own computer users manual to determine how to carry out the computer functions.

Select an option in the dialog box by typing 1 or 2. You may select the files you want to change one at a time or all at once.

Select this option if you want to protect your file from being overwritten.

Select this option if you don't want the file to display in a directory listing.

The file AUTOEXEC.BAT is an ASCII file. The options available are:

- Rename
- Move
- Copy
- Delete
- View
- Properties
- Open
- New
- Print
- Search
- Send To
- Copy
- Replace
- Link
- Edit
- Run
- Properties
- Help
- Autoexec.bat
- Options

Starting a File

The Open command lets you start a program or file. You can only open one file at a time.

Opening a file

Here's how to open a file:

1. Select the file you want to open.
2. Choose the Open command from the File menu.

Type the special options your program needs to run.

Associating Files with Programs

If you have a set of files that you often use with a particular program or application, such as a letter file that you use with a word processing program, you can associate them with the program. This command automatically starts the program or application whenever you open a file that has been associated with the program.

For example, if you have a Word processing file called DOC123.TXT and an associated page file called DOC123.STY, you would select the file and choose the Program command from the File menu.

244 BEST COPY AVAILABLE
**Instructions**

- Set the computer going **following the correct order of instructions** (or else the system will not operate).

- **Load the program** you wish to use.

- When you have done your work, **save it**. Then you can **load that data** back into the system and work on it at a later date.

- **Remember** – before closing down the system **make sure** that you have **saved** your material.

Remember to **leave the program** in the **correct way**.

**Close down the system** in the **order described**.

- Follow the instructions necessary to open up the system
- Load the program and data
- Close down the system

→ **Remember to follow all instructions carefully**
When wanting to **process information** using a computer system you must first enter this information into the computer.

**How do you do it?**

**Keyboard**
The keyboard is the most common way of inputting information. Most computer keyboards have the same layout as typewriters but with additional keys such as **shift lock**, **caps lock**, **control** and other special **function keys** – their function depends on the program being used.

<table>
<thead>
<tr>
<th>Space bar</th>
<th>gives a blank space</th>
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</thead>
<tbody>
<tr>
<td><strong>Cursor control keys</strong></td>
<td>move the cursor around the screen</td>
</tr>
<tr>
<td><strong>Delete key</strong></td>
<td>rubs out anything you don’t want</td>
</tr>
<tr>
<td><strong>Escape key</strong></td>
<td>press this to stop a program</td>
</tr>
<tr>
<td><strong>Return key</strong></td>
<td>sends your message to the computer</td>
</tr>
<tr>
<td><strong>Programmable or function keys</strong></td>
<td>allow you to do special things</td>
</tr>
<tr>
<td><strong>Shift keys</strong></td>
<td>some keys have 2 things written on them (like the number keys). Press the number key and you will get a number. Press the <strong>shift</strong> and the number key and you will get the character at the top.</td>
</tr>
</tbody>
</table>

**Mouse**
The mouse allows the user to move the cursor more quickly than by using the keys. (The cursor is a little marker that moves across the screen and shows you where the next letter will be placed.)
What is a floppy disk?

- A floppy disk is an individual disk of 3½" or 5¼" diameter which is used to store data.
For this task you will need to know how to:

- open up your computer
- load your word processing program
- enter text
- save text on floppy disk under the file name of your choice
- use a keyboard

Load your word processing program.
Key in the information given below.

Job instructions

Client, Mr J Harris, requires replacement door, design Carolina price £165.00, to be fitted on Tuesday 21 July at 11.30 am

Save your file.
Close down the computer.
For this task you will need to know how to:

- open up the computer
- access the word processing program
- retrieve previously saved file from floppy disk
- delete words
- replace words
- save amended version under same file name
- close down computer.

Load your word processing program.

Replace words previously keyed in with the new information given below:

Your client, Mr J Harris, has changed his mind. He now requires a door, style Georgia price £159, to be fitted on the same day but at a later time of 1.15 pm.

Delete the necessary words and replace them with this new information.

Save your file.

Close down the computer.
Key this passage into the computer.
Delete the words which you think are wrong.

SAFETY AT WORK

Safety at work is an important/immense/impossible matter. Failure to pay proper attention to safe procedures and rules can result in serious accidents. Many accidents have common causes, however, and can be easily prevented, provided we learn to work safely.

Using the proper practical/protective/prepared equipment is important. If such equipment as overalls, helmets, boots, dust masks, etc. are provided they must be used.

When moving about your place of work you should observe/reserve/preserve the rules: walk, don’t run and don’t take short cuts. Don’t drive a works vehicle without permission/operation/allowance/ and never hitch a ride. It’s also important not to have things lying around which people can walk/fall/lean over.

Lifting and carrying are a common case/cause/course of accidents. You should not lift or carry more than you can manage and you should ask for permission/assistance/offers with anything you cannot manage by yourself.

• Save your file
What is it?
Any computer can become a word processor by loading a word processing package into it. It's like an electronic typewriter.

What are the advantages?

- you can **type** in text
- you can **alter** it whenever you like
- you can **correct** mistakes (some have a spell check)
- you can **move** text **around**
- you can **add** to it, or **delete** words or paragraphs
- you can **lay it out** as you like it
- you **don't have** to **finish** something in one go – there's no hurry
- you can **save** it
- you can **print** it whenever you like
- it gives you thinking time – you can **add** or **alter** at a **later date**.
What can you do to present materials attractively?

- **Spacing**  
  Spacing between lines can be altered, extra spacing can be added between chunks of text so that the appearance of a document can be improved.

- **Typeface**  
  There are many different varieties to choose from:
  
  - Timber: Athens
  - Timber: Bookman
  - Timber: Helvetica
  - Timber: London
  - Timber: Times
  - Timber: Palatino

- **Size of letters**  
  - Timber: 9 point
  - Timber: 12 point
  - Timber: 14 point
  - Timber: 18 point

- **Style**  
  - Timber: Bold
  - Timber: Italic
  - Timber: Underline
  - Timber: Outline

- **Justify**  
  - Timber (justified left)
  - Timber (centred)
  - Timber (justified right)

- Produce a safety poster carrying this message:

  **Only drive works vehicles you have been trained to operate and are allowed to use!**

- Use any of the techniques listed above
**UPGRADE**

**Fax Machine**

**What is it?**
- Fax is a shortened form of facsimile which means exact copy.

**What does it do?**
- It transmits a copy of a document to a receiver.

**How does it do it?**
- By using either the telephone or telex network to transmit.

**What are the advantages of this form of communication?**
- It is quick – it can take a few minutes to send a document instead of a few days by normal post.

---

**Here are the instructions:**

- Place the sheet to be faxed on the feeder tray.
- Tap in the fax number of the person or firm you wish to send the material to.
- The material will feed through automatically once contact is made.
- A print-out will be given to you to show that the material has been received.
Situation:
There are 3 of you, all joiners, working on an extension to a detached house belonging to Mr Saville of 2 Dendy Road, Dibden, Nr Southampton, Hants.

Your firm’s Head Office in Birmingham and your supervisor (Jim Williams) has instructed you to fax in to the office the details of the hours worked by each joiner.

In order to carry out this task you will need to:

- open up the computer
- type in the required information

<table>
<thead>
<tr>
<th>To: Mr J Williams, Buildright, Birmingham</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Smith                       ... 42 hours</td>
</tr>
<tr>
<td>Bill Dawson                      ... 37 hours</td>
</tr>
<tr>
<td>Fred Brown                       ... 40 hours</td>
</tr>
</tbody>
</table>

Site: 2 Denby Road, Dibden, Southampton

- output hard copy
- follow instructions for faxing
- successfully transmit a copy to your supervisor.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command</td>
<td>a message that tells a computer to do something.</td>
</tr>
<tr>
<td>Cursor</td>
<td>a blinking line or box on a computer screen that marks where things you type in will go.</td>
</tr>
<tr>
<td>Drive</td>
<td>a device that moves information between disk and the computer's memory.</td>
</tr>
<tr>
<td>Filename</td>
<td>the unique name given to a program or a particular file.</td>
</tr>
<tr>
<td>Function keys</td>
<td>specific keys on the keyboard that, when pressed, instruct the computer to perform a particular task.</td>
</tr>
<tr>
<td>Hard Copy</td>
<td>a printed copy of computer output such as letters, reports, charts, graphs.</td>
</tr>
<tr>
<td>Input</td>
<td>the process of entering data into a computer, or the actual data being entered.</td>
</tr>
<tr>
<td>Memory</td>
<td>the area in the computer where information is held, while the computer is using it.</td>
</tr>
<tr>
<td>Menu</td>
<td>a list of choices from which you can select a task or operation to be performed by the computer.</td>
</tr>
<tr>
<td>Output</td>
<td>computer results or data that has been processed.</td>
</tr>
<tr>
<td>Program</td>
<td>a series of instructions a computer can understand which makes it do something.</td>
</tr>
<tr>
<td>Prompt</td>
<td>a character or series of characters that appear on the screen to ask for input from the user.</td>
</tr>
<tr>
<td>Save</td>
<td>to store information on a disk to be used later.</td>
</tr>
</tbody>
</table>
Information Technology

Please tick a box.

I know what I.T. is

I know where it is used and its benefits

I know how to start up and close down a computer

I know how to use the keyboard to enter data

I know how to enter, load and save text

I know how to delete words

I know how to use a printer

I know about word processing

I know how to present material effectively

I can use a fax machine

I know about computer networking

I am familiar with computer terms

I need further work on

Yes No

Yes No

Yes No

Yes No

Yes No

Yes No

Yes No

Yes No

If you have answered NO to any of these questions then read through this section again or ask your tutor for help.
Further copies are available from:
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