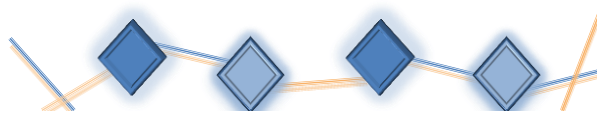


ENGLISH FOR CONSTRUCTION



Unit 1: Teamwork

- Talk about roles and responsibilities
- Explain how an organization works



Roles and responsibilities



Roles and responsibilities

Match these descriptions with the people in the illustration

1. I'm _____. I work for a concrete supplier. We deliver concrete to construction sites all over the country.
2. I'm _____. This is my apprentice.
3. I'm _____. Today I'm painting a steel staircase.
4. I'm _____. I control access to the site. I'm responsible to the site manager.
5. I'm _____. My company is responsible for the whole project.
6. We're _____. We're visiting the site to ask some questions.

Site manager
Security guard

Driver
Reporters

Electrician
Painter

Roles and responsibilities



Site manager



Painter



Security Guard



Electrician



Plumber



Welder

Roles and responsibilities



Glazier



Architect



Carpenter



Bricklayer



Surveyor



Equipment operator

Roles and responsibilities

1. We build walls, buildings, etc with bricks
2. We visit the site to ask some questions
3. We make and repair wooden objects
4. We control access to the site
5. We paint houses or other buildings
6. We weld metal in a factory
7. We repair pipes, baths, toilets etc
8. We connect or repair electrical wires or equipment
9. We design buildings
10. We fit glass into window frames
11. I'm responsible for managing all works on the site

LISTENING



LISTENING

- M: So ... how can I help you?
- S: Well, we'd like some _____(1) information about the project.
- M: OK, I can ask my _____(2) to send you some details. We sent out a press release a couple of weeks ago.
- S: Yes, we have a copy of that, thank you. We're interested in finding out more information about the people working here. How many _____(3) do you have on site? What do they do? Where are they from? Are they all local people?
- M: Oh, that depends on what's happening. As you can imagine, this is quite a _____(4) business, so we have different _____(5) and _____(6) coming in and out all the time.
- S: OK.

LISTENING

- M: But, to answer your question, I'd say we usually have about 100 people on site. And they're mostly from this area.
- A: And you're in charge of the site?
- M: Well, yes, my company - actually, my father's company - is the _____(7) for the project. We co-ordinate all the subcontractors and make sure things stay on schedule and stay within budget. I report to the _____(8), Sabina Tom.
- A: I see. And your father is Kasper Karp?
- M: Yes, that's right. Sometimes, on bigger projects, we work in a consortium with other _____(9) and _____(10).

LISTENING

- S: Could you tell us something about...?
- M: Excuse me, I've just seen Mr Lang. He's walking through the gate. He represents the _____(11), and I have a meeting with him and Anna Black in a few minutes' time ...
- S: Anna Black?
- M: Anna works for the _____(12), DKI Cement. They're supplying all the cement for the project. Just a moment, please. My assistant, Robert Lane, will answer any further questions you have.
- S and A: Thank you.

SPEAKING

Work in pairs. Explain what your jobs is and what you do. Example like this:

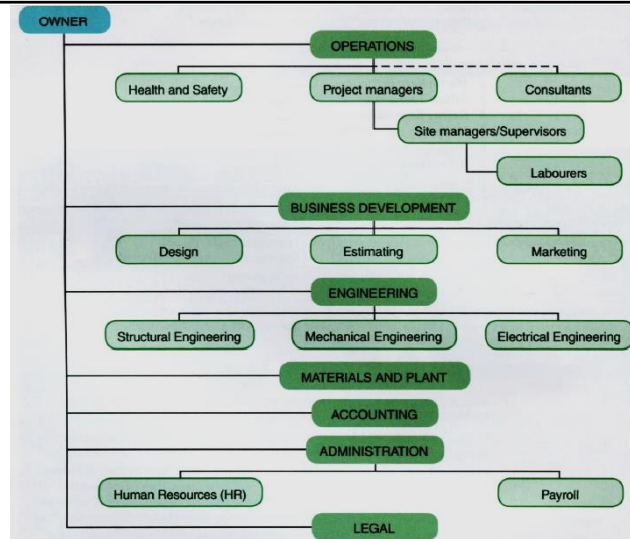
I'm a ...

I work for ...

My company ...

I'm responsible for ...

Structure of an organization



Structure of an organization

departments divided external has look part report section top

- 1 Our company has a simple structure. At the _____ is Kasper Karp, the owner.
- 2 There are seven _____. The department heads report to the owner.
- 3 Operations consists of a Health and Safety _____ and all the project managers.
- 4 The site managers and supervisors _____ directly to a project manager.
- 5 Business Development is _____ into three sections: Design, Estimating and Marketing.
- 6 Engineering also _____ three sections: Structural, Mechanical and Electrical.
- 7 There are different departments which _____ after materials and plant, accounting, administration and legal.
- 8 Sometimes we have _____ consultants to help with special jobs. They are not _____ of the company.

Structure of an organization

Listen the heads of the seven departments talking about their roles. Write the names of their departments. Use the organization above to help you.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

Structure of an organization

1. Support (n) help
 Fleet (n) a group of vehicles that are controlled by one company
 Liaise (v) exchange information with another organization
2. Claim (n) official request for money
3. Phase (n) one of the stages of a process
4. Income >< outgoings
7. Recruit (v) find new people to do a job
 Expense (n) money that spend on something
 Wage (n) ≠ Salary (n) money you receive for your work

Unit 2: Design

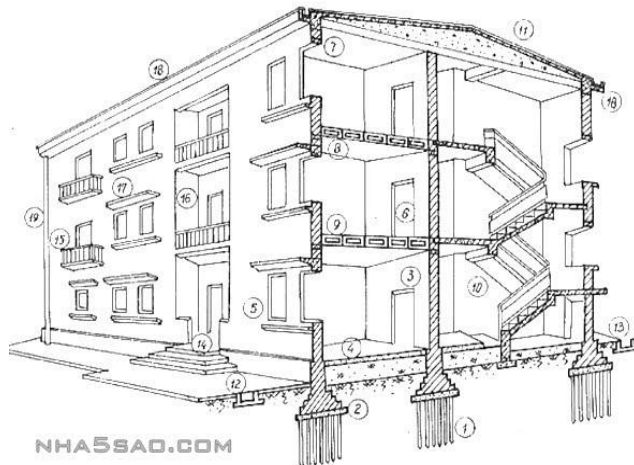
- Describe technical drawings
- Estimate



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TECHNICAL DRAWING

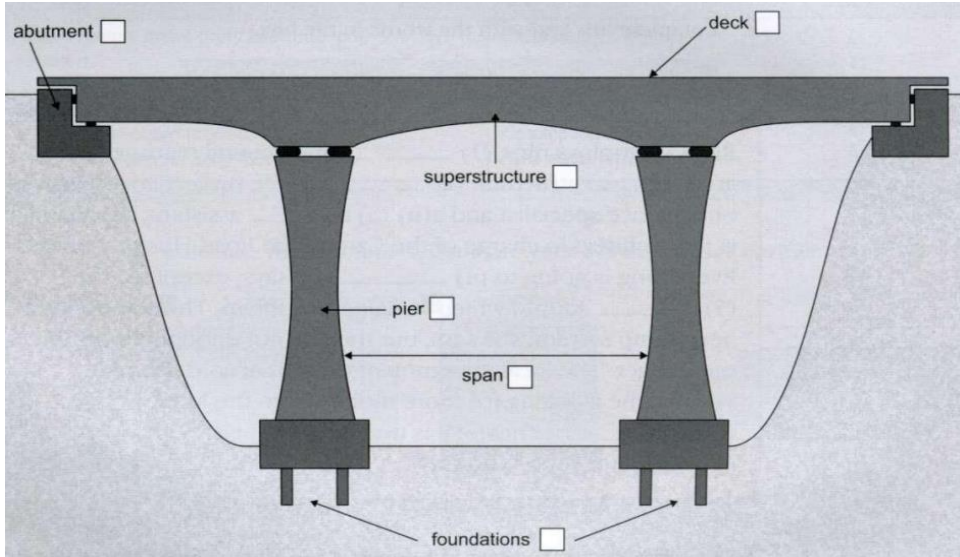
Look at the picture and name the elements numbered:



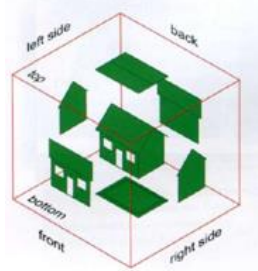
NHA5SAO.COM

- Pile
- Foundation
- Pavement
- Floor
- Wall
- Door
- Window
- Stairs
- Steps
- Lintel
- Loggia
- Balcony
- Gutter
- Down pipe
- Drainage ditch
- Drip mould
- Roof

TECHNICAL DRAWING



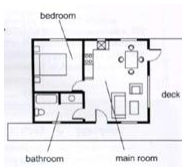
TECHNICAL DRAWING



Orthographic projection



Perspective projection



Floor plan



Elevation



Cross section



Exploded view

TECHNICAL DRAWING

Complete this text with the words above:

There are many ways of putting a 3D object into 2D. _____ can be found on all construction projects. These drawings show different views of the object, and can include _____ (a view from one side) and _____ (the view when you cut through an object). Another type of drawing shows _____, which are very useful for understanding the assembly of an object, in other words how it all fits together. A third type of drawing is _____, which allows us to see an object from above. A typical example of this is a floor plan. These are very useful when we want to look at the fittings in detail, in other words where objects like cookers and baths go.

TECHNICAL DRAWING

Words	Meanings
1. Elevation	a. A 2D representation of a 3D object
2. Beam	b. The view from one side
3. Roof	c. The view when you cut through an object
4. Projection	d. The view from above
5. Girder	e. A long heavy piece of material used in houses, bridges, etc
6. Column	f. Strong beam
7. Frame	g. A frame supporting a roof
8. Plan view	h. Structural element that transmits, through compression, the weight of the structure above to other structural elements below
9. Truss	i. An upright flat structure made of stone or brick, that divides or surrounds an area
10. Section	j. The main supporting parts of houses, bridges, etc
11. Wall	k. The structure that covers the top of a building

LISTENING

Listen and complete a conversation

ESTIMATE

WRITING	SAYING
2.000 m	
0,03 cm	
1,34 m	
3m x 4 m	
25 m ²	
600 m ³	
200 ± 1 mm	
1:100	
$20 \times 30 = 600$	
$\frac{12}{5}$	
πr^2	
$2\pi r$	
$\sqrt{64} = 8$	








ESTIMATE

Say these dimensions and calculations:

- | | |
|---------------------------|---------------------------|
| ➤ 3,065 mm | ➤ $5 \times 6 = 30$ |
| ➤ 4,632 m ² | ➤ $100 / 5 = 20$ |
| ➤ 2.500 sq ft | ➤ $\sqrt{36} = 6$ |
| ➤ 34m x 28m | ➤ $5 + 3 - 1 = 7$ |
| ➤ $26' \pm \frac{1}{2}''$ | ➤ $7^2 = 7 \times 7 = 49$ |

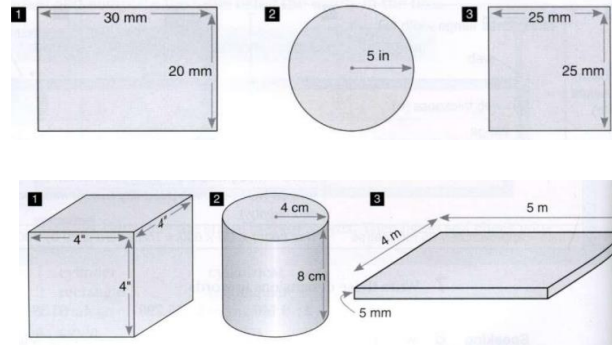
ESTIMATE

Complete this table about some shapes:

1 _____		a triangle	a(n) ² _____ truss
3 _____		an I-shape	a(n) ⁴ _____ girder
5 _____		a circle	a circular rod
6 _____		a square	a(n) ⁷ _____ beam
8 _____		a cylinder	a cylindrical can
9 _____		a(n) ¹⁰ _____	a spherical damper
11 <u>A</u> _____		a rectangle	a(n) ¹² _____ room

ESTIMATE

Calculate the areas and volumns



READING

Read text and answer some questions

1. What are the structural elements of building?
2. What may columns and beams are constructed of?
3. Where may pre-cast units be prefabricated?
4. Which units may be precast?
5. What does a bearing wall and curtain wall do?

LISTENING

Listen to an architect describing the house. Write the dimensions you hear.

1. total area _____.
2. main room, with the kitchen _____.
3. bedroom _____.
4. bathroom _____.
5. height of rooms _____.
6. doors, not including frames _____.

Unit 3: Equipment

- Talk about usages of equipments



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EQUIPMENT

Name some equipments and tools in construction site below:



Talking about equipment

Listen and name those machines.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

Talking about equipment

Work in pairs to talk about description, usage of some equipments like that:

1) *What does a bulldozer do?*

It can _____.

It's for _____.

It's used for _____.

2) *What do you use jackhammer for?*

I use it for _____.

Mixing concrete

Some equipments and tools in mixing concrete



Mixing concrete

Read this text about mixing concrete and choose True (T) or False (F):

1. Concrete mixers mix and pour concrete.
2. For small quantities of concrete, transport trucks are ideal.
3. Portable mixers use electricity.
4. Cranes lift hoppers full of chute men to the job site.
5. In- transit mixers rotate during transport.

Concrete mixers mix and pour concrete. For small quantities of concrete, hand mixers are ideal. The portable mixer has wheels and uses electricity. It has a small drum which rotates. Concrete transport trucks – or in-transit mixers – transport large quantities of concrete to the site. The drum rotates during transport. The chute man pours the concrete down the chute, or uses a pump to get the concrete to difficult locations. Sometimes a crane lifts a hopper full of concrete to the job site.

Unit 4: Materials

- Describe properties of materials
- Order materials



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Properties and Usages



Order materials

Listen a conversation and correct 4 mistakes

Caller:	Abdulla	Goods arrived:	9:00
Company:	Kawasoki Construction	Goods signed for by:	Malik Zahid
Order number:	G2356-J	Delivery address:	12 Bridge Road
Goods dispatched	10:05		

Order materials

Listen a conversation and complete

A: Hello?

B: Just one moment, please. Sorry about that. OK, _____(1).

A: Ah good. Thank you. My name 's Lopez. Who am I speaking to, please?

B: Christina Dudek. How can I help you?

A: I'm calling about a problem with an _____(2). We ordered some _____(3).

B: Hasn't it _____(4)?

A: Yes, yes, it's here. That's not the _____(5).

B: Is it the _____(6) sand?

A: No, it's the right sand. But it's the wrong _____(7).

B: What do you mean?

Order materials

Listen a conversation and complete

A: Well, we ordered three 10 kg bags. And we received three _____(8).

B: So are you saying that we sent you three truckloads?

A: Yes, that's right. No, wait.. Now we have six truckloads! Three more have just arrived...

B: Where is the sand now?

A: In our car park. Our security guard didn't check the _____(9) - he just signed for it.

B: Oh, no.

A: Oh yes. They unloaded six trucks before we could stop them.

B: Did you say unloaded? Oh, no...

Order materials

Work in pairs. Practice a telephone conversation between a supplier and a buyer. Using some phrases in the box

Example:

- 1) *A: I'd like to place an order. We need thirty bags of cement.*
 B: Certainly. What's your customer number? Do you have transport?
 A: No, I'm sorry. I don't.
 B: No problem. We organize delivery. Where is the site?
- 2) *A: I want to order some timber.*
 B: I'm sorry. We're out of stock.

1	In stock/ out of stock
2	Customer number/ order number
3	Delivery/ pick up
4	Place an order/ change an order
5	Type of goods/ quantity

Order materials

Work in pairs. Practice a conversation about ordering materials

- 1. Type of goods**
- 2. Quantity**
- 3. Delivery**
- 4. Cost**
- 5. Payment**

Reading

Read the text in page 16 and answer these questions

- 1. What kinds of raw materials can be used to make concrete?**
- 2. What are advantages of concrete?**
- 3. In what case can concrete crack and how to solve that?**
- 4. How to make concrete more effective?**
- 5. How many ways are applied for making concrete? What are they?**

MIDTERM EXAM

Unit 5: Processes

- Concrete process
- Recruiting process
- Write a CV



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Processes

Match the words with their meanings

1. This is a routine job, we do it everyday	a) Outcome
2. What is the procedure for setting out?	b) Steps
3. There are 3 stages in the process	c) Normal
4. The result is a straight line	d) Standard way of operating
5. It's important to be systematic	e) Organised

Processes

Complete this text with the words in the box.

Finally | First | result | routine | stages | Third

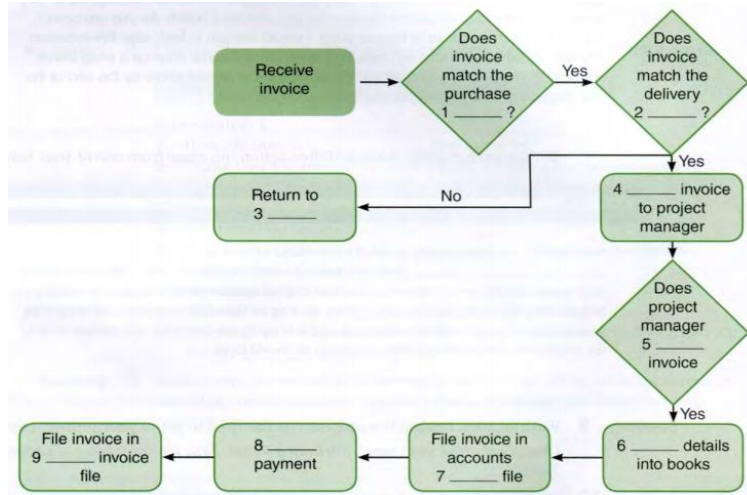
We do this every day: it's (1) _____. The procedure is simple. There are only seven (2)_____ and the (3) _____ is always the same. (4)_____, you smile at the guard and say 'Good morning'. Second, the guard smiles back and says 'Good morning'. (5) _____, the guard asks you for your ID. After showing him your ID, the guard smiles and says 'Thank you'. Then you also smile and say 'Thank you'. (6)_____, you enter the site.

Processes

<p>First, ... Second, ... Third, ... First of all, ... (Note that we do not say Second of all, ...) Next After that, ... /After + -ing ... Then Finally, ...</p>
<p>That's all I want to say about ... Moving on to the next step ... Before that, ... /Before + -ing ...</p>

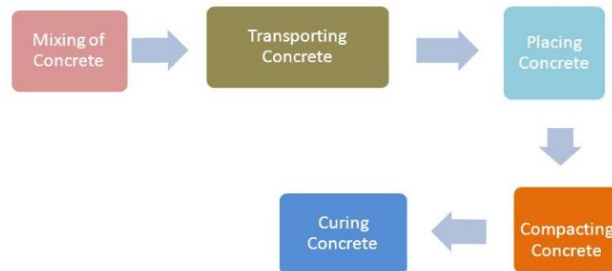
Reading

Read the text and complete the flowchart



Speaking

Work in groups, use sequencing markers to explain the process of concreting



Listening

recruit (v)	to find new people to work in a company
advertise (v)	to make an announcement, e.g. in a newspaper, that a job is available
interview (n)	a formal meeting at which someone is asked questions in order to find out whether they are suitable for a job
reference (n)	a person who provides information about your character and abilities
identify (v)	to recognize and correctly name someone or something
skill (n)	an ability to do something well
applicant (n)	someone who has formally asked for a job
prepare (v)	to make plans or arrangements for something that will happen in the future
update (n)	the most recent information about something
shortlist (n)	the final few applicants for a job, normally invited for a second interview

Homework

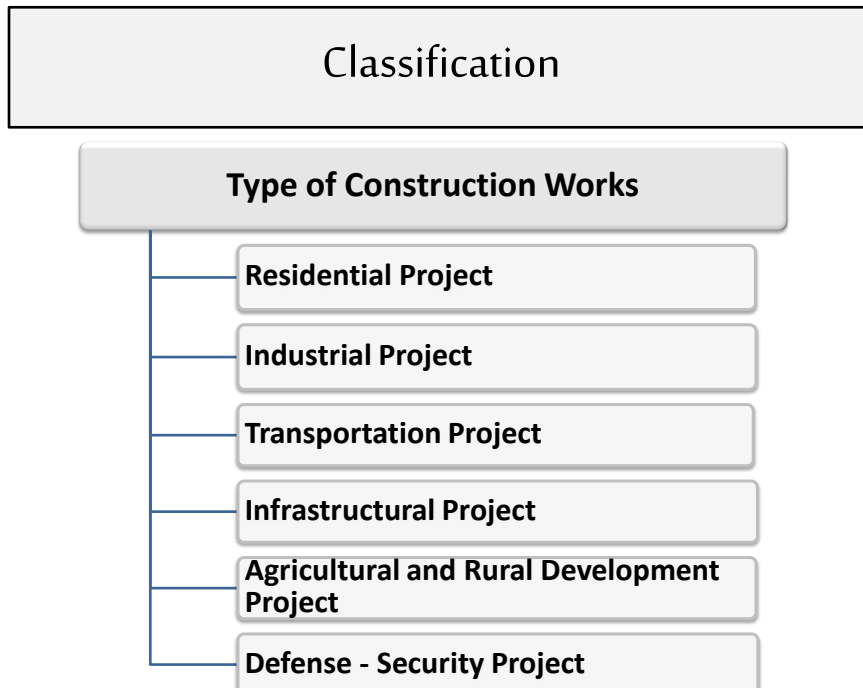
Write a CV for your job application.

Unit 6: Projects

- Classification
- Gant chart
- Contracts
- Meetings



3



Classification

The sizes, importance

Project of national importance

Project group A, B, C

Project at small size

Vocabulary

1	Have you seen the first draft of the project plan ?	a)	Land, building, equipment,...
2	The project manager clarified the scope of the project at the meeting.	b)	Document summarising all aspects of the project
3	The new WBS software is saving us a lot of time.	c)	Components
4	Rashid will be in charge of co-ordinating resources for the project.	d)	Without planning
5	The accountants are not happy with the budget .	e)	Official agreement
6	The room for the kick-off meeting has been changed. It's now in Room 2E.	f)	The work that needs to be done
7	The WBS splits the work into smaller elements .	g)	People, materials and other assets available for the project
8	Three firms bid for the contract on the new buildings.	h)	Work Breakdown Structure
9	Please check the invoice No10345 for me.	i)	Cost breakdown
10	The chairman has summoned an impromptu meeting.	j)	Offer to pay a particular price
11	There is a strike on this company	k)	List of goods have been supplied
12	The value of this company's asset is about \$16 billion.	l)	First meeting
13	The contract was fixed to a contractor from New York	m)	Not working

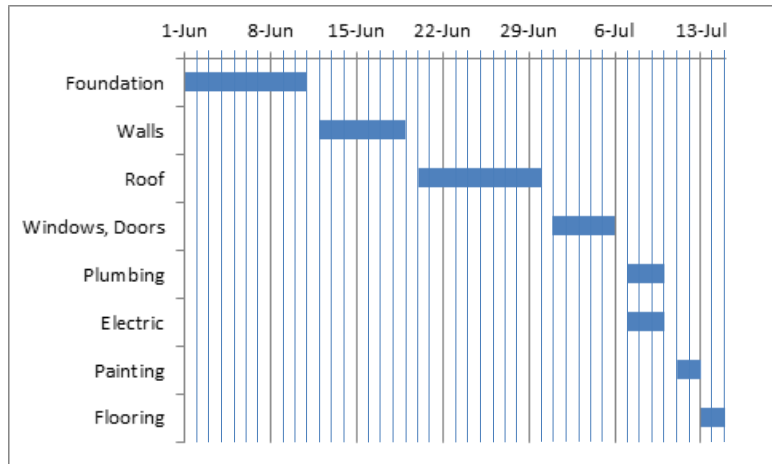
Gant Chart

Read the text and complete this schedule

	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Design																	
Site preparations																	
Foundations																	
Pier construction																	
Superstructure																	
Deck																	
Opening ceremony																	

Gant Chart

Describe this Gant chart:



Contracts

Type of Contracts

Lump sum contract- Fixed price contract

Fixed unit-price contract

Adjustable unit-price contract

Time-based contract

Percentage contract

Meetings

Read the text and answer these questions:

1. What types of meeting is it?
2. What is the problem?
3. What are the reasons she give for the problem?
4. Who has she spoken to about the problem?
5. How is she planning to solve the problem?

Listening

Listen and complete the text:

Unit 7: Documentation

- Types of document
- Document control procedure



Types of Document



Contract



Drawing



Order



Invoice



Schedule



Procedure



Memo



Agenda



Manual



Presentation



Report



RFI

Types of Document

1	Procedure	a)	A list of the subjects to be discussed at a meeting
2	Contract	b)	A book that gives instructions about how to do something
3	Report	c)	An official agreement between two or more people, stating what each will do
4	Agenda	d)	A way of doing something, especially the correct or usual way
5	Memo	e)	A short official note to another person in the same company or organization
6	Manual	f)	A written or spoken description of a situation or event, giving people the information they need

Types of Document

Practice a conversation about some documents

Example:

A: What is it?

B: It's a contract

A: What will we use it for?

B: It's an official agreement between client and contractor, stating what each will do

Document control

Listen and complete this conversation about document control in a company:

Document control

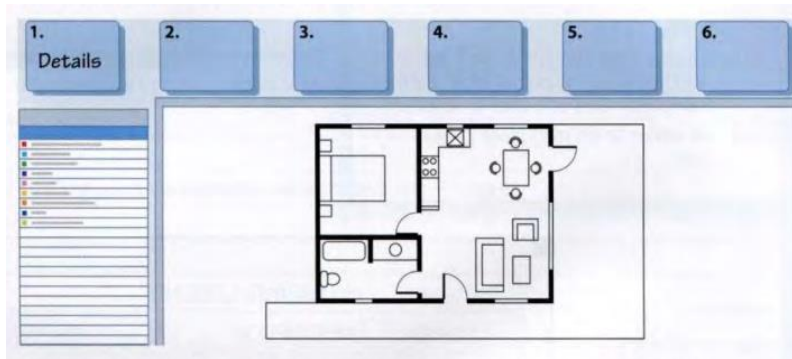
Complete this document control procedure with the words in the box:

amended archived books out figures
log number scan track version

When a document comes in, we first make a handwritten note in the (1) _____. If necessary, we give it a serial (2) _____. We then (3) _____ it in, so that we have a permanent electronic record. As you can see, the serial number ends with a slash and then another number, always three (4) _____. So, 001 is the first (5) _____ of the document. If the document is (6) _____ or updated in any way, it receives a new version number and so on. We also use the log to (7) _____ the movement of the document. If someone (8) _____ the document, the date and time are recorded here and when it comes back in, the date and time are recorded again. At the end of the project, the document is either destroyed or (9) _____, depending on its importance.

Document control

Listen to a conversation about a document management system. Label the buttons on the screenshot.



**Confidentiality level - Document output - Originator
Status - Document history**

Unit 8: Health and safety

- Injuries and accidents in construction site
- Protective equipments and warning signs



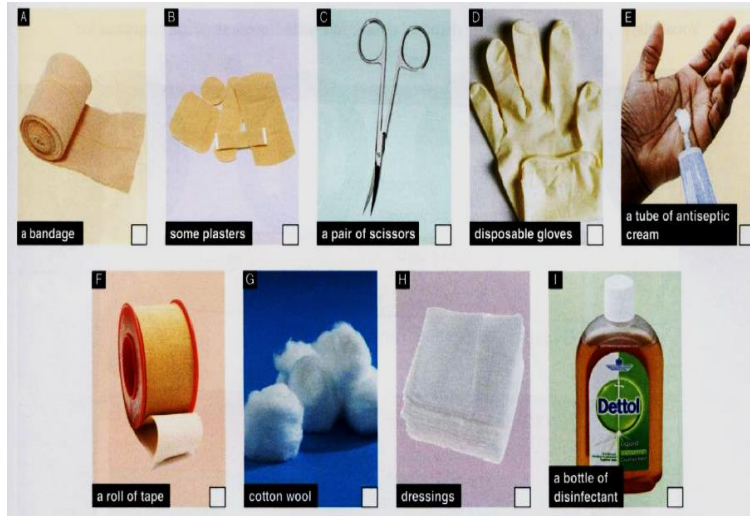
69

Injuries



70

First aid kit



71

First aid kit

1	Bandage	a)	A long thin piece of plastic or cloth
2	Plaster	b)	A special piece of material used to cover and protect a wound
3	Tape	c)	A soft mass of cotton use for cleaning and protecting wounds
4	Antiseptic	d)	A piece of clothing that you wear on your hand
5	Cotton wool	e)	A narrow piece of cloth that you tie around a part of the body that has been injured
6	Dressing	f)	A piece of thin material that is stuck on to the skin to cover a small wound
7	Glove	g)	A medicine that you put onto a wound to stop it from becoming infected

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First aid kit

Work in pairs. Tell your partner about injuries accidents in construction site and explain how it happened. Your partner explains what to do using the phrases in the box.

call an ambulance get the first aid kit go to hospital see the doctor
take an X-ray

Example:

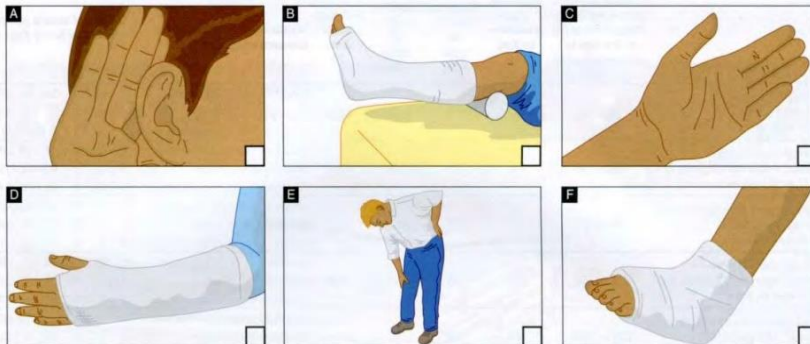
A: I cut my finger on some broken glass.

B: You need to get the first aid kit. First, clean the cut ...

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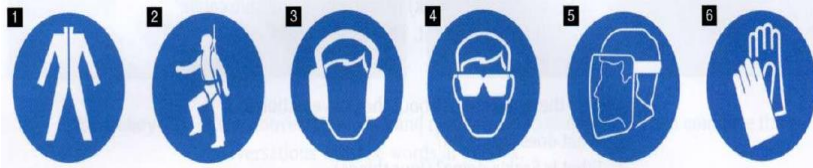
Accidents

Listen to 6 conversations about accidents. Match these illustrations with the conversations and complete them.



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Protective equipments



a harness a mask ear protection gloves
protective clothing safety glasses

- | | |
|------------------------|------------------------|
| 1 You must wear _____. | 4 You must wear _____. |
| 2 You must wear _____. | 5 You must wear _____. |
| 3 You must wear _____. | 6 You must wear _____. |

Warning signs



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Warning signs

- Use clues 1-9 to fill in the squares. What health and safety advice do you read in the column?

Clues:

- overhead _____
- _____ surface
- falling _____
- suspended _____
- _____ hazard
- stand _____
- _____ lift truck
- _____ dog
- safety _____



Site safety

- Look at this illustration. Circle the health and safety problems you see.



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THE END

