

PROFESIONĀLĀ ANGLŪ VALODA

ĒKU CELTNIEKIEM

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CONTENT

- UNIT 1. BUILDING KNOWLEDGE p.3 - 13**
- UNIT 2. TYPES OF BUILDINGS p.14 - 21**
- UNIT 3. HOUSEBUILDERS p. 22 - 28**
- UNIT 4. TOOLS AND MACHINERY p. 29 - 38**
- UNIT 5. BUILDING MATERIALS p. 39 - 48**
- UNIT 6. POSSIBLE PROBLEMS p. 49 - 57**
- UNIT 7. SAFETY AT WORK p. 58 - 67**

UNIT 1

THE RIGHT DECISION?

I Have a look at the questions and answer them.

- ✍ Are you fit and healthy?
- ✍ Are you hardworking?
- ✍ Do you like working outdoors?
- ✍ Are you ready to travel because of your job?
- ✍ Are you ready to set up a small business of your own?
- ✍ Are you interested in working abroad?
- ✍ Are you prepared to work overtime if needed?
- ✍ Are you ready to work in a team?
- ✍ Do you enjoy working with your hands?
- ✍ Are you accurate with the work you do?
- ✍ Are you prepared to clean up after the work is done?
- ✍ Do you have a good head for heights?

Did you answer "yes" to most of the questions? **If you did**, you have probably made the right decision, to become a housebuilder.

II Read the text and tell about advantages and disadvantages of being a builder. Add some your own ideas to the list.

As a housebuilder you must be ready to work outside in all weathers, even if it is raining or snowing and in cold weather, too. On the other hand it is like being on holiday when you work outdoors in beautiful and warm weather, isn't it?

Workdays may sometimes be very long, if schedule is tight. The work is often contract work, so the job has to be done in a certain time.

Economic ups and downs a powerful effect on the building industry. Therefore you may have to travel away from home to find work. A good way of earning money is work abroad. You have to be very flexible.

When the building industry is booming and the weather is fine every skilled housebuilder can choose the jobs he wants and make a lot of money.



ADVANTAGES (+)	DISADVANTAGES (-)
✍	✍
✍	✍
✍	✍

III Have a look at the words from the list. Copy some useful words into your notebooks.

1.	fit	labā fiziskā formā	в хорошей физической форме
2.	healthy	veselīgs	здоровый
3.	work overtime	strādāt virsstundas	работать сверхурочно
4.	unsocial hours	nakts maiņas, darbs brīvdienās	работа в ночную смену и по выходным
5.	outdoors	ārā	снаружи, на улице
6.	indoors	iekštelpās	в помещении
7.	height	augstums	высота
8.	schedule	(darba) grafiks	рабочий график
9.	tight	saspringts	напряжённый
10.	contract work	darbs pēc kontrakta	работа по контракту, договору
11.	economic ups	ekonomikas pieaugums	подъём экономики
12.	economics downs	ekonomiskas kritums	спад экономики
13.	earn	pelnīt naudu	зарабатывать
14.	boom	bums, pieprasījums	бум, спрос
15.	skilled	prasmīgs, kvalificēts	умелый, квалифицированный
16.	advantage	priekšrocība, pluss	достоинство, плюс
17.	disadvantage	trūkums, mīnuss	недостаток, минус

IV Match the phrase and the picture. Translate these into Latvian / Russian.

1. Housebuilding



2. Body-building



3. Building castles in the air



4. To keep an open house



1	2	3	4

V Study words denoting building tradesman and building work

The name housebuilder actually includes many trades. At a vocational school you can learn the basics of many different jobs such as masonry, steelfixing, tiling, roofing – just to mention a few. After school it is possible to specialize in a certain job. If you like to lay bricks you can become a skilled mason (bricklayer) or if you are more interested in working with wood you can become a carpenter. You are in a very lucky position, because you have many choices.

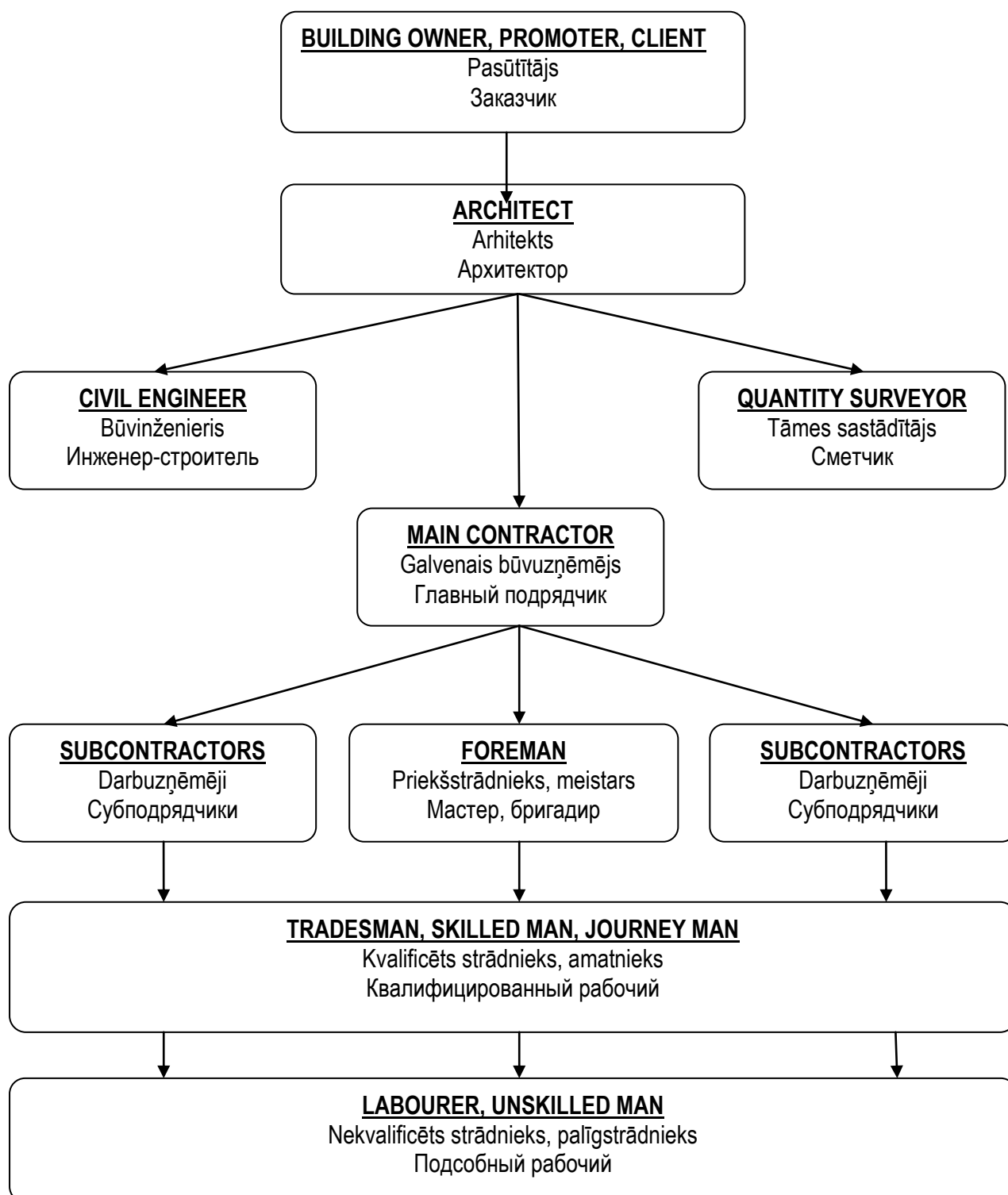
1.	bricklayer, mason	mūrnieks	каменщик
2.	concrete worker	betonētājs	бетонщик
3.	steel bender, steel fixer	stiegotājs	арматурщик
4.	plasterer	apmetējs	штукатур
5.	carpenter	namdaris	плотник
6.	sheetmetal worker, tin smith	skārdnieks	жестянщик
7.	plumber	sanitārtehnikis	сантехник
8.	electrician	elektriķis	электрик
9.	smith, locksmith	atslēdznieks	металлист
10.	welder	metinātājs	сварщик
11.	joiner	būvgaldnieks	столяр-строитель
12.	ironmonger	būvatslēdznieks	слесарь-строитель
13.	glazier	stiklinieks	стекольщик
14.	tiler	flīzētājs	облицовщик
15.	floor layer	grīdu licējs	настильщик полов
16.	painter	krāsotājs	маляр
17.	paperhanger	tapsētājs	клейщик обоев

What does we call a person:

1. who plasters walls etc.?
2. who fits glass in windows, who glasses pottery?
3. who is a skilled workman and does the lighter kinds of work in wood (the inside woodwork of buildings)?
4. who makes things with wood (the wooden parts of buildings, bridges, ships)?
5. whose business is building houses (one who builds)?
6. who makes plans for buildings, and sees to it that these plans should be followed by the builders?
7. who builds with bricks?
8. who cuts and prepares stone for building purposes (a worker in stone)?
9. who paints buildings, etc.?
10. who manages, makes, controls or repairs electric machinery?
11. who sweeps chimneys?
12. who makes living by fitting and mending water-pipes and cisterns, etc.?
13. who puts in place gas-stoves, etc.?
14. who rivets steel frame?

BUILDING KNOWLEDGE

VI Have a look at the chart, study it and learn the subordination



VII Read the text and translate the following questions. Put them to your group-mate and help to answer them.

WHY DO PEOPLE BUILD?

We build because we need shelter. We need shelter from sun, rain, wind, and snow. Not much that modern people do takes place outdoors. Our activities mostly take place indoors. For these activities we may need air that is warmer or cooler than the air outdoors. We may also need less light by day and more light by night than is provided by nature.

It is a well-known fact that modern people in many countries also need services. Modern services must provide energy, water, communications, and dispose of waste. Sanitary accommodation is also necessary and very important. For sanitary accommodation people must have ventilation. It is important to note that all services and accommodations are pre-planned and located on a site plan. A site plan must be prepared and provided for every building and every construction.

In order to have shelter provided with modern services and accommodations, people all over the world use many different construction materials and arrange them into different constructions. Since prehistoric these constructions have served as shelter and accommodation for a man, a group of people, many families, an organization, or enterprise.

What are the branches modern civil construction has? Among the branches the main ones are housing construction, construction of industrial enterprises, construction of railroads, highways, subways, constructions of bridges, dams, ports, canals, construction of different porting facilities. Among them there are stadiums, aquaparks, swimming pools, sporting complexes, and others.

1. Why do people need shelter?
2. What kind of services and accommodation do modern people need and use?
3. What branches of modern civil construction do you know?
4. Do you attend any sporting facilities? Do you attend them regularly?
5. Do you want to take part in modern civil construction?
6. What branches of modern civil construction are you interested in?

TEST YOURSELF









I. Choose the correct variant.

1. Much what we do takes place
 - a) indoors
 - b) outdoors
2. we need more light
 - a) by day than is provided by nature
 - b) by night than is provided by nature
3. Every construction serves as accommodation
 - a) For people and enterprises
 - b) For people, families, organizations and enterprises
4. Sporting facilities include
 - a) Stadiums and swimming pools
 - b) Stadiums, aquaparks, swimming pools, sporting complexes

1 point for each correct answer

Total:		4
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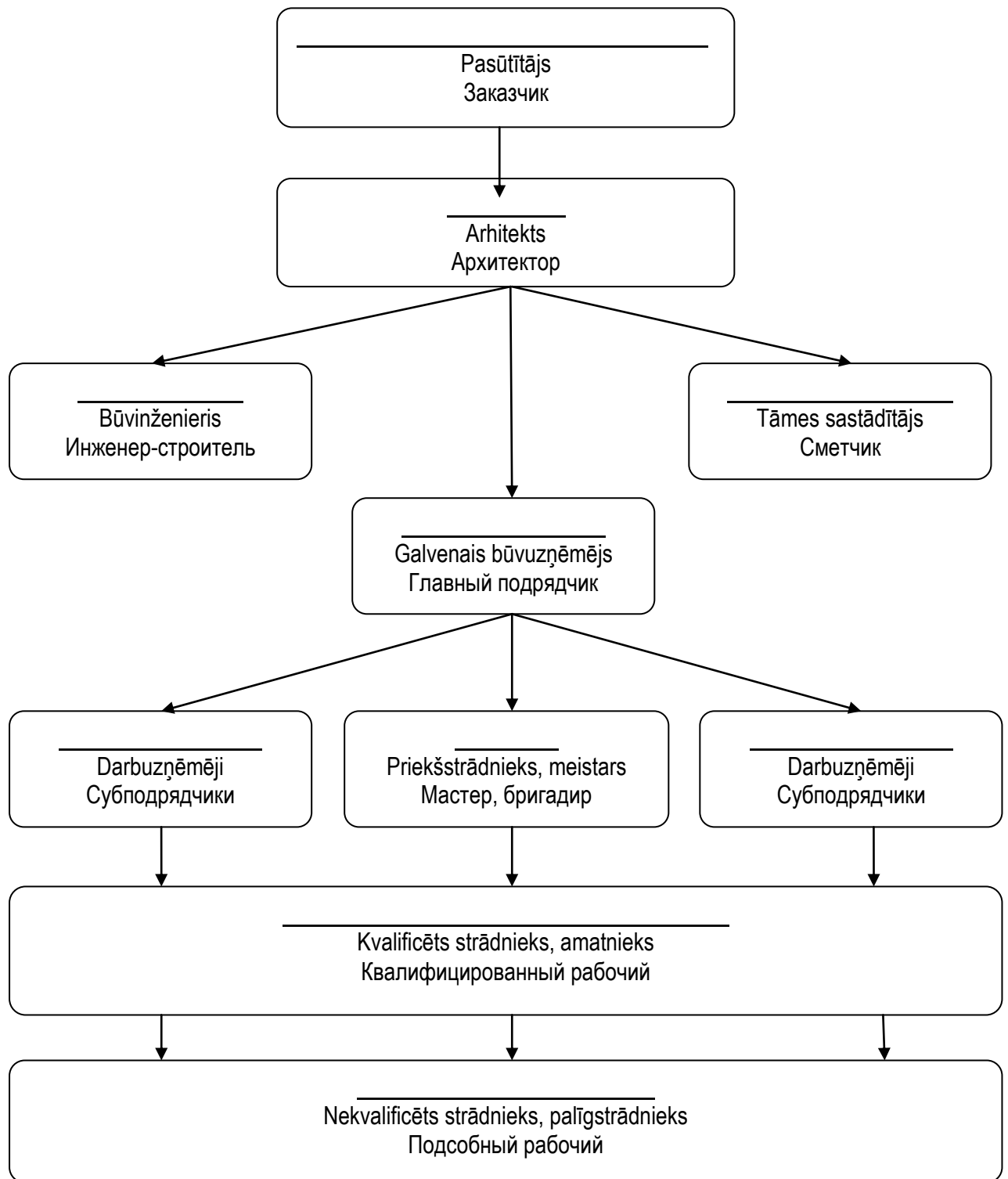
II. Name building workers you see in the pictures.

1. 	2. 	3. 	4. 
5. 	6. 	7. 	8. 

1 point for each correct answer

Total:		8
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III. Complete the chart



1 point for each correct answer

Total:		14
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III Test yourself and complete this crossword



1.

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2.

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3.

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4.

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5.

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6.

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7.

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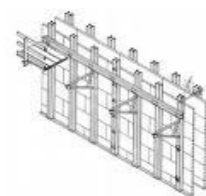


8.

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9.

[illegible]

10.

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11.

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12.

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13.

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14.

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15.

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16.

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17.

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18.

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Total:		18
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Total:		44
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Maximum is 10 (excellent)

Mark:		10
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Marking scale:

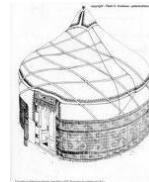
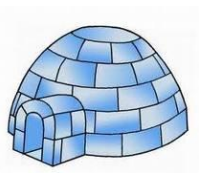
1	2	3	4	5	6	7	8	9	10
1-6	7-13	14-17	18-21	23-26	27-31	32-35	36-38	39-42	43-44

UNIT 2

TYPES OF BUILDINGS

I Have a look at the most traditional types of houses around the world. Read and translate the information about them

A house is built to give protection from heat, cold or storms. The first house was a cave, but since early times man has built many kinds of houses. These are the most traditional ones.



✍ **Huts** are used as temporary shelter by people. Huts are quickly built of natural materials such as ice, stone, leather, fur, grass, palm leaves, branches and/or mud and exist in practically all nomadic cultures. Some huts are easily transportable.

✍ A **tepee** (also **tipi**) is a conical tent traditionally made of animal skins or birch bark and are popularised by Native Americans of the Great Plains. The term "*wigwam*" (a domed structure) is sometimes incorrectly used to refer to a tipi. The tipi was durable, provided warmth and comfort in winter, was dry during heavy rains, and was cool in the heat of summer. Tipis could be disassembled and packed away quickly when a tribe decided to move and could be reconstructed quickly when the tribe settled in a new area. This portability was important for nomadic lifestyle.

✍ An **igloo** or **snowhouse** is a type of shelter built out of snow, originally built by the Inuit. *Iglu* is the word for a house or home built out of any material. Outside of Inuit society, however, "igloo" refers exclusively to shelters constructed out of blocks of compacted snow, generally in the form of a dome.

✍ The **ger**, or **yurt** as it is commonly called, remains today as the primary form of portable housing in Mongolia and Tibet. It is a portable, felt-covered, wood lattice-framed dwelling structure traditionally used by nomads in the steppes of Central Asia. A yurt is more home-like than a tent in shape and build, with thicker walls.

✍ An **izba** is a traditional Russian countryside dwelling. Traditional, old-style izba construction involved the use of simple tools, such as ropes, axes, knives, and spades. Nails were not generally used, as metal was relatively expensive, and neither were saws a common construction tool. Both interior and exterior are of split pine tree trunks, the gaps between are traditionally filled with river clay. All of the building's components were simply cut and fitted together using a hand axe.

II Note the difference between two words – HOUSE and HOME. Then fill in the blanks in the sentences with 'house' or 'home'



The basic meaning of the word "house" is a building intended for one household to live in. It may also mean "the home, or household" (as, to keep house). "Home" is an emotional word. It suggests family life, family joys. Another meaning of the word "home" is birthplace.

The words "house" and "flat" are often used in contrast to each other.

(Ex.: Do you live in a house or a flat?)

1. He was born in Moscow but now he looks upon Riga as his
2. That modest ... turned out to be the ... of the old teacher.
3. Who keeps ...in your family?
4. They had so little time together since their marriage that they both were longing: to settle down in a
5. The ... was in very good repair.
6. There is no place like
7. When he retires, he expects to make his ... in the country.
8. She usually starts from her... at 8 sharp.
9. ... is where the heart is.
- 10.The plan shows the layout of the
- 11.The pleasures of... will never be forgotten.
10. He looked up at the facade of a very imposing old
11. There is nothing worse than coming ... to an untidy
12. Men make ... but women make... .












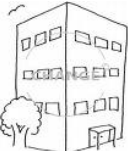



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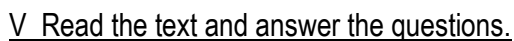
III Have a look at words connected with architecture. Study them and be ready to use.

1.	structural architecture	celtņu arhitektūra	архитектура наземных сооружений
2.	architectural engineering	projektēšana	архитектурное проектирование
3.	interior architecture	iekštelpu arhitektūra	архитектура интерьера
4.	landscape architecture	dārzu, ainavu arhitektūra	ландшафтная, садово-парковая архитектура
5.	environmental architecture	organiskā arhitektūra	органичная архитектура
6.	house, home, dwelling	dzīvojamā ēka, ģimenes māja	жилое здание, жилище
7.	split-level house	ēka ar nobīdītiem stāviem	дом со сдвинутыми уровнями
8.	stepped hillside house	terašu ēka	дом-терраса
9.	semi-detached house	dvīņu ēka	спаренный дом
10.	bungalow cottage	Vasarnīca	дача
11.	indoor swimming pool	slēgtais peldbaseins	крытый плавательный бассейн
12.	business premises	komerciestāžu telpas	офисное здание
13.	skyscraper	debesskrāpis	высотное здание, небоскрёб
14.	residential building	dzīvojama ēka	жилая застройка
15.	industrial building	rūpniecības ēka	промышленное здание
16.	tower	Tornis	башня
17.	block of flats	daudzdzīvokļu māja	многоквартирный дом
18.	bridge	Tilts	мост
19.	tunnels	Tunelis	туннель

IV Match the pictures with the words from exercise IV. The first has been done for you

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
18														

<p>A</p> 	<p>B</p> 	<p>C</p> 	<p>D</p> 	<p>E</p> 
<p>F</p> 	<p>G</p> 	<p>H</p> 	<p>I</p> 	<p>J</p> 
<p>K</p> 	<p>L</p> 	<p>M</p> 	<p>N</p> 	<p>O</p> 



It is a well-known fact that there exist different kinds of soil. It is also a well-known fact that the structure of the upper stratum of the soil is of great importance for excavation. The foundation of a building should never be placed on organic soils because water soils of kind are easily decomposed. They are decomposed because water and wind change their structure. So, if the upper stratum of soil is organic, it

must be removed from the construction area in order to guard the foundation of the building against water and wind erosion. Further excavation may take place only after the upper organic stratum has been

removed. In colder climates the foundations of building should be placed below the level to which the ground freezes in winter.

What are the major parts of a building? Modern buildings have three major parts. There are the superstructure, the substructure, and the foundation. The superstructure is the above-ground part of a building; the substructure – its below-ground part. As to the third part – foundation – its function is of great importance as it serves to transfer the loads of a building into the upper stratum of earth – its soil.

There exist two basic types of foundations: shallow and deep. Shallow foundations transfer the load to the earth at the base of the column or wall of the substructure. Deep foundations transfer the load at a point far below the substructure. As to the price of these types of foundations, shallow ones are usually less expensive than deep ones.

1. How many major parts does a modern building usually have?
2. What are the major parts of a building?
3. How is the above-ground (below-ground) part of a building called?
4. What is the function of a foundation?
5. Which part of soil is of great importance for excavation?
6. Which part of organic soil must be removed from the building area?
7. Why must it be removed?
8. In what climatic zones should the foundations be placed below the freezing point?
9. Have you ever watched the process of removing the upper stratum of soil from the building area?

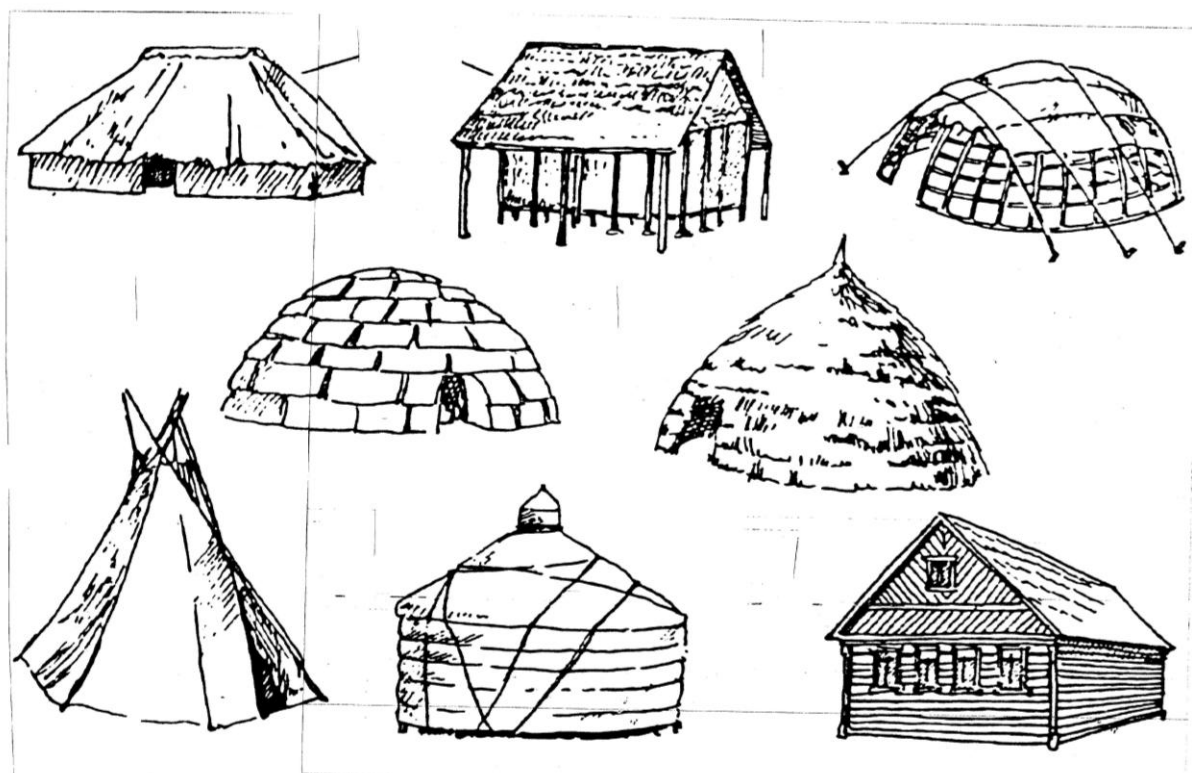
V. Translate the given Latvian words into the English ones.

1. Foundations keep both the (sienas un grīdas) _____ from the contact with the (augšne) _____.
2. Sinking may cause (plaisa) _____ in the walls of a building.
3. Foundation design may be both (sarežģīts) _____ and (vienkāršs) _____.
4. The foundations (kalpo par pamatu) _____ both dead loads and (dinamiskais svars) _____ of buildings.
5. The dead load (ietver) _____ the (visu) _____ of electrical and mechanical (iekārtas) _____.

|

TEST YOURSELF

I Name the most traditional types of houses you can see in the picture



1 point for each correct answer

Total:		8
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II Read the text and answer the questions

In order to have shelter provided with modern services and accommodation, people all over the world use many different constructions materials and arrange them into different constructions. Since prehistoric times these constructions have served as shelter and accommodation for a man, or family a group of people, an organization, or an enterprise.

What are the branches of modern civil construction has? Among the branches the main ones are housing construction, construction of industrial enterprises, construction of railroads, highways, subways, construction of bridges, dams, ports, canals, construction of different sporting facilities.

It is a well-known fact that every building needs permanent stability. In order to have stability, building should have foundations. We know that the function of a foundation is to transfer the lost of building into the soil. Foundations keep the walls and the floors of buildings from direct contact with the soil. They guard the walls and the floors against the action of the weather – rain, snow, and wind. They also guard buildings

against sinking that may cause cracks in the walls. Foundation design is very special. It may be both rather complex or very simple. It is a common practice that for very small buildings foundation design is usually much simpler than for large ones. Why is it so? Firstly, because foundations loads of small buildings are usually low.

What kinds of loads are supported by foundations? A foundation may support different kinds of loads. Among them there are dead loads and live loads. The dead load of a building includes the weights of the ceilings, the frame, the floor, roofs and the walls. Besides, every modern building is known to have water, electrical and mechanical. The dead load also includes the foundation itself. As to the live load, it includes the sum of the weights of the people and other living beings, the furnishings, and equipment they use. The live load also includes snow, ice, and water of the roof.

1. What kind of shelter do people need nowadays?
2. What branches of modern construction do you know?
3. For what reason does every building need stability?
4. What functions of a foundation do you know?
5. What may cause cracking in the walls of buildings?
6. What are the loads supported by foundations?
7. What part does dead load include?
8. What part does live load include?

1 point for each correct answer

Total:		8
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III Mark with a corresponding number the main structural elements of the buildings you can see in the picture



1. skurstenis
2. jumts
3. jumta slīpums
4. logs
5. balkons
6. siena
7. kāpnes
8. ēkas virszemes daļa
9. aizsargjumtiņš
10. 1. stāvs
11. bēniņi
12. garāža
13. apbūves gabala robeža

0,5 point for each correct answer

Total:		6,5
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Total:		22,5
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Maximum is 10 (excellent)


Mark:		10
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Marking scale:

1	2	3	4	5	6	7	8	9	10
1-3	4-6	7-8	10-11	12-13	14-15	16-17	18-19	20-21	22-22,5

UNIT 3

HOUSEBUILDERS

 Housebuilders study a lot of professional subjects like construction techniques in which they learn the basis of building houses, insulation work, foundation and masonry techniques, concrete techniques, basis of construction drawing etc.

1.	excavation work	grunts izstrādāšana	разработка грунта
2.	concrete work	betondarbi	бетонные работы
3.	formwork, shuttering work	veidņu ierīkošana	опалубочные работы
4.	reinforcing work	stiegrošanas darbi	арматурные работы
5.	carpentry work	namdaru darbi	плотничные работы
6.	sheetmetal work	skārdnieku darbi	жестяные работы
7.	roof tiling work	jumiķu darbi	кровельные работы
8.	water proofing work	hidroizolācijas darbi	гидроизоляционные работы
9.	plumbing work	sanitārtehnikas darbi	санитарно-технические работы
10.	insulating work	siltumizolācijas darbi	теплоизоляционные работы
11.	electrical installation	elektroinstalācija	электромонтажные работы
12.	blacksmith work	atslēdznieku darbi	кузнечные работы
13.	plaster, rendering work	apmetuma darbi	штукатурные работы
14.	joinery work	būvgaldnieku darbi	столярные работы
15.	ironmongery work	būvatslēdznieku darbi	слесарные работы
16.	welding work	metinātāju darbi	сварочные работы
17.	glazing work	stiklinieku darbi	стекольные работы
18.	tiling work	flīzētāju darbi	облицовочные работы
19.	floor laying work	grīdu likšanas darbi	настилка полов
20.	painting work	krāsotāju darbi	малярные работы
21.	wallpapering work	tapsētāju darbi	обойные работы

Most people in Great Britain live in houses rather than in flats. Usually there is a little garden in front and quite a large garden behind the house.



Most houses are rather small and are built of wood, stone or mud brick (adobe). Some are prefabricated – all the parts are made at a factory and put together quickly at the site.

Modern houses are made of a great variety of materials, including wood and plywood, brick, stone, steel, concrete blocks, tile, cinder blocks, and glass brick. Roofs are made shingles, thatch, tile, slate and tar.

Houses are insulated against heat and cold. They are warmed by coal, gas and oil, and sometimes cooled by air that has been refrigerated. British houses have one peculiar feature – highly decorative chimneys.

People of different skills are needed to construct a large building. An architect plans it, engineers supervise construction, masons lay the foundation, welders rivet the steel frame, carpenters do the woodwork, bricklayers make walls, plumbers and electricians connect pipes and wires, plasterers, interior designers help to finish it.

III Name the building tradesman or building work

<p>1</p> 	<p>2</p> 	<p>3</p> 
<p>4</p> 	<p>5</p> 	<p>6</p> 
<p>7</p> 	<p>8</p> 	<p>9</p> 
<p>10</p> 	<p>11</p> 	<p>12</p> 

Example:

I'm a teacher. I specialize in teaching languages. I teach students.

IV Read the texts about workers.

CARPENTERS AND JOINERS

Carpenters do all kinds of timber work at a building site. Traditionally the carpenter did the structural woodwork. The joiner made doors and window frames. But now they both do all sort of woodwork like wooden forms (moulds) for pouring concrete, erect prefabricated units, erect roof timbers, lay flooring panels, hand doors, fix window frames, make and install staircases, fit cupboards and wardrobes etc. They work either on sites or in workshops and factories.

Carpenters must be quite fit and strong, because they must carry and lift heavy planks of wood. They must not be afraid of high places or bad weather, because sometimes they must work on high scaffolding or roofs. The weather can be rainy or very cold, but carpenters must work anyway.

Carpenters and joiners must use safety equipment on the job, goggles hard hat (helmet) and ear protectors.

BRICKLAYERS

Bricklaying may seem to be very easy, but it is skilled work. Bricklayers must have a lot of technical knowledge and, of course, practical skills. They must also work very accurately.

Their work starts from laying the foundation to putting the chimney on the top. Masons can do different types of masonry work: foundations, brickwalls, fireplaces or even more complicated jobs like arches.

Masons sometimes work either in pairs or at bigger building sites in teams. They can also have labourers to fetch and carry bricks and mortar. Skilled masons are very respected, because not every one can become a good bricklayer.

STEELFIXERS

After the carpenters have made the formwork, the steelfixers start their job. They are skilled workers who make iron cages, which are used to reinforce concrete. Sometimes they also use steel bars. The cages are placed in the modules before the concrete is poured in.

PLUMBERS

Plumbers install all the pipes in the house. For instance they install drainpipes, central heating system and the water system. The plumbing in a large building can be very complicated.

ELECTRICIANS

The electrician's work varies from the basic task of wiring a house to complex jobs like installing the electricity in a factory. Every time you need a new socket or electrical appliances at home you have to call an electrician, because you are not allowed to do electrical jobs yourself.

PLASTERERS

The work of a plasterer is similar to the work of a bricklayer. He plasters walls and ceilings and he can also make decorative surfaces both inside and outside the house.

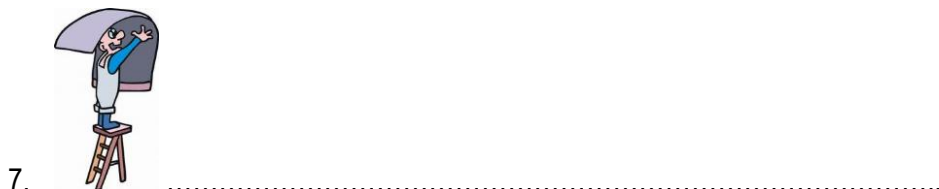
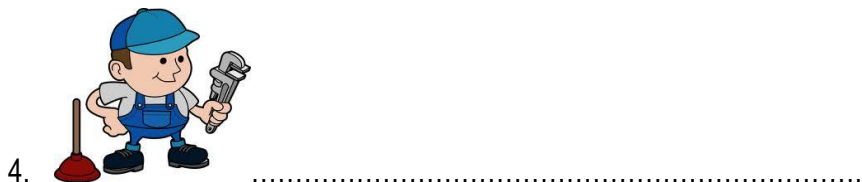
V Match the operations with the tradesmen described.

1	A steel fixer	A	a tradesman specializing in electrical wiring of buildings, stationary machines and related equipment. Electricians may be employed in the installation of new electrical components or the maintenance and repair of existing electrical infrastructure
2	A plasterer	B	a tradesperson who specializes in installing and maintaining systems used for potable (drinking) water, sewage, and drainage
3	A plumber	C	is a tradesman who works with plaster, such as forming a layer of plaster on an interior wall or plaster decorative moldings on ceilings or walls. The process of creating plasterwork, called plastering, has been used in building construction for centuries
4	A house painter and decorator	D	a tradesman who applies wallpaper to a wall
5	An electrician	E	is a tradesman who positions and secures steel reinforcing bars, also known as rebar, and steel mesh used in reinforced concrete on construction projects
6	A carpenter	F	is a craftsman who lays bricks to construct brickwork. The term also refers to personnel who use blocks to construct blockwork walls and other forms of masonry
7	A paper hanger (wallpapering)	G	a tradesman responsible for the painting and decorating of buildings, and is also known as a decorator or house painter. The purpose of painting is to make them look better or to protect them from damage by water, rust, corrosion, insects or mould.
8	A bricklayer or mason	H	a skilled craftsperson who performs carpentry. Carpenters work with timber to construct, install and maintain buildings, furniture, and other objects. The work may involve manual labor and work outdoors

1	2	3	4	5	6	7	8

TEST YOURSELF

I Write the correct name of the building profession you can see in the picture





9.



10.

1 point for each correct answer

Total:		10
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II Divide all the words into two groups: building work and decorating work

reinforce concrete
renovating
drainpipes
wiring house
spirit level
adhesive

tiling
topcoat
waterproof tile
plaster ceiling
brick
baseplate

mortar
wooden forms
washable paper
type of paint
concrete
heating system

1 point for each correct answer

Total:		18
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III Match the operations with the tradesmen described.

1	A Glazier	A	is a construction professional who selects, cuts, installs, replaces, and removes residential, commercial, and artistic glass. Glaziers also install aluminum storefront frames and entrances, glass handrails and balustrades, shower enclosures, curtain wall framing and glass and mirror walls.
2	A welder	B	(also weldor, which term distinguishes the tradesman from the equipment used to make welds) is a tradesman who specializes in welding materials together. The materials to be joined can be metals (such as steel, aluminum, brass, stainless steel etc.) or varieties of plastic or polymer. Welders typically have to have good dexterity and attention to detail, as well as some technical knowledge about the materials being joined and best practices in the field

3	A concrete worker	C	Is responsible for pouring and compacting the concrete into the mould for the baseplate. The foundation of the building should be very compact and solid, because the whole building rest on its foundation.
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1 point for each correct answer

Total:		3
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Total:		31
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Maximum is 10 (excellent)

Mark:		10
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Marking scale:

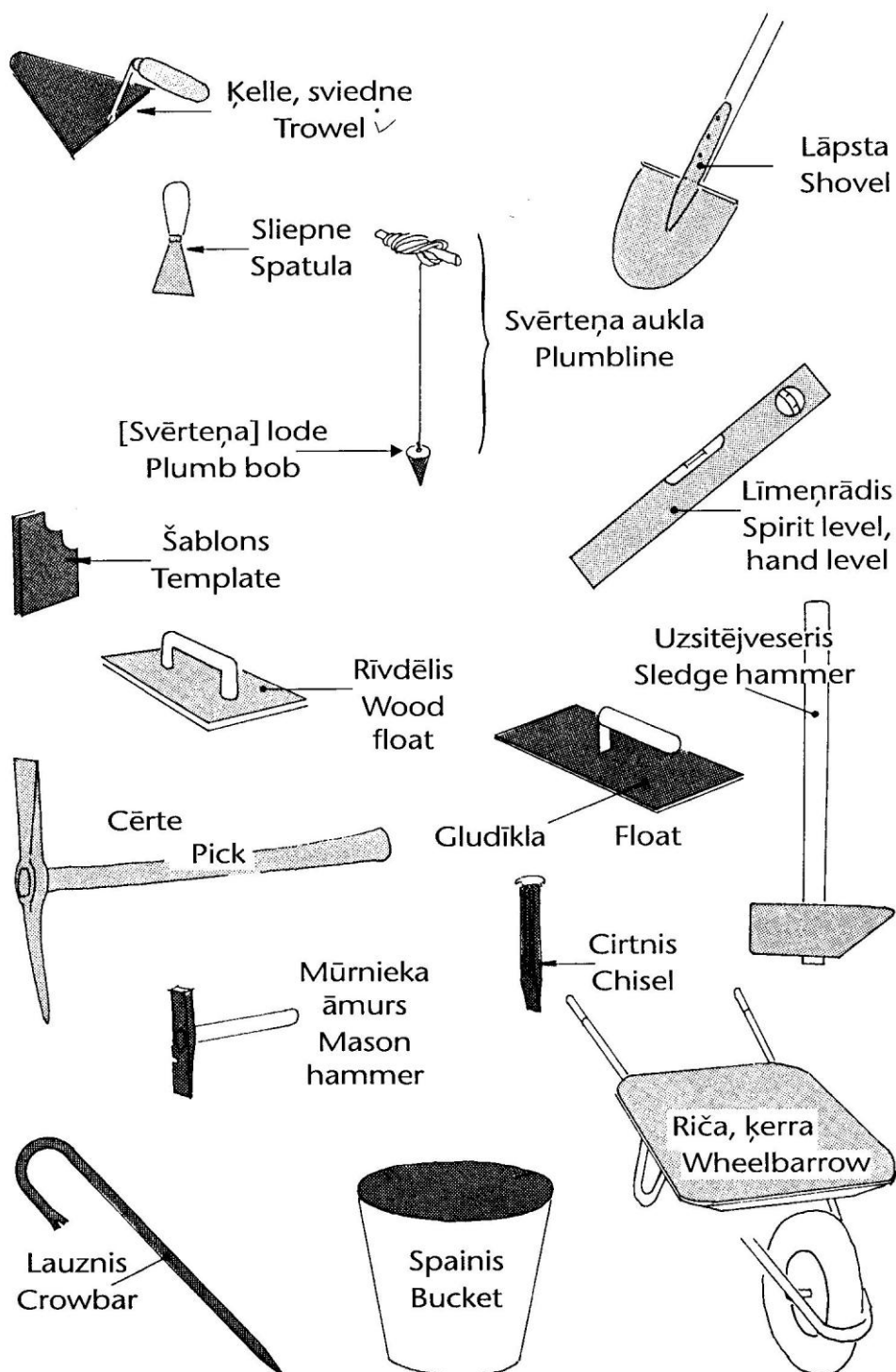
1	2	3	4	5	6	7	8	9	10
1-4	5-8	9-12	13-15	16-18	19-21	22-24	25-27	28-29	30-31

UNIT 4










TOOLS AND MACHINERY

I Have a look at the bricklayer's tools. Do you know their function?

Mūrnieka darbarīki
Bricklayer's tools



II Read the dialogue

-  - Do you know what? We've got a very pleasant job. We can begin to lay bricks on the exterior walls.
-  - That's exciting. By the way, have you ever done it before?
-  - We have practised bricklaying in our workshop at school
-  - But this is different, because exterior walls are seen by everyone, passers-by and visitors. We have to be very accurate.
-  - What do we need? First, could you fetch the wheelbarrows and spades from the toolshed?
-  - Yes, and I'll bring a spirit level, a plumb line, a jointer and a trowel. How do we get mortar?
-  - We have a power mixer over there, we have to mix the ingredients. The bags are ready.
-  - I'll fetch the equipment and then I'll begin carrying the bricks. Meanwhile you can get everything ready here.
-  - You can make the joints with the jointer while I lay the bricks.

III Study the construction. Make your own sentences.

We have a power mixer over there, we have to mix the ingredients → A power mixer **is used for mixing** ingredients.

We have two wheelbarrows. We can carry bricks and tools. → Wheelbarrows **are used for carrying** tools.

A hammer – to drive in nails

A screwdriver – to tighten screws, to loosen screws, to fix a screw

A mallet – to hammer, to flatten, to knock

Wrenches – to tighten nuts, to loosen nuts, to turn bolt

An anvil vice – to hold, to fix, to tighten

Nippers – to cut, to nip wires

Pliers – to hold, to squeeze metal objects, to bend wires

A saw – to cut wood, to saw off wood, to cut metals

Files – to file metal, to remove burrs

A hand drill – to drill holes in wood

A bit brace – to drill metal, wood, plastic

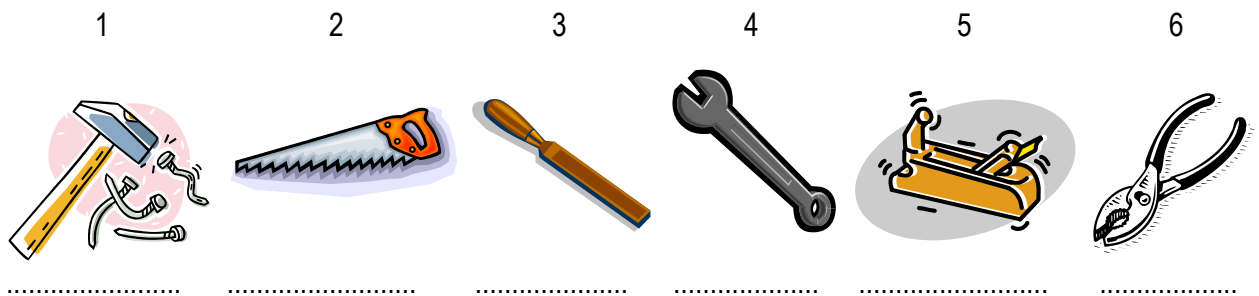
A chisel – to chisel metal

A plane – to plane wood, to make boards, to smooth

Shears – to cut paper, cardboard, sheetmetal

A soldering iron – to apply solder, to solder together

Write the correct name of the tool



IV Look at the pictures and give instructions with the words in the box.



Grip the nail. Use a pair of pliers. Pull out the nail.

bend	close	cut	drive in	grip	loosen	measure	open
pull out	put	put on	strike	take	take off	tighten	use



V Match words, definitions and illustrations.

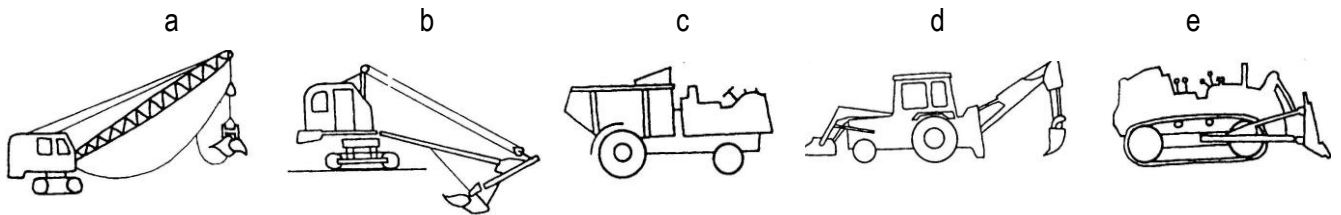
1

- a) A large machine with a broad metal blade at the front, used for scraping or moving earth or stone and for flattening uneven surfaces.
- b) A machine for moving earth or concrete in small spaces. One part of the machine can be tipped backwards so that the load falls out.
- c) A machine with a scoop bucket with a sharp edge, fixed to the end of a long pole, a machine used for digging deep trenches.
- d) An excavating machine with very long reach and with buckets that scoop up soil, sand and gravel as the bucket moves towards the main part of the machine.
- e) A very large machine that is used for digging, for example, on a building site.

2

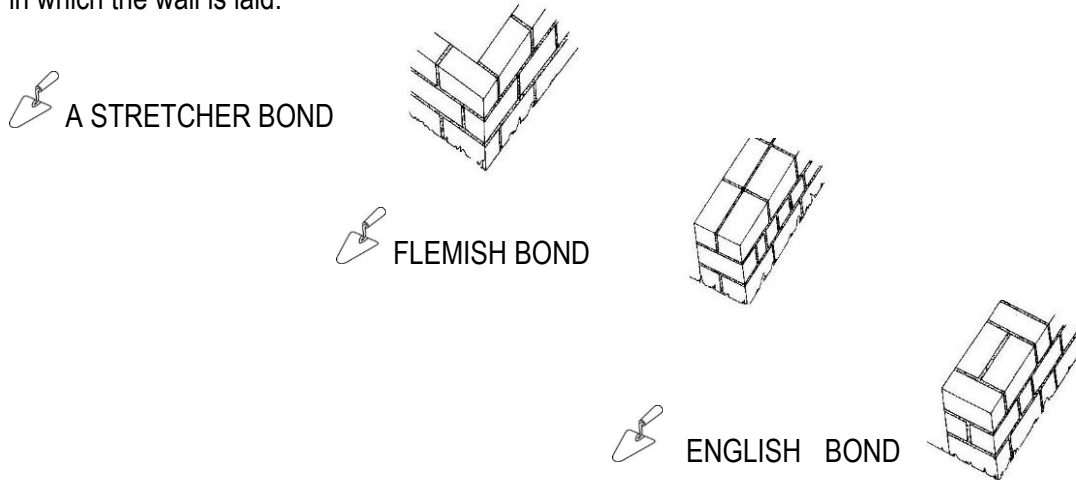
- a) Trench hoe
- b) Bulldozer
- c) Excavator
- d) Dumper
- e) Dragline (dragline excavator)

3



VI Bonds and joints

A bond is the arrangement of masonry units which holds them together as a solid structure. The pattern in which the wall is laid.



1
FLUSH JOINT
excess mortar is simply cut away with a trowel, this is not a strong joint.

2
STRUCK JOINT
the joint is struck with a trowel. It tends to collect water

3
WEATHER STRUCK JOINT
it is the most water-tight joint. It is compacted.

4
CONCAVE JOINT
it is made with a special jointer and is compacted. It is water resistant.

5
V-JOINT
it is rather similar to a concave joint. You need a special tool to make it.

Finishing mortar joints can be left until the end if the job is small. But for larger jobs you need to do jointing and bricklaying as you work. Joints should be done when they are neither too soft nor too hard, so that the metal tool does not leave black marks. Experience will teach you the right timing.

1. First strike the headjoints
2. Then strike the bedjoints.
3. Cut off the excess mortar with a trowel.
4. Brush the wall after the mortar is well set. Then restrike the joint once more.

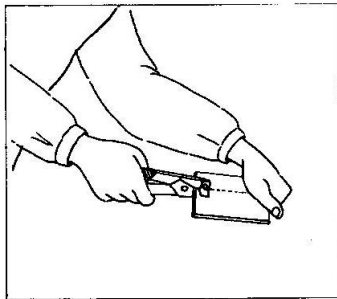
VII Tiling

Preparing:

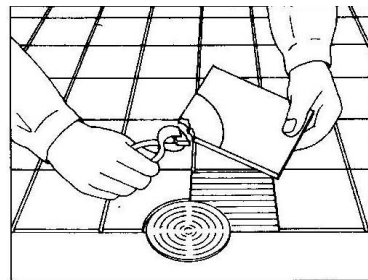
1. The surface must be dry, clean and free from grease.
2. If the surface is not even, the cracks and the holes should be filled.
3. Wallpaper and other coverings must be removed before tiling.
4. Paint must be examined.
5. The surface must be washed down and rubbed with sandpaper.

When all the preparations have been carefully done you can begin with the work. You have to find both the correct starting point and correct level. The aim of this is to have the top row and most of the area made up with whole tiles. The cut tiles will be only at the sides and the lowest level.

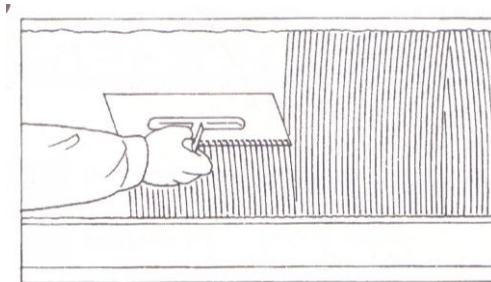
You must have the right equipment for the job:



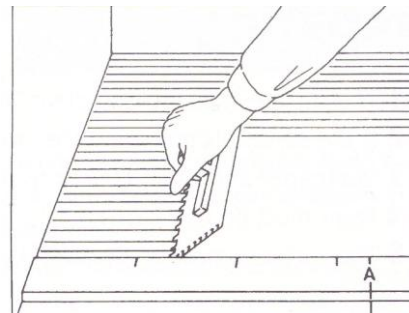
a tile cutter



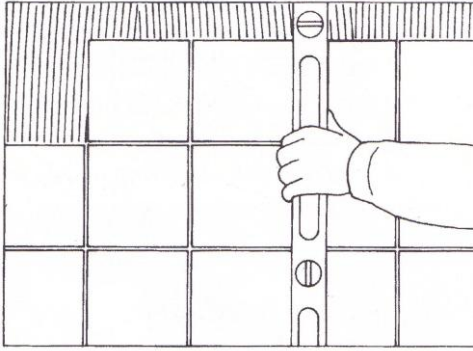
pincer – they can be used when small pieces are cut or irregular shapes are created.



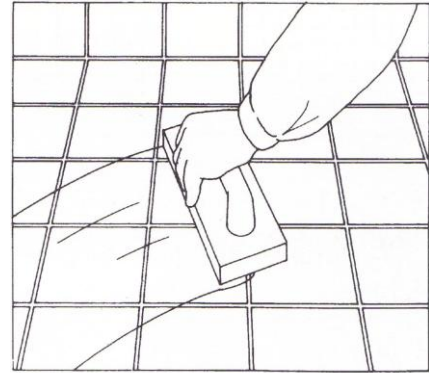
adhesive - there are several types such as waterproof and heat-resistant. It is used to fix tiles to the wall



a spreader – a metal or plastic scraper to spread the adhesive as an even layer. If you work with non-ceramic tiles you need some extra tools like scissors, a hammer and a sharp knife.



a spirit level – it must be used to make true horizontal and vertical lines.



a sponge – the simplest means of applying grout is to use a sponge. It can be also used to remove excess adhesive

VIII Study the words and complete the crossword

Būvmašīnas
Building machinery

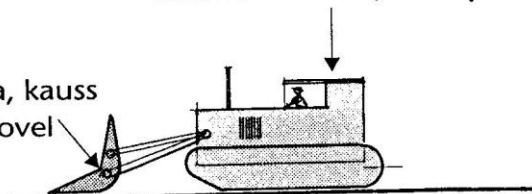
Dažas lietojamās mašīnas
Some common machines

Pāldzinis
Drop hammer

Iekrāvējs, buldozers
Crawler-loader, caterpillar

Ekskavators Excavator

Lāpsta, kauss
Shovel

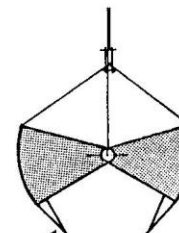


Ekskavators ar tiešo kausu
Power shovel

Izlice
Boom, jib

Kauss
Bucket

Kāpurķēde
Caterpillar track



Pašgrābis,
tvērējkauss, greifers
Grab, grabbing bucket

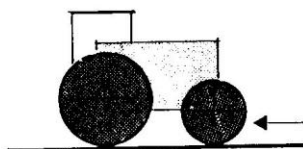
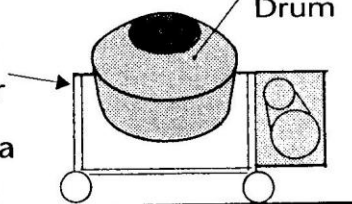
Ekskavators ar apgriezto kausu
Backacting shovel, backhoe

Peldošais ekskavators Dredger

Betonmaisītājs
Concrete mixer

Betonēšanas iekārta
Concreting plant

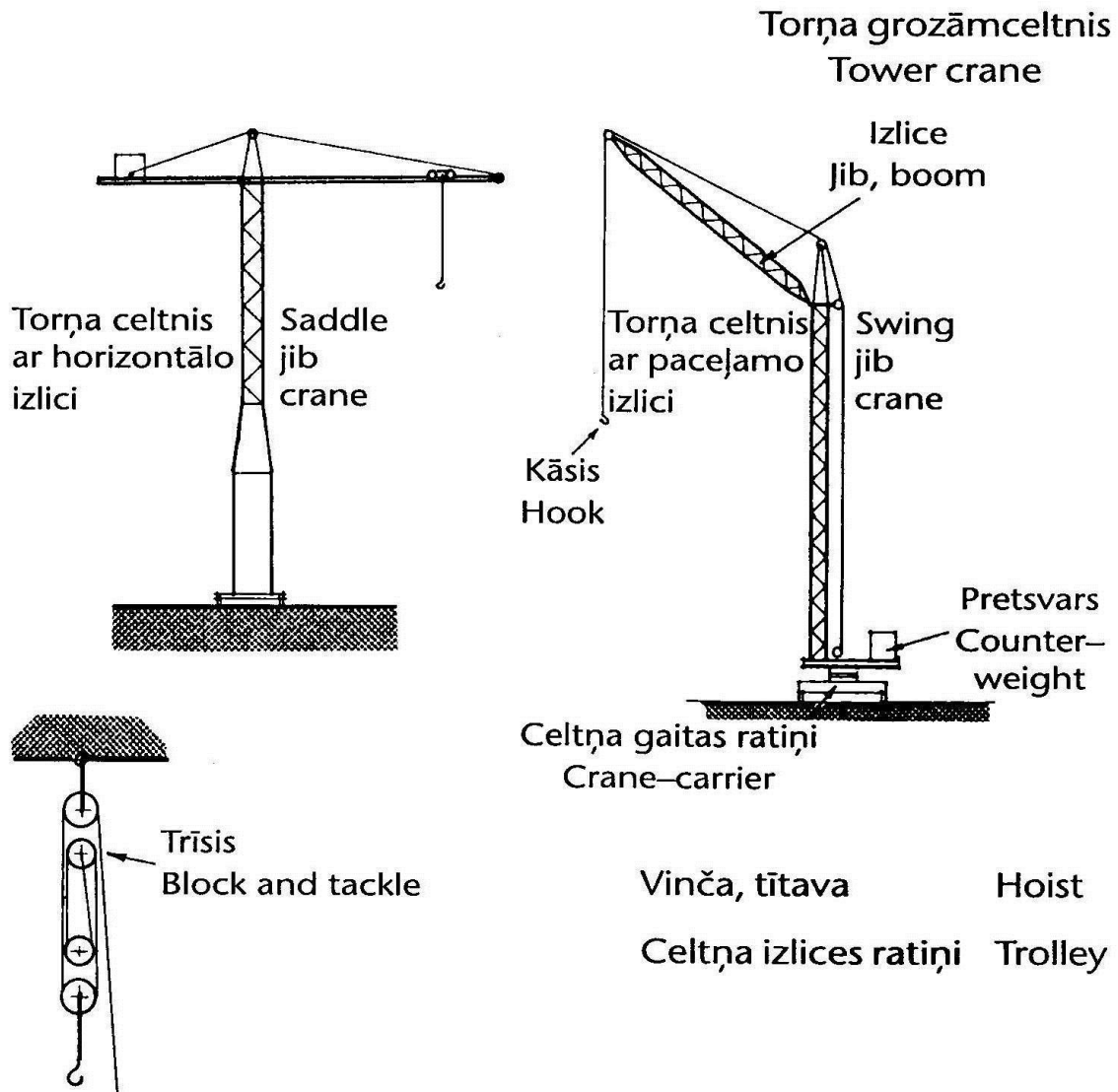
Rotējošā
tvertne
Drum



Veltis
Roller

Sūknis Pump
Centrbēdzes sūknis
Centrifugal pump
Torkrētaparāts
Guniting machine

Ceļamkrāni, celtni Cranes



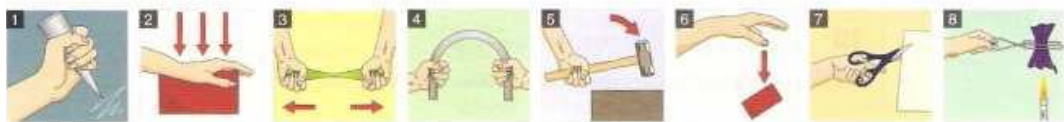


UNIT 5

BUILDING MATERIALS

I Match the actions with the verbs.

bend compress cut drop heat scratch stretch strike



1	2	3	4	5	6	7	8

II Match the photos with these materials.



aluminium

ceramic

fibreglass

graphite

nylon

polycarbonate

polystyrene

rubber

steel

titanium



III Match the sentences.

1. This material doesn't burn or melt if you heat it.
2. This material doesn't break if you strike it or drop it.
3. You can't bend this material.
4. This material doesn't corrode if you put it in water.
5. You can't scratch this material or cut it.

- a). it's rigid
- b). It's hard
- c). it's tough.

- d). It's heat-resistant.
- e). It's corrosion-resistant.

IV Match the words with their opposites.

- | | |
|-----------|-------------|
| 1. tough | a. soft |
| 2. hard | b. heavy |
| 3. rigid | c. weak |
| 4. strong | d. brittle |
| 5. light | e. flexible |

1	2	3	4	5

V Read the text and complete the table below.

This racing car is made from the latest hi-tech engineering materials. It's made from metals, alloys, ceramics, plastics and composites. Many materials in the car are light, but very strong.

The nose cone of the vehicle is made of strong, light fibreglass.

The spoiler and the wings are made from two materials. The inner core is light. It's made of polystyrene. The outer skin is hard and made of fibreglass.

The frame is light but very tough and rigid. It's made of cromoly, a steel alloy.

The radiator is made of aluminium. The aluminium is coated with ceramic. These two materials are corrosion-resistant.

The engine and pistons are made of a light aluminium alloy. Each piston inside the engine is coated with a heat-resistant ceramic.

The wheels are made of strong, light aluminium alloy. The tyres are made of a tough rubber composite.



Part	What's it made of?	What are its properties?
nose cone	(1)	(2)
spoiler and wings	coated with (3)	(4)
wheels	(5)..... alloy	(6)
tyres	(7) composite	(8)
pistons	coated with (9)	(10)
frame	(11)	(12)
radiator	(13)	(14)

VI Read the article and answer the questions

Materials used for construction purposes possess different properties. They differ in durability, strength, weight, fire- and decay-resistance and, naturally, cost.

Wood, timber, brick, stone, concrete, metals, and plastics belong to the most popular building materials used nowadays. They all have their advantages and disadvantages that are taken into account when designing a structure.

Wood belong to naturally growing materials. It is known to be the oldest construction material and is still widely used for different purposes. Wood is popular since it has low weight and is easy to work. Besides, it grows naturally and is cheap. But its usage is limited because of its disadvantages: it easily burns and decays. As to stone, it also belongs to the oldest building materials. Among its advantages there are strength, high heat insulation and fire-resistance.

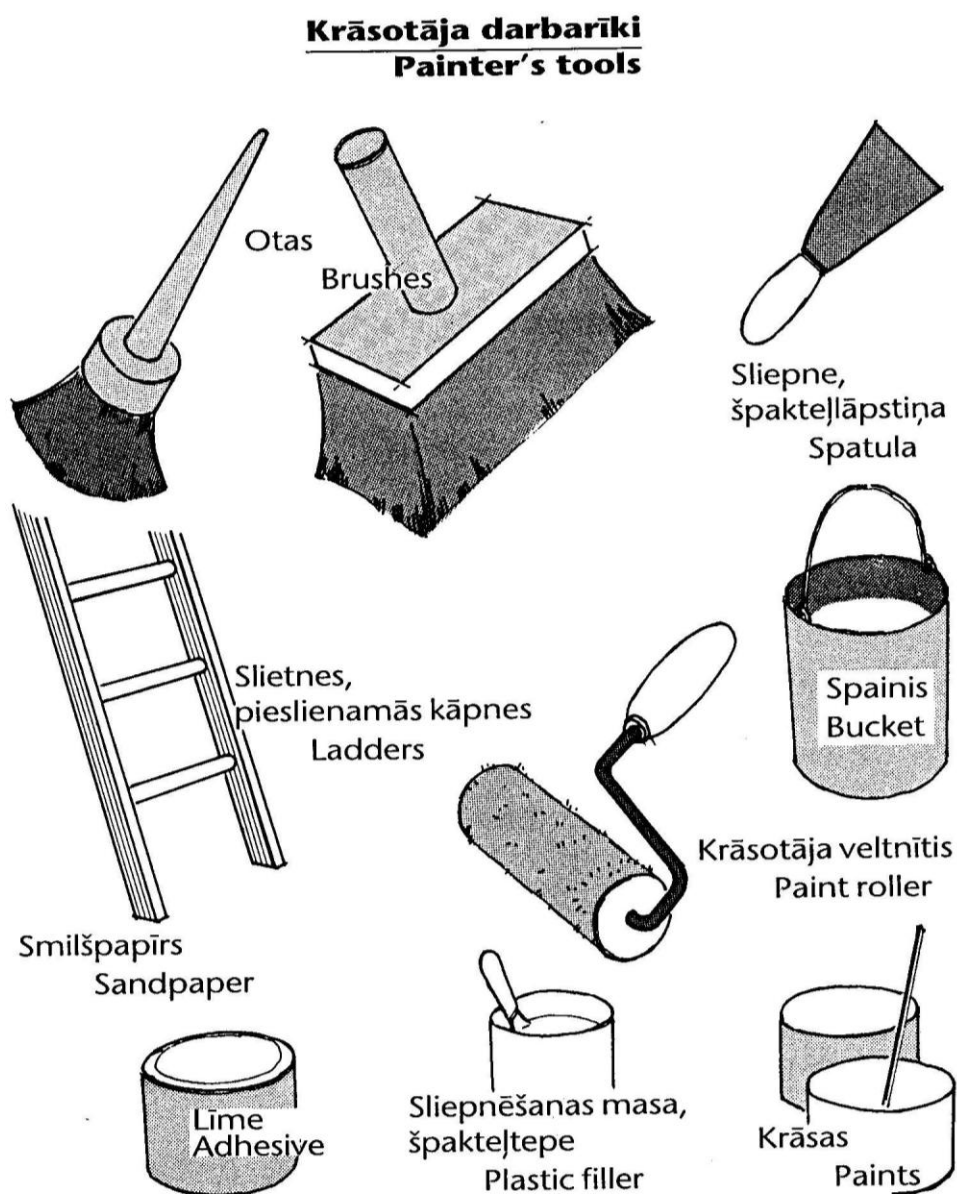
Brick belongs to artificial construction materials. It has been used in many countries and in different climates. In modern time bricks vary widely with the method of production and temperature of burning.

Concrete is known to be one of the most popular building materials. It is produced by mixing cement, gravel, water, and sand in the proper amount.

Metals belong to hard and fire-resistant building materials. There exist two main groups of metals: ferrous and non-ferrous. Non-ferrous metals are metals whose main component is not iron. As to iron, steel and their alloys, they belong to the group of ferrous metals.

1. Into what groups can construction materials be divided?
 2. What are naturally found materials and what are artificial ones?
 3. What are the advantages and disadvantages of wood, stone, metals?
 4. What two groups are metals divided into?
 5. What is the difference between ferrous and non-ferrous materials?
- * Name some ferrous and non-ferrous metals

VII Have a look at painters tools and study the names of some paints used in construction.



1. to paint	krāsot, lakot
2. to stain	kodināt
3. to stop	sliepnīt
4. to fill	špaktelēt
5. to sandpaper	slīpēt
6. to oil	pernicot
7. to wax	vaskot
8. to knot	tepēt
9. brush application	otēšanas metode
10. roller application	uzveltnošanas metode
11. spray application	uzsmidzināšanas metode
12. dip application	iemērkšanas metode
13. primer coat	gruntējums
14. undercoat	pirmais krāsojums
15. PVA paint	polivinilacetāta krāsa
16. distemper	līmes krāsa
17. lime wash	kaļķu krāsa
18. oil paint	eļļas krāsa
19. polyester paint	poliesteru krāsa
20. acrylic paint	akrilkrāsa
21. emulsion paint	emulsijas krāsa
22. semi-gloss enamel	blāvā emalja
23. high-gloss enamel	spoža emalja

VIII Read and translate the texts.

Paints can be oil-based, water-based and solvent, based. Oil-based paints suit wood and metal surfaces best both inside and outdoors, because they can give a tough and longlasting surface. When one is painting new wood or iron outside a primer should be used. Water-baser paints are goods for interior walls and ceilings. Water-baser paints are becoming more and more popular, becoming new types are suitable for all kinds of walls, both inside and outside the house.

Paints are either matt, semi-gloss or gloss. Gloss paint is good for wood and metal surfaces, because it is tough, but imperfections are easier seen on gloss than on matt or semi-gloss surfaces.

Primer

The primer is used to provide a smooth and good base for the undercoat and the topcoat. It prevents the paint soaking into the surface and other materials bleeding into the paint. The primer is not always needed, but when the surface is made of bare wood, metal, concrete or stone it is necessary to use a primer.

Undercoat

The undercoat is applied right after the primer. After the undercoat the surface is rubbed down to make it ready for the overcoat. The colour of the undercoat should be as near as possible to the colour of the overcoat. The undercoat is always needed before the overcoat.

Topcoat

The type of the topcoat varies according to the place where it is used. It must be strong enough to withstand use and humidity for example in the kitchen and bathroom. The walls have to be washable, too. The topcoat must be well painted, because it is the layer which shows.

IX Match the headlines with the paragraphs of the instruction. Write similar instruction for other type of paint.

- A **Application**
- B **Finish**
- C **Chemicals**
- D **Previously painted surfaces**
- E **Storage and transport**
- F **Coverage**
- G **Painting conditions**
- H **Thinner**
- I **Pretreatment**
- J **Examples of use**
- K **Painting**
- L **Drying time**
- M **Resistance**
- N **Cleaning of tools**

- 1: Wall and ceiling surfaces, especially suitable for surfaces requiring frequent washing like kitchens, entrance hall, staircases and bathrooms. *Remontti-Ässä* is not recommended for furniture.
- 2: previously painted surfaces 10-12m² /l filler treated, chipboard and wood fibre board surfaces 7-9 m²/l concrete and plaster surfaces 3-5 m²/l
- 3: water
- 4: roller, brush or spray
- 5: at 23°C, relative humidity of the air 50%: Dust dry ½ hour, recoatable 2 hours
- 6: semi matt
- 7: washing: good. Resist over 2000 brushings.
- 8: resists cleaning chemicals and weak solvents e.g. white spirit
- 9: protect from frost
- 10: Unpainted surfaces: Clean dirt and dust from unpainted surfaces. If needed smooth down the surfaces with a suitable filler. Paint directly with *Remontti-Ässä* or prime with a primer. Prime steel surfaces with *Rostex* anti-corrosive primer.
- 11: Clean previously painted surfaces with *Maalipesu* Cleaning detergent and rinse carefully with water. Smooth down holes and hollows and sand the dried surface. Sand hard or glossy surfaces matt and remove sanding dust.
- 12: The surface must be dry, the temperature of the air at least 5°C, and the relative humidity of the air below 80%.
- 13: Stir *Remontti-Ässä* well before use and thin with water, if necessary. Apply with roller, brush or spray.
- 14: Clean tools with water.



TEST YOURSELF

I Find the names of 14 materials in the puzzle and circle them. The words go vertically from top to bottom, and sideways from left to right. No words go diagonally.

B	A	J	L	O	Y	C	O	M	P	O	S	I	T	E
P	L	A	S	T	I	C	E	T	O	Z	P	R	A	K
L	U	R	T	I	B	K	Y	L	L	B	O	J	L	I
O	M	A	L	J	M	O	Q	A	Y	U	L	S	D	A
F	I	B	R	E	G	L	A	S	S	I	Y	T	I	Y
B	N	S	D	R	A	R	X	P	T	B	C	N	A	O
T	I	T	A	N	I	U	M	D	Y	F	A	H	M	I
J	U	E	K	Y	L	B	N	T	R	I	R	V	O	Z
A	M	E	B	L	C	B	F	G	E	A	B	H	N	I
J	R	L	K	O	Q	E	S	V	N	U	O	Z	D	W
Y	Z	C	O	N	C	R	E	T	E	X	N	B	G	Y
H	I	R	J	T	K	U	L	C	E	R	A	M	I	C
S	V	N	X	P	G	R	A	P	H	I	T	E	Q	W
I	Y	B	T	L	E	K	O	E	U	J	E	C	D	I

1 point for each correct answer

Total:		14
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II Make sentences about the materials with CAN and CAN'T.



(bend / metal / wood)

You can bend metal, but you can't bend wood.



(heat / air / water)

You can heat air and you can heat water.

1. melt / plastic / wood
2. scratch / glass / metal
3. stretch / nylon / glass
4. break / glass / wood
5. cut / wood / metal
6. compress / air / glass

1 point for each correct answer

Total:		6
--------	--	---

III Underline the two correct adjectives for each material.

1. A ceramic cup is *flexible* / *heat-resistant* / and *hard* / *soft*
2. A concrete floor is *rigid* / *flexible* and *brittle* / *tough*.
3. A rubber tyre is *rigid* / *flexible* and *weak* / *strong*.
4. A fibreglass window frame is *heat-resistant* / *soft* and *rigid* / *flexible*.
5. A nylon rope is *rigid* / *flexible*. and *weak* / *strong*.
6. The graphite in the middle of a pencil is *rigid* / *flexible*. and *weak* / *strong*.
7. A polycarbonate road sign is *rigid* / *flexible*. and *weak* / *strong*.
8. A polystyrene coffee cup is *brittle* / *tough* and *heavy* / *light*.

0,5 point for each correct answer

Total:		7
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IV Read the text and answer the questions TRUE or FALSE.

VALTTI COLOR – translucent wood finish

DIRECTIONS FOR USE:

Untreated wooden surfaces:

Remove dirt, dust and loose material from untreated surfaces with a steel brush. Wash down surfaces affected by mould with Tikkurila's Homeenpoisto 1 Mould Removal solution. Prime the surface as soon as possible with Valtti-Pohja priming oil.

Previously with wood preservative treated surfaces:

Remove loose material from the surface with a scraper or steel brush. Then clean it and wash down Homeenpoisto 1 Mould Removal solution, if necessary.

Painting conditions:

The surface should be dry, the moisture content of the wood should be below 20%. During painting and drying the temperature of the air should be at least 5°C, and the relative humidity of the air below 80%.

Painting:

Reserve enough tinted Valtti Color for one uniform surface and stir in a canister to avoid possible color differences. Stir the paint thoroughly before use and during painting.

Apply Valtti Color evenly with a brush along the whole length of a log or couple of boards to avoid possible overlapping. For the first application it is better to use a brush. But if you use a spray, it is recommended to finish surfaces with a brush. Treat old treated surfaces once, or if painting new untreated surfaces twice. Observe the condition of the finished surface, and if necessary repaint the surface at intervals of 3-5 years.

Contains White Spirit

Harmful if inhaled, swallowed or in contact with the skin.

Prevent solvent vapours from spreading, or arrange an efficient ventilation system. Wear appropriate respiratory protection. Avoid contact with the skin or eyes. Keep out of reach of children.

T/F

- 1) Valtti Color is only meant to be used on untreated wooden surfaces
- 2) You should wash down mouldy surfaces before using the paint
- 3) Prime the surface with any oily substance
- 4) Use a steel brush or comb to remove loose material from the surface
- 5) The surface should be fairly dry
- 6) Mix Valtti Color in a container
- 7) Use a uniform with Valtti Color
- 8) Put the paint on smoothly
- 9) Only use a spray when using Valtti Color
- 10) You should not breathe in Valtti Color fumes

1 point for each correct answer

Total:		10
--------	--	----

Total:		37
--------	--	----

Maximum is 10 (excellent)

Mark:		10
-------	--	----

Marking scale:

1	2	3	4	5	6	7	8	9	10
1-4	5-9	10-14	15-18	19-21	22-25	26-29	30-33	34-35	36-37

UNIT 6

POSSIBLE PROBLEMS



IN BOTH NEW AND OLDER HOUSES THERE CAN OCCUR DIFFERENT KINDS OF PROBLEMS WHICH REQUIRE REPAIR.

I Read the text and do the tasks.

Cracks

When cracks occur in the walls and ceiling of new houses, they can be a sign of a small or a serious problem.

One cause for small cracks in the interior walls and ceiling can be the facts that when wood, plaster mortar etc. Dry out they also shrink. These kinds of cracks can be easily covered and decorated. This problem can be avoided by keeping the house cool and well ventilated during the first few months after the house is ready.

The same kinds of cracks can occur when the house is settling down on its foundations.

When there are cracks both in the exterior and interior walls and ceilings you may have a serious problem to solve. If the foundation is improperly laid the whole house can start to move or subside. Then you should call a surveyor at once and ask him to examine the foundation. The house may even need underpinning of the foundations.

A. Name three reasons for cracks.

B. Match two parts of a sentence

- | | |
|---|---|
| 1) Cracks in walls and ceilings | A easily covered and decorated |
| 2) Wood, plaster and mortar | B can be a sign of a small or a serious problem |
| 3) If the foundation is improperly laid | C by keeping the house cool well ventilated |
| 4) When the house settles down | D can shrink when they dry out |
| 5) These problems can be avoided | E the whole house can start to subside |
| 6) Small cracks can be | F cracks can occur |

1	2	3	4	5	6

II Read the texts and do the tasks.

Heat loss

This problem costs money. You need more money to keep your house warm if the house loses heat. This problem depends mostly on the amount of insulation. The better the insulation is, the more money is saved. You should, however, remember that the house must not be perfectly airtight, because there must be enough ventilation to prevent dampness.

The type of house also affects the heat loss a flat roof lets more heat through than a pitched roof. And a terraced house or a flat will lose less heat through the wall than a detached house.

Insulation. How to keep warm in winter and cool in summer.

To keep our buildings comfortable without spending too much money on fuel, we must try to reduce the loss of heat. This can be done in several ways.

One of them is to use insulating materials to stop heat from being conducted through the walls, floor and roof of a building.

House pipes could, and water heaters and pipes may freeze in winter unless we use the right insulation materials.

The best insulation is a vacuum, the next best is air. Since air is a very poor conductor of heat, you would think that an excellent way to insulate a house would be to surround it with air, i.e. in the space in the outside wall of a house.

This is not the case, however. In winter the air in this space is in contact with a cold outside surface and a warm inside surface. The air in contact with the cold surface is cooled down and sinks, the air in contact with the warm surface is heated and rises.

Thus a constant flow of air is set up and much more heat will be lost through the wall than if the air could be kept still.

If the air space in the wall is filled with a porous material, the circulation of air will be reduced or stopped. If the material is not packed too hard, very little heat will escape, provided, of course, that the material itself is not a good conductor. Therefore, most materials used for thermal insulation are porous and contain a large proportion of air-filled cavities.

Rock wool, glass wool and plastic foam are materials that are often used for insulation in house walls. They do not change chemically over the years, they do not burn easily, they do not smell, and they are comparatively light in weight. A long time ago wood shavings or crumpled paper could be used to insulate the walls of a house, but they are inflammable, they are loved by certain species of insects and they deteriorate after some time.

If insulation is to be added to an older house, a granulated material is blown into the spaces between the studs by pneumatic machines. It is important that no empty pockets are left within the wall, and also that the material does not settle, leaving voids at the top.

In new house, insulation is of course installed while the house is being built. Batting, rolls of mineral wool, is made to fit into standard stud spaces.

Sometimes a sheet of asphalted paper is fastened to one side of the insulating material. The paper then acts as a vapour barrier. The batting should be installed with the treated paper on the warm side of the wall.

The effect of moisture on the insulation is a factor that should not be forgotten. In winter, the air inside the house is likely to be more humid than the outdoor air. Air from inside the house will flow slowly through the porous walls into the insulated space. If the humid air is cooled, condensation may be the result. Water will not only ruin the effect of the insulation but it may also damage the house.

A. Answer the following questions:

1. What is the best insulation?
2. A layer of air in the outside walls is not a good way to insulate a house. Why not? Explain.
3. A porous material does not always give very good insulation. Why not? Explain.
4. What make rock wool and glass wool good insulation materials?
5. Why is not paper regarded as a good insulation material?
6. How is insulation usually added to older house?

B. True or False?

Correct the statements that you think are false. If the text does not tell you whether the statement is true or false, answer *Don't know*. If you choose the answer *Don't know*, explain in your own words what the text actually says and what it does not say about that particular problem.

1. More insulating materials are needed in the roof of a building than in the walls.
2. Fifty- centimetre rolls of mineral fit into standard stud spaces.
3. Asphalted paper can act as a heat barrier.
4. When air is usually more humid than cold air.
5. When humid air is cooled, condensation may be the result.
6. Humid air gives very good insulation.

III Study the instruction and write out some important Dos and DON'Ts

Laying blanket insulation

Seal gaps around pipes, vents or wiring entering the loft with flexible mastic. Remove the blanket wrapping in the loft (it's compressed for storage and transportation but swells to its true thickness when released) and begin by placing one end of a roll into the eaves. Make sure you don't cover the ventilation gap – trim the end of the blanket to a wedge-shape so it does not obstruct the airflow, or fit eaves vents.

Unroll the blanket between the joists, pressing it down to form a snug fit, but don't compress it. If the roll is slightly wider than the joist spacing, allow it to curl up against the timbers on each side.

Continue at the opposite side of the loft with another roll: cut it to butt up against the end of the first one, using a

large kitchen knife or long-bladed pair of scissors. Continue across the loft until all the spaces are filled. Cut the insulation to fit odd spaces.

Do not cover the casing of any light fittings which protrude into the loft space. Avoid covering electrical cables, as there's a risk it may cause overheating. Instead, lay the cables on top of the blanket, or clip them to the sides of the joists above it.

Do not insulate the area directly below a cold water tank, so that heat rising from the room below will help to prevent freezing. Cut a piece of insulation to fit the hatch cover and attach it with PVA adhesive or hold it down with cloth tapes and drawing pins. Fit foam draught excluder around the edge of the hatch.



Laying blanket insulation in the loft

Seal gaps around pipes and vents (1). Place end of roll against eaves and trim ends (2) or fit eaves vents (3). Press rolls between joists (4). Insulate tank and pipes (5).

From Weatherproofing and Isolation © William Collins Sons & Co. Ltd

IV Read the texts and do the tasks.

Corrosion and Efflorescence

Corrosion can cause problems especially in industrial buildings where the walls are made of metal. If bare metal gets in contact with air moisture, rust will start to develop. To prevent this problem all metal surfaces should be treated with primed and undercoat and topcoat.

The white deposit which you often see on brick walls is called efflorescence. It is caused by water-soluble salts in the mortar. The salt come to the surface when the walling materials start to dry. You can get rid of the deposit by brushing the surface with a wire brush. Never try to clean the walls with water. You will only bring fresh new salts onto the surface of the bricks.

Damp

Damp can cause serious problems if it is not noticed early enough. If patches are found on the walls and ceiling or floor tiles start lifting o wallpaper peeling you should find the cause and repair the surface. If dampness has already reached the structural woodwork, it may have caused rot and mould. Mould can be a serious health risk for the people living in the house. That is why it is extremely important to prevent damage by protecting the house against damp. The easiest way is proper insulation. In the places which come into contact with water and damp, preservative-treated wood should be used.

There are different kinds of damp:

1. Water from an inside source reaches the wall, for instance, a leaking pipe or radiator.
2. Water from the air condenses on the wall and ceiling. For example, there is poor ventilation and a lot of steam in the room.
3. Water from the ground reaches the walls and floor, for example, in old houses where no damp-proof course has been made.
4. Water from the rain or snow. Cracks in the brickwork and missing mortar or defective window frames and sills can let in water.

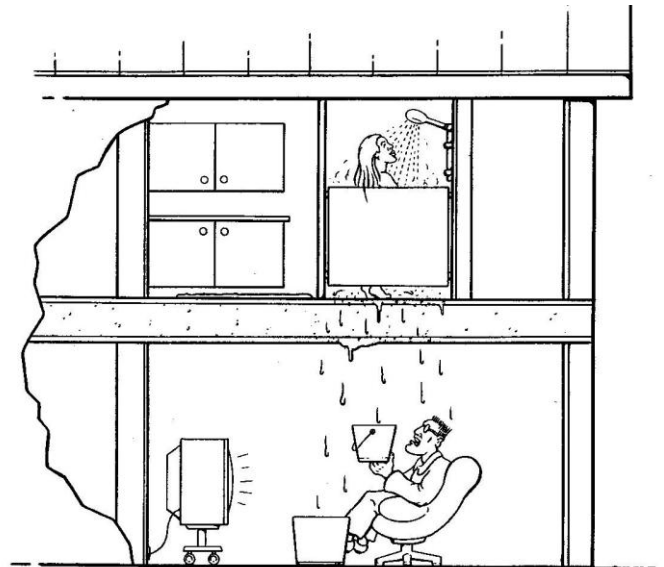
Damage caused by dampness is surprisingly common in our houses. According to surveys 8 out of 10 houses have some kind of damage because of damp. Dampness in the structures causes mould and different kinds of fungi. These kinds of damage are found in a house build in the 50s as well as in house built in the 90s. The cause of the damage can vary.

In houses built in the 50s the basement was not meant for living in and that is why the insulation is not done well enough to keep the basement waterproof. Now many of those houses have has also been brought into use. Saunas and other facilities have been built there. But damp rises from the ground to wall structures and causes rot and mould. Mould is especially dangerous for health.

House built in the 70s and 80s which have flat roofs have the same kind of problem. Water cannot get away from the roof and it gradually goes inside the house between the walls and causes mould there.

In many houses built in the 80s structures in bathrooms and other damp areas are improperly built. There is only vinyl flooring and wall-covering and there is no insulation at all. Such rooms are not water-resistant. Often only surface damage is repaired and nothing is done to the actual structures. That is how mould starts to spread.

Here is one terrifying example of a terraced house with two storeys where the living room was on the first floor and the sauna above it on the second floor. One evening when the mother of the family was having a shower upstairs, water started to come straight through the ceiling. When the bathroom was examined they noticed that there was no damp proof course at all the floor.



A. Answer the questions TRUE (✓) or FALSE (X)

- 1) Dampness in structures causes mould and fungi to develop. _____
- 2) These kinds of damage are not found in houses built in the 60s. _____
- 3) The causes of damage can be very different. _____
- 4) The basement in houses built in the 1950s is not always damp-proof. _____
- 5) Damp rises vertically. _____
- 6) Water remains on roofs which are not hipped or pitched. _____
- 7) In the 1980s bathrooms and other damp areas were built properly. _____
- 8) Rooms without a damp-proof course are not waterproof. _____
- 9) Often people only fix what they see on top. _____
- 10) If the structures are not taken care of, mould can reach many places. _____

TEST YOURSELF

I Find the 13 words from the unit in the puzzle and circle them. The words go vertically, and sideways. No words go diagonally.

S	G	P	T	A	E	H	P	Y	Q	W	E	R	T	Y	U
C	F	Z	W	P	A	T	Z	M	O	R	T	A	R	I	O
B	D	X	S	L	L	R	L	U	A	S	D	F	G	L	H
A	E	C	N	E	C	S	E	R	O	L	F	F	E	O	K
N	S	V	C	K	G	J	A	T	J	K	L	Z	X	S	C
R	A	F	O	O	R	P	Q	R	E	T	A	W	V	S	B
U	Q	B	V	U	F	I	M	F	N	M	Q	S	C	V	F
S	W	N	B	C	O	R	R	O	S	I	O	N	O	I	R
T	E	M	R	E	U	O	T	O	M	N	B	V	C	X	S
M	R	L	G	W	N	V	D	L	U	O	M	Z	A	S	K
A	T	O	H	V	D	A	B	F	D	F	G	P	H	J	C
I	N	S	U	L	A	T	I	O	N	K	L	M	Q	W	A
L	Y	Q	J	B	T	C	C	D	E	R	T	A	Y	U	R
K	U	A	K	T	I	B	N	S	I	O	P	D	A	S	C
J	I	Z	O	Y	O	R	E	A	D	F	G	H	J	K	L
H	O	X	V	E	N	T	I	L	A	T	I	O	N	Y	V

1 point for each correct answer

Total:		13
--------	--	----

II Name the problems you can see in the pictures.

1.



2.



3.



4.



5.



1 point for each correct answer

Total:		5
--------	--	---

III Write some 5-7 recommendations to prevent such problems as damp, corrosion, efflorescence, cracks.

Use the construction you **should / you shouldn't ...**



You should treat metal surfaces with primer and undercoat.

You shouldn't allow bare metal get in contact with air and moisture.

1 point for each correct answer

Total:		7
--------	--	---

IV Go to <http://www.ecoopenhouses.org/links/glossary.html> study listed features of eco house. Present some ideas you can use in our houses, in Latvia. Discuss some features which are not suitable for us due to some reasons.

Total:		10
--------	--	----

Total:		35
--------	--	----

Maximum is 10 (excellent)

Mark:		10
-------	--	----

Marking scale:

1	2	3	4	5	6	7	8	9	10
1-4	5-9	10-13	14-17	18-20	21-24	25-27	28-31	32-33	34-35

UNIT 7**SAFETY AT WORK**

I Read the text and answer the questions after it.

General Notes

When you study in the building department or start working for a construction company you should know the following facts:

- ✍ All workers should work in place where risks to their health and safety are properly controlled, so you must follow the safety rules and regulations.
- ✍ All workers are responsible for their own safety and for the safety of others.
- ✍ You must use the safety equipment required for each job. For example, you need overalls, goggles, safety boots, a helmet, a mask, ear protectors and gloves.
- ✍ When you are working you must know where the fire extinguishers are and how they are used. You must regularly attend courses on hot work to maintain your skills.
- ✍ You must also learn how to give first aid and have the first aid kit available nearby.
- ✍ It's important to read the signs on machines and follow the instructions carefully every time.
- ✍ Machines must have protective shield.
- ✍ Remember to check the safe working load, and don't exceed it. When lifting heavy objects, remember to lift correctly, using your leg muscles and keeping your back straight.

Safety Equipment

You need many kinds of safety equipment on a building site. Housebuilders and other workers have to wear safety boots, helmets, gloves, and sometimes goggles and dustmasks. Ear protectors should be used near noisy machines. Ladders and scaffolding are used when working at heights. Ladders must be placed right and they must be strong enough to carry the load of the workers. Scaffoldings must also be carefully erected, so that they don't both ladders and scaffoldings are usually made of metal, but sometimes also wooden ones are used.

Here are some other points to keep in mind:

- ✍ A very important thing is to keep you working place tidy and clean.
- ✍ You must not leave empty tins or dirty buckets on floors or in yards.
- ✍ Tools must be kept in the right places, in toolkits and sheds.
- ✍ Nails and screws must be kept in boxes, so that they will not be wasted.
- ✍ All the used boards should be collected into one place as well as other garbage.
- ✍ One a building site you should always be careful with fire.
- ✍ Paints and solvents catch fire very easily.

1. What are all workers responsible for?
2. What is important to know when working with fire?
3. What kind of courses must you attend regularly?
4. What skills must you learn?
5. What must you read carefully before operating machines?
6. What must you check before loading and lifting?
7. How should you lift carefully?

II The picture shows protective clothing. Study new words, translate them if necessary and use to complete the following sentences.



What must you wear if:

1. you want you protect your head against injuries? _____
2. you want you protect your eyes? _____
3. you want you protect your ears against noise? _____
4. you want you protect your feet against sharp items? _____
5. you want you protect your clothes? _____
6. you want you protect your hands? _____

III Read the instructions carefully. Match them with possible recommendation.

HOW TO AVOID DANGERES?

1. Somebody can throw boars out of the window or something con fall on your head.
2. There are always used boards which have nails on them, you can step on them by accident.
3. When you work with mineral wool or with other dusty materials, you should be careful.
4. When you plane or saw small can get into your eyes.
5. When you carry boards you can hurt your hands.
6. When you work with paints or solvents you should protect your clothes.
7. If you work on high places you should remember you use safety equipment and not boxes or chairs to stand on.

- A USE LADDERS AND SCAFFOLDINGS
- B USE GLOVES
- C USE A HELMET
- D USE GOGGLES
- E USE OVERALLS
- F USE SAFETY BOOTS
- G USE A DUSTMASK

1	2	3	4	5	6	7

IV. Read the text. Match the examples to the signs.

THE SAFETY SIGNS BELOW FOLLOW THE ISO INTERNATIONAL STANDARD. THIS STANDARD IS USED IN THE EU BECAUSE IT HAS MANY DIFFERENT LANGUAGES. THERE ARE THREE TYPES OF SAFETY SIGN:



- **WARNING SIGNS.** These signs warn you about a danger. They say things like this: *Warning. Danger. Be careful. Look out. There is a danger or hazard here.* You might injure yourself. The signs are yellow and black in colour and triangular in shape. Here are some examples:

1. Warning. Poison: see (1) C
2. Danger. Fire hazard here: see (2) _____

- **PROHIBITION SIGNS.** These signs prohibit an action. They say: *Do not do this. You must not do this. Always do this.* The signs are some red, white and black in colour and round in shape.

Here are some example:

3. You must not lift this with a hook: see (3) _____
4. Never take the guards off this machine: see (4) _____

- **MANDATORY ACTION SIGNS.** These signs order you to do something. They say: *Do this. You must do this. Always do this.* These signs are blue and white in colour, and round in shape.

Here are some examples:

5. Always read the manual before you service this machine: See (5) _____
6. You must use the guard on this circular saw: see (6) _____

V. Complete the instructions with the words in the box.



always	do	do not	must	mustn't	never
--------	----	--------	------	---------	-------

- _____ use a lighted match in this workshop.
- _____ wash you hands after using these chemicals.
- _____ enter this small space.
- You _____ wear safety boots when you lift this.
- _____ not smoke in this factory.
- You _____ touch this machine with bare hands. It's hot.

VI Write these signs in another way.



Example:

- Do not smoke here.
- Do not

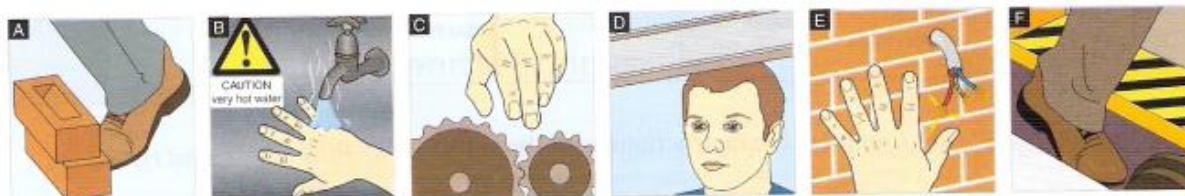
VII Complete these warnings with the words or phrases in the box. You can use words or phrases more than once.

could	might	there is	there are
-------	-------	----------	-----------



1. Take care. Heavy weight. You _____ injure your back.
2. Warning. _____ a could surface here.
3. You _____ injure your hands or arms.
4. Be careful. You _____ trap your hand in the gears.
5. Danger. _____ lasers in this laboratory.
You _____ injure your eyes.

VIII Match the warnings with the picture.



Warning	Possible result
	You might burn your hands.
	You could injure you head.
	You might fall into the gap.
	You trip over the bricks.
	You might trap you hand in the gears.
	You could get an electric shock.

IX Study the picture. How many safety hazards can you see? You are a safety inspector, inspecting the workshop in the picture. Write your report using the ideas from the table.

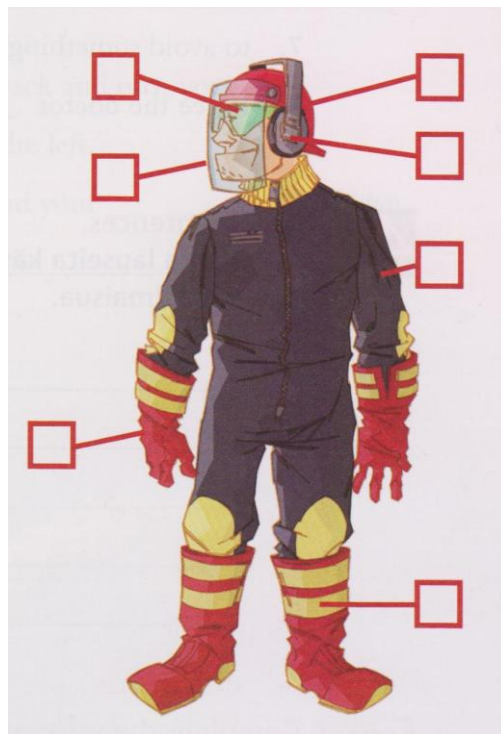


There is	a	liquid				
There's	some	bricks				
There are	no	boxes	in the workshop.	A cable		damaged.
		flood	on the floor.	Two windows	is	locked.
		drink	around the bricks.	The fire exit	are	broken
		tools	on the machines.	Some cables		coiled.
		fire extinguishers	on the stairs.			
		fire exit	on the benches.			
		cones				
		guards				

TEST YOURSELF

I Label the picture

- A goggles
- B overalls
- C safety boots
- D helmet
- E mask
- F ear protectors
- G gloves



1 point for each correct answer

Total:		7
--------	--	---

II Use the words in the box to complete the instructions.

always	do	don't	must	mustn't	never
--------	----	-------	------	---------	-------

1. *Don't* smoke in the workshop.
2. _____ use mobile phones in the workshop.
3. You _____ wear safety goggles when you use this machine.
4. You must _____ enter the cold store if you are alone in the factory.
5. _____ not lift heavy weights by hand.
6. You _____ use this machine without the guard.
7. _____ read the manual before you service the machine.
8. _____ touch packets in the cold store without gloves.

1 point for each correct answer

Total:		7
--------	--	---

III Complete each sentence with a pair of verbs.

drop/ break lift/ hurt pick/ burn put/ burn put/ melt touch/ get
use/ scratch use/ trap

1. Don't *drop* that box. You might *break* the TV inside it.
2. Don't _____ the CD on that hot surface. It could _____.
3. Don't _____ that box without a forklift truck. You might _____ your back.
4. Don't _____ a hook when you lift the car. You might _____ it.
5. Don't _____ up that hot plate. You might _____ your hand.
6. Don't _____ that wire. You could _____ an electric shock.
7. Don't _____ that machine without a guard. You could _____ your hand in it.

1 point for each correct answer

Total:		12
---------------	--	-----------

IV An inspectors is inspecting a factory. Write sentences from his notes.

- | | |
|-------------------------------------|---|
| 1. Liquid on floor | <i>There is some liquid on the floor.</i> |
| 2. Hole in the outside | _____ |
| 3. No fire exit | _____ |
| 4. Broken window | _____ |
| 5. Cables on a workbench | _____ |
| 6. No fire extinguishers in factory | _____ |
| 7. 2 machine guards missing | _____ |
| 8. Some damaged warning cones | _____ |

1 point for each correct answer

Total:		7
---------------	--	----------

V Use phrases from the box with *might* or *could* to complete these warnings.

burn your hand	fall into it	get an electric shock	injure your head	start a fire
	trip over them	trap your hair in it		

1. Mind that lighted match! (could) *You could start a fire.*
2. Mind that cable! (might) _____
3. Mind those bricks! (could) _____
4. Mind that machine! It doesn't have a guard. (might)

5. Mind the gap! (could) _____
6. Mind that low beam! (might) _____
7. Mind that circular saw! It's very hot. (could)

1 point for each correct answer

Total:		6
---------------	--	----------

VI Complete the inspector's report about the hazards in a factory. Use each of the words or phrases once.

there was there were was were two no some the

1. There *were* no fire extinguishers anywhere in the factory.
2. There was _____ food and drink on the workbenches.
3. _____ some boxes of parts on the stairs.
4. _____ guards on one of the machines was broken.
5. _____ some oil on the floor.
6. The fire exit _____ locked with a padlock.
7. There was _____ key for the padlock.

1 point for each correct answer

Total:		6
---------------	--	----------

Total:		45
---------------	--	-----------

Maximum is 10 (excellent)

Mark:		10
--------------	--	-----------

Marking scale:

1	2	3	4	5	6	7	8	9	10
1-7	8-13	14-18	19-22	23-27	28-30	32-36	37-40	41-43	44-45