Technical English for Engineers
Prof. Aysha Iqbal
Department of Humanities and Social Science
Indian Institute of Technology, Madras

Lecture – 13
Passive Voice (Continued)

Good morning friends. So, we are continuing with our discussion of passive construction, and we were talking about, why passive, why do we need passives at all?

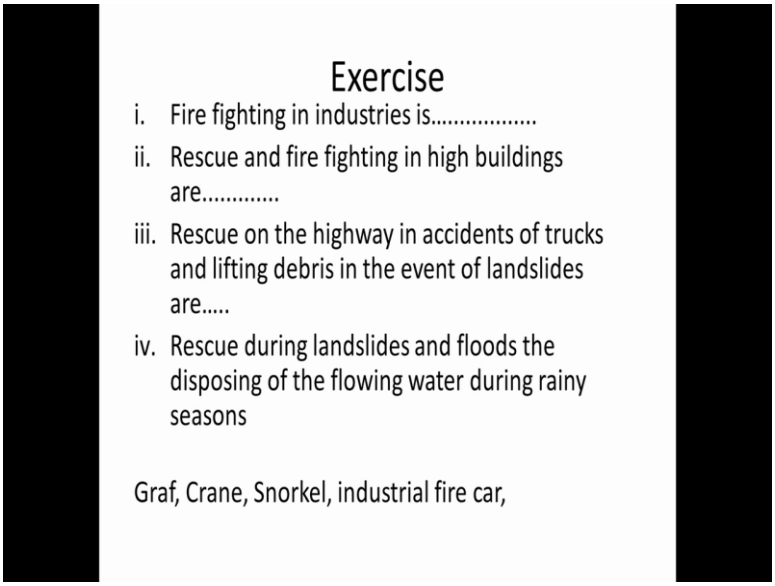
So, as I told you earlier, that passive verbs are necessary in technical English. We do not use this degree of formality in our, let us say, friendly letters or friendly conversations or more formal, sorry, informal and semi formal kind of writings. So, we would not say football was played by so and so; we will say the great football player Messi, he hit a goal; but, we will not say, he, a goal was scored by so and so. So, that is not the way. In more formal writing, we use passive construction, and technical writing, the kind of writing you people would need, is definitely the kind of expressions you need to, you people need to use, it definitely asks for demands passive construction.

(Refer Slide Time: 01:36)

Now, look at these two sentences, or rather, three sentences that I have done here for you.

Expansion is caused by heat. Aeroplanes are powered by engines. Cargo was lifted by crane. Crane lifted the cargo; grammatically correct; engines power aeroplanes and heat causes expansion. I mean, all these are grammatically, absolutely correct, but in our scientific writing, in our scientific communication, technical communication, we need to be more focused on the passive construction of sentence, which is, which has a degree of impersonality. They are not subjective; they are, they have the air of being objective and impersonal. And therefore, for making scientific statements, we need this kind of grammar. I will give you these sentences.

(Refer Slide Time: 02:42)



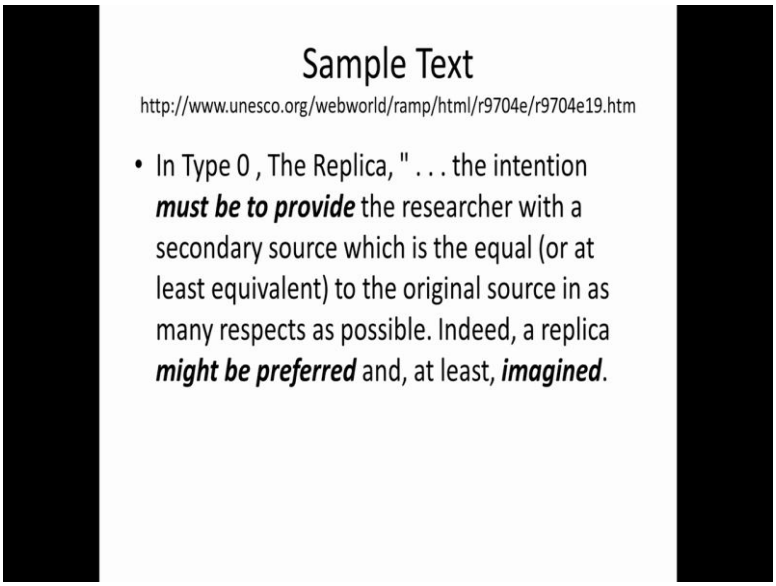
Please look at the slides; this is an exercise for you. Answers are all, all jumbled up, given at the bottom. Fire fighting in industries is, and I would like you to write something like, caused by or done by. Rescue and fire fighting in high buildings are done by. Rescue on the highway in accidents of trucks, and lifting debris in the event of landslides are done by. So, you have to use these words, these expressions, and then, use the form, use the most appropriate form. Rescue during landslides and floods the disposing of the flowing water during rainy season is, and then, complete the sentence. Your answers are, your choices are, industrial fire car, snorkel, graf and crane; alright

So, the first answer is industrial fire car; fire fighting in industries, this is done by

industrial fire car. Second one, rescue and fire fighting in high buildings are done by snorkels. Third one is, rescue on the highway in accidents, etcetera, the answer is crane and rescue during landslides and floods, the answer is graf. So, all these are done by, using industrial fire cars, using snorkels, done by crane, and done by using graf. So, this is the way you write and speak.

Now, look at the sample text, and I have highlighted some of the passive markers here.

(Refer Slide Time: 04:45)



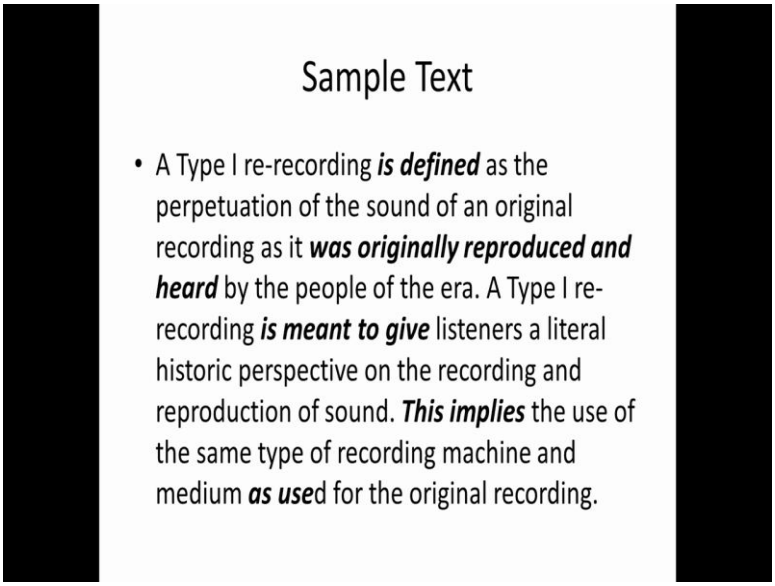
In type zero, I have given you the reference also, and this is just a sample text. Please listen to it, and please take down notes. And, pay rather close attention to the kinds of verbs, those are highlighted and those are considered as passive constructions. All these will be of great help to you, when you actually get down to writing a publishable paper or an assignment.

'In type 0, the replica, the intention ***must be to provide*** the researcher with a secondary source, which is the equal, (or at least equivalent) to the original source, in as many respects as possible. Indeed, a replica ***might be preferred*** and, at least, ***imagined***'. So, is there, the, what is being talked about, we are talking about recording speeches, keeping recorded speeches as part of our archives. You know, during the, archives and recording

speeches of important personalities is very, very necessary part of the government and the government generally appoints, designates certain kinds of bodies and organizations, who are in the business of, or whose job is to record, maintain and preserve the recorded voices and conversations of, that relate to certain significant events in history. For example, a broadcast made during one of the wars, a broadcast made by the Prime Minister or the Chief Minister of a state, in the, or in a state, or in an event of great consequence.

So, all these speeches, even conversations between two important dignitaries, foreign dignitaries and our own, people representing our own country, all these are recorded and they are preserved and archived, for referencing, for future generations. So, that is being talked about here, in this passage. It is a very interesting passage for those of you, who might be interested in Sound Engineering. So, what he is, the passage talks about the type O, which is called replica, and then, I go on. 'The intention must be to provide the researcher with a secondary source, which is the equal, or at least equivalent to the original source, in as many respects as possible. Indeed, a replica might be preferred, and at least, imagined'.

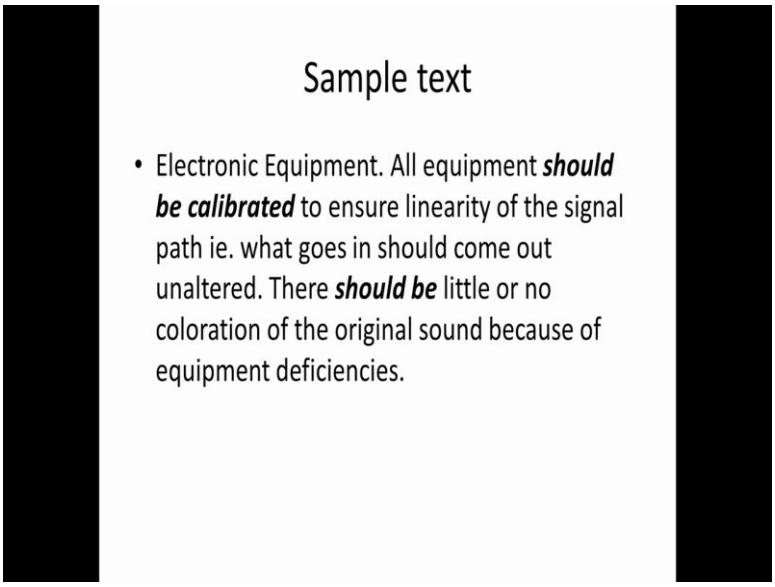
(Refer Slide Time: 07:43)



I continue, and Please keep looking at the slides. 'A type 1 re-recording **is defined**'. So,

it is not, he is not saying we define it as. This is, ‘is defined as the perpetuation of the sound of an original recording, **as it was originally reproduced and heard** by the people of the era. A type one recording, re-recording **is meant to give** listeners a literal historic perspective on the recording and reproduction of sound. **This implies** the use of the same type of recording machine and medium, **as used** for the original recording’.

(Refer Slide Time: 08:25)



We continue, ‘Electronic equipment: All equipment ***should be calibrated*** to ensure linearity of the signal path, that is, what goes in, should come out unaltered. There ***should be*** little or no coloration of the original sound, because of equipment deficiencies’. How many passives have we seen? Please, let us have another look. Must be to provide, might be preferred, imagined. So, the idea is not, I am imagining; something has to be imagined by me, that is the idea. So, therefore, even if you do not see the, the preposition by, must be done, all these expressions, you do. The idea is very clear that, imagined happens to be a passive construction.

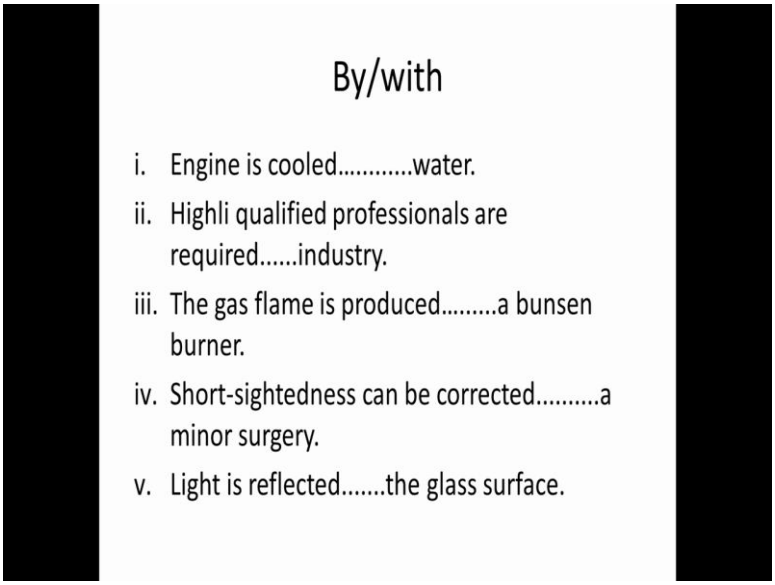
And again, Look at the second slide; is defined, was originally reproduced and heard, here, of course, you have by; is meant to give, this implies. Now, this is another tricky word; this implies, let it be told; all these are quite passive in construction. They are not, definitely not active; as used. And then, you have, should be calibrated and should be

little or no coloration. So, this is the way we use. I am just refreshing what we have been doing so far, and this is something that needs some attention.

Now, there are two important words, both prepositions, which are very important in the construction of passive sentences. One, of course, is by; there is no getting away from by. Then, you have with. So, in passive sentences, it is the 'what' agents? What. Expansion is caused by heat; agent is expansion; what is caused by heat. So, that is mainly used with the present and modals; you all, of course, you remember your modals; can-could, may-might, shall-should.

For example, let us look at the sentence, sulphuric acid is produced by the action of so and so. Sulphuric acid is produced by the action of this and this elements. So, you have to think, or, what are those chemicals that cause the production of sulphuric acid. Again, some car engines are cooled by water, and some by air. So, agents are car engines; water, cooled by water and air. So, some are cooled by water, some by air. There are some cars whose engines are cooled by air; most of the cars require water though, but the, there are some cars that require air. So, this is, by is necessary here.

(Refer Slide Time: 11:45)

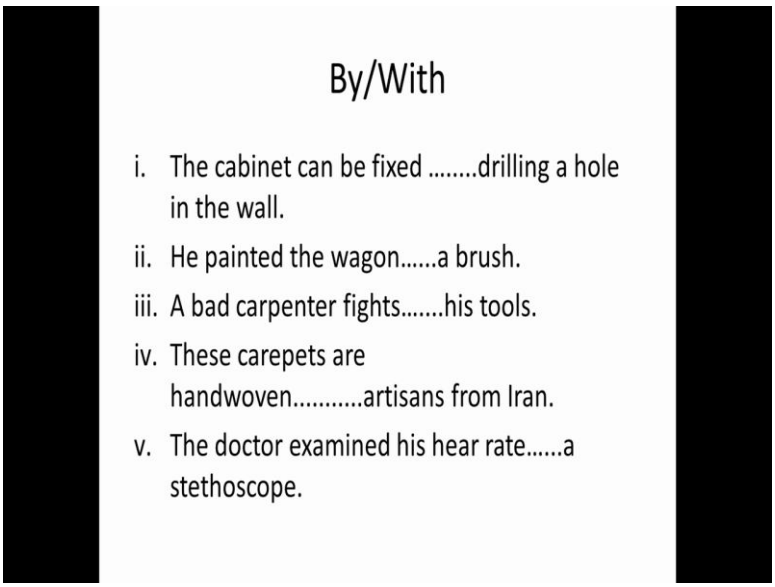


Now, I have, this is another exercise; take a look at this particular slide. Do not get

confused; use ‘by’ and ‘with’, in the appropriate places.

Engine is cooled dash water. Highly qualified, I am sorry about the spelling, h i g h l y, qualified professionals are required dash industry. The gas flame is produced dash a Bunsen burner. Short sightedness can be corrected dash a minor surgery. Light is reflected dash the glass surface. Engine is cooled by water. Highly qualified professionals are required, not with the industry, but by industry. The gas flame is produced by a Bunsen burner. Short sightedness can be corrected by a minor surgery. Light is reflected by the glass surface. So, every, all these sentences here require ‘by’.

(Refer Slide Time: 12:44)



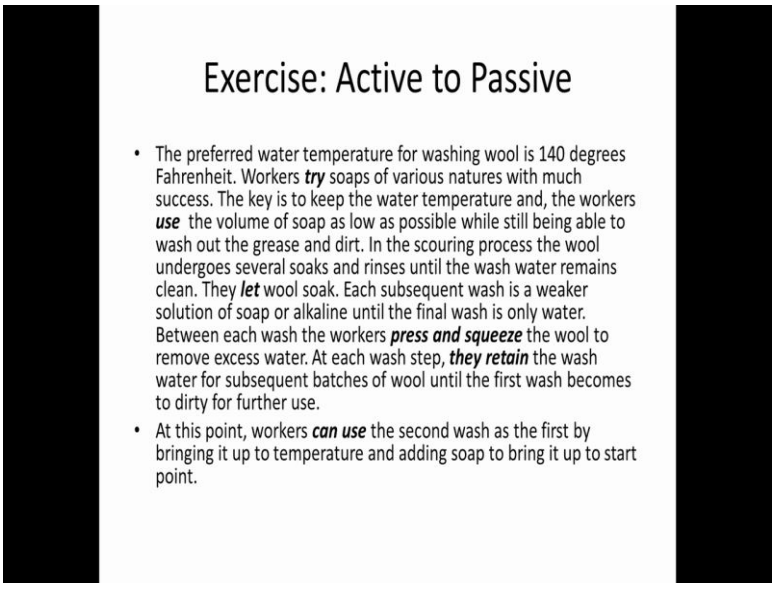
Now, look at this another slide, the next slide and more examples. The cabinet can be fixed dash drilling a hole in the wall. He painted the wagon dash a brush. Bad carpenter, a bad carpenter fights dash his tools. This is a proverb also; people who do not know, or who are not experts in anything, they just end up ruining the things. These carpets are dash, artisans from; these carpets are hand woven dash artisans from Iran. The doctor examined his heart rate, and not hear rate; heart rate dash a stethoscope. Now, cabinet can be fixed by drilling; we do not have say with drilling a hole. He painted the wagon with a brush; by, by brush is not too appropriate; with a brush. A carpenter, a bad carpenter fights with his tools; not by his tools; by his tools will give you another sort of

a meaning. These carpets are handwoven by artisans from Iran. The doctor examined his heart rate with a stethoscope.

Must and should are other auxiliaries and modals, which are very necessary while construction, while constructing passive. So, you must use, you must keep in mind, when to use must, should; this must be done. So, be, plus ‘ed’ form; done is an ‘ed’ form; past participle. I should have returned the book by now. This book should have been returned to the library by now. So, been, plus ‘ed’; returned, ‘ed’ forms of return; ‘ed’ form of the verb. So, must and should are other important auxiliaries.

I have also, if in case, I have not yet recommended, then, I do recommend a book called Advanced English Grammar and this book is by Martin Hewings. This is a very important book and all of you should be able to consult this, whenever there is any kind of confusion between passive construction and use of by and with and various kinds of modals and auxiliaries. I will write the name of the author here, Martin Hewings, Advanced English Grammar. This is the name of the author. One of these days, I will also bring this book to the class and I will show you the book. Right now, you just take a look and if possible, please get this book for yourself.

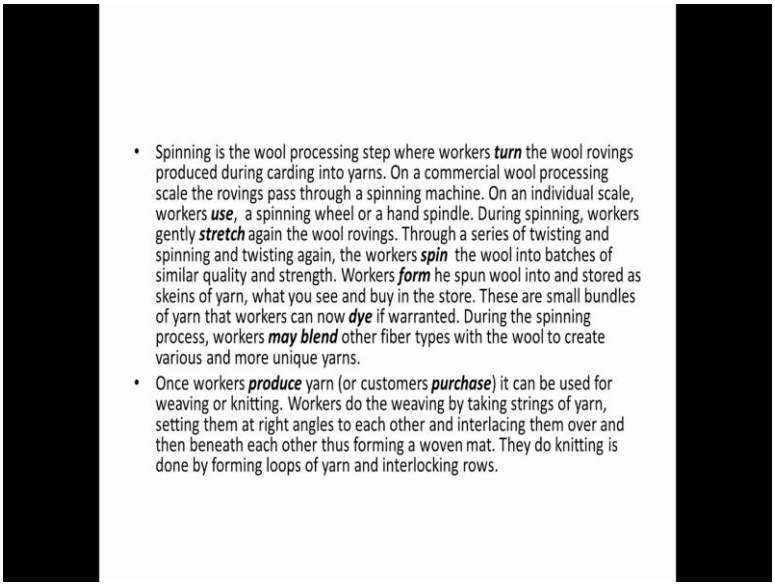
(Refer Slide Time: 16:08)



Now, let us look at this exercise. The idea is, to turn active to passive, and I have highlighted the verbs, which are done in active here; and I would ask you to turn them into passive. I will read it out for you, and Please try to transform, change the sentences into passive forms, wherever highlighted, wherever indicated. 'The preferred', please look at the slide; 'The preferred water temperature for washing wool **is** 140 degrees Fahrenheit. Workers **try** soaps of various natures, with much success. The key is to keep the water temperature, and the workers **use** the volume of soap as low as possible, while sting, still being able to wash out the grease and dirt. In the scouring process, the wool undergoes several soaks and rinses, until the wash water remains clean. They **let** wool, sorry, they let wool soak. Each subsequent wash is a weaker solution of soap, or alkaline, until the final wash is only by water. Between each wash, the workers **press and squeeze** the wool, to remove excess water. At each wash step, **they retain** the wash water for subsequent batches of wool, until the first wash becomes too dirty'. It is not to, t o, but t double o; 'dirty for further use.

At this point, workers **can use** the second wash as the first, by bringing it up to temperature, and adding soap to bring it up to start point'.

(Refer Slide Time: 18:08)

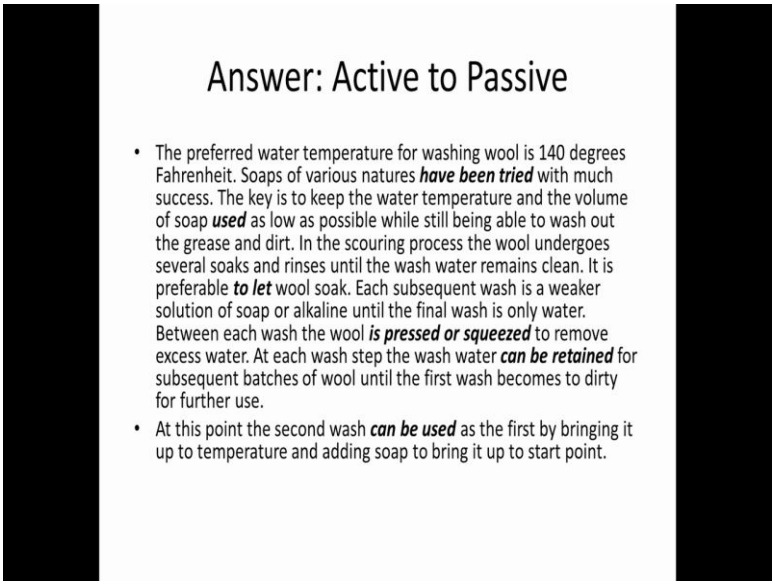


Next slide; please read on, please look at it. 'Spinning is the wool processing step where

workers **turn** the wool rovings produced during carding into yarns. On a commercial wool processing scale, the rovings pass through a spinning machine. On an individual scale, workers **use,** a spinning wheel, or a hand spindle. During spinning, workers gently **stretch** again the wool rovings. Through a series of twisting and spinning, and twisting again, the workers **spin** the wool into batches of similar quality and strength. Workers form the spun', not he spun; 'Workers **form** the spun wool into and stored as skeins of yarn'; skeins, you know, as it is like a thread of yarn, what are spools of yarn; 'what you see and buy in the store. These are small bundles of yarn that workers can now **dye,** if warranted. During the spinning process, workers **may blend** other fiber types with the wool, to create various and more unique yarns.

Once workers **produce** yarn, (or customers **purchase**), it can be used for weaving or knitting. Workers do the weaving by taking strings of yarn, setting them at right angles to each other, and interlacing them over, and then, beneath each other, thus forming a woven mat. They do knitting is', I am sorry, this one is done for you. So, we will here, 19 48 'They do knitting, by forming loops of yarn and interlocking rows'. I will repeat, 'They do knitting, by forming loops of yarn and interlocking rows. Take your time, not more than 5 minutes, and then, we will come back and solve the exercise.

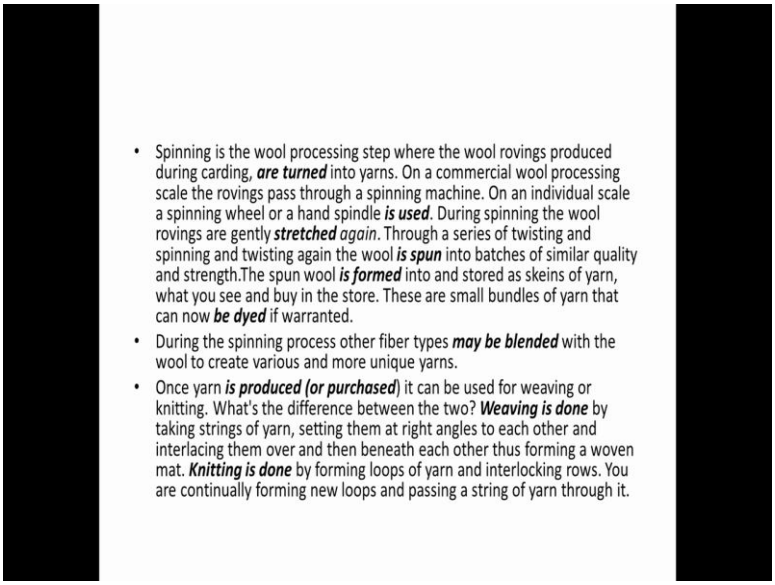
(Refer Slide Time: 20:18)



So, here is the answer. Please look at the slides. There may be some typos here, which I will rectify as we look at the solved passage. So, the preferred water, water, preferred water temperature for washing wool is 140 degrees Fahrenheit. Soaps of various natures **have been tried**. So, instead of workers tried, we are using have been tried, with much success. The key is to keep the water temperature and the volume of soap **used** as low as possible while still being able to wash out the grease and dirt. In the scouring process, the wall, sorry, the wool changes, the wool undergoes several soaks and rinses, until the wash water remains clean. It is preferable **to let** wool soak. Each subsequent wash is a weaker solution of soap or alkaline, until the final wash is only by wool, sorry, only water. Between each wash the wool **is pressed or squeezed** to remove excess water. At each wash step, the wash water **can be retained** for subsequent batches of wool, until the first wash becomes too dirty, t double o, too dirty for further use.

At this point the second wash **can be used** as the first by bringing it up to temperature and adding soap to bring it up to start point.

(Refer Slide Time: 21:43)



Next slide; Spinning is the wool processing step, where the wool ravings, or, sorry, rovings, produced during carding, **are turned** into yarns. On a commercial wool processing scale the rovings pass through a spinning machine. On an individual scale, a

spinning wheel, or a hand spindle is used. So, not workers used. Remember, and pay attention to the fact that, if we are not using the passive construction, how many times we have to use the subject, as the workers do, the workers try, the workers process. So, we are just trying to avoid that repetition of that subject, which is understood, and which is implicit, and therefore this construction is more elegant, more refined, in a more formal kind of a sentence.

During spinning, the wool rovings are gently **stretched** again. Through a series of twistings and spinnings, and twisting again, the wool **is spun** into batches of similar quality and strength. The spun wool **is formed** into and stored as skeins of yarn, and what you see and buy in the store. These are small bundles of yarn that can now **be dyed**, if warranted.

During the spinning process, other fiber types **may be blended** with the wool, to create various and more unique yarns.

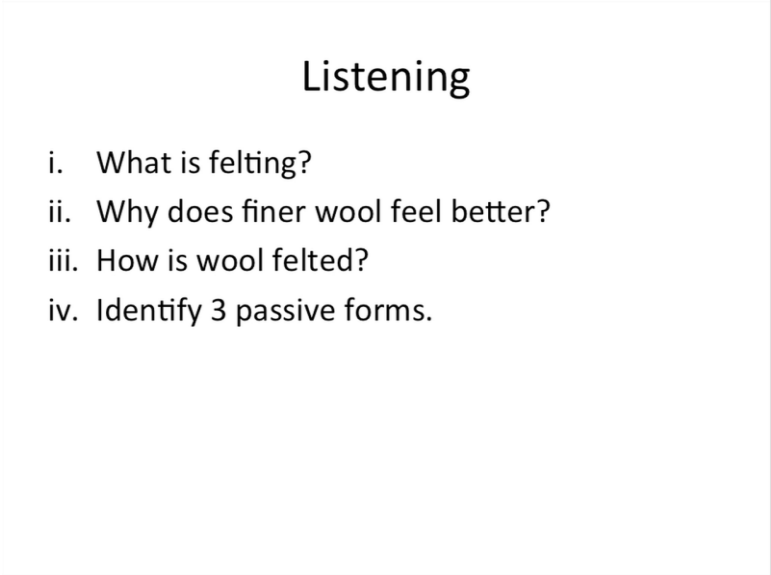
Once yarn **is produced (or purchased)** it can be used for weaving or knitting. What's is the difference between the two? **Weaving is done** by taking strings of yarn, setting them at right angles to each other and interlacing them over and then beneath each other, thus forming a woven mat. **Knitting is done** by forming loops of yarn and interlocking rows. You are continually forming new loops and passing a string of yarn through it. So, this is the way we have done passive.

What has passive done to active now, can anyone tell me that? What we get here is, more impersonal use of language; and this is what is required in, which is, in writing, which is more formal, as you are supposed to do. So, more objective, more formal, more elegant, so that is what passive does, but if you use it in, again, I am warning you; if you use, over-use passive constructions in your day to day writing, your speech, it looks very odd. Passive construction is used at a particular place, at a particular time; not anywhere, where we want to; alright.

Now, from here, We will move on to do some listening. As usual, I am going to show you the questions, before I read out the passage for you. You have to listen to the

passage; you will not be shown the passage. So, you will not be shown the passage, as you have been seeing it so far. You know how we are doing listening practice in this course. I am going to just show you the questions.

(Refer Slide Time: 25:02)



So, please look at the slide here. Listening questions; what is felting? Why does finer wool feel better? How is wool felted? Identify three passive forms. These are the questions, and now, I will read out the passage for you. You will not be able to see it. Please listen to the passage carefully.

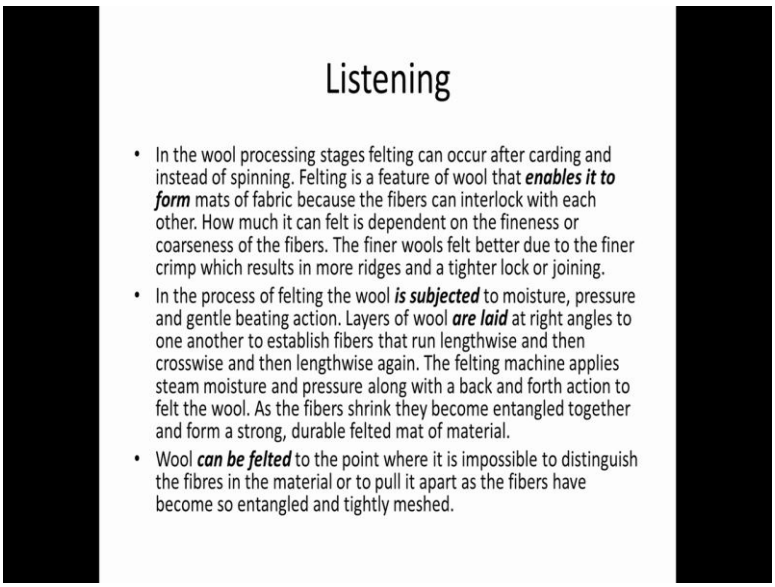
'In the wool processing stages, felting can occur after carding and instead of spinning. Felting is a feature of wool that enables it to form mats of fabric because of the, because the fibers can interlock with each other. How much it can felt, is dependent on the fineness or coarseness of the fibers. The finer wools felt better due to the finer crimp, which results in more ridges and a tighter lock or joining.

In the process of felting, the wool is subjected to moisture, pressure and gentle beating action. Layers of wool are laid at right angles to one another to establish fibers and run lengthwise and then crosswise, and then lengthwise again. The felting machines applies, sorry, the felting machine applies steam moistures and pressures along with the back and

forth action to felt the wool. As the fibers shrink, they become entangled together and form a strong, durable, felted mat of material. Wool can be felted to the point, where it is impossible to distinguish the fibers in the material or to pull it apart as the fibers have become so entangled, and tightly meshed'.

So, this was your passage. Go back to the questions. What is felting? Why does finer wool feel better? How is wool felted? Identify three passive forms. I will now, again, I will show you the passage now and you can tell your answers here. Some of the passives have been highlighted for you. So, please tell me your answers with the passage.

(Refer Slide Time: 27:35)



In the wool processing stages, felting can occur after carding, and instead of spinning. Felting is a feature of wool that **enables it to form** mats of fabric because the fibers can interlock with each other. How much it can felt is dependent on the fineness or coarseness of the fibers. The finer wools felt better due to the finer crimp, which results in more ridges and a tighter lock or joining.

In the process of felting, the wool **is subjected** to moisture, pressure and gentle beating action. Layers of wool **are laid** at right angles to one another, to establish fibers that run lengthwise and then crosswise, and then lengthwise again. The felting machine applies

steam moisture and pressure along with the back and forth action, to felt the wool. As the fibers shrink, they become entangled together, and form a strong, durable, felted mat of material.

Wool **can be felted** to the point, where it is impossible to distinguish the fibers in the material or to pull it apart as the fibers have become so entangled and tightly meshed.

So, I hope, you got your answers here. And, again, Let us have some fun and games with the language. I am giving you these idioms. I am writing these idioms on the board and what I want you to do is to find the meanings of these idioms from the dictionaries. And, consult the dictionaries and find the meanings of these idioms, . Let me erase the board, just give me a minute and I will give you your idioms, that you may not necessarily use in your scientific language, but they may help you in some other reaspects of your, may be more elegant writing or your speech.

(Refer Slide Time: 29:39)

So, wolf in sheep's clothing, idiom. Remember, sheep in plural is sheep; children in plural remain children; child plural is children, not childrens; sheep is sheep; deers is, deer is deer, and not deers. So, it is always the same; deer plural and deer in singular; no change in spelling. Dyed in wool, dyed in wool; pull the wool over someone's eyes, over

someone’s eyes; all wool and the yard wide; wrap up in cotton wool. I will write it here, wrap up in cotton wool. These are idioms. These are your idioms. I thought it, it would be a good idea to add some variety to all the technical English that we have been doing so far. We You have just did an exercise or passage, listening and grammar based on a wool processing in a, related to something wool and processing and felting and making wool. So, I thought, this is a good idea to give you some kind of expressions that will add more color to your language.

So, please, look these expressions up and thank you very much. We will be meeting soon for our next class.

Tags

Reading English, English for Engineers, English words, English Exercise, Exercises in English, Grammar usage, English Grammar, vocabulary, words and phrases, spoken communication, written communication, English writing, English speaking, scientific English, report writing, CV, formal letter, Speech-Preposition, Noun Phrases, Countable and uncountable nouns, singular, plural, Modals and Voice

Essay writing, word categories, word formation, formal tone, paragraph writing, tone in writing, speaking tone, signal words, Letter writing, understanding essays, Mechanics of Essays, publishable essays, nouns, pronouns, verbs, adverbs, adjectives, propositions, determiners, linking words, 'be' form, linking words, reading, listening, sentence, Subject, Verb, Object, Articles, comparatives, passive voice