

>> All right. Oh, oh, look at that. Do you see the knee, everybody? Just let me know that you see it.

>> Yeah, I see.

>> Okay. So yeah, it's very exciting. And remember, I can't see the chat so – oh, wait. I got it, ching ching. All right. Sometimes it opens and sometimes it doesn't. I don't know. Okay. Here we go. So what we're looking at – just going to give you – this is the best I can do, I must tell you. Let me just see if I can zoom out of it. Okay. So I'm just kind of zoom in and out as we move through this. And again, this is the part of the day where I wish you were here to enjoy the scent that I'm enjoying with the knee joint today. This is a knee joint we've had around for a bit. And we freeze it and unfreeze it, freeze it and unfreeze it. And we usually get new knee joints that, since we've all been involved in – or many of us have been working from home, we don't have any knee joints. But it's okay. Yeah, I know, Julie. I know, Vanessa. I know. Okay. So here's what we're seeing. I'm just going to kind of pull back and forth, as we do with these long bones. So what we're seeing here is the femur and those large condyles, even much larger than they are. This is an anterior view on the cow. So here, the anterior view of the condyles and then the articulation with the tibia, which we're seeing here. And I've added some clamps on this – some of the structures we're going to look at. We'll identify them in a second. But I want to also give you the posterior view of this joint. So probably, I think, I think, I hope, a bit more obvious that these are the large, round, right, we said – when we talk about condyle, that the condyle can be a large, round knob shape. And I think that that is certainly true for the distal end of the condyles on the femur. And then I can see the condyle of the tibia here and not as well on this one. But that – whenever I see the smooth, shiny – look for smooth and shiny. Because of course, that's the articular cartilage, we'll come back to in a second, at the end of the bone. So this is a posterior view. And I see the large, rounded condyles. The other thing I want to point out to you is, okay, I've got a femur. I've got a tibia. I got no fibula. And so the fibula was removed. But here's what I do know, that even though it was removed, I can see where it would be placed – woah, sorry. I can see where it would be placed, because I have this kind of ledge, right, this indentational ledge. This is the end of the bone, right here. And so my hand is now representing the fibula. And so even though I don't have it there, I can see where it was versus this side, which I don't have really any place for the attachment of the head of the fibula. So even though I can't really see, I should still, at least in this view, identify lateral versus medial. And say it again. This would be lateral with this end, if I can see this end of the bone, right here, lateral versus medial. And I have a couple structures that I need to know lateral versus medial. So that's why I'm pointing that out to you. So I'm going to turn it anterior once again. And we'll look at these structures from the anterior and the posterior. And we'll start with the collateral ligaments, which I have placed here and here. And so I'm looking at collateral ligaments. And this you, like, probably couldn't tell too much, which was lateral and which was medial. But I'm going to hang onto this one and turn

back to that posterior view. And now I can see where the fibula was attached. And so speak to me or actually, I can see the chat if you want to write in the chat. Be specific. Name this structure. Be specific and name this structure. Don't be afraid. The fibula was located here. So this is a what? Be specific. Good, good, good, good, good, good, good. Yes, lateral collateral ligament. Excellent, excellent, excellent. And if that's the lateral collateral ligament, then this is the – this would be the what? Right. And I wouldn't have – good. And I wouldn't have all of these other – these other clamps in the way kind of hiding our view. That one is probably not as easily seen, because I'd really have to give you this view to see the whole thing. And then you can't really see where the fibula was. But in our demonstration, good. You've got it, so the collateral ligaments. Then the – while we're here, let's stay posterior. And I had another set of ligaments that we said, based on their attachment to the tibia, we could name. And so this, here's my posterior, right, large, rounded condyles. Be specific and name this structure. Good, good, good, good, good, good, good, posterior cruciate ligament. And again, what's my clue? Look for the round portion, the condyle. That is indicating posterior to you. So round condyles. And we'll stay posterior. If I'm looking at the posterior and I've already identified that this is where the fibula would be and I pointed out this structure and said, "Name it. Be specific." What are you going to say? Yes! Good! Right? Because this is the fibula. And it's lateral. So this side has got to be medial. It's my thick fiber cartilage connected tissue pad called a meniscus, medial meniscus. Now, let me show you. The menisci are my favorite structures in a joint. Here's why. I'm going to turn it lateral. And I want you to see what happens to the meniscus when I flex. Watch the meniscus. What? It moves with the condyle. So there's never bone to bone contact. I love it so. Let's look at the other meniscus. Look at that! That's so cool. Love that meniscus. Love that meniscus. Excellent. Great work. Let's stay here. Then we'll go anterior. Then the next thing I know is that I have its [inaudible]. Look at how shiny, smooth, shiny. We can't see as well here but smooth, shiny. If I pointed out any of these surfaces and said, "Name this surface. Be specific," or "Name this – sorry, name the structure. Be specific." What would you say? I'll do this one. Name this structure or surface. Be specific. But be specific, absolutely. But be specific. What do we have to say besides just articular cartilage? We have to say – so this one is which bone? Everyone, what bone – yes. This is the femur. Remember, large round condyles are femur. So femoral articular cartilage. Down here, this is the tibia. This would be tibial articular cartilage. Good. Yes, sorry. Good. Then – I did. I actually did, Vanessa, after doing this. Name it. Name it. Yeah, that wasn't very helpful. I agree. So here we go. All right. So then, instead of name the structure or surface, be specific, what is the histology of this surface or this structure? What is the histology? Smooth, shiny, yep. Everybody, what did we say? Tut, tut, tut, tut, yep, yep. Remember to not just say hyaline cartilage. Say hyaline cartilage connective or hyaline cartilage CT. Thank you. Thank you. Thank you. Thank you. We don't want to lose points on something we know. Good, good, good. Very nice. By the way, CT, I have told you, you can use those, an abbreviation.

Don't abbreviate other things on a test. You'll lose points. If you put ER on the last test instead of wrote endoplasmic reticulum, you lost points. Don't abbreviate unless I tell you. And CT is one of our abbreviations, for sure. All right. Posterior, posterior, let's go anterior, right. And so again, those large condyles indicating the femur. And now I'm going to open so we can see, woah. That's way too close. No, it's okay, I guess. That's as good as – that's as far away as I can get. And now again, look at the structure that's attaching. This is the – wait, we get – this is the anterior. I'm going to pull it back down so you can see – anterior femur, tibia. This structure is attaching on the anterior of the tibia. Name that structure. Be specific. Name that structure. Be specific. Yep, yep, yep, yep, yep, yep, good. Good. Okay. Different question, what is the histology of the structure pinned? And you're going to say what? Histology of the structure pinned. Yes. Ligaments are always DRCT. Alyssa, yes, absolutely. You can write it that way today. But again, on our test, we're going to spell it out. It's okay for – it's okay today. I got you. But spell everything out. Spell everything out unless I have told you it's okay to abbreviate. You got it. Excellent. So that's the few that we saw with the model. Now I'm going to pull a different – a different specimen over. Now, new specimen. Uh oh, lost you, my fault. Hold everything. Hold everything while I reconnect whatever disconnected. Oh, this might take a minute. We're just glad that – actually going to stop the share for just a second and try a share with you again. And camera still looks like it's out. We were so close. We were so close. All right. Going to turn the camera off, turn it back on. I'm just speaking so that those that are not with us right now know what's going on. Here we go. All right. And then I'm going to share just my screen with you. Got it.

[ Inaudible Comment ]

Still attempting to share with everyone. All right. We're back. And try not to run into that anymore. And so [inaudible] you are seeing is the mid-sagittal cut through a bone so that we can see some of the internal anatomy and some of the structures on a long bone that we've been discussing. So I'll start with this view from a bit further away. And I'll zoom in on some things for you. And there's also another structure we didn't mention before that we cannot see that will finish up with all of our structures. So again, the shaft is called the diathesis. It is compact bone. It has an opening called the medullary canal that is filled with – and here it is. Don't you love it? – yellow bone marrow. So there it is. Yes! Yellow bone marrow, yellow bone marrow, histologically it is composed of what? And I'll see if I can get back to the chat. So I know. Excellent. Excellent, everyone. What is the composition of yellow bone marrow? Type it in. Thank you, Jane. Yep, yep, yep, yep, yep, yep, yep. And again, it wouldn't ask functions on a lab practical. But certainly on the lecture exam, you would have to be specific about functions of the yellow bone marrow. And those would be – give me one. One function of yellow bone marrow would be what? Energy storage. Energy storage. Excellent, excellent, excellent. Anybody have anything different? What was out other – lighten the bone? Excellent. Wonderful. Versus the ends called the epiphysis, which are not – I'm going to zoom in now – which

are not compact bone but spongy bone. And I don't have yellow bone marrow. But I have a little bit of it left in here, this kind of dark, reddish material that I find within the spongy bone, the epiphysis, is red bone marrow. And red bone marrow composition histology is what? What is red bone marrow histologically? Good. Yes, yes, yes, yes, yes. So you can see the difference. That's kind of dark. If this were fresh bone, it would be very red, kind of dark red. And of course, the job of myeloid connective tissue is to do what? What does myeloid connective tissue do? It's function is what? Yep. Yep, produce blood cells. Please don't say produce blood, because it does not produce all of the blood. It produces blood cells. It does not produce plasma. And so we don't want to just say blood. Be specific. Good, good, good. Now here's the structure we didn't see, because there was no way to see it. So on your – in your lab book – on your lab book, on the right hand side page of page 33, right underneath epiphysis, the fourth indent, epiphysial growth plate or epiphysial line. So remember what an epiphysial growth plate is. That's where I still have a line of hyaline cartilage connective tissue if the, in this case, organism or person, in our case, is still growing. And in fact, this right here, see this whiteish? That's an epiphysial growth plate. And I know it's a growth plate because that is hyaline cartilage connective tissue, not bone. And so if I see this thin white line that has any hyaline cartilage connective left, this is an epiphysial growth plate or epiphysial cartilage plate. I could say either one. Love it. It's a really good example on this bone. The other thing that I can see that I couldn't see on the other example is this outside covering. Take a look. Most of it has been pulled off so that I can see this slick, shiny, hard surface of the diathesis. But I have a little bit of the outside covering of the bone still attached. And I can also see, attached into it, some muscle fibers. Because that's one of the things that attaches on this structure. And so this outside covering on the bone is called what? Excellent, excellent, excellent. Yes, it is. Good. Good. And what might I need to know? Absolutely, some of the – some of the functions of the periosteum for my lecture exam. Good. So this is a nice view of the inside of the bone. This was the head. It was cut. Here are those condyles, right, that we've seen. There's one other thing I want to show you on the other knee that I kind of skipped over. And I want you to see it. I skipped over the fibrous capsule and synovial membrane. And I don't want to do that. I want you to see it. But I did it mostly because, in order to see all of the rest of these structures, all of these structures, you have to cut the capsule away. You have to cut it off. Because what would it be doing? It's completely surrounding and encapsulating. And so in order to see all of this, we have to cut away the fibrous capsule, same thing in the [inaudible]. In order to see everything here, we have to cut away the fibrous capsule. But I have a little bit of it left. I repositioned the clamp. And I have a little bit of it left right here. So I just want you to see where I am. This right here, get my [inaudible]. This right here is the – where I clamped before. That's the medial collateral ligament. And this structure right here, I want you to see how it's attached. Remember what we said. The outside of it is dense, regular connective tissue, fibrous capsule that is lined with – if I go to the inside of it – the inside, right in here – can't see it very well – inside would

be synovial membrane. And where is it attached? It's attached to the edges of the articular cartilage. In lecture, we talked about the fact that the synovial membrane – we can – we see how it it's attaching here – is attached to the edges of the articular cartilage. So if you were seeing this structure, it would be tagged just like so. And if you said either fibrous capsule or synovial membrane, that would be fine. Because you, you know, would be – I wouldn't ask you to identify one versus the other. But I wanted you to see what's left of the fibrous capsule outside, synovial membrane inside. Yeah. So those are – oh, sorry. So those are the structures that we can see on the actual knee. Any questions that I can answer? And then I'll stop the recording. And then we'll have some time to – you just study and ask to see things again. So is there anything, before we do that, that I can assist with? I'm wiping my hands. Sorry. All right. So I'm going to stop the recording.