Transcript : Episode 63

[pop captions up]
alex lindsay: be very, very quiet. i'm twacking motions in motion with on "the wab with weo waporte". [pop captions down] [music] [beeping] [music] [pop captions up]
leo: be wery, wery quiet. hello and welcome to "the lab". i'm leo laporte. you don't have to be quiet. no it's all right. this is the show where we help you understand technology and if along the way you want to go whoo-hoo or ew or any noise at all you just go ahead and do it. we won't mind. ladies and gentlemen kate abraham who has been known every once in a while to issue a ahem in disgust. humph, hurrumph hi kate. [pop captions down]
kate: divaish.
leo: no.
kate: i can't deal with this anymore.
leo: no. i can't work like this.
kate: oh my god.
leo: who are all these people? alex lindsay's here he's going to show us how to track. yeah this is something that is that right alex? yeah okay. this is something that you do a lot in motion pictures when you have a special effect or you have a green screen behind you. how do you make the camera match the motion of the person or the background, match, match the motion of the camera. it's tricky. but he says he can do it. we'll find out how. did you know there is no magenta?
kate: i've heard this.
leo: there is no magenta.
kate: it blew my mind.
leo: we'll ray maxwell explains all. and it's, it's involving bananas i might i'm given to understand.
kate: okay.
leo: and susie gardner's here with our web workshop. a great show ahead for you. i'm so glad you're here. we're gonna talk about technology in all its guises and help you understand how it all works. and kate abraham is here and that's reason enough to watch this show.
kate: turn off now please.
leo: no you must stay tuned. kate has also brought us three fabulous callers.
kate: i have.
leo: who do you have to start with?
kate: i have josh and he is from melbourne in victoria.
leo: oh wow.
kate: and the cool thing is he's kind of in green screen. [pop captions up]
leo: he's got, he's got his own green screen.
kate: he's got his own green screen.
leo: hey josh how are you?
josh: good how are you?
leo: i'm wonderful. thank you for calling. what time of the day is it in melbourne?
josh: ah it is nearly nine o'clock.
leo: oh that's not so bad. for some reason i thought it was early in the morning.
josh: no.
leo: not at all. what can i do for you today my friend?
josh: well i've got a g5 computer and i run final cutpro. [pop captions down]

leo: okay.
josh: and at the moment i've got two strains, computer strains and also a tv that i am running up through my camera like a tapedeck.
leo: that's actually smart. you know most video editors i know will often look at what they're working on, on the tv if it's going for tv so they can see what video safe is. you know what's gonna be on screen, what's not gonna be on screen and how it's gonna look on a television. that's a very good idea. it's kind of akin to people who make records listening to what it's gonna sound like on cheap headphones or cheap speakers before they send out the mix. i think that's a smart idea. so you've got --
josh: yeah cause a, a lot of the time the source is different from --
leo: exactly.
josh: no matter what you can actually --
leo: so you've got two computer screens and a television screen.
josh: yeah. so what i'm wanting to do though is and i think it's an effective way at the moment because i'm using my camera as a tapedeck cause i really i -- [pop captions up] [both talking at once]
leo: oh yeah you don't want to do that.
josh: -- at the time while i'm editing.
leo: yeah.
josh: so what i'm looking for is, is there a way for me to either add on a third, a third screen.
leo: okay.
josh: um like an lcd screen
leo: right.
josh: and then use that as an ex-external um you know -- [both talking at once]
leo: you don't mind if it's a computer screen. you don't want it to be a tv. [pop captions down]
leo: you want it to be a computer screen.
josh: yeah so --
leo: so you want to extend your desktop to three screens now instead of just two.
josh: yeah.
leo: okay. and tell me again what kind of mac you have? [pop captions up]
josh: i've got the g5, you might be able to see it.
leo: the, the, the tower?
josh: the g, the tower yeah.
leo: all right we just saw it. [pop captions down]
leo: you're gonna have to get another video card i believe. am i right alex lindsay? and i'm sure alex does this all the time. there are, the nice thing about the g5 towers is that they have their single video card has two outputs. so it's easy to do two screens but it only has two. so to get another screen you just have to add an another card. the easiest would probably be to add the same kind of card you have now.
alex lindsay: that's what i would suggest.
josh: okay. and with the, with the mac i'll have to do that through the actual apple itself won't i or?
leo: yeah that's a good question or can you use a pc card? i think you can go out as long as it's the same card with the same amount of video ram. i don't even think it's that critical um but you should be able to plug it in. so you, what do you have is it a radeon? i can't remember what they put in the g5. is it a radeon in there or ati?
josh: i'm not totally sure. but so, so with the once i've got another video card in there will it -- [both talking at once]
leo: it'll show up.
josh: it automatically has another external --
leo: you bet, absolutely.
josh: like will i be able to access that through final cut and use like the full screen mode?
leo: as far as i know yeah. what, what processer speed? do you have two gigahurts?

josh: yep.
leo: dual processer or single?
josh: it's i'll just have a look at that.
leo: i'm going to the everymac.com site which has specs for every mac ever made.
josh: okay um processer is the dual two gigahurts.
leo: yeah. [both talking at once]
leo: i have the exact same mac.
josh: -- g5.
leo: i love that mac.
josh: yeah.
leo: it's, it's, it's got a soft spot in my heart. [both talking at once]
leo: and it has let's see what kind of video? an ati radio 9600 and so you want to just get another ati the good news is it'll be cheap. another ati radeon 9600 pro. put that in there. [pop captions up]
leo: you'll have an extra bus. remember it's pci express? so you'll have to get the right kind of card. you'll have to get a pci express card. pop it in and it should just work fine right sean? [pop captions down]
sean carruthers: it should um --
leo: i don't think you'll need a special driver cause it's the same card as you're already using. that's why you want to use the same card.
sean carruthers: although i, i actually do have another solution that might work too.
leo: oh okay.
sean carruthers: and he might want to do this. the matrox has a series of products --
leo: they have a splitter.
sean carruthers: called the triplehead2go.
leo: yeah.
sean carruthers: and that works with a number of windows systems plus a couple of macs and i think maybe this g5 powermac will work as well. it looks like it maybe compatible.
leo: so that would one card that has oh it's not a card, it's an external --
sean carruthers: yeah it splits that one that you have already and it increases your scree resolution to three screens worth and then splits it among those three screens. [pop captions up]
leo: now i've seen this used on laptops and the old imacs where you didn't have a choice.
sean carruthers: right.
leo: you couldn't put another card in it.
sean carruthers: right.
leo: so i think it probably should work.
sean carruthers: yeah.
leo: i don't understand how it works.
josh: is there anything out there that's like a usb? [pop captions down]
leo: well this is kind of like that. it's not usb. it connects two this is i'm amazed that this works. it connects right to your, your card output. you don't have to open the box at all.
sean carruthers: what it does is it simulates a monitor, that a single monitor that's triple width and then splits it.
leo: so it tells the card it's a much bigger monitor.
sean carruthers: right and if you've got a macintosh that has dual outputs all you really need to do is get a dualhead2go, which has two. so they've got a triplehead version and a dualhead version.
leo: right.
sean carruthers: and just plug the dual head into one of your outputs.
leo: wow that's wild.
sean carruthers: so you'll have wonderful resolution and this other one that will split it.
leo: i am told these will work with a mac. wow that's really interesting. so it's matrox, m-a-t-r-o-x.com and

because you're using final cut you're not gaming you don't care about super performance. although they claim it will work with games too but i haven't tried it with final cut. and it could be that final cut may or may not work. have you, you've, you've never tried anything like this have you alex?
alex lindsay: i usually two monitors is as far as i go. [both laughing]
alex lindsay: we, we, we think about doing we sometimes we'll have a separate monitor to just play the video playback. but that's a different thing. it goes through our kind of pro video card.
leo: right that's what i thought he was doing, right exactly.
alex lindsay: right. so we'll do like our kona card or black magic card will have a video --
leo: just cause you want to see what it looks like.
alex lindsay: and the analog video output --
leo: right.
alex lindsay: or, or hdsdi out and then we have a main window for the edit bay.
leo: right.
alex lindsay: and then one for the, for the palette. but we -- [both talking at once]
leo: i've seen people do that. in fact most pro editors do that cause they want to see that's what i was saying at first they want to see what it looks like on tv.
alex lindsay: right. that's about as far as we go with it.
leo: yeah.
alex lindsay: i mean three monitors just for the desktop or, or computer programs is not something that we do.
leo: this says this works on os10, 10.4 required. and you can have 31920 by 480 or i mean that's the 640 or 2400 by 600. look this is amazing.
josh: is there an alternative to um like is there a way of like an external, an external cap, like almost like a capsi card or something that cause i use firewire when i'm doing it. is there a way where i can eliminate my camera but still use the television?
leo: yeah just as, as alex was talking you'd have to get an external, a, a video card output.
josh: right.
leo: and, and what, what brands do you recommend?
alex lindsay: we use two different cards. the one that we primarily use is called a kona2 card.
leo: kona, k-o-n-a.
alex lindsay: yeah and you can get there's, there's smaller kona cards, um --
leo: you can't do externally like with a firewire adaptor or anything like that?
alex lindsay: ah we don't use the --
leo: i suppose you could use like one of the elgado devices or something like that maybe.
alex lindsay: hmmm.
leo: rrrrrrrr. i would stick with the kona.
alex lindsay: yeah that's more of a professional end.
leo: yeah.
alex lindsay: and you can even the, the, the base one i'm not sure what they start at. but they're like 395 or something like that for the card and a little output to that.
leo: well anyway there's a couple of solutions for you. i hope one of them works out.
josh: cool.
leo: let us know, let us know what you do. i'd love to see that setup working. you send us a picture or something okay?
josh: yeah okay cool.
leo: hey thanks for calling. i really appreciate it. have a great day.
josh: no problem.
leo: coming up alex lindsay is here. he's gonna show us how they do motion, it's motion tracking yeah?
alex lindsay: motion tracking.

leo: motion tracking in motion.
alex lindsay: and in hoe, pfhoe.
leo: and pfhoe. well i don't know what that means. but we'll find out when "the lab" continues. you stay right here. [music] [pop captions down] [commercial break] [music]
leo: welcome back to "the lab". i'm leo laporte. this is alex lindsay the chief cook and bottle washer at the pixels corps and he's gonna show us i don't know what he's gonna show us. i never know what he's gonna show us. it's some mystery about moving and motion. what are we doing here today? [pop captions up]
alex lindsay: well here's what happens a lot of times when you're doing motion graphics. so a lot of times you'll see things where that you have little things flying through, flying through the scene.
leo: right.
alex lindsay: but they actually look it was a handheld shot so it's not like it's just still. [pop captions down]
leo: right.
alex lindsay: and you have to get those graphics to look like they're part of a handheld shot.
leo: so it's like when you're marrying graphics to a real life shot.
alex lindsay: right.
leo: it's very tricky cause the real life camera's one way. you've got to match that camera move in the graphics.
alex lindsay: and all the little shakes and everything else that's going on.
leo: oh boy and how do you do that?
alex lindsay: and you don't want to do that by hand.
leo: no.
alex lindsay: and so you need a, you need a motion tracker to do that. now, now motion3 has trackers built into it but you can also use external 3e trackers. [pop captions up]
alex lindsay: motion3 now has 3d built into it.
leo: motion is the apple's 2d, 3d compositing program right?
alex lindsay: exactly.
leo: yeah.
alex lindsay: so one of the first trackers to make this available and make it easy is a, is a company called pixelform and they have, they have a program called pfhoe.
leo: all of their, all of their programs are farm implements. [pop captions down]
alex lindsay: yeah exactly.
leo: this is the hoe okay.
alex lindsay: this is the hoe.
leo: okay.
alex lindsay: and so, so here you see this little scence and this is a real short little video.
leo: and that's real life.
alex lindsay: right this is real life. [pop captions up]
leo: and that's the camera moving around.
alex lindsay: right so i just this is just a little handheld so i --
leo: but if you wanted to add a gnome to it you'd have to have the gnome --
alex lindsay: yeah or if i wanted to have some graphics fly through it. [pop captions down]
leo: or even just graphics, even graphics.
alex lindsay: even graphics flying through so that they match the camera and everything else.
leo: so this is the kind of thing you see every day on television and on movies.
alex lindsay: every day.
leo: everything.
alex lindsay: every day. and so, so what i do here is i can tell it to track. this is really built. this is like $99.
leo: okay.
alex lindsay: so this is a really inexpensive little thing. and i tell it to track and what it's gonna do is it's

gonna start going through here and looking for um the first cut.
leo: computers are good at this kind of thing cause the computer just looks at points see its final points and it just follows those points.
alex lindsay: so what it's doing is it's looking for anything that has some contrast.
leo: wow.
alex lindsay: anything it can follow along. and so what you're seeing here is these are the trails, these are the motion trails. these are the motion trails on here.
leo: right that's the actual movement of the image.
alex lindsay: yeah so it's figuring out what each one of those points does. now that this isn't the only thing it has to figure out. but this gives it a sense of where all the points are going.
leo: look at that.
alex lindsay: now what it's gonna have to do next is it's gonna actually have to what we call solve for the camera. now, now it's going backwards. and, and why it's going backwards is its checking its work.
leo: just so it's sure it got it right.
alex lindsay: it says i knew what it was going this way.
leo: yeah.
alex lindsay: do these points really work when i go backwards? and so now once it figures this out --
leo: wow that's amazing.
alex lindsay: yeah it, it just --
leo: what a lot of work that is.
alex lindsay: yeah and, and this software -- [both talking at once]
leo: imagine doing this by hand.
alex lindsay: we used to do it by hand.
leo: yeah.
alex lindsay: when i worked on "star wars" we were doing it by hand. so anyway so, so now we have this so, so what we do is we, we drop a little box in here and we say you know this if i can find something that's kind of square and i'm not gonna do this too precisely. but i just match these little corners up to something that i can see.
leo: yeah.
alex lindsay: and you can see how that, that this, this grid is starting to look like it matches on the scene.
leo: yeah, yeah, okay.
alex lindsay: by doing this, this just is a way to cheat and tell it this is what the distortion of the lens is. this is how the lens worked. and then from there i can do what's called a solve for camera. now what this is gonna do is it's gonna take the information from this box.
leo: it's still using the track though that it made or?
alex lindsay: yeah. so there it is.
leo: yeah.
alex lindsay: and so now you have a bunch of points and when i hit play you'll see that those points these points are now stuck.
leo: look they stay right there.
alex lindsay: they're stuck on it.
leo: which is what you wanted.
alex lindsay: right.
leo: that's what you were going for.
alex lindsay: and if i click here what you're gonna see this is, this is actually a 3d scene. see the points aren't moving at all.
leo: right.
alex lindsay: but the camera, here you can see the camera path. there's the camera path that we're getting --
leo: okay.

alex lindsay: that, that it created. so if it has recreated the move that i made.
leo: that's the actual path of the camera that you had to shoot to get what you -- [both talking at once]
alex lindsay: that's the actual in relationship to this image.
leo: yeah.
alex lindsay: now all i have to do so you know it's reversing -- just from those figuring out where those points were.
leo: yeah amazing. yeah.
alex lindsay: now once it does this all i have to simply say i stop it and i say i want to export it to 3d and it will actually i can just save it to -- [both talking at once]
leo: to motion --
alex lindsay: that's right here.
leo: okay.
alex lindsay: now i can do a whole bunch of, a whole bunch of 3d formats.
leo: right maya, shake and soft -- [both talking at once]
alex lindsay: but it goes right out to motion.
leo: flame, great.
alex lindsay: so i can drop it out to motion and once it's out there so i'll, i'll go ahead. i -- it.
leo: so now you're gonna apply that movement to a graphic from within motion.
alex lindsay: right so here you have motion here and what you're gonna see is when i hit play and this one's a little bit longer there. let's see if i can -- [pop captions up]
leo: is this the same camera move or a different one?
alex lindsay: this is the same camera move. it's a, it's a slightly longer camera move and ah let's see if i can ah somebody's not letting go of their ram. [pop captions down]
leo: you're slowing down. this happens all the time. you look how many programs you've got open over there. you've got to close some programs. you've got ical. you've got firefox.
alex lindsay: yeah.
leo: you've got safari and firefox. you've got microsoft word! what are you crazy? close all that stuff!
alex lindsay: i'm, i'm trying to -- [both talking at once]
leo: what do you think you have an infinite ram in there?
alex lindsay: i, i thought, i thought i actually did have infinite ram and --
leo: apparently not.
alex lindsay: apparently not and --
leo: so the motion which would allow you to let's say alex lindsay's really big show. you would create that graphic and then it will move --
alex lindsay: it'll, it'll fly in there and with it'll take that 3d information that i just got out of pfhoe. i can bring it into motion. i can bring into 3d mac, you know any, any kind of 3d.
leo: right.
alex lindsay: and, and it'll actually track --
leo: that's very cool.
alex lindsay: along with that. so it's, it's pretty fun. [pop captions up]
leo: 99 bucks. its pfhoe and it's from pixelfarm.
alex lindsay: that's correct.
leo: pixelfarm. i'll tell you what. [pop captions down]
leo: close a few applications --
alex lindsay: i've already done that.
leo: and later on in the show we'll show you our fantastic graphic. but first you've got to close word. now it's time to zoom on something found around "the lab". no motion involved here. [pop captions up]
leo: it's a static still shot of what? what could that be? hmm think about it. i'll tell you what. we'll zoom out and find out right after these flying commercial messages. stay right here. [music] [pop captions down]

[commercial break] [music] [pop captions up]
leo: ladies and gentlemen that is a very tight closeup of something commonly found around "the lab". something you might think of as a video camera. that's my guess. it is! the shony, shony, the shony hvr-aiu. that's a nice looking camera, very sleek, high definition camera. [pop captions down]
leo: is that something you shoot lab rats with?
sean carruthers: yeah that's one of our lab rats cameras.
leo: it's a lab rats camera. ladies and gentlemen sean carruthers mr. macro is in the house. now it's time to get another caller in the house with kate abraham.
kate: we have barry from surrey. try saying that.
leo: barry from surrey.
kate: barry from surrey in british columbia.
leo: all righty. [pop captions up]
leo: hey barry.
barry: hi leo.
leo: welcome to the show.
barry: thank you.
leo: what can i do for you?
barry: i was watching your show a couple of episodes ago you were sort of going over the details of parallels --
leo: yeah.
barry: and how it integrates with apple.
leo: sweet.
barry: and i was just wondering how the licensing aspect of the microsoft software works if i wanted to install windows xp on my imac?
leo: um well of course you can install it on your imac. [pop captions down]
leo: but technically i think microsoft said you can only install it one machine at a time. ah in practice that's not always been the case. so are you saying you have it installed somewhere else? [pop captions up]
barry: well i have a, a laptop that came with a pre- installed of windows xp.
leo: ah and you'd like to take that and run it on your mac.
barry: yes.
leo: ah very often that won't work because that version of windows is often kind of designed for that manufacturer's laptop. the, the one way to kind of know is if you have an actual windows disk. [pop captions down]
leo: it says microsoft windows and it's got the whole graphic label on it. i mean it's just pure windows. in that case you might get away with it. if it is designed you know if it has an ibm lenovo label on it or something like that ah then it may not work on another machine at all. let alone you know the license agreements. it's designed to work. so do you, who, who, who made the main, the laptop?
barry: ah hp.
leo: yeah very often in fact i've never seen an hp come with a actual windows install disk. i might be wrong on this. but it usually comes with a hp recovery disk.
barry: yeah that's right.
leo: yeah you can't use that. well you could try. but i think what it'll do, what, what hp does and dell does this gateway does this, compaq used to, now they're part of hp so they keep doing it. they have a hidden partition on your hard drive that contains not only often some windows installs files but also kind of a key and unless that installer sees that hidden partition it ain't gonna do nothing. so you could try it.
barry: and then if that doesn't work then i'm pretty well have to get a new copy of windows xp.
leo: yeah you can buy, hey here's the good news. you can buy xp pretty cheap on ebay these days. let me just see what it costs on ebay because of course most people are buying vista. so let's see if we can find windows xp um actually i guess i'll type windows xp instead of just xp. and just see if the upgrade windows

xp -- [humming]
leo: windows professional new sealed that's 162. that's a little high. i bet you we can even go down from that because it's no longer the current version. although you know the, the price on xp might be inflated a little bit by the fact that people don't want vista. so that might actually inflate it. so um, you should be careful when you buy xp here. you want to make it's really sealed with license as they say. here's one that's $92. that's probably where i would go to get a copy of xp.
barry: okay.
leo: here's $60 for xp home. that'd be perfectly fine by the way for running in parallels. um that's, that's probably where i would go.
barry: okay.
leo: get it sealed you know with the license. you don't want it cause if somebody else has already installed it and activated it you'll get it and you won't be able to do anything with it.
barry: right.
leo: okay but yeah. i, well i mean go ahead and try. no one's gonna come pounding on your door. if you can get it to install without it being an hp and there may even be tricks on the internet to, to actually do that. i wouldn't be surprised if somebody's figured out ways around that. then you have the issue of is it gonna activate? and you know this is where i said sometimes it works. sometimes you know and technically microsoft does not want you to do that and i wouldn't encourage you to break the law or anything. but sometimes you actually can install windows xp, not vista anymore. but xp on a couple of different computers with the same serial number, right? that's been my experience anyway.
sean carruthers: yeah although with windows genuine advantage kicking in, if it's in running on two different machines at the same time --
leo: don't ever turn it on with the genuine advantage.
sean carruthers: yeah don't, don't turn that on.
leo: cause then you will get not in trouble but they'll --
sean carruthers: yeah.
leo: they'll be activated on you.
sean carruthers: they will be activated on you.
leo: okay?
barry: okay thanks a lot.
leo: yeah good luck.
barry: okay bye.
leo: that's one of the issues of running windows on a mac cause you've got to have a copy of windows. and you know most people have never bought a copy of windows. it just comes with their computer right? you don't have to buy a copy. i'll tell you, you want sticker shock? go to staples or office depot and buy a copy of windows, haaa. it's expensive.
ryan yewell: i actually bought a copy of windows for the parallels -- [pop captions up]
leo: it's expensive isn't it?
ryan yewell: yeah.
leo: so did i.
ryan yewell: it's, it's a cost for sure.
leo: yeah, yeah and the cost most of the time you don't see this absorbed its built into the price of the pc. [pop captions down]
ryan yewell: yeah.
leo: but if you're installing it on a mac you don't have it.
ryan yewell: for sure.
leo: time for our free file of the day mr. oh i like this one. i already know what it is --
ryan yewell: oh.
leo: mr. mr. ryan yewell is here with -- [pop captions up]

ryan yewell: well we can't fool you, you then.
leo: writeboard. you can't fool me ryan yewell.
ryan yewell: no, okay.
leo: what is writeboard?
ryan yewell: writeboard essentially it's um it's a website. you go to writeboard.com and three easy steps. you just enter the name of your writeboard, you sign a password you enter your email address and once you do that you can actually create a document online and that document can be accessed by anyone around the world that you invite to. [pop captions down]
ryan yewell: and then they can edit it. so i'm just gonna show you i've created a document here.
leo: it's a, it's a collaborative document.
ryan yewell: it's a collaborative document. and so for instance i just wrote some text here and you can see on the right there's actually a history. so you can see when people are making changes i can go to eight hours ago and see that ryan made a change.
leo: and we can see even who did it.
ryan yewell: and we can see who did it. and if we go back you see there's a lot less things there. we can compare it. so i can compare this one to that one.
leo: oh that's neat so that you can see the different versions.
ryan yewell: so you can see the difference. so you can see what changed.
leo: wow.
ryan yewell: you can invite people. so let's say you have an associate --
leo: that's neat.
ryan yewell: around the world, you just enter the email address it sends him the password. so you can access it anywhere in the world. it's collaborative.
leo: a great way to write a book together.
ryan yewell: yeah.
leo: or work on any document together.
ryan yewell: exactly.
leo: yeah.
ryan yewell: absolutely free.
leo: and it works on any operating system if you've got a browser.
ryan yewell: if you've, if you've got a browser. i believe it's internet's explorer 6 something. you can't do the older internet explorer.
leo: oh i bet i'm gonna have to see if it works on an iphone. it might work on an iphone for that matter.
ryan yewell: there you go.
leo: writeboard.com.
ryan yewell: yes writeboard.com. it's a yewell's jewel. [pop captions up]
ryan yewell: go to -- [blank for boards]
ryan yewell: and we'll show you where to go and how to get there.
leo: all right. where to go and how to get there. yes, believe it or not we have instructions on the website.
ryan yewell: there you go.
leo: where to go and how to get there. [pop captions down]
leo: no matter what you want to know we got it. all right we're gonna, we're gonna take a break. when we come back ray maxwell is here to prove that magenta does not exist. colour is an illusion. we'll find out about that in just a bit. but right now one more chance to take our quick quiz question of the day. [blank for boards]
leo: this must be a sean carruthers question. he lives drum machines. was it -- [blank for boards]
leo: i believe the latter. [simulating playing drums]
leo: we'll take a break and beatbox right back right after this. stay here. [simulating playing drums] [pop captions down] [music] [commercial break] [music]

leo: welcome back to "the lab with leo". those graphics you see at the beginning of this show just now these are motion graphics and there's alex's graphic that his computer crashed on. so you see as the, as the, as the background moves so move the fireballs. they're imaginary though just like magenta. ladies and gentlemen ray maxwell. he is a colour scientist, a photographer, photoshop expert and he's gonna explain to us why colour is an illusion. it will --
ray maxwell: the mysteries of colour.
leo: it will involve a banana.
ray maxwell: yes.
leo: i'm told.
ray maxwell: yes.
leo: either that or ray has a snack.
ray maxwell: that's right. [both talking at once]
leo: or both. [pop captions up]
ray maxwell: what i want to talk about --
leo: yes.
ray maxwell: is have you ever thought about the question when i look at the yellow banana --
leo: yeah.
ray maxwell: is the sensation in my brain the same as in yours? [pop captions down]
leo: is my yellow the same as your yellow?
ray maxwell: yeah we have really no way of proving that.
leo: no in fact what we know is that the brain it's dark in there. there's no yellow in the brain.
ray maxwell: you got it.
leo: yeah.
ray maxwell: but most people think of colour is an objective thing.
leo: right.
ray maxwell: you know something external.
leo: right and this is important.
ray maxwell: yeah.
leo: because if you're doing photoshop or colour matching or printing you need to know this. [pop captions up]
ray maxwell: you need to know how the brain and the eye react.
leo: yeah.
ray maxwell: so that you can create the same illusionary colour remotely --
leo: i like it.
ray maxwell: as what you see.
leo: all right.
ray maxwell: so let's start out and --
leo: what is colour?
ray maxwell: what is colour? at the very basics we have a part of the electromagnetic spectrum that runs from 400 to 7 nan, 700 nanometers which your eye responds to.
leo: so you're saying colour is vibration basically. it's ah --
ray maxwell: electromagnetic vibration.
leo: okay.
ray maxwell: not acoustic vibration.
leo: right, yeah, yeah, yeah i got it, okay.
ray maxwell: okay?
leo: its light.
ray maxwell: so any light it that's what light is.
leo: right.

ray maxwell: and we get all of these colours across the spectrum.
leo: so --
ray maxwell: but there's more colours then what appears in the spectrum.
leo: so the frequency in is, is what determines what quote colour we see.
ray maxwell: what sensation.
leo: got it, got it.
ray maxwell: exactly. now the way it works is we have three kinds of sensors in our eyes that we will for simplification say that they're sensitive to red, green and blue.
leo: okay.
ray maxwell: it's a little more complicated than that but that gets you off on first principles anyway.
leo: interesting it's red and green and blue just like our monitors isn't it?
ray maxwell: yes.
leo: yeah. probably not a coincidence.
ray maxwell: that is not an accident.
leo: yes i'm not surprised.
ray maxwell: so here i've got along the bottom of the screen i have those nan, 400 to 700 nanometers.
leo: okay.
ray maxwell: and here is the response. here's the blue response of the blue sensor in the eye.
leo: ah.
ray maxwell: the green response. notice it responds some to blue.
leo: huh.
ray maxwell: okay notice that the red and green heavily overlap.
leo: very close yeah.
ray maxwell: if they overlap more than that you're red green colourblind.
leo: oh that's what happens.
ray maxwell: that's what happens.
leo: you can't distinguish the two.
ray maxwell: exactly.
leo: okay.
ray maxwell: now so from this you'd say oh well if i just vary the frequency along the bottom here and those sensors pick up varying amounts that's what makes me see colour.
leo: it's kind of additive?
ray maxwell: yeah.
leo: yeah.
ray maxwell: it's not that simple.
leo: no.
ray maxwell: and i want to prove to you --
leo: i, i didn't think it was. [laughs]
ray maxwell: the brain --
leo: i knew it wouldn't be.
ray maxwell: the brain doesn't work quite, now that's the way instruments see it.
leo: right.
ray maxwell: okay.
leo: right.
ray maxwell: but now let's have a look at this slide.
leo: ah, ah, ah.
ray maxwell: we have two shades of blue here one would think.
leo: yeah one the dark blue on the left and the light blue on the right, right?
ray maxwell: exactly.

leo: yeah.
ray maxwell: now those two blues are exactly the same.
leo: no they're not ray. no don't try to trick me. there's dark on the left and light on the right.
ray maxwell: because the local contrast makes, next to the yellow makes that one appear lighter i'm going to fill in the center --
leo: oh it --
ray maxwell: so your eye can scan across.
leo: it still looks darker but now i can tell it's all the same.
ray maxwell: it's all the same. i'll switch back and forth.
leo: oh wow.
ray maxwell: it's a very strong illusion.
leo: what, what that's telling me is that the brain is getting the same inputs all the time.
ray maxwell: yeah.
leo: so it's constantly adjusting to match the environment. that's why when we go outside - -
ray maxwell: and the surroundings.
leo: we automatically white balance.
ray maxwell: exactly.
leo: we know the context.
ray maxwell: right.
leo: yeah.
ray maxwell: so then our surroundings effect what our brain sees.
leo: interesting.
ray maxwell: it is not objective.
leo: that's a great proof --
ray maxwell: yeah.
leo: that it's not objective. it's totally based on what how the brain's interpreting.
ray maxwell: exactly. so now i'm going to bring in the banana.
leo: good cause i'm getting hungry.
ray maxwell: yeah.
leo: oh i'm sorry, yeah. [laughs]
ray maxwell: now --
leo: yellow banana.
ray maxwell: here i have a yellow banana.
leo: you sure do.
ray maxwell: okay. and what's happening is it's absorbing all the white light falling on it, except it's reflecting in one narrow part of the spectrum.
leo: that's why it looks yellow. [both talking at once]
ray maxwell: that's why it looks yellow.
leo: and that's lighting off that colour okay.
ray maxwell: and if we go back to my chart here i have drawn this yellow bar and so what it's doing is it's evenly stimulating the green and the red cone through our eyes --
leo: we see that as yellow.
ray maxwell: here in the studio.
leo: yeah okay.
ray maxwell: and so we see yellow. but now when the camera looks at this and sends it out to your television set if you get a magnifier and look at real close up at your television set --
leo: yeah, yeah, yeah.
ray maxwell: there's nothing but a red and green phospher and if we looked at the spectrum --
leo: cause tvs don't have a yellow phospher.

ray maxwell: that's right.
leo: yeah.
ray maxwell: so if i looked at the spectral distribution coming out of your tv it looks like this.
leo: okay.
ray maxwell: so we've got red and green phospher turned on.
leo: but my brain combines them.
ray maxwell: combines them. now i'm gonna introduce a big word.
leo: oh-oh.
ray maxwell: a misused big word.
leo: yes.
ray maxwell: here if i get this yellow which is only putting out the yellow --
leo: yeah.
ray maxwell: to match the monitor over there in the studio and it looks yellow to us --
leo: yes.
ray maxwell: that's called a metameric match.
leo: a metameric match.
ray maxwell: and that's the secret to reproducing colour with only three channels is metamerism.
leo: now i you know when you talked about colour, colour printers before that was one of the flaws that a colour printer had was metamerism.
ray maxwell: it's a misuse of the word.
leo: okay.
ray maxwell: met, metamerism only applies to pairs.
leo: okay.
ray maxwell: what people are really talking about is there were some early inks that when you changed the lighting on them --
leo: didn't respond properly.
ray maxwell: they shifted colour.
leo: okay.
ray maxwell: and that's colour constancy.
leo: okay.
ray maxwell: it isn't metamerism.
leo: it's not. so metam say it again. what, what is metamerism really?
ray maxwell: metamerism is the fact that with different spectral input.
leo: two colours.
ray maxwell: we can make our brain think it sees exactly the same colour.
leo: we see, we see one.
ray maxwell: so it's a metameric match.
leo: got it.
ray maxwell: and you always deal with metameric pairs.
leo: so yellow is the same as this much red and green?
ray maxwell: right.
leo: it's a metameric pair for yellow.
ray maxwell: yes.
leo: got it.
ray maxwell: you've got it. so now i'm gonna get to the final illusion here. what would happen --
leo: yes.
ray maxwell: if i stimulated your blue and your red cone?
leo: no idea.
ray maxwell: okay --

leo: i ain't gonna say yellow. i can tell you that.
ray maxwell: if i do that i'm playing two notes at once like you see now.
leo: am i gonna see purple?
ray maxwell: well no.
leo: no?
ray maxwell: purple is actually a little different than magenta although it's close.
leo: oh we're gonna see magenta.
ray maxwell: we're gonna see magenta.
leo: okay.
ray maxwell: and magenta does not exist in the spectrum and cannot be reproduced, reproduced with one frequency.
leo: you mean there is no magenta?
ray maxwell: there is no single frequency producable magenta.
leo: there's no metameric equivalent of magenta?
ray maxwell: no, exactly.
leo: so let's see magenta.
ray maxwell: and so that's - -
leo: that's magenta. how can you say there's no magena? that's magenta!
ray maxwell: it's an illusion in your brain. we're playing two notes into your eye at once.
leo: it's a chord.
ray maxwell: and you see one colour.
leo: it's a chord in effect.
ray maxwell: yeah.
leo: very interesting.
ray maxwell: so the, the key thing in all of this is if you're studying graphic arts of photography --
leo: yeah.
ray maxwell: you need to understand this or you'll get in big trouble.
leo: you can't try to find magenta.
ray maxwell: right, right.
leo: you've got to remember it's red and blue.
ray maxwell: right, right.
leo: fascinating.
ray maxwell: and many people are you know struggling with colour science and so forth.
leo: yeah.
ray maxwell: and so i just want to wrap up and with apologies to william shakespeare --
leo: yes.
ray maxwell: the fault my dear leo is not in our colour management but in ourselves.
leo: it's in our noggins.
ray maxwell: yes.
leo: very good. ray maxwell is a colour scientist, speaker and teacher and you can see brilliant. we now know why there is no magenta. that would be good for a bar bet.
ray maxwell: yeah exactly.
leo: if you could only prove it. just give the guy a banana. all right hey thank you that was great ray, fascinating. [pop captions up]
leo: all right when we come back more of your calls as "the lab" continues. don't go anywhere else. stay right here. oh man, my mind oh. that was great.
nine, eight, seven, six, five commercials three, two, one. [pop captions down] [music] [commercial break] [music]
kate: welcome back to "the lab with leo". i'm kate abraham and now its time for our facebook app of the

day. and i'm talking to you about countdown clocks. [pop captions up]
kate: countdown clocks are a great application to add to facebook. so basically you just literally add it straight into your profile page. so for instance i'm going on vacation in 51 days, 16 hours - - [pop captions down]
leo: i love it.
kate: 14 minutes and 50 seconds. my birthday is in 21, 121 days.
leo: that's a great --
kate: very simple to add. i can even add your birthday straight in.
leo: i wish you would cause i'm counting the moments.
kate: and fingers crossed if the internet connection works - -
leo: we will see. sometimes the apps are slow --
kate: there you go.
leo: because it's not just the internet connection you're waiting on the app server. there it is though.
kate: so there you go. 139 days until your birthday.
leo: that stinks.
kate: so for more information go to -- [pop captions up] [blank for boards]
kate: and our next caller is --
leo: what should i count down to?
kate: i even know what to do it.
leo: vacation's good. i could count down to your birthday.
kate: yeah you would?
leo: what could i countdown to?
kate: it's my 21st birthday.
leo: bruins home opener of course. what was i thinking? mr. bruins fan he never even lived in boston. all right, let's get a caller.
kate: okay we have matt on the line from fort nelson in b.c.
leo: all right.
kate: and he's on skype so i'm gonna do some quick changes --
leo: okay.
kate: and get him into there for you.
leo: matt harris is the bruins fan in here but he's also a red sox fan but he's from canada. explain that. aren't you a leafs fan? why aren't a leafs fan?
matt harris: baaa. baa.
leo: all right is matt ready. i mean ah yes there he is.
kate: yes this is matt.
leo: he's a little green. i guess he's kind of dark there. hey matt how are you?
matt: good and how are you? [pop captions up]
leo: wonderful. welcome to the show. what can i do for you today?
matt: um a little while ago i had a really bad virus and i had to -- [both talking at once]
leo: i can tell, it's, it's got you all broken up and pixelated. you had a virus on your computer?
matt: yeah.
leo: oh-oh what happened?
matt: well i had to do a reinstall in it.
leo: yeah, yeah.
matt: and cause it kept restarting about halfway through --
leo: yeah.
matt: startup. [pop captions down]
leo: yeah.
matt: and how they usually a local disk c it got split up in the local disk c and a new drive d.

leo: oh it partitioned it.
matt: yeah.
leo: yeah.
matt: and i was wondering how to put em back together without having to do a big reinstall again?
leo: yeah well partitioning is you take, you take a physical drive. [pop captions up]
leo: you know an actual hard drive and you divide it into logical drives. just like taking a, a big room like this and putting up partitions and dividing them into smaller offices. it fools the operating system into thinking instead of one big c drive you have a c and a d drive. [pop captions down]
leo: and that's exactly what happened to you. now normally repartition deletes, partitioning deletes everything. so if you wanted to for and if you didn't care if you deleted everything you could run the windows installer once again and right at the beginning it says okay. i see your drive. you've got two partitions, windows on one. and at that point you could say well delete both partitions and start over but you would lose everything. i take it you don't want to do that, no.
matt: no i got a lot of stuff.
leo: a lot of stuff. let's not start over, we just did, did so you need what's called a non-destructive partitioner. now no matter what it's a good idea to backup just in case, cause as good as things are you can always have problems. the commercial one and the one i've used for years and really an excellent one. it's $70 though i'm just gonna mention that is norton's partition magic. great little program. [pop captions up]
leo: it gives you a graphical view of your hard drive. it'll, it'll i think it's magic with a g, c at the end there. we've got the, the super wrong. but that's, that's gonna be 80 bucks and i know you don't want to spend that much. [pop captions down]
leo: do you matt? do you matt?
matt: ahh.
leo: ah, uh, uh. so i'm gonna show you a free one. but i got to tell you the free one is open source and um it maybe a little untried. some people say it's really good. [pop captions up]
leo: um i've, i've never used it cause i have partition magic. i know partition magic is reliable and will work. there it is partition magic. ah but if you're willing to take a chance and you've backed up your data then you might want to try gparted or the gnome partition editor g-p-a-r- t-e-d.sourceforge.net. [pop captions down]
leo: the good news about this its absolutely free. [pop captions up]
leo: now its linux so you're not gonna just download this program and run it. what you're gonna do is your gonna download you have two choices, either a live cd of it which will burn to a cd. it's only about 50 megabytes. it's fairly small. [pop captions down]
leo: you'll burn it to a cd and you'll boot the cd and the cd will then say okay i see two partitions. would you like me to join them? or there's a usb key version of it, which is very cool. you actually download the live cd version and do a little magic and you could put it on a usb key. but of course your system has to be able to boot from usb for that to work. so given that we don't want to spend a lot of money i guess you're going to want to try gparted. but again backup.
matt: okay.
leo: because some bad things can happen even to nice people like you matt. all right?
matt: yeah.
leo: so you were looking for what's called a non-destructive partitioner. the traditional commercial version is partition magic. gparted is fairly new. i don't have a lot of experience of it with it. but i do know a lot of people who do and say it's very good. so there you have it. the live cd is available from gparted.sourceforge.net. thanks for calling matt. [pop captions up]
matt: hey thanks.
leo: time for one of sean's shinies. [pop captions down]
leo: he's like a little magpie whenever something's shiny and new he goes baak, baak, i got to see it. i got to see it.

sean carruthers: bawk, bawk.
leo: and today he's gonna show us something shiny and new for your ipod.
sean carruthers: yes indeed. so you've got the ipod right there. [pop captions up]
leo: and i've got a doohickey coming off my ipod, i -- [both talking at once]
sean carruthers: now i happen to know you like etymotic headphones. [pop captions down]
leo: i love em.
sean carruthers: we have a new set of wireless headphones first etymotic called the heavy 8s.
leo: oh.
sean carruthers: they ah connect to this little dongle.
leo: so the usb dongle goes in the bottom of this.
sean carruthers: yeah it goes into the universal connecter on the back the bottom.
leo: yeah.
sean carruthers: and ah --
leo: and then you don't need no wires.
sean carruthers: no you don't need any wires.
leo: it's like david copperfield.
sean carruthers: right. [pop captions up]
sean carruthers: so you can just plug these things into your ears and control them through these -- [both talking at once]
leo: that's kind of nice it has a control on it.
sean carruthers: you've got a, you've got a little --
leo: how much are these gonna set me back? cause i know etymotics are expensive.
sean carruthers: they are expensive. that's a downside. [pop captions down]
sean carruthers: so it's 299 for the set together.
leo: but etymotics wired are some of the best headphones made.
sean carruthers: exactly.
leo: but do these sound as good as the wired ones?
sean carruthers: these sound pretty darn good.
leo: wow that's nice.
sean carruthers: um the one thing i will say about them you notice they've got these big things on the side.
leo: yeah you look like kind of a dork.
sean carruthers: you look like -- [both talking at once]
leo: it's like you've got, it's like you're wearing an earring.
sean carruthers: it's like - - [both talking at once]
leo: and you've got two of them and then the wire.
sean carruthers: and you've got two of them and then the wire between. and, and then you're sitting there poking yourself in the ear every time you want to change the ah the track. but you know it does work so you just put in these buds.
leo: now i have to say i tried these with my iphone. i was really hopeful --
sean carruthers: mmm-hmm.
leo: that i wouldn't need this dongle right.
sean carruthers: mmm-hmm.
leo: cause the iphone has bluetooth. it doesn't work with the iphone.
sean carruthers: right.
leo: in fact this dongle doesn't even work with the iphone so.
sean carruthers: yeah it, it doesn't necessarily work with a lot of things. i was hoping i'd connect it to my ibook's bluetooth.
leo: no.
sean carruthers: and it was pretty icky sound.

leo: no you, you really need to have an, an, an ipod --
sean carruthers: yeah.
leo: and this device --
sean carruthers: right.
leo: to attach to it.
sean carruthers: now you can buy these separately by themselves for $199.
leo: you can?
sean carruthers: if you want to try to hook them up to something.
leo: does it work with your ibook?
sean carruthers: um not --
leo: no.
sean carruthers: really all that well. now that that's the important thing is that these things are stereo these a2dp. most bluetooth that's built into notebook still at this point is the old school. so it's not gonna sound very good. there's not really much of a point of doing it.
leo: right. that was one of the points about the iphone early on --
sean carruthers: mmm-hmm.
leo: is it doesn't support a2dp.
sean carruthers: mmm-hmm.
leo: although it could if they upgraded.
sean carruthers: it could.
leo: maybe by the time you're watching this they will and this will work just fine with it. i like these too. i use em a lot. from etymotics a little pricey but they are wireless.
sean carruthers: mmm-hmm.
leo: there's something to be said for that. thank you sean carruthers. that's sean's shiny for the day. [pop captions up]
leo: very shiny.
sean carruthers: i'm gonna go check out this illusion on that screen.
leo: there's no illusion, it's imaginary. that's what i meant by illusion. coming up our web workshop. we'll take another viewer's website and destroy it, destroy it and make it better when "the lab with leo" continues. you stay right here. meanwhile while we're getting ready for that let's take our quiz question of the day. [blank for boards]
leo: was it -- [blank for boards]
leo: think about that and we'll come back and beatbox our way into your hearts when "the lab" continues. bom-bom-bom [music] [pop captions down] [commercial break] [music]
leo: welcome back to "the, welcome back to "the lab with leo". before the break we asked you - - [blank for boards]
leo: as opposed to what analog samples? i'm guessing the alesis hr-6. would i be right? i'd be wrong. well it was just a guess. the linn lm-1 of course. [pop captions down]
leo: i knew that. susie gardner is here. she is the web designer and creative director at hotspot studios. hot, not hot spot, hotstudios.com. hotstudios.com. they won a webbie this year for their client truthdig.com. congratulations.
susie gardner: thanks.
leo: that must have felt good.
susie gardner: it did.
leo: yeah.
susie gardner: it was a lot of work.
leo: did you have to come up with a five word thank you or did truthdig come up with a five word thank you?
susie gardner: they did it.

leo: what did they say? [pop captions up]
susie gardner: i don't remember.
leo: you don't remember? we'll have to look that one up.
susie gardner: they attended the awards and -- [both talking at once]
leo: yeah it was back in new york. so we're gonna talk, we're, we're doing this now. [pop captions down]
leo: i think this is so much fun. we're gonna take a viewer's site. they submit their sites to us.
susie gardner: mmm-hmm.
leo: and susie's gonna tear it apart tear it limb from limb and then rebuild it better than ever before. now this is kind of fun because i've been looking at the site trying to figure out what susie's gonna say.
susie gardner: yeah we were just having a little back and forth about what is wrong with this site because so much is right with this site.
leo: i like it.
susie gardner: yeah.
leo: it's the personal computer museum. it's in brantford pcmuseum.ca and it's you know i like the graphic. [pop captions up]
leo: i like the background. i think the colour choices are good. the navigation looks pretty good.
susie gardner: yeah.
leo: what could, what could susie possibly find wrong with this site?
susie gardner: well i agree with you on all those things that are good.
leo: mmm-hmm. [pop captions down]
susie gardner: you know the really clear navigation and structure.
leo: mmm-hmm.
susie gardner: and the cool little computer --
leo: that's fun.
susie gardner: outboard in the background.
leo: yeah.
susie gardner: and i love of course always a site that brands itself well, um --
leo: it's pretty clear what it's about.
susie gardner: yeah. so when this site got submitted i you know i looked at it and i thought well i mean really --
leo: what am i gonna say?
susie gardner: they're doing a really good job. but --
leo: but --
susie gardner: one area i think maybe they could do a little better on --
leo: okay.
susie gardner: is text.
leo: you know what? its funny cause i said the same thing. it seems like kind of text heavy on that front page there. [pop captions up]
susie gardner: well yeah it is a little text heavy and some of that is caused by all the things that are happening with the text.
leo: yeah.
susie gardner: some of it's bold.
leo: yeah.
susie gardner: some of it's underlined. sometimes there's just asteriks all over the place. the red text. your, your eye isn't really sure -- [pop captions down]
leo: where to go.
susie gardner: what to look at.
leo: oh that's a really good point.
susie gardner: mmm-hmm.

leo: you want to kind of draw people's eye just like with a good painting or photograph draw people's eye through it right?
susie gardner: right.
leo: have a natural flow.
susie gardner: really when you looked at this site and the very first thing you noticed was this little element.
leo: yeah that was kind of a downer. ah i'm sure jim's a great guy.
susie gardner: yeah.
leo: but do you want to start with that?
susie gardner: it's the biggest thing right here on the --
leo: yeah.
susie gardner: on the front.
leo: yeah.
susie gardner: and there's, and there's no link or, or much description.
leo: we don't even know who he is.
susie gardner: yeah.
leo: yeah.
susie gardner: so right away i would say let's get something out there that makes it really clear what the first element is and you know --
leo: maybe a little picture of -- [both talking at once]
susie gardner: a picture --
leo: you could, you could have somewhere a little picture of jim and then the rip and then maybe an explanation of who he is --
susie gardner: sure.
leo: or a link --
susie gardner: yeah.
leo: that goes to something. but --
susie gardner: i'm not saying it doesn't belong there.
leo: yeah, yeah i understand yeah.
susie gardner: yeah.
leo: yeah.
susie gardner: so ah the other --
leo: nowadays people design sites in a much cleaner way then they used to.
susie gardner: yeah.
leo: they really do try to simplify. make it bold, bigger letters, bigger buttons.
susie gardner: absolutely.
leo: a cleaner design. that's, that's kind of the trend right now isn't it?
susie gardner: yeah.
leo: right.
susie gardner: and this is, this is maybe a little bit old school but i think that really suits the piece of the museum.
leo: that's true.
susie gardner: you know that has all about the history of computing.
leo: that's true.
susie gardner: so one thing i will say though is and there's a number of pages on the site that do this. there's text that goes all the way across the screen here.
leo: that's not good is it?
susie gardner: it's hard to read.
leo: yeah.

susie gardner: it's hard for most of us to read and, and it gets worse when you go in and you look at one of these pages --
leo: yeah.
susie gardner: where it's all like this.
leo: and this is a fixed width page?
susie gardner: it is.
leo: it doesn't get any --
susie gardner: yeah.
leo: okay.
susie gardner: so you can't really move that around. so your eye has to travel all the way across and then come all the way back.
leo: there's a natural length that's comfortable. anymore than that's too much.
susie gardner: yeah.
leo: what is that about 65, 75?
susie gardner: well about two-thirds of what you see here.
leo: two-thirds okay.
susie gardner: is a little more comfortable to read.
leo: yeah.
susie gardner: so columns are always a good thing to do.
leo: two columns here would have solved it.
susie gardner: yeah. plus visually it's appealing to look at.
leo: right.
susie gardner: take for example this page here where they are using a column layout --
leo: much of it.
susie gardner: it's about two-thirds.
leo: yeah.
susie gardner: and they've got this nice picture here.
leo: yeah.
susie gardner: it's just a little easier to read.
leo: right.
susie gardner: so there's that. and, and of course one of the things that they could consider is adding a bigger margin. on this page he did a nice big margin and you know it, it adds that feeling of more readability and easier to read. they could even put a little more area in here and just make it even more readable.
leo: very straight. and you're a young person so --
susie gardner: the same back here.
leo: i'm not gonna say that you probably wouldn't notice this but i know i'm an older person and people over 40 sometimes a bigger font's not a bad thing to do.
susie gardner: it's not a bad thing.
leo: it makes it easier for us to read it right?
susie gardner: yeah. although if you don't want it a little bigger one thing you could look at is adding some leading and that's the space between each of the lines and that would also and if you added a little bit of leading in here even if you had it all the way across the screen it would get a little bit easier to read.
leo: easier to read.
susie gardner: yeah.
leo: how about things like drop cap, caps and like little --
susie gardner: sure.
leo: those would be okay? you wouldn't --
susie gardner: they're great. you do still have to do those you know with a little more code work around

some graphics --
leo: right.
susie gardner: so they're harder to, to code.
leo: right.
susie gardner: but they also would give you a better, a better appearance and more readability.
leo: more legilibilty, yeah.
susie gardner: yeah.
leo: yeah.
susie gardner: then we have a page here with a lot of center text.
leo: i don't like center text.
susie gardner: no it's bad. [laughs]
leo: yeah, yeah.
susie gardner: and here's why again your eye bounces around all over on the edges.
leo: its, its, its hard to read.
susie gardner: it's hard to read.
leo: i don't like right justified either where it's all squared up.
susie gardner: yeah in general --
leo: left justified is what you want right?
susie gardner: left you know you want to align in the left and justification where, where the right margin is a solid line you want to avoid that too cause on the web it just doesn't work very well.
leo: it doesn't work and you get weird spacing and stuff. it doesn't do a good job here.
susie gardner: and then finally here they're, they're doing the, the right thing. you'll be happy with their linking. you know it's -- [both talking at once]
leo: i can really see it.
susie gardner: a traditional colour.
leo: yeah.
susie gardner: and it stands out and that's great and it's underlined.
leo: yeah.
susie gardner: also an uncommon choice these days. but really it's easy on the user.
leo: you know its funny i've seen asthetic people say underlining is ugly.
susie gardner: it is.
leo: in fact i often turn off underlining in my browser. but let that be my choice right?
susie gardner: yeah.
leo: that's okay, yeah, yeah.
susie gardner: well and if you're gonna, if you're gonna turn it off then at least do what they've done here and make a really obvious colour --
leo: yeah.
susie gardner: distinction or a -- colour. [both talking at once]
leo: i like to use i know people say oh but you know i have a colour palette and i want to use a colour palette. but i, i like to use the standard colours for you know blue for the links, red for the follow or the hover --
susie gardner: mmm-hmm.
leo: and purple for the follow links. i like that cause everybody knows what --
susie gardner: it's, it's very safe.
leo: you know what you're seeing.
susie gardner: yeah.
leo: yeah.
susie gardner: ah well but they do have some underlined text here.
leo: right.

susie gardner: and as always i would say --
leo: that's confusing.
susie gardner: you'd better underline your links. don't underline anything else.
leo: yeah, yeah, yeah.
susie gardner: so i have one little tip here. this is a site that i, that i came across a while back that i use a lot for figuring out the text that i want to use. [pop captions up]
susie gardner: and this is kind of a three-column layout here. it shows you the safe fonts. these are the ones that are installed on both macs and pcs. you can pick the one that you're interested in using. set a font size, so let's jump it up a little bit.
leo: this is great.
susie gardner: change the leading.
leo: look at this. this is great.
susie gardner: that's what i was talking about with the leading. [pop captions down]
leo: and all of this is in the css you could easily and --
susie gardner: right and down here it shows you --
leo: isn't that nice.
susie gardner: a nice update and you can compare.
leo: how much easier is that to read?
susie gardner: well --
leo: look at that.
susie gardner: it's quite a bit easier.
leo: it's so much easier yeah.
susie gardner: and let's, let's do what you wanted and let's jump up the size of the font.
leo: yeah cause i'm blind.
susie gardner: even better.
leo: oh now you're talking.
susie gardner: yeah.
leo: now i'm happy.
susie gardner: so this is a great tool.
leo: and never use comixends never, never ever ever never ever right? right. [laughs]
leo: susie gardner is the creative director at hopstudios.com. our web workshop leader. thank you so much.
susie gardner: thank you. [pop captions up]
leo: good job. and, and go to the personal computer museum, pcmuseum.ca. what a neat site.
susie gardner: it's really cool.
leo: yeah.
susie gardner: yeah.
leo: yeah it really is really cool. hey we'll be back with a final word right after this. stay right here. [pop captions down] [music] [commercial break] [music] [pop captions up]
leo: oh i can't believe we got another day done. thank you ryan yewell and sean carruthers and kate abraham. we appreciate you being here most of all. if you want to be on the show kate how do they get on the show?
kate: just go to labwithleo.com/techquestions. submit your question, give me all your details i'll phone you. [clicks tongue]
kate: we'll get you on the show.
leo: yep. we're so glad you were here. okay guys join hands.
all: happy birthday -- we'll see you next time. thank you so much. oh my god we've got like 30 seconds to do this. this is so embarrassing.
ryan yewell: i'm very uncomfortable. [pop captions down]
leo: kate left. i don't know where she went. but she's gone now. i don't oh there she is there.

kate: kate is stepping away.
leo: she wishes she weren't part of this. hey thank you everybody we'll see you later. we'll see you next time on "the lab with leo", bye-bye. [music] [coins bouncing] [music] [pop captions up quickly] closed captioning performed by: broadcast captioning & consulting services inc. www.closedcaptioning.com [pop captions down]