Gamify your learning with Makecode Arcade video transcript

Mona: OK everyone, so I would like to begin by acknowledging the traditional custodians of the land from which I'm attending today the Darug people of the Eora Nation, and I pay my respects to their elders past and present I extend that respect to Aboriginal people here today. Thank you everyone for coming along for 'Gamify your Learning' to build a cyber maze with the very awesome Andrew Balzer from Microsoft. Over to you Andrew.

Andrew: Hello everybody. Good to be here. Happy Monday. I was just looking at the chat to see where everyone was coming from and it's great to see you are dialing in from all over the place. I'm gonna be your host for the next hour OK or maybe just under. We're gonna give you some time to do some of these activities but welcome to Cybermarvel Makecode Arcade in which I'm going to teach you how to design your very own cyber maze.

Now the purpose of this cyber maze, OK, is not only to inform others about being safe in this online world but also it allows you to practice your computer coding skills, your computational thinking skills, your logic skills and of course your art and design skills. So ideally, we're teaching you to code and create your very own retro arcade game with an educational focus. It's going to be a lot of fun. I am gonna love being here with you and if you have any questions make sure your teachers puts that into the chat and I'm sure Mona will stop me in my tracks if there's anything that's really apparent that we need to be addressing. Now one other thing - it is being recorded, OK. It can be hard sometimes, when you have a classroom full of students, everyone is trying to follow at the same pace. Just please let your students know that it is being recorded and if they don't follow at pace or maybe they made a mistake they can always come back, or you could always replay this and tailor the speed for your classroom environment. OK so you can come back and do this again you don't have to start from scratch Makecode will remember the computer you're using. OK, it is being recorded so don't worry if you do fall behind. You will have the opportunity to continue this in your own time.

So, I'd also like to acknowledge the traditional custodians of land on which we meet today. My name is Andrew I am from Awabakal land here in Newcastle so it's great to meet you all digitally and I'm looking forward to working with you. Now, I am a Learning Delivery Specialist here at Microsoft, so my job is to help teachers and students become more proficient with Microsoft technology so that includes Minecraft for all you lovely little souls out there. I work with the Minecraft team to enhance Minecraft Education Edition.

Now I'm going to introduce you to our coding platform at Microsoft - it's 100% free open source, it's called Microsoft Makecode Arcade. Basically, it lets students design retro arcade games. Once you are introduced to Makecode you will find it's very, very addictive and one of the easiest ways to get into coding and game design. So that's going to be really really fun!

Now you've never seen the Microsoft Makecode Arcade before. It's a free open-source platform to create engaging computer science and learning experiences. OK, so we had students come up with like environmental games where you had to pick up trash or other students come up with biodiversity games where you had to raise awareness of forest fires. OK there's lots of learning opportunities today. We're gonna build a cyber maze. Where you have to navigate your way around the maze collect

computer disks and every time you collect a disk it presents a fun and informative cyber fact and you're going to design everything from the characters to the level OK and we're gonna teach you how to do that as well.

Now we do have some plans for you today. The first one that we're going to do is ensure that you understand how to code using Makecode Arcade. This may be the very first time that you're using a program like Makecode so I'm gonna help you code your very first game. You gotta learn about four programming and game development concepts when you're building this, which is gonna be really fun. You can come home and say, "Hey mum, dad I've made and coded my very own game today from scratch." If you're very artistic you will also be engaging art designs. You get to design all the characters and the levels and the images as we go through here and you're going to use that to construct a cyber maze. And lastly, you're gonna research digital citizenship and cyber safety to incorporate it into your game. So, you need to come up with some very smart informative cyber safety facts. But if you don't have time, I will share some of mine and you might be able to borrow just a few of them if you are interested. Now this does align to the Digital Technologies strand and there's some syllabus outcomes here as well. Now we will make sure that the teachers get this deck after the fact, so if you do want to run this again, maybe with another cohort or maybe with one of your feeder schools, feel free to utilise this deck there as well.

OK so I am going to help you develop digital solutions, code and think creativity, construct algorithms and use design and computational thinking skills. So, a lot of fun right, a lot of fun. So, we're gonna have a great time and then of course I'll put the cybermarvel site there as well. Now if you are a high school okay or a primary school, this can scale for you, right. The primary school kids will start really basic make sure everyone gets the core concepts. For the high school kids or maybe stage 3-, 4 or 5, I will make sure I give you opportunities for you to scale this as well. OK, so we can actually make this you know to your development. Alrighty, now the whole theme of building our games today is around how we can stay safe online, right. So, during this lesson you'll research some informative facts about staying safe online that can inform your audience, so we need to ensure that you keep your facts really brief and to the point all right. So, one fact for example would be make sure that you choose strong passwords or make sure you pick passwords that aren't easy to guess right. You need to find at least four to six facts or even just come up with them in your classroom with a colleague or with a friend, OK. And then we're going to design a game that's going to educate the player about staying safe online OK. It's gonna be a lot of fun!

So on that note, let's start to get coding. Now the first thing we need to do is open up a new browser and head on over to https://arcade.makecode.com and I hope you don't mind Mona if you put this into the chat for us that would be really great. So when this slide disappears, and they need that website it will be into the chat there. https://arcade.makecode.com perfect, thank you very much, thank you thank you. Alright https://arcade.makecode.com now I'll just leave that up there for a moment so that everyone can get setteled alright https://arcade.makecode.com. Alright so any browser and that will take you to our Makecode Arcade homepage. Once you get there, stay there don't click anything just yet alright and I'll help you on this next path of our journey. https://arcade.makecode.com and I am going to go nice and slow for us today OK. You'll also have that recording so don't forget about that recording, OK. Alrighty, I think that's enough time https://arcade.makecode.com. I'm going to now share my screen and show you what we're going to design - the end product of today's session and then I'm going to teach you how to do this from scratch okay. Any questions feel free to put them into the chat or ask your teacher to and the lovely Mona. will look after you there as well.

So, I'm gonna share my screen. Coming up you'll see a lovely, wanna think it's a swan pretty sure it's a swan someone's gonna correct me and say, pretty sure it's a swan right there. So, you can see the background of my computer at this point in time and I'm just gonna bring up my my chat on the right-hand side so I can see what's going on and I'm gonna bring my https://arcade.makecode.com alright so https://arcade.makecode.com and that will take you to this home page here OK. Now don't click anything just yet alright. I was obviously preparing for this lesson, so I built my very own cyber maze that you'll see pop up here. Now our goal today is to build a cyber maze, like you can see right in front of you. You can see my lovely little character here it looks very very much like me, alright, using the keys to move up and down and I have to navigate this cyber maze. Ok. Now you will notice that my attempt at a floppy disk which is that right there that's a floppy disk OK if anyone's not aware. I'm sure you can design a better floppy disk than me. But every time I collect one of these floppy disks, I would like a fun cyber fact to appear OK.

Now Makecode Arcade is all about coding alright, so we use what we call these blocks it's kind of like Lego. You snap the blocks in and then you tell the blocks to do certain elements of coding. So, say, for example, I wanted a fact to show all right, when I went over one of those pieces you can see here - when a player overlook overlaps a floppy disk, show this text or this fact, OK. And I'm going to teach you how to do this. So, if we were to re-run my game after I've just snapped in a little bit of code, right. I hover over a floppy disk and then it says - ensure you change your password every six months right that's just one of my my fun facts that I've put there as well. Alright, so you need to think of some fun facts while we go and code this this program right. Now here are some fun facts to get you started alright. Just think about these as we go through.

So, I've picked 5 facts for us today. Number one - always ensure you make hard to guess passwords right. That's that's a fun fact that increases cyber safety. Number two - asking adults if you're unsure about a website OK. Number three - never speak to anyone you don't know online. Now I'm going to use these facts for my game. Again, you can research or define some of your own. It's a great opportunity in the classroom to kind of shout out some facts that you'd like to use in your program. Number four - protect your personal information. So not putting your address or your bank details or your phone number anywhere and number five, you can learn more at saferInternetday.org. So just a little follow-up fact. So, I'm gonna use those facts today OK. So that's gonna be our goal, that's our vision - to develop this lovely cyber maze in which the character walks around, collects the floppy discs, gets a fun fact OK, and then they have to make their way to the exit alright. So, I have a little exit just down here which loads a new level which I haven't finished building yet. But you'll get the idea. You can make your mazes really complex and then increase some more facts. Maybe you're speaking about personal information safety or maybe you're speaking about identity safety or digital citizenship, is completely up to you, OK. So, that's our vision, that's our goal.

Let's get started and our first step at Makecode Arcade is to click the big orange button called new project alright. So, the big orange button. I'll get everyone a chance to press that button right there - new project the big orange button. I'll put a picture into the chat just for anyone that's not too sure on what to click. We are going to start a brand-new project. Now we need to give the new program a name. I'm going to call this the Cybermarvel CyberMaze, that's pretty cool, alright. So, have it whoa so Cybermarvel CyberMaze, OK. Think of a creative name you can always rename it OK. So, I am going to click create. So, give your program a name and once you are here this is going to be our coding canvas. I'm gonna walk you through step by step on how we can program a game. Now the great thing about

this is that every time we add a bit of code, right on the left-hand side, here it's gonna update our Game Boy. I'm gonna call it a Game Boy right. Just for just for relevance and every time we add something you can see the changes happen on our Game Boy or our game device, all right. So, yes, it's going to be very visual, very informative, all right. So, this is our landscape, here are our blocks and here's our game device OK. So, I'll make sure everyone has the opportunity just to get to this blank canvas and then we can start from here. Now if you do want to rename your maze you can do it down the bottom, all right. But you can always do that after the fact. Ah if you students can't see the simulator alright, it might be either the browser that you're using or there's this little snap tab OK. But you can snap out. Now have you are using an iPad or a Mac, sometimes you have to activate the simulator separately right, it just depends on your device. So, you can activate that. So, rather than seeing it live OK, you can activate the simulator separately when you like to go and test your game OK.

Alrighty, so let's continue on here OK. Now the first step we need to do when designing our game is, we're going to set the background color of our gate OK. At the moment there's nothing there, there's no pieces of code. So, to do that, all of the bits of code that I'm going to use today are color-coded OK. So, if I'm going to use a gray block, you'll find it in the scene category OK. Additionally, if you search for the name of the block that I'm using, you will also find it, alright. So, I'm going to click on the scene category and the first block I'm gonna pick is I would like to change the background alright. I'd like to change the background of my game. So, I'm going to select this block that says set background color to. OK and then I just click and drag until it snaps in there you can actually see it snapping in right there with the yellow. It'll make it like a sound once you snap that in right. So, once you drop that block in, you need to select the color palette and pick a colour OK. So, I just click on the little empty square, and I can pick anyone of these colors right. So, 'set background color to'. Now take a moment to explore the different colors. Maybe I want my game to be green, so I select green and then on the left-hand side the game device updates to green. Maybe I want my game to be yellow in terms of the background color, the left -hand side of the game device updates to yellow, right. So, feel free to pick a lovely colour of your choice and again if you can't see your game device you can still code right you just have to activate the ah game simulator, check it out and then go back to the coding. Mona's put some great support links in there that just explains how that works, alright, OK and again, if there's any major drama that will be recorded there as well. I would suggest as well, just test out other browsers to make sure everything is going smoothly for you.

Now I'm gonna select maybe this kind of, what colour is this, this one's called purple, I think. It's like a dark purple, I am going to select this dark purple as my background color for my maze, OK. So, select the color for your Makecode Arcade game platform and then we'll move on, alright. So, once we've selected a color the next thing, we need to do is also going to be in the scene category OK. We've got a background now we need to design a level, all right OK, AKA a maze. So, the next button or piece of code is that we're going to scroll down here, we're going to go to the category that's called tile maps OK, and you'll see here that we have a button that says 'set tile map to' alright. So, we're gonna grab this one here and just slot that in alright.

So, there's no colour for you AJ, just keep clicking this little, this little space here and that should drop down some different colours there for you. I might, I might change my color myself we might go green-aqua. I think that is alright. Oh! that's too close to my Game Boy, let's not do that. Let's go light blue. You're welcome, AJ, no worries. OK so there are our two blocks. They're from the scene category OK. And then we've selected our color, whatever color you choose. Our next block, we're going to draw our

maze, right. Now we'll give you some moments to do this. So, I wanna select this little gray square just by clicking on it OK, and what that does, is it brings up the level editor OK. And what we are going to do in this instance is draw a maze OK. Now how do you draw a maze? Well, on the left-hand side here, you have some different categories that already have some pre-built tiles. Now you can design your own tile, okay but I wouldn't recommend that just for today's session. I would select a pre-existing tile here. So, you can pick anything from these categories, alright. I might have a look at the miscellaneous and see what's there, see if there's anything there that I like. Maybe the dungeon. Oh! I kind of like these kinds of starry ones, OK.

So, once you select that all you have to do is just paint, right. So, I'm going to put a corner here on a select the tiles that I like and I'm just going to draw just an outline for my level OK I'll make sure I give you some time to do this. Just draw an outline for your level. Ideally, we're going to make a maze, like those mazes you do in books, you gotta follow the route until you get to the exit. As you can see, I'm just drawing just a boundary around my program. How do I delete one? Great question! So, there's an eraser tool here. So, if you do make a mistake, you can use the eraser tool, I make mistakes all the time. Great question, great question, AJ, the eraser tool. The pencil tool's to draw, the eraser tool is to delete, all right. Good question. Now everyone should just start drawing a little bit of a maze. I'm going to continue to do that for mine here, alright. So, I'm just going to draw. I'm going to make a bit of a maze.

Your maze can be anything that you'd like. I'm gonna do this. I'm gonna have like a little piece going all the way along here and our little piece all the way up here, OK. Your maze could be anything you like. Everyone's gonna have a slightly different maze. That's the beauty of coding. Everyone has their own designs, their own ideas, alright. Just drawing a little maze here. I like that. Uh let's see, here maybe that. I need people to get lost, can't make it too easy for them. I'll go over here; I'll make that a dead end. And uh let's see that's a dead end. Let's say, OK I like that actually. I want like that to be higher, so I'll use my erase and then I'm just going to draw that looks pretty good. So, you can come up and down and in there. Let's do a little bit of this and then a little bit of that. So, make it anyway that you like OK. It's completely up to you, it's your maze. It can look any way you want it to look. I think that looks pretty good for me, it's like a good maze for me. Now I'll give you a moment to continue drawing your maze, OK. And the next part we're going to do is consider where you start and where you end alright. So, I'm going to pause there for a second, give everyone a chance to just finish up their maze, alright. You can always come back and add details later, alright. So don't worry about getting it perfect, you can come back and add the details later, OK. All right so finish up your maze and we are going to go to our next step.

Now our next step will be to make sure that you can't escape the maze, OK. So, what I need you to do is select this big red wall icon that will make anything you paint impassable. So, people can't just walk right through the walls of your maze alright. It's like setting boundaries. So, everything you just painted I want you to use this wall icon, and that will stop anyone going through anything that you paint or color in, right. Kind of like an invisible wall, whoops, let's just get rid of that one. Don't want them to get stuck there, right. So, make sure you paint what you just drew using the wall icon, OK. So, I don't want them to go through any of these walls, so I'm setting boundaries if that makes sense. You want everything that you drew to be colored red so they can't pass. Now some students like to make secret walls, which is fine. And I'll show you how you can do that. That basically means that you just don't colour in one of these boundaries. So, if I wanted a secret wall here that means the player can pass through, they can come through the maze and pass through there, but it will look like every other one. It's completely up

to you if you like to have these little secret passages OK, completely up to you. Just make sure that you have painted all of your areas.

How do I change the color of the block? Great question, AJ. You can select just a different tile from down the bottom or if you really really want to, you know, customize it, you can actually edit your own tiles which we won't do today. It's under my tiles, I mean you can, if you're quite advanced, you can actually draw your own tiles if you want to paint using 'my tiles' but due to the interest of time I'm gonna keep moving. And you can come back and paint your very own tiles. So, you don't have to use anything from the gallery. You actually use something from 'my tiles' okay. Tiles you have personally colored in and made which is really cool. Really really cool. You can also use the paint icon if you want to change the colours.

Now boundary, is by using this big wall block. I'm going to draw a big arrow on the screen, that's how you set up a boundary, OK. You select the big wall icon and then you start painting over what you drew, OK. You're welcome you're most welcome. So, let's give you a few more moments, just to make sure that you've painted everything on the screen red all right. We want to make sure we set those boundaries up OK. And that will be our maze for now. You can actually see a little preview on the top left-hand corner on what that would look like.

Alright, ok, now once you have painted, we need a place for our little character to start, alright. Now you can put down whatever you want in terms of these little pictures on where your want your character to start where you want your character end. I want to select this little orb. You don't have to select the orb. You can cycle through the gallery and pick whatever you want, OK. Alright, but I'm going to put the little orb maybe in the top left-hand corner here. Just make sure you do select your pencil icon to place things OK. So, that's where I want my character to start, OK and then I need to select a space for my character to end. Trying to put it maybe down in the corner here, OK. So, you need to select two different what we call sprites or images to put a start and an end for your maze, OK. You could select the treasure chest that's closed and the other one that's open, just make sure they're two different pictures all right. You might want to select, you know, a little dungeon wall or a little door, alright. So, a start and a close.

When you select the wall icon, make sure you have the pencil. Yes, correct, above it, click the post for the eraser that is correct. Thank you very much, Sharon. The pencil is the drawing icon. Correct all right. And so, like just a start and an end OK. That's going to be very important. I made a smiley. Yeah good, excellent excellent. So, you made a little smiley face. That's great, that can be your start and it just make sure the start and the end are separate pictures alright. We are almost there for our level design. Almost. There is something else that we need to add. Now this is where I am going to click on 'my tiles' OK, all right, and I'm going to draw. Oh yes, the start? Sure, sure sure sure, so you need to just select the picture from the gallery, OK, so you can see all of these pictures down here and then place one where you would want your character to start, right. It just has to be visual tile or visual indicator. And one where you want your character to end, like as in to get to, that's going to be the exit of the maze, yeah. Just make sure they're two different, I selected two orbs - a blue orb and an orange orb. You could select or have you like alright anything that you like, all right.

Excellent OK, now we need to draw what you would collect during this maze run alright. Now to draw your very own tile, you're gonna click on 'my tiles' and then you're gonna click the 'little plus icon' to create a brand-new tile, OK. So, 'my tiles' and then the 'plus icon'. Now, I want my character to collect little discs right, because this is cyber safety, we're talking about computers. So, I'm going to get my

character run around the maze and collect little discs, so I need to draw whatever the character is going to collect. Now you can draw anything that you like, OK. I'm gonna try and attempt to draw a little computer disk just here and I think this kind of looks like a computer disk, you will see that kind of looks like a computer disk. Uh! draw that across, draw a big floppy disk circle, there we go and then I'm going to color in using the coloring in tools. That's my floppy disk, alright. That is my floppy disk, right there. So, you can draw whatever you want your character to collect, alright. That is my floppy disk. That kind of looks like a disc to me, alright. That's my floppy disc.

Can you import? No, Makecode Arcade - it's all about drawing. Drawing your art, OK. So, I've drawn my little floppy disk. So, again you click on 'my tiles' and then you click the 'plus icon' OK. Alright number one, number two, and then you draw whatever you want your characters to get. Don't spend too much time on it. You can always come back and change it. As long as you just get something down. Draw a little CD-ROM, if you want. Little circle right. I've drawn a little floppy disk. This is, yeah, so that's a good question - do you know what a floppy disk is? Do you know what a computer disk is? In this day and age maybe you're drawing a USB, right. Maybe you're drawing a little USB drive. Once you've drawn your little design, you need to put maybe five of them down on the screen. So, I'm going to put one here and this is what the character would collect. I'm gonna put one here, I am going to put one here. That's three. One here, that's four and one here that's five, OK. So, you would just drop 5 little designs - discs, USB 's whatever you've drawn onto the screen. Don't put them in the red, right, remember the red is the boundary block. We want them outside of the red, so the character can walk over them OK. So, we've designed everything we need for our level, OK. I will just pause there for a second to make sure everyone can place four or five little designs down in their maze, OK. Now I'll put a picture of my maze into the chat, just in case you are having any issues and you need to have a look at my picture and be like, oh right, he has nothing touching the red or ours hasn't got the red painting on it. That's, that might be a problem, or our start and exit don't look the same. Alright, so yes, I will put that into the chat there for you, OK put two of them in there. We'll put two of them in there, why not. OK, hopefully that gives you enough time to design and draw a little maze.

We have a start, which is my orb here. Now we have an end which is this one here we have 5 discs that the player needs to collect and then they're going to give us some fun facts about staying safe online, OK. Once you have completed your maze, you're going to hit the 'done' button down the bottom right-hand corner, OK. Done. That will take us back to the design page and you can see here it's updating with my new maze, right. So, I have these two blocks. One is the maze, and one is the background color, OK. So, there are my two sets of code - the maze and the background color, alright. So, you should have two blocks - one with the background colour and one with the maze.

Now, not too long to go. We only have a few more bits of code before we have a fully working game. The next part we need to do is we have no character. We need to make a character for our game, OK. The character that's gonna walk around and collect those discs. So, what we are going to do is click on the 'sprites category', the blue category. You're going to select 'set my Sprite' the very first block, OK. The very first one. I am going to click and drag and drop that in there and like everything else in Makecode Arcade you can select the little 'blank icon' here and you can draw your own which I know students love to draw their own, OK. Or you can select the ''gallery at the top here and pick something that's already been made, OK. I am going to pick this little character here, all right. Well maybe, this little girl here, all right. You can change her and colour her in and add stuff. I am going to select that little girl here, all right. So that is my character. So, that's our next block. It's in the blue sprites block and it's 'set

my sprite to' whatever you draw or select and make it a 'player' now. I am going to put that into the chat there as well. And if you are watching this as a recording feel free to pause the recording, OK. Excellent now we have a bit of an issue here.

When we look at our game the character just appears on the screen in the centre. We don't want that. She's stuck in a wall, right. We don't want that whatsoever. So, our next bit of code is that we're going to click on the scene category and we're going to look for a bit of code that says, 'place my sprite on top of a random tile'. So, it's in the scene category. I'm going to go nice and slow. Drop that in there and then from this drop down, I can select where I want her to appear. Now obviously I made a start and an end just like you did when we designed our maze. So, we're going to select the blue orb because that's where I want her to appear, OK. So, I select the blue orb. She will appear in the top left-hand corner. There she is, just here in the top left-hand corner there. So, now I have four blocks of code, 'set the background color to blue', 'set the tile map to this maze' that we've drawn 'set a character to this screen' which mine is a Princess yours can be whatever you like, and then 'place the character on top of a random orb' or a door or a chest whatever you have drawn as your start, OK.

Alright and there's just two more bits of code that we need to add in. The first thing you'll notice is that if I hit play, I hit the control here, she's not moving, nothing's happening, OK. We need to fix that. To fix that, we're going to click the controller block. We're going to select the very first one, move my sprite with buttons and we just click and drag that on there. So, now I have five blocks, OK and you'll notice now if I use a little joystick, I can move my character around the maze. Now I can't go through the walls because we painted them red. So, you can see she's actually bumping into the walls. That's how we want it. I'll use the keys on my keyboard, all right, but we also have another problem. Now we can't see the rest of the maze. She just kind of goes off the screen, back on, off the screen, back on. OK. So, we need to solve that with our last bit of code. And the last bit of code is from the scene category and we're going to choose 'camera follow sprite' that basically means the camera is going to follow the character, OK. I am going to click and drag that one on there. Ok, we've just coded 6 lines of code. I will put that into the chat for those playing at home. If you are watching the recording, feel free to also pause the recording and have a look at these blocks.

So, we have 4 gray blocks from the scene category, one blue block which is this sprite block and one orange block which is a controller block. OK. So, I'm going to pause there and give you a good look those blocks, OK and you can always use the search and just start typing in the name of the block, like the word 'move' or 'place' or 'camera', alright. So, all you're doing that set the background to blue, draw the level which we just did, place a character, place a character on top of an object, move the character. Yes, we're about to get there, Oscar, almost there. And then walk the character around. Have you, have you done all of this Oscar where you can move your lovely little character around the maze because if you have you are in the right step and you can see now, we can actually go around the maze, right. Our little sprite can't go through the walls because we painted them red. The camera is following the little sprite or character that we drew or that you selected, but we have a few issues. How do I get a full screen? Yes, great question AJ. Depending on your device, there should be a full screen button. It kind of looks like a, I'm going to call it a square that allows you to go into full screen and out of full screen. I do it just so people can see what our game looks like, alright. Can I do more of this coding? It's great to see. Of course, you can. So, look at that. Isn't it fun. It's so easy to do too.

But we have a bit of an issue with our five blocks of code. We can move around, and we can't go through the walls. It's great but when we go over the discs nothing happens. No one's getting any facts. No one's learning. So, we're going to change that. And the last thing is that when we get to the end, that the oh nothing happens as well. We haven't coded that yet, OK. A 3D maze, Belinda! It sounds like he's loaded up a different, there's no, there's no 3D. It sounds like he's loaded up at a demo program, right because there's demo ones on there, rather than building his own. That's what I would guess. Yep, Yep Yep. But that's ok Belinda, the recordings here. So, if they need to go back and and you know replace certain parts they can. Yeah, no worries, OK. Now there's only two more blocks we need to add to make this complete, right. So, that's pretty easy to do so far, isn't it? It's only 123456 bits of code, all colour coded, OK. And it's all in the start category so when the game starts this is what happens.

Now we need to make sure that when you go over a floppy disk or a USB or a CD or whatever you designed, something happens, OK. And to do that we're going to go back to our scene block, OK, our gray block. We are gonna go down and we're going to select this block. It's called when 'a sprite that's a player overlaps' whatever you choose 'do something' that's what that block means. So, I'm going to drag this block here and I'll put it on screen. So, you can see exactly what it looks like here, all right. I'll put that into the chat there. On sprite of kind of player overlaps and object, guess what object we are going to pick in this example? OK, so I click the little drop icon - when my character overlaps a floppy disk at the location that the floppy disk is at, then don't want it to do something, OK, alright. So, we also need to go into the scene block here again and we're going to grab a block that says, let me just have a bit of a look here, we're going to grab the 'set block' which is this one, OK. When I grab this block so have you type in set at the top there it's going to come up with that block. Go back to the scene category so set OK. And then the last step here is to drag this location into there, like this drag and and drop.

So, what it's saying is when the character goes over a floppy disk at the location, set the floppy disk to be invisible at that location, that's what that code says, right there. I'm also going to put that one into the chat. So, hopefully that makes sense for you when a character goes over a floppy disk at the location, make the floppy disk invisible. So, let's test that. Alright here we go, when a character goes over a floppy disk at the location, there we go, make the the floppy disk. Example. Oh yes, good question. How do we make the floppy disk talk? Now we just have to add one more piece of code, OK. So, we click on the game icon, the purple icon here, alright. If you scroll down, you'll see that you have these dialogue settings in the purple category. I'm gonna pick 'show long text at the bottom' OK. So, 'show long text' and then you're going to start putting in some cyber facts. Do you remember any cyber safety facts? So, for example, any one of these I'm going to use. You could choose your own cyber safety facts. So,' I might type in protect your personal information' that's going to be my fact. So, here protect your personal information and I would like that to appear at the bottom. So, 'when a sprite overlaps a floppy disk at the location set the floppy disk to be invisible at that location and then show some text' that's what that code says. Let's test that out. So, let's go we're walking around and then we're going to go over the floppy disk and it pops up 'protect your personal information' it's the 'a' button then I can continue going along.

Now we're going to have another problem, though, look next time I overlap another floppy disk, it runs that same bit of code 'protect your personal information' alright, so we need to make sure they're different and to do that what you can do is just right click on the code and say duplicate. OK, now I've got two. But the problem is that I've already selected the floppy disk. So, I need something else to to overlap alright. So, I'm going to go into my code here and maybe I'm gonna copy my floppy disk or I'm

gonna add different coloured floppy disks, right. So, instead of having a black floppy disk, I can edit this floppy disk and make it a red floppy disk, OK. So, you can just add more discs or more things to collect and then you just change what you want them to collect here, OK. So, when they get a black floppy disk, it's going to say protect your information and they get a red floppy disk it's going to stay change your password every six months, OK. Yeah, so to change it what you have to do is just click on your tile map up here or you can click on 'my assets' at the top corner here and you can change what they look like, OK. So, you actually see here, you can draw a new one or you can copy these and edit them, those ones there, alright. So, if I select it. I can duplicate the disk and I can make it a new one so maybe I want to yellow disk, click duplicate and then I would edit that one and make it yellow and maybe I want a purple or a blue one, duplicate and then I want it to be pink, alright. So, that's just at the top - my assets. They're all the assets that you've drawn for your game and then to go back, you just hit the blocks icon.

So, that's pretty much all of your code. There's one last thing we need to do, and I'll just leave this up on screen so you can see what the code looks like, is that you need to make at least four or five of these blocks here. These when they overlap a certain block, make it say this or make it say that you can just right click and duplicate, alright and this time I'm going to select a yellow floppy disk and type in a new fun fact 'report unsafe websites' OK. So, you do that four or five times until all of the discs on your screen, OK, have been collected, alright. So, let me put down a red one here, and a yellow one here and a pink one here, I'll put a pink we're add colors we need one more color I'll get rid of that last one, OK We're going to change password every three months, oh wow! There you go, so I'm going to change this good work Mona, just three months there you go, right so it's it's very easy to do. We only have one block of code here and then just one block of code here that we've just copied three times, OK. Now for our program to end, we need to get to the end of the maze, alright. So, we're gonna copy this one here again, OK but instead of overlapping a disk we're going to overlap an orb, all right and instead of showing some text I'm going to click and drag that into the bin and I'm going to click and drag the make it invisible into the bin I'm gonna click on the game icon and say 'game over is true' or 'you win', right. And that's it. We have fully coded a cyber safety maze, where you start as a character, navigate the maze, learn some fun cyber safety facts and then win the maze when you get to the end, OK. Just using two main blocks of code. This block that we coded and then this block here that we coded, OK. So, to end the game AJ, what we need to do is copy one of these on sprite of kind of player overlaps whatever you chose to be the exit of your maze and then you go to the game icon and select game over, OK. That's it. Yeah, yeah sure no no problem. I want to put that last one into the chat. So, as long as you can get those two major blocks here, OK. In fact, I might put this one just down here and zoom out a little bit so you can see my two blocks, alright. Right there are two major blocks that is everything you need to get your game working, that's it, that's it. Yeah, I'm gonna test this.

We have 3 minutes left. Here's my character, we're walking through the cyber maze, there's some discs, let's hover over one 'protect your personal information' great! Let's hit 'a'. Keep walking. There's another disc, 'change your password every three months' thank you, Mona. I didn't know that one. So, I will be changing my password every three months not six months and I keep walking. Oh! there's two more facts there. Let's go back. Go down, get this one. Oh! I didn't code that one yet, but this one 'report unsafe websites' fantastic and then we need to find the exit. Let's go. We win! That's it, that's how hard it is to code a cyber maze from sets of blocks because these ones are all just copied, they're the same type of blocks, alright, same type of block.

Now I can't wait to see what your kids come up with. They're going to have different background colours, so we could make the background yellow for example, OK just by clicking the set background color too whatever nice yellow maze, OK. Yes, I believe well, that's that's the Mona question but I'm sure she'll make sure that it is accessible to you, OK. So, that's it, that's that's how hard it is and you might need to go back and you know do this a little bit slower with your kids, OK. Maybe you would click a block in, pause the video, walk around the room, make sure everyone's on the same page, play the video, OK. But you can see the end result. It is colour coded to all the blocks or a certain colour, OK, and you'll have the video here to support you as well. Ah! Yes, how do students save their progress? This little save disc just down the bottom here, great question great question, Dianna. A little save icon down here or in the top right-hand corner you can log in using your DET account, OK, and it will save it to the cloud right so there's two ways to save that all right. Now if you'd like to play my game, right at the end here we can share your games using QR codes, right. So, my game is finished, maybe I'd like you to play it. I can click this share icon OK this is my cyber maze and there's a QR code I'll put that into the chat so if you have an iPad or you have an iPhone or something along those lines you can use that or if you'd like to show the kids in the classroom there's a link I also put into the chat so if you're a teacher watching this in the classroom, you can click that link and you can see how easy it is to share your games, alright. You can hold your iPad up and scan that QR code or you can click the link in the chat and then the students can play the little maze that we just coded but they can also share their own mazes, using this method as well. So, you can walk around the room, with the iPads get everyone testing each other 's game and maze and learning about different facts, OK that's using the share button just up here. So, that's it, that's how easy it is to code a cyber maze that also displays fun facts. Kids can differentiate their learning at this point; you can add extra levels, different facts, maybe some enemies, maybe some obstacles, it's completely up to the students.

Now it is 11:30 so we are out of time. So, just in summary, here with the five facts. What cyber safety facts can you share with the class, off the top of your head at the end of this lesson? Maybe you've gamified the learning experience and you'd like to share what you've learned through gaming, OK. How could you modify the program that we just coded to make it easier? Maybe there's only two floppy disks. Maybe it's a small maze or more difficult. Maybe it's a very big complex maze and maybe you make it so you have to collect every single disk and for extra curricula, how could you add extra levels to your maze? What focus could you share on each about your cyber safety, so maybe one level is about digital citizenship, maybe another level is about protecting your online safety, maybe a third level is about false websites, OK. And other than that, that is going to be our summary, right. Did you learn any facts about online safety that you didn't know before? What were they and what do you think they mean?

OK, next steps for Makecode Arcade is to go to the Makecode Arcade website and of course I'll provide Mona and lovely team with all of the resources there to continue your journey including the recording so I just saw your message there Christiano, you can have a look up at the the chat, you'll see a little screenshot with that game end block that we put in right at the end there, this block here. It's a purple block when they overlap at the end.

Thank you so much more and I'm going to throw it back over to you.

Mona: Thanks Andrew. That was amazing I was sitting here doing it and answering the chat then I got lost. So, all the screenshots are there. Follow along, plus the video recording should be available before

3:00 pm. I promise I'll get it done as soon as possible but just check the Cybermarvel website - the educators page, where the session was placed, the registration link and the video will go on that same web page as well. Thanks Andrew, thank you everyone for joining. Hopefully your students are going to be awesome cyber maze creators and then they can share their games with their colleagues and peers and even their parents and see how fun it is and test each other 's cyber awareness.

Andrew: Well yeah, pleasure being here.

Mona: Thank you everybody. Enjoy your coding. We're going to close this session now. Have a good day, bye, bye.

Andrew: Bye, bye.