Practical Capital Budgeting with LOOKUP Functions

I would like to have a look now at using an exact match VLOOKUP and a close match
VLOOKUP within the same model and look at the differences between the two. I bit of a
practical exercise for you to get the hang of the difference between an exact match
VLOOKUP and a close match VLOOKUP.

What I would like you to do is to pick up the life of the asset here. You can use a named
range if you like to, it is optional in this instance. This is going to be a replacement schedule.
I would like you to calculate exactly when something is going to come to the end of its
useful life. In this case, pick up the life of the asset here and do that using the table at the
top. Calculate the cost of the item and then I would like you to take the life of the asset and
add that to the spend date. For example, in the first one office equipment is four years. If
we bought the item in 2017, that means it's going to come to the end of its useful life in
2021; that is when we are going to have to replace it. We are going to use that to calculate
our replacement schedule. We are going to do this using an exact match VLOOKUP, a close
match VLOOKUP and then we will use an IF statement as well. I will give you a minute to
work on that, so pause the video and have a go and see if you can figure it out by yourself
and then we will work through it together.

Let's do it together. You don't need to use a named range but you can if you'd like to. I
won't in this case. I am going to use an exact match VLOOKUP. I will say office equipment is
the lookup value, my array is this range here, hit F4, it's the second column across and it's an
exact match so I will put a zero in here. Then I would like you to copy it down. You can see
that I forgot to put in my dollar signs, so you can see how important they are. In the Total

column, put cost multiplied by 1 and then copy that down. That is what your formula looks like in that one and that is what your formula looks like in that one.

We need to start from this date here and we need to add on this many number of years. This is a function, you may not have used before but it's really handy and one of my favourites; an EDATE. An EDATE function starts from a particular date and then you say how many months you want to add on to that date. We will say the start date is June 2017 and then we are going to add four years and multiply that by twelve to get the number of months. That will then calculate the date out into the future. Use EDATE; the start date is this one here, comma, and then the number of months is going to be the life of the asset multiplied by twelve. That gives us the number of months. You can see there that it is being written down in June 2021. I'm not going to worry too much about the exact date. You can put in the day if you would like to. You can see here that it is not showing up the number of days. If you would like it to show the number of days, you can go into custom formatting and you can put DD-YY or however you would prefer i.e. hyphen or dot or space. Say okay. And you can see there that it is giving up exactly four years. I will copy that down and that should work for all of them. You can see that each of the dates are exactly the same. That is what your formula should look like.

We are going to use that written down date to calculate the financial year in which it falls. What I have done here, is I want to be able to forecast out for the next five years, what our replacement schedule is going to look like. If you work for a company that has a January to December financial year, you are very lucky as you can just use a YEAR function; you just put equals year and it picks up the calendar year. That makes it really easy. If you are working in Australia and you have a June year end, it causes a few problems and a lot of companies have April or September; different times of the year. You need to think about which financial year that falls into. Rather than having to think about it each time, it's going to be much easier if we can run a formula that is going to work that out for us. I have got a schedule here and that is going to be my LOOKUP table. If I did an ordinary VLOOKUP and asked it look for the 1st June or 6th February and if I ask for an exact match it won't be able to find it, because it can't find that exact date whereas when it comes to a close match, if you have got your data sorted in ascending order, it will force it down to the nearest. A bit

confusing that they call it a close match, it's actually not a close match at all. In this case here it is going to look down the range and it will go to the one that is too high and it will force it down to the nearest. You can either use a LOOKUP function or a VLOOKUP function. I am going to use a VLOOKUP because I have got quite a small block. My lookup value is this one here, exactly like we did in the last exercise, the array is this table, highlight the whole lot and press F4, Column is two and I am going to ask it for "true" and say okay. That is going to pick up the corresponding financial year. Copy that down and there we go.

Once you have got that working, you can then populate the next five years in your replacement schedule. We can do that using an IF statement. IF this date here and use dollar signs, is equal to the replacement date, get the dollar signs right, then the value of true is going to be the total, dollar signs and the value of false is going to be zero. You should be able to copy that across and down. I will do a quick sense check to make sure it is picking up the right values. If I use ALT equals, you can see there that it has actually picked up my replacement date, thinking that it is a number. I don't want to include that there, so you just need to change it. Copy that down and again select ALT equals. Again, it has picked up my date. I don't want that. Just make sure it is picking up the right values and copy it all the way across. Again you can see that the 203,200 should be equal to 203,200 here. That is what your formulas should look like.

That is an example of how you can use an exact match VLOOKUP and a close match VLOOKUP in one single financial model.