

# Hardware Research For our project Initial development

- Raspberry pi 4  
[https://www.jaycar.co.nz/raspberry-pi-4b-single-board-computer-8gb/p/XC9104?gclid=CjwKCAjw9-KTBhBcEiwAr19ig9kqnr\\_pBSDnfiwG09E1d7PLYt6-pSV68qGvcH92tX7uCiZDIde7cxoCC28QAvD\\_BwE](https://www.jaycar.co.nz/raspberry-pi-4b-single-board-computer-8gb/p/XC9104?gclid=CjwKCAjw9-KTBhBcEiwAr19ig9kqnr_pBSDnfiwG09E1d7PLYt6-pSV68qGvcH92tX7uCiZDIde7cxoCC28QAvD_BwE) 8GB
- Raspberry pi camera  
[https://www.pbtech.co.nz/product/SEVRBP0263/Raspberry-Pi-HQ-Camera-12-MP-Official-High-Quality?qr=GShopping&gclid=CjwKCAjw682TBhATEiwA9crl30Gj49wFzyIFkJHNR\\_Dw-4iRnx1riqbvHI5ZHpmYk\\_YwVt0p-ZtlxoCGVEQAvD\\_BwE](https://www.pbtech.co.nz/product/SEVRBP0263/Raspberry-Pi-HQ-Camera-12-MP-Official-High-Quality?qr=GShopping&gclid=CjwKCAjw682TBhATEiwA9crl30Gj49wFzyIFkJHNR_Dw-4iRnx1riqbvHI5ZHpmYk_YwVt0p-ZtlxoCGVEQAvD_BwE)
- Battery pack
- Fan (cooling system)  
[https://www.digikey.co.nz/en/products/detail/dfrobot/FIT0816/14824958?utm\\_adgroup=Thermal%20-%20Heat%20Sinks&utm\\_source=google&utm\\_medium=cpc&utm\\_campaign=Shopping\\_Product\\_Fans%2C%20Thermal%20Management&utm\\_term=&productid=14824958&gclid=CjwKCAjw9-KTBhBcEiwAr19ig-NPhdu5OqaBEuvy6gbx6aeDIJtHoGCVNIaHBFhf-Orq4uzq1e0NvRoCRo0QAvD\\_BwE](https://www.digikey.co.nz/en/products/detail/dfrobot/FIT0816/14824958?utm_adgroup=Thermal%20-%20Heat%20Sinks&utm_source=google&utm_medium=cpc&utm_campaign=Shopping_Product_Fans%2C%20Thermal%20Management&utm_term=&productid=14824958&gclid=CjwKCAjw9-KTBhBcEiwAr19ig-NPhdu5OqaBEuvy6gbx6aeDIJtHoGCVNIaHBFhf-Orq4uzq1e0NvRoCRo0QAvD_BwE)
- Wide Angle Lens (6mm)  
[https://www.aliexpress.com/item/4001116380549.html?\\_randl\\_currency=NZD&\\_randl\\_shipto=NZ&src=google&aff\\_fcid=992419767d4549e0bdfc1ff45bf814f1-1652084288891-03067-UneMJZVf&aff\\_fsk=UneMJZVf&aff\\_platform=aaf&sk=UneMJZVf&aff\\_trace\\_key=992419767d4549e0bdfc1ff45bf814f1-1652084288891-03067-UneMJZVf&terminal\\_id=86dbafb1fed048eabc03f917af8ad384&afSmartRedirect=y](https://www.aliexpress.com/item/4001116380549.html?_randl_currency=NZD&_randl_shipto=NZ&src=google&aff_fcid=992419767d4549e0bdfc1ff45bf814f1-1652084288891-03067-UneMJZVf&aff_fsk=UneMJZVf&aff_platform=aaf&sk=UneMJZVf&aff_trace_key=992419767d4549e0bdfc1ff45bf814f1-1652084288891-03067-UneMJZVf&terminal_id=86dbafb1fed048eabc03f917af8ad384&afSmartRedirect=y)
- Case for Raspberry Pi  
<https://www.jaycar.co.nz/official-raspberry-pi-4b-case-red-and-white/p/XC9110?pos=3&qqueryId=338e19a6e97d100f0f9dd851f260c41e&sort=relevance>

[https://www.aliexpress.com/item/1005003518762495.html?\\_randl\\_currency=NZD&\\_randl\\_shipto=NZ&src=google&aff\\_fcid=5a964e53334242579aa2650e8dadb1b8-1651805800302-00366-UneMJZVf&aff\\_fsk=UneMJZVf&aff\\_platform=aaf&sk=UneMJZVf&aff\\_trace\\_key=5a964e53334242579aa2650e8dadb1b8-1651805800302-00366-UneMJZVf&terminal\\_id=86dbafb1fed048eabc03f917af8ad384&afSmartRedirect=y](https://www.aliexpress.com/item/1005003518762495.html?_randl_currency=NZD&_randl_shipto=NZ&src=google&aff_fcid=5a964e53334242579aa2650e8dadb1b8-1651805800302-00366-UneMJZVf&aff_fsk=UneMJZVf&aff_platform=aaf&sk=UneMJZVf&aff_trace_key=5a964e53334242579aa2650e8dadb1b8-1651805800302-00366-UneMJZVf&terminal_id=86dbafb1fed048eabc03f917af8ad384&afSmartRedirect=y)

Raspberry Pi 8GB

<a href="https://www.pbtech.co.nz/product/SEVRBP0263/Raspberry-Pi-HQ-Camera-12-MP-Official-High-Quality?qr=GShopping&amp;gclid=CjwKCAjw682TBhATEiwA9crI30Gj49wFzyIFkJHNR_Dw-4iRnx1riqbvHI5ZHpzmYk_YwVt0p-ZtlxoCGVEQAvD_BwE">https://www.pbtech.co.nz/product/SEVRBP0263/Raspberry-Pi-HQ-Camera-12-MP-Official-High-Quality?qr=GShopping&amp;gclid=CjwKCAjw682TBhATEiwA9crI30Gj49wFzyIFkJHNR_Dw-4iRnx1riqbvHI5ZHpzmYk_YwVt0p-ZtlxoCGVEQAvD_BwE</a>	Raspberry Pi High Quality Camera
<a href="https://www.trademe.co.nz/a/marketplace/electronics-photography/other-electronics/electronic-components/other/listing/3587840545">https://www.trademe.co.nz/a/marketplace/electronics-photography/other-electronics/electronic-components/other/listing/3587840545</a>  <a href="https://www.jaycar.co.nz/power-pack-for-raspberry-pi-with-li-ion-battery/p/XC9060?gclid=EAlaIQobChMlWp72klvR9wIVCB4rCh1eMAepEAQYASABEgl8a_D_BwE">https://www.jaycar.co.nz/power-pack-for-raspberry-pi-with-li-ion-battery/p/XC9060?gclid=EAlaIQobChMlWp72klvR9wIVCB4rCh1eMAepEAQYASABEgl8a_D_BwE</a>	Li-ion Battery Pack
<a href="https://uk.pi-supply.com/products/pijuice-standard">https://uk.pi-supply.com/products/pijuice-standard</a>	PiJuice HAT- A portable Power platform for every Raspberry pi
<a href="https://nz.rs-online.com/web/p/raspberry-pi-hats-add-ons/2020449?cm_mmc=NZ-PLA-DS3A-_-google-_-PLA_NZ_EN_Raspberry_Pi_%26_Arduino_%26_Development_Tools_Whoop-_- (NZ:Whoop!)+Raspberry+Pi+HATs+%26+Add-ons-_-2020449&amp;matchtype=&amp;pla-303419454625&amp;gclid=EAlaIQobChMlK96135DR9wIVupNmAh1_2wPGEAQYAiABEgLGwvD_BwE&amp;gclsrc=aw.ds">https://nz.rs-online.com/web/p/raspberry-pi-hats-add-ons/2020449?cm_mmc=NZ-PLA-DS3A-_-google-_-PLA_NZ_EN_Raspberry_Pi_%26_Arduino_%26_Development_Tools_Whoop-_- (NZ:Whoop!)+Raspberry+Pi+HATs+%26+Add-ons-_-2020449&amp;matchtype=&amp;pla-303419454625&amp;gclid=EAlaIQobChMlK96135DR9wIVupNmAh1_2wPGEAQYAiABEgLGwvD_BwE&amp;gclsrc=aw.ds</a>	Raspberry pi 4 Fan Kit
<a href="https://nz.rs-online.com/web/p/raspberry-pi-hats-add-ons/2020457?cm_mmc=NZ-PLA-DS3A-_-google-_-PLA_NZ_EN_Raspberry_Pi_%26_Arduino_%26_Development_Tools_Whoop-_- (NZ:Whoop!)+Raspberry+Pi+HATs+%26+Add-ons-_-2020457&amp;matchtype=&amp;pla-303419455185&amp;gclid=EAlaIQobChMlK96135DR9wIVupNmAh1_2wPGEAQYASABEgJfH_D_BwE&amp;gclsrc=aw.ds">https://nz.rs-online.com/web/p/raspberry-pi-hats-add-ons/2020457?cm_mmc=NZ-PLA-DS3A-_-google-_-PLA_NZ_EN_Raspberry_Pi_%26_Arduino_%26_Development_Tools_Whoop-_- (NZ:Whoop!)+Raspberry+Pi+HATs+%26+Add-ons-_-2020457&amp;matchtype=&amp;pla-303419455185&amp;gclid=EAlaIQobChMlK96135DR9wIVupNmAh1_2wPGEAQYASABEgJfH_D_BwE&amp;gclsrc=aw.ds</a>	Raspberry pi tower fan
<a href="https://thepihut.com/collections/raspberry-pi-cooling/products/raspberry-pi-4-case-fan">https://thepihut.com/collections/raspberry-pi-cooling/products/raspberry-pi-4-case-fan</a>	Cooling system for Raspberry pi 4 (recommended)

<a href="https://nz.banggood.com/Raspberry-Pi-4-Model-B-Dual-Fan-with-Heat-Sink-Ultimate-Double-Cooling-Fans-for-Raspberry-Pi-4B-or-3B+-p-1942967.html?utm_source=googleshopping&amp;utm_medium=cpc_organic&amp;gmcCountry=NZ&amp;utm_content=minha&amp;utm_campaign=minha-nz-en-pc&amp;currency=NZD&amp;cur_warehouse=CN&amp;createTmp=1&amp;utm_source=googleshopping&amp;utm_medium=cpc_us&amp;utm_campaign=aceng-pmax-nz-all-220402-bay&amp;utm_content=bay&amp;ad_id=&amp;gclid=Cj0KCQjw1N2TBhCOARIsAGVHQc5FI4pN9dm-p1LxohEaminPRI8uxsQ4AbKKOuPOf0dL06PBVVSwgUYaAraDEALw_wcB">https://nz.banggood.com/Raspberry-Pi-4-Model-B-Dual-Fan-with-Heat-Sink-Ultimate-Double-Cooling-Fans-for-Raspberry-Pi-4B-or-3B+-p-1942967.html?utm_source=googleshopping&amp;utm_medium=cpc_organic&amp;gmcCountry=NZ&amp;utm_content=minha&amp;utm_campaign=minha-nz-en-pc&amp;currency=NZD&amp;cur_warehouse=CN&amp;createTmp=1&amp;utm_source=googleshopping&amp;utm_medium=cpc_us&amp;utm_campaign=aceng-pmax-nz-all-220402-bay&amp;utm_content=bay&amp;ad_id=&amp;gclid=Cj0KCQjw1N2TBhCOARIsAGVHQc5FI4pN9dm-p1LxohEaminPRI8uxsQ4AbKKOuPOf0dL06PBVVSwgUYaAraDEALw_wcB</a>	52Pi Extreme Cooling Fan kit for Raspberry pi
<a href="https://www.aliexpress.com/item/4001116380549.html?randlcurrency=NZD&amp;randlshipto=NZ&amp;src=google&amp;aff_fcid=992419767d4549e0bdfc1ff45bf814f1-1652084288891-03067-UneMJZVf&amp;aff_fsk=UneMJZVf&amp;aff_platform=af&amp;sk=UneMJZVf&amp;aff_trace_key=992419767d4549e0bdfc1ff45bf814f1-1652084288891-03067-UneMJZVf&amp;terminal_id=86dbafb1fed048eabc03f917af8ad384&amp;afSmartRedirect=y">https://www.aliexpress.com/item/4001116380549.html?randlcurrency=NZD&amp;randlshipto=NZ&amp;src=google&amp;aff_fcid=992419767d4549e0bdfc1ff45bf814f1-1652084288891-03067-UneMJZVf&amp;aff_fsk=UneMJZVf&amp;aff_platform=af&amp;sk=UneMJZVf&amp;aff_trace_key=992419767d4549e0bdfc1ff45bf814f1-1652084288891-03067-UneMJZVf&amp;terminal_id=86dbafb1fed048eabc03f917af8ad384&amp;afSmartRedirect=y</a>	6mm wide angle lens
<a href="https://nz.rs-online.com/web/p/raspberry-pi/1822096?cm_mmc=NZ-PLA-DS3A-_-google-_-PLA_NZ_EN_Raspberry_Pi_%26_Arduino_%26_Development_Tools_Whoop-_(NZ:Whoop!)+Raspberry+Pi-_-1822096&amp;matchtype=&amp;pla-300482240867&amp;gclid=CjwKCAjw9-KTBhBcEiwAr19ig6we8YMe5NTL4QGuXfaMzhZaasuPXY8u6e-gofbL3Tq_0hSOF5Ob3BoCz38QAvD_BwE&amp;gclsrc=aw.ds">https://nz.rs-online.com/web/p/raspberry-pi/1822096?cm_mmc=NZ-PLA-DS3A-_-google-_-PLA_NZ_EN_Raspberry_Pi_%26_Arduino_%26_Development_Tools_Whoop-_(NZ:Whoop!)+Raspberry+Pi-_-1822096&amp;matchtype=&amp;pla-300482240867&amp;gclid=CjwKCAjw9-KTBhBcEiwAr19ig6we8YMe5NTL4QGuXfaMzhZaasuPXY8u6e-gofbL3Tq_0hSOF5Ob3BoCz38QAvD_BwE&amp;gclsrc=aw.ds</a>	Raspberry Pi 4 B 4GB
<a href="https://nz.rs-online.com/web/p/raspberry-pi-cameras/9132664?cm_mmc=NZ-PLA-DS3A-_-google-_-PLA_NZ_EN_Raspberry_Pi_%26_Arduino_%26_Development_Tools_Whoop-_(NZ:Whoop!)+Raspberry+Pi+Cameras-_-9132664&amp;matchtype=&amp;aud-813230962291:pla-335061582843&amp;gclid=CjwKCAjw9-KTBhBcEiwAr19igyWys5iOI561zAmjRjlpV7z4BrRQseCcg5rhczYIW7SG-Lju95gjdxcCZp0QAvD_BwE&amp;gclsrc=aw.ds">https://nz.rs-online.com/web/p/raspberry-pi-cameras/9132664?cm_mmc=NZ-PLA-DS3A-_-google-_-PLA_NZ_EN_Raspberry_Pi_%26_Arduino_%26_Development_Tools_Whoop-_(NZ:Whoop!)+Raspberry+Pi+Cameras-_-9132664&amp;matchtype=&amp;aud-813230962291:pla-335061582843&amp;gclid=CjwKCAjw9-KTBhBcEiwAr19igyWys5iOI561zAmjRjlpV7z4BrRQseCcg5rhczYIW7SG-Lju95gjdxcCZp0QAvD_BwE&amp;gclsrc=aw.ds</a>	Raspberry Pi, Camera 3280 x 2464 pixels Resolution

<a href="https://www.aliexpress.com/item/1005003977359151.html?_randl_currency=NZD&amp;_randl_shipto=NZ&amp;src=google&amp;aff_fcid=e9da598e372040f89cc93715fe50b771-1652134201868-01077-UneMJZVf&amp;aff_fsk=UneMJZVf&amp;aff_platform=aaf&amp;sk=UneMJZVf&amp;aff_trace_key=e9da598e372040f89cc93715fe50b771-1652134201868-01077-UneMJZVf&amp;terminal_id=bbbf240ed43f46c9ac57bccdd68088ff&amp;afSmartRedirect=y">https://www.aliexpress.com/item/1005003977359151.html?_randl_currency=NZD&amp;_randl_shipto=NZ&amp;src=google&amp;aff_fcid=e9da598e372040f89cc93715fe50b771-1652134201868-01077-UneMJZVf&amp;aff_fsk=UneMJZVf&amp;aff_platform=aaf&amp;sk=UneMJZVf&amp;aff_trace_key=e9da598e372040f89cc93715fe50b771-1652134201868-01077-UneMJZVf&amp;terminal_id=bbbf240ed43f46c9ac57bccdd68088ff&amp;afSmartRedirect=y</a>	Raspberry Pi Li-polymer Battery
<a href="https://www.digikey.co.nz/en/products/detail/dfrobot/FIT0816/14824958?utm_adgroup=Thermal%20-%20Heat%20Sinks&amp;utm_source=google&amp;utm_medium=cpc&amp;utm_campaign=Shopping_Product_Fans%2C%20Thermal%20Management&amp;utm_term=&amp;productid=14824958&amp;gclid=CjwKCAjw9-KTBhBcEiwAr19ig_OuLWhfjyahuFOfqrHd3lI939-rX0eISysevDou87D9AKTzFz7iEhoCgXoQAvD_BwE">https://www.digikey.co.nz/en/products/detail/dfrobot/FIT0816/14824958?utm_adgroup=Thermal%20-%20Heat%20Sinks&amp;utm_source=google&amp;utm_medium=cpc&amp;utm_campaign=Shopping_Product_Fans%2C%20Thermal%20Management&amp;utm_term=&amp;productid=14824958&amp;gclid=CjwKCAjw9-KTBhBcEiwAr19ig_OuLWhfjyahuFOfqrHd3lI939-rX0eISysevDou87D9AKTzFz7iEhoCgXoQAvD_BwE</a>	Fan FIT0816
<a href="https://nz.rs-online.com/web/p/raspberry-pi-hats-add-ons/2020457">https://nz.rs-online.com/web/p/raspberry-pi-hats-add-ons/2020457</a>	Fan 52Pi ICE Tower Cooling
<a href="https://nz.element14.com/raspberry-pi/rpi-6mm-lens/rpi-6mm-wide-angle-lens/dp/3381607?gclid=CjwKCAjw9-KTBhBcEiwAr19igwq48CP8mTQxenm2m_jn9BvPbwHRk3kiPxQTMLPUvFofjmKBzyZjcxoCfflQAvD_BwE&amp;CMP=KN-C-GNZ-SHOPPING-PMAX-3381607">https://nz.element14.com/raspberry-pi/rpi-6mm-lens/rpi-6mm-wide-angle-lens/dp/3381607?gclid=CjwKCAjw9-KTBhBcEiwAr19igwq48CP8mTQxenm2m_jn9BvPbwHRk3kiPxQTMLPUvFofjmKBzyZjcxoCfflQAvD_BwE&amp;CMP=KN-C-GNZ-SHOPPING-PMAX-3381607</a>	RPI-6MM LENS
<a href="https://www.aliexpress.com/item/1005003154058721.html?_randl_currency=NZD&amp;_randl_shipto=NZ&amp;src=google&amp;aff_fcid=8c2e119aae4b43cb84fe58040b119f3b-1652140137469-06214-UneMJZVf&amp;aff_fsk=UneMJZVf&amp;aff_platform=aaf&amp;sk=UneMJZVf&amp;aff_trace_key=8c2e119aae4b43cb84fe58040b119f3b-1652140137469-06214-UneMJZVf&amp;terminal_id=bbbf240ed43f46c9ac57bccdd68088ff&amp;afSmartRedirect=y">https://www.aliexpress.com/item/1005003154058721.html?_randl_currency=NZD&amp;_randl_shipto=NZ&amp;src=google&amp;aff_fcid=8c2e119aae4b43cb84fe58040b119f3b-1652140137469-06214-UneMJZVf&amp;aff_fsk=UneMJZVf&amp;aff_platform=aaf&amp;sk=UneMJZVf&amp;aff_trace_key=8c2e119aae4b43cb84fe58040b119f3b-1652140137469-06214-UneMJZVf&amp;terminal_id=bbbf240ed43f46c9ac57bccdd68088ff&amp;afSmartRedirect=y</a>	Raspberry Pi

<https://www.raspberrypi.com/products/camera-module-v2/>

[https://www.pbtech.co.nz/product/SEVRBP0339/Raspberry-Pi-Official-Camera-Board-V2--V21-8-Megap?qr=GShopping&gclid=Cj0KCQjw4PKTBhD8ARIsAHChzRI\\_aw0sSoamLjb9d72K0QVekaqMNoQOJfj6q-q8NoidYYG\\_QEIZ\\_E8aAp1XEALw\\_wcB](https://www.pbtech.co.nz/product/SEVRBP0339/Raspberry-Pi-Official-Camera-Board-V2--V21-8-Megap?qr=GShopping&gclid=Cj0KCQjw4PKTBhD8ARIsAHChzRI_aw0sSoamLjb9d72K0QVekaqMNoQOJfj6q-q8NoidYYG_QEIZ_E8aAp1XEALw_wcB)

Raspberry pi module 2 camera, less bulky than the high quality camera