

## VEX Sizzler

During a New Zealand summer it is a common custom to invite your friends and family for a 'bring-a-plate' barbeque. Everyone who is invited will bring a plate of food whether it is meat or sausages to be cooked, or a side dish. This saves the hosts from preparing large amounts of food for everyone, but it does mean the host will still end up standing over the BBQ cooking the meat, unable to join in with the party.

One of the main meat products that arrive next to the BBQ will be sausages. The job of the VEX sizzler is simple: 'Cook them'. This saves the host time, effort and the discomfort of standing in front of the barbeque getting smoke in their eyes and spatters of hot oil from the sausages all over their arms and instead, allows them to socialise. It also ensures that the sausage at the back doesn't get forgotten and end up burnt.

The VEX Sizzler is a very simple automated machine that is attached to the BBQ. It has a main tray that is tilted slowly by a servo (hence the low gear ratio) as the sausages are cooking. This allows them to turn and cook evenly. After a predetermined sausage cooking time, the servo tilts the tray down one final time, further than normal, allowing the sausages to roll under the end gate and into a (hopefully) waiting dish, ready to serve.

Inspiration for this design came from an occasion when I was helping my friend cook at a party he was hosting and we both ended up missing out on what was happening. From there I brainstormed possible ways of making the robot before coming up with a final design that I then started making in Inventor. Making my design in Inventor allowed me to see exactly how it would work before needing to order or modify parts and I was able to make modifications and improvements, as I went, very easily. In this respect I found everything in Inventor useful! I found it very important to see just how all the parts will react when put together, and also found the patterning tool very useful when adding centre axes to the holes on the parts.