

BumbleBots

Grovetown School, Riverlands School, Springlands Schools and Te Kura Correspondence School
Marlborough, New Zealand



- 1 Years participating in SeaPerch
- 1 Times at the International SeaPerch

Challenge
Our SeaPerch is unique because: (100 words MAX)

Frame: is smaller and lighter than the standard ROV, improving thrust to mass ratio.

Buoyancy: vita fizz tubes as floats can be moved forwards and backwards to adjust the ROV's trim.

Hook: a longer lightweight hook makes it easier to move the task items.

Mounts: 3D printed mounts stabilize items on the ROV while allowing them to be quickly replaced.

Colour: the yellow and black striped ROV with silver tape on the tubes allows us to see the ROV and its orientation underwater and meets the team theme.

SeaPerch Design Overview: (100 words MAX)

We liked the small design because it's small like a bee. We tried different larger designs, but they weren't fast or maneuverable. We tested the utility bot design, it was really slow. We then tested the 'Rocket' and 'Flying Dorito' designs, these were hard to control. We found that the final 'Bumble' design was fast and agile and performed well at Regional and National competitions. For SeaPerch we updated Bumble by changing the hook design and removing magnets. The revised design required less buoyancy and a different centre of gravity so we adjusted the motor positions for the new tasks.

Our biggest takeaway this season is: (100 words MAX)

We learned that communication and teamwork are really important to develop a successful ROV and support each other during the competition. The team had a lot of great ideas and tried lots of prototypes, having great fun in the process! We enjoyed learning about the engineering design process and are really looking forward to seeing the designs of the other SeaPerch teams and comparing our ROV to theirs. We also loved learning about real world applications for ROVs in ocean conservation, particularly the problems of invasive seaweed and the growing kina barrens in the Marlborough Sounds.