

Engineering Notebook



22435A

Team Number

Mighty Macs

Team Name

ST. Macartans NS Bundoran

School

04/11/24

Start Date

00/00/0000

End Date

1

Book #

of 1

V3.0 Date 6.10.24

VEX
ROBOTICS



Vex Day 1

Today the engineers are Marcus D.E Aidan McQ Kacper K Jayden at the minute. Jayden and Kacper K are constructing the beginning of the robot. Aidan Mc,Marcus,and Brooklyn are documenting todays activities. There are two drivers and two sub drivers for our vex competition in January. Ella and Callum have took account of all the activities to build the field for our robot. Indi P is our photographer for this project.The coders are C.McC,Tomas V and kacper W.Callum and Jake are in charge of all the designs and pictures

Vex IQ day 2

We had to wait to start because there was a certain part that was crucial to start on the morning of the fifth of November there was a 1st generation and 2nd generation upgrade kit waiting for us and then we started to build the upper body and the support of the catapult

Vex IQ day 3

The builders are building the catapult, while they were building they ran into a problem. They found out the 2x9 beam was unfindable so the 2x9 beam replaced it. The were building for about 5 minutes and a second problem occurred they didn't have a 2x9 plank after using all the other ones. Jayden had an idea To connect a 1x9 to another 1x9 making it a 2x9 .Soon after building they found a 2x9 piece. Just then they attached 4x16 plate because they couldn't find a 3x16 plate. They then attached the brain and battery, they also need a 16 tooth ratchet gear and eventually found it. So they began building the launching system.

Vex IQ day 4

Today the builders are nearly finished the ball loader on the robot. Kacper w and Tom were coding the controller. Earlier Master Tighe updated the motors And the brain with Kacper k tom and Aidan mc with connector. Cables. Aidan mc and Kacper added the touch sensor for the catapult. Tom and kacper w has got the Conntroller connected to the motors to make the wheel turn. They finised.the driving coding and the claw coding finished today.Kacper k and Senan have ran into a big problem they cant get the ball loader spin which is takeing a bit of time to fix.

Vex IQ day 5

Today the coders are testing the main code. Aidan C and Senan could not find the 3x6 so they used 4x8 they also fixed the intake and got it spinning. The coders want to turn the robot 360 degrees using the motors.

Vex IQ day 6

Today the builders are nearly finished the robot there are only 11 more steps left. The builders ran into a huge problem there is only 1 proper rubber band left. The rubber bands are needed to move up and down.

Vex IQ day 7

Today the builders and the coders solved a problem with the controller, the problem on the code the button they wanted to use did not show up on the code. They solved it by searching it up on Google and they were missing a motor on the robot.

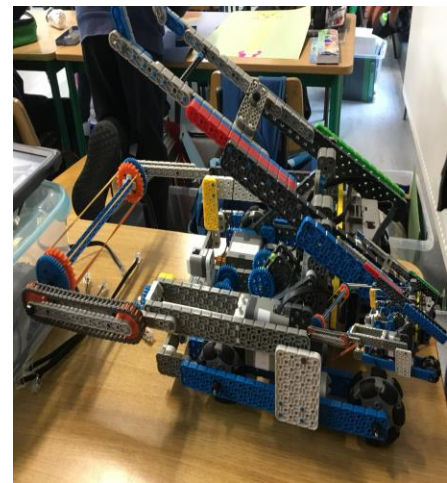
Day 1



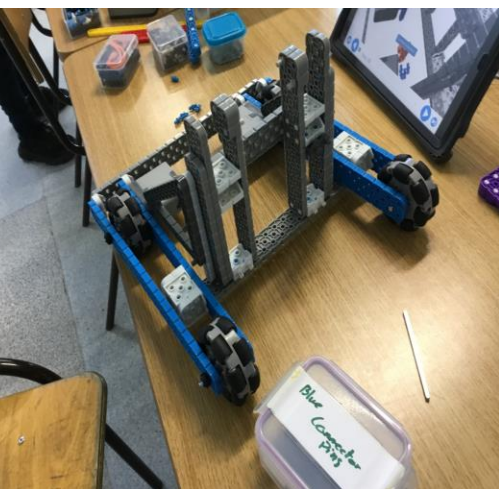
Day 4



Day 7



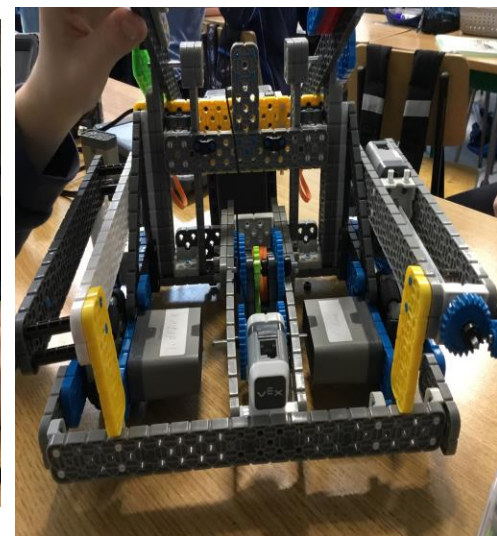
Day 2



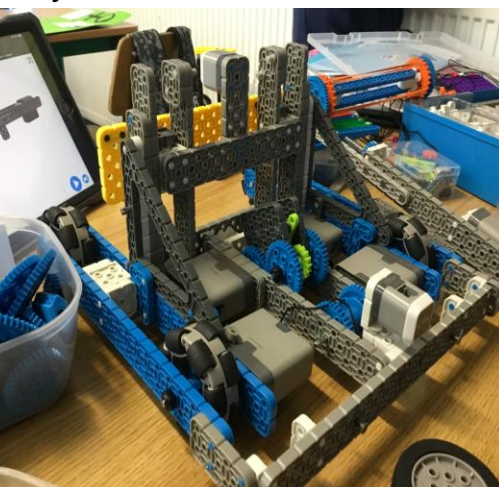
Day 5



Day 8



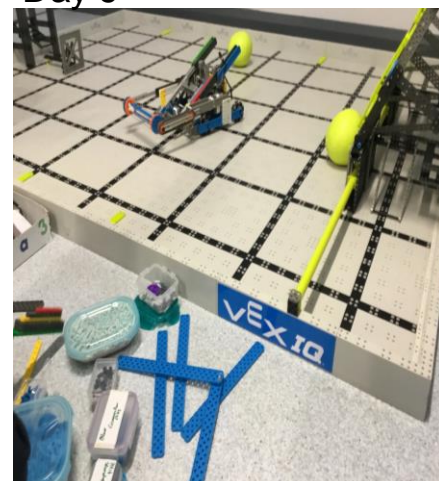
Day 3



Day 6



Day 9



Vex IQ day 8

Today the coders have noticed a problem as soon as we came over to the Vex field and we will have to spend a bit of time working on it. The problem is that the wire that pulls the catapult down isn't connected to the gear. Kacper K, Cian Mc, and Kacper W are trying to move the gear forward so it can pull the catapult down and launch the catapult up. The rest now have to move back to step 120B.

Vex IQ day 9

Today the builders are finishing the last bits of the robot. The problem was solved by Kacper K and Jake finished the problem on Friday evening, they moved the gears closer to the wire after they rebuilt the gears. Soon after they realised the intake does not spin any more, this is because we do not have the right piece for the intake. We have asked Master Tighe for the correct piece and it should come on Thursday.

Vex IQ day 10

Today the builders are adding the horns for the robot, these will help align the robot at the bottom of the target wall making aiming easier. Brooklyn found an idea for 3x acceleration but it is no use as it does not work.

Vex IQ day 11

Today the coders are thinking of a protector for the brain. The rest of the builders have successfully added the horns and our gear platform works as well.

Vex IQ day 12

Today the coders started on the tensioner code for the robot. We have also heard about other rules one is that the robot should be less than 15 cm tall, so Senan and Tomas are doing measurements for the robot.

Vex IQ day 13

Today the coders are working on the gear platform as the gears don't work because they were placed upside down.

Vex IQ day 14

Today the builders are attaching the tensioner to our robot. After they attached the tensioner Senan tried to shoot but the tensioner snapped and flew into the air nearly breaking the target wall. Soon after they realised a second problem occurred the tensioner was not connected properly, this is why the tensioner flew the air.

Vex IQ day 15

Today Cian Mc did some auto driving code for the robot. The engineers have also attached the new hybrid gears, these hybrid gears move the intake so the ball can be picked up into the catapult and the ball will then be launched into the target wall. Senan has started to attached the 12 tooth hybrid gear to the intake. A problem they have encountered is the gears are not moving the intake. We have also found out what our STEM project is Understanding Ethics In Robotics

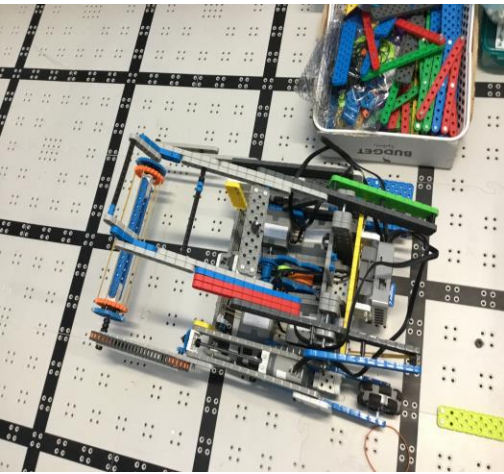
Vex IQ day 16

Today the builders are trying to fix the intake, the problem is it does not work the way it should work, it spins the ball and the ball under and on to the catapult but the intake does not spin. Brooklyn has tried to fix it but it did not work, now Senan and Kacper K are trying to add new connector gears to make the 12 tooth hybrid gears spin. The codes are now re-attempting the auto drive and soon going to test it.

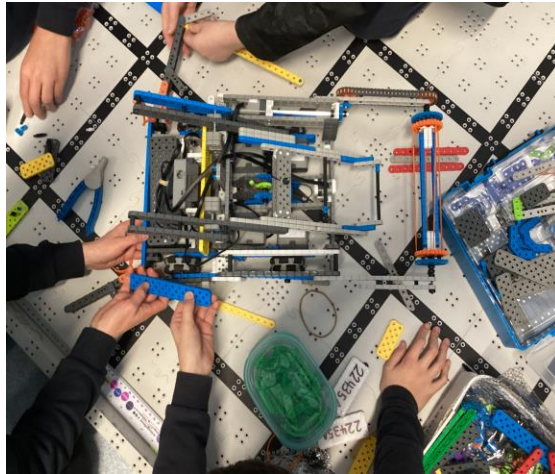
Vex IQ day 17

Today the robot is fully working the coders have finished the auto drive code and it works the builders have made the catapult work and the intake spins. The name is also official for our robot it is Robob a mix of robot and the name Bob. Brooklyn and Cian Mc added the licence plate on the front and back. The coders are now making Robob's auto drive for the start of our competition campaign in January. The builders have nearly finished the slight problem, it was because the tensioner wasn't letting the catapult move down as far as it should. The solution was the coders fixed the tensioner code by changing the rubber bands.

Day 10



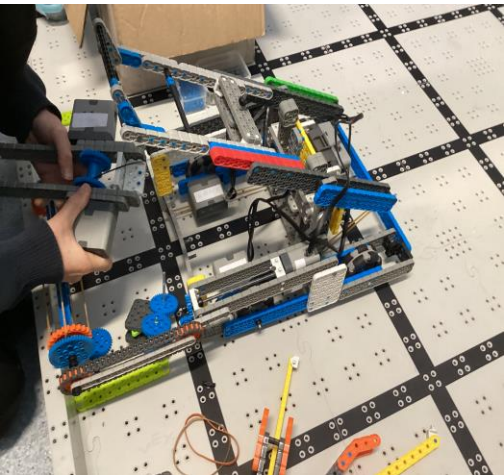
Day 13



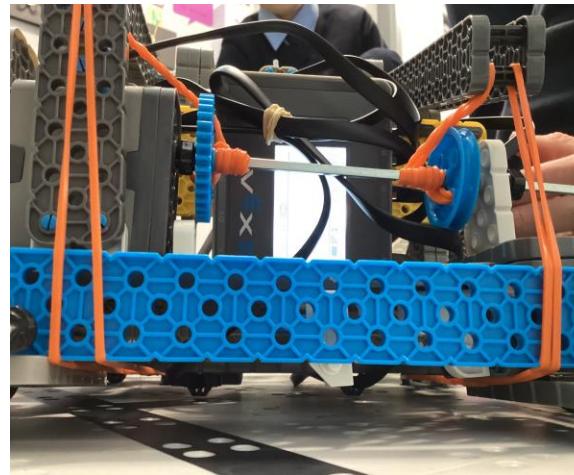
Day 16



Day 11



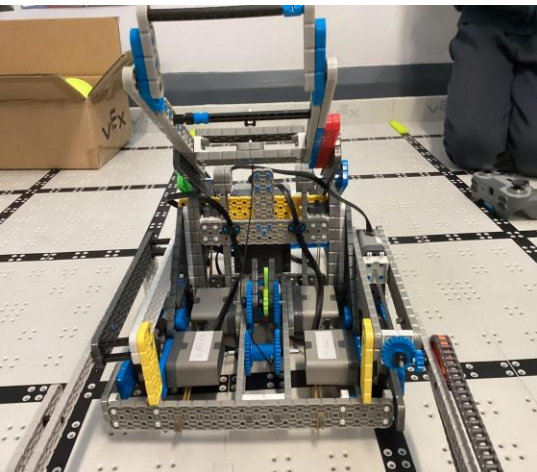
Day 14



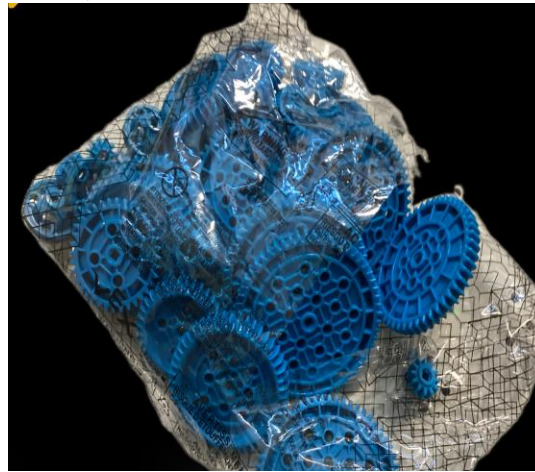
Day 17



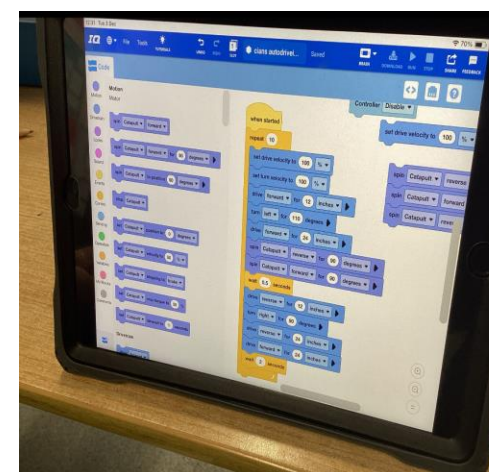
Day 12



Day 15



Day 18



Vex IQ day 18

Today the main code ipad is having an update, this means that the robot is unable to drive until the code is added onto the brain which isn't good for the drivers or coders.

Vex IQ day 19

Today the engineers have fixed the intake, because it didn't pick up the ball properly, they fixed it by adding a motor to the gear instead of having a 36 tooth gear moving the 12 tooth gear. After fixing this the catapult broke, the rubber bands are too tight and not letting the catapult move 1/3 of the way down.

Vex IQ day 21 (school was shut for day 20 so we skipped it)

Today the engineers are running Robob through tests so we can see what needs to be fixed. Our coders have informed us that the code is 90% done, this means the robot is pretty much done.

Vex IQ day 22

Today our robot is a complete mess, we have no idea why it doesn't work anymore. The robot's shooting mechanism doesn't and can't launch the ball anywhere on the target wall.

Vex IQ day 23

Today a full generation 2 kit has arrived, this means we will be able to build a robot again. We can practice passing, shooting, and strategy at the highest standard possible. Senan and Tom are now going to build a second robot while the coders test out there auto drive code on Robob with no interruptions.

Vex IQ day 24

Today the builders are working on the second robot once again, the coders are still doing there auto driving code and a few drivers are testing their skills as well! The STEM researchers are nearly finished there project too.

Vex IQ day 25

Today the builders are building a new tensioner because the original didn't work.

Vex IQ day 26

Today Creevy NS has come for some tips and tricks. We will show them bits of our auto drive code and our driving skills. Senan had attempted making a new tensioner but it didn't work. Kacper K thinks when our Gen 2 robot is finished we should just use that one.

Vex IQ day 27

Today the builders have found quite a few problems, the motors aren't working and the tensioner isn't either. The others are working on the second robot now named Robob a.k.a JR.

Vex IQ day 28

Today Jr's outer shell is completely finished, and the coders were two steps ahead because they had coded the motors for Jr already and all we have to do is add them to their designated places.

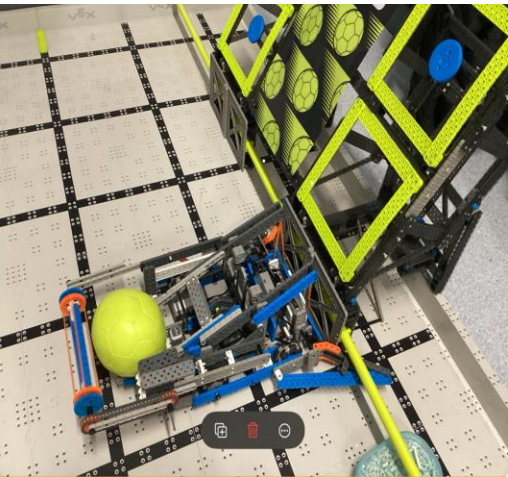
Vex IQ day 29

Today we all are trying our tests for our last opportunity for the last sub driver position, Aidan Mc and Senan are already the two main drivers and Tom is our first sub driver. After our trials Oscar won the place for a sub driver.

Vex IQ day 30

Today the builders and drivers went over the specific rules for the competition. The coders have officially completed Jr's auto drive and just have to make sure it is ok to use for the competition. Master Tighe has informed us that the competition date has changed, it is now one day earlier than the original date.

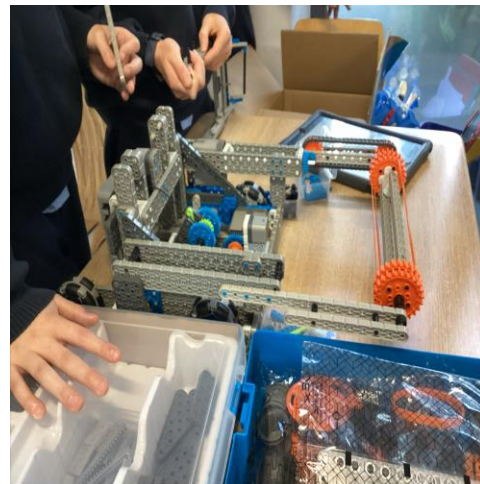
Day 19



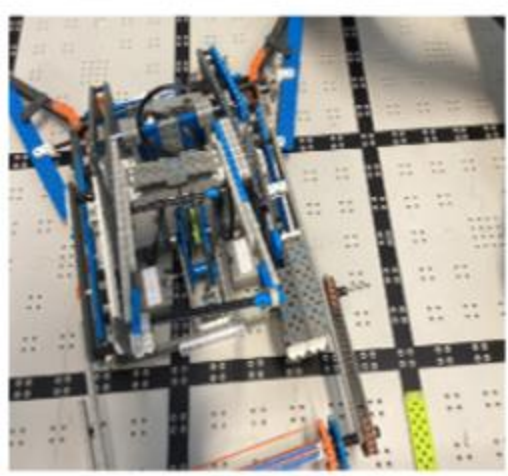
Day 23



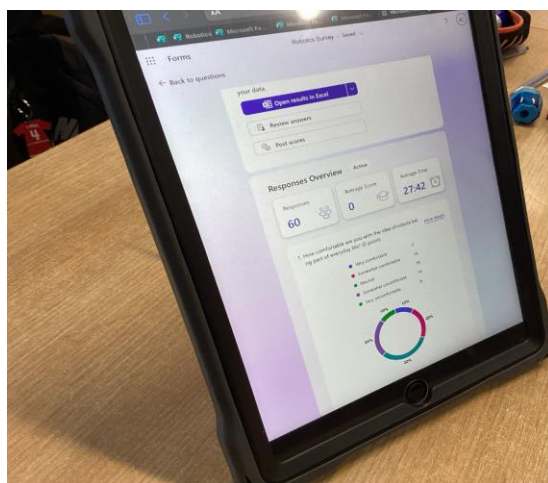
Day 26



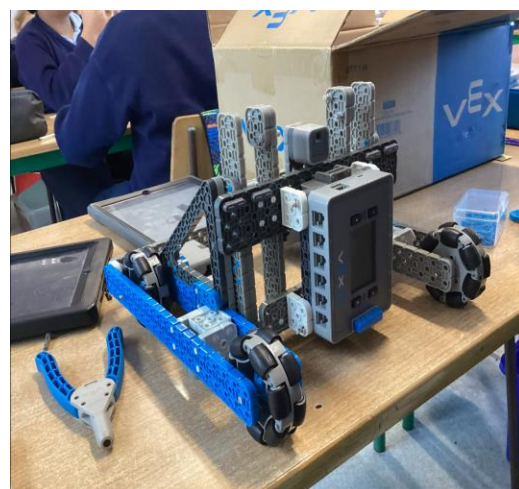
Day 21



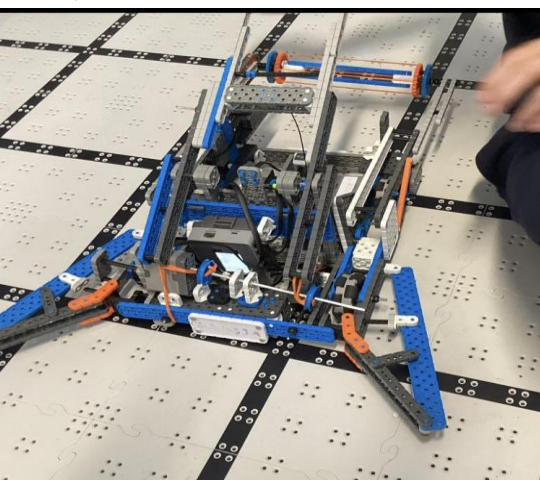
Day 24



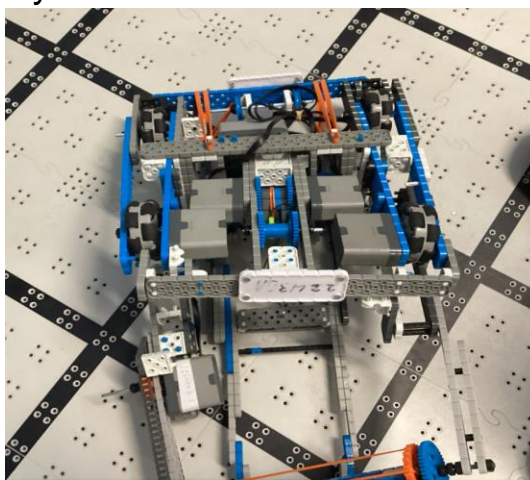
Day 27



Day 22



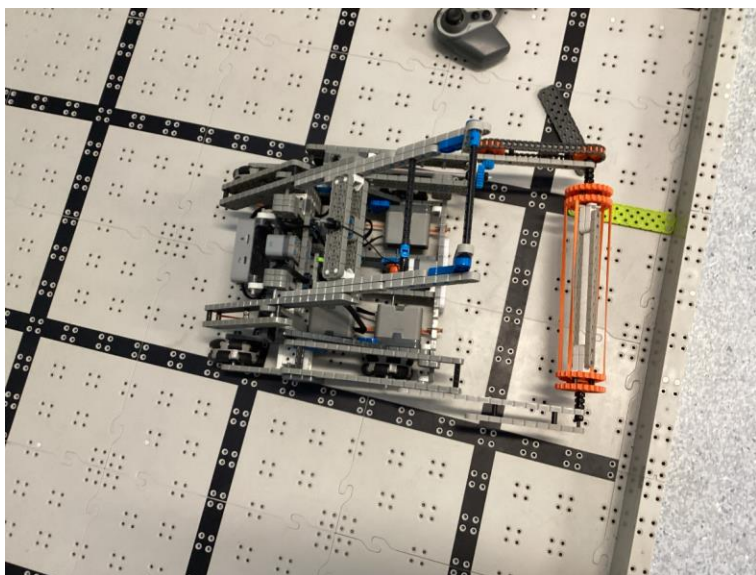
Day 25



Day 28



Day 29



November 2024

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4 Start Day 1	5 Day 2	6 Day 3	7 Day 4	8 Day 5	9
10	11	12 Day 5	13 Day 6	14 Day 7	15 Day 8	16
17	18 Day 9	19 Day 10	20 Day 11	21 Day 12	22 Day 13	23
24	25 Day 14	26 Day 15	27 Day 16	28 Day 17	29	30

December 2024

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3 Day 18	4 Day 19	5	6	7
8	9 Day 22	10 Day 23	11 Day 24	12 Day 25	13 Day 26	14
15	16 Day 27	17 Day 28	18 Day 29	19 Day 30	20	21
22	23	24	25	26	27	28
29	30	31				

January 2025

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16 Competition Day	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	