

“ROBOT EXPLORER” CHALLENGE – WRO SA 2016

1.0 - The WRO SA Organising Committee has decided to continue with this category at Regional and National Competitions this year 2016.

1.1 - This is to cater for beginners who would also like to participate on competition day but are not yet ready for WRO.

1.2 - It is also a great challenge to use for Inter School Competitions.

2.0 - Have a look at the Challenge and then decide if you think you can do it.

2.1 - There will be a “Robot Explorer” category at the all Regional competitions and qualifiers will get the opportunity to participate at the National Competition.

2.2 - The challenge has been designed on the WRO Elementary competition mat – Clean Way to School.

3.0 - Participants are only allowed to compete in the Robot Explorer Category **once** at WRO SA Regional and National level.

They then need to move onto WRO Regular or Open Category.

3.1 - The age groups will be Primary/Elementary 7 – 12 years and Junior High 13 -15 (No Senior High)

3.2 - Team size will be 2 participants.

4.0 - Registration on the WROSA website www.wrosa.co.za

4.1 - The entry fees will be the same as WRO.

4.2 - This competition will run for approximately 3 hours to finish ahead of WRO Final Round so that they can watch.

5.0 - As with WRO, the challenge has been released for you to practice and prepare but the differences are:

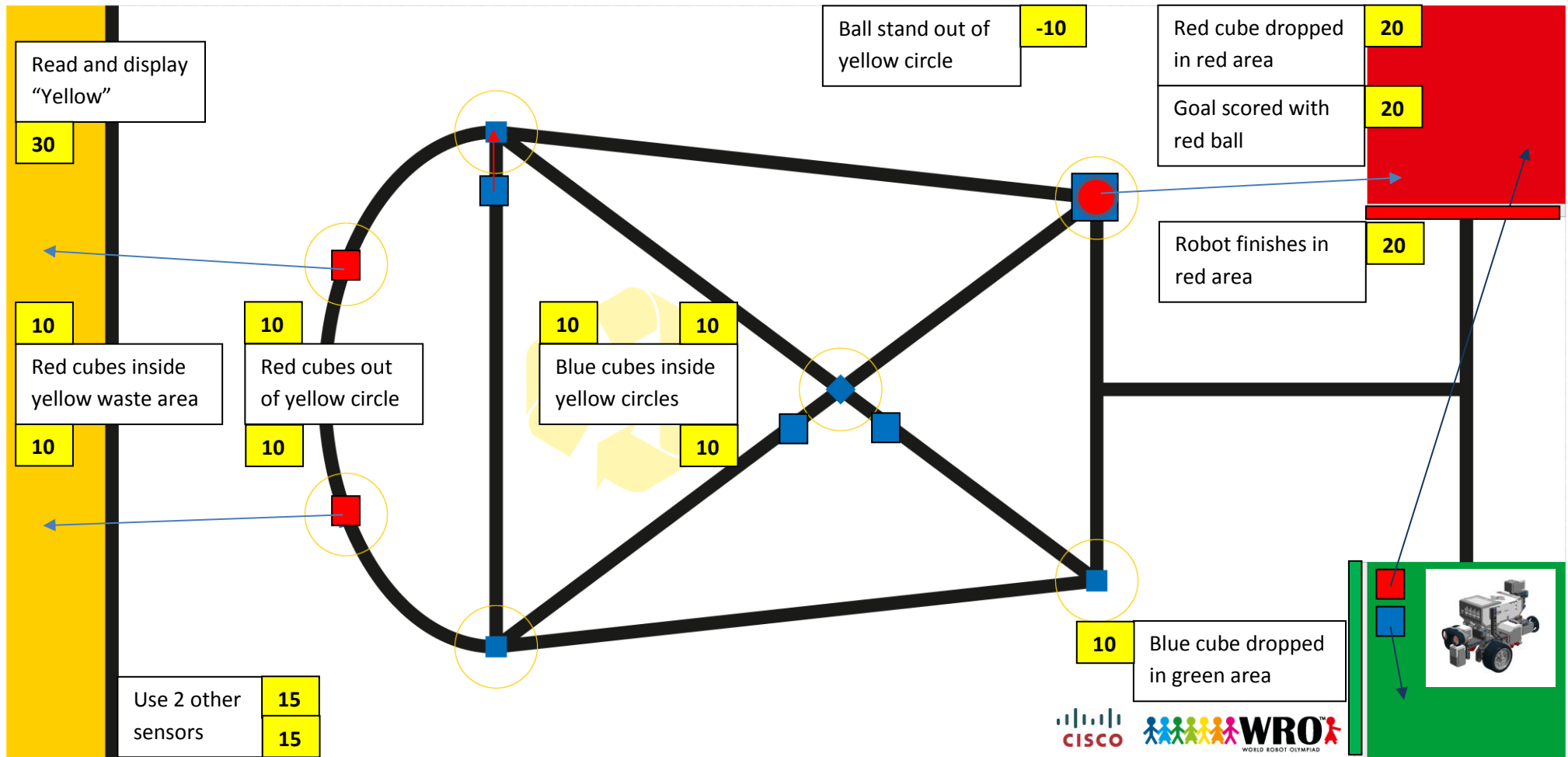
5.1 - You arrive with a Standard prebuilt NXT or EV3 driving base (any other driving base needs to be approved by email at danie@handsontech.co.za)

5.2 - No sensors or mechanical pieces attached on the model before competition starts (These parts may be pre-assembled to attach once allowed time starts)

5.3 - You have to re-program your robot on the day from beginning (No pre written or saved programs may be used)

5.4 - Referees will check this before the start and failure to adhere will result in disqualification.

5.5 - Scoring happens on a continuous basis until the end of competition time.



COMPETITION RULES:

- 1 – Arrive with a prebuilt NXT or EV3 robot which is a basic driving base. **No sensors attached**
- 2 – You have to re-program your robot on the day from beginning (No pre written or saved programs may be used)
- 2 – Mechanical sensor parts/assemblies may be prebuilt to attach as soon as the competition starts.
- 3 – The robot may be altered/changed during the competition to complete the challenges.
- 4 – The Robot needs to start in the green area (completely inside) and finish in the red area (completely inside)
- 5 – You may register a maximum of 4 scores during the competition time allowed.
Example is that if your score is 80 pts and the referee has seen it, register 80 points as your first score which you keep, then try and improve on your last registered score.

SCORING OPTIONS:

The points may be scored in any order! (It is not compulsory to follow the order below)

▪ 1 RED cube and 1 BLUE cube need to be loaded onto the robot before the start	-
▪ The BLUE cube needs to be dropped in the GREEN start area (10 pts)	10
▪ The RED cube needs to be carried on the robot and dropped in the RED finish area (20 pts)	20
▪ Use the light/colour sensor to read and DISPLAY the word YELLOW on the screen for at least 5 seconds, when it detects the YELLOW waste disposal area (30 pts)	- 30
▪ Move the 2 RED trash cubes into the YELLOW waste disposal area	-
▪ RED cubes moved completely outside their respective YELLOW circles (10pts each)	20
▪ RED cubes moved completely inside the YELLOW waste disposal area (10 pts each)	20
▪ Move the 3 BLUE clean cubes completely inside a YELLOW circle (10 pts each)	30
▪ Demonstrate the use of TWO of the following sensors: ULTRASONIC, GYRO or TOUCH (No fingers), anywhere on the white area of the challenge table (15 pts each)	- 30
▪ Score a goal! Knock the RED ball off the pedestal into the RED finish area (20 pts)	20
▪ If the pedestal is moved outside the YELLOW circle you receive a penalty (- 10 pts)	-10
▪ Robot finishes completely inside the RED finish area (20 pts)	20
BONUS Points:	200

The 3 BLUE cubes on the table are placed in 3 different YELLOW circles **+20**

There may be an addition of a surprise rule at the National Competition for more bonus points.

If there are teams with the same scores then they will run against each other with a timed round.

“ROBOT EXPLORER” 2016 – Elements

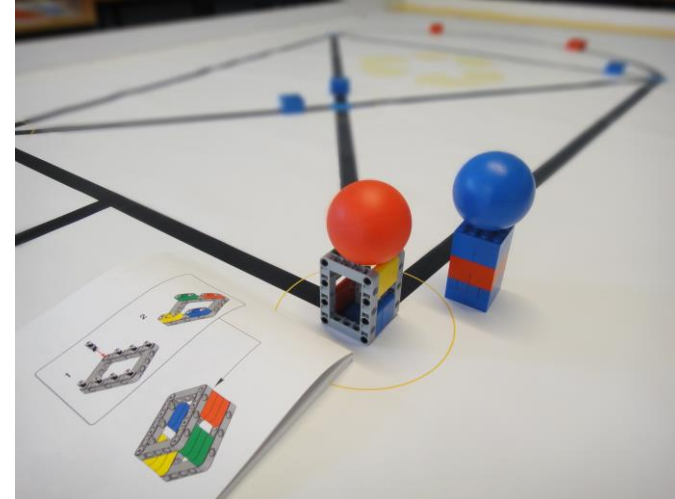
1 x Red brick barrier and 1 x Green brick barrier as per Elementary – “Clean way to School”

1 x LEGO Mindstorms RED or BLUE plastic ball

1 x LEGO Mindstorms CUBOID – as per the building instructions booklet (Page 6)

Can use 12 – 2 x 4 LEGO bricks to create the pedestal as per Diagram 1

Diagram 1



As per Diagram 2

4 x BLUE LEGO brick cubes – Four 2x4 blue bricks per cube

3 x RED LEGO brick cubes – Four 2x4 red bricks per cube

Diagram 2

