

Section
2



Zig Zag The Game

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Section 2 – The Game

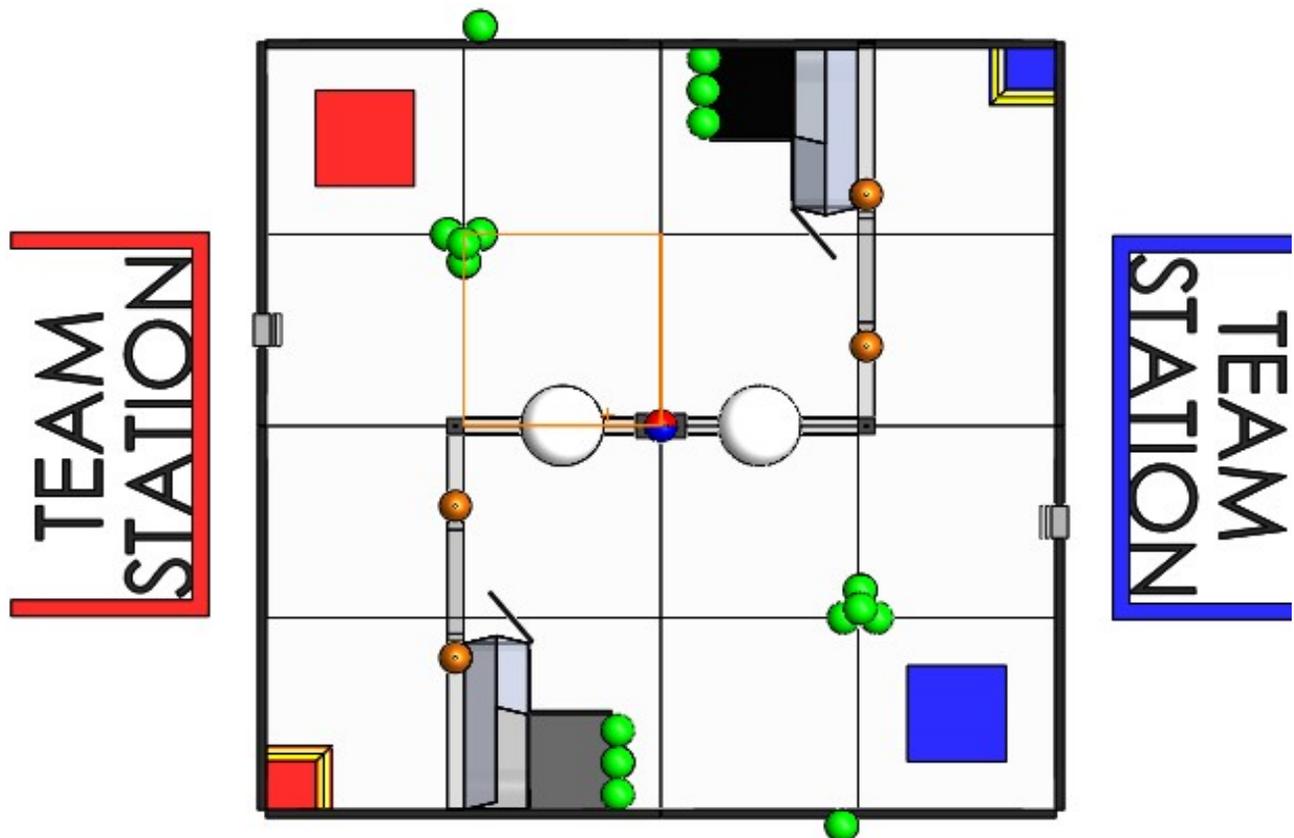
2.1 – Overview

This section describes the CREATE Junior game called *Zig Zag*. It also lists the game definitions and game rules.

2.2 – Game Description and Field Drawings

Matches are played on a field initially set up as illustrated in the figure below. Two teams, making up an *alliance*, collaborate in each *match*. The object of the game is to attain the highest score possible by working together to push *orange footballs* off their towers, scoring *green balls* in the *green ball ramp*, pushing the large *white balls* onto their *scoring platforms*, flipping the *flipper* and by being *parked* on the *starting platform* when time has expired.

There are a total of sixteen (16) *green balls*, four (4) *orange footballs*, two (2) *white balls*, one (1) *flipper* two (2) *wall buttons* and two (2) *starting platforms* available as scoring objects in the game. Fourteen (14) *green balls* will be found on the field, while two (2) will be available to each *alliance* prior to the *match*. A robot is limited to 1 ball to preload. Two (2) *starting platforms*, one (1) *flipper*, two (2) *white balls* and four (4) *orange footballs* will also be found on the field at the start of the *match*. In addition to these scoring objects the flipper will also act as a bonus multiplier for the green balls. *Green balls* will double in value once the *flipper* has been flipped from its vertical starting position. There are also two *wall buttons* on the field at the start of the match. By alternately pressing these objects an alliance can score up to 20 points.



2.3 – Game Definitions

Alliance – Two randomly paired teams that work together for a *match*.

Coach - A student or adult designated as the team adviser during the *match*.

Driver - A team member responsible for operating and controlling the *Robot*.

Driver Change – Changing from the first to the second *driver* in the middle of the *match*.

False Start - A *robot* leaving the *starting platform* before the *match* begins and trips the *starting platform* sensor will be considered to have *false started*. A five (5) point penalty will be assessed for each *robot* that *false starts*. If the *false start* is severe, at the discretion of the referee, the *robot* may be disqualified.

Flipper – The dual purpose red and blue pivoting mechanism located in the center of the wall. The *flipper* acts as a *green ball multiplier* as the first flip doubles the *green ball* score and each subsequent full flip scores one point..

Goal – Either one of the two *white ball* scoring zones or one of the two *green ball* ramps. Each *white ball* scoring zone will allow one score, while the *green ball* ramps allow for multiple scores.

Green Ball – Any of the 16, 4” diameter green spheres.

Green Ball Bonus Multiplier – See Flipper..

Green Ball Goal – One of two triangular shaped covered ramps.

Orange Footballs – Any of the four (4) oblong spheroids to be found on the four towers lining the center wall.

Match - A *match* consists of a one minute and thirty second *driver* controlled period. A *match* starts when the referee says “Go”.

Starting Platform – The 12”x12” 3/4” inch high square located on the playing field.

Parked – A *robot* is considered to be *parked* when it is in contact with the *starting platform* in such a way that the center light sensor is covered blocking out enough light to trip the sensor.

Robot – Anything (which has passed inspection) a team places on the field prior to the start of a *match*.

Scored –

- A *green ball* is scored if it passes over the scoring sensor in the *green ball* ramp.
- A *white ball* is scored if it is in its goal so that the scoring sensor senses the presence of the *white ball*.
- The *orange ball* is scored if it is removed from its tower enough for its sensor to no longer recognize its presence.
- The *flipper* is scored when it has been completely flipped from one side to the other.
- The *wall button* is scored when fully depressed.

Team Station – The designated region where the *drivers* stand during any *match*.

White Ball – One or two large white spheres that start on the center wall.

Wall Button – The red or blue push mechanism mounted on the outside wall. This mechanism must be fully depressed before points are earned.

2.4 – Game Rules

2.4.1 – Scoring

- The *flipper* can be used to double the value of scored *green balls*. The multiplier is earned by pushing the *flipper* from its vertical position to either of its two horizontal positions.
- A *flipper* that is scored counts one (1) point.
- A *green ball* that is scored counts two (2) points.
- A *green ball* that is scored with multiplier counts four (4) points. (Only *green balls* scored AFTER the *flipper* is flipped count four (4) points.)
- An *orange football* that is scored counts three (3) points.
- The *wall button* can be used to earn up to twenty (20) points. By pressing the red or blue *wall button* an alliance earns five (5) points. By pressing the other *wall button* an additional fifteen (15) points is earned. Twenty (20) points is the maximum total points that can be earned using the *wall buttons*.
- A *white ball* that is scored in the *white ball goal* counts ten (10) points.
- A *robot* that is *parked* at the end of the *match* is worth five (5) points.
- If both *robots* are *parked* at the end of the *match* fifteen (15) points, five (5) for each parked robot and a five (5) point bonus, are awarded.
- If a *robot false starts*, a five (5) point penalty will be assessed. The *match* continues and is NOT restarted. If the *false start* is severe, by the judgment of the referee, a *robot* may be disqualified.

2.4.2 – Safety Rules

<S1> If at any time the *robot* operation is deemed unsafe or has damaged the playing field, surface, barriers or wall, by the determination of the referees, the offending team may be disqualified. The *robot* will require re-inspection before it may take the field again.

<S2> If a *robot* goes completely out-of-bounds (outside the playing field), the *match* will be over and the score will be taken at that point regardless of time left in the *match*.

2.4.3 – General Game Rules

<G1> At the beginning of a *match*, each *robot* must not exceed a volume of 13 inches wide by 13 inches long by 13 inches tall. An offending *robot* will be removed from the *match* at the Head Referee's discretion.

- a. Alignment devices (templates, tape measures, lasers, etc.) that are not part of the *robot* may NOT be used to assist with the positioning of the *robot*.

<G2> Each team shall include two *drivers* and one *coach*.

<G3> During a *match*, the *drivers* and *coach* must remain in their *team station*.

<G4> Scoring objects that leave the playing field are considered out of play. They will not be returned to the field for that *match*.

<G5> *Drivers* and *coaches* are prohibited from making intentional contact with any game or field object. The first instance of intentional contact will result in a warning, with any following instances resulting in disqualification.

<G6> During a *match*, *robots* may be remotely operated only by the *drivers*. If a *coach* touches his/her team's controls anytime during a *match*, the *team* will be disqualified for that *match*.

<G7> Scores will be calculated in real time by the scoring sensors/computer. However the score is not final until any adjustments to score, if required, are completed by the referee/score keeper.

<G8> *Robots* may not intentionally detach parts during any *match*, or leave mechanisms on the field. Multiple infractions may result in disqualification for the entire competition.

<G9> *Robots* must be designed to permit easy removal of scoring objects from any grasping mechanism without requiring that the *robot* have power after the *match*.

<G10> Field tolerances may vary by as much as +/-1". Teams must design their *robots* accordingly.

2.4.4 – Zig Zag Specific Game Rules

<SG1> At the beginning of each *match*, the *robot* must be placed such that they are on the *starting platform*, have tripped the parking sensor and no part of the *robot* is in contact with the foam tiles.

<SG2> Prior to the start of each *match*, each *alliance* will have two *green balls* available to pre-load into their *robots*. Pre-loading is optional. If pre-loading is not used, the balls are removed from the field of play and will not be used in that *match*. Each robot may load one, or a single robot may load both *green balls*.

- a. A *green ball* is considered to be legally preloaded if it is touching the *robot* and not touching any part of the playing field or game objects.

<SG3> *Drivers* must change (*Driver change*) sometime between the 30th and 60th second of the *match*. *Driver* one may hand the remote to *driver* two anytime between 31 and 59 seconds on the clock. If a team exchanges the remote too early or too late in a *match* they will be disqualified for that *match* and the *alliance* will receive a zero score for that *match*.