

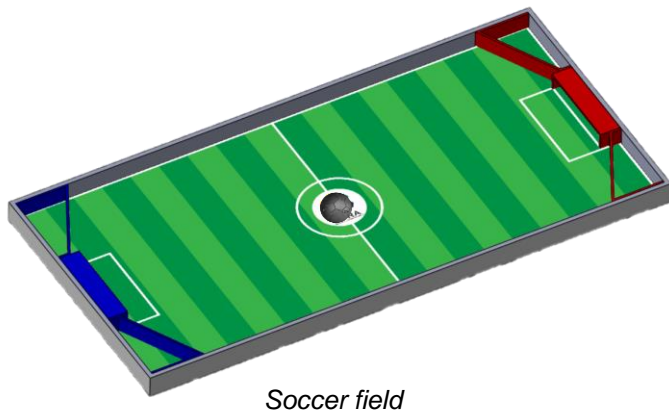


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# SPIKE Remote Soccer Elementary Category Competition Rules and Competition System

Updated: 14/03/2024





*Soccer field*

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## SPIKE Remote Soccer Elementary Category Competition Rules and Competition System

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- A. Introduction
- B. Soccer Field Setup And Soccer Specifications
- C. Game Rules
- D. Game Details
- E. Other Rules
- F. Competition System
- G. Seasonal Game Points Accumulation  
(for advancing to international competition)

### A. Introduction

A1. A soccer team consists of two to three members, and each team will use two soccer robots to compete with the other team in a remote-controlled battle. The team with the higher score within the time limit is the winner.

A2. Quota for participating: There is no limit to the number of teams for each school or organization.

A3. Participating age: Participants must be 9-13 years old (birth date in 2024 season is 2011-2015).



## B. Soccer field setup and soccer specifications

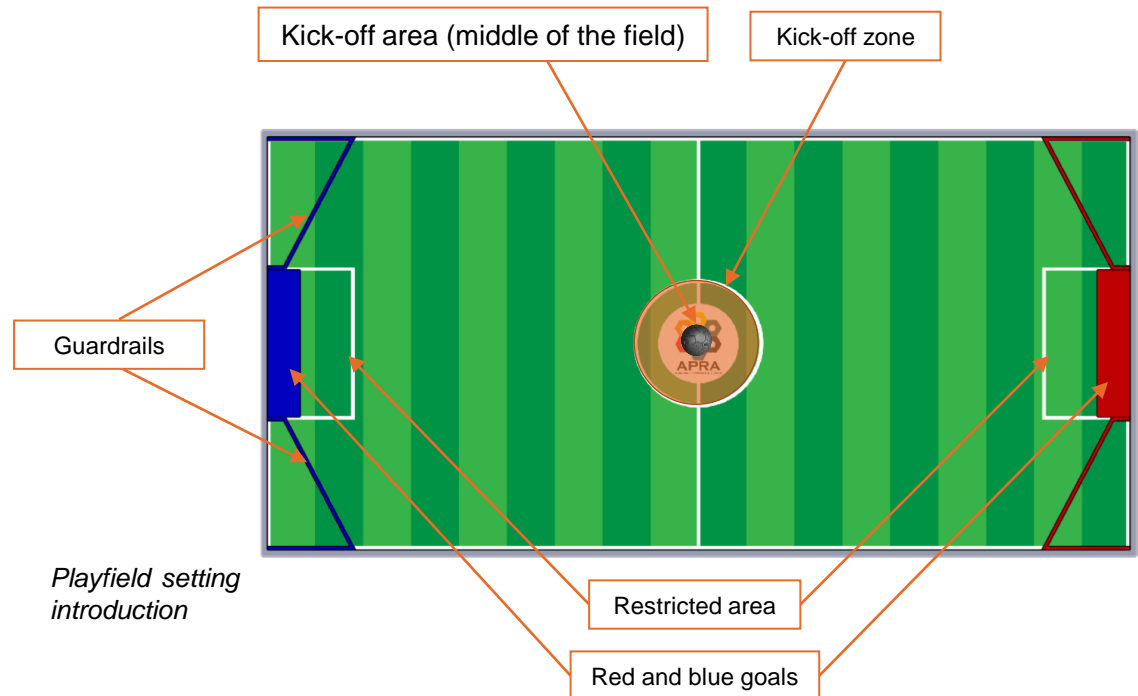
B1. The soccer field will be covered with a printed field mat measuring approximately 2360mm x 1140mm with a perimeter height of approximately 80mm around the field.

B2. Each goal is approximately 400mm wide, approximately 90mm deep and approximately 70mm high.

B3. Trapezoidal guardrails will be placed at the four corners of the site.

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## SPIKE Remote Soccer Elementary Category Competition Rules and Competition System





## B. Soccer field setup and ball specifications

B4. The ball is a 3D printed ball with a diameter of 55mm.

B5. Color is black and hollow with a wall thickness of 2mm.

B6. Weighs approximately 9g to 11g.



*Ball*

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SPIKE Remote Soccer  
Elementary Category  
Competition Rules and  
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## C. Game Rules

### Game Duration

C1. The tournament is divided into group stage and knockout stage.

C2. Both the group stage and the knockout stage are three minutes each in the first half and the second half.

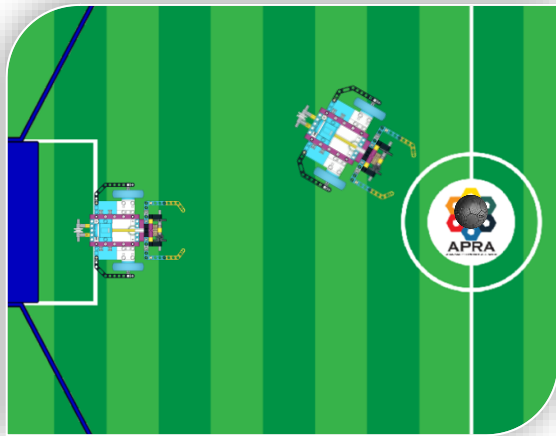
C3. Before the game, there will be two minutes of preparation time. After halftime, the two teams switch positions and have two minutes for preparation.

C4. The first half and the second half of the championship match and the third-place match are five minutes each.

C5. If the team fails to report within two minutes after the game start, the opponent will win with a score of 2:0.

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## SPIKE Remote Soccer Elementary Category Competition Rules and Competition System



*Robot kick-off method*

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## SPIKE Remote Soccer Elementary Category Competition Rules and Competition System

### C. Game Rules

#### Kick-Off

C6. Before the game start, both sides place their robots on the field, and all parts must remain still.

C7. The referee will insert a red or blue mark on the robot, representing the color of his own goal respectively.

C8. The two robots of the same team must be placed in one's own half, outside the kick-off area, and the vertical projection of one of the robots must overlap with one's own penalty area. (As shown)

C9. After starting the program, the robot must wait outside the kick-off area for the referee to signal "Game Start".

C10. The referee places the ball in the "kick-off area" (middle of the field). (As shown)

C11. The kick-off procedure is when the referee counts down "3, 2, 1, GO!", and all robots can move freely.

C12. After the game start, players must stand behind their own gantry to operate the robot.

C13. A re-kick-off is required after each goal.



## C. Game Rules

### Scoring Method

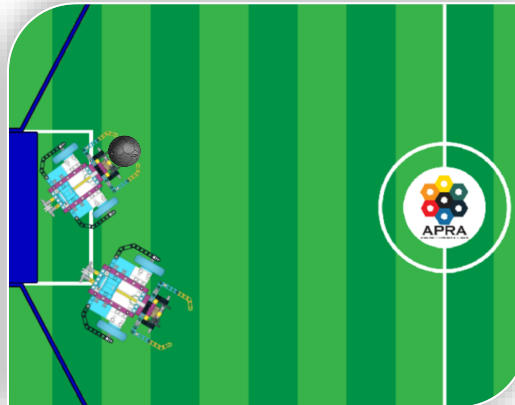
C14. A goal is scored when the ball touches the back wall of the goal. The stopwatch will be paused until kick-off is resumed.

C15. Goals scored in the way of multiplayer defense are also counted, and own goals are still counted.

C16. Multiplayer defense means that the vertical projections of the two robots of the same team overlap with one's own restricted area at the same time.

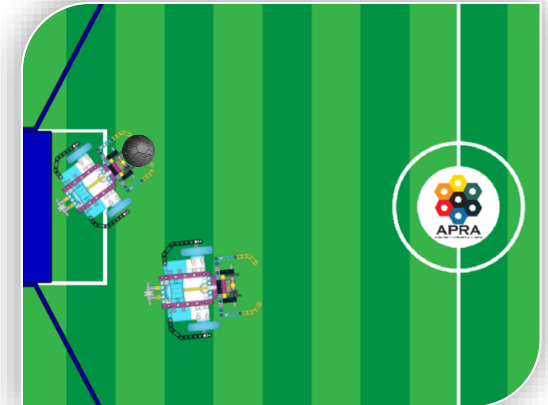
C17. In the case of multi-player defense, if one of the robots of the team touches the goal and touches the ball at the same time, the goal is also counted. (As shown below)

## SPIKE Remote Soccer Elementary Category Competition Rules and Competition System



Case 1: Scored a goal

- Multiplayer defense ✓
- One of the robots touches the goal and the ball ✓



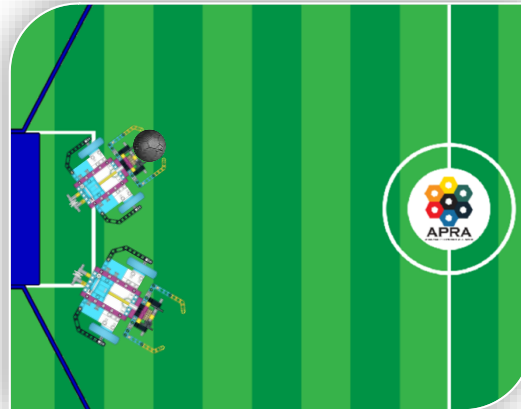
Case 2: Unsuccessful goal

- Multiplayer defense ✗
- One of the robots touches the goal and the ball ✓



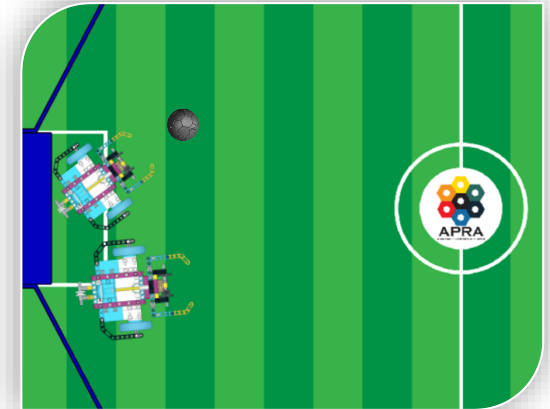
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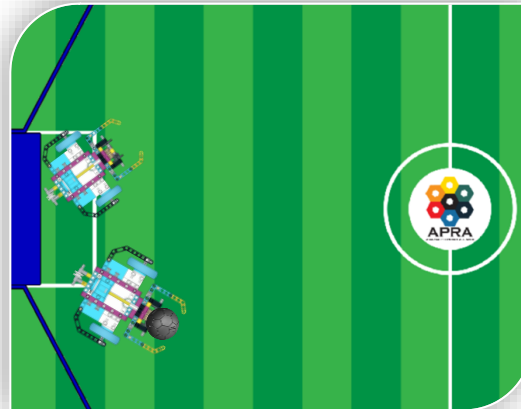
Case 3: Unsuccessful goal

- Multiplayer defense ✓
- One of the robots touches the goal and the ball ✗



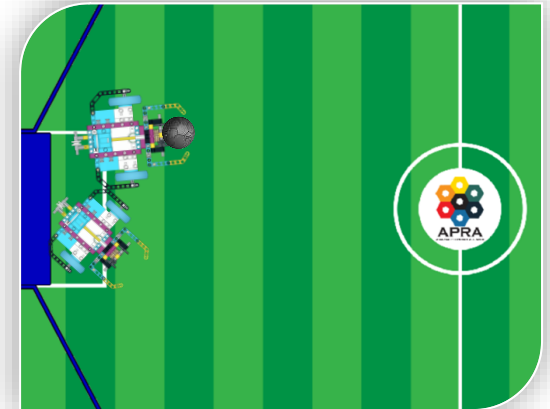
Case 3: Unsuccessful goal

- Multiplayer defense ✓
- One of the robots touches the goal and the ball ✗



Case 3: Unsuccessful goal

- Multiplayer defense ✓
- One of the robots touches the goal and the ball ✗



Case 3: Unsuccessful goal

- Multiplayer defense ✓
- One of the robots touches the goal and the ball ✗





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## SPIKE Remote Soccer Elementary Category Competition Rules and Competition System

### C. Game Rules

#### Malfunction Robot

C18. When the robot does not move for more than five seconds, the referee has the right to judge the robot as a "malfunction robot".

C19. The referee will take the "malfunction robot" out of the field and return to the field when the ball is re-kicked off.

C20. If the robot falls down after colliding with the opponent's robot, the referee can pick up the robot and continue the game.

C21. The game and the stopwatch will not be suspended when a "faulty robot" is determined.

#### Boundary Ball Handling

C22. If the following situations occur, the referee will judge this situation as a "boundary ball"

- i. When the ball stays on the four-corner guardrail or the perimeter of the field for more than five seconds, but neither robot can gain possession of the ball, the referee will judge this situation as a "boundary ball".
- ii. When the ball stays in the "restricted area" for more than ten seconds without any progress in the game;
- iii. When the ball remains "anywhere on the field" for an extended period of time without any progress in the game; or
- iv. When the referee determines that the progress of the game is affected.

C23. When the "boundary ball" appears, without changing the position of the robot, place the ball in the "kick-off area".

C24. When moving the "boundary ball", the robot does not need to pause its action.

C25. The game and the stopwatch will not be suspended when a "boundary ball" is judged.



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## SPIKE Remote Soccer Elementary Category Competition Rules and Competition System

### C. Game Rules

#### Deliberate foul

C26. When a participant or his robot has the following situations, it will be considered a "foul".

- i. The robot of one's own side does not move in the direction of the ball, and maliciously attacks the robot of the opponent.
- ii. Malicious damage to ball and damage to the playfield.
- iii. During the game, the participants did not get permission from the referee to touch the robot or ball.
- iv. Use inappropriate language.
- v. Other actions that the referee considers to be fouls.

#### Foul Handling

C27. The referee will give the team a "yellow card". The robot that receives the "yellow card" will be taken out of the field and can only return to the field when the ball is kicked off again.

C28. If the team accumulates four "yellow cards", it will be immediately disqualified from the tournament, and all its game records will be changed to a "0:2" loss.

C29. "Yellow card" records are accumulated until the end of the day's game. If there are any special circumstances, all decisions shall be based on the decision of the chief referee, and no objection shall be allowed.

C30. Only two robots can play in each game until the end of the game. Different robots can be selected to participate in the game. It is forbidden to replace the robot during the game. The violating team will be immediately disqualified from the game, and all its game records will be changed to "0:2" defeat.



*Robot Size Checker*

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## SPIKE Remote Soccer Elementary Category Competition Rules and Competition System

### D. Game Details

#### Robot Hardware Limitations

D1. The maximum extension size of the robot (including wires) cannot exceed a cylinder with a diameter of 220mm in length and width, and the height cannot exceed 220mm. Before the game start, the referee will notify all teams to place their robots in the inspection area. After the inspection is passed, the robot cannot be modified, disassembled or changed.

D2. Robot including battery must not weigh more than 1000 grams (g).

D3. Robot can only use original electronic parts of SPIKE™ Prime or Robot Inventor, the number of motors is limited to three (two medium motors and one large motor), and the number of sensors is not limited.

D4. Each participating robot can only use one microcomputer controller (SPIKE™ Prime Hub or Robot Inventor Hub), and the remote control parts will be calculated separately.

D5. Only the official SPIKE™ Prime or Robot Inventor lithium battery can be used. The referee has the right to ask the participant to open the microcomputer controller and inspect it. If there is any violation, the team must modify the offending component within one minute. If the specification is not met within the time, the team will not be able to participate in the game.

D6. Robots are to be constructed using strictly LEGO® brand pieces only.

D7. No other building materials can be used, including glue, tape, screws etc.



## D. Game Details

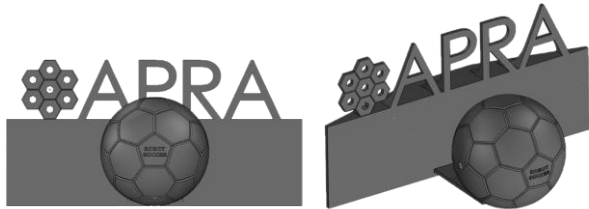
### Ball Capturing Zone Restrictions

D8. "Ball capturing zone" refers to the area occupied by the vertical projection of the ball entering the robot. (Take the maximum extension of the robot as the measurement standard).

D9. The width of the ball capturing zone entrance shall not be less than 72mm.

D10. The width of the ball capturing zone entrance can be detected by using the "Ball capturing checker". (Please refer to the next page)

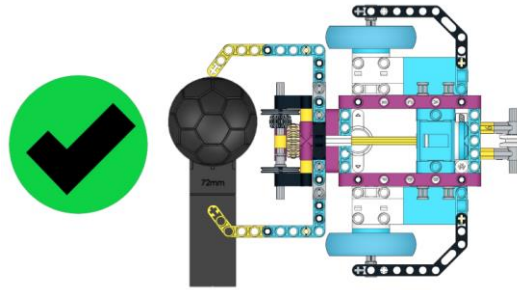
D11. The depth of the ball capturing zone shall not be more than 72mm (from the deepest point where the ball can touch the robot to the most forward point where the robot is at its maximum extension). (Please refer to the next page)



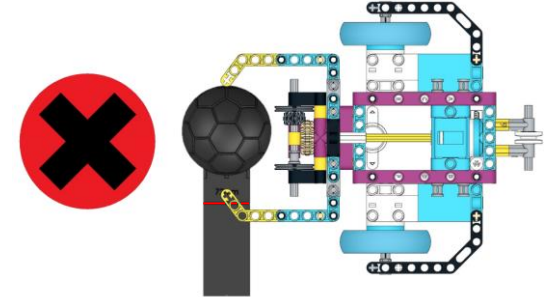
*Ball Capturing Checker*

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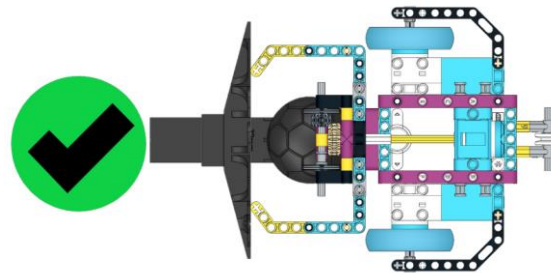
## SPIKE Remote Soccer Elementary Category Competition Rules and Competition System



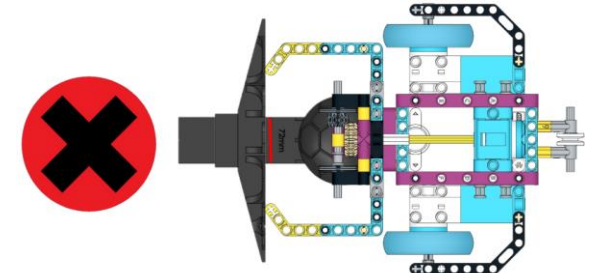
- The ball capturing zone entrance is greater than 72mm and passes the test.



- The ball capturing zone entrance is less than 72mm and fails the test.



- The depth of the ball capturing zone is less than 72mm and passes the test.



- The depth of the ball capturing zone is greater than 72mm and fails the test.

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## SPIKE Remote Soccer Elementary Category Competition Rules and Competition System



*Ball*

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## SPIKE Remote Soccer Elementary Category Competition Rules and Competition System

### D. Game Details

#### Robot “Dribbling Zone” Restrictions

D12. When the robot is dribbling:

- i. The ball must maintain in motion
- ii. The ball must remain in contact with the ground
- iii. The ball cannot penetrate the ‘ball capturing zone’ by more than 72mm.
- iv. The movement of the ball may not be restricted by any movable structure.
- v. When the robot move backwards, the ball can flow out naturally.

D13. If the robot lacks any of the above items when dribbling, the referee will give the team a "yellow card" and kick off again.



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## SPIKE Remote Soccer Elementary Category Competition Rules and Competition System

### D. Game Details

#### Robot Software Restrictions

D14. Teams can bring pre-built robots for the game.

D15. Teams must bring their own computers/tablets and remote controllers for the game.

D16. The remote controller must be a PS4, XBOX, Dragon War or third-party substitute controller.

D17. LEGO® MINDSTORMS® Inventor software must be used to control robots.

D18. Robot remote control procedures:

- i. The remote control is connected to a computer or tablet using bluetooth.
- ii. The robot connects to the control program software using bluetooth.
- iii. Start and run the programming program, and directly use the remote controller to control the robot.
- iv. There is no need to turn off the computer and bluetooth during the game.
- v. Microcomputer controller, computer or tablet cannot be used as a remote control method.



## E. Other Rules

### Responsibility of Parties

E1. During the game, the referee has the final decision.

E2. Any objection to the decision of the referee will be warned. If you continue to argue, you will be immediately disqualified from the tournament.

E3. After the game, both teams send a representative to sign the score sheet for confirmation.

E4. When confirming the score sheet, a protest can only be lodged if the score is incorrect or if there is a problem with the result of the game. Once the score sheet has been signed, no protest may be made by either party.

E5. The referee may interpret the rules.

E6. In special circumstances, such as unforeseen problems or the capabilities of robots that everyone agrees in the game, the rules can only be changed with the consent of the chief referee.

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## SPIKE Remote Soccer Elementary Category Competition Rules and Competition System





## E. Other Rules

### Inspection of Robot

E7. If the robot is modified during the game, the referee may ask for inspection again.

E8. Any robot that does not comply with inspection regulations, it will not be able to use in the game until it is corrected.

E9. Modifications must be made within the time schedule of the game and teams must not delay game play while making modifications.

E10. If the robot cannot comply with all the regulations (and cannot comply after the modification), it will be disqualified from the game. (without disqualification).

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## SPIKE Remote Soccer Elementary Category Competition Rules and Competition System



## E. Other Rules

### Fair Play

E11. Except for the participants and staff, no one is allowed in the game area.

E12. No one other than the participants is allowed to modify the robot or the program.

E13. Participants are not to be prompted or assisted in any way during the tournament.

E14. If the above situations are found during the game, the team may be disqualified from the tournament.

E15. When the team registers for the tournament, it is also necessary to clearly read the relevant registration terms and competition rules.

E16. When the content of different files conflicts, the order of precedence of the rules is:

Final Decision of Organizer > Rules Update > SPIKE Remote Soccer Rules.

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## SPIKE Remote Soccer Elementary Category Competition Rules and Competition System



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## SPIKE Remote Soccer Elementary Category Competition Rules and Competition System

### F. Competition System

F1. The number of teams participating in each season is different, and the number of "Knockout" may be different.

F2. The first stage "group competition": All teams are divided into several groups for group competition, and the first and second place in the group will be determined.

F3. The group match adopts a point system, with 3 points for the winner, 0 points for the loser, and 1 point for each tie.

F4. If the total points are the same after the group match, the result of each other's match will be referred to first. If there is a tie, it will be calculated according to the goal difference, and if it is still the same, it will be calculated according to the number of goals scored.

F5. The second stage "Knockout": In the first round, the first place in each group will compete with the second place in each group. The winner will advance to the final.

F6. In the championship game, the winner will be the champion, and the loser will be the 1<sup>st</sup> runner-up; the loser of the top 4 will have a third-place match, where the winner will be the third and the loser will be the fourth.

F7. If any team is tied in the knockout round, teams will have 2 minutes of preparation time and then there will be 2 minutes of extra time, the first to score within 2 minutes will win the game. If there is a tie again, teams will have 2 minutes of preparation time and then each team will pick up a robot, and there will be 2 minutes of extra time. The first player to score a goal within 2 minutes will win the game. If there is a tie again, the above rules will be implemented again, and so on until the winner is determined.



## G. Seasonal Game Points Accumulation (Example: Hong Kong )

G1. The 2023 SPIKE Soccer Tournament in Hong Kong is divided into two seasons. (One season or two seasons are an optional case for hosting country/city to decide)

G2. Each season will have specific system points, and a total of four places can be promoted to the international competition.

G3. The first two places are the champions and 1<sup>st</sup> runner-up of the second season, and the other two places are the teams with the highest total points in the two quarters.

G4. Please refer to the following table for the points of the two quarters:

Hong Kong – Season 1	
Result	Points
Champion	100
1 <sup>st</sup> Runner-Up	80
2 <sup>nd</sup> Runner-Up	60
3 <sup>rd</sup> Runner-Up	40
Top 8	30
Top 16	20
Others	10

Hong Kong – Season 2	
Result	Points
Champion	Advance to International Final
1 <sup>st</sup> Runner-Up	Advance to International Final
2 <sup>nd</sup> Runner-Up	110
3 <sup>rd</sup> Runner-Up	90
Top 8	60
Top 16	30
Others	10

### SPIKE Remote Soccer Elementary Category Competition Rules and Competition System