

Sonic Strider Relay Mission Junior Category Game Description, Rules and Scoring

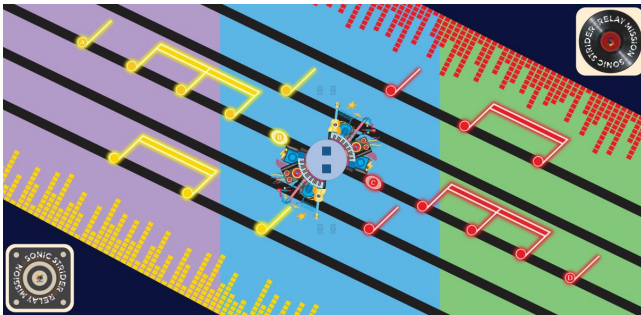
Updated : 10/03/2026





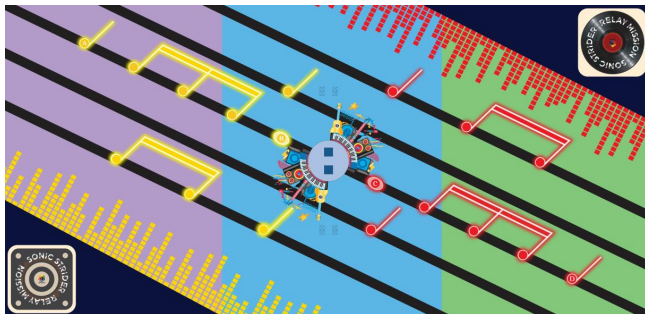
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Mission Field

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Game Description, Rules and Scoring



Mission Field

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A. Brief

A1. The "Symphonic Core," the symbol of world harmony, suddenly fell silent. A wave of digital silence swept across the Asia-Pacific region, plunging all cities into a frequency of stillness. To restore the rhythm of the world, the APRA Alliance has officially deployed the "Sonic Strider".

As a Sonic Strider, your robot is more than just a machine - it is a pioneer of music. You must traverse the perilous paths of the "Grand Staff," an area filled with unstable frequencies. Your mission is to carry the "Floating Musical Notes" across the soundscape, perfectly hitting every note. As long as you can synchronize your movements with the rhythm of the earth, the world will once again resonate with melody.

The stage is set, and the rhythm is about to oscillate. Striders, are you ready to play the sound of victory?

A2. The participating teams are composed of two to three members, and each team will use two robots. They may start at the same time to complete the tasks that can be scored both individually and cooperatively.

A3. The quota for each school or organization will be determined based on the actual number of participating teams.

A4. Participating age: Participants must be 13 - 18 years old (birth date in 2026 season is 2008 – 2013).



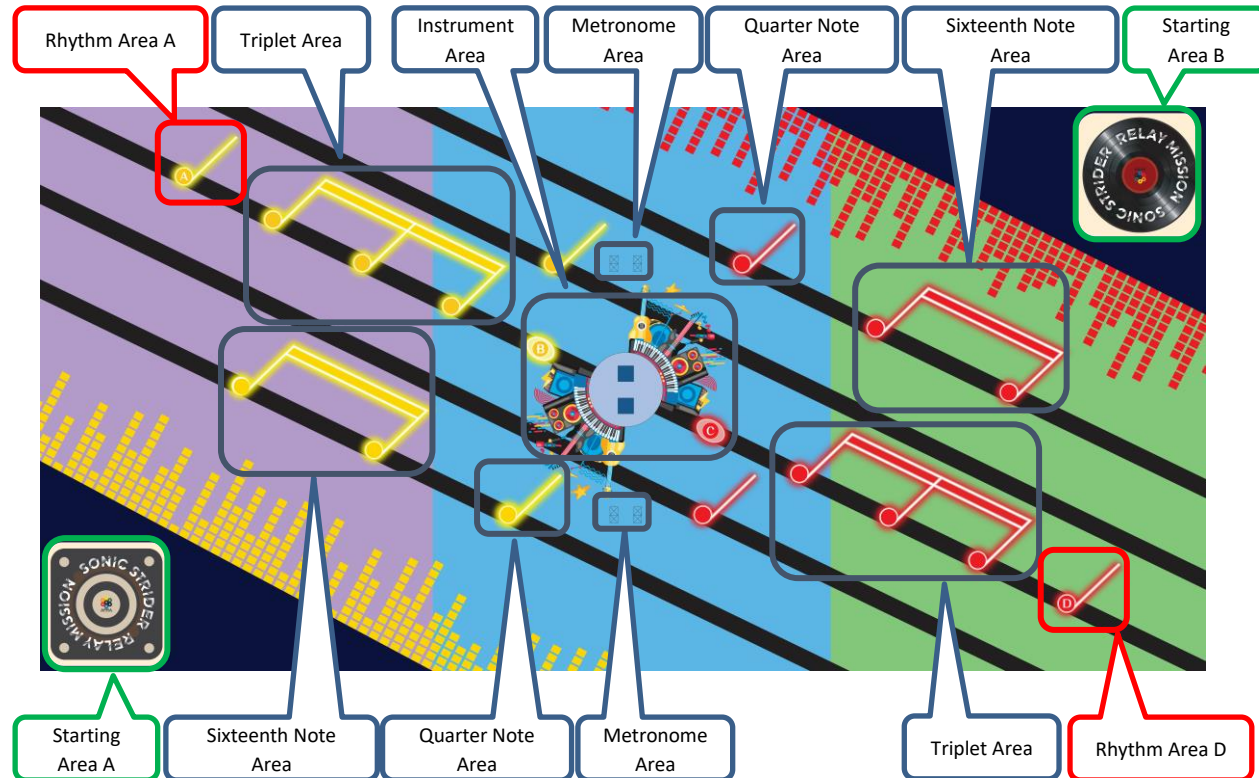
B. Game Description (Field Setup and Specifications)

B1. The mission field has five areas: 'Quarter Note Area', 'Sixteenth Note Area', 'Triplet Area', 'Metronome Area' and 'Instrument Area'.

B2. The bottom left corner of the mission area is 'Starting Area A', while the top right corner is the 'Starting Area B'.

B3. There are four 'Rhythm Area ABCD'.

B4. There will be walls around the game table with a height of approximately 80 mm.

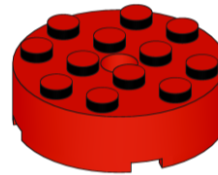


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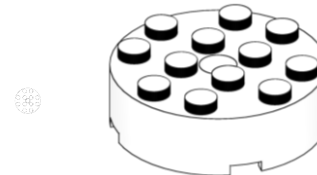


B. Game Description (Field Setup and Specifications)

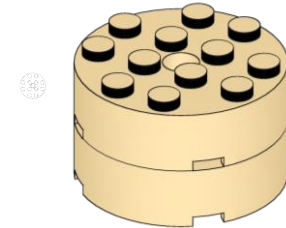
B5. Game Objects include six 'Red Beat', six 'White Beat', two 'Music Rhythm', two 'Ensemble Beat' and two 'Metronome'.



Red Beat

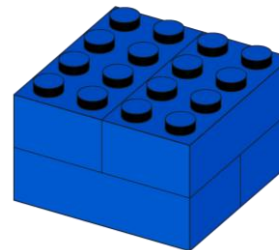


White Beat

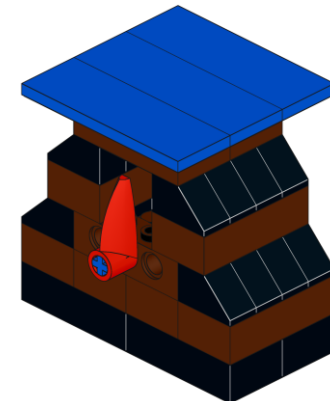


Music Rhythm

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Ensemble Beat

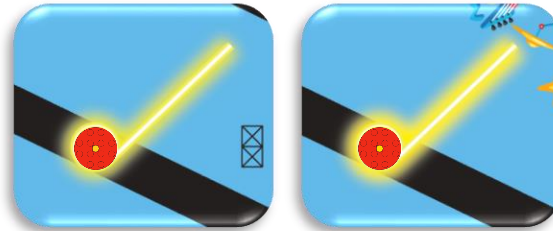


Metronome

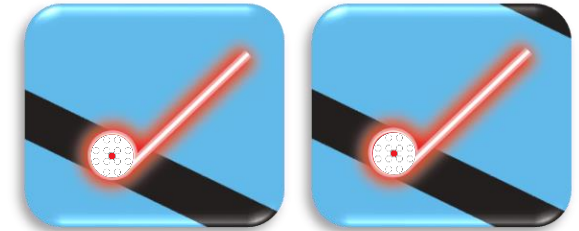


B. Game Description (Field Setup and Specifications)

B6. Before each round of competition, a 'Red Beat' will be placed in each 'Yellow Quarter Note Area' respectively. A 'White Beat' will be placed in each 'Red Quarter Note Area' respectively.

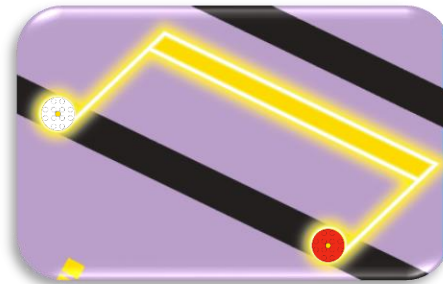


Yellow Quarter Note Area

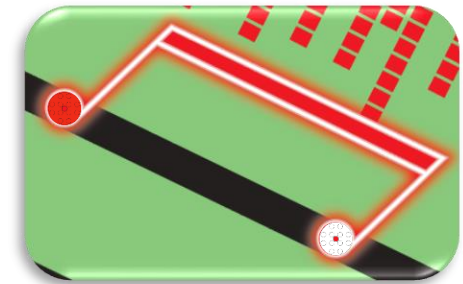


Red Quarter Note Area

B7. Before each round of competition, a 'Red Beat' and a 'White Beat' will be placed in each 'Sixteenth Note Area'.



Yellow Sixteenth Note Area



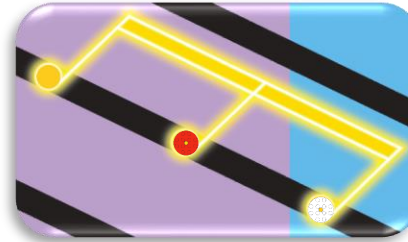
Red Sixteenth Note Area

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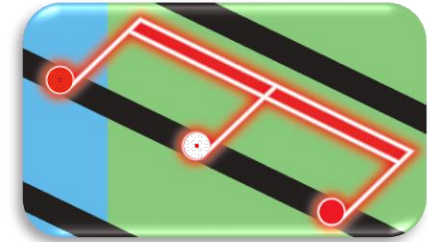


B. Game Description (Field Setup and Specifications)

B8. Before each round of competition, a 'White Beat' and a 'Red Beat' will be placed in the 'Yellow Triplet Area'. A 'Red Beat' and a 'White Beat' will be placed in the 'Red Triplet Area'.

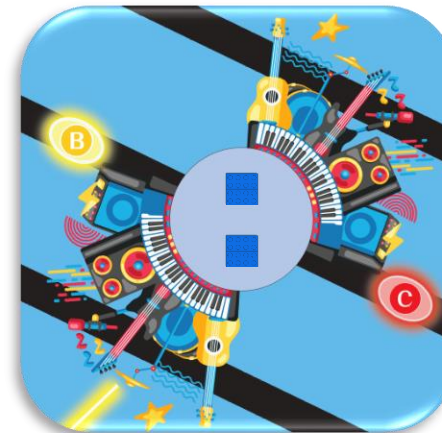


Yellow Triplet Area



Red Triplet Area

B9. Before each round of competition, two 'Ensemble Beat' will be placed in the 'Instrument Area'.

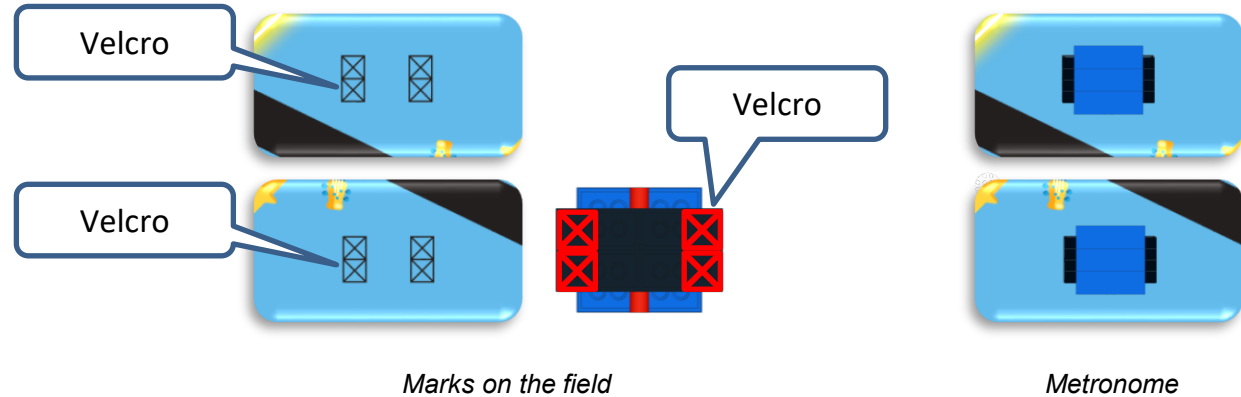


Instrument Area

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B. Game Description (Field Setup and Specifications)

B10. Use Velcro to fix two 'Metronome' to the marks on the field.

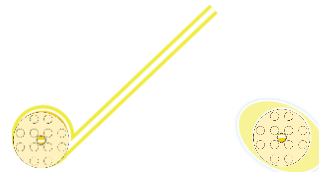


B11. The junior category will have one bonus mission on the day of the competition.

B12. On the day of the competition, the positions of two 'Music Rhythm' will be drawn randomly using the English letters A to D. They will be placed in the 'Rhythm Area' respectively. The results will be drawn before the testing time and will be uniformly applied in the three rounds of the tournament.

B13. If the team chooses not to take on the bonus mission, 'Music Rhythm' can request to remove it from the field.

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If A and B are drawn, two 'Music Rhythm' will be placed in 'Rhythm Area A and B' respectively.



B. Game Description

- B14. There are three rounds on tournament day, and each round lasts 120 seconds.
- B15. The preparation time is 60 seconds · Participants can place robot in starting area, turn on, adjust the robot and choose the program.
- B16. The vertical projection of the robot, including wires, must be completely within the starting area before the game starts.
- B17. The robot that starts from starting area A is Robot A, and the robot that starts from starting area B is Robot B.
- B18. When the game starts, robots A and B can start at the same time.
- B19. When the time exceeds 120 seconds or the participating member says ‘finish’, the timing ends.
- B20. All scores will be calculated and recorded after the competition time is over.

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C. Scoring

C1. Definition of completely entered : The vertical projection of an object is **completely overlapped** with the pattern.

C2. Definition of completely left : The vertical projection of an object is **not overlapped** with the pattern.

C3. Definition of partially entered : The vertical projection of an object is **overlapped** with the pattern.

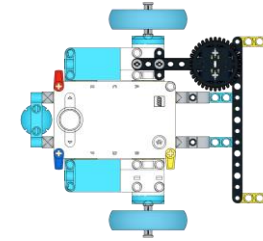
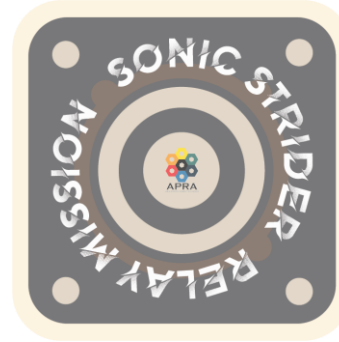
C4. There is no requirement for the direction in which the objects are placed, as long as they meet the scoring requirements.

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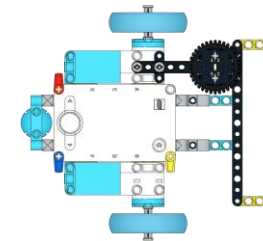
C. Scoring

C5. (Mission 1) Robot A **completely leaves** the 'Starting Area A', getting 10 points.



*Robot A **completely leaves** the 'Starting Area A', getting 10 points.*

C6. (Mission 2) Robot B **completely leaves** the 'Starting Area B', getting 10 points.



*Robot B **completely leaves** the 'Starting Area B', getting 10 points.*

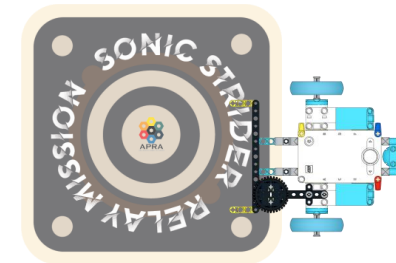
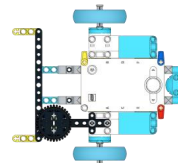
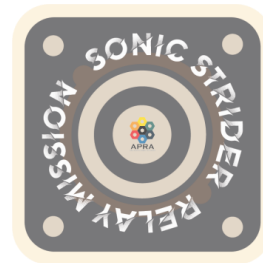
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C. Scoring

C7. (Mission 3) As soon as the timer stopped, two robots stopped completely, getting 10 points.

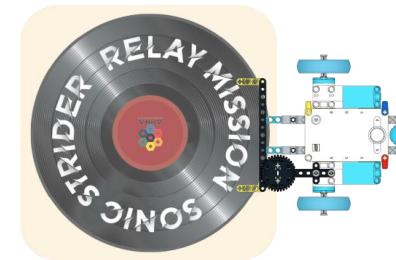
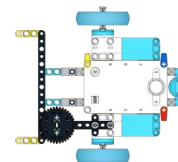
C8. (Mission 4) After the timer stops, Robot A or B **partially entered** the 'Starting Area A', getting 10 points.



Robot A or B **did not partially enter** the 'Starting Area A', getting 0 point.

Robot A or B **partially entered** the 'Starting Area A', getting 10 points.

C9. (Mission 5) After the timer stops, Robot A or B **partially entered** the 'Starting Area B', getting 10 points.



Robot A or B **did not partially enter** the 'Starting Area B', getting 0 point.

Robot A or B **partially entered** the 'Starting Area B', getting 10 points.

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C. Scoring

C10. (Mission 6) Two 'White Beat' **partially entered** the 'Yellow Quarter Note Area' respectively, getting 10 points each, total 20 points. Only one 'White Note' can be placed in each note area.



0 point

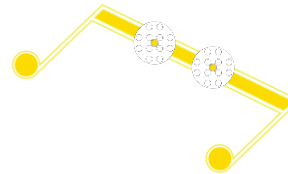


10 points

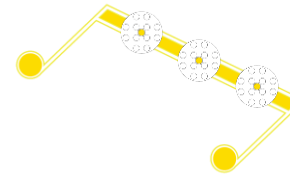


0 point

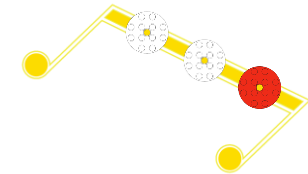
C11. (Mission 7) Two 'White Beat' **partially entered** the 'Yellow Sixteenth Note Area', getting 20 points. Only two 'White Note' can be placed in each note area.



20 points



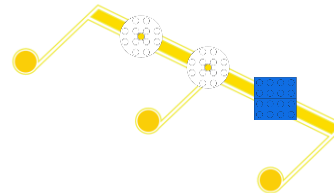
0 point



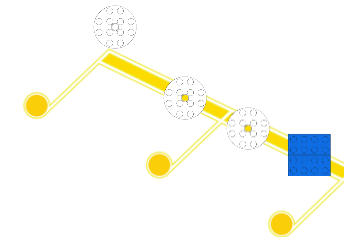
0 point

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C12. (Mission 8) Two 'White Beat' and one 'Ensemble Beat' **partially entered** the 'Yellow Triplet Area', getting 30 points. Only two 'White Beat' and one 'Ensemble Beat' can be placed in each note area.



30 points

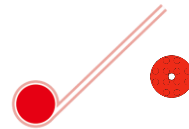


0 point

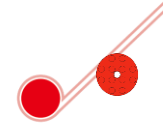


C. Scoring

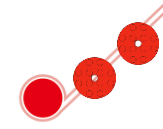
C13. (Mission 9) Two 'Red Beat' **partially entered** the 'Red Quarter Note Area' respectively, getting 10 points each, total 20 points. Only one 'Red Note' can be placed in each note area.



0 point

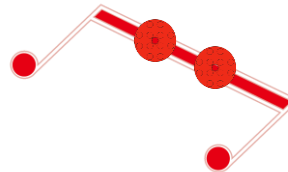


10 points

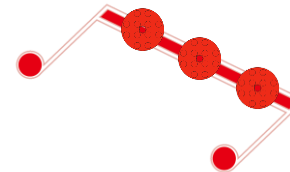


0 point

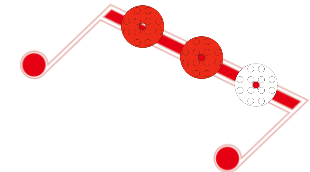
C14. (Mission 10) Two 'Red Beat' **partially entered** the 'Red Sixteenth Note Area', getting 20 points. Only two 'Red Note' can be placed in each note area.



20 points



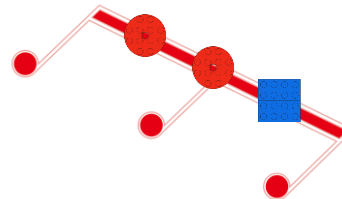
0 point



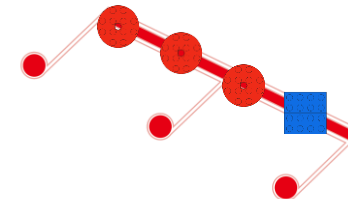
0 point

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C15. (Mission 11) Two 'Red Beat' and one 'Ensemble Beat' **partially entered** the 'Red Triplet Area', getting 30 points. Only two 'Red Beat' and one 'Ensemble Beat' can be placed in each note area.



30 points

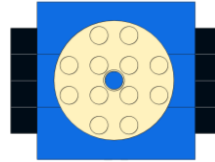


0 point

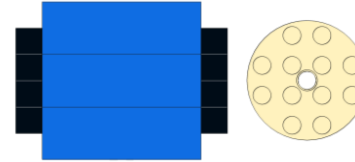


C. Scoring

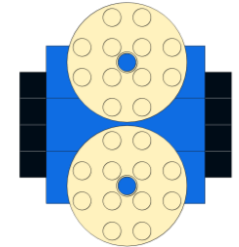
C16. (Mission 12) A 'Music Beat' placed on top of each 'Metronome' respectively, getting 10 points, total 20 points. Only one 'Music Beat' can be placed in each metronome.



10 points



0 point



0 point

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C. Scoring

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| Robot | Mission (Scoring Item) | | Score |
|---|------------------------|---|-------------|
| A | Mission 1 | Robot A <u>completely leaves</u> the 'Starting Area A'. | 0 / 10 |
| B | Mission 2 | Robot B <u>completely leaves</u> the 'Starting Area B'. | 0 / 10 |
| A + B | Mission 3 | As soon as the timer stopped, two robots stopped completely. | 0 / 10 |
| A / B | Mission 4 | After the timer stops, Robot A or B <u>partially entered</u> the 'Starting Area A'. | 0 / 10 |
| | Mission 5 | After the timer stops, Robot A or B <u>partially entered</u> the 'Starting Area B'. | 0 / 10 |
| | Mission 6 | Two 'White Beat' <u>partially entered</u> the 'Yellow Quarter Note Area' respectively. | 0 / 10 / 20 |
| | Mission 7 | Two 'White Beat' <u>partially entered</u> the 'Yellow Sixteenth Note Area'. | 0 / 20 |
| | Mission 8 | Two 'White Beat' and one 'Ensemble Beat' <u>partially entered</u> the 'Yellow Triplet Area'. | 0 / 30 |
| | Mission 9 | Two 'Red Beat' <u>partially entered</u> the 'Red Quarter Note Area' respectively. | 0 / 10 / 20 |
| | Mission 10 | Two 'Red Beat' <u>partially entered</u> the 'Red Sixteenth Note Area'. | 0 / 20 |
| | Mission 11 | Two 'Red Beat' and one 'Ensemble Beat' <u>partially entered</u> the 'Red Triplet Area'. | 0 / 30 |
| | Mission 12 | A 'Music Beat' placed on top of each 'Metronome' respectively | 0 / 10 / 20 |
| Total score (Maximum marks is 210) | | | ____ marks |
| Completion time (Time limit is 120 seconds) | | | __:__:__ |



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D. Game Rules

D1. The size of the robot should be within 25 cm (L) x 25 cm (W) x 25 cm (H), but there are no limits after the game has started.

D2. The electronic components (including motors, sensors and microcomputer controllers) used to build the robot must be from LEGO® and Hitechic products.

D3. Only one microcomputer controller can be used for each participating robot. (SPIKE™ Prime, Robot Inventor, EV3 or NXT)

D4. SPIKE™ Prime or Robot Inventor can only use official rechargeable batteries, while EV3 and NXT can also use lithium batteries with a maximum voltage of 1.5V per battery (with a total voltage not exceeding 9V). The referee has the right to ask the contestants to turn on the microcomputer controller and check it.

D5. The parts for building the robot must be strictly LEGO® parts, and other building materials such as glue, tape, screws, etc. must not be used.

D6. The control program must be written by LEGO® MINDSTORMS® Robot Inventor, LEGO® SPIKE Prime, LEGO® classroom, LEGO® MINDSTORMS™ EV3, LEGO® MINDSTORMS™ NXT or ROBO LAB software.

D7. Robots must operate automatically and cannot be operated by remote control.



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D. Game Rules

D8. Participating teams can bring pre-built robots for the tournament.

D9. If the referee finds a robot that does not meet the specifications at any time, the team must modify the offending parts within 1 minute. If teams do not meet the requirements within the time limit, they will not be allowed to participate in the existing round.

D10. Only two robots can be used in each round of the tournament. Teams can use different robots in the next round of the tournament, but it is strictly forbidden for different teams to exchange robots or parts. Once violations are found, the relevant teams will be disqualified.

D11. On the day of the competition, there will be testing time, inspection time, preparation time, and competition time.

D12. After each round of testing time, no program can be loaded from the computer to the robot.

D13. The robot must shut down, turn off WIFI and Bluetooth during the inspection time. (WIFI and Bluetooth must be turned off during the competition time.)

D14. The preparation time is one minute. Participants can turn on and adjust the robot but cannot start any programs.

D15. The robot is not allowed to input data in any form before starting. If any violation is found, the relevant team will be disqualified from the competition, and the results will be recorded as zero points and 120 seconds.



D. Game Rules

D16. After the start of each round, if any parts of the robot accidentally fall off, the referee will not remove them and will not return them to the contestants until the end of the competition.

D17. After the start of each round, it is not allowed to reassemble all the components of the robot or replace parts and batteries, and it is not allowed to suspend the tournament.

D18. All teams are not allowed to bring the game field to the venue for practice. The organizer will provide testing time for all teams, and each testing time session is limited to two minutes.

D19. Participants must bring their robots to lineup ; otherwise, the simulation will be canceled, and they will need to line up again.

D20. After the game starts, if the participating member interferes with the game in any way, the round will be regarded as 0 point and recorded according to the competition time limit; if the contestant is influenced by others, the referee will judge whether to rematch.

D21. Teams are strictly prohibited from interfering with their opponents in any way, otherwise, they will be disqualified immediately.

D22. If there are any special circumstances, all decisions shall be made based on the decision of the chief referee, and no objections will be permitted.





















D23. The minimum score recorded is 0 point, and there will be no negative points. The highest time recorded will be the competition time limit.

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D. Game Rules

D24. There is no limit to the number of motors and sensors that can be used. The types that can be used are as follows :

| | | | | |
|--|---|---|---|---|
|  |  |  |  |  |
| 9842-NXT Motor | 9843-NXT Touch Sensor | 9844-NXT Light Sensor | 9845-NXT Sound Sensor | 9846-NXT Ultrasonic Sensor |
|  |  |  |  |  |
| 9694-NXT Color Sensor | 45502-EV3 Large Motor | 45503-EV3 Medium Motor | 45504-EV3 Ultrasonic Sensor | 45505-EV3 Gyro Sensor |
|  |  |  |  |  |
| 45506-EV3 Color Sensor | 45507-EV3 Touch Sensor | HiTechnic-NXT Color Sensor V2 | 45602-SPIKE Large Motor | 45603-SPIKE Medium Motor |
|  |  |  |  |  |
| 45606-SPIKE Force Sensor | 45604-SPIKE Ultrasonic Sensor | 45605-SPIKE Color Sensor | 88017-Inventor Large Motor | 88018-Inventor Medium Motor |

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E. Other Rules

Responsibility of the Parties

E1. In the tournament, the referee has the final decision.

E2. Any objections to the decision of the referee will be warned. If participants continue to argue, the team will be immediately disqualified from the tournament.

E3. After the game, participants from each team need 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 abilities of robots that everyone agrees on in the tournament, the rules can only be changed with the consent of the chief referee.

Inspection of Robots

E7. If the robot is modified during the game, the referee may ask the robot to check again.

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



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E. Other Rules

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

E10. If the robot cannot comply with all the regulations (and cannot comply after the amendment), the existing round will be disqualified. (The qualification will not be canceled.)

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.

Rule's Content

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 > Sonic Strider Relay Mission Junior Category Rules.



F. Competition System

F1. During the tournament, each team will have three rounds, and the score and time of each round will be recorded.

F2. The scores of the three rounds for each team will be sorted from high to low. If the scores are the same, the team with the shorter completion time will be sorted first.

F3. Teams will be ranked according to their highest scores. If the scores are the same, the team with the shorter completion time will be ranked higher.

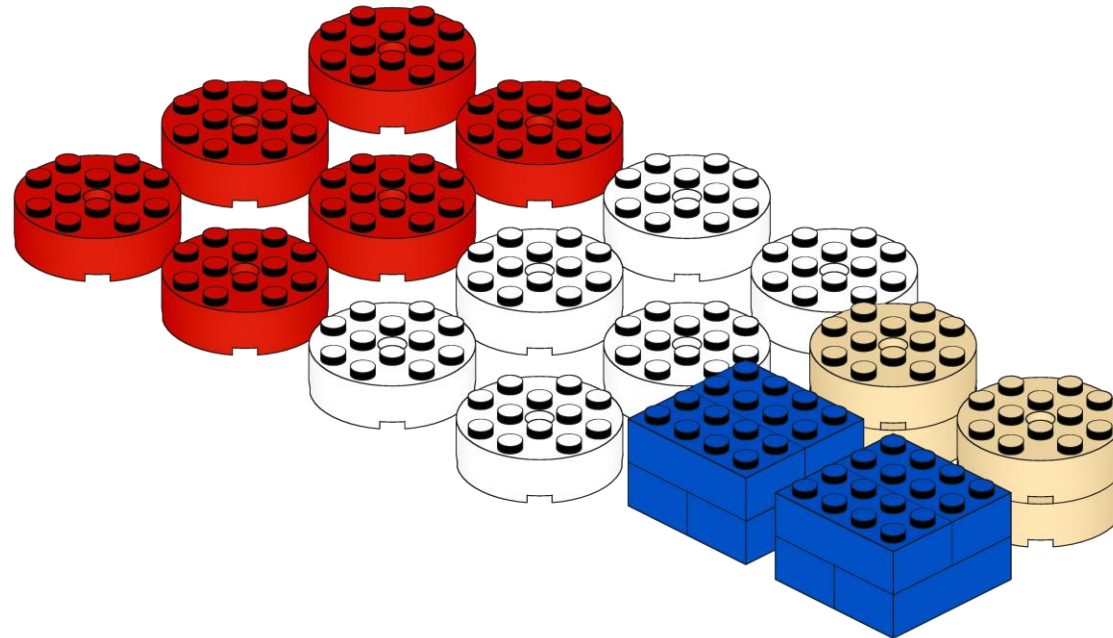
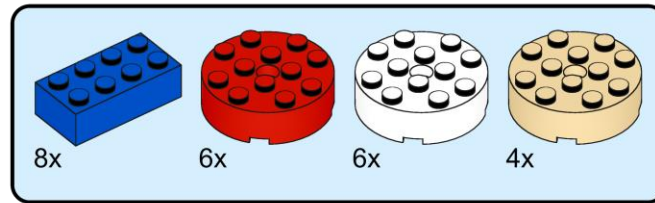
F4. If the scores and times of the teams are the identical, the best scores and times from the next round will be compared.

Sonic Strider Relay Mission
Junior Category
Game Description, Rules and Scoring



G. Assembly Of Game Objects

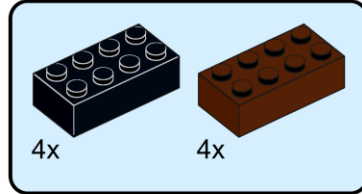
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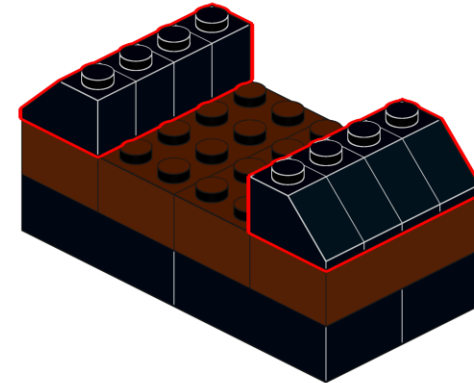
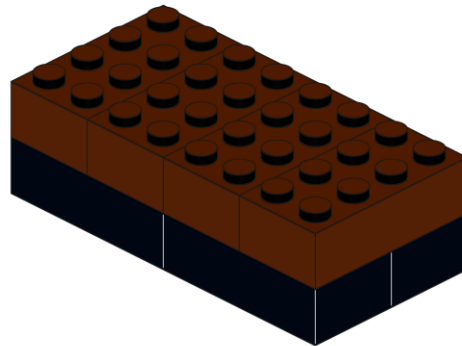


G. Assembly Of Game Objects

2



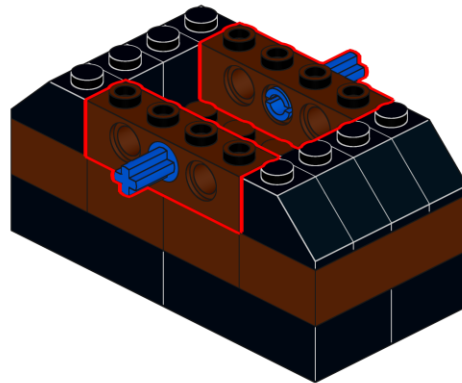
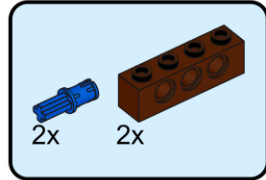
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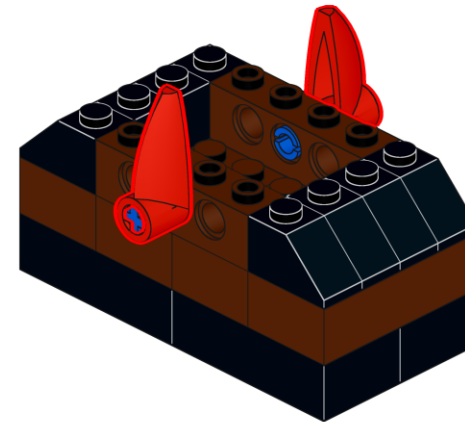
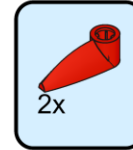


G. Assembly Of Game Objects

4



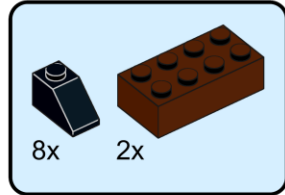
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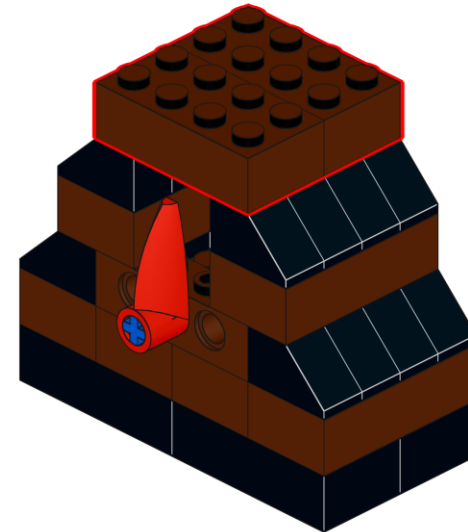
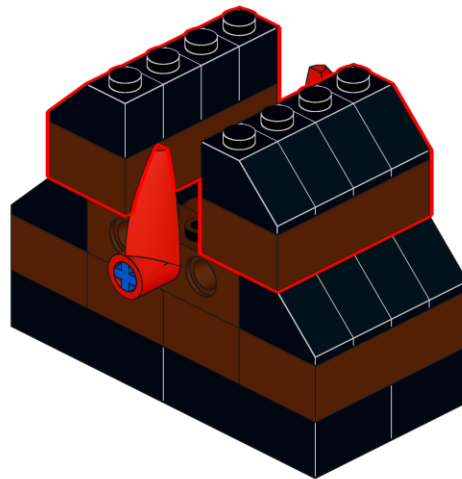
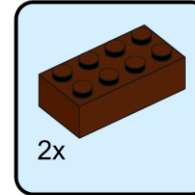


G. Assembly Of Game Objects

6



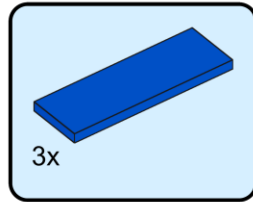
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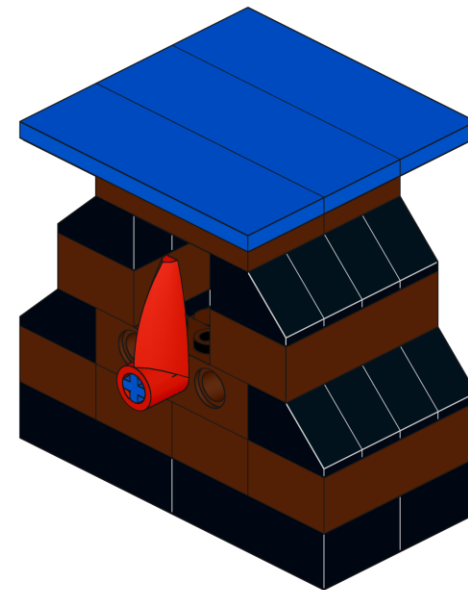
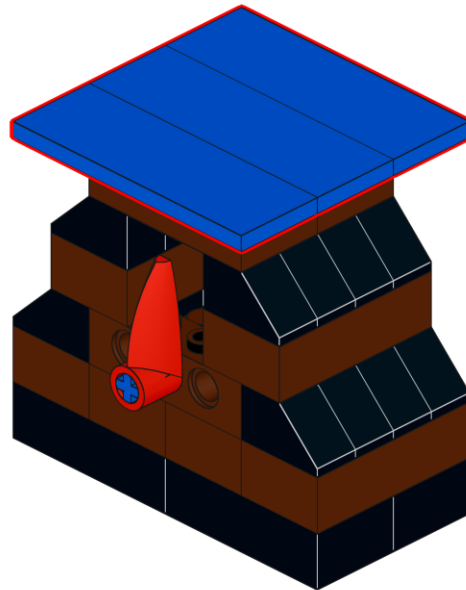


G. Assembly Of Game Objects

8



9



x2