

6/1/16

2016 MS Training Session 1
Question and Answers from Chat

General Questions:

Q1: Where are directions for making paper SPHERES?

A: Directions and image can be found here

<http://static.zerorobotics.mit.edu/docs/ms/PaperSPHERE.pdf>

<http://static.zerorobotics.mit.edu/docs/ms/MakeYourOwnSPHERE.pdf>

These are also referenced from the educator guide and are available in the student materials week 1-06.

Q2: Are you going to email us a copy of the recording session plz?

A: We will make a recording available on the website.

Q3: Will the chat questions be posted after the training too?

A: Yes -See Training materials tab on the Middle School Tournament Page.

Q4: Are student teams able to compete against each other prior to the competitions

A: Students can compete against their own team mates or against standard players. Here is a link to a document that describes intramural competitions.

<http://static.zerorobotics.mit.edu/docs/ms/IntramuralGameMode.pdf>

All teams within a state will also have a chance to compete against each other in the practice competition and the Regional competition.

Q5: Can you show us how to get to the list of tutorials....really fast please!

A: The list of tutorials is available in 2 places.

1) linked from page 6 of the Educator Guide.

2) On the Middle School Curriculum Page. Go to Resources> Middle School Curriculum> Look at the bottom of the Student Materials section for the Programming Tutorials Index Link. (Which opens to this page: <http://zerorobotics.mit.edu/ms/tutorials/>)

Q6: Where do we find the survey:

A: <http://2016zrms-postpd.questionpro.com>

Also available on the middle school Tournament page -under the evaluation surveys tab :

<http://zerorobotics.mit.edu/tournaments/22/info/112/0/>

Q7: Is Internet Explorer supported?

A: Internet Explorer is not recommended. We suggest using Firefox or Chrome.

Math/Coding Questions

Q8: Will we always be in FREE MODE???? even for the students, and everyone..

A: FREE MODE is used for the tutorials. Your students will learn in Free Mode and then go to the game mode to program for the competition. See tutorial here about game mode:

<http://static.zerorobotics.mit.edu/docs/ms/IntroGameMode.pdf>

This year's game has not been posted (as of the first webinar).

Q9: The loop() is executed once per second. Is this on a set timer, and if so, what happens when the previous execution doesn't finish? Is it terminated, does it skip, or does it wait?

A: To give an example. If the SPHERE is moving to one position but doesn't have enough time to reach that position before it is commanded to a new position- it will redirect to the new position.

This tutorial helps show this:

<http://static.zerorobotics.mit.edu/docs/ms/HintsSPHERESDynamic.s.pdf>

Q10: What is the init section of the global variables block do ?(See the loop on the init page)

A: MS students will not use this slot in their programs. This is not used in/covered by the middle school curriculum. (The "init" block of the "init" page (below "global variables") is used to run functions only once at the start of the game - this is usually used if students create their own functions (Note that this does not apply to the procedural functions which are introduced later in the middle school curriculum))

Q11: Is there a way to say, If I'm at (0,0), then go to position B?

A: Yes, This tutorial gives an example of this:

<http://static.zerorobotics.mit.edu/docs/ms/AppliedConditionals.pdf>

Q12: Are there any other variables that can dictate changing positions?

A: getMyZRState described above is one example. Game functions used in conditional statement is another. For example you could use a conditional statement to say if my energy is less than 2 then setPositionTarget to a new position target.

Q13: Will the counter increment correspond to 1 sec in actual game?

A: Since the code is read once per second, the counter will increment each time the code is read.

Q14: If someone names counter as N how it will be know that means counter?

A: If the code increments N every time the loop is read it will be treated like a counter.

Q15: Do the kids program velocity

A: For middle school students will only use the setPositionTarget function to control translational movement. The setVelocity Target function is not used in MS program.

2016 MS Game Questions

Q16: What is the link to the website shown in the LEO video?

A: <http://apps.agi.com/SatelliteViewer/> This is also provided on the Game documents tab of the Middle School Tournament Page: <http://zerorobotics.mit.edu/tournaments/22/info/116/0/>

Q17: Where is the link to the Game intro video?

A: <http://zerorobotics.mit.edu/tournaments/22/info/116/0/>

Q18: Are there penalties for going out of bounds? //

A: If you go out of bounds in the dark zone and are out of fuel you will be stuck out of bounds. However, if you go out of bounds because you are out of energy (and still have fuel) then once the light switches your SPHERE will regain energy and be able to move back in bounds.

Q19: What happens when you are in the dark zone and out of energy?

A: When you are in the dark zone and run out of energy you will drift in the direction of your last motion. For example if you were moving in the direction of the edge of the game --you will go out of bounds-- and will be stuck there until the light changes--if you were moving toward the light Zone before you ran out of energy you would drift in a straight line into the light zone and then regain energy as soon as you enter the light zone (drift one step for each step in the increment). If you were not moving just prior (For example you did not plan any steps but just planned to stay in place and ran out of energy because you took a picture-- you will stay in that place until the light switches.)

Q20: How much time will you have before sides switch from dark to light?

A: In the actual game the light and dark zones switch at 60 seconds and 150 seconds into the game.

Q21: What happens if SPHERES occupy the same coordinate at the same time?

A: With the actual hardware--There are collision avoidance algorithms that take over to prevent collision. The SPHERES that is moving faster will be deflected more than a slower moving SPHERES during collision avoidance. A stationary SPHERE will experience very little deflection. (If this scenario occurs in "acting out the game" it is only significant if two people arrive to pick up an item at the exact same time: neither will be able to take the item.)

Q22: How long does the "mirror" last?

A: Mirror for the "acting out the game activity" it lasts for 6 steps (CORRECTED answer). in the actual game it is activated for 24 seconds

Q23: Can you pick up both mirrors?

A: Yes

Q24: Is there an energy cost in changing attitudes?

A:

In the actual game all motion translational or rotational costs energy. To maneuver the satellite, 0.15 virtual energy is used per 1 second of fuel used.

For the purposes of acting out the game--just assume that any "step" costs energy when the student is in the dark zone so if you take a step to change your pointing direction then it would cost 1 energy.

Q25: How fast do you lose energy in the dark?

A: Energy is only lost if the SPHERES is in motion or is taking a picture. For the "acting out the game" the energy loss in the dark is related to the movement of the SPHERES and picture taking so in the acting out the game activity each step you lose one energy and each picture you lose 1 energy

Q26: How fast do you regain energy in the light?

A: In the "acting out the game" you regain full energy immediately upon reentering the light.

Q27: If the SPHERE is midway between light and dark are you considered in the light or dark?

A: For acting out the game -- use your best judgement. In the actual game the location of the center of the SPHERE determines if the SPHERE is in the light or the dark

Q28: What happens if there is a tie?

A: In the actual game, in the unlikely case of a tie the player closest to the origin (center of the map) wins.