Stellafane 2017

Curiosity rover work sheet.

You will start a new mission and give it a name. The name of your mission is _____. We have multiple rovers so each team will have their own rover. Your rover is _____. That mission will consist of several sequences of tasks. You will send a task list to the rover and it will execute the tasks. after each task on the list it will automatically read all the sensors and repair the readings. Once it completes its list of tasks you web browser will display all the results. Be patient, it takes a long time for your command list to get to mars, then the rover has to do all the things you ask and send a transmission back to you.

Rover commands:

Every command is a command word followed by a number

- **forward** (number of seconds)
- **reverse** (number of seconds)
- **left** (number of seconds)
- **right** (number of seconds)
- **nod** (number of steps, positive number are up, negative numbers are down)
- **arm** (position)
- **camera** (number of pictures) - high resolution pictures
- **cameraHS** (number of pictures) - high speed lower resolution images
- **cameraRF** (number of pictures) - high resolution with the laser ranger on
- **cameraRFHS** (number of pictures) Hi speed with he laster range finder on
- **cameraVid** (1 = start video, 0 = stop video, video will automatically stop at the end of the task list)
- **mast** (position)

Before your rover is launched to Mars, you should calibrate it:

1. How long does it take for your rover to go forward 1 meter? _____
2. How long does it take to turn your rover 90 degrees? _____
3. What is the fully stowed position of the mast?_____
4. What is the fully up position of the mast? _____
5. What is the fully stowed position of the arm?_____
6. What it the fully extended position of the arm?_____
7. How many steps of the camera nod control from fully down to fully up?_____
8. How many steps of the camera nod control from fully up to horizontal?_____
9. How many steps of the camera nod control from fully down to horizontal?_____
10. What is a good camera position to see the end of the arm?_____

Mission:

Your mission is to drive your rover to find all the letters that spell “C U R I O S I T Y”. You want to get as close as possible to each of the letters and take measurements a that letter. To avoid all the rovers being in the same place at the same time, different rovers will be landed near different letters. You mission will start with the letter _____, Once you get your picture and measurement of that letter, proceed to the next letter in sequence. Once you get to ‘Y' continue to C then the rest of the letters you need to spell “CURIOSITY”.