

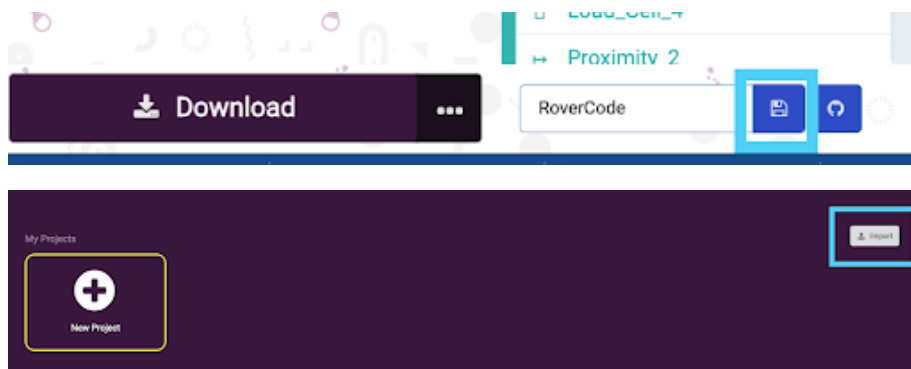


## Mission: Mars Final Steps

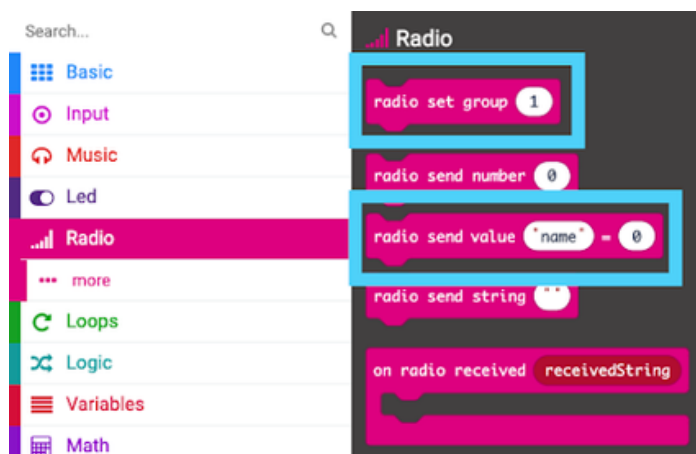
You've built your rover, you can drive it over WiFi to complete your missions, but how do you report that data back to our Mars base station for verification?

First, with all of the code we're packing onto these micro:bits and b.Boards for these missions, some have run into a bit of memory trouble. To fix it, we are asking that you use [code-alpha.brilliantlabs.ca](https://code-alpha.brilliantlabs.ca) for your rover code if you find you're getting a compilation error.

You can save your code and import it on the new IDE as shown below:



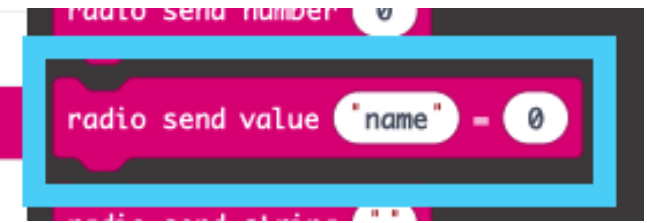
Once you're up and running on [code-alpha.brilliantlabs.ca](https://code-alpha.brilliantlabs.ca), it's time to get your rover to communicate with the base station using the radio blocks. To find the radio blocks, look in the Radio toolbox as shown below:



Put the 'radio set group' into your 'on start' block and set it to 142.



Now every time you want to report your results from a mission, use the 'radio send value \_\_ = 0' block and be sure to put the exact name as specified at the end of this guide for each mission.



To help you control when to gather and send mission data, we suggest adding more button widgets on cloud-alpha.brilliantlabs.ca to trigger when to send the results of a mission.



Below is an example of how you might drive your rover while at the same time listening for numbers '5' and '6' for reporting the humidity and seismic activity values:

```
on start
  radio set group 142
  connect to ssid "MissionMars" with password "Rover2021"
  show icon [grid icon]
  BL MQTT connect with API Key "88a6a3c5-0346-4e53-a735-d721d9e01b3d"
  show icon [grid icon]
  BL MQTT subscribe to feed "RoverController"
  show icon [smiley face icon]
  set Weather2 to b.board Clickboard A
```

```
on BL Cloud MQTT message received receivedData2 from feed "RoverController"
  if <receivedData2 = 0> then
    set left motor speed to 0 %
    set right motor speed to 0 %
  +
  if <receivedData2 = 1> then
    set left motor speed to 100 %
    set right motor speed to 100 %
  +
  if <receivedData2 = 2> then
    set left motor speed to -100 %
    set right motor speed to 100 %
  +
  if <receivedData2 = 3> then
    set left motor speed to 100 %
    set right motor speed to -100 %
  +
  if <receivedData2 = 4> then
    set left motor speed to -100 %
    set right motor speed to -100 %
  +
  if <receivedData2 = 5> then
    radio send value "Humidity" = Weather2 humidity
  +
  if <receivedData2 = 6> then
    radio send value "Vibration" = acceleration (mg) strength
  +
```

'Humidity'



'Vibration'



## Final Notes:

When your rover is complete, please send it along with any unused materials by June 18th to:



Make sure you've set your WiFi SSID=MissionMars and Password=Rover2021 to our network as specified in the WiFi guide before sending!

### Join the Mission: Mars Challenge!

Are you on track to complete your Mission: Mars Rover by early May? If so, Brilliant Labs welcomes you to visit or mail your rover to 1 of 5 in-person Provincial School Maker Faires or the Atlantic Virtual Mission: Mars Challenge (June 2nd). This is your chance to showcase your work and participate in up to 10 mission challenges. Each challenge, when completed successfully, will earn points and badges. The Mission: Mars student engineers with the most points will win the Mission: Mars Challenge Showcase!

### Download, Register & Book Today!

Get the Mission: Mars Challenge Guide to learn more about what to expect and how the points will be awarded. Plus, don't forget to register and book your Mission Challenge(s) at [Brilliantlabs.ca/innovation-challenge/missionmars](https://brilliantlabs.ca/innovation-challenge/missionmars) (winners will be announced at the June 9th Atlantic Virtual School Maker Faire). Join the challenge and explore Maker Mars!

