ScRATCH **Mars Rover**

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https://scratch.mit.edu
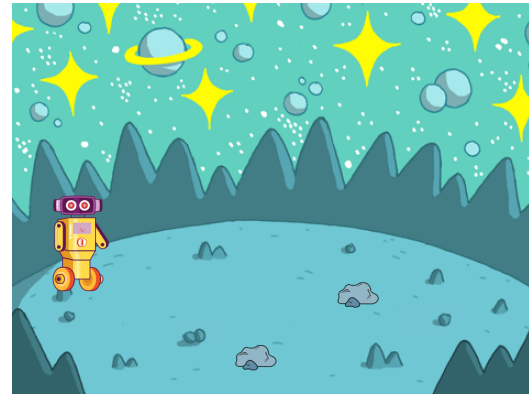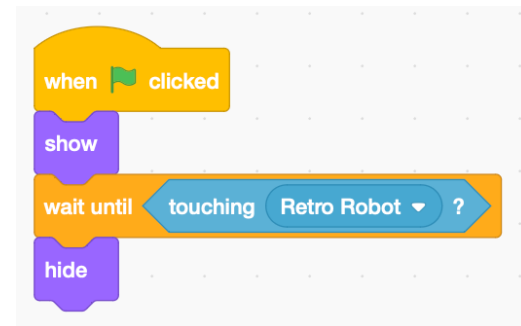
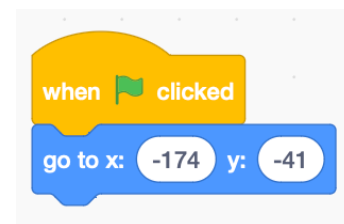*Make the Mars rover collect rocks using a string of letters for directions.*

1) Choose a robot **sprite,** a suitable planet **background**, and a rock **sprite**.

2) When the robot touches a rock, it picks it up (hides it).
Add this code to the rock.

```
when ⚑ clicked
show
wait until  touching  Retro Robot ▾  ?
hide
```
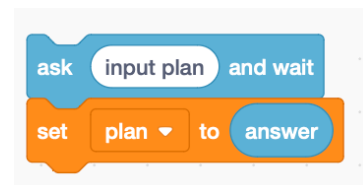
Clicking the green flag shows the rocks and places the rover at the start position.

3) Place the robot at a suitable start position, add the **start block** and **go to x,y** to the robot. The x,y position is where you placed the robot.
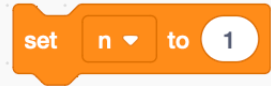
```
when ⚑ clicked
go to x: -174  y: -41
```

*The plan is a list of directions to move the robot **u** (up) **d** (down) **l** (left) **r** (right).*
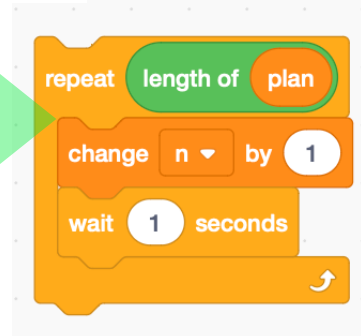
```
ask  input plan  and wait
set  plan ▾  to  answer
```

4) **Make a Variable** called **plan** for the robot plan.

5) Add robot code to **ask** for the input plan and **set plan to the answer**.

Input a plan like "dddddddrrrrruuuuurrrrr" to move the robot and collect rocks. Use a loop to step through the letters.

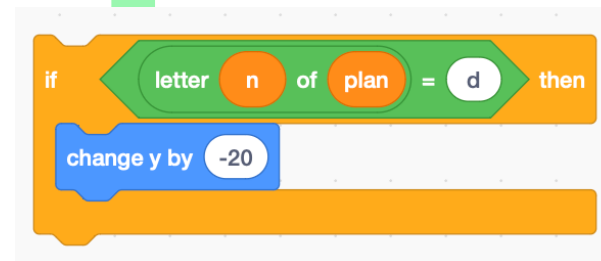6) **Set** loop variable **n to 1**, for the first List item.

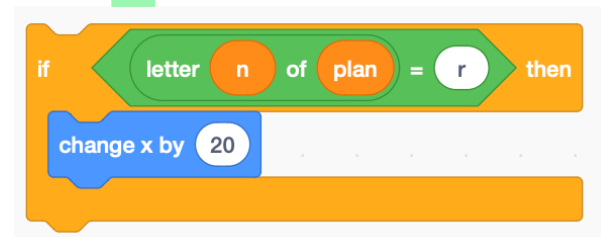7) Add a loop that **repeats** for the **length of** the **plan**.

8) Inside the repeat loop, **change n by 1** each time around, and **wait** a second.

9) The **first** thing it should do **inside** the loop (before **change n**) is move the robot in the direction given by **letter n of the plan**. **If** this is **equal(=)** to **d** then **change y** negatively to move down.

10) Check for **r** (right) and **change x** positively **if** it finds it.

*Run your code with the **green flag**,*
***d** and **r** might be enough to collect one rock.*

Duplicate the rock.
*Do you need to add code for **u** (change y positively) or **l** (change x negatively) instructions now?*

*Save your code with a good name. **File > Save now***