

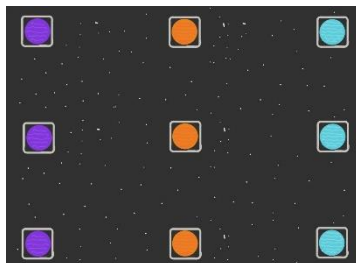
The universe is out of control! Only YOU can help!

Nothing is as it should be. In three separate galaxies, all in the **Rise Above Galaxy Cluster**, the planets have shifted out of their solar systems! The only way to get things back to how they should be is with your help!

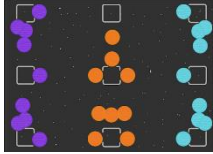
You, a member of NASA, and your team were chosen to fix the universe. You must build a **spacecraft** with the ability to move the **planets**, then use it to put them back where they are supposed to be, while meeting a set of **constraints for your spacecraft**. The planets are sorted not only into solar systems, but into galaxies, so you must replace any given planet to its **solar system** as well as its **galaxy**. You must complete this mission before it is too late, **before either the universe destroys itself** due to the instability, or **before the planets reach their destination**.

We, at NASA, have found that some sort of gravity well is pulling planets out of their orbit. We aren't yet sure what this would entail for your team, so you will need to be careful on your mission with your spacecraft.

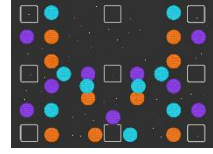
The gravity well seems to be a recent development in the universe, which means that, based on how far they have already gone, it is very strong and the planets will continue to move quickly. This means you will only have a short amount of time before you will have to return your spacecraft to the **space station**. Although you will only be able to leave for 60 seconds at a time, you will be able to fly out several times. Between each attempt, though, the gravity well will have pulled the planets back out to where they were before you moved them.



The planets are all scattered, so you must decide where the correct solar system is for each one. There are three (3) galaxies in the Rise Above Galaxy Cluster: the Purple Galaxy, the Orange Galaxy, and the Teal Galaxy. Three (3) stars from each galaxy have planets, and all of these planets are scattered, pulled out of their orbits by this mysterious gravity well.

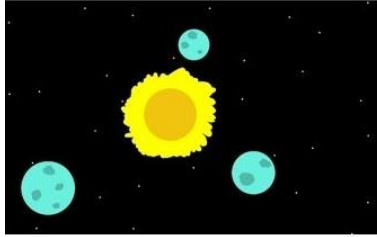


Beginning at the **space station**, you and a partner from your team (during a skills match), or you and your partner working with two members of a second team (during a teamwork match), will work to get as many planets back into



their solar systems and galaxies. This can be done by controlling the spacecraft manually, autonomously using a pre-made program, or a combination of each.

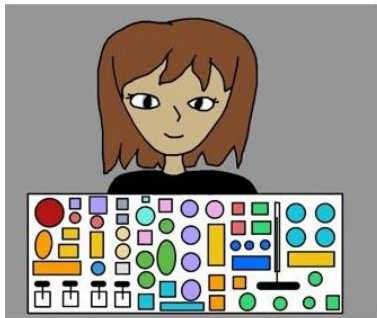
As the gravity well will continue to pull on the galaxies after they are **secured**, your mission is not to solve the problem completely. Your mission is to create a temporary solution to hold the planets together long enough for us, at NASA, to learn more about this unnatural occurrence and find a true, permanent solution. Until then, good luck.



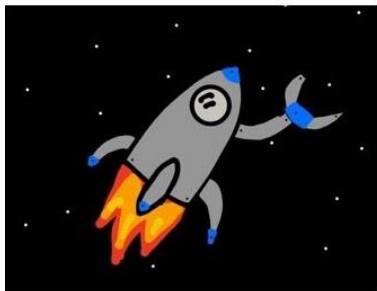
The Rise Above Galaxy Cluster. It was huge, but only three of its galaxies had planets. The Orange Galaxy had three stars with planets circling them, three planets each. The Purple Galaxy, with the same, and finally, the Teal Galaxy, again with three planets per star and three stars with planets. For millennium this was true. Until, one day, NASA noticed something that would change everything....



The planets in the Rise Above Galaxy Cluster were not where they should be. That was what NASA noticed first, on that fateful day. Some kind of shift in gravity's pull on the planets, they said. Enough mass to pull the planets, but not enough to pull the stars. Gravity well became a word used far too often. A gravity well, unnatural, maybe even a black hole, pulling the planets away from their orbits. The clock began to tick, even though no one knew what would come first: the instability destroying the universe, or the planets reaching the gravity well.



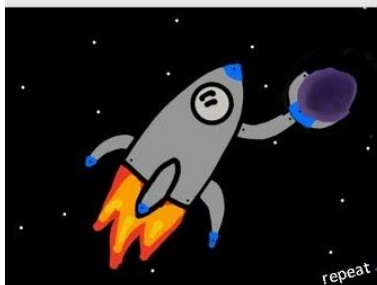
Just after the gravity well was discovered, NASA issued the mission Rise Above, assigning you and your team to create a spacecraft that could move the planets back to where they should be. It wasn't intended to be a permanent solution, as the gravity well would keep pulling on the planets, but it was intended to give NASA time to research the gravity well, and take it out of the equation.



As no one knew how fast the gravity well would pull the planets, or what hidden dangers it held, NASA made a plan to try to ensure your safety on the mission. You would go out in 60 second bursts. On each burst, you will have the choice between manually flying the spacecraft, running it autonomously using a premade program, or a mix of each. You will be running the spacecraft with two members of your team, and for some bursts, there will be another spacecraft working with you from another NASA team.



Once the 60 seconds are up, you will return your spacecraft to the space station near the galaxy cluster, for your own safety.



However, once it is certain there is no added dangers, you will be able to set off again for another 60 second burst. Of course, the planets will have moved back out again, due to the gravity well, so you will have to start over moving them back. You will have several chances to push the planets back, some with another team, some with just two representatives of your own.

GOOD LUCK

GLOSSARY

Rise Above Galaxy Cluster: *field and field elements*

Spacecraft: *robot*

Planets: *risers*

Spacecraft constraints: *robot size rules*

Solar systems: *goals*

Galaxies: *rows*

Destruction of the universe/planets reaching the gravity well: *one (1) minute timer*

Space station: *starting position*

Secure: *score*

CREDITS

Mission Rise Above

Team: *4606M*

Members: *Mina, Paela, Aderyn*

Header Photo: *Mittermeier, Felix. "Photo by Felix Mittermeier on Unsplash." Beautiful Free Images & Pictures, 8 June 2018, unsplash.com/photos/ihbqhut19x4.*