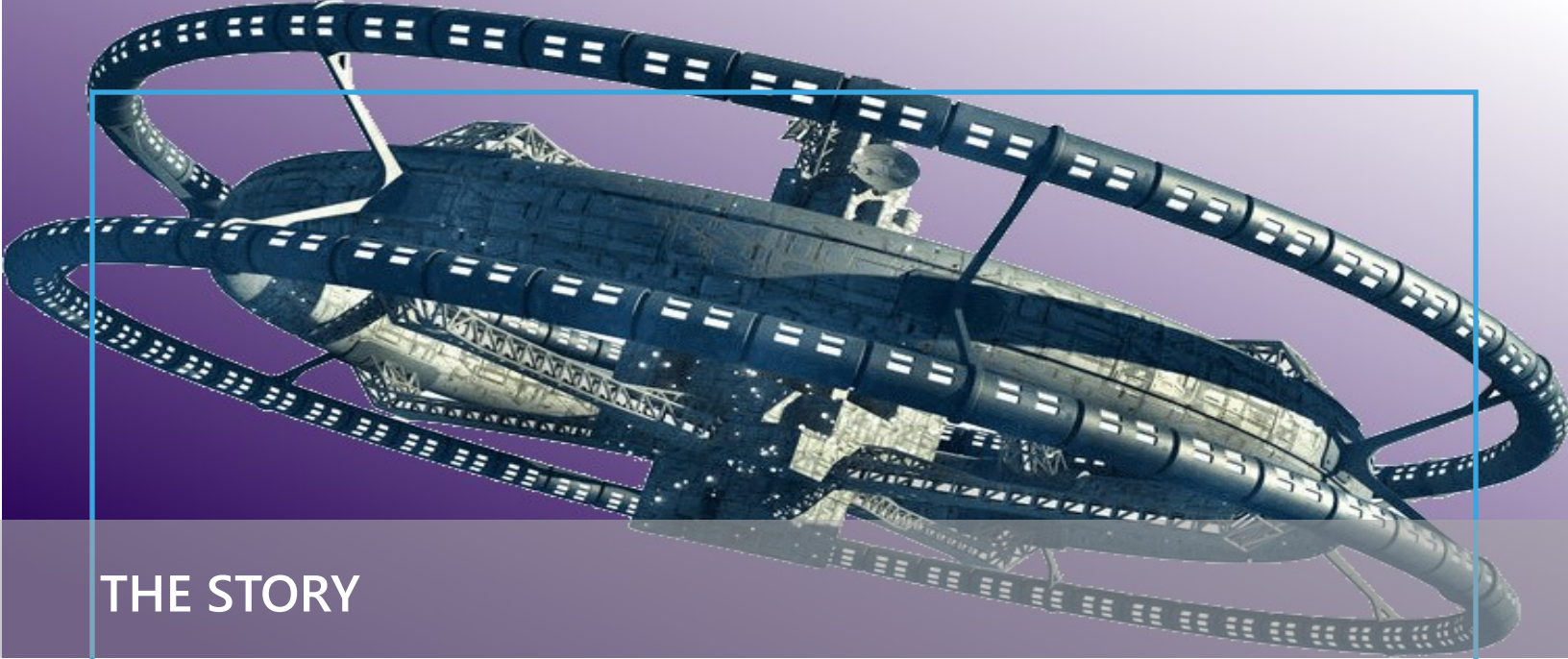


MATH ADVENTURE KIT

Star Base
Alpha

STORY
OVERVIEW



THE STORY

Math Adventure: Star Base Alpha, follows the activities of a crew team on an interplanetary space station. As part of the crew, teams will need to help out when things break, go on missions to planet surfaces, and interact with visitors to the station.

Unlike some other Math Adventures, which are set up as a mystery, this story does not have a bad guy, nor a central quest. Instead, think of this as a situation comedy, dealing with the odd things that can happen in outer space.

In this sit-com metaphor, there are four episodes, called stations. In each one, the teams is sent to help out on an important tasks. Each station has a dramatically different story, and is fun for different reasons.

In one, there has been a mishap with the main reactor powering the base. Apparently, a clumsy worker has knocked down the stack of fuel rods. The team will need to rebuild a pyramid structure, using robot arms instead of their hands. This is primarily a dexterity challenge.

In a second station, an ship with alien space travelers has come to visit. They are friendly, and love to trade. Indeed, our scientists are keen to get a new kind of rocket that they have. The problem is, the aliens don't speak our language. In fact, they don't speak at all, but rather they communicate through gestures. Teams will need to learn to dance and do other gesture motions, in order to describe what we want, and to understand what the aliens want in return. While physical, this challenge is actually more mental, as students will need to think about how to communicate without words, and will need to focus to understand the aliens' responses.

A third station calls the teams in to help dock a cargo ship, delivering supplies. The automatic docking system is broken, so the students will need to guide the blind docking arms to meet together, from their view in a nearby window. The blind docking arms are in turn driven by team members, who cannot see. Like with the aliens, this is partly a communication challenge. But add to that strategy, almost like programming a computer, to give accurate driving instructions to their team mates. Finally, it will be thrilling to be the blind drivers, navigating outer space without their sense of sight.



THE STORY

The final station takes the students to the surface of Mars, where they are mining for valuable minerals. They've brought with them some sensors, but unfortunately, those sensors aren't very accurate. They can only tell which sensor on the team gets the strongest reading, turning the activity into an unusual variation of "hotter and colder". The twist is that the landing party is not alone. There are also cute aliens, roaming the surface, and curious what the team is up to. What do the alien critters want? This station has a small dose of scariness, combined with a sugary reward.

While different stations may play to different strengths: dexterity, strategy, team work, and such, they all have a strong funny element. Sometimes they'll be laughing at each other (dropped "fuel rods" and mistaken driving directions). Other times they'll laugh with or at the actors (especially the alien critters and traders). All of the stations are equal parts silly and challenging.

THE STATION CIRCLE

The 4 stations described above may be undertaken in any order. For crowd control reasons, it is generally best to organize them into a circle, and then have different student teams start at different points on that circle. For example a team may start mining on Mars, and then move through the reactor repairs, the trading post, and end docking the cargo ship. Another team may start with docking, and then move on to mining, repairs, and end up trading. As long as all teams are moving through the circle in the same direction, each station will keep moderately busy throughout the event.

GIVEAWAYS AT EACH STATION

This event is intentionally light on giveaways. In fact, in only one of the four stories is a giveaway strongly suggested for the story to make sense. And even there, you could work around it. Conversely, extra giveaways or treats are always easy to add, for a school that wants to.

The proposed giveaways are a glow-stick necklace from the reactor, a toy ring from the traders, candy from the cargo ship, and finally M&Ms (a.k.a. Mars Minerals) from mining Mars.

WRAP-UP STATION

While teams all start in unison, they will finish at different rates, depending on how well they do at the math puzzles, and whether they hit any traffic jams at the stations. There are no winners, and everyone is helped to finish. After each team finishes their last station, they get their own wrap-up meeting with the base commander. They can show off the trinkets they earned (they likely will already have eaten any treats). The commander will thank them for their invaluable service, and reward them with one last treat at the end. We recommend "Moon Pies".

Make math fun for your school!

Math Adventure

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