

**MATH
ADVENTURE
KIT**

**Star Base
Alpha**

Scripts &
Station Details
for the Opening Skit
and Wrap-up



STATION – SOLVING AREA

LOCATION

Most commonly in the school cafeteria, where each team gets their own table for 6 or so people — enough for all team members plus any coaches.

BACK STORY

Students are crew members of the Star Base Alpha—an interplanetary space station. Their duties range from basic repairs, to exploring alien planets, and interacting with visitors to the station.

SUPPLY LIST

- Initial puzzles – one per team,
 - Each of these should have a title sheet, with team numbers written in the corner.
 - Unless the event is very small, the initial puzzles should be an even mix of each of the four puzzle types. Different teams start with different puzzles.
 - The initial puzzles should be sorted by table number for quick handout
- Extra puzzles – in case teams want to change level, or need a fresh copy.
 - Keep these separate from the initial puzzles.
- Extra math supplies – pencils, rulers, scratch paper, pencil sharpener
- Team check in list with table assignments – a few copies
- Table numbers – either place cards, or a copy of the check-in list, sliced up
- Masking tape – for table labels and hanging up team lists
- Volunteer list – where is each volunteer assigned to work?
- Puzzle answer cheat sheets – for math mentors to carry in their pocket
- Costumes for opening skit and wrap-up (such as hats with a space theme)



STATION – SOLVING AREA

- Treats to give out at the end
- Signs – to Base Commander
- Microphone – if sound amplification is available
- Water for actors – they talk a lot, and get thirsty

COSTUME SUGGESTIONS

The base commander and his staff should be recognizable at a distance. A distinct hat—especially one with an astronaut or out space theme—tends to work perfectly. This goes for any volunteers working as math mentors.

AREA SETUP

- If you need to move anything, take a picture of it first. This will help you return everything back to where you found it.
- If you're in a cafeteria, put down tables, and spread them out as much as possible. Make sure to think about teams leaving their tables, and running off. Create corridors for everyone to get in and out.
- Identify an area for the opening skit. A stage is ideal, if one is handy. If not, find a clearing among the tables.
- Post team lists in a prominent place by the entrance. For crowded events, post a few copies of the lists. The lists should assign each team to a table.
- Number the tables. One trick is to take a copy of the team list, and cut out each team's row into its own strip. Tape the strips onto the tables.
- If you have spare supplies of pencils and the like, place them prominently.
- Organize each team's starting puzzle into a stack, sorted by table number. This way, when it's time to start, they are easiest to hand out quickly.
- Identify where the Base Commander will sit, to congratulate teams at the end of the event. Reuse the stage, if you have one. Or pick a place just outside in the hallway. Label that place with a "Base Commander" sign, so teams can find it at the end of the event.



STATION – SOLVING AREA

TIMELINE

The following times are a handy guide. This example is based on a 6pm kickoff to a 2-hour event...

- 4:30 Supplies are delivered to the school.
Set up the solving area, including team names on tables, and a check-in list by the door. Some teams will show up earlier than expected, so it is important to be ready for them.
- 5:00 Other event staff set up the other stations.
- 5:30 Teams arrive, along with actors.
Teams can find their table assignments on a posted list, and sit down.
Actors should check in with a volunteer coordinator.
- 5:30 to 6 Teams can eat dinner at their stations.
Actors are taken to their stations, where they practice with each other.
- 6:00 Welcome speech and Opening skit.
- 6:02 Hand out the first set of puzzles.
- 6:20 Most teams have solved their first puzzles, and headed off to the stations.
Stations often experience an initial traffic jam, which gets better for the remainder of the.
- 6:30 Most teams are back in the solving area, working on their second puzzles. Between different speeds solving puzzles, and potentially backlogs at the stations, team speeds will start to spread out.
- 7:00 Most teams should have started their 3rd puzzle. Any teams who haven't should be offered help. If you have spares printed, struggling teams should drop a difficulty level in puzzles.
- 7:15 The fastest teams will be approaching the finish. Set up a table for the wrap-up activity and make sure the "Base Commander" is on hand to lead it.
- 7:30 Most teams should have started their 4th puzzle. Any teams who haven't should be offered help, and/or drop to an easier puzzle difficulty.
- 7:50 All teams should have finished their puzzles. Most teams will be completely done. Some will still be at stations, doing the last stories. Any team still solving should be offered substantial help.
- 8:00 All teams should be done, and have cleaned up their solving areas.
Send a runner around to the stations, confirming that no more teams are coming, and that they may pack up — or not, if a straggling team is still coming.

STATION – SOLVING AREA – OPENING SKIT

SKIT CHARACTERS

Event Lead – Welcomes everyone, and explains the rules of the event

Base Commander – Gives teams their mission in the opening skit, and meets them again at the end

Base XO – Assist the commander in the skit

WELCOME SPEECH

Event Lead: Hello! Welcome to our production of Math Adventure: “Star Base Alpha”! We’ll be starting shortly, but I wanted to quickly recap the ground rules...

Math Adventure is about having fun. This is NOT a competitive event. If at any time, you're not having fun trying to solve the math puzzles your team has, find a math mentor, who can help.

Point out any mentors — volunteers who circulate among the teams in the solving area throughout the event, helping any teams in need.

Event Lead: We have math supplies for you, including extra pencils, rulers, etc.

Point out where these are available.

Event Lead: Respect the school! Make sure to obey the usual school rules, and in particular, to clean up any messes. This also means no littering in the hallways.

Here's how tonight will work:

- Each team will solve a packet of math puzzles.
- When you put the solved puzzles together in page order, if they have been solved correctly, they will spell out a secret phrase.
- If they spell out gibberish, check the answer page for clues what the answer should look like, then please re-check your math, or ask for help from a math mentor. Your coach can even use their phone to check the QR code on the puzzle for a hint.
- Once you have the answer, write it on the cover sheet, and take that with you to the matching station. There are signs throughout the school to lead the way.

Point out the first signs, which should be posted at the exits of the solving areas.

- After each station, don't leave that station without getting your next puzzle! Bring that puzzle back here to solve it. Do this four times until you have finished the adventure.
- I believe the Base Commander is almost ready. They have some opening remarks, after which they'll hand out everyone's first puzzles.
- Good luck and have fun!!

STATION – SOLVING AREA – OPENING SKIT

OPENING SCRIPT

As the skit begins, have a helper or two on hand with each team's first puzzle. This stack should already be sorted by the teams' table number, to make sure each team gets the correct puzzle level. The last line of the skit instructs the helpers to hand these out. Do so as quickly as possible – teams will be chomping at the bit to get started.

Commander: Welcome to your first day of duty, crew! I'm sure you all thought you were signing up for glory and adventure. But of course, we run a tight ship here, so nothing ever goes wrong, and there's nothing to get excited about.

XO: That's what you said to the last crew. And then the hydraulic system went berserk, and all the toilets started pumping in reverse!

Commander: Well sure, that was not a great day. But the crew repaired things, and after a week of scrubbing and showers, I think things were back to normal.

XO: What about that mission to Io when the volcanic moon geysers started erupting all over the place?

Commander: Now why do you need to focus on the bad things? More than half the crew made it back alive!

XO: So maybe it'd be better to just tell this new crew that the important thing is they need to work as a team, and be prepared for anything that might go wrong.

Commander: Well ok. Maybe that is a more realistic attitude.

XO: *(responding to alarm on cell phone)* Oh my, sir, we have a code Zeta 13!! What is that, exactly?

Commander: Zeta 13!? Oh no. That's when everything goes crazy all at the same time. We have special instructions for handling this circumstance.

Officers, please hand out the mission briefings to the crews, so we can all get to work. Good luck everyone.

After the skit, the assistant and director are done until the wrap up activity. They may want to roam the solving area as math mentors. Or go around the school checking on stations. Every time you pass a team of students, be sure to give them words of encouragement, like a good boss.

STATION – SOLVING AREA – FINALE

WRAP-UP SCRIPT

Once teams finish their 4th puzzle, and have participated in the 4th theatric station, they should be told to take their collected satellite pieces, and make a final report to the Base Commander.

Hopefully, the commander has been milling about throughout the event, and will be easy to find when the first team is ready. At that point, he/she should go to the station/table marked Base Commander. If possible, an assistant should be on hand for crowd control, so that each team gets their own turn with the commander.

Assistant: (to teams arriving) Did you complete all 4 of today's missions? Great, the commander will want to hear all about them.

Commander: (to one team at a time) Hello Crew! How was duty today? Were you able to get everything back under control?

Team: *(are likely to recount their craziest adventure)*

Commander: Excellent work! Thank goodness you were on your toes, and worked together as a team!

I figured a hectic day like today calls for a special treat. The folks at Lunar Base Gamma sent over some of their famous Moon Pies!

(hand out one treat to each team member. If you have extra, share some with tag-along little siblings too)

Nice work, all of you. Alpha Base is lucky to have you. Good night!

TEAM MANAGEMENT

The end of the event starts as a trickle, as the very fastest teams will be done 70-90 minutes after they start. But as more and more teams finish, it will become a mob of teams, all looking to make their final report to the commander and get their treat.

The XO can set up near the commander, and take half of the teams.

If you have another helper, like a math mentor, it's nice to have them do crowd control, keeping teams back until the commander or XO is ready to take their report. They can also help the teams form a line, in the order they've arrived.

Keep an eye out for teams that return to the solving area finished, but unaware that they need to talk to the director. They may be waiting for a final closing skit. There isn't one.

STATION – SOLVING AREA

ANECDOTES FROM PAST EVENTS

Over the years, we've seen a number of things go sideways. If you have some spare time before the event, read on. You never know when one will happen.

Solving in parallel

Some teams don't realize they can/should solve the puzzle pages in parallel. The intent is to immediately divide up the packet, so each member of a four-person team gets one page. Then they can recombine the solved pages.

Stuck on a puzzle

Don't let teams stagnate on a puzzle. Each team should take no more than 20-25 minutes to solve a packet. A team that stalls on a puzzle too long not only grows frustrated, but runs the risk of running out of time later in the event. Offer them help, in whatever way they are receptive to — either a mentor can sit down and co-solve a puzzle, or someone who knows the correct math can simply fill in some blanks, or correct any mistakes.

QR Codes

If a team gets frustrated enough that it's no fun anymore, go ahead and throw in the towel. Each puzzle's cover sheet has a QR code in the bottom corner. Scan that with your phone, and it will take you to a web page with the fully-solved puzzle. Use that to check one student's math, or to jump straight to the answer.

Changing levels

Some teams have mis-judged their math preparedness. Even children who know what to do in the quiet of math class during the day, may forget it in the adrenaline-soaked zaniness of a Math Adventure. We strongly encourage printing out a few extra puzzles at every level, and offering any team that asks, to change levels. As a rule, it's easiest to change levels when picking up the next puzzle after participating in the story station. Teams can even go up to a harder level, if they want to.

Running out of time

It is more important that every team participate in all four story stations than they solve all four math puzzles. If time is running out, and story stations are at risk of closing down, considering swapping their puzzle for a much lower grade. While adults may think of this as a blow to their egos, in our experience, children never mind. After slogging through 3 other puzzles, they view of a final puzzle that is artificially easy as a treat. And of course, if there's not even time for that, simply tell the team the answer, and send them to the station.

Tracking team progress

How can you spot a team that is falling behind? A trick that has worked very well is to print each of the four puzzle types on different paper colors. As the evening progresses, the scraps of previous puzzles pile up, and can be counted at a glance.

Kick-off confusion

Our recommendation for the event start is a quick skit, followed by passing out the initial puzzles. However, this can confuse teams who are not clear how puzzles will be handed out. We recommend teams stay at their table, and volunteers with stacks of puzzles labeled for each team come to them in order. But plenty of teams are so eager to start that they rush the volunteer out of order. We recommend that you make this step clear, BEFORE the skit starts. Alternatively, hand out all the puzzles just before the opening skit, and make clear to each coach that they should not start until the skit instructs them to.

Skits in noisy crowds

Even with microphones and amplification, attendees at larger events will have a hard time hearing the skit. Anticipating this, consider handing out the puzzles first, because the cover sheet of the puzzle contains instructions that the coaches can read.

Coordinated shut down

Ideally, the story stations won't fully shut down until they're sure no more teams are inbound. Once you confirm that is the case, it's nice to send a runner to the story stations to tell them. Conversely, if one straggling team is running long, send a runner to ask that station to remain open, while the others can shut down.

Make math fun for your school!

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