

West Virginia's First Spacecraft - LEGO Challenge

West Virginia's First Spacecraft - LEGO Challenge was set up by NASA IV&V and West Virginia Space Grant Consortium to teach students about Simulation to Flight-1 (STF-1), West Virginia's first spacecraft, and give students more STEM opportunities. This challenge involves building your own LEGO STF-1; NASA IV&V provides directions for their EV3 STF-1 to inspire ideas. The competition is now open and lasts until October 3rd. Each team will utilize LEGOs (EV3, NXT, WeDo or any other LEGO power functions) to perform a mission. STF-1 is only the size of a loaf of bread and is made up of three 10x10x11cm cubes, this size and shape should be taken into consideration when building your own. The competition will give students the ability to improve team work skills and problem solving while giving hands on learning and valuable life skills to improve overall thinking. Teachers, families and First Lego League (FLL) teams are encouraged to gather a team to have a chance to win a prize for their classroom, home or FLL team.

Prizes

First Place -LEGO EV3 Mindstorms set and a tour of NASA IV&V in Fairmont, WV (\$380 value)

Second Place – LEGO WeDo Core set (\$160 value)

Third Place - \$50 Visa gift card

Team Members

The teams have the same rules as First Lego League, teams of 2-10 students with at least one adult coach. The coach is around to supervise and get team members thinking but the project should be the work of the team members. Team members are to be between the ages of 9 and 14 years old as of January 1, 2016. If a member turned 15 on January 2, 2016 that member is eligible to compete.

Building Rules

Students are to build their own Lego STF-1, create a code(s) and are encouraged to build NASA's Lego STF-1 to help ideas flow when building their own. The building directions are attached [here](#). The only regulations on your own STF-1 LEGO mockup is it must be made with, but not limited to, LEGO power systems. Your LEGO STF-1 should form a specific function through making a code through the LEGO software chosen.

What to Submit

Each group that enters will type a 1-3 page essay about (1) what is the differences between your LEGO STF-1 and NASA's LEGO STF-1, (2) how CubeSats affect space exploration around the world and (3) what you want to have in West Virginia's future spacecraft and why. The essay



should be between 1 and 3 pages including pictures, Times New Roman, 12 point font, single spaced.

Submission Process

All submissions are to be emailed as a word attachment to kashby1@mail.wvu.edu by October 3, 2016 at 5:00 PM EST. Pictures of your STF-1 should be added with your essay along with a screenshot of your code. The subject line of the submission email should read “WV’s First Spacecraft LEGO Challenge”. Each student must turn in the “Student Information Form” and the coach must fill out “Coach Information Form” and attach to the email with the essay. If pictures show student’s faces fill out the “Picture Release Form” for each student. If students want to send in a short 30 second video showing what the LEGO STF-1 mission does, it can be added as an attachment to the email.

Winners

The first place winning team will receive a LEGO MINDSTORMS Education EV3 Core Set (\$380 value) and a tour of the NASA IV&V facility in Fairmont, WV, Second place winning team will receive a WeDo Core Set (\$160 value) and the third place winning team will receive a \$50 Visa gift card funded by the West Virginia Space Grant Consortium. The winning groups will be announced by the end of October, 2016.

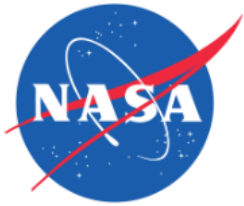
Scoring Criteria

1. Uniqueness of modified LEGO STF-1 CubeSat
 - a. Creativity
 - b. General application
2. LEGO code
 - a. How does your code work?
 - b. What your mission does?
 - c. Screenshot of the code
3. Pictures
 - a. Your LEGO STF-1 (to be added to your essay)
4. Essay (1-3 page)
 - a. What you want to have in West Virginia’s second spacecraft and why?
 - b. What is different from your LEGO STF-1 and NASA’s LEGO STF-1 and why?
 - c. How do CubeSats affect space exploration around the world?

Questions?

If you have questions please email Kala Ashby at kashby1@mail.wvu.edu or call at [304-293-3936](tel:304-293-3936)





LEGO Challenge: STF-1

Student Information Form



2016 LEGO STF-1 CONTEST ENTRY FORM

DUE: October 3, 2016

The form must be completed for all students and the essay received via email October 3, 2016

Submit as attachment to kashby1@mail.wvu.edu

Please Print

Student Name

Birthdate

School Name and Address

Parent(s)/Guardian

Parent(s)/Guardian Contact – email or telephone

I hereby give permission for my child to enter West Virginia's First Spacecraft LEGO Challenge and for their name, grade, age, school, and essay to be released to NASA and media for participation in and promotion of STF-1.

Parent(s)/Guardian Signature

Date

Photo Release (optional: only if picture of child is sent)

I hereby give permission for my child's picture to be used and released to NASA and media for participation in and promotion of STF-1.

Parent(s)/Guardian Signature

Date





LEGO Challenge: STF-1

Coach Information Form



2016 LEGO STF-1 Adult Coach

DUE: October 3, 2016

The form must be with the team's entry via email October 3, 2016

Submit as attachment to kashby1@mail.wvu.edu

Please Print

Coach Name

School Name and Address

Email

Telephone

I hereby acknowledge that this is the work of the students where I, the coach, acted as an overseer, all the work is that of the students and I am over 18 years of age. I understand that the essay and school name may be used for promotion of the STF-1.

Signature

Date

