

# NASA Regional Educator Resource Center

## STEM Activity Kits

Complete STEM Activity Kits available for Educators and Mentors to checkout.

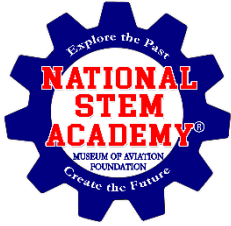
- Fee: Free
- Kits are available for checkout for 1 week at a time.
  - Pick up on Friday.
  - Return by the following Thursday. If your event falls on a Thursday, other arrangements can be made.
- Maximum 2 Kits per school, per week
- Kits may be reserved up to a month in advance. Walk-ins are welcome, however, kits cannot be guaranteed without a reservation.

The NASA RERC has been recognized and is a member of the  
NASA-AESP Professional Development Network.

For educator programs and workshop schedules, visit  
[www.museumofaviation.org](http://www.museumofaviation.org)

For more information on checking out activity kits or to reserve a kit, please contact Clare Swinford at 478-222-7547 or [cswinford@museumofaviation.org](mailto:cswinford@museumofaviation.org)

\*Please see STEM Activity Kit Agreement for policies. Policies subject to change.



# National STEM Academy STEM Activity Kit Agreement

Borrower Name: \_\_\_\_\_ School/Organization: \_\_\_\_\_

County: \_\_\_\_\_ Phone: \_\_\_\_\_ Email: \_\_\_\_\_

Date Checked Out: \_\_\_\_\_ Date To Be Returned: \_\_\_\_\_

Kit(s) Checked Out: \_\_\_\_\_ Kit Value: \_\_\_\_\_

Kit(s) Checked Out: \_\_\_\_\_ Kit Value: \_\_\_\_\_

Kit(s) Checked Out: \_\_\_\_\_ Kit Value: \_\_\_\_\_

By signing below, the Borrower agrees to the following:

## **Use of Equipment – The borrower is responsible for following the STEM Activity Kit policies.**

- As a borrower, you agree to:
  - Use the STEM Activity kit(s) and their contents in a careful manner and as intended for academic pursuits and education events.
  - Comply with all applicable federal, state and local laws and policies applicable to the use of the kit(s) and contents.
  - Take all safety precautions while using the kit(s) and its contents to ensure the safety of all involved with the kit(s) and activities.

## **Loss and Damage – The borrower will be responsible for any damages or losses.**

- The borrower will assume all responsibility for any damage, loss or theft of the kit(s), contents, and accessories checked out by borrower. All costs associated with the loss, theft or damage of the kit(s) and/or its contents while in borrower's possession shall be the sole obligation of the borrower.
- Replacement charges will be based on the cost of supplies and or equipment and consideration of "normal wear and tear," or the current cost of replacing the entire kit – whichever is most appropriate.
- The borrower bears responsibility to return kit(s) and contents in the same condition as originally loaned.

## **Return – The borrower agrees to return the kit(s) by 4:00 pm on the due date stated above.**

- The borrower understands that failure to return the kit(s) at the scheduled return time may result in the loss of future loan privileges as determined by the Education Center.

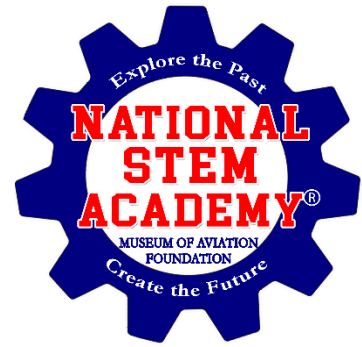
**Checkout Limitations** – 2 Kit maximum per *school*. Kit(s) may be checked out for one week at a time.

The borrower agrees that he/she has read the National STEM Academy, Museum of Aviation Foundation, STEM Activity Kit Agreement and understands and agrees that failure to follow all policies may result in removal of borrowing privileges. \*Policies are subject to change.

\_\_\_\_\_  
Borrower's Signature

\_\_\_\_\_  
Date

# STEM Activity Kits:



- Geometry **Best for: 2<sup>nd</sup>-6<sup>th</sup> Grades**
  - Students will explore geometry and angles through the use of hands-on manipulatives, interactive activities and teamwork.
- Geology Classroom Kit **Best for: All Grades**
  - Students will get up close and personal with the rocks and minerals they are studying in class. Includes 3 digital microscopes.
- Data, Probability & Graphing **Best for: 3<sup>rd</sup>-8<sup>th</sup> Grades**
  - Students will explore data, probability and graphing through the use of hands-on manipulatives, interactive activities and teamwork
- Rock & Mineral Kit **Best for: 6<sup>th</sup> Grade**
  - Students will explore rocks, minerals, and soil by testing hardness, pH levels, etc. with hands-on materials.
- Renewable Energy Kit **Best for: 6<sup>th</sup> Grade**
  - Students will learn about solar, wind, and hydro-power renewable energy sources by constructing a solar calculator, windmill, and other hands-on activity kits.
- Summer of Innovation Earth vs. Mars **Best for: 7<sup>th</sup> Grade**
  - Students will use remote satellite images of Earth and Mars to compare and contrast physical processes that occur on both planets. (A NASA.Gov Lesson)
- Summer of Innovation Solar System Simulator **Best for: 7<sup>th</sup> Grade**
  - Students will investigate how to determine the relative position of the sun, planets, and a number of planetary spacecraft using a simple web-based program and hands-on star finders. (A NASA.Gov Lesson)
- Heavy Lifter Challenge **Best for: 8<sup>th</sup> Grade**
  - Students will design and build a crane out of cardboard, determine methods to reinforce the crane's arms so it doesn't collapse under a heavy load, and build a crank handle. (A NASA.Gov Lesson)
- End Effector Kit **Best for: 8<sup>th</sup> Grade**
  - Students will work in pairs to construct a simple "hand" using a design patterned after Canadarm's End-effector. (A NASA.Gov Lesson)

## Kits Sponsored By:



Operation STEM  
#NNX16AM20G



- Microscopic Matters **Best for: All Grades**
  - Students will use microscopes to investigate insects, plant cells, animal cells and more.
- Forces of Flight **Best for: Pre K - 5<sup>th</sup> Grades**
  - Rotor Blades and Glider Experiment
- Tallest Building Challenge **Best for: 4<sup>th</sup> - 12<sup>th</sup> Grades**
  - Teamwork and critical thinking Engineering Challenge
- Static Electricity **Best for: 3<sup>rd</sup> - 8<sup>th</sup> Grades**
  - Static Electricity Experiment teaches about atoms and electrons
- GeoSolids **Best for: 6<sup>th</sup>-12<sup>th</sup> Grades**
  - Geometry and critical thinking based activity
- Solo Cup Engineering Challenge **Best for: All Grades**
  - Teamwork and critical thinking based activity
- Magnet Engineering **Best for: Elementary Grades**
  - Geometric shaped magnets teach students to reason with shapes as they engineer 3D creations.
- Aircraft Engineering **Best for: Pre K -2<sup>nd</sup> Grades**
  - Students are introduced to hands-on empirical learning through humorous, 24-page, build-as-you-read adventure story.
- Arches **Best for: All grades**
  - Students will explore civil engineering while comparing and contrasting arched and standard bridges.
- Gears, Gears, Gears **Best for: Elementary Grades**
  - Students use spinning gears to build early STEM skills such as problem solving, critical thinking, and perseverance.
- Astronaut Training **Best for: All Grades**
  - Students use large gloves to build with small Legos to learn how Astronauts' fix things in space. (A NASA.Gov Lesson)
- Math Hopscotch **Best for: All Grades**
  - Students roll one or two di then use the "calculator mat" to hop out an equation for the amount rolled.
- Programming & Coding with Dash & Dot **Best for: Pre K-3<sup>rd</sup> Grades**
  - Students use tablets to program the robot Dot to perform various tasks.
- Who Engineered It? **Best for: Pre K – 1<sup>st</sup> Grades**
  - Students will use Engineer Cards to match with cards displaying various engineering jobs performed.
- Programming & Coding with Recon Rovers **Best for: 6<sup>th</sup>-12<sup>th</sup> Grades**
  - Students will work together in teams to program Recon Rovers to complete an obstacle course of the instructor's making.
- Amusement Park Engineer **Best for: Pre K – 2<sup>nd</sup> Grades**
  - Students are introduced to hands-on empirical learning through humorous, 24-page, build-as-you-read adventure story.
- ZomeTool Creator 3 Kit **Best for: 3<sup>rd</sup>-5<sup>th</sup> Grades**
  - Students will explore art, math and architecture while constructing bridges, pyramids, stars, even shadows from the fourth dimension.
- Code Gamer Kit **Best for: 3<sup>rd</sup>-5<sup>th</sup> Grades**
  - Students will use the innovative gamepad to control the action, solve coding puzzles and even write their own programs and applications for the sensors.
- STEM Jobs Kits **Best for 6<sup>th</sup>-12<sup>th</sup> Grades**
  - Lessons & resources for careers in STEM fields.

For more information on checking out activity kits: 478-222-7580 or [vgill@museumofaviation.org](mailto:vgill@museumofaviation.org)  
 For more educator resource information: 478-222-7547 or [cswinford@museumofaviation.org](mailto:cswinford@museumofaviation.org)

- Modeling the Earth: Moon System **Best for: 6<sup>th</sup> Grades**
  - Using an assortment of playground & toy balls, students will measure diameter, calculate distance/scale, and build a model the Earth-Moon System. (A NASA.Gov Lesson)
- Lego Mobile Maker Space Kit **Best for all grades**
  - Students will use Lego Kits to build and make. Includes stop-motion animation, Women of NASA, and more.
- Mr. Potato Head Genetics **Best for 7<sup>th</sup> Grades**
  - Using Mr. & Mrs. Potato Head, students will learn about genetics and the scientific process through experimentation and observation.
- Cell Models **Best for 7<sup>th</sup> Grades**
  - Students work in pairs to build a model of a plant and/or animal cell using materials to represent different cell parts and organelles.
- Energy Transfer: Sound & Light Waves **Best for 8<sup>th</sup> Grades**
  - Waves occur all around us. Using hands on materials, students will conduct experiments that demonstrate the many kinds and sizes of Light and sound waves.
- Garfield's Cyber Safety Kit **Best for all Grades**
  - Students will learn about internet safety with Garfield and his friends.