

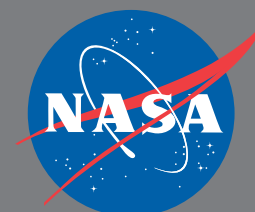
# MISSION: SOLAR SYSTEM

NASA AND DESIGN SQUAD NATION TEAM UP TO  
INSPIRE A NEW GENERATION OF ENGINEERS



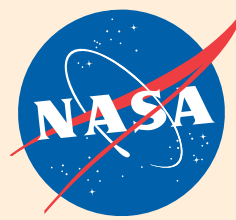
**DESIGN**squad  
Nation

in collaboration with the  
National Aeronautics and  
Space Administration



**SPACE-BASED  
ENGINEERING  
CHALLENGES FOR  
SCHOOL AND  
AFTERSCHOOL  
PROGRAMS  
GRADES 4-8**

National Aeronautics and  
Space Administration



**Headquarters**  
Washington, DC 20546-0001

Dear Educators:

Highly capable rovers, sophisticated sensors, and nimble spacecraft make this an especially exciting era in space exploration. Between October 2010 and August 2012, a fleet of NASA spacecraft made visits to many of our celestial neighbors. Their accomplishments include gathering clues about the evolution of the solar system, understanding the potential of Mars to support life now or in the past, and providing insights into the development of our own planet. So much exploration took place during these 23 months (the length of a single Martian year) that the Science Directorate gave the effort a special name—the Year of the Solar System. The Year of the Solar System missions have set the stage for future explorations. These and NASA's future missions have bold ambitions and are equipped with advanced technologies, helping NASA continue to broaden what we know about the solar system.

As NASA prepares for the future of exploration, we recognize that the young people of today are the engineers, scientists, and astronauts of tomorrow. Creativity, curiosity, and analytical thinking are the trusted tools of NASA's engineering toolkit, and we continually direct our educational efforts to create experiences that allow young people to develop these skills as they investigate and solve challenging problems.

NASA is proud to partner with *Design Squad® Nation*, Public Broadcasting Service's (PBS's) National Science Foundation-funded multimedia program for kids that includes television episodes, an interactive website, and hands-on engineering activities. Central to this partnership is our belief that science, technology, engineering, and mathematics education will play a vital role in solving the problems of the twenty-first century. *Mission: Solar System* is part of our long, proud tradition of showcasing how engineering fuels space exploration. By structuring the activities around real-world engineering applications, it is our hope that you will find the *Mission: Solar System* activities to be effective, innovative ways to engage your students in the engineering design process, encourage their interest in space exploration, and inspire them to pursue a career in engineering.

NASA supports people like you who play a key role in preparing the minds that will strengthen the nation's future. Use this guide to bring the possibilities of engineering to life for young people and to inspire them to solve challenging problems. Engage their creativity, foster their curiosity, and teach them to strive for excellence.

Sincerely,

A handwritten signature in black ink, appearing to read "John M. Grunsfeld". The signature is stylized and cursive.

John M. Grunsfeld  
Associate Administrator for  
Science Mission Directorate

# TABLE OF CONTENTS

Launch your kids into space exploration! In *Mission: Solar System*, NASA and *Design Squad® Nation* bring kids fun, hands-on ways to think like NASA engineers. The guide's hands-on activities and videos let kids apply science, technology, engineering, and math (STEM) skills to solve design challenges. Use this resource in school and afterschool settings to engage kids in engineering and in NASA's exploration of our solar system.

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**The *Mission: Solar System* engineering design challenges deepen kids’ understanding of NASA’s missions, science concepts, and the design process. They will also provide opportunities for teamwork and hands-on problem solving, and present engineers as creative problem solvers who design things that matter and improve people’s lives.**

# PROJECT COMPONENTS

The standards-based challenges use readily available materials, give kids many ways to succeed, can be done in an hour, and work well with both large and small groups. The challenges have the following components and are downloadable at: [pbskids.org/designsquad/links/solarsystem](https://pbskids.org/designsquad/links/solarsystem).



**The Leader Notes give you all you need to run a challenge with kids.**

## Leader Notes

The leader notes include: an overview of the challenge and its connection to NASA; tips to help you prepare for, introduce, run, and wrap up the activity; discussion questions that explore the science, engineering, and space-related themes; and ways to make curriculum connections.



**The Handouts help kids build and troubleshoot their projects.**

## Kids' Handout

These reproducible handouts step kids through each challenge, providing them questions to brainstorm, building tips, illustrations, and interesting stories about NASA missions related to the challenge.



**The DIY Videos show kids having fun doing the challenge, using the design process, and applying science concepts.**

## Do-It-Yourself (DIY) Videos

Each *Mission: Solar System* challenge has its own three-minute DIY video that shows kids doing the activity and talking about its science and engineering and its connection to NASA missions. Used as an introduction, the videos give kids a sense of the design possibilities and get them excited about doing some creative problem solving. Used as a wrap-up, the videos give you a way to reinforce the challenge's science, engineering, and NASA connection.



**The Video Profiles feature NASA engineers and help kids relate the work they do in a challenge to real-world engineering.**

## Video Profiles of NASA Engineers

These three-minute videos feature young, dynamic engineers who tackle interesting problems related to NASA's solar system missions. They put a human face on engineering, showing engineers as well-rounded people with interesting work and personal lives. The connections to the activities are general—the primary goal is to break down engineer stereotypes and showcase engineering as a rewarding career. Each video has a sheet with discussion points and follow-up ideas to help kids make full use of the videos.

# RUNNING A CHALLENGE—START TO FINISH

Designed for kids in schools and afterschool programs, *Mission: Solar System's* five hands-on challenges bring to life NASA's Year of the Solar System missions. Each challenge provides an engaging way to integrate science and engineering into your science, technology, engineering, and mathematics (STEM) program.

## BEFORE THE CHALLENGE

- 1 Choose a challenge.** Consider your curricular goals and consult the activity overviews to choose a challenge that works for you.
- 2 Read the Leader Notes.** Find out what to prepare ahead of time, the materials you'll need, and how to lead kids' exploration, troubleshoot potential issues, and wrap up the session.
- 3 Try the challenge.** A practice run will help you figure out the best way to introduce the activity, anticipate potential questions and issues your kids may have, and identify modifications you may want to make.
- 4 Get ready.** Use this section to determine what you'll need to prepare. You'll also want to download and preview the videos listed here. Get them at: [pbskids.org/designsquad/links/solarsystem](https://pbskids.org/designsquad/links/solarsystem).
- 5 Copy the Handout and Assessment Rubric.** The black-and-white pages are designed to reproduce well on a photocopier.

## DURING THE CHALLENGE

- 1 Introduce the challenge.** Kick things off with the provided discussion prompts and everyday examples. Then show the DIY and NASA videos. Your kids will be inspired by seeing other kids tackling the challenge and will understand how the activity relates to NASA's exploration of the solar system. If you're unable to show videos, tell kids about the NASA connections described in the challenge overview and in the "Relate it to the NASA missions" section. Also review the handout's overview, steps, and stories.
- 2 Identify the problem, brainstorm, and design.** Use the discussion prompts to get kids thinking about different ways to meet a challenge. Since an open-ended challenge offers kids many ways of succeeding, this section jump-starts their thinking about various possibilities and approaches.
- 3 Build, test, evaluate, and redesign.** Use the strategies in this section of the Leader Notes to assist kids when issues arise as they work through a challenge. To help teams build and work effectively, give them the assessment rubric and discuss its four performance criteria.
- 4 Discuss what happened.** Use the questions (and answers) in the wrap-up section of the Leader Notes to review the challenge's science and engineering concepts, help kids reflect on how they used the design process (see page 4), and highlight how the challenge relates to NASA's solar system explorations.
- 5 Show the NASA engineer profile.** These videos show young, dynamic NASA engineers tackling interesting problems related to NASA's missions and highlight how exciting engineering can be. Download the companion sheet with discussion prompts and follow-up ideas.

## FOLLOWING UP THE CHALLENGE

- 1 Extend the challenge.** This section of the Leader Notes presents a few quick, fun ways that build on the experiences kids have had in a challenge and further their exploration.
- 2 Curriculum connections.** This section of the Leader Notes offers suggestions for how to tie kids' challenge experiences to concepts commonly covered in science, math, and technology curricula.

# INTRODUCING THE DESIGN PROCESS

When NASA engineers try to solve a problem, they try different ideas, learn from their mistakes, and try again. The series of steps engineers use to arrive at a solution is called the **design process**.

Different versions of the design process exist. Yet, they all describe an iterative process for developing effective solutions to problems. *Design Squad Nation's* design process (graphic on the right) is available as a tear-out poster (page 39) and from the website.

As kids work through a challenge, use questions such as the ones below to talk about their work and tie what they are doing to specific steps of the design process.

## BRAINSTORM

- What are some different ways to tackle today's challenge?
- Off-the-wall suggestions often spark GREAT ideas. How creative can you be?

## DESIGN

- Which brainstormed ideas are really possible, given your time, tools, and materials?
- What are some problems you need to solve as you build your project?
- How can a sketch help clarify your design?

## BUILD

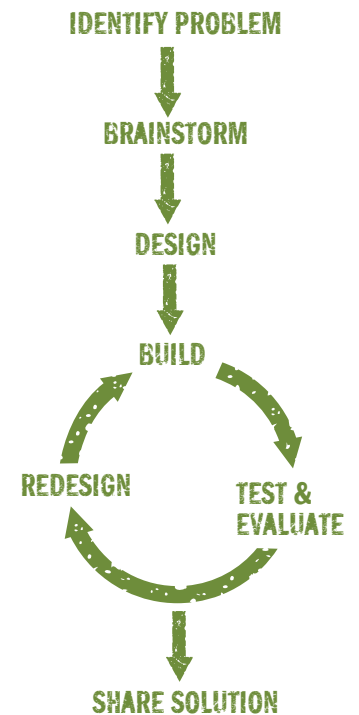
- What materials will you need?
- What can you learn by looking at other kids' projects?

## TEST, EVALUATE, AND REDESIGN

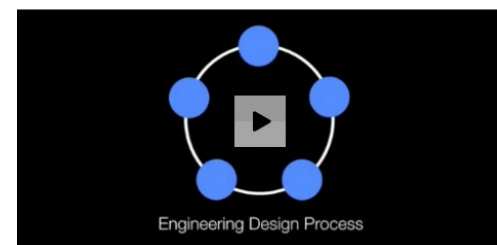
- Why is it a good idea to keep testing a design?
- What specific goal are you trying to achieve, and how will you know if you've been successful?
- How does the design meet the criteria for success presented in the challenge?

## SHARE SOLUTIONS

- What's the best feature of your design? Why?
- What was the hardest problem to solve?
- What were the different steps you did to get your project to work?
- If you had more time, how would you improve your project?



As kids work through a challenge, they'll see that the steps of the design process encourage them to think creatively to solve a problem and produce a successful result.



This NASA video introduces kids to one version of the engineering design process and the methods engineers use to approach and solve problems. Get it at: [www.nasa.gov/audience/foreducators/best/edp.html](http://www.nasa.gov/audience/foreducators/best/edp.html).

# TIPS FOR FACILITATING OPEN-ENDED CHALLENGES

**Emphasize creativity.** There are multiple ways to successfully tackle a challenge, and one successful solution is as good as another. Help kids see that the challenges are not competitions. Instead, they're opportunities to unleash an individual's ingenuity and creativity.

**Tap the power of brainstorming.** Have kids come up with several ways to solve a problem before they move ahead with an idea.

**See problems as opportunities.** When something's not going as desired, encourage kids to try again. Problems are opportunities for learning and creative thinking.

**Use questions to guide kids.** When kids feel stuck, have them explain why they think they got the results they did. Then ask questions to get kids back on track rather than telling them what to do. For example, ask: "Why do you think this is happening?" or "What would happen if..." or "What is another thing you could try?"



**If a design doesn't work as planned, encourage kids to try again. Setbacks often lead to design improvements and to ultimate success.**

## FIT THE GUIDE'S CHALLENGES INTO ANY PROGRAM

### **Classrooms, afterschools, clubs, and other ongoing programs**

*Mission: Solar System* challenges provide fun ways for kids to apply the design process and core science concepts. Each activity is distinct, offering kids variety, letting them unleash their creativity, and helping them practice important skills, such as problem solving, teamwork, and critical thinking.

### **Events and other one-time occasions**

Take *Mission: Solar System* activities to a museum, library, mall, or university and spark kids' interest and confidence in engineering with a lively, fun-filled event. The *Inspector Detector* challenge is especially good for events like science and engineering days—it uses simple, readily available materials, and is open ended, with multiple solutions that engage a wide variety of ages and ability levels.

# WHY HAVE NASA AND DESIGN SQUAD NATION TEAMED UP?

It's a natural! NASA is one of the biggest employers of engineers in the world—over 90,000 between its own employees and its corporate partners. Clearly, NASA's work depends on engineers. Not surprisingly, NASA is deeply committed to getting kids excited about engineering and inspiring them to become engineers.

And *Design Squad Nation* is all about engaging kids in engineering. Its award-winning TV program, website, and hands-on challenges highlight the fun, excitement, and rewards of engineering. Kids see that engineering not only can unleash their creativity, it can also offer an approach to challenges that enables people to make a real difference and change the world.

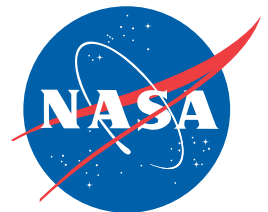
By teaming up to bring you the *Mission: Solar System* set of resources, NASA and *Design Squad Nation* put fun, hands-on challenges in the hands of educators whose goal is to make engineering and the adventure of space exploration real and relatable for kids.

## NASA'S EXPERTISE IS EXPLORING SPACE

What's out in space? What will we find? What can we learn just by trying to get there, that will make life better here on Earth? NASA has been working for over 50 years to answer these questions. Its mission? To pioneer the future in space exploration, scientific discovery, and aeronautics research.

NASA scientists and engineers work in laboratories, on airfields, in wind tunnels, and in control rooms at NASA's ten centers around the country and even in different countries. NASA's work is divided into four main areas:

- **Aeronautics:** pioneers and tests new flight technologies that have practical applications on Earth and improve our ability to explore space.
- **Exploration Systems:** creates new capabilities and spacecraft for affordable, sustainable human and robotic exploration.
- **Science:** explores Earth, the moon, Mars, and beyond; charts the best route of discovery; and reaps the benefits of Earth and space exploration for society.
- **Space Operations:** provides technologies through the International Space Station, the Orion space capsule, the Space Launch System rocket, and flight support.



**"NASA's engineers do some of the most amazing things ever undertaken by mankind."**  
David E. Steitz, NASA

## DESIGN SQUAD NATION'S EXPERTISE IS ENGAGING KIDS IN ENGINEERING

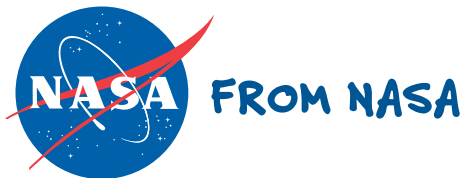
*Design Squad Nation* is a powerful multimedia way to open kids' eyes to the exciting world of engineering. The award-winning website gives kids a forum to brainstorm, submit project ideas, and respond to other kids' ideas. It also provides parents and educators with resources that bring engineering to life for kids and empower them to use their ingenuity to solve problems. Its Emmy and Peabody Award-winning television series lets kids see teens working on amazing, sometimes wacky projects that showcase the fun and creativity involved in engineering. Pages 7 and 37 list *Design Squad Nation* resources that get kids excited about engineering.



**Imagination fuels innovation. To explore the frontiers of Earth, the solar system, and the universe, NASA engineers work on the coolest stuff, find solutions to extraordinary challenges, and turn dreams into realities.**



# RESOURCES FROM NASA AND DESIGN SQUAD NATION



NASA offers many ways to enhance kids' explorations of the solar system. The websites below will quickly connect you to a host of resources.

**NASA's education program** (K–12). Find a variety of resources for students and educators. You can identify teaching materials by keyword, grade level, or subject at this NASA education hub.

[nasa.gov/audience/foreducators/index.html](https://nasa.gov/audience/foreducators/index.html)

**Year of the Solar System** (K–14). Get a host of activities and related resources (e.g., images, animations, videos, interactives, and podcasts) related to the 11 Year of the Solar System missions, organized by grade and searchable by topic.

[solarsystem.nasa.gov/yss](https://solarsystem.nasa.gov/yss)

**NASA Wavelength** (K–16). Explore this peer-reviewed collection of digital Earth and space-science resources for formal and informal educators. The site's social media features even let you share your favorites with others.

[nasawavelength.org](https://nasawavelength.org)

**NASA Solar System Exploration** (K–16). Access resources for planets, missions, news, and education at this one-stop-shopping website devoted to solar system exploration. [solarsystem.nasa.gov](https://solarsystem.nasa.gov)

**NASA Robotics Education** (K–12). Innovation, creativity, problem solving—the world of robotics at NASA is all of these things. Visit this site to see if robotics might be in your future.

[nasa.gov/education/robotics](https://nasa.gov/education/robotics)

**Eyes on the Solar System interactive** (5–8). Download this visualization tool to explore the solar system in 3-D using real mission data. Control your experience and see planets up close, hop on an asteroid, watch the solar system move in real time, and fly a spacecraft. [eyes.nasa.gov](https://eyes.nasa.gov)



*Design Squad Nation* is a diverse program designed to inspire the next generation of engineers. Check out the following resources in the website's Parents and Educators area: [pbskids.org/designsquad/parentseducators](https://pbskids.org/designsquad/parentseducators).

**Engineering-design challenges.** Like the hands-on challenges in this guide? There are 60 more, covering such topics as electricity, force and energy, and technology and materials.

**Scientist and engineer profiles.** Like the *Mission: Solar System* engineers video profiles? We've got dozens more of engaging, young engineers tackling interesting problems and showing that engineering is a rewarding career that helps make the world a better place.

**Online games.** Kids can use their problem-solving and engineering skills in the multiplayer game *DESIGNit*, *BUILDit*, *FIDGIt*; and can compose music playing the *String Thing* interactive.

**Interactive community.** Kids can submit photos and sketches of their designs and projects and see what other kids have made. Educators can get project ideas for their own students.

# TALKING WITH KIDS ABOUT ENGINEERING

Few kids can say what engineering is or what an engineer does. Yet once they find out, many are hooked! You can be the one to help a young person discover just how cool engineering can be. As you work with kids, use the information below to talk with them about engineering.

## WHAT'S AN ENGINEER?

Engineers dream up creative, practical solutions and work with other smart, inspiring people to invent, design, and build things that matter. They are changing the world all the time.

## WHAT DO ENGINEERS DO?

- **Think creatively.** Engineering is an ideal outlet for imagination and creative problem solving—an ideal field for independent thinkers.
- **Work with great people.** Engineering takes teamwork. As an engineer, you'll be surrounded by smart, creative, inspiring people.
- **Solve problems and design things that matter.** Engineers improve peoples' lives by tackling problems, improving current designs, and coming up with solutions no one else has thought of.
- **Change the world and make a difference.** Among many other pursuits, engineers develop systems that save lives, prevent disease, reduce poverty, and protect our planet.

## HOW DO ENGINEERS IMPROVE PEOPLE'S LIVES AND MAKE THE WORLD A BETTER PLACE?

- Build spacecraft that travel to the moon
- Develop state-of-the-art cell phones
- Create more fuel-efficient cars
- Invent artificial retinas for the blind
- Design lighter bike frames
- Construct tall skyscrapers and high bridges
- Build systems that purify water and process waste
- Design clothing that repels mosquitoes
- Create satellites that detect drought around the world
- Develop a feather-light laptop



You can be the one to help a young person discover just how cool engineering is.

## WHAT'S ENGINEERING?

*"Engineers get to imagine the future and design for it."*

**Marisa Wolsky, Design Squad Executive Producer**

*"Engineering is about thinking through problems, finding solutions, and helping people."*

**Daniele Lantagne, environmental engineer**

*"The best part of being an engineer is the creativity that's involved and the satisfaction that comes from solving hard problems."*

**Jananda Hill, computer-science engineer**

*"Every day I see things that could be made better by just applying some good engineering know-how."*

**Jessica Miller, biomedical engineer**

# EDUCATION STANDARDS

## NEXT GENERATION SCIENCE STANDARDS

### PRACTICES

1. Asking questions, defining problems **(ALL CHALLENGES)**
2. Developing and using models **(ALL CHALLENGES)**
3. Planning and carrying out investigations **(ALL CHALLENGES)**
4. Analyzing and interpreting data **(CHALLENGE 4)**
5. Using math and computational thinking **(CHALLENGE 5)**
6. Constructing explanations **(ALL CHALLENGES)**
8. Obtaining, evaluating, and communicating information **(ALL CHALLENGES)**



### CROSSCUTTING CONCEPTS

1. Patterns **(CHALLENGE 5)**
2. Cause and effect **(ALL CHALLENGES)**
4. Systems and system models **(CHALLENGE 3 and 5)**
5. Energy and matter **(ALL CHALLENGES)**
6. Structure and function **(CHALLENGES 1–4)**

### CORE AND COMPONENT IDEAS

#### Physical Science

##### PS2: Motion and Stability

- PS2.A: Forces and motion **(ALL CHALLENGES)**
- PS2.B: Types of interactions **(ALL CHALLENGES)**

##### PS3: Energy

- PS3.A: Definitions of energy **(CHALLENGE 4)**
- PS3.B: Conservation of energy and energy transfer **(CHALLENGE 3)**
- PS3.C: Relationship between energy and forces **(CHALLENGE 4)**

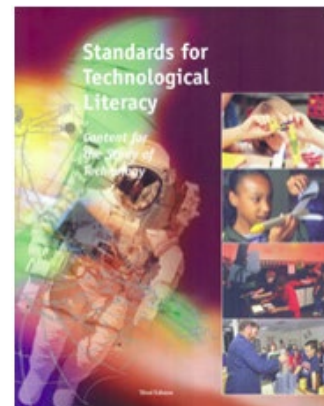
#### Engineering Design

- ETS1.A: Defining and delimiting an engineering problem **(ALL CHALLENGES)**
- ETS1.B: Developing possible solutions **(ALL CHALLENGES)**
- ETS1.C: Optimizing the design solution **(ALL CHALLENGES)**

## INTERNATIONAL TECHNOLOGY EDUCATION ASSOCIATION CONTENT STANDARDS

### DESIGN

- Standard 8: Attributes of design **(ALL CHALLENGES)**
- Standard 9: Engineering design **(ALL CHALLENGES)**
- Standard 10: Role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving **(ALL CHALLENGES)**



## ABILITIES FOR A TECHNOLOGICAL WORLD

- Standard 11: Applying the design process (**ALL CHALLENGES**)
- Standard 12: Using and maintaining technological products and systems (**ALL CHALLENGES**)
- Standard 13: Assessing the impact of products and systems (**ALL CHALLENGES**)

## THE DESIGNED WORLD

- Standard 16: Selecting and using energy and power technologies (**CHALLENGES 1, 3, 4**)

## MASSACHUSETTS SCIENCE AND TECHNOLOGY/ENGINEERING STANDARDS

### PHYSICAL SCIENCES GRADES 3–5

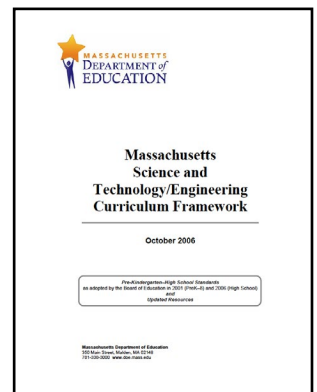
- Properties of Objects and Materials (**ALL CHALLENGES**)
- Forms of Energy (**CHALLENGES 1, 2, 3, 5**)
- Magnetic Energy (**CHALLENGE 5**)

### PHYSICAL SCIENCES GRADES 6–8

- Forms of Energy (**CHALLENGES 1, 3, 5**)
- Motion of Objects (**CHALLENGES 1, 5**)

### TECHNOLOGY/ENGINEERING

- Materials and Tools (**ALL CHALLENGES**)
- Engineering Design (**ALL CHALLENGES**)



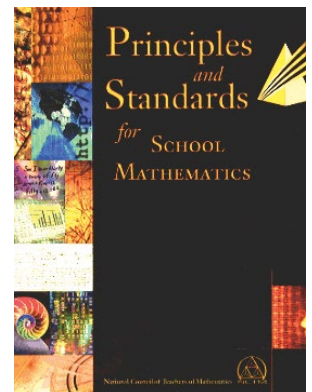
## NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS STANDARDS

### CONTENT

- Measurement—Grades 6–8 (Understand metric and customary systems of measurement) (**ALL CHALLENGES**)
- Data Analysis—Grades 3–5 (Design investigations to address a question and consider how data collection methods affect the nature of the data set; collect data using observations, surveys, and experiments; represent data using tables and graphs) (**ALL CHALLENGES**)
- Algebra—Grades 6–8 (Represent, analyze, and generalize a variety of patterns with tables, graphs, words, and when possible, symbolic rules) (**CHALLENGE 4**)

### PROCESS

- Problem Solving—Grades K–12 (Apply and adapt appropriate strategies to solve problems; solve problems that arise in mathematics and other contexts) (**ALL CHALLENGES**)



# PROFESSIONAL DEVELOPMENT RESOURCES FROM DESIGN SQUAD NATION

Looking for ways to integrate the design process into your lessons? New to leading hands-on challenges? Want to get kids excited about engineering? *Design Squad Nation* offers a suite of free, online professional-development resources. Check them out by clicking the “Training” link at: [pbskids.org/designsquad/parentseducators](http://pbskids.org/designsquad/parentseducators).

## MISSION: SOLAR SYSTEM TRAINING VIDEO

See the *Mission: Solar System* resources in action in this five-minute video. Watch how an educator creates a rich, multi-faceted learning experience for kids by integrating the DIY, Engineer-Profile, and NASA videos into a hands-on design challenge.



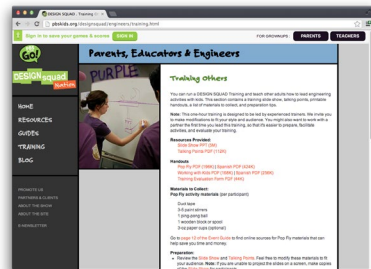
## LEADING HANDS-ON ENGINEERING ACTIVITIES ONLINE WORKSHOP

Use this free, 75-minute, self-paced tutorial to help you build skills and confidence in leading hands-on, open-ended engineering design challenges with kids.



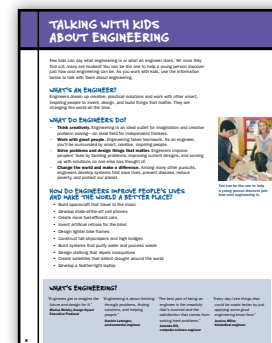
## TRAINING OTHERS

Train volunteers, parents, and mentors how to lead engineering activities with kids. This one-hour slide show comes with talking points, printable handouts, and preparation tips.



## HOW-TO SHEETS

Find helpful *How-To* sheets in the front section of each guide. Topics covered include: *Introducing the Design Process*, *Talking to Kids about Engineering and Invention*, *Setting up an Engineering/Invention Club*, *Hosting an Event*, and *Working With Kids*.



## SOCIAL MEDIA CONNECTION

Get the latest news about *Design Squad Nation* and engineering education. Subscribe to our **newsletter**, follow us on **Twitter**, and friend us on **Facebook**. We've got an Educator page just for you at: [facebook.com/DesignSquadEducators](http://facebook.com/DesignSquadEducators).



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Photo Credits: NASA (Cover, Page 19) NASA/JPL (Pages 9, 14, 24, 30)

# BRING ENGINEERING TO LIFE FOR KIDS

PBS's *Design Squad Nation* combines real-world engineering problems with readily accessible materials so kids can unleash their ingenuity and think like engineers.



**Mission: Solar System's companion guide *On the Moon* has six engineering challenges that spotlight NASA's moon missions.**

## LIKE THESE CHALLENGES?

There are over 60 more! Each one has leader notes, handouts, and related TV episodes, animations, and engineer-profile videos.

Visit: [pbskids.org/designsquad](http://pbskids.org/designsquad).



## Check out these NASA resources on



The *NASA Physics and Engineering Collection* brings you videos and interactives exploring real-world applications of these subjects.



The *NASA Planetary Science Collection* brings you videos and interactives of what NASA missions have discovered about the planets, moons, and other objects in the solar system.



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