

DESIGNING YOUR EVENT

You can host a *Design Squad™* event just about anywhere. All you need is a large room, some tables, and a whole lot of low-cost materials. Science and children's museums, malls, professional conferences and meetings, afterschool programs, schools, libraries, and youth and recreation centers are all excellent locations. The following resources will help you visualize your event and make it a success.



MORE RESOURCES ARE ON THE WEB!

Visit pbskidsgo.org/designsquad/engineers to download:

- **SIGNS:** Tabletop signs for the Welcome Table, Challenge Stations, Video Station, and Testing Zones. A sign that displays the design process is also available.

- **VIDEOS:** A clip introducing the show, short profiles of real engineers, and animations that clearly demonstrate engineering principles.

- **CHALLENGE SHEETS:** Available online in English and Spanish.

- **DESIGN SQUAD LOGO TRANSFERS:** Iron these onto T-shirts for volunteers. Don't forget to wear one yourself!

WELCOME TABLE

Set up a Welcome Table. It's a great way to greet participants and distribute giveaways. It also gives you a place to display the Welcome Sign that you must use at all events. The sign credits our funders and without them none of this would be possible. In addition to the Welcome Sign, stock the table with colorful piles of giveaways, including:

- Information about your organization or association.
- Handouts describing upcoming events.
- Giveaway bags for storing Challenge Sheets, pencils, and the participants' engineering creations. If possible, fill the bags with small engineering-related giveaways. Visit eweek.org to order inexpensive giveaways or ask your partners to donate them.
- Event Evaluation Forms (see page 14)

CHALLENGE STATIONS

There are five hands-on engineering challenges provided in this guide: Rubber Band Car, Kinetic Sculpture, Pop Fly, Hidden Alarm, and Four Corners. Invite kids (and the adults who came with them) to try out *Design Squad* challenges at the Challenge Stations. Each Challenge Station should offer a different activity and include everything needed to complete the challenge. Offering 3 to 5 different challenges will provide variety, assist with audience flow, and give participants experience with many engineering concepts. (See the Event Checklist on page 8 for more information on setting up your stations.) Staff each station with volunteer engineers who can help participants work on the challenges. Now let the engineering fun begin!

Challenge Sheets provide instructions for each engineering challenge, plus background information.



VIDEO STATION

Show video clips of real engineers from *Design Squad* episodes by setting up a computer or video monitor in a place where participants can watch. These clips will dispel the “I can’t do that” stereotype and replace it with “That’s engineering? I want to do that.” Be sure to staff the station with engineers, so they can talk about their own work and answer questions.

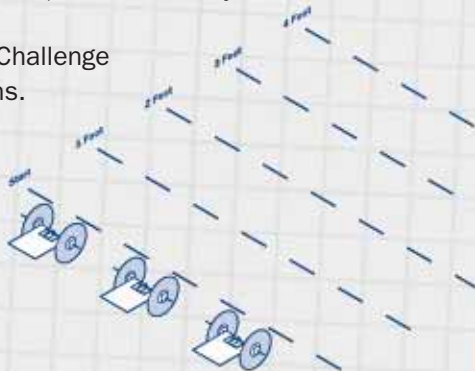


Visit pbskidsgo.org/designsquad/engineers to download the *Design Squad* video profiles of engineers.

TESTING ZONES

Create a space where participants can test their results—how far their rubber band car travels, how well their sculpture holds up in the wind, or how high their Ping-Pong ball flies. Staff the Testing Zones with one or two volunteers. They can encourage kids to test their creations to see what works and what doesn’t. Volunteers can also direct kids back to the Challenge Stations to modify their designs until they get the results they want. A major part of the design process is finding out how solutions work in the real world.

- Set up the Testing Zone near the corresponding Challenge Station.
- Mark the area with a colorful Testing Zone sign (available at pbskidsgo.org/designsquad/engineers).
- Provide measuring tools. If you’re measuring distance, create a start line and mark one-foot increments with tape on the floor.
- Set up a data-recording chart. Use an easel and a large pad of paper to record kids’ names (first names only, please) and results.
- Encourage kids to return to the Challenge Stations and modify their designs.



SET THE STAGE

Give your whole event a *Design Squad* look and feel. Hang *Design Squad* signs everywhere. Make sure your volunteers are easily identified in their matching T-shirts. Use the *Design Squad* colors (either gray and purple or gray and red) for your tablecloths.

MAKE T-SHIRTS

You can create your own *Design Squad* T-shirts using an inkjet printer, iron-on transfer paper, and the downloadable logo available at pbskidsgo.org/designsquad/engineers. Pre-made *Design Squad* T-shirts are available for purchase at eweek.org.



EVENT CHECKLIST

The term “event” can mean anything from having a guest speaker visit a classroom to hosting an all-day event for a large crowd. The type of event you choose depends on lots of things, especially your time, budget, and the goals you set for your outreach. The *Design Squad™* resources support all kinds of events, large or small. The Event Checklist can help you get started.

CONVENE A COMMITTEE

Don't try to do everything yourself—get some help! In addition to helping you organize the event, committee members may be able to offer a venue, volunteers, and/or publicity opportunities. Consider asking representatives from various engineering disciplines and companies, schools and afterschool programs, universities and colleges, and your local public television station and other media partners to volunteer.

IT'S ALL IN THE PLANNING

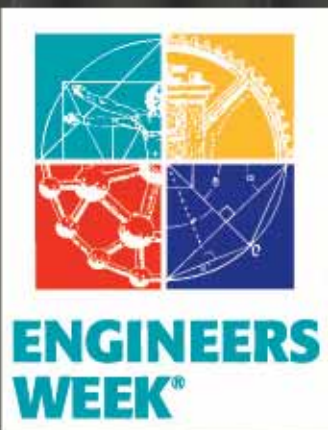
Here are some questions to address at your first planning meeting:

- What are your goals for the event?
- Who is your target audience?
- What is the ideal number of attendees?
- What's the best date? (Consider holidays, religious observances, or other conflicting events.)
- What's your budget? (You'll need to pay for challenge materials, tablecloths, photocopying, T-shirts for volunteers, and refreshments. You may also need to pay for your venue.)
- Which challenges will you select? Review the Challenge Sheets and select the ones that are right for your event.

LOCATION, LOCATION, LOCATION

Pick a spot that's appealing, convenient, and kid-friendly. When choosing a venue, consider the following:

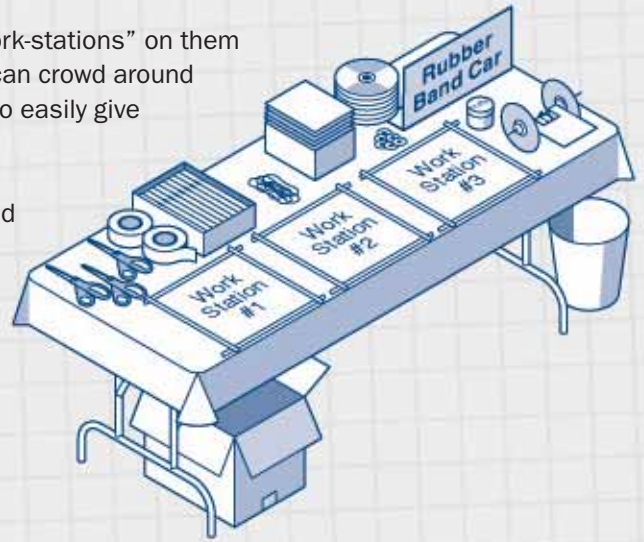
- Number of people** the site can accommodate (be sure the location is accessible to people with disabilities and find out the maximum number of people the venue can safely hold).



You'll definitely want to host an event during Engineers Week (visit eweek.org for more information), but you can schedule an engineering event any time of year.

GET SET: DURING THE EVENT

- **Have volunteers make samples** for their Challenge Station. The samples will serve as models for the kids to use when they try the challenge.
- **Ask volunteers to stand inside a U-shaped configuration of tables** at their Challenge Station so they can easily interact with participants and restock supplies. Be sure to provide chairs or stools for the volunteers.
- **Cover tables with colorful tablecloths** and make individual “work-stations” on them with masking tape. This limits the number of participants who can crowd around a table at one time. The “work-stations” also allow volunteers to easily give instructions to a small group.
- **Put a trash container at each Challenge Station.**
- **Put the *Design Squad* tabletop signs at each station.** Download them from pbskidsgo.org/designsquad/engineers.
- **Set the Challenge Sheets on the table** in a basket or box, so kids can take one home and continue experimenting.
- **Put materials in containers** (i.e., all the rubber bands in one container, all the Ping-Pong balls in another) to keep them organized and easy to use.
- **Store extra materials under the table**, so they will be readily available but not in the way.
- **Help people navigate** within the venue with directional signs. Don't forget to point out where the bathrooms, water fountains, and other essentials are.



HOW DID IT GO?

It's always useful to know what worked and what didn't. Make copies of the Event Evaluation Form (see p. 14) and put them on the Welcome Table. Place a volunteer at the exit to thank participants and collect evaluation forms from them as they leave. If a participant forgets to return the form, ask the volunteer to encourage them to do so. After the event, read the evaluations carefully so your next event can be even better. It would help us to have copies of the evaluation forms you receive. Please fax them to the *Design Squad* Outreach Coordinator at 617-300-1040 or send them to *Design Squad* Outreach, WGBH, 125 Western Avenue, Boston, MA 02134.

An 'EVENT EVALUATION FORM' for Design Squad. The form is on a white background with a blue header. It contains several numbered questions for feedback, such as 'How did you like the event?' and 'What did you learn?'. There are checkboxes and lines for answers. At the bottom, there is a 'THANKS!' section with a space for a name and a 'DESIGN SQUAD' logo. Logos for Intel, WGBH, and PBS are also visible at the bottom.

WORKING WITH VOLUNTEERS

One of your most valuable resources is your volunteers. Here are some helpful hints on how to find and coordinate them.

SIX TO EIGHT WEEKS BEFORE THE EVENT

Recruit engineers as volunteers. You might be surprised at how excited kids are to meet real engineers and how willing engineers are to participate. Ask people from engineering firms, societies, organizations, or local universities to volunteer. Let them know this is a chance for them to have fun and tell kids what a rewarding and interesting career engineering is.

Ask high school and college kids to volunteer. Contact the community service programs at local high schools and colleges to see if students would like to volunteer.

Staffing the stations.

- Assign two volunteers to each Challenge Station. Have some extra volunteers on hand to fill in for volunteers who can't make it to the event at the last minute.
- Assign one or two volunteers to each Testing Zone. These volunteers can help participants test out and modify their engineering creations.
- Ask additional volunteers to welcome guests, explain the day's events, answer questions, and be on hand as "floaters" to cover Challenge Stations during assigned breaks and lunch time.

Make T-shirts. T-shirts are a great way to identify the volunteers. Download the *Design Squad* logo and transfer instructions from pbskidsgo.org/designsquad/engineers or purchase pre-made *Design Squad* T-shirts at eweek.org.

Order materials. Schedule time to prepare the materials for each of the challenges (see p. 12). You may want to use volunteers to help.

ONE WEEK BEFORE YOUR EVENT: HOST A TWO-HOUR TRAINING

Make copies and distribute the handout "Working with Kids" (see page 13).

Create and distribute an event schedule, complete with volunteers' assignments, break times, mealtimes and your contact information in case of emergency.

Explain the goals of the event, then have volunteers try the challenges. Once they've had a chance to experience the challenges themselves, discuss ways to do them with kids.

ON THE BIG DAY

Schedule a **day-of-event orientation** at least one hour before your event begins. Give volunteers an overview of the day, provide schedules, and review bathroom locations, emergency exits, and other venue-specific information. Show volunteers where each Challenge Station is set up and wish them luck!

- Distribute nametags and T-shirts.
- At the end of the day, gather your volunteers to say thank you and give them individual certificates of appreciation. (You can download these at pbskidsgo.org/designsquad/engineers.)

PREPARE YOUR MATERIALS

To make your event run smoothly, collect and prepare materials for the challenges ahead of time. The following is a list of online sources that can save you time and money when buying materials. Most supplies can also be found at grocery, office supply, hardware, electronics, and craft stores.

Bamboo skewers

We like: Good Cook brand
($\frac{1}{8}$ " diameter)
Netgrocer.com
Item #07675324451
\$1.29 for 100

Buzzers

We like: two-wire lead buzzers
APC International
570-726-6961
Item #KPI-2210L
\$1.00 each, minimum order
of 50 (reference code *WGBH*
SQ2124200 with order)

For a louder buzzer:
Radioshack.com
Item #273-053
\$3.29 each

Chipboard

We like: 11 x 17"
Uline.com
Item #S-8293
\$49 per case (375 Sheets)

Compact discs

Collect used CDs and DVDs
or order new
thetechgeek.com
Item #01-VDPD801-100
\$15 for 100

Corrugated cardboard

We like: 11 x 17"
Uline.com
Item #S-3585
28¢ per piece

Faucet washers

We like: $\frac{1}{4}$ " L flat or beveled
Doityourself.com
Item #4001095
\$1.19 for card of 10

Metal washers

We like: Zinc-plated Cut or
Fender washers
Offer a variety of sizes
Approx. 5–10¢ each at
hardware store

Ping-Pong balls

Nationaltabletennis.com
Martin Kilpatrick brand
144 One Star balls
\$36 for 144

Poster or mounting putty

We like: Duck Brand
Officemax.com
Item #07014884
\$1.49 for 2 ounces

Hookup wire

We like: stranded, 22-gauge
Radioshack.com
Item #278-1224
\$5.99 for 75 feet

Wooden spoons

We like: hourglass shape
1 $\frac{3}{8}$ " diameter x
1 $1\frac{5}{16}$ " long x $\frac{5}{16}$ " hole
Woodcrafter.com
Item #NS28
\$1.80 for package of 10

If you are buying small quantities, try these types of stores:

Electronics: wire, buzzers, compact discs

Hardware: faucet washers, metal washers, paint stirrers

Craft: wooden spoons

Grocery: bamboo skewers

Office: corrugated cardboard, chipboard, poster putty

Please note: Although these sites were verified at the time of publication, Web site addresses and content are frequently subject to change.

GET READY FOR YOUR EVENT!

Rubber Band Car

- Cut all of the cardboard pieces with a paper cutter before the event.
- Make sure the cardboard's corrugation is parallel to the short side of the car body.

Kinetic Sculpture

- Cut strips of cardboard, colored paper, and fabric.

Pop Fly

- Ask your local hardware store if they are willing to donate a large number of paint stirrers.

Hidden Alarm

- Strip the electrical wire before the event. (Use a wire stripper or scissors.)
- Cut wire into 6-inch, 1-foot, and 2-foot lengths.

Four Corners

- Cut all of the cardboard pieces with a paper cutter before the event. The cardboard's corrugation should be parallel to the short side of each piece.
- Put cardboard into bins labeled "tracks," "paddles," and "handles."
- Set up easel with chart paper to record kids ideas.