

# DESIGN SQUAD™ PATCH

*Design Squad* is a television show that gets kids, ages 9-13, thinking like engineers. The show features two teams of high school kids who use their problem-solving skills to design, construct, and test engineering projects, such as a machine that automatically makes pancakes.

But *Design Squad* is more than just a television show. Through each episode, the Web site (where you can watch full episodes and engineer profiles), and the hands-on activities on the following pages, kids learn that engineering is fun, creative, and exciting. Now you can bring the excitement of the show to your girls and let them feel like contestants by challenging them to earn the *Design Squad* patch!

## SPONSORED BY:

Girl Scouts of Eastern Massachusetts

## NUMBER OF ACTIVITIES TO EARN THE PATCH:

- Juniors:
- Warm-up activity
  - 1 full unit (or 3 activities)
  - plus the community service component

- GS 11–17:
- Warm-up activity
  - 2 full units (a unit can be replaced with 3 activities)
  - plus the community service component

## NOTE TO LEADERS:

Before presenting this patch to your girls, we suggest exploring the ZOOMsci™ Training at [pbskids.org/zoom/grownups/scitraining](http://pbskids.org/zoom/grownups/scitraining). This easy-to-use, 40-minute online tutorial is designed to help you lead fun, meaningful, hands-on science activities with kids.



Photo: Anthony Treuli

## WATCH DESIGN SQUAD!

Find more information about the show, air times, and watch episodes at [pbskids.org/designsquad](http://pbskids.org/designsquad).

To order the *Design Squad* Patch, contact the Girl Scout Country Store:  
**(781) 893-6293; [girlscoutshop.org](http://girlscoutshop.org)**

For more information about *Design Squad* contact Margot Sigur, Outreach Assistant:  
**[margot\\_sigur@wgbh.org](mailto:margot_sigur@wgbh.org)**

*Design Squad* activities and episodes can be downloaded at [pbskids.org/designsquad](http://pbskids.org/designsquad). Photocopy and distribute them to your kids.

D-Squad Pro Files can be downloaded at [pbskids.org/designsquad/parentseducators/download\\_video.html](http://pbskids.org/designsquad/parentseducators/download_video.html).

\* Activity sheets available in Spanish and English.

## WARM-UP ACTIVITY

- \* **Pop Fly** – Invent a way to send a Ping-Pong ball flying high enough to catch it.

## UNIT: IT'S ELECTRIC

- \* **Activity 1: Hidden Alarm** – Build a circuit to power an alarm so small you can hide it.
- \* **Activity 2: Dance Pad Mania** – Build a dance pad that sounds buzzers and flashes lights.

**Activity 3: Dance Off** – Play a game that puts the dance pads to the test.

**Watch an Episode:** Functional Fashion ([pbskids.org/designsquad/challenges/s1-ep8.html](http://pbskids.org/designsquad/challenges/s1-ep8.html)) or Bodies Electric ([pbskids.org/designsquad/challenges/s1-ep12.html](http://pbskids.org/designsquad/challenges/s1-ep12.html))

**Watch a D-Squad Pro File:** Dr. Howard Pryor ([pbskids.org/designsquad/profiles/howard\\_pryor.html](http://pbskids.org/designsquad/profiles/howard_pryor.html)) or Lt. Darrin Barber ([pbskids.org/designsquad/profiles/darrin\\_barber.html](http://pbskids.org/designsquad/profiles/darrin_barber.html))

## UNIT: CARS, CARS, CARS

- \* **Activity 1: Rubber Band Car** – Make a two-wheeled car powered by a rubber band.
- \* **Activity 2: Motorized Car** – Add a motor to your rubber band car.

**Activity 3: Customized Car** – Choose one of several ways to modify your car.

**Watch an Episode:** The Need for Speed ([pbskids.org/designsquad/challenges/s1-ep1.html](http://pbskids.org/designsquad/challenges/s1-ep1.html))

**Watch a D-Squad Pro File:** Peter Bethune ([pbskids.org/designsquad/profiles/peter\\_bethune.html](http://pbskids.org/designsquad/profiles/peter_bethune.html))

## UNIT: BLOWIN' IN THE WIND

**Activity 1: High Rise** – Build a tall tower that can support a tennis ball.

- \* **Activity 2: Kinetic Sculpture** – Build a tower with parts that move in the wind.

**Watch an Episode:** Blowin' in the Wind ([pbskids.org/designsquad/challenges/s1-ep11.html](http://pbskids.org/designsquad/challenges/s1-ep11.html))

## UNIT: KICK START

- \* **Activity 1: Kicking Machine** – Build a machine that kicks balls across the floor.
- \* **Activity 2: Extreme Kicking Machine** – Modify your kicking machine in one of two ways.

**Watch an Episode:** Just for Kicks ([pbskids.org/designsquad/challenges/s1-ep7.html](http://pbskids.org/designsquad/challenges/s1-ep7.html))

**Watch a D-Squad Pro File:** Chris Fidler and Scott Keller ([pbskids.org/designsquad/profiles/fidler\\_keller.html](http://pbskids.org/designsquad/profiles/fidler_keller.html))

## SINGLE ACTIVITIES

**Feel the Heat** – Heat things up by building a solar hot water heater.

**Heavy Lifting** – Build a cardboard crane and see how heavy a load it can lift.

- \* **Helping Hand** – See how many objects you can grab with a homemade “bionic” arm.

**Launch It** – Design an air-powered rocket that can hit a distant target.

**On Target** – Modify a paper cup so it can zip down a line and drop a marble onto a target.

- \* **Paddle Power** – Check out how fast a boat can paddle itself across a container of water.

- \* **Paper Table** – See how strong a table you can build out of paper.

**Watch an Episode:** Cardboard Furniture ([pbskids.org/designsquad/challenges/s2-ep1.html](http://pbskids.org/designsquad/challenges/s2-ep1.html))

**Watch a D-Squad Pro File:** Jen Chua ([pbskids.org/designsquad/profiles/jen\\_chua.html](http://pbskids.org/designsquad/profiles/jen_chua.html))

**Roving on the Moon** – Build a rubber band powered rover that can scramble across the room.

**Touchdown** – Create a platform that can safely cushion “astronauts” when they land on a table near you.

- \* **Watercraft** – Find out if you can build an unsinkable boat out of straws and plastic wrap.

**Watch an Episode:** PVC Kayak ([pbskids.org/designsquad/challenges/s2-ep2.html](http://pbskids.org/designsquad/challenges/s2-ep2.html))

**Watch a D-Squad Pro File:** Connie Yang ([pbskids.org/designsquad/profiles/connie\\_yang.html](http://pbskids.org/designsquad/profiles/connie_yang.html))

- \* **Zip Line** – Test how quickly you can get a Ping Pong ball to the bottom of a zip line string.

## COMMUNITY SERVICE COMPONENT

Introduce one of the above activities or units to a group of younger children (another Girl Scout Troop, younger siblings, or neighborhood kids.)

To order the *Design Squad* patch, contact the Girl Scout Country Store:

**(781) 893-6293; [girlscoutshop.org](http://girlscoutshop.org)**

For more information about *Design Squad* contact Margot Sigur, Outreach Assistant:

**[margot\\_sigur@wgbh.org](mailto:margot_sigur@wgbh.org)**

Major funding for *Design Squad* provided by



Additional funding for *Design Squad* provided by



© 2008 WGBH Educational Foundation. *Design Squad* is produced by WGBH Boston. *Design Squad*, AS BUILT ON TV, and associated logos are trademarks of WGBH. Major funding for *Design Squad* is provided by the Corporation for Public Broadcasting and the Intel Foundation. Additional funding is provided by the National Council of Examiners for Engineering and Surveying, United Engineering Foundation (ASCE, ASME, AICHE, IEEE, AIME), Noyce Foundation, Northrop Grumman, the IEEE and the Intel Corporation. All rights reserved. All third party trademarks are the property of their respective owners. Used with permission.

\* Activity sheets  
available  
in Spanish  
and English.

