Building Blocks
Engineering Our Community

STEM Activities for Kids Ages 10–13
Unit 1: Introduction to Engineering

BOYS & GIRLS CLUBS
OF AMERICA

Activity 1: What can STEM do for communities?

Get Prepared

What kids will do: Learn about STEM, with a focus on how engineering can help communities

Time needed: 45 minutes

What you will need:

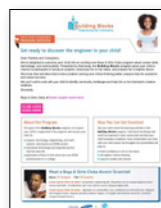| Printouts	Materials
• <u>Activity Sheet A: Engineering in Our Community</u>	• Samsung tablets • scissors • paper • pens or pencils

Before you begin: Get prepared for the **Building Blocks** program by working with your administrative team to make sure all tablets are connected to your Club's Wi-Fi. Also take the time to locate the apps in the "Apps" section of the tablet so you can direct kids to find them when they need to.

Note: Kids may use the activity sheet printouts or they may follow along on their tablets at: **www.scholastic.com/STEM**.

Connect With the Home:

Before you begin the **Building Blocks** program, send home the <u>Club-to-Home Communication: Program Overview</u> to explain to parents and guardians what the program is about.

After you've begun the first unit, send home the <u>Club-to-Home Communication: Unit 1 Overview</u> so family members will know what types of activities are involved in Unit 1 of the program.

Introduce Them to STEM Careers 5 minutes

1. Familiarize kids with the idea of STEM by asking: *Has anyone heard of the acronym STEM? Can you explain what it stands for?* (STEM stands for science, technology, engineering, and mathematics.)

2. Have kids use the tablets to open the <u>STEM Career Flip Book</u> and skim the careers in the book. (Note: You'll go more in depth with the <u>Flip Book</u> in later activities.) Ask: *Can you name some specific careers that would fall under STEM?* (Answers may include careers that involve: accounting, computer programming, medicine, chemistry, zoology, and engineering.)

Engineering in the Community 10 minutes

1. Kick off a group discussion by asking: *What do you think STEM can do for communities?* (Answers may include: STEM careers provide valuable services like health care; technology and engineering can make communities safer and improve how they function.)

2. Kids may be familiar with science, technology, and math as part of their daily lives, but less so with engineering. Discuss kids' prior knowledge about this topic by asking:

- *What is engineering?* (Engineering combines science and math to improve the world around us.)

- *What do engineers do?* (There are dozens of types of engineering careers. Some engineers create and construct buildings, bridges, and other structures. Other engineers design planes and cars. Still others clean up oil spills, create new computer technology, or formulate new chemical compounds.)

Activity 1: What can STEM do for communities? (continued)

STEM Challenge! 15 minutes

Take the idea of engineering in the community further. Have kids pair up to name the engineering aspects in their own neighborhood. Hand out **Activity Sheet A: Engineering in Our Community** and ask kids to work together to imagine engineering solutions for their communities.

Use the Tablets! 15 minutes

Ask kids to imagine themselves improving their neighborhoods with an engineering project. Kids will need to consider what would have to change in their neighborhood, what they would build, and what the benefit of their engineering project would be. Then have them use the **Cartoon Maker app** to create a short animation that answers the question, "What engineering project can improve my community?"

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TEAM MEMBERS: _____

Engineering in Our Community

If you want to see engineering in action, all you need to do is look around! When you walk through your neighborhood, what types of engineering might you spot? Maybe new bike lanes are being built. Buildings might have ramps for people with disabilities. There could be street signs with flashing lights to warn drivers to slow down in school zones. Engineering can be found everywhere!

Instructions: As a team, list the types of engineering you've seen in your neighborhood in the middle column of the chart below. Then think of engineering projects that could improve people's lives in your community, and write those in the last column. Imagine what your ideas could do!

Types of Engineering	Our community has…	Our community could use…
Public Buildings (like museums, town halls, post offices, libraries)		
Structures (like bridges, water towers, dams)		
Technology (like lighting and traffic control)		
Utilities (like sewage systems, storm drains, electrical lines)		
Public Facilities (like parks, piers, recreational areas)		
Transportation (like roads, bike paths, sidewalks, buses, trains)		