About Girls Get STEM: Unleash Your Inner Scientist

Girl Scouts of the USA has unleashed a new partnership with Discovery Education to spark girls' interest in STEM and help them unleash their G.I.R.L. (Go-getter, Innovator, Risk-taker, Leader)™ potential. Girls Get STEM: Unleash Your Inner Scientist provides educators and Girl Scouts troop leaders with standards-aligned curriculum that aims to address gender equity in STEM education across the country through a series of girl-led, girl-tested, and girl-approved resources for students in grades 2–5.

Quick Facts

- **Program Name:** Girls Get STEM: Unleash Your Inner Scientist
- **URL:** https://www.girlsleadstem.com/educator-resources
- **Audience:** Girl Scouts in grades 2-5

About the Girls Get STEM Activities

The Girls Get STEM activities below were created to bridge national science and engineering standards into the Think Like a Citizen Scientist Journey. This can support you as a troop leader in recruiting girls and establishing relationships with educators. In additional to our national standards, non-cognitive skills are factors that predict success in school beyond content knowledge and academic skills. In education, we refer to some of the most popular learning strategies in today's workforce as the "4Cs" for 21st Century Learning. They include critical thinking, communication, collaboration, and creativity. Each of the activities created in this partnership highlight and help develop these important skills.

The table below provides an overview of each Girls Get STEM activity, how to include this activity in your current Think Like a Citizen Scientist Journey, and identifies the 21st Century Learning Skill featured.

Design Activity: Creativity

Timing: Approximately 30 minutes, but tailor this activity to fit your troop's needs!

Focus Area: Planning to reach a goal is an important skill that requires both creativity and attention to detail. In this activity, girls will practice this skillset as they design their Take Action project!

Activity Overview: To develop a plan for their Take Action project, girls will be divided into two teams: Material Masters and Timeline Stars. With the help of the leader(s), the girls will brainstorm materials or steps that they will need to complete their project. The two groups will then share their ideas with each other, get feedback, and make sure their ideas will work together for the troop's Take Action project. For those troops whose Take Action project involves a science project, this activity also walks girls through the steps of identifying the parts of a scientific investigation!

Where can this activity fit in?

- Take Action Project: This activity can be used to complement the "Brainstorm and Design" section of "Design Your Take Action Project" in Think Like a Citizen Scientist Pt. 4.
- Any Time: This activity can also be modified to use any time your troop needs to plan for an upcoming project or event!

Materials:

- Three pieces of poster board or chart paper
- Tape, magnets, or thumb tacks (for hanging the poster board)
- Markers, five colors
- **Material Masters**, enough for half the troop
- **Timeline Stars**, enough for half the troop
- **Optional:** If your troop is completing a second Citizen Science Project or another science investigation as part of their Take Action project, print one copy of the **Scientific Method** handout.

Steps:

Brownies will be divided into two teams: Material Masters and Timeline Stars to plan their Take Action project.

Part 1: Setting the Stage

Begin the activity by reviewing the Take Action project that the girls agreed upon.

SAY:

- Now, you'll begin planning for your Take Action project.
- Before you get started, turn to the girl next to you and discuss: Have you ever planned for something before? What was it? Why was it important to plan?

Give girls a couple minutes to discuss in pairs before coming back together to discuss as a troop.

SAY:

- When you plan for something, there are usually two major parts that you need to plan for: 1) What materials will I need? And 2) What do I need to do?
- Next, you'll work as either a 'Materials Master' or 'Timeline Star'.
- If you're in the Material Masters group, you'll be in charge of coming up with everything the troop will need to complete the Take Action project.
- If you're in the Timeline Stars group, you'll need to develop the timeline, or plan, of the steps the troop will take to actually complete the Take Action project!

Have the girls count off by two and divide them into two groups: Material Masters and Timeline Stars.

Part 2: Divide and Conquer

Note to Volunteers: The following portion has been written for a troop meeting with two adults. If only one adult is present, appoint one girl in each group to be the reader (she'll read the questions to the group) and one girl in each group to be the notetaker (she'll write down the answers to the questions). You can then rotate between groups and provide additional help as needed.

Once the girls are in their groups, distribute and review the directions on the top of the Material **Masters** and **Timeline Stars** handouts.

Lead the girls in a discussion of each question on the sheet. If chart paper or poster board is available, record their answers on a large piece of paper rather than the handout so it's easier to share later. However, if larger paper is not available, you can use the handout!

Allow each group about 10–15 minutes to brainstorm and record their thoughts. When just a couple minutes are left, ask each group to choose two girls who will present their thoughts to the group!

Part 3: Coming Back Together

If the girls' ideas have been recorded on poster board, hang both groups' posters next to each other.

Encourage the Timeline Stars to share their ideas first. Once the girls have presented, invite the rest of the troop (the Material Masters) to ask them questions and provide suggestions.

Optional: Review the Steps of the Scientific Method. If your troop is completing a second Citizen Science Project or another science investigation as part of their Take Action project, follow the bulleted instructions below to review the steps of the Scientific Method with your troop. If not, skip ahead to the next un-bulletted step!

- Hold up the **Scientific Method** handout.
- SAY:

A science investigation usually has five parts:

1. Observe the world around you.
2. Create a question about your observations.
3. Make a hypothesis or an educated guess that answers your question.
4. Conduct an experiment to see if your guess is correct.
5. Look at your data and develop a conclusion that answers your question.

- Use the markers to color the box next to each step a different color. Then turn the troop's attention to their Take Action plan. If they can identify the parts of the scientific method in their timeline, use a marker to underline it in that step's color. If any section of the scientific method doesn't yet exist in their steps, use this color to add it!
- Then go on to the next step of the scientific method until all parts have been underlined and/or added.

Next, invite the Material Masters to share their list of materials. After they present, ask your troop to think about the overall timeline and materials needed for their Take Action project.

SAY:

- Are there any other materials that they may need to accomplish these steps?
- Are there any materials on the list that they may not need?
- What steps should be accomplished next meeting and which of the materials (if any) will you need to accomplish these first steps?

Save the troops' timeline and list of materials for the next meeting.

Material Masters

It is your group's job to think about what materials you will need for your Take Action project, as well as where you may be able to get them! Answer the questions below to get started:

1. *What will you need as you prepare for your project?* For example, if one part of your project involves making posters, what would you need to make the posters?

2. *What will you need during your project?* For instance, if you will be hanging posters, you will need plenty of tape!

3. *Will you need any materials as you wrap up your project?* Think especially about materials you will need to make sure your project continues to make a difference in the future. For instance, if you want to make a weekly announcement to encourage students to take a certain action, you may need a pencil and paper to write down what you will say!

4. Look back at your list and now think about where you can get these materials. Try to be creative: Not everything needs to come from a store! Next to each material that you listed, make a quick note of where you may be able to find it.

Timeline Stars

It is your job to think about the steps your troop will need to accomplish before, during, and after your project to make sure it runs as smoothly as possible. You don't need to fill in all of the numbers below…Just complete as many as your project needs!

Before: What will you need to do to get ready for your project?
(Hold interviews, gather materials, find a location, etc.)

1.

2.

3.

During: What will you need to do to actually complete your project?

1.

2.

3.

4.

5.

After: Will you need to do anything *after* your project to wrap it up? (Clean up, write thank you notes, etc.)

1.

2.

3.

Scientific Method

1. Observe the world around you. ☐

2. Create a question about your observations. ☐

3. Make a hypothesis or an educated guess that answers your question. ☐

4. Conduct an experiment to see if your guess is correct. ☐

5. Look at your data and come up with a conclusion that answers your question. ☐