

Think Like a Citizen Scientist Pt. 1

Overview

Juniors sharpen their observation skills through activities that challenge them to notice changes and describe a group of items. Girls learn why it is important for scientists to use observation and are introduced to citizen science.

Notes for Volunteers:

Use The Talking Points (But Make Them Your Own): In each session, you'll find suggested talking points under the heading "SAY." Some volunteers, especially new ones, find it helpful to follow the script. Others use the talking points as a guide and deliver the information in their own words. Either way is just fine.

Be Prepared (It's What Girl Scouts Do!): Each meeting includes a "Prepare Ahead" section that includes a materials list and what kind of set-up is required. Read it in advance so you have enough time to gather supplies and enlist help, if needed.

Use Girl Scouts' Three Processes: Girl-led, learning by doing, cooperative learning — these three processes are the key to making sure girls have fun in Girl Scouts and keep coming back.

"Learning by doing" and "cooperative learning" are built into this Journey, thanks to the hands-on activities and tips. You'll also find specific "keep it girl-led" tips in the meeting plans. They'll help you create an experience where girls know they can make choices and have their voices heard.

Observe. Record Data. Analyze Data.: On this Journey, girls will do hands-on activities to learn about the scientific method. They'll learn how to observe closely, record their observations and analyze what they've learned. They'll then put what they've learned into practice by doing a citizen science project.

When they send in the data they collected, girls are doing something very important. Their data will help a real-life scientist to do real-life research. They will join thousands — even millions! — of other people who also did the project and sent in their data. That's how science works — gathering millions of pieces of information and then figuring out how it all fits together. And it all starts with observing, recording and analyzing data.

Leave Time For The Closing Ceremony: If girls are having fun doing an activity, you may be tempted to skip the Closing Ceremony so they can keep going — but the Closing Ceremony is absolutely key to their learning. Here's why:

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When girls leave a meeting, they'll remember how much fun it was to play an observation game or go outside and take pictures of clouds. However, they may not realize that they just learned how scientists make discoveries — unless you tell them.

When you do that, you turn a *hands-on* activity into a *minds-on* activity. During the Closing Ceremony, you can connect the dots for girls by:

- Pointing out how they acted as citizen scientists. For example: They noticed dozens of details, small and large, about nature as they did their project. (You might tell them that children are actually *better* at citizen science than many adults! That's because children see the world in a fresh way — they don't fall into the habit of seeing what they expect to see.) The girls may have scribbled notes, taken pictures and recorded sounds. They thought about what they discovered.
- Reminding girls that they are *already* scientists, because they're naturally curious about the world. (Think of how many times girls ask "why" -- why is the sky blue, why is it cold in winter and hot in summer, why aren't there giraffes in Iowa?) Encourage girls to try to find answers to their questions by observing the world around them and asking questions about what they notice.
- Letting them know that they have what it takes to continue exploring STEM.

These simple messages can boost girls' confidence and interest in STEM — and end the meeting on an upbeat note!

Tell Your Troop Story: As a Girl Scout leader, you're designing experiences that girls will remember their whole lives. Try to capture those memories with photos or videos. Girls love remembering all they did — and it's a great way for parents to see how Girl Scouting helps their girls.

And please share your photos and videos with GSUSA by emailing them to STEM@girlscouts.org (with photo releases if at all possible!).

Program Pairing: The Junior Camper, Animal Habitats, and Flowers badges go well with this Journey!

Prepare Ahead (Roughly 60 minutes total)

1. Review vocabulary (2 minutes)

This meeting includes the following vocabulary:

- **Citizen Science** – Citizen science connects regular people with scientists to help them conduct research. With the help of thousands of citizens around the world, scientists can do research more quickly, share information more readily, and greatly add to the store of human knowledge.

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- **Observation** – watching and noticing something using all of your senses, especially sight, to get information and better understand a situation or environment.
- **Scientific Method** – the process, or series of steps, that scientists take when conducting scientific research.

See the **Junior Think Like a Citizen Scientist Journey Glossary** for more vocabulary and examples.

2. Read through this guide and its Meeting Aids (15 minutes)

This will help you to get familiar with the flow of the meeting.

Read the following handouts (found in the **Meeting Aids** section):

- **Junior Think Like a Citizen Scientist Journey Materials List:** Each meeting has its own materials list, but you can use this handout if you like to do all your supply shopping at one time. It includes all materials needed for the entire Journey.
- **Junior Think Like a Citizen Scientist Journey Glossary:** This is a list of words that Juniors may not know and how to define them.
- **Think, Pair, Share:** These facilitation tips will help you to make sure that every girl's voice is heard during brainstorming activities.
- **Take Action Guide:** This handout explains the difference between Take Action and Community Service. It also includes tips to make a project sustainable and Take Action project ideas that you and your troop can use as inspiration.

3. Gather materials (30 minutes)

Gather materials using the Materials List for this meeting. If your meeting location doesn't have a flag, bring a small one that Juniors can take turns holding or hang in the room.

4. Sign up for your SciStarter account and invite your troop (15 minutes)

In partnership with GSUSA, SciStarter has created a special dashboard for Volunteers to help you manage your troop's citizen science project.

You will have access to a dashboard to with specially curated citizen science projects and materials. If you register for a Girl Scouts SciStarter account, you can track what your girls have done over time, throughout the Journey and even for any future citizen science projects the girls want to complete. Through the Girl Scouts SciStarter dashboard, volunteers and girls can record their progress to see all that they have accomplished and possibilities for future projects as citizen scientists.

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By registering for a Girl Scouts SciStarter account, you will have access to:

- A short list of projects that have been chosen because they're easiest to do within a typical troop meeting. You can, of course, explore other projects on the SciStarter site with girls.
- The projects on the short list include welcome videos from the scientists. You can show these videos to girls to help them understand how they're helping scientists with their project and why the project is important.
- The short listed projects also have "Thank You" videos from the scientists of each project. You can show these videos to girls to boost their sense of pride and accomplishment.

To get started, sign up for a Girl Scouts SciStarter account at Sign in to your Girl Scouts SciStarter account at <https://scistarter.com/girlscouts/volunteer/landing>

1. **Sign Up:** Enter your email, username, password, and zip code (to help locate projects that work for your location) and click "Create Account". **You must sign-up for SciStarter via the Girl Scouts landing page (<https://scistarter.com/girlscouts/volunteer/landing>) to start your Journey.**
2. **Select a Project:** Once you sign up, you will see a Welcome Page. Scroll down to view the Welcome Videos from each project leader. Choose half of the introduction videos to show to girls this meeting. You can stream or download the videos for girls. After you show the remaining videos in Think Like a Citizen Scientist PT. 2, you will choose one project for your troop to complete. This creates the Citizen Science Journey for your troop.
3. **Invite Girl Scouts:** After you choose a project in Think Like a Citizen Scientist PT. 2, you'll have the opportunity to invite your girls to join SciStarter (with their parents help and permission). Confirm your email to receive your Citizen Science Session Link to share with the girls. **After the meeting, remind the parents/guardians to sign-up their girls for SciStarter through this session link before the next meeting so they can join you on the Journey.**
4. **Explore Your Dashboard:** Your selected project will be highlighted on your SciStarter dashboard. You will see the introduction video again along with a written description of the project and the instructions to get started. Under the Girl Scout Management tab, you can see which girls have signed up for SciStarter. Once you get started in your Journey, you will mark their attendance in this tab. Finally, you will see information about how to Take Action after completing your citizen science project.

Get Help from Your Family and Friends Network

Your Friends and Family Network can include:

- Girls' parents, aunts, uncles, older siblings, etc.
- Other volunteers who have offered to help with the meeting

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Think Like a Citizen Scientist Pt. 1

Ask your Network to help:

- Bring in items for Activity 1: As Girls Arrive: Sensing Nature and Activity 3: Observing with Detail and Precision

Award Connection

Juniors will earn two awards:

- Think Like a Citizen Scientist award
- Take Action award

Juniors will earn both awards following the completion of the Take Action project and Journey in **Think Like a Citizen Scientist PT. 6.**

(Note to Volunteers: You can buy these awards from your council shop or on the Girl Scouts' website.)

Meeting Length

90 minutes

- The times given for each activity will be different depending on how many Juniors are in your troop.
- There is no snack time scheduled in these meetings, but there are 15 minutes of “wiggle room” built in for snacks or activities that run long.
- Give Juniors 10- and 5-minute warnings before they need to wrap up the last activity so you'll have time for the Closing Ceremony.

Materials List

Activity 1: As Girls Arrive: Sensing Nature

- 10-15 small items from nature for girls to observe (leaves, twigs, flowers, rocks, etc.) Option: If you can find enough objects of the same type, girls will have to observe and describe the items with even more detail in Activity 3: Observing with Detail and Precision.

Activity 2: Opening Ceremony: Becoming Citizen Scientists

- Flag
- Device (computer, tablet or smartphone) with project videos from SciStarter, downloaded or with ability to stream
- Optional: Poster Board with the Girl Scout Promise and Law

Activity 3: Observing with Detail and Precision

- 10-15 small items from nature for girls to observe (leaves, twigs, flowers, rocks, etc.) Option: If you can find enough objects of the same type, girls will have to observe and describe the items with even more detail
- Blank paper

Think Like a Citizen Scientist Pt. 1

- Pens or pencils
- Towel, blanket, or similar item to cover the small items all at once
- Blank paper
- Notecards or blank paper cut into four pieces
- Pens or pencils
- Optional: Take Juniors outside for this activity. It will give girls the chance to explore making observations outdoors, which will be an important part of their citizen science activity in Think Like a Citizen Scientist PT. 3.

Activity 4: Closing Ceremony: Take Action like Citizen Scientists

- **Take Action Guide**

Awards

Juniors do not receive any awards in this meeting.

Detailed Activity Plan

Activity 1: As Girls Arrive: Sensing Nature

Time Allotment

10 Minutes

Materials

- 10-15 small items from nature for girls to observe (leaves, twigs, flowers, rocks, pinecones, etc.) Option: If you can find enough objects of the same type, girls will have to observe and describe the items with even more detail in Activity 3: Observing with Detail and Precision.

Steps

Organize the items in the middle of the room.

Welcome Juniors, and have them take a few minutes to look at the different items, thinking about each of their senses.

SAY:

We're going to be going outdoors on this Journey to do a science project.

Take some time to really look closely at these objects from nature.

Feel free to pick them up. What do they feel like? What do they smell like?

Think Like a Citizen Scientist Pt. 1

Find a partner, and try to describe one of the objects just by listing details of what it looks like.

Encourage Juniors to make close observations of each natural object.

Activity 2: Opening Ceremony: Becoming Citizen Scientists

Time Allotment

15 Minutes

Materials

- Flag
- Device (computer, tablet or smartphone) with project videos from SciStarter, downloaded or with ability to stream
- Optional: Poster Board with the Girl Scout Promise and Law

Steps

Recite the Pledge of Allegiance and the Promise and Law.

Conduct any troop business.

Introduce Juniors to the Think Like a Citizen Scientist Journey.

SAY:

Today, we are starting a new Journey where we are going to be citizen scientists!

Does anyone know what scientists do?

Girls may say: They do experiments, they work in labs, etc.

Scientists study different parts of nature to understand how it works.

They use something called the scientific method. The scientific method is the name for the steps that scientists take to learn new things.

On this Journey, you're going to use the scientific method to help real-life scientists learn more about the world.

You're going to do something called citizen science. A scientist asks regular citizens — that's you and me — to help her out.

Think Like a Citizen Scientist Pt. 1

We have a few citizen science projects to choose from. Let's get started by watching some videos. Scientists are going to explain what they want to learn and how you can help them.

Show Juniors about half of the project videos on SciStarter. You'll show them the rest in the next meeting when they'll also choose their project, Think Like a Citizen Scientist PT. 2.

(Note to Volunteers: If you can't stream videos or don't have the videos downloaded, tell girls about some of the options for their citizen science project based on the project descriptions on the SciStarter site.)

Activity 3: Observing with Detail and Precision

Time Allotment

40 Minutes

Materials

- 10-15 small items from nature for girls to observe (leaves, twigs, flowers, rocks, etc.) Option: If you can find enough objects of the same type, girls will have to observe and describe the items with even more detail.
- Towel, blanket, or similar item to cover the small items all at once
- Blank paper
- Notecards or blank paper cut into four pieces
- Pens or pencils
- Optional: Take Juniors outside for this activity. It will give girls the chance to explore making observations outdoors, which will be an important part of their citizen science activity in Think Like a Citizen Scientist PT. 3.

Steps

Practice Observation with Kim's Tray. (15 minutes)

Introduce observation to Juniors.

SAY:

Today, we're going to practice observing like scientists.

Does anyone know what observation is?

Girls may say: Observation is looking at something, etc.

Think Like a Citizen Scientist Pt. 1

Observation is watching and noticing something using all of your senses, especially sight, to gather information.

Observation isn't just looking at things around us. We also need to think about what we see. You did this when you examined different items from nature to identify what they were.

Now, let's see if you can remember the items!

Organize ten items under the towel or blanket.

SAY:

See how many of the items you can remember in 30 seconds.

Do you think you can remember them all?

Uncover the items for the girls to see.

Girls spend 30 seconds observing the items.

Cover the items again, and have Juniors name what they saw.

SAY:

What items did you see?

Girls take turns naming the items, trying to name all ten.

SAY:

Is there something that could help you to remember the items better?

Girls may say: We could keep them uncovered, we could make a list, etc.

You could write down the items. Let's see if that helps!

Hand out blank paper and pens to the girls.

Uncover the items for the girls to see.

Girls spend 30 seconds observing the items, creating a list on their paper.

Cover the items again, and have Juniors name what they saw.

Think Like a Citizen Scientist Pt. 1

SAY:

What items did you see?

Girls take turns naming the items on their lists, trying to name all ten.

SAY:

Writing down what you saw really seemed to help you remember!

However, do you think you would notice when something changes?

Under the towel (blanket, etc.), add or remove one item, but do not let the girls see.

Uncover the items for the girls to see.

Girls spend 30 seconds observing the items, creating a list on their paper.

Cover the items again, and have Juniors name what changed.

SAY:

What was different? Was there something new or missing?

Girls take turns naming the items on their lists, trying to name all items and figure out what was added or missing.

Repeat several times, adding and removing items.

Describe Your Observations. (15 minutes)

Divide Juniors into pairs to practice writing observations and describing parts of nature.

SAY:

If you were to describe this rock [or other item], what would you say?

Girls may say: There is a rock, the rock is white, the rock is smooth, etc.

But what if you had you describe this rock [point to a different rock or object]? How would you describe the differences between the two rocks?

Girls may say: It is bigger, it is more gray, etc.

Now, work in pairs. Choose one item to describe to your partner, but don't tell them which one! You can't point to the item either.

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Everything you want to communicate to your partner about your item must be written on a notecard [or piece of paper].

Remember, some of the items are very similar, so it's important to write as many details as you can to help your partner guess which item you chose.

Hand out notecards or blank paper pieces to the pairs.

Display the items in one place so girls can look at them all.

Optional: If you can, have girls go outdoors for this activity. Girls can walk around and find their own items to describe.

Juniors silently choose one of the items to write a description for.

Once girls have chosen the item they want to describe, have them sit with their partners and spend a few minutes writing a description.

Once girls think their descriptions are detailed enough, have them exchange notecards/pieces of paper, and take turns figuring out which item their partner was describing.

If the partner guesses incorrectly, the girl should go back and review her description, adding new details to help her partner guess correctly.

Repeat several times, changing items and partners.

Make Scientific Observations. (10 minutes)

Juniors team up to practice making scientific observations about their world.

SAY:

Scientists observe nature to understand how it works.

Observation is an important part of being a scientist. A scientist looks closely and studies the details to learn about our world and thinks about what they might mean.

They pay super close attention to what is happening around them, both looking and thinking about what they are seeing.

Can anyone think of an observation a scientist might make about this room?

Girls may say: The room is big, there are (X number of) people, the walls are white, etc.

Think Like a Citizen Scientist Pt. 1

The things a scientist can observe are endless!

Scientists make many different types of observations. They note how many things there are and details about each of the things.

How many people are there in this room?

Let girls answer.

SAY:

That's a scientific observation!

Now, if I'm describing a cat to you, I could say the cat is black or I could say the cat looks scary. Which is scientific? (Answer: The cat is black.)

Let girls answer.

SAY:

The cat is black is a scientific observation because it give information about the object. It doesn't include my personal feelings or opinions. When I say, "The cat looks scary," I'm giving my opinion.

Scientific observations can't include your personal feelings or opinions.

Can anyone think of another observation that isn't scientific?

Girls may say: The room is pretty, she is nice, etc.

Let's practice making scientific observations about this room.

It might help if you first choose one thing, like a plant or a chair, and write down lots of observations about it and the other objects around it. Remember, great observations include lots of details!

Organize Juniors into groups of 3-4 girls, and hand out paper and markers, pens, or pencils to each group.

Juniors go around the meeting area in their groups and choose something (chair, plant, table, etc.) to observe, writing and discussing their observations as a group.

Girls make **only** scientific observations for a couple minutes before moving on to observe something else.

Think Like a Citizen Scientist Pt. 1

As Juniors make observations, circle around and remind them what makes an observation scientific or not.

Bring Juniors back into a Friendship Circle.

Have each group share some of their scientific observations. If they include any with personal emotions or reflections, remind girls what makes an observation scientific.

SAY:

You just made scientific observations!

Observation is an important step for scientists to take when they want to understand something. They look closely at all of the details. Sometimes, scientists observe what they thought they would. Other times, they're surprised!

Activity 4: Closing Ceremony: Take Action Like Citizen Scientists

Time Allotment

10 Minutes

Materials

- **Take Action Guide**

Steps

Have Juniors form a Friendship Circle to review what they learned.

SAY:

You did a great job observing today!

Observation is one of the first things scientists do to learn more about the world. They observe and collect data or information. This is one of the first steps of the scientific method.

What was your favorite part of practicing your observation skills?

How could you continue to sharpen your observation skills?

Share with Juniors that they will be planning a Take Action project.

SAY:

Scientists help people, animals, and our world. They look for ways to help sick people, take care of wild animals, keep rivers and oceans clean, and much, much more.

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There's a special way that Girl Scouts help others, too. Does anyone know what it is?

Girl Scouts do Take Action projects to help make the world a better place.

When you do a Take Action project, you look for a problem in your community, come up with a plan to fix it, and team up to take action.

Does anyone have ideas right now about problems you'd like to solve? I'll keep a list of your ideas so you have them when you're ready to choose a Take Action project.

Keep It Girl-Led: Let girls offer ideas, and write them down.

Tell girls about the Journey awards they'll earn.

SAY:

You'll earn two awards on this Journey. The first one is called the "Think Like a Citizen Scientist" award. You'll earn that for learning how to solve problems like a citizen scientist.

The second one is called the "Take Action" award. You'll earn that for doing a Take Action project that will make a difference in the world.

If there is time, begin to brainstorm ideas for the Take Action project.

(Note to Volunteers: Check out the **Take Action Guide** handout in the Meeting Aids if Juniors need help with ideas. Bring the list of ideas Juniors come up with to the next meeting.)

End the meeting with a Friendship Squeeze.

Think Like a Citizen Scientist Journey

Glossary for Juniors

Juniors may not know some of the words used on this Journey. Here are definitions you can share with them:

Citizen Science connects regular people with scientists to help them conduct research. With the help of thousands of citizens around the world, scientists can do research more quickly, share information more readily, and greatly add to the store of human knowledge.

The **scientific method** is the process, or series of steps, that scientists take when conducting scientific research.

Observation is watching and noticing something using all of your senses, especially sight, to get information and better understand a situation or environment.

Data is information that scientists receive, collect, or observe in the field.

Analysis is reviewing data or information to create conclusions that explain more about what you're observing.

Think Like a Citizen Scientist Journey

Materials List

Think Like a Citizen Scientist 1

Activity 1: As Girls Arrive: Sensing Nature

- 10-15 small items from nature for girls to observe (leaves, twigs, flowers, rocks, etc.) Option: If you can find enough objects of the same type, girls will have to observe and describe the items with even more detail in Activity 3: Observing with Detail and Precision.

Activity 2: Opening Ceremony: Becoming Citizen Scientists

- Flag
- Device (computer, tablet or smartphone) with SciStarter project videos downloaded or with ability to stream
- Optional: Poster Board with the Girl Scout Promise and Law

Activity 3: Observing with Detail and Precision

- 10-15 small items from nature for girls to observe (leaves, twigs, flowers, rocks, etc.) Option: If you can find enough objects of the same type, girls will have to observe and describe the items with even more detail
- Blank paper
- Pens or pencils
- Towel, blanket, or similar item to cover the small items all at once
- Blank paper
- Notecards or blank paper cut into four pieces
- Pens or pencils
- Optional: Take Juniors outside for this activity. It will give girls the chance to explore making observations outdoors, which will be an important part of their citizen science activity in Think Like a Citizen Scientist 3.

Activity 4: Closing Ceremony: Take Action Like Citizen Scientists

- Take Action Guide

Think Like a Citizen Scientist 2

Activity 1: As Girls Arrive: Create Your Field Notebook

- Option 1: Blank paper, stapler
- Option 2: Field notebooks (one per girl). A field notebook can be any small notebook that girls can carry with them to jot down notes.
- Pens, pencils, or markers
- Decorating supplies (construction paper, glue, animal stickers, etc.)

Activity 2: Opening Ceremony: Choosing Our Citizen Science Project

- Flag
- Device (computer, tablet or smartphone) with SciStarter project videos downloaded or with ability to stream
- Optional: Poster Board with the Girl Scout Promise and Law

Think Like a Citizen Scientist Journey

Materials List

Think Like a Citizen Scientist 2 (continued)

Activity 3: Animal Tracking Field Notes

- **Animal Tracks Cutouts**, five sheets printed and cut out (making 15 tracks in total)
- **Animal Tracking Graph** (one for each girl)
- **Example: Animal Tracking Graph**
- **Animal Tracking Key** (one for each girl)
- Tape
- Field notebooks from Activity 1: As Girls Arrive: Create Your Field Notebook
- Pens, pencils or markers

Activity 4: Closing Ceremony: Brainstorming Our Take Action Project

- List of Juniors' Take Action ideas from Think Like a Citizen Scientist 1
- **Take Action Guide**

Think Like a Citizen Scientist 3

Activity 1: As Girls Arrive: Prepare Your Field Notebook

- Juniors' field notebooks from Think Like a Citizen Scientist 2
- Pens or pencils

Activity 2: Opening Ceremony: Time to be Citizen Scientists!

- Flag
- Optional: Poster Board with the Girl Scout Promise and Law

Activity 3: Conducting Our Citizen Science Project

- Device (app or website on tablet, computer, or smartphone) or other materials needed for you to share Juniors' data and show them the 'Thank You' video SciStarter
- Materials needed for your chosen citizen science project (Check your SciStarter Dashboard or project's instructions.)
- Field notebooks or blank paper for girls
- Pens or pencils

Activity 4: Closing Ceremony: Time to Decide on Take Action

- List of Juniors' Take Action ideas from past meetings
- Index cards or paper
- Tape
- Pens, pencils, or markers

Think Like a Citizen Scientist 4

Activity 2: Opening Ceremony: Working Together to Take Action

- Flag
- Optional: Poster Board with the Girl Scout Promise and Law

Think Like a Citizen Scientist Journey

Materials List

Think Like a Citizen Scientist 4 (continued)

Activity 3: Designing Our Take Action Project

- Large pieces of paper or poster boards
- Markers
- Post-It notes
- Pens and pencils

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Activity 2: Opening Ceremony: Why is Our Project Important?

- Flag
- Optional: Poster Board with the Girl Scout Promise and Law

Activity 3: Creating Our Take Action Project

- Any materials Juniors need for their Take Action project

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Activity 1: As Girls Arrive: Get Ready to Celebrate!

- Girl Scout Promise and Law poster(s)
- Any items Juniors want to display (such as photos or videos from their Take Action project)
- Photos and videos from the Journey meetings
- Music system
- Decorations
- Snacks

Activity 2: Opening Ceremony: Welcome!

- Flag
- Optional: Poster Board with the Girl Scout Promise and Law

Activity 3: Awards Ceremony and Celebration

- Think Like a Citizen Scientist award
- Take Action award

(Note to Volunteers: You can buy these awards from your council shop or on the Girl Scouts' website.)

Activity 4: Girl Survey

- If girls are taking the survey online: Laptop/tablet
- If girls are filling out the survey on paper: Copies of Girl Survey (pdf available in Meeting Aids) and pen or pencil

Brainstorming Tips: Think, Pair, Share

How to Run a Think, Pair, Share Activity:

Tell girls that they're going to brainstorm answers to your question using "Think, Pair, Share."

Lead girls through the basic steps by telling them they will:

1. Break into small groups.

2. Listen to the question or prompt.

3. Think about their answers.

- Girls may want to write their answers down.
- Twenty seconds should be enough time, since girls will need to sit quietly.

4. Pair with other girls.

- Girls talk with one to three other girls (depending on group size), making sure everyone has a chance to share their answers. If there's time, it's OK for girls to ask questions about each other's answers.
- For pairs, 20 seconds should be enough time. If your troop enjoys discussion, consider extending this to 1 to 2 minutes.

5. Share with the group.

- Girls share their answers with the larger group.
- This can be completed in 20 – 30 seconds, but will run longer based on group size and how the group sharing is done.

There are two ways to set up group sharing:

- **Strongly Recommended:** One girl shares the best/most interesting/summary answer for the group. This approach is great if you're running short on time. It also helps develop conflict resolution and compromise skills.
- **Optional:** Each girl shares her partner's answer. This helps girls develop active listening skills, but will run longer because all girls are sharing.

Think Like a Citizen Scientist Journey

Take Action Guide

What's the difference between a community service project and a Take Action project?

Community Service makes the world better by addressing a problem “right now.” For example, collecting cans of food for a food pantry feeds people “right now.” Gathering toys for a homeless family shelter makes kids happy “right now.” Providing clothing and toiletries to people after a fire or flood helps them “right now.” These acts of kindness are important ways to help people — right now.

Take Action encourages girls to develop a project that is sustainable. That means that the problem continues to be addressed, even after the project is over. Sustainability simply means coming up with a solution that lasts.

For example, girls might want to do something about trash in a local park. If they go to the park and pick up trash, they've solved the problem for today — but there will be more trash to pick up tomorrow.

Instead, girls could explore why there's so much trash. Here's what they might discover:

1. There aren't enough trash cans in the park.
2. The trash cans are hard to find.
3. People have to walk out of their way to throw away trash because of where the cans are placed.
4. People don't realize the importance of putting trash in the trash cans.

Here's how girls might address these issues:

- **Issues 1 – 3:** Make a presentation to the city council to report on their findings and suggest adding more trash cans or moving them to more visible or convenient positions.
- **Issue 4:** Create a public awareness campaign that encourages people to use the trash cans instead of littering.
- **Variation:** Older girls may want to design interactive garbage cans that make tossing your trash fun. Do an online search for “the fun theory” or “the world's deepest bin” to see this in action.

What are the steps of a Take Action project?

Girls team up to:

- Identify a problem
- Come up with a sustainable solution
- Develop a team plan
- Put the plan into action
- Reflect on what they learned

Keep It Girl-Led: Girls should actively participate in each step in order for this to be girl-led. Younger girls will need more guidance, but they can and should decide as a team what problem they want to address.

How do girls make their project sustainable?

Here are three ways to create sustainable change:

1. Make your solution permanent.
2. Educate and inspire others to be part of the change.
3. Change a rule, regulation or law.

How can I help girls come up with Take Action Ideas?

Next are some specific examples you can use to help girls understand what sustainable Take Action projects look like.

Keep It Girl-Led: These examples are intended to give a sense of what a Take Action project could look like. **Please do not choose a project from this list for girls to do!** Instead, guide them to brainstorm ideas, get feedback, and come up with a plan. Girls will learn key leadership skills, such as decision-making, compromise, conflict resolution, and teamwork, when their Take Action project is girl-led.

Citizen Science Take Action Ideas

Issue: More kids and families should know about how they can have fun (and help scientists) by doing citizen science projects.

- **Solution: Educate and inspire others.** Do a presentation at your school's parents' night about why citizen science is important. Showcase a few citizen science projects that are particularly fun and easy for families to do together.

Issue: More people need to know how they can do citizen science projects to help scientists learn about the world.

- **Solution: Educate and inspire others.** Organize a Citizen Science Day at your school or in your town. Set up Citizen Science Stations with handouts explaining different projects (and materials, if needed). Invite everyone to choose a project, collect data and upload it.

Issue: Perhaps you've done a citizen science project that's really sparked your interest. You've discovered that a river near your town is polluted. You've learned that bees are dying off and that our food supply is threatened. You've realized that monarch butterflies are in danger because the milkweed plant, their main source of food, is disappearing.

- **Solution 1: Educate and inspire others.** You create a video, presentation, skit, event, poster campaign, movie, etc. to tell people about the problem — and give them several ways they can take action to address it.
- **Solution 2: Change a rule, regulation or law.** You do some research and find out that changing a local law or regulation could address the problem. You make a presentation to your city council, start a petition drive, or advocate at the state level for a change in laws or regulations to address the problem.

Issue: More people need to know how exciting and fun STEM can be.

- **Solution 1: Educate and inspire others.** Create a list of great books, movies and documentaries that focus on STEM. Make copies for teachers to hand out or make posters for the school library.
- **Solution 2: Educate and inspire others.** Create a short play based on one of the books and perform it for your class or school.

Other Ideas for Take Action

Issue: We could conserve water if more people collected rain water and used it to water plants.

- **Solution 1: Make it permanent.** Make rain collection devices for family or friends that can be installed in their yards. Give them a list of different ways to use rain water and how they're helping the Earth.
- **Solution 2: Educate and inspire others.** Create a handout, video tutorial, or show-and-tell presentation about how to make a rain collection device, how to use rain water and how that helps the Earth.

Issue: Parents often run their engines outside the school as they wait to pick up or drop off their children, which pollutes the air.

- **Solution: Change a rule, regulation or law.** Make a presentation to the school board or administrators about why this is a problem and suggest a new rule that makes the pick-up/drop-off area a "no idling" zone.

Issue: There's no sidewalk along a street near the elementary school, which makes it dangerous for children to walk home.

- **Solution: Make it permanent.** Make a presentation to the city council about the problem and suggest that they build a sidewalk. (Note: Even if the council doesn't vote to create a sidewalk, the girls have earned their Take Action award because they came up with a sustainable solution and took action through their presentation.)
- **Extra Inspiration:** Do an online search for "Girl Scout Brownies Convince City Hall to Build Sidewalk."

Issue: There have been several accidents at a busy intersection that doesn't have a stoplight.

- **Solution: Make it permanent.** Research the number of accidents and make a presentation to the city council, asking that they have a stoplight installed.

Issue: The local park doesn't have a swing for children with disabilities.

- **Solution: Make it permanent.** Make a presentation to the city council explaining the problem and offering to use troop money from the cookie sale to help pay for the swing.
- **Extra Inspiration:** Do an online search for "How One Brownie Troop Became Social Entrepreneurs.")

Issue: We should recognize women who have helped their communities and made the world a better place in all kinds of ways.

- **Solution: Educate and inspire others.** Research the “hidden figures” in your community (unsung women who’ve done great things). Create a display about their accomplishments for a library or community center.

Issue: It’s hard for new students to meet people and make friends at school.

- **Solution: Make it permanent.** Design and build “buddy benches.” Partner with the school to have the benches installed on the playground so kids who want to make new friends can find each other.

Issue: The local shelter is having a hard time getting rescue animals adopted.

- **Solution: Educate and inspire others.** Use your photography skills to create pet portraits for the shelter’s web site. Use your writing skills to craft heart-warming bios for each portrait.

Need more ideas?

Check out [Girls Changing the World](#) on the GSUSA web site. Girls post their Take Action and Bronze/Silver/Gold Award projects on this site. You can search by project topic or grade level. (And after the troop has done their project, please post it so they can inspire other girls!)

33 Ways to Take Action!

Make your solution permanent.

1. Make and install something outside (benches, bird houses, dog run, ropes course, sensory trail for children with disabilities, Little Library, etc.)
2. Plant something (butterfly garden, tree, wind chime garden, etc.)
3. Make something inside (Maker Space, reading room, etc.)
4. Create a collection (children's books children's hospital or family shelter, oral histories for town museum, etc.)
5. Advocate for building a permanent community improvement (sidewalk, bridge, park, streetlights, stoplight, etc.)

Educate and inspire others to be part of the change.

6. Do a show-and-tell
7. Create a poster campaign
8. Perform a skit
9. Make a "how to" handout
10. Draw a comic
11. Give a speech
12. Write and perform a song
13. Make an animated movie
14. Make a live-action movie
15. Make a presentation
16. Create a workshop (perhaps in partnership with a local business or organization) to teach a skill such as coding, camping, canoeing, robotics, sewing, car care, healthy eating, gardening, home repair, budgeting, etc.
17. Create a workshop to teach others about healthy living (exercise, nutrition, mental health, etc.)
18. Create a social media campaign
19. Make video tutorials to teach a skill
20. Organize an email campaign
21. Organize a petition
22. Organize an event (concert, play, poetry slam, art exhibit, sporting event, field day) to raise awareness about an issue
23. Make a "playbook" to help others follow your lead (how to mentor robotics teams, organize a workshop or event, advocate to city council, create an online petition, change a law, etc.)
24. Make an app that helps people take action on an issue
25. Create a web site
26. Write an op-ed or letter to the editor of a newspaper or magazine
27. Start a blog

Change a rule, regulation or law.

28. Make a presentation to your school principal
29. Make a presentation to your school board
30. Make a presentation to your city council
31. Speak up at your representative's town hall meeting
32. Create an online petition
33. Advocate for a law with your state government

The Girl Scout Promise

On my honor, I will try:

To serve God and my country,

To help people at all times,

And to live by the Girl Scout Law.

The Girl Scout Law

I will do my best to be

honest and fair,

friendly and helpful,

considerate and caring,

courageous and strong, and

responsible for what I say and do,

and to

respect myself and others,

respect authority,

use resources wisely,

make the world a better place, and

be a sister to every Girl Scout.