

Think Like a Citizen Scientist Pt. 6

Overview

Girls celebrate what they've learned and receive their Think Like a Citizen Scientist and Take Action awards.

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:

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.

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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 scribbled notes, took 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!).

Prepare Ahead (Roughly 80+ minutes)

1. Read through this guide (15 minutes)

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

2. Invite others to the Celebration (15+ minutes)

Send reminders about the Celebration to the girls' families with the time and place of the meeting.

Invite any special guests, such as people in the community who have helped the girls with their Take Action project.

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3. Gather party supplies and decorations (40 minutes)

Bring decorations and snacks for your girls and their guests. Bring a music system. Collect all the materials the girls created from the Journey their citizen science and Take Action projects, and photos and videos you've taken along the way.

From your council shop or the Girl Scout website, buy the Think Like a Citizen Scientist and Take Action awards, one for each girl.

If your meeting location doesn't have a flag, bring a small one from home to either hang or have the girls take turns holding.

4. Gather support for the Celebration (10 minutes)

If you need more adult helpers to organize everything for the Celebration, let them know the time and place of the meeting, and brief them on what the girls are doing and what they need to have prepared.

Get Help from Your Family and Friends Network

Your Friends and Family Network can include:

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

Ask your Network to help:

- Bring a camera, smart phone, or video camera to document the final celebration.
- Brings snacks for the final celebration.
- Supply a CD player and music CDs for the final celebration.

Award Connection

Girls will earn two awards:

- Think Like a Citizen Scientist award
- Take Action award

Girls will earn both awards in **Activity 3: Awards Ceremony and Celebration.**

(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 girls are in your troop.

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- There is no snack time scheduled in these meetings, but there are 15 minutes of “wobble room” built in for snacks or activities that run long.
- Give girls 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: Get Ready to Celebrate!

- **Girl Scout Promise and Law poster(s)**
- Any items the girls want to display (such as photos or videos from their citizen science or Take Action projects)
- 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: Closing Ceremony: Closing the Circle

- None

Detailed Activity Plan

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

Time Allotment

10 Minutes

Materials

- **Girl Scout Promise and Law poster(s)**

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- Any items the girls want to display (such as photos or videos from their citizen science or Take Action projects)
- Photos and videos from the Journey meetings
- Music system
- Decorations
- Snacks

Steps

Have the girls help set up the meeting room by putting up posters and decorations. Make sure they greet guests as they walk in and offer them a snack.

When guests have all arrived, have the girls give a warm welcome to their guests by saying together: *“Welcome, everyone!”*

Activity 2: Opening Ceremony: Welcome!

Time Allotment

10 Minutes

Materials

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

Steps

Have the girls recite the Pledge of Allegiance and the Girl Scout Promise and Law. Then, have them introduce any special guests.

Activity 3: Awards Ceremony and Celebration

Time Allotment

35 Minutes

Materials

- 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.)

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Steps

Girls stand in front of guests and share one thing that they learned while they were on the Think Like a Citizen Scientist Journey or while doing their Take Action project.

They can make this into a “show and tell” by showing photos or video from their citizen science and Take Action projects.

Ask the girls to stand in front of their audience.

SAY:

Can each of you give an example of something you learned on this Journey?

Multi-Level Tip: Older girls are more likely to speak about what they learned on the Journey. Adjust for younger girls by asking them what they had the most fun doing on the Journey.

Give each girl a chance to speak. If she wants to pass, she can.

SAY:

Please step forward when I say your name to accept your awards.

Lead a round of applause for each girl as she steps forward.

SAY:

You have earned your Think Like a Citizen Scientist award, which means you learned how to solve problems and answer scientific questions like a scientist. You completed a citizen science project, where you collected and recorded data to help a real scientist to do her work!

And you have earned your Take Action award because you did something to make the world a better place.

Now you'll start your celebration!

Include any activities — such as taking photos, dancing or singing a special song—that the girls decided to do as part of the celebration.

Activity 4: Closing Ceremony: Closing the Circle

Time Allotment

10 Minutes

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Materials

- None

Steps

Have the girls and guests stand in a Friendship Circle. Girls lead the Closing Ceremony.

SAY:

The girls would like to end this Journey together with a Closing Ceremony.

Have the girls lead the close of the meeting in the way they chose—for example, a song, poem, or a cheer.

SAY:

And now we'll finish with our Girl Scout tradition, a Friendship Squeeze.

End the meeting with a Friendship Squeeze with the girls and guests.

Think Like a Citizen Scientist Journey

Glossary for Girls

Girls 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 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: Sharpening Our Observation Skills

- 10-15 small items for girls to observe (keys, pens, coins, paperclip, etc.)
- Towel, blanket, or similar item to cover the items all at once
- Blank paper
- Pens or pencils
- Optional: Take girls 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

Activity 3: Snail Field Notes

- **Snail Cutouts**, four sheets printed and cut out (making 16 snails in total). Option: Add additional snail cutouts to increase the level of difficulty.
- **Cardinal Direction signs** (Alternatively: papers with North, South, East, and West written, respectively on each)
- **Snail Mapping Template** (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 the girls' Take Action ideas from Think Like a Citizen Scientist 1
- Optional: **Take Action Guide**

Think Like a Citizen Scientist Journey: Materials List

Think Like a Citizen Scientist 3

Activity 1: As Girls Arrive: Prepare Your Field Notebook

- Girls' 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 the girls' 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 the girls' Take Action ideas from past meetings
- Index cards or paper
- Tape
- Pens, pencils, or markers

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Activity 2: Opening Ceremony: Working Together to Take Action

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

Activity 3: Designing Our Take Action Project

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

Think Like a Citizen Scientist Journey: Materials List

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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 the girls 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 the girls want to display (such as photos or videos from their citizen science or Take Action projects)
- 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

Benefits of a Multi-Level Troop

Leading a multi-level troop can be lots of fun, but also challenging!

Picture this: The troop meeting is in full swing. You notice that the Brownies and Juniors are absorbed in an activity, but the Daisies are distracted. Or the Juniors are ready to take on a more complex project, but the younger girls can't move at the same pace or don't get the concept. Or you see that the Daisies are having tons of fun doing an activity that completely bores the Brownies and Juniors.

How do you manage it all?

This Journey was developed with the multi-level troop in mind. You'll find "multi-level notes" throughout to help you navigate the challenges of leading groups of K – 5 girls .

Multi-level troops are naturally set up to create a more girl-led environment.

- Older girls have a unique opportunity to lead. They can serve as role models for younger girls, creating an enhanced leadership experience for all involved. They can explain more advanced concepts, which gives younger girls a powerful near-peer experience.
- Younger girls have aspiration built right into their experience. As they interact with the older girls, they learn what's possible for them.

Multi-level troops offer all girls a diversity of perspective.

When they do an activity together:

- Older girls approach it with confidence and skill, based on their experience.
- Younger girls bring a sense of wonder and imagination that makes the

Tips for Working with Girls at Different Levels

Follow these tips and insights to help make your multi-level troop experience fun, not challenging:

- Check out the STEM Glossary in Meeting Aids, and share definitions with all girls.
- Offer younger girls more concrete guidance to help them express their thoughts and come up with ideas.
- Older girls will have more nuanced understandings of interpersonal interactions and how Girl Scouts can take action, as well as more in-depth knowledge about the subject matter. They will bring up more complex concepts, which won't be familiar to younger girls. This is a great opportunity to ask older girls to share their knowledge with younger girls. Ask questions like, "Can you give us an example of that?" or "Can you describe that for everyone in the group?"
- Sometimes Daisies will outperform Brownies or you may have Juniors who perform at Brownie level. That's all OK, just customize your activities based on your experience with your troop.
- Younger girls will need more adult supervision, and it's natural that older girls will help them, too. But make sure to treat older girls like troop members, not as mini-Troop Leaders.
- Help older girls feel welcomed and valued by giving them leadership opportunities, such as guiding a discussion or acting as a scribe. Juniors may want to earn their Junior Aide award by mentoring the younger girls.
- Give older girls more responsibility in troop decision-making. While all girls should be involved in decision-making at some level, older girls will be able to offer good insights about how to make things work better for them. When older girls make a suggestion that can reasonably be implemented, try it out and acknowledge their contribution.
- Encourage all girls to help hand out supplies and snacks.

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.