

Think Like a Citizen Scientist Pt. 2

Overview

Girls take notes about snails and learn about collecting and analyzing data. Girls also choose their citizen science project to conduct in Think Like a Citizen Scientist PT. 3.

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 may have 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 75 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.
- **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.

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- **Data** – information that scientists receive, collect, or observe in the field.
- **Analysis** – reviewing data or information to create conclusions that explain more about the subject of observation.

See the **Multi-Level 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):

- **Multi-Level 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.
- **Multi-Level Think Like a Citizen Scientist Journey Glossary:** This is a list of words that girls 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.
- **Benefits of a Multi-Level Troop:** This handout highlights the benefits of running a multi-level troop and offers practical advice and insight into working with multi-level girls.

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 girls can take turns holding or hang in the room.

4. Room preparation (10 minutes)

Before girls arrive, prepare the room for Activity 3: Snail Field Notes.

Tape the cardinal direction signs (North, South, East and West) to each of the walls of the room to create the map for the activity.

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Tape the snail cutouts in different places around the room for girls to find. To help girls easily analyze why the snails may be in certain places, it might help to group similar snails around key parts of the room.

Example: Place 4 of one type of snail around a chair. Then, girls could figure out that something about the chair attracts that pattern of snails.

5. Check your SciStarter Dashboard (15 minutes)

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

Log in to your Girl Scouts SciStarter account at <https://scistarter.com/girlscouts/volunteer/landing>

1. **Explore Your Dashboard:** Once you sign up for SciStarter, you will see a Welcome Page. Scroll down to view the Welcome Videos from each project leader. Choose the remaining half of the introduction videos to show to girls this meeting. You can stream or download the videos for girls. **You must sign-up for SciStarter via the Girl Scouts landing page (<https://scistarter.com/girlscouts/volunteer/landing>) to start your Journey.**
2. **Girls Choose Their Project:** After girls watch the remaining videos this meeting, they will be choosing one project to complete in Think Like a Citizen Scientist PT. 3. This creates the Citizen Science Journey for your troop.
3. **Invite Girl Scouts to Join SciStarter:** After you choose a project with your girls this meeting, you'll have the opportunity to invite them 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.**

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

Ask your Network to help:

- Bring art supplies or field notebooks for girls

Award Connection

Girls will earn two awards:

- Think Like a Citizen Scientist award
- Take Action award

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Girls 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 girls 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 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: 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 project videos from SciStarter, 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

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Activity 4: Closing Ceremony: Brainstorming Our Take Action Project

- List of the girls' Take Action ideas from Think Like a Citizen Scientist PT. 1
- Optional: **Take Action Guide**

Awards

Girls do not receive any awards in this meeting.

Detailed Activity Plan

Activity 1: As Girls Arrive: Create Your Field Notebook

Time Allotment

10 Minutes

Materials

- **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, stickers, etc.)

Steps

Welcome girls, and have them decorate their new field notebooks.

Option 1: Have girls create field notebooks

Have girls create their own field notebooks by folding blank paper in half and stapling them together to make a small notebook.

Option 2: Hand out field notebooks

Hand out field notebooks, one for each girl.

Have girls decorate their new field notebooks.

SAY:

Scientists need somewhere to store their observations, so they keep a field notebook.

You'll take your notebook with you when you do your citizen science project so you can keep a record of what you see and do.

You can decorate your notebook while we wait for everyone to arrive.

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Activity 2: Opening Ceremony: Choosing Our Citizen Science Project

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.

Review Think Like a Citizen Scientist PT. 1 with the girls before they choose their citizen science project.

SAY:

What's a scientist? What does a scientist do?

Girls may say: Scientists do experiments, they study things, etc.

A scientist is someone who studies the world to understand how it works.

Last time, you were scientists and practiced observing your world.

Does anyone remember what observation is? (Answer: Watching and noticing something using all of your senses, especially sight, to get information and better understand a situation or environment.)

Observation is looking closely at something using all of your senses.

What kind of senses could you use?

Girls may say: My eyes or looking, my nose or smelling, etc.

Observation is the first step scientists take when they want to learn something new.

Does anyone remember what these steps are called? (Answer: The scientific method!)

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Today, we're going to explore more of the steps used in the scientific method.

But first, let's look at more videos of citizen science projects you may want to do!

Watch the remaining project videos from SciStarter with the girls. Remind girls about the projects they watched in the last meeting. You may want to write a list of the projects on a whiteboard or large piece of paper so girls can see the different projects they can choose.

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

Have the girls choose one citizen science project to complete in Think Like a Citizen Scientist PT. 3.

If girls are having trouble choosing, have them vote or try Fist-to-Five. Remind girls that the troop may choose to do another project for their Take Action project and that they can always access the project on their own SciStarter Dashboard (with help from their parents).

Following the meeting, log on to your SciStarter Dashboard to finish creating your Citizen Science Journey and invite your girls to join the project (see Prepare Ahead for more information).

SAY:

At our next meeting, we'll use all the skills we've been practicing and use them to do this project — just like scientists!

Activity 3: Snail Field Notes

Time Allotment

40 Minutes

Materials

- **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

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Steps

Set-Up. (10 minutes before the meeting)

Tape the **Snail Cutouts** in different places around the room. You may want to group similar snails near one another to help the girls analyze the correlation.

Tape the **Cardinal Directions signs** to each wall of the room to create the “map” for the activity.

Observe Snails. (10 minutes)

Talk to the girls about field notes.

SAY:

How do scientists remember what they observe?

Girls may say: They write it down, they take notes, etc.

Taking notes about what you see is an important part of being a scientist. What do you think they'd want to make notes about?

Girls may say: What something looks like, how big it is, what color it is, what it sounds like, how many things she sees, etc.

Now, you're going to have a chance to take field notes like a scientist!

Girls take out their field notebooks and pencils, pens, or markers.

SAY:

Today, we're going to pretend we're helping a scientist learn more about snails. The scientist has asked you, as citizen scientists, to tell her about the snails in this room.

For the next three minutes, walk around the room and take notes about the snails you see. You can draw the snails. You can count the snails you see. You can make notes about where the snails are. Everything you see could be important, so write it all down!

Remember, scientists pay super close attention to all of the details and are constantly thinking about what their observations might mean.

Girls walk around the room and take notes.

Multi-Level Tip: Encourage older girls to work with a younger partner as a team to take field notes. Praise them when you hear them collaborating. Let them know that scientists

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work in teams and need to get along with people of all different experiences and backgrounds.

You can also ask an assistant or parent to help the Daisies while the Brownies and Juniors work together.

Either option works! The first option gives older girls a chance to teach younger girls and practice leadership skills, in addition to learning about citizen science. The second option gives Daisies more specialized attention and allows the older girls to team up and learn at roughly the same level.

Bring the girls back to form a Friendship Circle.

SAY:

Looking at your field notes, what did you observe?

Have girls share their observations.

SAY:

Scientists want to remember everything about their observation session when they look at their field notes, even if they don't look at them until months later. What other information do you think a scientist would want to write down?

Girls may say: What they see, where they are, etc.

They write down the date and where they were when they made their notes. Let's add today's date and our location to your field notes right now.

Give girls time to write the date and location in their field notebook.

SAY:

All your notes are called data. Data simply means information. Data can be notes, drawings, photos, recordings or videos of what you see and hear. It can also be information about where you are — how hot or cold it is, what the weather is like, and so on.

Is there anything you'd like to add to your notes about the snails?

Give girls time to add missing information to their notes if they want to.

Map Your Data. (15 minutes)

Girls map the snails' locations to explore one way scientists present and share their data.

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SAY:

Now, what's a way for us to show where the snails are in this room?

Girls may say: A map, GPS, etc.

We're going to create a maps of the snails in the room. What are some things you usually see on maps?

Girls may say: Oceans, directions, secret treasure, etc.

Most maps have something called a compass that gives directions about where things on the maps are located. The directions are North, South, East, and West.

These are called the cardinal directions.

On the walls, you will see signs that tell you what direction each wall is.

Hand out a **Snail Mapping template** to each girl.

SAY:

On your paper, there are also four directions! They match the signs on the wall.

You're going to walk around the room and map where each snail is located.

For example, if there was a snail right next to the South sign, I would put it here (point to the area near 'S' on the Snail Mapping Template) on the map. Or, if there was a snail right in the middle of the room, it would go right in the middle of your map.

Repeat a few more times for the girls to understand the relationship between the map template, the position of the snails, and the room. It might be helpful to have girls mark their maps with the location of large objects, such as chairs or tables that are in the room.

Have the girls walk around the room and map the snails, either in pairs or small groups.

Multi-Level Tip: Encourage older girls to work with a younger partner as a team to map the snails. You can also ask an assistant or parent to help the Daisies while the Brownies and Juniors work together.

Either option works! The first option gives older girls a chance to teach younger girls and practice leadership skills, in addition to learning about citizen science. The second option gives Daisies more specialized attention and allows the older girls to team up and learn at roughly the same level.

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Keep It Girl-Led: Circle around to help girls, but allow them to rely on each other and make group decisions on where objects and snails should be drawn on the maps.

Analyze Your Snail Data. (15 minutes)

Bring the girls back to form a Friendship Circle to review and analyze their snail maps.

SAY:

How many snails were there?

Let girls answer.

SAY:

How many snails had shells with this pattern (point to one pattern)? How many snails were there with the other pattern (point to the other pattern)?

Let girls answer.

SAY:

How many snails had zig zags on their shells?

Let girls answer. They may be confused because there weren't any snails with zig zags on their shells.

SAY:

Let's see if your observations were correct!

Organize the girls into 3 groups.

Assign each group one snail pattern: Circle pattern 1, circle pattern 2, and zig zag. Have each group go around the room and collect all the snails that have their pattern.

Bring girls back into the Friendship Circle. Have each group report on the number of snails they collected.

(Note to Volunteers: If you used four pages of cutouts, there should be 16 total snails, 8 of each circle pattern, and 0 snails with zig zags on their shells.)

SAY:

Once scientists have data, what do they do with it?

Girls may say: They read the notes, they share them, etc.

Think Like a Citizen Scientist Pt. 2

They also look for patterns that could tell them what their data means. This is called analysis. It is another step in the scientific method.

What could scientists learn from your map? What kind of patterns could they see?

Girls may say: They see where the snails are, they see how many snails there are, they see all the different kinds of snails, etc.

SAY:

When we do our citizen science project at our next meeting, we'll collect data and send it to the scientist we're helping. He or she will look at our data — and data from many, many other people — to see if there are any patterns. That's how you'll help scientists learn something about the world.

Activity 4: Closing Ceremony: Brainstorming Our Take Action Project

Time Allotment

10 Minutes

Materials

- List of the girls' Take Action ideas from Think Like a Citizen Scientist PT. 1
- Optional: **Take Action Guide**

Steps

Have the girls form a Friendship Circle.

SAY:

Today, you did what scientists do — you used the scientific method. You made observations. You recorded data. And you looked for patterns in your data.

What was your favorite part?

What's something important to remember about taking field notes?

Let girls answer.

SAY:

At our last meeting, we talked about how Girl Scouts do Take Action projects to help make the world a better place.

Does anyone have more Take Action ideas to add to our list?

Write down the girls' ideas.

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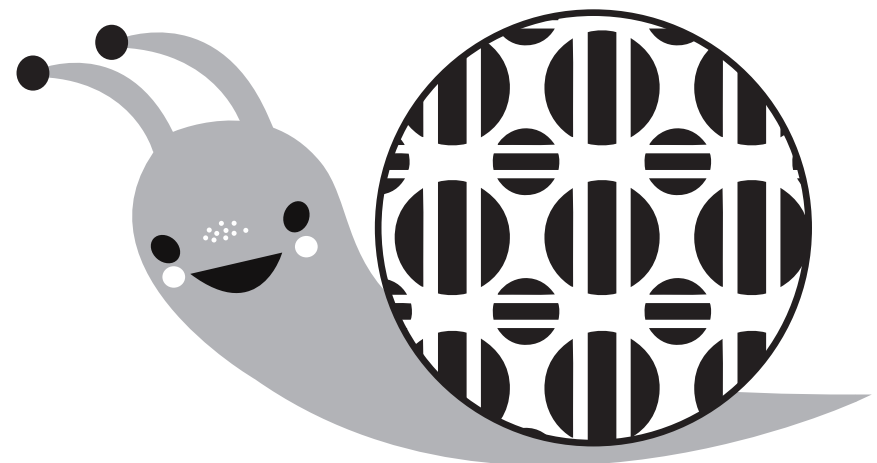
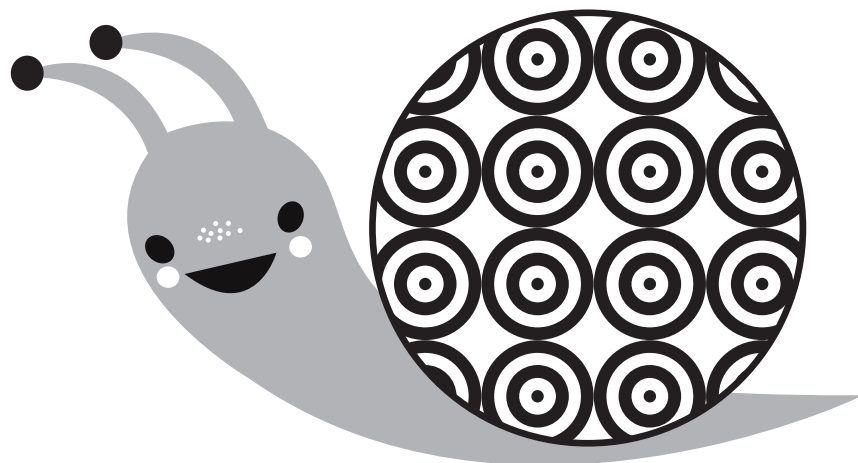
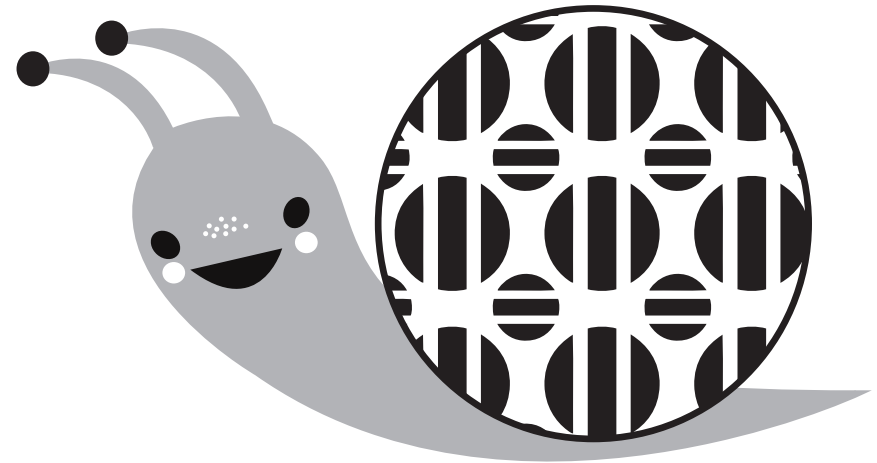
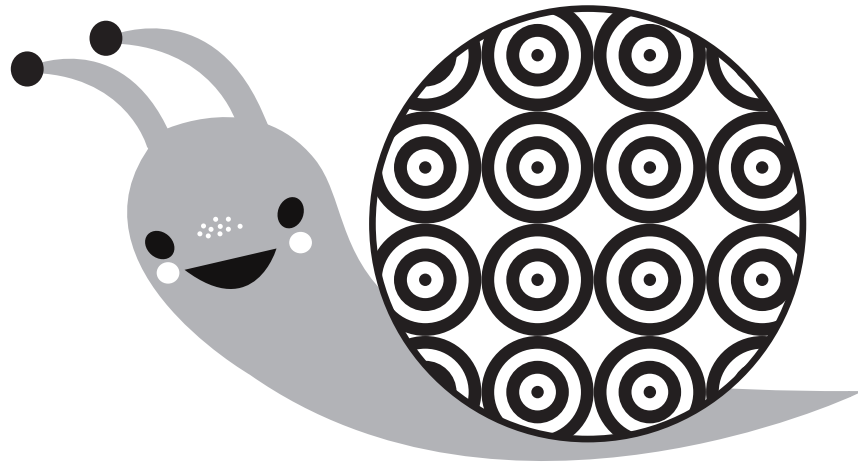
SAY:

Our list is getting longer! There are lots of great ideas here. We'll take a look at them when we meet next time.

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

End the meeting with a Friendship Squeeze.

On your honor!



Cardinal Direction Signs
for Think Like a Citizen Scientist 2

N

NORTH

E

EAST

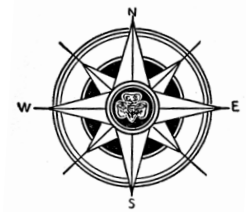
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WEST



SOUTH

NORTH



WEST

EAST

SOUTH

Name: _____

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

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

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.

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.