Think Like a Programmer pt. 5

Overview

Brownies create their Take Action project.

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 Brownies 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 Brownies know they can make choices and have their voices heard.

Solve Big Problems Step By Step: On this Journey, Brownies will do hands-on activities to learn how computer programmers think through problems. They'll learn to follow and create algorithms, break big problems down into smaller ones, and persist when faced with challenges.

You can help Brownies think this way! Encourage them to keep trying when their first few approaches to solving a problem don't work. Tell them that they can solve any problem if they break it down in smaller ones. And remind them that they can use those skills in their daily lives as well.

Leave Time For The Closing Ceremony: If Brownies 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 Brownies leave a meeting, they'll remember how much fun it was to plant a seed, make a suncatcher or play a game of "Programmer Says." However, they may not realize that they just learned how algorithms work — 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 programmers. (For example: They used an algorithm to plant a seed or they created an algorithm to teach a skill to others. They struggled a bit with a challenging activity — but they persisted. Now they know that they can solve hard problems if they keep trying. They worked together to solve problems.)
- Reminding Brownies that they are *already* programmers — and that it's fun to solve problems using programming.
- 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 Brownie Computer Expert badge goes well with this Journey!

Prepare Ahead (Roughly 90+ minutes)

1. Review vocabulary (2 minutes)

This meeting includes the following words:

- **Algorithm** — a list of steps that you can follow to finish a task.
- **Innovation** — a new or improved idea, device, product, etc.
- **Prototype** — a sketch of an idea or model for something new. It's the original drawing from which something real might be built or created.
- **Computational Thinking** — the thought processes involved in formulating a problem and expressing its solution(s) in such a way that a computer—human or machine—can effectively carry out.
- **Debugging —** finding and fixing problems in your algorithm or program

See the **Brownie Think Like a Programmer Journey Glossary** for more vocabulary and examples.

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

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

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

Brownie Think Like a Programmer 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.

Brownie Think Like a Programmer Journey Glossary: This is a list of words that Brownies 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 (40 minutes)

Depending on your girls' Take Action Project, you may need to prepare or set up specific things. Gather supplies for the Take Action project.

For example, girls may need: A smartphone or camera if girls are creating a video, poster board if they're making signs, a laptop if girls are making PowerPoint slides for a presentation to the school principal or city council, or material for costumes if they're putting on a skit.

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 Take Action Project (30+ minutes)

If you need more adult helpers for the Take Action project, let them know the time and place of the meeting and brief them on what the girls are doing and how they can best support the Brownies.

Additionally, you may need to talk to people who are needed to help Brownies to complete their Take Action project.

For example:

- If the girls have decided to make posters for their school or local library, call the school/library office to set up a time when the Brownies can make their proposal in person.
- If they want to put on a skit at the community center, talk to an administrator about how to arrange that.
- If they want to make a presentation to the city council, call the office to find out how to schedule that.

Get Help from Your Family and Friends Network

Your Friends and Family Network can include:
- Brownies' parents, aunts, uncles, older siblings, cousins, and friends
- Other volunteers who have offered to help with the meeting.

Ask your Network to help:
- Bring art supplies.
- Bring a camera, smart phone, or video camera to document the meetings.
- Assist Brownies to create their Take Action project.

Award Connection

Brownies will earn two awards:

- Think Like a Programmer award
- Take Action award

Brownies will earn both awards following the completion of the Take Action project and Journey in **Think Like a Programmer 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 Brownies 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 Brownies 10- and 5-minute warnings before they need to wrap up the last activity so you'll have time for the Closing Ceremony.

Brownies create their Take Action project.

Materials List

Activity 1: As Girls Arrive: Our Recipe for Success
- Poster board or large paper
- Paper
- Colored markers

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 Brownies need for their Take Action project

Activity 4: Closing Ceremony: Planning Our Celebration
- None

Awards
Brownies do not receive any awards in this meeting.

Detailed Activity Plan

Activity 1: As Girls Arrive: Our Recipe for Success

Time Allotment
10 minutes

Materials
- Poster board or large paper
- Paper
- Colored markers

Steps
Welcome Brownies, and have them add a step to your Troops' "Recipe for Success" poster.

SAY:
Every great team has certain things they do to succeed. What do we do as a troop?

Think about it, feel free to brainstorm on paper, then add one step to our "Recipe for Success" poster!

Remember, an algorithm is just like a recipe. Both have steps to solve a problem.

Today, we'll be creating our Take Action project, so don't forget all the steps we should take together to make sure it is a success!

If there's extra time, girls can decorate the Troop's poster.

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

Time Allotment
20 minutes

Materials
- Flag
- 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.

Lead Brownies in a discussion so that each will share why they think their Take Action project will make a difference.

SAY:

Finish this sentence: We're about to team up and Take Action to_____.

Have Brownies say what their Take Action project is about.

Have Brownies say one thing she thinks is important about their Take Action project.

Get Brownies charged up about starting their Take Action project with this energetic cheer:

SAY:
What are you going to do today?
(**Brownies say**) *Take Action!*

What will you make the world?
(**Brownies say**) *A better place!*

Who's got the power?
(**Brownies say**) *Brownies!*

Do the Brownie cheer to get their energy going!

Repeat even louder, and do a high-five or clap at the end.

Activity 3: Creating Our Take Action Project

Time Allotment
35 minutes

Materials
- Any materials Brownies need to carry out their Take Action project.

Steps
(**Note to Volunteers:** Stay on schedule so you can hold your Closing Ceremony. Give Brownies 10 and 5-minute warnings before they need to wrap up.)

Set Up. (5 minutes)
Set up the activity. Break Juniors into teams of 3-4 to create and build their part of the Take Action project. (**Note to Volunteers:** These teams can be the same as the design teams from the last planning meeting.)

SAY:
Every Girl Scout Take Action project changes the world a little bit and makes it a better place.

You've learned to think like programmers — to define needs, create plans, test and spot problems, work as a team, and come up with a solution. Now you're going to help others by taking action — and you know that programmers do that, too!

In our last meeting, you came up with a plan for your Take Action project.

Let Brownies list the "to do" items from the last meeting. Remind them of any they missed.

Build and Test. (30 minutes)

Help Brownies create what they need (posters, videos, presentations, costumes, and scripts).

If Brownies have a "next step" in their project, remind them about it. For example, they may have written a script and created costumes for a school assembly skit. If so, remind them about when they'll be presenting the skit.

If you've done some "behind the scenes" work since the last meeting, such as setting up a meeting for Brownies with officials or securing permission for their project, let them know about it now.

Congratulate the Brownies if they've completed their Take Action project in this meeting (if, for example, they've created a video that an adult will now share with friends and family or post safely online).

Activity 4: Closing Ceremony: Planning Our Celebration

Time Allotment
10 minutes

Materials
- None

Steps

Have Brownies form a Friendship Circle and plan their celebration.

SAY:

At our next meeting, you'll celebrate everything you learned. How do you want to celebrate?

Offer prompts for Brownies to come up with their own ideas for the celebration:

- *Do you want to make a special display of our Take Action photos or show our videos?*
- *Do you want special music?*
- *Is there anyone you want to thank?*
- *What do you want to do for the Closing Ceremony?*

Write down their ideas, and tell them you'll help organize this for the next meeting.

SAY:

Let's end the meeting with a cheer for Take Action. First, let's all stand up.

For the next three things I'm about to say, jump once and yell out, **Yay, Girl Scouts!**

Every Girl Scout, from Daisy to Ambassador, does Take Action projects.
(**Brownies say:** Yay, Girl Scouts!)

It doesn't matter how big or small your project is, it makes a difference in the world.
(**Brownies say:** Yay, Girl Scouts!)

You're a leader because you work as a team to make the world a better place.
(**Brownies say:** Yay, Girl Scouts!)

End the meeting with a Friendship Squeeze.