BOYS & GIRLS CLUBS OF AMERICA

STEM

Everything STEM

Planning Guide

Everything you need to get started, evaluate and enhance your STEM programming

stem next OPPORTUNITY FUND

Engaging Learners Everywhere

2018 Version 2.1

Components

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OVERVIEW
Goals for This Guide

Science, Technology, Engineering and Math: Young people have been studying these subjects in school for years. Particularly in out-of-school time settings like Clubs, the focus has evolved over the past decade into an interdisciplinary approach that blends these mighty four to create project-based, problem-solving, inquiry-driven learning opportunities collectively referred to as STEM.

STEM programming offers your Club unique opportunities to engage members in fun, safe, hands-on learning experiences that will support awareness, engagement and learning in STEM. When Clubs provide high-quality STEM experiences, kids are free to express themselves as they dive into projects and are inspired to reach their full potential. No matter what individual interests and skills our members have, they will be empowered to grow them in a way that is fun – even launching toward real careers of their own. But to get there, we need vital resources to support the programming and the kids who access them. This Everything STEM Planning Guide will help your Club assess and plan to grow those resources – through Staffing, Policies, Space, Technology & Hardware, and Programming – to make it possible.

If you would like to get a comprehensive view of STEM at BGCA, check out our STEM white paper at **BGCA.net/STEM**.

HOW TO USE THIS GUIDE

ASSESS

SECTION ONE: **STEM Readiness Assessment**

Take your time and complete the assessment individually, to gauge where your Club's STEM program currently stands. Share your findings with your STEM Planning Team, and come to a consensus on the current state of your Club's STEM programming.

PLAN

SECTION TWO: **STEM Improvement Plan**

Based on the findings from your STEM Readiness Assessment, gather with the STEM Planning Team and build a yearlong plan to enhance your Club's STEM programming. Prioritize your areas of growth and record clear milestones to help measure your progress. Then meet regularly to review your Club's plan, track its progress, and discuss how to facilitate further growth.

RESOURCES

SECTION THREE: **STEM Planning Resources**

With so many resources available, both offered by BGCA and outside our network, it can be overwhelming to know what they are and where you can find them. Use this section to find the resources that correspond to the level of STEM programming you plan to round out, and decide which best align with your Club's unique programming needs.

Outcome Model for Youth, Staff and Clubs

1 2 3 4

Program Inputs

BGCA
- Expertise
- Leadership
- Funding
- Curriculum

Club
- Staff
- Facilities
- History
- Relationships
- Community
- STEM Ecosystem

Youth Inputs
- Family
- Creativity
- Curiosity
- Identity

Program Activities

Club Capacity
- Hire experienced talent.
- Seek professional development.
- Work toward facilities improvement.

Staff Practice
- Apply STEM knowledge.
- Align activities to school-day learning.
- Use project-based learning principles.
- Prepare for Jr. Youth of the Year.
- Use mentor activities.

STEM Activities
- Engage youth in STEM experiences that are hands-on, youth centered and relevant.

Youth Activities
- Engage youth in ongoing STEM experiences.

Program Outputs

Program Quality/ Fidelity Outputs
- Club Capacity:
  - Dedicated spaces
  - Executive commitment
  - Technology-to-kid ratio
- Staff Practice:
  - STEM staff
  - Observation and coaching feedback
  - Hours of STEM Professional Development
- Youth Participation:
  - Youth participating
  - Youth completing
  - Youth recognized as Youth of the Month
  - Youth moving onto Jr. Youth of the Year
  - Youth moving onto Youth of the Year

Program Outcomes

Club Outcomes
- Training for staff builds skill, knowledge and other talents to improve STEM program quality.
- Programs deploy volunteers to access STEM expertise.
- Clubs secure space and tools to facilitate robust programs.

Staff Outcomes
- Staff have skills to effectively facilitate the STEM curriculum.
- Staff understand STEM content and principles.
- Staff exhibit confidence in their ability to facilitate STEM.
- Staff execute STEM programs effectively and with fidelity.
- Staff demonstrate deeper commitment to the program and express satisfaction with their job and performance.

Youth Outcomes
- Youth develop STEM-specific skills.
- Youth build knowledge of core STEM principles and apply school-day learning.
- Youth value STEM.
- Youth attendance, retention and satisfaction increase.
- Youth are aware of a variety of STEM careers.

STEM PROGRAMMING LEVELS
At a Glance

Your current programming will likely fall into one of these three levels. Upon completing the Stem Readiness Assessment, you'll know exactly how you rank with the **STEM Readiness Assessment Scale** on page 14.

FOUNDATIONAL	INTERMEDIATE	ADVANCED
Part-time STEM coordinator, part-time technology support staff, and occasional volunteers are on-site and trained each year.	Full-time STEM director, full-time technology support staff, and monthly volunteers are on-site and trained several times yearly.	Full-time STEM director with a STEM degree, full-time technology support staff, and monthly volunteers are available on-site and trained quarterly.
Bring Your Own Device and Internet Safety Policies are in place.	Bring Your Own Device and Internet Safety Policies are in place, with mobile technology incorporated into STEM programming.	Bring Your Own Device and Internet Safety Policies are in place, with mobile technology incorporated into STEM programming.
Shared space is dedicated to STEM at least two hours per week.	Shared space is dedicated to STEM at least four hours per week, and STEM is integrated into other programs.	Club dedicates space exclusively to STEM, and integrates STEM into other programs.
Internet connectivity is accessible to all staff and most Club members.	Sufficient broadband is available to provide for all programming, administrative needs and some members.	Sufficient broadband is available to provide for all Club and member needs.
Computers are reasonably fast and provide staff and members with a productive work environment.	A variety of computing devices are available, with a sufficient number to support programming and individual member needs.	A variety of technology is available, including high-end computers and other technology tools, to allow for specialized programming.
STEM programming is delivered at least two hours per week.	At least two STEM programs are each delivered at least three hours per week.	A plan has been created for replacing and expanding technology using BGCA's Club Technology Planning Guide.
		At least two STEM programs are each delivered to at least two age groups at least four hours per week, including advanced programming.

SECTION 1

STEM Readiness Assessment

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SECTION 1
STEM Readiness Assessment

The STEM Readiness Assessment is based at the Club level, but it requires organizational support. Use this self-assessment to identify your Club's current STEM programming framework, related to the outcome-driven Club Experience for teens. Based on the results, define your starting point with the STEM program, and use the BGCA resources to soar to the next level.

Based on your findings, customize a continuous improvement plan. Rather than a huge overhaul, think of this as the process of making a series of small changes to improve your programming. It's easy to set goals and achieve them when using the Everything STEM Planning Guide and resources provided.

Stem Continuous Program Improvement Framework

Your Club's **level** of STEM programming is measured using the STEM Assessment, and each measurable category is rated:

- Foundational
- Intermediate
- Advanced

The five featured **categories** are measurable ways to support each organization's growth in progressing their STEM programming. These include:

- Staffing
- Policies
- Space
- Technology & Hardware
- Programming

Outcomes include goals to increase measurable units, as well as suggestions for effective follow through.

The **resources** presented throughout this guide are tools to help your Club reach the outcome suggestions listed in each level.

Who Does This Involve?

Select a variety of professionals from your Club to form a **STEM Planning Team**. These team members will work together to continually assess, monitor and enhance your members' STEM programming. The team should include multiple stakeholders at the Club, including at least one representative each from:

Club Leadership – may include CEO, development officer, operations officer, board member

Unit Director – the person responsible for decision-making at your Club

Program Staff – program directors and dedicated STEM staff members

Youth – one or two current teen Club members

Next, elect a team leader. This could be the unit director, the STEM program coordinator or director, or another responsible staff member. The STEM team leader should ensure all Planning Team members complete the Readiness Assessment individually, schedule a time for the team to meet, and then discuss and come to a consensus on the findings. The leader will also schedule and facilitate regular follow-up meetings to ensure continuous program improvement.

As your STEM Planning Team prepares to complete the STEM Readiness Assessment, keep the following in mind:

- Content experts are not necessarily needed. While it is helpful to have an expert in the area of STEM, a passion for pursuing high-quality STEM programming is most important.
- All team members need to thoroughly review the entire STEM Readiness Assessment tool before completing it.
- All team members must have a working knowledge of the Club and its current resources.
- The team lead will schedule a 90-minute meeting to discuss in detail the assessment findings of each member of the team.
- The assessment tool is meant to foster open, honest and critical feedback. This is not intended to disparage any of the current work taking place at the Club, but rather to set a path for continuous improvement.
- Youth voice is critical in order to make this a comprehensive readiness assessment. Find ways to gather members' feedback, such as through youth focus groups around STEM, teen workshops, etc.
- The programming categories may be advanced in one category and foundational in another category. The tool is not developed to give one overall rating or score, but is intended to identify areas of improvement.

Each member of the STEM Planning Team should independently select either Foundational, Intermediate or Advanced for **each category** of STEM Readiness.

Once the team has met and come to consensus, it is time to begin planning.

STEM Readiness Assessment

How to Use the STEM Readiness Assessment

1

Step One: Assess
Each section of the STEM Readiness Assessment highlights one of the STEM categories. Review each statement below the category it describes. Select the statement from each row that best describes your Club's current STEM program, and record the corresponding number (to the left of each statement) in the square under Score.

2

Step Two: Tally
Add the scores for each section, and record them next to Total. Note the level of programming that corresponds to the value for that section, and record it in the square to the right of Total.

3

Step Three: Transfer
Transfer the scores and resulting level of programming to the **At What Level Is Your STEM Program Running** table on page 13.

4

Step Four: Grade
Use the **STEM Readiness Assessment Scale** on page 14 to identify your STEM program's overall level of programming. This will be your starting point from which to round out the current level and build to the next.

Use the forms that follow to record your scores, and check out **BGCA.net/STEM** for digital forms.

For each indicator, select the number that best describes your Club's programming and record it under Score. If there are any qualifiers or things you'd like to discuss during your next STEM Planning Team meeting, jot them down under Notes. Then tally the scores together next to Total. Record the value that corresponds to the programming level total (Foundational, Intermediate or Advanced) under Notes across from the Total.

STEM READINESS ASSESSMENT TOOL
Category 1 - Staffing

STAFFING

	INDICATORS	SCORE	NOTES
Program Staff	1 At least one part-time STEM program staff coordinator 2 At least one full-time STEM program staff director 3 At least one full-time STEM program staff director with a degree in a STEM-related field		
Technology Staff	1 At least one part-time technology support staff member 2 At least one full-time technology support staff member		
Volunteers	1 Use volunteers with backgrounds in STEM less than monthly. 2 Use volunteers with backgrounds in STEM monthly. 3 Use volunteers with backgrounds in STEM at least monthly.		
Training	1 Provide at least one annual opportunity for staff to participate in STEM-related training. 2 Provide at least three annual opportunities for staff to participate in STEM-related training. 3 Provide at least four annual opportunities for staff to participate in STEM-related training.		

0-4 Foundational ●

5-8 Intermediate ● ●

9-11 Advanced ● ● ●

Total Score: 0

STEM READINESS ASSESSMENT TOOL
Category 2 - Policies

POLICIES

	INDICATORS	SCORE	NOTES
BYOD	1 Bring Your Own Device Policy (BYOD) is in place, and members' signed Acceptable Use Statements are on file.		
Mobile Tech	1 Internet safety education is part of programming.		
Wi-Fi	1 Members' personal technology is incorporated into STEM programming.		

1 Foundational

2 Intermediate

3 Advanced

Total Score:

0

STEM READINESS ASSESSMENT TOOL
Category 3 - Space

SPACE

	INDICATORS	SCORE	NOTES
Dedicated	1 Club dedicates a space for STEM at least two hours per week. 2 Club dedicates a space for STEM at least four hours per week. 3 Club dedicates a space for STEM at all times.		
Other	1 Club leverages other program spaces for STEM and integrates STEM into other programs.		

1 Foundational ●

2 Intermediate ● ●

3-4 Advanced ● ● ●

Total Score:

0

STEM READINESS ASSESSMENT TOOL
Category 4 - Technology & Hardware

TECHNOLOGY & HARDWARE

	INDICATORS	SCORE	NOTES
Wi-Fi	1 Internet connectivity is accessible to all staff and most Club members. 2 Sufficient broadband is available to provide for all programming, all administrative and some members' needs.		
Tech	1 Computers are reasonably fast and provide staff and members with a productive work environment. 2 A variety of computing devices are available, with a sufficient number to support programming and individual member needs.		
Management	1 Club/org has completed Technology Assessment in Club Technology Planning Guide and created a plan for tech infrastructure improvements.		

0-3 Foundational ●

4 Intermediate ● ●

5 Advanced ● ● ●

Total Score: 0

STEM READINESS ASSESSMENT TOOL
Category 5 - Programming

PROGRAMMING

	INDICATORS	SCORE	NOTES
Hours	1 Deliver STEM programming at least two hours per week. 2 Deliver STEM programming at least three hours per week. 3 Deliver STEM programming at least four hours per week for at least two separate age groups.		
Variety	1 Run advanced STEM programs, characterized with longer dosage cycles. (i.e., APP LAB, FIRST Robotics, etc.).		

0-1 Foundational ●

2-3 Intermediate ● ●

4 Advanced ● ● ●

Total Score: 0

At What Level Is Your STEM Program Running?

	SCORE:	LEVEL:
STAFFING	0	
POLICIES	0	
SPACE	0	
TECHNOLOGY	0	
PROGRAMMING	0	
TOTAL	0	

1. Transfer category scores and levels to the table above.
2. Use your scores to determine the starting level of each STEM readiness category.
3. Refer to the **STEM Readiness Assessment Scale** on the next page to get a full picture of where your Club is now and how you'd like it to grow. Then you will be well-prepared to move onto Stage Two: STEM Improvement Plan.

STEM Readiness Assessment Scale

FOUNDATIONAL

0-10 Total Points

Staffing

- Staff at least one part-time STEM program coordinator.
- Use volunteers with backgrounds in STEM less than monthly.
- Provide at least one annual opportunity for staff to participate in STEM-related training.
- Staff at least one part-time technology support member.

Policies

- Bring Your Own Device Policy is in place.
- Internet Safety Policy is in place and is being maintained.

Space

- Club dedicates a space for STEM at least two hours per week.

Technology & Hardware

- Internet connectivity is accessible to all staff and most Club members.
- Computers are reasonably fast and provide staff and members with a productive work environment.

Programming

- STEM programming is delivered at least two hours per week.

INTERMEDIATE

11-19 Total Points

Staffing

- Staff at least one full-time STEM program director.
- Use volunteers with backgrounds in STEM monthly.
- Provide at least three annual opportunities for staff to participate in STEM-related training.
- Staff at least one full-time technology support member.

Policies

- Bring Your Own Device Policy is in place.
- Internet Safety Policy is in place and is being maintained.
- Incorporate mobile technology into STEM programming.

Space

- Club dedicates a space for STEM at least four hours per week.
- Club leverages other program spaces for STEM and integrates STEM into other programs.

Technology & Hardware

- Sufficient broadband is available to provide for all programming, all administrative and some members' needs.
- A variety of computing devices are available, with a sufficient number to support programming and individual member needs.

Programming

- Deliver STEM programming at least three hours per week.
- Conduct at least two STEM programs simultaneously.

ADVANCED

23-27 Total Points

Staffing

- Staff at least one full-time STEM program director with a degree in a STEM-related field.
- Use volunteers with backgrounds in STEM at least monthly.
- Provide at least four annual opportunities for staff to participate in STEM-related training.
- Staff at least one full-time technology support member.

Policies

- Bring Your Own Device Policy is in place.
- Internet Safety Policy is in place and is being maintained.
- Incorporate mobile technology into STEM programming.

Space

- Club dedicates a space for STEM at all times.
- Club leverages other program spaces for STEM and integrates STEM into other programs.

Technology & Hardware

- Sufficient broadband is available to provide for all Club and member needs.
- A variety of technology is available, including high-end computers and other technology tools, to allow for specialized programming.

Programming

- Deliver STEM programming at least four hours per week for at least two separate age groups.
- Deliver at least two STEM programs simultaneously.
- Run advanced STEM programs, with longer dosage cycles.

SECTION 2

STEM Improvement Plan

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SECTION 2
STEM Improvement Plan

Now that you've completed your STEM Readiness Assessment, it's time to develop your STEM Improvement Plan. STEM programming can be intimidating. Part of adopting a continuous improvement model is using available tools to assess your current programming quality, and planning for gradual, incremental improvements. First determine which categories are falling behind, and aim to bring those in alignment with your baseline. Prioritize which categories need the most improvement: Investing in the appropriate staff is often a great place to start.

This planning phase is all about charting a course for achievable growth in each measurable category. So enjoy the process, and take it one step at a time. Your STEM Planning Team should complete the STEM Improvement Plan together. Include those who will be responsible for delivering on the tasks.

How to Use the STEM Improvement Plan

1

Step One: Determine what's missing.
Once you've completed the STEM Readiness Assessment and calculated your STEM program's current level in each category, review the **STEM Readiness Assessment Scale** on page 14 with your team. Collaborate to (1) round out your overall level of programming, or (2) advance to the next level of programming. Determine which categories are falling behind in your Club's STEM program.

2

Step Two: Fill the gaps.
Discuss and agree upon the goals you aim to achieve in order to meet your current and/or goal level of STEM programming. Record your goals in the chart below, and note how you will reach each objective. Locate the Maps to Resources in the following section for a list of tools to help you, and transfer your objectives to the matching chart introducing each resource.

3

Step Three: Meet and repeat.
As you are achieving your outcomes, meet with your STEM Planning Team regularly to assess your progress, reevaluate your current level of programming, and continue charting a path toward greater improvement. Use your Program Improvement Plan to track your progress, and continue to update it with your accomplishments and further goals.

STEM Program Improvement Plan Chart

Category 1: STAFFING Hired Staff, Volunteers & Interns, and Training

Objective	Strategy	Lead Person	Approved?	Deadline	Completed?
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N

Category 2: POLICIES Bring Your Own Device, Mobile Technology and Wi-Fi

Objective	Strategy	Lead Person	Approved?	Deadline	Completed?
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N

STEM Program Improvement Plan Chart

Category 3: SPACE Dedicated or Shared STEM Center Space

Objective	Strategy	Lead Person	Approved?	Deadline	Completed?
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N

Category 4: TECHNOLOGY & HARDWARE Including Wi-Fi Options

Objective	Strategy	Lead Person	Approved?	Deadline	Completed?
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N

STEM Program Improvement Plan Chart

Category 5: PROGRAMMING Amount and Type

Objective	Strategy	Lead Person	Approved?	Deadline	Completed?
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N

SECTION 3

STEM Planning Resources

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SECTION 3
STEM Planning Resources

ACTION PLANNING is an essential part of the assessment process, as it can help your STEM program grow to the next level. The following tables outline key resources available in each of the categories, as well as where you can access them. Find the resources that correspond to the level of STEM programming you plan to round out, and decide which best align with your Club's unique programming needs. Use these to customize your comprehensive STEM Improvement Plan.

How to Use the STEM Planning Resources

1

Step One: Fix your location.

Each program category is represented in Section 3. Start by entering your program start and goal status on each resource overview page. Transfer the information from the Improvement Plan Chart to the corresponding category charts that head each Resource section.

2

Step Two: Chart your course.

Now that you know what categories of your STEM programming to take to the next level, discover what resources are available on the Resource Map. Use the resource information, and note where you are going and how you plan to get there.

3

Step Three: Start exploring.

Dive right in, section by section. Use the resources contained in this guide, and follow the links to suggested supplementary tools to learn even more. There are no limits to what your Club can accomplish. These resources will power you in the right direction to pave your Club's way to STEM programming greatness.

Staffing Resources

Current STEM Staffing Level: _____

Goal STEM Staffing Level: _____

Category 1: STAFFING Hired Staff, Volunteers & Interns, and Training

Objective	Strategy	Lead Person	Approved?	Deadline	Completed?
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N

You'll find a dedicated staff member – whose primary responsibility is to direct and facilitate your Club's STEM-based programming – will make all the difference. The following job descriptions reveal what types of responsibilities your STEM personnel can fill. Since one size rarely fits all, feel free to modify the job descriptions to best suit your Club's needs.

MAP TO **STEM Club Staffing, Volunteer & Training Resources**

Category	Resources	Location
Staffing	HR Resources for Club Professionals	**BGCA.net/Operations**
Volunteers & Interns	Volunteer and Mentor Resources on the Web	**VolunteerMatch.org, TutorMentorConnection.org, EnergizeInc.com**
Training	My.Future Virtual Training	**goo.gl/DVV972**
	Spillett Leadership University	**BGCA.net/Training**
	Click2SciencePD	**Click2SciencePD.org**

Your Staff Is Your Greatest Resource

A successful STEM program starts with the right people. Likely you have a team of talented staff members who can't wait to dive into your exciting STEM program. They bring with them not only a passion for their work, but a variety of skills and backgrounds. Think of your photography fanatic, your coding coach, and your engineering enthusiast. Maybe some love to blog, others market, and still others have a real flair for organization and business acumen. Harness those resources, and empower the individual staff members onboard to lend their skills and passions to your program.

While it takes a strong team to lead any successful program, it's important to have at least one member on staff dedicated to everything STEM. When hiring someone new, make sure that person has the skills it takes to supplement what you already have. Are there people on your team with a strong science/technology background, experience with management, business leadership, partnership development, and a passion for all things creative? If not, look for those skills when reviewing applicants. Whether you aim to hire a part-time coordinator or a full-time director, select the person or people who can bring those missing pieces to your team of professionals.

In addition to your hired staff, think about your volunteers, existing members, and even high school and college interns who would jump at the chance to lend their skills and share with others. Your Club and community has a wealth of experience. Use this section to learn how to bring this to your Club's programming.

Recruiting STEM Staff

The following pages include sample job descriptions to assist in supplementing your STEM team. Please use these as templates, and customize them according to the needs of your Club. Every Club is different, and the perfect person for your Club is out there. Advertise for and hire that ideal individual to round out your Club's program according to its unique needs.

JOB DESCRIPTION
Template 1

STEM **Full-time Director** Job Description Template

Position Title
Director of STEM/Technology

Basic Requirements
Bachelor's degree in applicable field (IT, Instructional Technology, STEM) or a combination of education and at least 2-3 years of experience in a similar position

Salary
DOE, competitive with health benefits, dental, vision, 401(k), vacation and sick leave

Summary
The Director of STEM/Technology is an integral part of the full-time leadership team at Boys & Girls Clubs. This position is a perfect fit for someone looking to take the next step in their career to work with youth in a science, technology, engineering and mathematics education setting.

Our technology programs have seen tremendous growth over the past five years, and it is expected that growth and improvements will continue. Our goal is to be the premier agency for youth who have an interest in technology programs.

With the No. 1 priority being their work with kids during program hours, the person who fills this position will also be responsible for the duties listed below.

Essential duties and responsibilities

- Plan and execute technology/STEM activities for K-12 during afterschool and summer hours.
- Use 3D printers, tablets and other Club technology resources.
- Participate in BGCA national program and training opportunities (Digital Arts Festival, My.Future, robotics, coding, media programming, etc.) as necessary.
- Create engaging STEM-focused local programs.
- Manage application, execution and reporting of technology grants.
- Manage site performance and compliance for National Youth Outcomes Survey; including distributing of information, training and survey management.
- Support marketing efforts with pictures and/or video for special events, social media, web posts or other needs as requested.
- Develop relationships and coordinate partnership efforts.
- Communicate with local school staff, teachers and district personnel for summer school, online program access and other issues.
- Manage audio/video setup and equipment for meetings and presentations.

- Support updates to social media outlets and website.
- Update blog.

Additional responsibilities
May include technology support or management.

Networking
- Maintain licensing compliance for software used – such as Microsoft, Symantec security products and other installed software.
- Manage and request software from BGCA, TechSoup or other vendors as needed.
- Manage content filtering, network security and workstation updates.
- Manage Wi-Fi and LAN network servers.
- Plan for timely updates and replacement of hardware.
- Provide maintenance and troubleshooting to LAN and wireless networks.
- Provide maintenance and troubleshooting for technology hardware, or support any outside vendors hired to provide maintenance.

Security
- Monitor security system, access logs and rosters.
- Manage logs, distribution of staff ID cards and staff access cards.
- Manage network security and login credentials for staff and members.

Other responsibilities as needed
- Create invitations, thank-you notes and print materials for Club use.
- Document Club events with photos or social media posts as requested.
- Create and distribute quarterly newsletter (digital and print editions).
- Manage email contact list.
- Provide troubleshooting and IT assistance to staff as needed.
- Create daily program schedules and staff assignments.
- Manage domain and blog hosting accounts and registrations.

This job description is not intended to cover every detail of the position as required. Its purpose is to give a broad overview of the general expectations for the person filling the position. Other duties/requirements may be added at any time, and the position description may change as necessary to meet the needs of the Club.

JOB DESCRIPTION
Template 2

STEM **Full-time Coordinator** Job Description Template

Position Title
STEM Coordinator

Basic Requirements
Associate or bachelor's degree in a STEM discipline or related field; or exhibit at least two years of continuous experience working and/or volunteering in a STEM-related field. Directly responsible for assisting in the daily operation of the Club, focusing primarily on coordinating/implementing program curriculum; general supervision of members; administrative duties; promote/market the program; and facility management.

Salary
DOE, competitive with health benefits, dental, vision, 401(k), vacation and sick leave

Summary
The STEM Coordinator is an integral part of the program team at the Club. This position is a perfect fit for someone looking to take a first step in their career to work with youth in a science, technology, engineering and mathematics education setting.

Our technology programs have seen tremendous growth over the past five years, and it is expected that growth and improvements will continue. Our goal is to be the premier agency for youth who have an interest in technology programs.

With their No. 1 priority being their work with the kids during program hours, the person who fills this position will also be responsible for the items listed below.

Essential duties and responsibilities

- Design and implement a comprehensive STEM program that aligns with the expectations set forth by the charter of the organization.
- Facilitate activities that encourage community and shared purpose.
- Collaborate with program, unit directors, and staff on program and curriculum ideas.
- Responsible for submitting requests for the purchase of supplies and equipment to the unit director as needed.
- Develop partnerships for internships, tutoring opportunities and professional development.
- Serve in both advocate and coordinating capacities between the Club's STEM program and potential community partners (museums, libraries, corporations, schools, etc.) to develop field trips, volunteer engagement opportunities, curriculum partnerships and more.
- Maintain and submit all record keeping including, but not limited to, member enrollment, attendance reports and activity calendars.

JOB DESCRIPTION
Template 2

- Assist program and unit directors with:
  - Evaluation of program curriculum and implementation
  - Recruitment and training of STEM volunteers and interns
  - Applying for funding to support STEM programing
  - Ensuring all requirements of associated letters of agreements are met including, but not limited to, enrollment percentages, community partnerships and evaluation
- Complete other duties as assigned.

Additional responsibilities

- Knowledge and use of BGCA.net.
- Assist in the planning of Club special events.
- Complete Readiness Assessment.
- Assist in planning of Day Camp.
- First-aid/CPR certified.
- Background check clearance.

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill and/or ability required.

Prerequisites

- Experience developing lesson plans, activities and/or curriculum.
- Familiarity with current STEM research and professional associations.
- Two or more years of experience in a leadership position working with youth.

Basic leadership qualities

- Must possess maturity, self-control and sound judgment.
- Must have a sincere interest in helping youth.
- Must possess the energy, initiative and ability to achieve results within timeframes.
- Must possess a capacity for loyalty and support of the organization's mission, goals and policies.

Specific skills and aptitudes

- Exceptional organizational and planning skills.
- Well-developed written and verbal communication skills to support interaction with diverse academic and non-academic audiences.
- Ability and skills necessary to conceptualize and translate ideas into results.
- Commitment to STEM vision and mission, and ability to communicate that commitment to staff, members and their families.
- Must possess the ability to function objectively and fairly.

This job description is not intended to cover every detail of the position as required. Its purpose is to give a broad overview of the general expectations for the person filling the position. Other duties/requirements may be added at any time, and the position description may change as necessary to meet the needs of the Club.

JOB DESCRIPTION
Template 3

STEM **Part-time Coordinator** Job Description Template

Position Title
STEM/Technology Program Staff

Basic Requirements
Bachelor's degree in applicable field (such as IT, technology education, STEM) or a combination of education and at least 1-2 years of experience in a similar position

Salary
DOE, competitive with health benefits, dental, vision, 401(k), vacation and sick leave

Summary
The Program Staff for STEM/Technology is an integral part of the program team at the Club. This position is a perfect fit for someone looking to take a first step in their career to work with youth in a science, technology, engineering and mathematics education setting.

Our technology programs have seen tremendous growth over the past five years, and it is expected that growth and improvements will continue. Our goal is to be the premier agency for youth who have an interest in technology programs.

With the No. 1 priority being their work with the kids during program hours, the person who fills this position will also be responsible for the items listed below.

Essential duties and responsibilities

- Plan and execute technology/STEM activities during afterschool and summer hours.
- Use 3D printers, tablets and other Club technology resources.
- Participate in BGCA national programs and trainings (Digital Arts Festival, My.Future, robotics, coding, media programming, etc.) as necessary or desired.
- Create engaging STEM-focused local programs.
- Support marketing efforts with pictures and/or video for special events, social media, web posts or other needs as requested.
- Develop relationships and coordinate partnership efforts.
- Communicate with local school staff, teachers and district personnel for summer school, online program access and other issues.
- Manage audio/video setup and equipment for meetings and presentations.
- Support updates to social media outlets, website and blog.

JOB DESCRIPTION
Template 3

Networking

- Manage content filtering, network security and workstation updates.
- Manage Wi-Fi and LAN network servers.
- Provide maintenance and troubleshooting to LAN and wireless networks.
- Provide maintenance and troubleshooting for technology hardware, or support outside vendors as necessary.

Security

- Monitor security system, access logs and rosters.
- Manage logs, distribution of staff ID and access cards.

Additional responsibilities as needed

- Create invitations, thank-you notes and print materials for Club use.
- Document Club events with photos or social media posts as requested.
- Create and distribute quarterly newsletter (digital and print editions).
- Manage email contact list.
- Provide troubleshooting and IT assistance to staff as needed.

This job description is not intended to cover every detail of the position as required. Its purpose is to give a broad overview of the general expectations for the person filling the position. Other duties/requirements may be added at any time, and the position description may change as necessary to meet the needs of the Club.

Recruiting STEM Volunteers and Interns

STEM coordinators can't possibly be experts in all subject areas of STEM. Therefore, volunteer experts and supporters are needed. The key to great programming is a diverse group of people coming together for one purpose, and making lasting relationships along the way. Round out your programming by including volunteers from your community.

The Boys & Girls Club Movement was founded by volunteers, and Clubs realize that harnessing the power of volunteers can extend their budgets, allow their staff to be more focused on programs, as well as positively impact kids. A well-managed volunteer program provides loyal volunteers who contribute to the Club's overall success.

Just as when recruiting permanent staff, draft a job description for the role you need a volunteer to fill. To recruit volunteers with the skills you need, they should complete an application and be interviewed. Remember to check their references and conduct a criminal background check.

Once your organization selects a volunteer for a position, provide them with a volunteer manual and orientation. Keep a written record of each volunteer's time and impact at the Club. Such an official record will help when expressing your appreciation and providing future recognition.

When working with volunteers, know what's required and communicate this up front. For example, volunteers have helped Clubs to run FIRST Lego League programming. This programmatic experience requires a commitment over the duration of six to nine months for two to four hours per week. Be sure your volunteers have the availability to devote the time and attention needed before assigning them to a role.

Not sure where to start looking? Check out the following sources for volunteers and skill-based STEM staffing.

Corporate Volunteers

BGCA has a history of partnering with organizations who give their time and energies to the leaders of our future. Organizations will often lend substantial funding, and even their connections and expertise. Seek out STEM-based companies in your area. Such corporations often have talented people who would like to volunteer, mentor members and/or support STEM programming.

Recruiting STEM Volunteers and Interns

National Service

To maximize your Club's capacity, reach out to the Corporation for National and Community Service (CNCS). This federal organization can match year-long volunteers with your Club to support a specific project. They offer two distinct approaches.

You can recruit Volunteers in Service to America (VISTAs) to support your Club's STEM programming. They assist by developing partnerships, recruiting volunteers, writing grants and providing other community-focused activities.

If you would like to add to your STEM teaching team, CNCS can match you with AmeriCorps State and National programs. These programs will help you enlist dedicated STEM volunteers who are willing to spend their year of service with you.

And if you would like assistance handling the entire process, intermediaries can manage the recruitment, reporting and training for you. This service is not always free, but generally affordable.

So what's stopping you? No matter how you wish to supplement your STEM programming, there's likely a federal resource with volunteers just waiting to help.

Higher Education Volunteers and Partnerships

Reach out to local colleges and universities regarding internships and volunteer opportunities for those in the STEM fields. Students welcome the opportunity to learn more about their field, as well as earn credit for their studies. Many students have to complete a capstone project or thesis. Volunteering at the Club can provide that opportunity for the volunteer, while your Club benefits from their expertise.

Professional Development

To fuel staff's growth and empower them to effectively conduct STEM programming, ongoing training is essential. BGCA is here to support you. Take advantage of the resources below as you work toward your continuous improvement model.

STEM Observation and Feedback Tool

Sit in and observe your Club's STEM activities in action, then provide direct feedback and targeted coaching to facilitators. Use the STEM Observation and Feedback Tool following as a guide. The content is organized around the five key elements and the foundational STEM skills all staff should develop. Use your observations to offer feedback and plan future professional development opportunities.

STEM Program Quality Assessment

The Weikert Center for Youth Program Quality developed a content-specific STEM Program Quality Assessment (PQA). This thorough and comprehensive tool will provide an in-depth picture of your STEM program's quality and effectiveness. To access this incredible resource and learn how your Club can benefit, visit their website: **CYPQ.org.**

Dimension of Success

DoS was created by Harvard University's PEAR Foundation to help program managers assess the quality of a specific STEM activity. It is an extensively tested tool that requires certification through a two-day training. With this resource, your professional staff will develop the skills necessary to offer directed feedback on program facilitators' teaching methods, which promotes high-quality STEM activities. You can find more information through the PEAR Institute at **ThePearInstitute.org**.

Spillett Leadership University

BGCA offers STEM-specific trainings that can be delivered at an All-staff Conference or other STEM training. You can request an all-day, in-person training conducted by National Training Associates (NTAs) that is hands-on and interactive. Notice what's available to help your STEM team improve the programming in your Club:

- STEM Sessions
  - Engaging Members in Active STEM Learning
  - Using Purposeful Questions to Enhance STEM Learning
  - Giving Members Control and Ownership of the STEM Learning Experiences
- Tech Classes
  - My.Future Platform and Digital Literacy Essentials
  - Computer Science Pathways

Professional Development

Additionally, BGCA is providing STEM, digital engagement and mobile device trainings at some regional conferences. Visit Spillett Leadership University on **BGCA.net** for more information, or to request one of these trainings for your Club.

Learning Coaches Initiative
The Spillett Leadership University Learning Coaches Initiative provides local Clubs with professional development opportunities. Consider selecting an employee from your staff to serve as a Learning Coach. Once selected, they will be trained to deliver the BASICS In-Service Learning Modules, including four courses focused on fundamental STEM skills and four additional courses around more advanced STEM topics.

Each turn-key Learning Module has everything a Learning Coach needs to lead an interactive, face-to-face in-service training. These trainings fulfill the requirements and electives of the Foundation Level of Spillett Leadership University's School of Youth Development. To learn more, review the Learning Coaches Initiative FAQ in the Training Documents on **BGCA.net**.

Click2Science

If your staff can't attend an in-person training, we feature a user-friendly online training platform. These training resources also enhance the impact STEM programming has on our members. Learning modules include resources for extensive trainings, brief meetings and coaching arranged around these topics:

- Planning STEM Learning Experiences
- Interacting With Youth During STEM
- Building STEM Skills in Youth

Visit **Click2SciencePD.org** to learn more.

STEM Observation and Feedback Tool

STEM directors and leadership staff may use this worksheet to record their observations when attending a STEM activity. Use the findings to drive future trainings and enrich your coaching experience.

Date: _____ Club: _____

Activity: _____ Facilitator: _____

Number and description of participants: _____

5 KEY ELEMENTS

Safe, Positive Environment

- ❑ Physical safety
- ❑ Emotional safety

Fun

- ❑ Engaging activities
- ❑ Relevance

Supportive Relationships

- ❑ With adults
- ❑ With peers

Opportunities and Expectations

- ❑ Targeted praise
- ❑ Rules and expectations established around respectful interactions

Recognition

- ❑ Unsolicited, non-evaluative feedback from staff
- ❑ Positive feedback from peers

STEM SKILLS

Active STEM Learning

- ❑ Hands-on learning
- ❑ True discovery vs. rote instruction
- ❑ Organized material

Inquiry

- ❑ Purposeful questions from staff
- ❑ STEM practices (observing, making hypothesis, collecting data, analyzing, etc.)

Youth Voice

- ❑ Youth-initiated activities
- ❑ Choice allowed within activity

Content

- ❑ Process-driven, rather than content-driven
- ❑ Appropriate level of challenge

Reflection

- ❑ Time allowed for reflection in some form: written, small groups or entire group
- ❑ Youth invited to give feedback on activity

Strengths	Challenges	Next Steps

Boys & Girls Clubs of the Austin Area (Austin, Texas)

Profile: 28 Clubs
Interviewee: STEM Director Erica Egan

What staffing models work best for your network of Clubs?
We have 28 Clubs in Austin. I'm the STEM director, and I oversee STEM instruction in all of our Clubs. In addition, we staff a STEM coordinator. She assumes an administrative role earlier in the day, and after school she teaches in the Clubs. We also staff five part-time STEM educators who travel to some Clubs. Finally, most Clubs have full- or part-time educators who run STEM and other programming at their locations.

What does your role involve?
As the director, I spend a lot of time scouting funders and analyzing data and test results. In addition, I'm busy with meetings, trainings and research. I also work hard to develop the STEM curriculum, and keep up with the STEM budget for all of our Clubs.

How do you recruit and retain your STEM team members?
Recruiting college students has been a big success! We also recruit BGCA alumni who are now in STEM careers to join our team as part-time staff. We provide the environment – including opportunities for growth, different staffing models and incentives – to promote BGCA as a career.

What training do you offer STEM programming staff?
STEM can be taught. It's for everyone! So, we hire based on experience working with kids. To that end, I run quarterly trainings, teaching staff appropriate STEM practices and how to best promote problem-solving and team-building among their members. I try to look at each educator's needs and then get them back to the basics of STEM.

Are there any programs you have found especially helpful for running STEM?
This school year, we are launching Engineering Everywhere in some Clubs. This free, downloadable curriculum was created for Clubs by the Museum of Science in Boston. It's one of the best programs for out-of-school providers I've ever seen!

> *"STEM can be taught. It's for everyone! So, we hire based on experience working with kids. I try to look at each educator's needs and then get them back to the basics of STEM."*

FROM THE FIELD
Volunteers and Professional Partnerships

Boys & Girls Clubs of Harford County (Aberdeen, Md.)

Profile: Four Clubs, plus merging three additional from Cecil County
Interviewee: Development Director Nancy Mahoney

Describe your relationship with AFCEA (Armed Forces Communications and Electronic Association).
AFCEA is key to our STEM programming, since they can provide volunteers and financial support. Their affiliate organization, Young AFCEANs, last year conducted a fundraiser for our organization, and later offered to completely redo one of our Club's STEM Centers. This $20,000 project included not only the materials, but also the volunteer labor to carry it out! Today, even more Young AFCEANs volunteer at our Clubs. And now that we are merging with Boys & Girls Clubs of Cecil County, AFCEA has agreed to create a mobile STEM lab to serve them.

What other partnerships has your organization developed?
A conglomerate of 10 companies came together and wanted to help our Clubs. The organizations collaborated to develop the STEM Center, created their own lesson plans and produced a full-package program. The resulting Tech Girls program they created has been key to encouraging girls to join. Up to 10 volunteers come out monthly to mentor middle to high school girls. The original volunteers are middle-aged and very successful in their fields. Now they bring their kids to volunteer and become part of the STEM family. They start their lessons by talking about how they got where they are in life, which ties into our SMART Girls program. They take apart and put back together computers, visit weather stations, and do other fun activities in and out of the Club with our members to make STEM come to life.

Once the sponsors saw how effective their program was, they decided to go to a second Club, and then a third. Once their volunteer base grows, they plan to assist our newly merged county's Clubs.

How do you recruit these and other volunteer organizations?
Being involved in the community makes a difference. For example, when Major General Harold Green passed, we partnered to form the Major General Harold Green Educational Fund. Many organizations now donate to that fund, and the proceeds are used for our STEM programming.

You have to be out there at community events. Go talk about your STEM programs and what a difference it makes for the kids. Get the people you meet into the Clubs, and everything else follows.

Community fairs are important. For example, at one fair, Duke Plus Corporation had a table next to ours. They wanted to partner with us, and they ended up providing tower gardens outside each Club – where plants grow in the air to produce vegetables and herbs. Now the kids learn how to grow, cultivate and harvest food from seed. They replant seeds from what they cultivate to grow new plants. Finally, once we harvest, we make and eat meals from what they grow, like pizza and salad. Many of these kids live in food deserts, without access or prior exposure to healthy foods; but now they can grow and prepare real food on their own. The Tower Garden project promotes healthy eating, which many kids hadn't been exposed to. We teach them a way of living through STEM!

FROM THE FIELD
Volunteers and Professional Partnerships

Are there any other partnerships you wanted to share?
John Hopkins University needed to test a new program, called Crazy 8 Math Club, which is designed to alieve math anxiety. So they asked us to pilot the program.

Cal Ripken Senior Foundation approached us since they wanted to provide a STEM program. They asked us to be their test model. They sent everything we needed to run the program – computers, kits and more – and they just asked us to write the reviews. Based on our equipment review, they developed a curriculum. Next they took our curriculum feedback and made a curriculum guide. They are even providing more materials, based on our feedback, for this year.

How did you develop these ongoing relationships with your partners?
The key with any organization is to develop the relationship. This comes from regular communication, showing appreciation for their generous support, and sharing what kids are doing with what they have been given. As a result, corporations expand their efforts – from sending volunteers, to funding, to reaching out to additional Clubs in our network.

> *"You have to be out there at community events. Go talk about your STEM programs and what a difference it makes for the kids. Get the people you meet into the Clubs, and everything else follows."*

Policy Resources

Current STEM Policy Level: _____

Goal STEM Policy Level: _____

Category 2: POLICIES Bring Your Own Device, Mobile Technology and Wi-Fi

Objective	Strategy	Lead Person	Approved?	Deadline	Completed?
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N

Technology has changed the way people communicate, and this is especially true for our tween and teen members. Now more than ever, Clubs are challenged with managing the use of members' personal devices, and helping them make decisions that are both safe and responsible. Learn how to implement a Bring Your Own Device Policy, Mobile Tech Policy and Wi-Fi Policy that works for your Club.

MAP TO
STEM Policy Resources

Category	Resources	Location
BYOD	Club Technology Planning Guide for Policy & Permission Fillable Forms	**BGCA.net/Operations**
Safety	BGCA Child Safety Resource Library	**BGCA.net/ChildSafety**
	Digital Literacy Essentials	**MyFuture.net**
Technology	Club Technology Planning Guide for Self-Assessment	**BGCA.net/Operations**

Building a Technology & Internet Safety Plan

No matter what policies your Club has in place, a Technology and Internet Safety Plan is essential.

Consider the questions below when designing your Technology and Internet Safety Plan:

- What are the procedures for giving members STEM/Technology Center and social networking privileges?
- How will Club staff obtain permission for members to use computers and social networking sites from parents?
- How will we ensure adequate staff coverage when young people are using the STEM/Technology Center?
- What procedures can we establish to ensure responsible use?
- Which social networking sites are allowed?

Implement the components that follow into your Technology and Internet Safety Plan. And for more information on devising your Plan – including worksheets and templates to help you create a customized Content Filtering Policy, Password Storage and Management Policy, and Acceptable Use Policy for Members – please refer to the companion piece, Club Technology Planning Guide.

Policies and Procedures

- An **ACCEPTABLE USE POLICY** defines appropriate use of computer equipment and the internet for both staff and members, as approved by the Board of Directors and signed by each staff member and placed in their personnel file.
- A **BRING YOUR OWN DEVICE POLICY** defines if and how members may use their own personal devices in your Club.
- A **CODE OF CONDUCT** lists rules for members that can be written in simple, easy language. Post the Code in your Club's STEM/Technology Center. File copies signed by members and their parent/guardian.
- **MEMBERSHIP FORMS** can include a statement that members will have access to the internet in the Club, which parents sign.
- **INCIDENT PROCEDURES** for handling incidents and different internet-based issues should be developed and shared with all staff.
- **CLUB DIGITAL PRACTICES** give staff the ability to positively engage young people in working with their personal devices.
- **INTERNET SAFETY EDUCATION:** Staff must be trained on internet safety in order to protect youth, as well as themselves and the organization. Youth members who use computers and/or the internet should be trained to use their devices responsibly. Consider using these excellent resources to educate them.

Digital Safety Practices

Effective safety practices are essential to a positive Club Experience. Consider implementing three strategies to build your Club's safe digital environment.

1. Set up convenient and secure places for members to store their devices, when they aren't needed. Some Clubs feature device bins. Other Clubs use hanging cloth shoe pockets, each labeled with members' names. Whatever your method, have a way to securely store members' devices when they're not needed, and promptly return them when they are.

2. Create a language for talking about how devices should be used. There are six power words that every Club professional and Club member should know. While you can change your phrasing, do be sure you, your staff and your youth agree to what the words are, and what they mean. The six essential concepts are:

- **DEVICES OUT**: Take your devices out of your bags and/or other storage locations now.
- **DEVICES AWAY**: Put your devices away completely. There should be no devices out.
- **DEVICES UP**: It's OK to pick up and use your devices.
- **DEVICES DOWN**: Put your devices face-down, in a visible location, such as on top of a desk.
- **SAFE CONVERSATION**: A young person can use this expression when they need to speak with a staff member about something that makes them feel uncomfortable. This is useful for non-digital conversations, as well. Members should understand if they see something uncomfortable online, they can safely speak with a staff member about it, away from other youth.
- **NO PICTURES**: Young people can use this phrase to let other members know they do not want to have their photo taken or shared. It is similar to, "No Paparazzi!" an image with the hand held over the lens. In a Club, this preference must be respected completely.

3. Establish a consistent pattern for your members. Just as you have a way to check members in each day, be consistent with when and where members check their devices. Staff should use their power words consistently throughout the Club day. Others, including parents, should be consistently told about the ways in which members may, and may not, use devices in Clubs. It's important for all staff, members and their guardians to understand your practices thoroughly.

In addition, always remember to **provide adequate adult supervision**. No matter what procedures are in place, children should be monitored when using computers. Such supervisors should be actively engaged with members and aware of what they are viewing.

Mobile Devices and Your Club

Mobile devices have changed the way young people communicate. Many of our members now have their own phones and tablets, and they use them to text message, access social media and a variety of applications. Such devices have become essential to our members' lives, as well as to our Club programming. Consider how comfortable your Club is with using mobile devices, and determine how to best manage your members' usage.

Seek to integrate mobile technology into your Club's programming. Phones and tablets are powerful tools with free apps available that allow members to learn, create, socialize and explore the world around them. Mobile devices are now a part of the positive Club Experience our members have come to expect.

Of course, balance is needed, and there is a time and place for everything. Be aware of how much time your members spend on their devices, what they are accessing, and when this takes place. In this way, you can help your members use their devices as effective tools, rather than allowing them to become dangerous distractions.

This need not be a daunting task. With policies and procedures drafted ahead of time, your entire Club staff, the members and their parents will understand your Club's mobile technology regulations. They'll know what you expect regarding when, where and how to use their devices. And you can work together to ensure mobile technology is as effective as possible in supporting your Club's programming.

Customize the Bring Your Own Device Policy Templates

By embracing technology, Clubs will continue to be relevant and engaging spaces for young people in our communities. Of course, it is essential to manage this technology effectively by involving all the Club's stakeholders (staff, Board, members, parents) in developing a Bring Your Own Device (BYOD) Policy.

The Bring Your Own Device Policy Template from Boys & Girls Clubs' Legal Team will get you started. Download it from **BGCA.net**, or access it right from this section. Review and modify the template to fit your Club's needs.

Mobile Devices and Your Club

In addition to what is covered in the policy template that follows, your Club may wish to address the following questions when customizing your Bring Your Own Device Policy.

- How much time should members spend on their devices?
- Are there times and places when mobile technology should be restricted?
- Do members have suggestions to implement into the policy?
- Are there regulations to ensure staff use mobile technology appropriately when connecting with members outside Club hours?
- What can be done to ensure members who do not have their own devices feel included and have access to the internet?
- Will you use social networking applications to promote Club programs? What policies are in place?

Make sure your members and their parents understand what will be required of them, should they choose to bring their own devices to the Clubs. Communication is a must! To that end, a Memo and Policy Template is also contained in this section. Modify the **BYOD Memo to Parents Template** and **BYOD Parent and Member Permission Form Template** that follows.

Send your modified Memo and Permission Form home with members, so they can discuss the Policy together with their parents. Members and parents should each sign the Permission Form and return it to the Club, indicating that they received it, understand what is required, and agree to comply with the policies it contains.

If you have any questions, BGCA's My.Future team will be happy to help you at **MyFuture@BGCA.org**.

Bring Your Own Device Policy Template

The **[NAME]** Boys & Girls Club adopts this policy to maintain a safe and secure environment for members, staff, volunteers and others.

A PERSONALLY OWNED DEVICE includes all member-owned existing and emerging technologies and devices that can take photographs, play and record audio or video, input text, upload and download content and/or media, and transmit or receive messages or images.

Emerging technologies and devices include but are not limited to cell phones, computers, tablets and storage media (e.g., flash drives), as well as communication tools including social media sites, text messages, chat and websites. Not all devices are covered within this policy. Unacceptable devices in this policy include, but are not limited to, gaming devices or consoles, laser pointers, modems or routers and televisions.

CLUB PURPOSES include program activities, career development, communication with experts and/or Club peer members, homework and Club activities. Members are expected to act responsibly and thoughtfully when using technology resources. Members bear the burden of responsibility to ask staff when they aren't sure of the permissibility of a particular use of technology prior to engaging in the use.

Personally owned devices are permitted for use during Club time for Club purposes and in approved locations only. The Club expressly prohibits the use of personally owned devices in locker rooms, restrooms and other areas where there is an expectation of privacy.

Any inappropriate use of a personally owned device, as determined by Club staff, can lead to disciplinary action including, but not limited to, confiscation of the device, immediate suspension from the Club, termination of membership, or other disciplinary actions determined to be appropriate to the Club's existing disciplinary policies including, if applicable, referral to local law enforcement.

INAPPROPRIATE COMMUNICATION includes, but is not limited to, obscene, profane, lewd, vulgar, rude, inflammatory, threatening, or disrespectful language or images typed, posted or spoken by members; information that could cause damage to an individual or the Club community, or create the danger of disruption of the Club environment; personal attacks, including prejudicial or discriminatory attacks; harassment (persistently acting in a manner that distresses or annoys another person) or stalking others; knowingly or recklessly posting false or defamatory information about a person or organization; and communication that promotes the destruction of property, including the acquisition or creation of weapons or other destructive devices. If a member is told to stop sending communications, that member must cease the activity immediately.

MOBILE DEVICE
Template 1

Members may not use any technology to harass, threaten, demean, humiliate, intimidate, embarrass, or annoy their peers or others in their community. This behavior is cyberbullying, which is bullying that takes place using emerging technologies and devices. Examples of cyberbullying include mean text messages or emails; rumors sent by email or posted on social networking sites; and embarrassing pictures, videos, websites or fake profiles. Any cyberbullying that is determined to disrupt the safety and/or well-being of the Club, Club member, Club staff or community is subject to disciplinary action.

Members must be aware of the appropriateness of communications when using Club or personally owned devices. Inappropriate communication is prohibited in any public messages, private messages and material posted online by members.

MONITORING AND INSPECTION. Boys & Girls Club of **[NAME]** reserves the right to monitor, inspect, copy and review a personally owned device that is brought to the Club. Parents/Guardians will be notified before such an inspection takes place and may be present, at their choice, during the inspection. Parents/Guardians may refuse to allow such inspections. If so, the member may be barred from bringing personally owned devices to the Club in the future.

INTERNET ACCESS. Personally owned devices used at the Club are not permitted to directly connect to the internet through a phone network or other content service provider. Personally owned devices must access the internet via the Club's content-filtered wireless network. Boys & Girls Club of **[NAME]** reserves the right to monitor communication and internet traffic, and to manage, open or close access to specific online websites, portals, networks or other services. Members must follow Club procedures to access the Club's internet service.

LOSS AND DAMAGE. Members are responsible for keeping devices with them at all times. Staff are not responsible for the security and condition of the member's personal device. Furthermore, the Club is not liable for the loss, damage, misuse or theft of any personally owned device brought to the Club.

PARENT/GUARDIAN NOTIFICATION AND RESPONSIBILITY. BGCA's Internet Acceptable Use Policy restricts the access of inappropriate material. However, supervision of usage may not always be possible while members use the internet. Due to the wide range of material available on the internet, some material may not fit the particular values of members and their families. Because of this, it is not practical for Boys & Girls Club of **[NAME]** to monitor and enforce a wide range of social values in student use of the internet. If parents/guardians do not want members to access information beyond the scope of the Internet Acceptable Use Policy, parents should instruct members not to access such materials.

Bring Your Own Device Memo to Parents/Guardians Template

Dear Parent/Guardian:

Mobile devices have changed the way young people communicate. Many of our members have their own phones and tablets, and they use them to text message, use social media and access a variety of applications. This has become essential to our members' lives, as well as to our Club programming.

At Boys & Girls Clubs of **[NAME]**, we integrate mobile technology into our Club's programing. Phones and tablets are powerful tools that allow children to learn, create, socialize and explore the world around them.

Of course, balance is needed, and there is a time and place for everything. We care about how much time children spend on their devices, what they are accessing, and when this takes place. With your help, we aim to help our children use their devices safely as an effective tool, rather than allowing them to become a dangerous distraction.

To help achieve this, Boys & Girls Clubs of **[NAME]** has adopted a Bring Your Own Device (BYOD) Policy for our Club. This policy will allow members to bring their laptops, tablets and/or smartphones to the Club for educational use in our facilities. However, members are never required to bring their personal technology to the Club. All members will be able to continue to use our Club technology equipment, and no member will be left out of a program because they do not have a personal device.

If you would like your child to participate in this program, please read and discuss the following BYOD Acceptable Use Policy with your child. If you and your child agree to the terms, return the portion with your names and signatures to Club staff.

If you do not want your child to participate, you do not need to take any action.

Thank you for your understanding and cooperation with this initiative. We welcome your suggestions and feedback. If you have questions about the BYOD program, please contact **[CLUB]** at **[PHONE NUMBER]**, **[EMAIL ADDRESS]**.

Sincerely,

[Name]
[Title]
[Club]

Parent/Guardian and Member Bring Your Own Device (BYOD) Policy Permission Form Template

If you would like your child to use a personally owned electronic device within the Boys & Girls Club of **[NAME]**, please read, sign and submit this agreement to Club staff.

1. In order to use the Boys & Girls Club BYOD services (including the wireless network), members and parents must review and sign the BYOD Acceptable Use Policy. This is considered a legally binding agreement.
2. Members will take full responsibility for their devices and keep them with them at all times. Members may not lend their devices to any other Club member or staff. The Club is not responsible for the security of the devices or loss/damage/theft of a personally owned device.
3. Members are responsible for the proper care of their personal devices, including any costs of repair, replacement or any modifications needed to use them at the Club.
4. Members should only use their devices to access services, networks or files relevant to Club-sanctioned programs. Members should only use the features of their devices, including, but not limited to, taking or transmitting pictures, videos, location information or other features in accordance with programs.
5. Members may not use their devices to record, transmit or post pictures, videos, or other information of or about a person or persons at the Club. Nor can any images, videos, or other information recorded at the Club be transmitted or posted at any time without the express permission of Club staff.
6. Members must use the Club's secured wireless network. Use of cellular (e.g., 3G, 4G) wireless connections is not allowed.
7. The Club reserves the right to inspect a member's personal device. Parents/Guardians will be notified and allowed to be present before any such inspection takes place. Parents/Guardians are free to refuse to allow Club staff to inspect a device; however, that member may be barred from bringing personally owned devices to the Club in the future. This decision will be at the Club's discretion.
8. Members must comply with staff requests to shut down or turn off devices when asked. Failure to do so may result in the member being barred from bringing personal devices in the future.
9. Violations of any Club policies, administrative procedures or Club rules involving a member's personally owned device may result in the loss of use of the device at the Club and/or disciplinary action.

MOBILE DEVICE
Template 3

I, the undersigned, as a member of the Boys & Girls Club of **[NAME]**, have reviewed the BYOD Acceptable Use Policy and guidelines. I understand that any violation of the policy or guidelines may result in revocation of technology privileges and possible further disciplinary action.

Member's Name:_____

Member's Signature: _____

Date: _____

I, the undersigned legal guardian, have reviewed the BYOD Acceptable Use Policy and guidelines for the Boys & Girls Club of **[NAME]**.

My Child, _____ , is also aware of the terms and conditions.

Parent/Guardian's Name:_____

Parent/Guardian's Signature:_____

Date:_____

Boys & Girls Clubs of Greater Washington (Washington, D.C.)

Profile: 14 Clubs
Interviewee: Teen Program Director LeVar Jones

What technology policies does your organization have in place?
In our Teen Space, Bring Your Own Device (BYOD) is encouraged. We take a liberal approach on negotiating with teens how to use their devices. They are encouraged to bring and use their phones and tablets. They can use these on BGCA's internet network, with Club-wide safety filters to keep them safe online.

Our Club hosts Washington, D.C.'s Best Buy Teen Tech Center. With all of the multi-media projects teens are engaged in, they need access to some websites that are otherwise blocked. When working on specific projects, the Club can provide temporary access for those teens. It's a good balance to ensure all Club members are safe, while maintaining open access for teen members to the web, with enough restriction to maintain their safety online.

How do you enforce your technology and internet safety policies?
It goes back to the relationship our staff has with teen members. Staff are always engaged with young people, and members share what they're looking at with them. Having members' trust in the digital space is really based on the strength of relationships. Staff members maintain a strong presence, so young people know they are there in their circle – not just as big brother watching them, but as mentor to mentee.

> *"Having members' trust in the digital space is really based on the strength of relationships. Staff members maintain a strong presence, so young people know they are there in their circle."*

How does your Club handle social media?
There's lots of discussion around how teens represent themselves and the Club, both on social media and online. Teens are taught to recognize their personal brand, and what their digital footprint says about them. The Club maintains their own social media channels. Staff converse with teens about what's the best posts to make, in representing themselves and the Club in the best light.

Young people often use the digital space to create alternative realities for themselves. Gaining their trust in that space has promoted conversations around real life; and not having teens run into their digital space to escape their real space. They are taught how to cope with real life, which often otherwise pushes them into digital space. It's about teaching life skills.

FROM THE FIELD
Policy

How has BGCA's supplied materials helped your Clubs to enlist their policies?
The recent BGCA webinar pushed the BYOD template. At the time, our Clubs were at an early stage of developing their own BYOD policy, and the template was a huge help! We needed the outside perspective on crafting the language for that policy. While in workshops at the National Conference, colleagues shared the same thing – the templates are right on! What's come out last year has really helped meet the needs in the field.

My only suggestion for improvement is boosting the marketing so everyone knows the policy templates are there. With so many resources, they can get lost. Reiterate to the Movement that they are available so people can use them.

Space Resources

Current STEM Center Space Level: _____

Goal STEM Center Space Level: _____

Category 3: SPACE Dedicated or Shared STEM Center Space

Objective	Strategy	Lead Person	Approved?	Deadline	Completed?
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N

How often you dedicate space to STEM will greatly impact the programming. Can you dedicate space for this unique programming for two hours a week? How about four hours per week? What would it take to dedicate a portion of your Club to STEM at all times?

MAP TO
STEM Center Space Resources

Category	Resources	Location
Dedicated Space	STEM Centers of Innovation Space Redesign Guide	**BGCA.net/STEM**
	Maker Ed	**MakerEd.org/Makerspaces**
	The Tinkering Studio	**Tinkering.Exploratorium.edu**
	Spark Lab	**Invention.si.edu/About-SparkLab.org**

Setting Up Your Club's STEM Center

Whether your STEM programming is at the Beginner or Intermediate level – sharing space with other programs – or is at the Advanced level, with a dedicated STEM Center, space setup greatly impacts how members benefit from the programming it contains.

A little preparation goes a long way, and a lot of preparation goes even farther! Find out what it takes to create an exciting space for your members to chill out, relax and get excited to learn. Put some thought into the design, products and aesthetics of the space. Make the most of your time, money and resources – including personnel. And take advantage of all the great information available.

Sharing a Space for STEM Programming

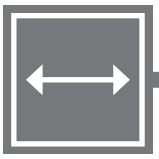
Space can be shared with other programs, but the space should be STEM-only during STEM programming. Your unit director should consult regularly with the STEM Planning Team and hold primary responsibility for the space. If your Club is shared with another partner organization or school, it is important for that partner to be included in the planning of the space and scheduling of programs prior to launching your STEM program.

When sharing a space, it is especially important to safely store any equipment and supplies so they are always ready and available when you need them. Rolling carts or locked storage containers are excellent options.

Whether starting with an empty room or bolstering an existing programming space, Clubs and stakeholders should answer the following questions prior to space design in a shared space:

- What programs need to be conducted in the space?
- What is the specific schedule of each program held in that space?
- Does the STEM programming schedule allow time between programs to ensure instructors can set up and break down their lessons?
- What is the protocol for using the space?

Design Elements of a STEM Center



Imagine **wide open spaces** for members to collaborate, conduct research or informally present their work.

Create a **cozy corner** as a peaceful place to chill out by the window, in comfy chairs, over a rug, beside a shelf stocked with books to inspire making.

Bring in **natural light** and set a mood that is ambient, airy and aesthetically appealing. Make technology part of the built-in environment so it is accessible, but does not dominate the space.

To **stimulate** great ideas, show off your materials in transparent containers that are easy to locate and keep the space organized.

Changeable layouts with furniture on wheels and puzzle-piece tables can be **customized** for large groups, small groups, individual projects and everything in between.

Make your space **inspirational** to foster collaboration and conversation. Promote relaxed **interaction** and allow for quiet, reflective work. Add a unique design element that reflects your community and youth interests.

Design Elements of a STEM Center

Design Materials

Storage and Safety Supplies
Storage bins and tool cabinets for electronics, white boards, markers, safety glasses, gloves, dust masks, power strips, extension cords, brooms, first-aid kits, fire extinguishers

Basic Hand Tools
Screwdrivers, hammers, wrenches, sockets, clamps, pliers, rulers, calipers, tape measures, box cutters, hack saws, scissors, wood saws, staple guns, glue guns, workbenches

Basic Power Tools and Electronics
Soldering irons, multimeters, wire cutters and crimpers, battery holders, alligator clips, Arduinos, motors, sensors, servos

Textile Tools
Sewing machines, fabric scissors, needles, bobbins, irons, pushpins, safety pins

Consumables
Glue, tape, sand paper, staples, blades, solders, thread, zip ties, batteries, wire, LEDs, paintbrushes, paint, wood, butcher block paper, fabrics, pipe cleaners, 3D printer plastic filament

Expert Tip

Review Your STEM programming to determine what supplies you will need in your space. Visit BGCA's STEM Portal for information about our national programs. Be sure to include the needs and interests of your own teen population when considering STEM programming additions.

Boys & Girls Clubs of North Alabama (Huntsville, Ala.)

Profile: 12 Clubs
Interviewee: STEM Director Angela O'Neil

Do your Clubs have a dedicated STEM Center?
Our Williams Boys & Girls Club received the first STEM Center of Innovation, which was developed as part of a one-year grant from Raytheon. This made possible a huge remodel of the former computer lab. The space is now exclusively STEM, and it's been so successful that we are now seeking funding for STEM Centers in all 12 of our Clubs! We have a three-year plan to this end, and have already received funding for three more STEM Centers. In fact, our third Center is now ready for its grand opening, and the community is very excited.

How did you solicit funding?
Once the Clubs' unit directors see what STEM can do for Clubs, they seek funding on their own. The first to get funding was through a Google grant. In the second Club, a professional football player came by to visit the Club and asked what he could do to help. The director said they wanted a STEM Center, so he wrote them a check! The third Center was sponsored by an engineering company with its headquarters in the Club's town. As a part of their Board development, the Club wrote a proposal to the company, including what was happening with their Raytheon-sponsored Club. They shared what a STEM Center looks like – with materials, furniture and programming. Since it was an already working model, it was easier to get the sponsors to sign on.

What has BGCA provided to help facilitate your STEM Centers' design?
BGCA hosted design charrettes, which were very useful. It was important to hear from those who are actually going to use the space as to what it should be like. Also, the thought process on flexibility came out of the charrette. EVERYTHING is on wheels. There is nothing that can't move around easily. All tables are an adjustable height, based on kids' ages, if they like to stand/sit, etc. If doing group work, we can move tables together. (Warning: Wheels on chairs can turn them into race cars!) We do a large furniture change each semester based on the programming coming up. It keeps things fresh and exciting for the kids.

And although a former edition of this guide came out after our space was completed, we were happy to lend some tips that were implemented. This guide is very applicable and represents how we designed our space. I feel it's an excellent resource for Clubs.

What makes your STEM Center different from other parts of the Club?
An engineering thought process went into the design, where every piece of equipment, furniture, etc., has more than one job. There are lots of capabilities. The STEM Center has a different feel. It's not a classroom, it's a lab! A lab is for active learning: It's not about loafing, but doing something. The space gives an expectation of science and experiments. It's special, and the kids know that – It looks different, and they act different. They say, "I'm going to the lab." It gives them an engineering/scientific mindset. The space really sets the tone.

FROM THE FIELD
Space

Have the STEM Centers had any measurable effects on your members?
Last fall, we surveyed kids on their interests at all 12 locations. At the Raytheon-sponsored Club, STEM ranked in 2 of the top 5 favorite things to do at the Club. At other Clubs, STEM didn't even make the list. It really showed having the STEM Center and dedicated program hugely impacts the kids. I've seen kids go from being resistant, to now cheering when we say they'll be doing STEM that day.

How do you feel about offering your members quality STEM programming?
My reason for existing is for kids to say, "Science is fun!" because it is. It's been wonderful. I've been in science education for a long time. And working with kids like this every day is very rewarding. Because I know what they're interested in and what they're capable of. Some will be rock stars at computer programming when they grow up. But without this program, how would they know that? They wouldn't have access until middle school, but I'm picking up third graders into computer science. I'm blessed with a cool job, great people to work with, and all the tools I need.

> *"The STEM Center has a different feel. It's not a classroom, it's a lab! It's special, and the kids know that. The space really sets the tone."*

Technology & Hardware Resources

Current STEM Technology & Hardware Level: _____

Goal STEM Technology & Hardware Level: _____

Category 4: TECHNOLOGY & HARDWARE Including Wi-Fi Options

Objective	Strategy	Lead Person	Approved?	Deadline	Completed?
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N

Every Club is unique as the members they serve. Customize your STEM programming according to your Club's own capacity and member interests. Use the following equipment, internet and software suggestions to get your Club on the right track.

Club Technology Planning Guide – An Overview

Technology puts the "T" in STEM. By now you know that adequate technology is essential to running your programming smoothly. This Everything STEM Planning Guide began your journey toward evaluating your Club's current technology. But to learn more, be sure to check out this guide's companion piece, the Club Technology Planning Guide, available on **BGCA.net/Technology**.

The Club Technology Planning Guide will lead you toward a more comprehensive review with the Club Technology Assessment, complete with resources for each section to help attain your technology goals. The evaluation and resources include these topics:

1. Network Engineering
2. Equipment
3. Policies
4. Digital Safety
5. Data and Information Security
6. Funding
7. Personnel
8. Training

Enjoy working through the companion guide to discover all of the tools available to bring your technology plans to life. You'll find so many great assets to get you on your way. Hopefully the list of offerings below will whet your technological appetites!

Broadband and wireless connectivity recommendations – Includes internet speed diagnostics and BGCA reduced-rate package offerings

Networking hardware – Discover what they are and how to determine what you really need.

Internet safety and content filtering – Learn what's available and how to keep your members safe online.

Technology equipment packages – View recommended devices to support any level of STEM programming.

Club policy templates – Customize these to help your members use technology effectively in the Club.

Digital safety recommendations – Promote a positive Club atmosphere for members and staff.

Data training – Understand data's role and learn how to effectually use and back it up.

Non-profit discounts – Tap into reduced-rate software offered to Clubs like yours.

Recruiting Technology staff and volunteers – Learn what type of technology staffing your Club needs, and determine how to recruit the best candidates.

Training – Take advantage of BGCA's and Microsoft's ever-expanding educational offerings available to your STEM/Tech Team.

Club Technology Plan Template – Use this handy worksheet to map out your comprehensive Technology Plan.

Managing Your Technology

System
A STEM Center that fulfills your technology needs includes the broadband to support the staff and members you have online at any time, internet filtering, up-to-date software, fast computers and plenty of portable devices. To learn how well your system works together, conduct a periodic review.

1. Assess your Wi-Fi, broadband, routers and safeguards. Not sure how? Our Club Technology Planning Guide provides excellent resources.

2. Enlist a skilled technology consultant in your area. These experts can evaluate your current state of technology and develop a plan to help achieve your vision.

Software
Next it's time to evaluate your software. You know – the programs that tell your computer what to do. To help software work most efficiently, follow these simple steps:

1. Determine what software your computers need to run your Club's programming. Keep accurate records. That way, should anything happen, you can easily reload your computer with everything it needs.

2. To make sure your system doesn't act up or inherit harmful viruses, develop a clear process with strict permissions for downloading software. Install a program like Deep Freeze to protect from harmful things your members may inadvertently download. Plus, it enables you to bring all of your computers up-to-date simultaneously. Hooray for multi-tasking!

Devices
1. Be sure all of your devices are registered under a Club leadership email account and phone number.

2. To encourage your staff and members to take excellent care of your tablets and laptops, make sure they're all labeled. Maintain a running inventory to keep track of what you have. Use sign-out sheets so everyone knows where to find each piece of equipment and who is responsible for it.

3. To ensure no one accesses your devices without your permission, lock them down with effective passwords. Keep all of your devices' passwords recorded in a central location, maintained by both programming and administrative staff.

Organization
1. Obtain portable storage carts to easily charge devices from anywhere. And use them to conceal your tablets and laptops when they aren't in use.

2. Keep your bundles of cables neatly tucked away. That way, your room stays neat and tidy, and no one will hurt themselves or your equipment by taking a fall.

Supplemental Equipment for STEM Projects

Included in the companion piece, the Club Technology Planning Guide, is a list of all the computer equipment your Club needs to run your technology programs. In addition, your STEM program will benefit from blending coding and technology skills with hands-on projects. Below is a list of supplements many Clubs have found to be effective learning tools for their members. These recommendations are not comprehensive, so research carefully to ensure you find the best resources for your Clubs.

EQUIPMENT	AGES	PROGRAM FOCUS	LINKS	COST
Foundational Level				
Dot and Dash Robots	6-13	Introduce robotics that can be controlled through Bluetooth or through Blocky, a program similar to Scratch.	**MakeWonder.com**	$50-$150 per robot
Snap Circuits	6-13	Use components and color-keyed directions to build a variety of electronic projects.	**SnapCircuits.net**	$30-$150 per kit
Squishy Circuits	6-18	Create sculptures using conductive playdough to teach the basics of electrical circuits.	**SquishyCircuits.com**	$10-$30 per kit
WeDo Lego Kits	7-10	Using LEGO bricks, members can build and program engaging projects that move.	**Education.Lego.com /en-us**	$175 per kit

Supplemental Equipment for STEM Projects

EQUIPMENT	AGES	PROGRAM FOCUS	LINKS	COST
Intermediate Level				
Lego EV3 Robots	10+	Members design, build and program Lego-based robots. Also used for FIRST Lego League competitions.	**Education.Lego.com /en-us**	$389.95 per robot kit
Little Bits	8+ with more difficult levels	Color-coded electronic Bits snap together with magnets that allow members to build their own inventions.	**LittleBits.cc**	Kits begin at $100
Makey Makey	8+	Allows members to turn everyday objects into electronic touchpads or game controllers.	**MakeyMakey.com**	$49.95 per device
Advanced Level				
3D Printer	10+ with staff support	Members can explore the world of additive manufacturing.	Devices will vary depending on skill. Consult with local support system for best approach.	Basics begin around $400
Arduino	13+	Microcontroller kits useful for creating interactive devices for the "internet of things."	**Arduino.cc** SparkFun.com is a good source for beginners.	Starting at $50 for a sample kit
Raspberry Pi	13+	Learn programming and create your own devices with this very small, affordable computer.	**Raspberrypi.org**	Starting at $40 for a sample kit

Boys & Girls Clubs of Silicon Valley (San Jose, Calif.)

Profile: 12 Clubs
Interviewee: Chief Operating Officer Mark Washbush

Do your Clubs have dedicated STEM Centers equipped with needed technology?
We currently have STEM/Tech Centers across 11 of our sites. Over the past four years, we adapted these from our computer labs with fast internet, up-to-date software, fast PCs and internet capacity for 20 kids at a time.

Why do you feel technology is an integral part of STEM programming?
This is so important to meet the operational needs of the agency, and to prepare kids to be competitive in the global economy. Computer science, robotics, digital arts production – these STEM skills inspire members to pursue post-secondary careers in STEM fields.

How do you balance technology with other skills in your programming curricula?
We aim to create an environment that is project-based. This may include some screen time, but primarily members work as teams on projects. They learn to communicate with each other, and engage in problem-solving and critical thinking. Kids really enjoy this hands-on, collaborative approach. It's what BGCA has focused on for 100 years, and there is no reason not to apply this in the STEM/Tech Center.

What are your views on ensuring internet safety in Clubs?
We view technology as a tool for learning, and not as a burden. We need to be aware of what's going on with technology, and apply this when we look at the current policies each year. We also get our youth involved in setting the rules. We adhere to some basic parameters:

1. Members are supervised at all times in the Tech Center with staff monitoring.
2. We enlist a program called Deep Freeze to block certain websites.
3. Clubs enlist a BYOD policy. Members with BYOD parent releases may use their tablets and laptops for programming purposes only. They understand their device usage will be monitored, and that there are consequences for disobeying the rules.
4. Members are asked not to access social media during program hours.

What plans do you have in place to support your hardware and technology infrastructure?
We have a robust infrastructure in place, with staff to run our programs and the budget.
The administrative office holds our database server, and there are individual servers for each site.
It is important to have the fastest Wi-Fi possible. Many Clubs are at schools or city-owned buildings, and these can tap into their existing Wi-Fi in addition to their own Wi-Fi hubs. To maintain all of this, monetary budgeting is vital. We need to continue to sustain our hardware, software, staff and professional development. We build this all into the budget, with planning for emergencies and growth.

FROM THE FIELD
Technology

How do you solicit funding for your technology and growing infrastructure?
Although we are located in the heart of Silicon Valley, it is still a challenge to get fundraising for our labs. Funders are all about the data, and they are educated to look at data facts. We have to forge a nice balance of how to quantify learning, and make a statement to investors on moving the needle of learning, including the soft skills. The Club is not a school; it's a place where members are inspired to learn, have fun, and be kids.

Do you enlist any outside help to manage your technology?
We hire IT consultants who help by evaluating our current state of technology and vision for the future. With 350 computers across our agency, we need an outside vender to handle our hardware and infrastructure. We use NPCE – their CEO started at BGCA, and provides IT support exclusively for Clubs. They understand our unique capacity, infrastructure, administrative and program needs. They keep our technology competitive.

> *"We have a robust infrastructure in place, with staff to run our programs and the budget. We need to continue to sustain our hardware, software, staff and professional development. We build this all into the budget, with planning for emergencies and growth."*

Programming Resources

Current STEM Programming Level _____

Goal STEM Programming Level: _____

Category 5: Programming Amount and Type

Objective	Strategy	Lead Person	Approved?	Deadline	Completed?
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N
			Y N		Y N

STEM provides opportunities for kids to not just learn, but market their skills and create real products as tangible results. With a seemingly endless variety of programs available, your members will discover the technology they're passionate about, and you'll have the satisfaction of helping them develop their expertise over time. Explore some of the programs available in this section.

There's Something for Everyone

Every Club is unique, and no set package of programs will fit every one. Based on the needs and interests of your Club – as well as the resources and support available – select a variety of programs to offer. Remember, STEM programming is not just about teaching science or math in your Club. It is an interdisciplinary approach to teaching science and engineering practices using project-based, problem-solving, inquiry-driven activities.

Look for curriculum guides that reflect current research findings on the needed components for high-quality STEM. Principles to look for include:

1. Hands-on activities that are organized around solving a real world problem relevant to youth.
2. Outcomes are around teaching science and engineering practices rather than academic knowledge.
3. Meets criteria for positive youth development.
4. Program is flexible enough for your Club's schedule.
5. Costs fit within your budget.

The table that follows will help get you started. Browse these program offerings, and decide which ones are best for your members.

PROGRAM	AGES	DESCRIPTION	LEVEL	SOURCE	EQUIPMENT NEEDED
DIY STEM	9-12	DIY STEM is a hands-on, activity-based curriculum connecting youth to science themes including: Energy and Electricity, Engineering Design, Food Chemistry, Aeronautics and the Science of Sports: Football Available at **BGCA.net/STEM**	Beginner	BGCA	Household materials for DIY STEM are listed in each lesson plan of the curriculum
Ultimate Journey	9-13	One of BGCA's oldest STEM programs is focused on environmental education. It has always been a fun way for members to explore their natural world and develop an appreciation for all it contains. Available at **BGCA.net/STEM**	Beginner	BGCA	Materials list included with each activity Computer or mobile device and internet access required for supplementary activities
My.Future Platform	6-18	My.Future is a safe, fun, mobile-friendly social platform with access to 125 BGCA program activities, including STEM, Leadership and Visual Arts. Available on **MyFuture.net**	Beginner, Intermediate and Advanced activities	BGCA	

There's Something for Everyone

PROGRAM	AGES	DESCRIPTION	LEVEL	SOURCE	EQUIPMENT NEEDED
Digital Literacy Essentials	6-18	This is the foundational program for the My.Future platform. Members learn and apply internet, media and information literacy skills they need to succeed in school, life and in more advanced Club programming. Essentials consists of staff-facilitated projects as well as youth selected and directed experiences that promote building, exploring and communicating. Members learn and apply foundational internet, media and information literacy skills they need to succeed in school, life and in more advanced Club programming. Essentials consists of staff-facilitated project experiences that promote building, exploring and communicating. Available on **MyFuture.net**	Beginner, Intermediate and Advanced activities	BGCA	Computer or mobile device and internet access
Media Making	6-18	Create, edit and share your photography, videos, audio content and websites in a digital design studio. Media Making encourages members to express themselves and share their ideas through a collection of creative digital media projects. Projects include photo manipulation, animation, music production, film editing, podcast creation, design thinking, web design and more. Available on **MyFuture.net**	Beginner, Intermediate and Advanced activities	BGCA	Computer or mobile device and internet access Additional equipment for photo, audio, video and web may supplement some activities
Computer Science Programs	6-18	Tinker with computer code, practice algorithmic thinking, and design and pitch your own app through a series of programs designed to help members explore, experience and gain expertise in computer science. Available on **MyFuture.net**	Beginner, Intermediate and Advanced activities	Multiple sources: Hour of Code, CS Unplugged, BGCA, EdX	Most activities require a computer and internet access CS Unplugged is meant to be run without devices

There's Something for Everyone

PROGRAM	AGES	DESCRIPTION	LEVEL	SOURCE	EQUIPMENT NEEDED
Summer Brain Gain STEM Modules	11-14	Summer Brain Gain is BGCA's fun, interactive program designed to enrich member learning over the summer. Foundational STEM experiences are included in the curriculum. Look on **BGCA.net/Programs** for more information	Beginner	BGCA	Various materials included as a list in the Summer Brain Gain program
EV3 Lego Robotics	10+	LEGO MINDSTORMS EV3 teaches youth to build, program and command their own LEGO robots. Visit the website below for info on how to purchase supplies and start programming. **Lego.com/en-us/Mindstorms/About-EV3**	Beginner, Intermediate and Advanced activities	Lego EV3	Requires EV3 kits, which are approximately $350

FROM THE FIELD
Programming I

Boys & Girls Clubs of West San Gabriel Valley (Monterey, Calif.)

Profile: 5 Clubs
Interviewee: STEM Club Director Priscilla Alfaro

What STEM programs do you offer your members?
During fall and spring, we run 12-week STEM programs based around four three-week projects, and we partner with the local community college to develop the curricula. Then we host a culminating STEM event where kids from multiple sites gather to compete.

In the summer, we run STEM Club and the Little Einstein's program, with different projects each week. We use BGCA activities – like Click2Science – plus SciGirls from PBS for curriculum ideas.

What programs are most popular with your members?
DIY STEM is very popular. While we had an in-house STEM program we created, DIY STEM grabs a different audience. Our tweens (sixth to eighth graders) are interested in it, because it's more hands-on.

How has BGCA supported your programming?
I went for STEM/DIY training in Atlanta, which was really helpful. We were able to start implementing what we learned immediately back at the Club. We are still benefitting from strategies on how to teach members, implement programming and problem-solve. Plus, the suggested materials were inexpensive and easy to find.

Do you have any suggestions for others who would like to implement STEM programming in their Clubs?
When conducting STEM programming, it's best to maintain a staff-to-member ratio of 1:20. And good planning is key! Complete the projects ahead of time to make sure you're ready before conducting them with the kids. Purchase, organize and lay out materials before the members need to use them.

> *When conducting STEM programming, good planning is key!*

Boys & Girls Clubs of Central Orange Coast (Santa Ana, Calif.)

Profile: 7 Clubs
Interviewees: Director of Support Services Amber Plummer and Unit Director Jose Delgado

What programs do you feature in your STEM Center, and how do you run them?
We developed Shutterbugs, our digital photography course. Members use their iPads to take photos according to the day's lesson plan. They can then transmit these to the room's screen so all can see.

We customized Jr. Toast Masters to be used on mobile devices. We wanted it to be more collaborative for kids to create group presentations. We also built in topics for kids to choose from, like recycling and water conservation. The kids use their tablets or Chromebooks for research. For safety, we have provided a list of approved websites for them to access. During the culminating events, kids create presentation boards and use their public speaking skills to share what they learned.

We also modified the Youth for Unity curriculum – a global awareness course where members can explore the world through their tablets. We start by presenting PowerPoints on each continent for staff to preview with kids on the assigned region's geography, culture, etc. Next we provide safe websites for kids to do further research. Then participants go online and create a scrapbook to jot notes, organize pictures and keep other elements they discovered to remember their travels. Finally, we have a culminating event presentation at the end of each program. Kids invite friends and family, while using their devices to showcase what they learned. Each room is set up with a different region, complete with food to eat. Students act as tour guides to answer their guests' questions.

Our Robotics is run by a program specialist who takes kits across our various sites to teach the program. She uses Windows laptops to run the specific software required.

As part of our Family Strengthening Initiative, we open the Club in the morning to adults for programming. This is a great way to utilize the facility while kids are in school. We run two ESL (English as a Second Language) courses, as well as a pilot GED program. It's not just limited to parents and family of youth members. Everyone is welcome, and so new families are reached.

What technology do you use to carry out your programming?
We use technology in the classroom as part of our day-to-day routine. We are now using tablets with individual member accounts, including points incentives. We grant points to the students, based on behavior and accomplishments. They can watch their points raise and fall accordingly.

We went from Chromebooks to laptops and tablets. Each room has a computer screen or projector. We use this variety of devices for different programs. Chromebooks are most versatile for teaching typing and programming. We are at the mercy of our internet connection – but we increased the bandwidth and now have less problems. We use Chromebooks and iPads when teaching Code.org. Younger members like using touch screens, especially if they can't type as well.

FROM THE FIELD
Programming II

How do you manage your devices and infrastructure to support ongoing programming?
We outsource our primary IT support to Twintel, such as when a device needs to be fixed or replaced. The infrastructure the IT team developed is still working well. Our COO says we need new devices every three years, in order to keep up. We have had our devices for almost three years now, and some have broken and are submitted for repairs. In the meantime, we have been able to mix and match devices for use with most programs, while we wait for the broken ones to be returned.

How do you train your staff to do STEM programming?
We do not have an official STEM director or coordinator. But, every quarter, we conduct training on how to conduct upcoming programs for our staff. We are both also available to answer any questions they may have.

Have you partnered with others in your community for STEM support?
We really try to keep things fresh for our members. So, we bring in outside partners to help teach specialized programming. This gives members new career choices and shows how they can use what they're learning.

We have a lot of technology in our Club, and many local technology companies know about it, so they volunteer to come in and teach. Last year, a company wanted to come teach JavaScript and HTML. So, they would teach once or twice per week for a five-week course.

How do you recruit such volunteers?
We have promoted ourselves as a 21st century Club. Our director of development and team reach out to the community to promote the work we're doing. They present opportunities for companies to get engaged. And from there, it spreads through word of mouth. Donors and stakeholders like to contribute more than financially. They enjoy coming in as mentors for a day, by conducting specialized lessons. They run the activities with things they bring, and show our members how to use their skills later in careers of their own.

"We really try to keep things fresh for our members. So, we bring in outside partners to help teach specialized programming. This gives members new career choices and shows how they can use what they're learning."

SECTION 4

Appendix

BOYS & GIRLS CLUBS OF AMERICA

STEM

SECTION 4
Appendix

We are here to support your Club's STEM programming every step of the way. Whether you call our Program Hotline with questions, log onto **BGCA.net** for grant announcements, join the My.Future mailing list to get the latest news and offerings delivered to your inbox, or join our live Tech Talk discussions – you'll be connected with the BGCA community of STEM facilitators.

Check out a few more tools to help your STEM Center gain funding.

Stay in the Know

Stay tuned to BGCA.net's Grant Announcements to learn about emerging technology and STEM-related grant opportunities! For research and programmatic information on STEM, visit: **BGCA.net/STEM**. Email general questions to **STEM@BGCA.org**.

My.Future Mailing List

By joining this list, your STEM team can learn what's new in technology education, computing, devices, policy and maker spaces! You'll also access education technology news, tips and other programmatic ideas. Simply log on the My.Future mailing list.

Tech Talks

Tech Talks feature cutting-edge STEM-related programmatic opportunities. Each live talk includes a BGCA moderator who engages Club staff as expert panelists, while facilitating Q&As with the viewing audience. Prior talks have explored digital literacy, coding, 3D printing and robotics. We post information about upcoming Tech Talks to BGCA.net and the My.Future mailing list.

BGCA Program Hotline

Get answers to all program-related questions, including training opportunities for your STEM team, by dialing 404-487-5411. A staff member will answer your call on business days from 8 a.m. to 5 p.m., EST. Outside those hours, please leave a voice message, which will be returned within one business day.

Making the Case for STEM

In any community, there are professionals in education, industry and government who are interested in STEM as an educational priority, an investment in workforce development, and as a part of broader community-building goals around equity and access to STEM. Aligning your afterschool opportunities with your community needs will help ensure support.

1. Parents are your most important partners, so an important first step is inviting them to learn with you. Provide opportunities for parents to participate in STEM activities, go on STEM-focused field trips, and meet STEM professionals who can advise their children about higher education and careers.

2. BGCA has many resources that can make you aware of new programming, current trends in STEM education, and new funding opportunities. Check out **MyFuture.net** for incredible resources.

3. Use the NYOI report to share your story around academic achievement and STEM. Additionally, you can find Frequently Cited Statistics on **BGCA.net**, which can provide background material to support your message.

4. Extensive research has been done at the national level in building support for STEM. A great starting place to understand the issues as you frame your requests and build your program is the Afterschool STEM Hub (**AfterSchoolStemHub.org**). Here you will find research-driven approaches to building support at all levels.

5. Up-to-date statistics can be found from a variety of sources. Keep in mind that while they can be helpful in building your case, they should be used to support your broader points. Check out these exceptional national resources:

   - **Change the Equation: ChangeTheEquation.org**
   - **U.S. Department of Education: Ed.gov/STEM**
   - **National Science Foundation: NSF.gov/nsb/sei/edTool**

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