SCRATCH

RECRUIT THE COMMUNITY

Developed by: Mississippi State University
Center for Cyber Education

Table of Contents

2 It Takes a Village

4 Participation Strategies

7 Prior to the Event

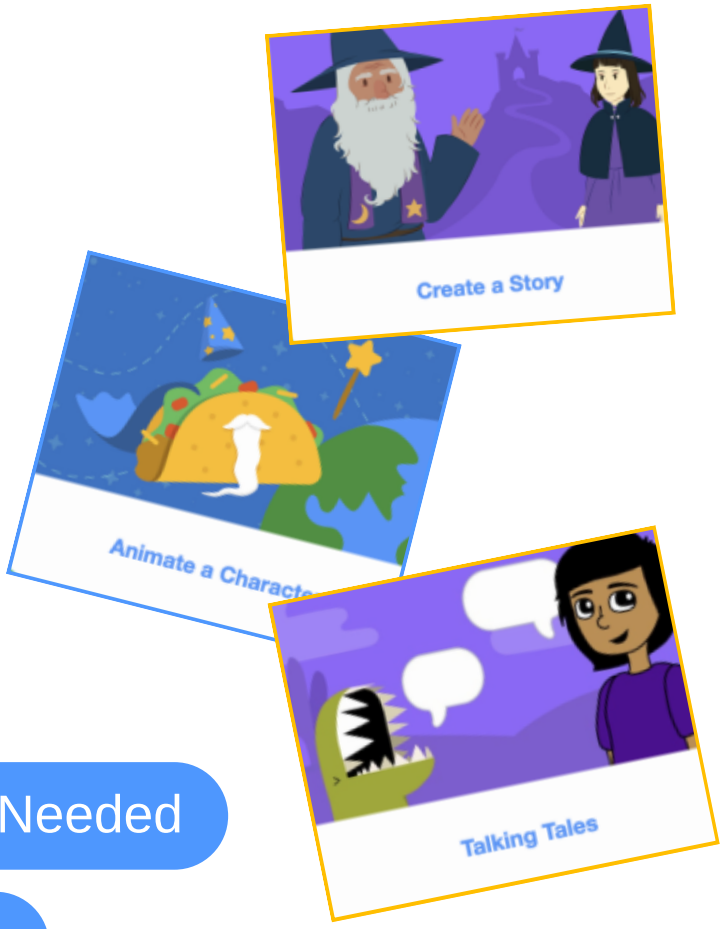
9 Day of the Event

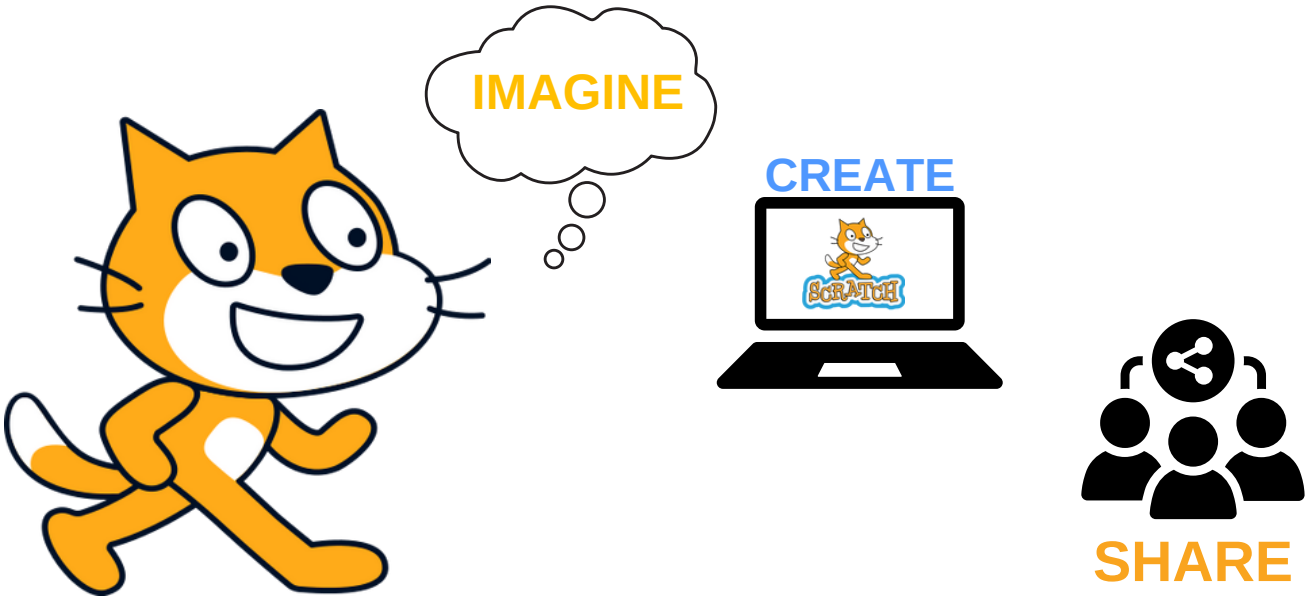
14 Pilot Models

18 Lessons Learned

20 Materials and Personnel Needed

24 Examples and Resources





This document was developed with the generous support from The Scratch Education Collaborative.

It Takes a Village...

Computer science (CS) knowledge has been recognized as a vital skill set for students to be prepared for the current and future workforce. However, students often don't pursue or persist in CS/STEM (Science, Technology, Engineering and Mathematics) subjects due to lack of support or encouragement from family and community. Teaching computer science is also fairly new in most states. In addition to helping teachers and administrators understand how to integrate CS into the school day, it is important to provide them with a resource to educate the families and community members within their district. Therefore, this guide is intended to "Recruit the Community" to support and encourage students to acquire these valuable CS skills.

A community event featuring student work, hands-on activities, and industry stakeholders will demonstrate to parents that CS skills are attainable for all students, relevant in all industries, and often lead to high-wage, high-demand jobs. Helping the parents and community members overcome stereotypes and understand the value of learning coding for all students is key to increasing diversity in computing fields. We believe these events will help parents see that all students really can learn to code, and that CS will continue to impact all career fields.

The activities that will be recommended in this "Recruit the Community" guide emphasize student demonstration of their CS work, showing that all students can learn CS. Additionally, hands-on activities such as creating an animated family banner will allow each student and their family to create something unique reflecting their culture and values. Other activities demonstrating the use of Scratch to learn about robotics will also be incorporated into the suggested hands-on activities in this guide.

Students and their families will be most directly impacted by this resource. This "Recruit the Community" guide is designed to help schools promote coding to the families of their students in such a way as to allow the families to directly experience coding for themselves and to see what students have independently created. Combined with learning from industry guest speakers about the demand for CS skills, these events will help debunk stereotypes and foster an attitude of encouragement from parents to both their children and their school districts.

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PLANNING GUIDE

Initial Planning

When initially planning for your event, you will need to consider your desired audience for classroom implementation and the event. Aspects to consider:

- What school(s) to include
- What grade(s) to include
- What subject(s) to include
- What teacher(s) to include
- Anticipated event location and participant capacity
- Theme of classroom implementation of the event

All of the above aspects affect each other, how you choose who implements the event's pre-assignments, and ultimately the event itself, so they should not be considered in isolation but holistically.

For example, if you want to have an event showcasing students' animations of a story, then it would best to select ELA teachers to implement Scratch into their classrooms and invite the families and students in those teachers' classrooms to the event itself. In this example, which ELA teachers you select would depend on the capacity of the event as well as if you wanted to select all ELA teachers of a certain grade or from a certain school or select ELA teachers on an individual basis.

Families gather around a laptop to create their family banners.

Teacher Recruitment

To ensure optimal success, it is best to recruit teachers to implement Scratch into their classrooms who are either comfortable with Scratch already or are willing to try it. “Voluntold” teachers will likely not yield high participation in the event at the end of implementation. Recruiting teachers is best done through personal communication rather than wide-scale communications like email blasts. This can be done by building-level principals or district administrators through individual emails (personally addressed but otherwise the same message to all teachers) or, even better, a face-to-face conversation about the exciting opportunity, benefits, resources, and goals of implementation and the event.

Students engage with various robots during the robot playground activity.

Teachers can find information on Scratch if they have never used it before in the Educator’s Guide at https://cs4ms.org/wp-content/uploads/Scratch-Educators-Guide.pdf found on www.cs4ms.org and Resources located later in this guide. Additionally, teachers can always reach out to the Center for Cyber Education (CCE) at Mississippi State University for help on Scratch, implementing Scratch into the classroom, or questions regarding this guide by emailing thecs4ms@gmail.com.

Marketing

It is important to establish who will be responsible for getting students and their families to the event. Will this be handled strictly by the teacher or will the building administrator and/or district personnel take care of this or share in the marketing responsibility? If this is handled by building or district personnel make sure to:

- Email teachers about event and prework expectations.
- Provide teachers with support throughout implementation.

Regardless of who handles marketing, the following steps should be taken:

- Send flyers home with students (sample provided later in this guide).
- Email flyer to parents (sample provided later in this guide).
- Send event reminder through school messaging system.
- Post event on school's social media pages.
- Create a registration form for families to RSVP and include link on marketing materials.

Offer incentives for students who attend the event with their families:

- homework pass
- bonus daily or test grade
- break time
- etc.

Classroom Preparation

Prior to the community event, participating teachers should implement a unit focused on creating animations with Scratch so that students are prepared to display and demonstrate a project at the event. The unit should align with the standards of the relevant computer science course and content being taught at the school/district and/or could also be implemented into a core subject class and aligned with those standards as well. Example units that can be done using Scratch Junior in grades K-2 and Scratch in grades 3-12 can be found in the Educator's Guide https://cs4ms.org/wp-content/uploads/Scratch-Educators-Guide.pdf on www.cs4ms.org. The example units were compiled using materials/resources from Scratch and were intended as introductory activities to Scratch; therefore, they are not intended for use in schools/districts where students have regularly used Scratch or Scratch Junior in the past.

Educator's Guide

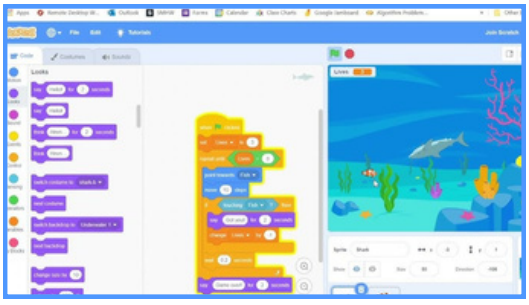
The Educator's Guide located at https://cs4ms.org/wp-content/uploads/Scratch-Educators-Guide.pdf is a resource for teachers who have never used Scratch before to help them prepare and feel more confident in incorporating it into their classrooms. There are also several online resources on Scratch for teachers included in the Resources later in this guide. Teachers can always reach out to the Center for Cyber Education (CCE) at Mississippi State University for help on Scratch, implementing Scratch into the classroom or questions regarding this guide by emailing thecs4ms@gmail.com.

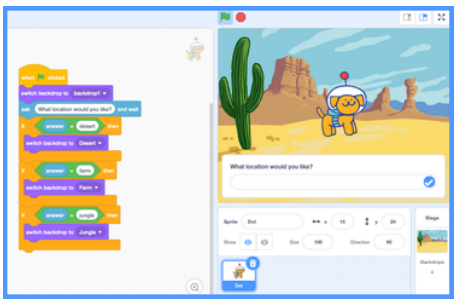
Unit Ideas

1. Complete the example units located in the Educator's Guide on cs4ms.org during class, and at the Recruit the Community event, students will demonstrate their favorite creation.

2. Another idea is to have students read a story then each student creates a Scratch animation of their visualization of a single chapter or of the entire story. One variation on this unit idea would be for students to be put in groups where each student in a group animates one chapter then the group combines their projects to animate the entire story. In either option, their story animations would be on display during the Gallery Walk at the Recruit the Community event.

3. A third option would be for each student to create a game in Scratch. The game could be oriented to a specific topic that serves as an assessment tool. For example, the background is an image of an unlabeled cell, and a character moves around the cell asking the player to identify the part of the cell in question. Points are earned for correct answers. The Gallery Walk portion during the Recruit the Community event would be an arcade, and it should be publicized as such. You could give tickets to families for each "game" they play and allow them to earn prizes at the end. Or you could simply say each family must have at least 2 tickets at the end for pizza.





Scheduling

Following are some sample agendas based on four different models that have been piloted. Additionally, general information is provided regarding timing, needed personnel, and agenda items.

The event volunteers should arrive approximately 1 hour before the start of the Recruit the Community event in order to set up the room(s). Event setup should be complete no later than 15 minutes prior to the event starting. Ideally, if pizza is the event refreshment, it would be delivered to the location approximately 20 minutes before the expected end time. If refreshments cannot be delivered, 1 volunteer should pick up the refreshments approximately 30 minutes prior to the event starting. One volunteer should be in position at the sign-in table approximately 20 minutes prior to the event starting to welcome families as they enter. The industry guest speaker should be asked to arrive 10 minutes before the event starts so that the organizer and speaker have time to discuss time allotment and expectations.

Young students collaborate with robots in the Robot Playground.

Middle school girls get excited while programming a Vex Go Robot in the Robot Playground.

Day of the Event

Scheduling Elements

The pilot Recruit the Community events all contained the same elements: Welcome, Industry Guest Speaker, Gallery Walk or Tutorial, Family Banner Creation, Robot Playground, and Refreshments.

Welcome

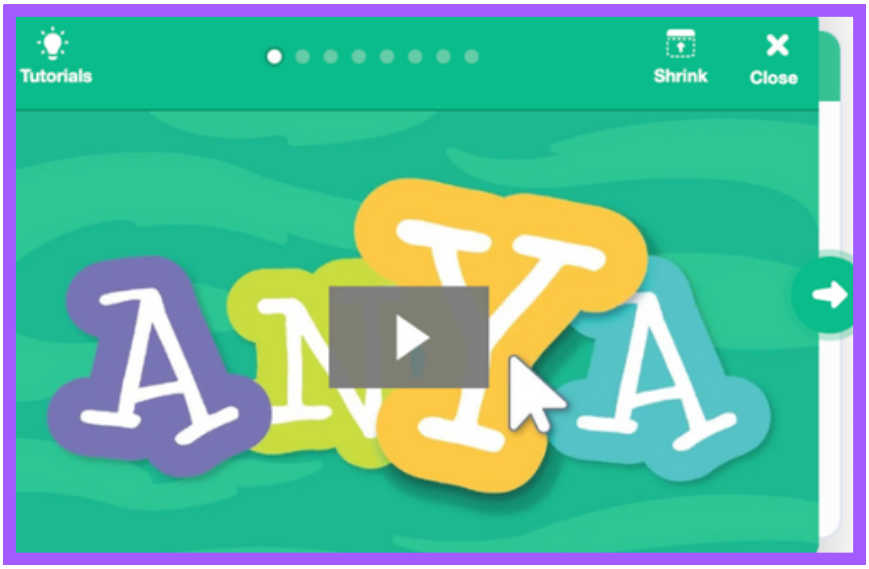
Each event should start with a 5-minute Welcome. The Welcome signifies the beginning of the event to all participants and is ideal for going over logistics for the event. Most importantly, this is a prime time for the organizer to briefly explain the importance of learning CS and the need to breakdown CS stereotypes for the sake of a well-rounded CS workforce.

Industry Guest Speaker

It is best practice to have an Industry Guest Speaker in-person but if this is not an option, a live, virtual call-in is a valid substitute. The purpose of the industry guest speaker is partly to give students a role model in a CS field to relate to but also, proof to parents of the need for and importance of their children learning CS. The intent is for an industry guest speaker to talk about their path to a career involving CS, how they use CS regularly in their job, and answer questions from parents or students. The guest speaker should talk for a maximum of 10 minutes to allow the students and parents to get to the hands-on activities of the event. However, encourage the guest speaker to stay and interact with students and parents throughout the event. A sample guest speaker invite email is included in the Examples and Resources later in this guide.

Gallery Walk

The Gallery Walk is the time for students to show their parents and other guests their Scratch project. Ideally, this would be set up like a science fair where students have their programs displayed on their devices and as parents walk around to watch or play a program, each student would talk about how they created their program and answer questions. There are some sample prompts in the Communication Examples found later in this guide that students can prepare answers for prior to the event. This may help them to be more talkative during the Gallery Walk. To further build confidence, students should first share their Scratch program with their own parents before parents start rotating around the room to view and ask questions of other students' programs.



Tutorial

The Tutorial is only needed for events where students have very little or no experience practicing Scratch in their classrooms prior to the event. During this time, a teacher should provide an overview of the Scratch platform, what it is used for, and an overview of the screen where new projects are created. The teacher then should walk the group through how to program the first letter of the family banner and give ideas to families on what they could do for the remainder of their family banner creation (i.e. make letters spin, add a background, etc.).

Family Banner Creation

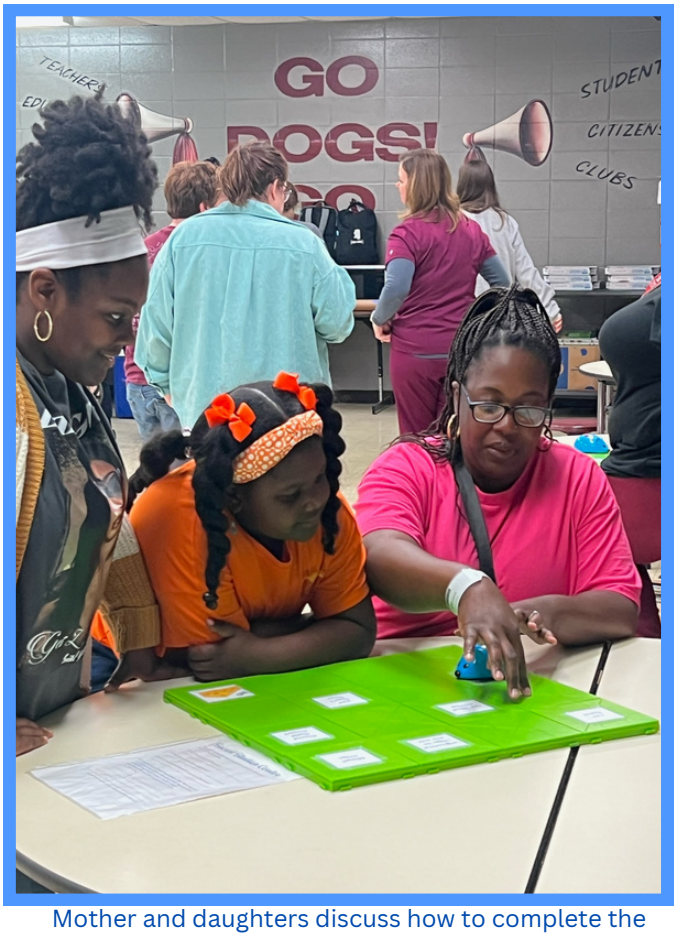
The highlight of every Recruit the Community event is the Family Banner. During this time, each family should work together to create an animated family banner that is unique to their family, culture and values. In order to demonstrate that everyone can learn to code, it is recommended that parents actually code the family banner while their child(ren) direct them and tell them what to click and what to do. This strategy is called driver-navigator, where the parents are the drivers, and their child(ren) are the navigator(s). Navigators are not allowed to touch the computer but only tell the driver what to do, and drivers are not allowed to do anything on the computer without being told by the navigator. The result should be a completed family banner in Scratch that families can be proud of. A tutorial for the family banner is Scratch's Animate a Name which can be found at https://scratch.mit.edu/projects/editor/?tutorial=name.

Family selects a sprite they feel best represents them for the family banner activity.

Robot Playground

The Robot Playground is a time for families to experiment with a variety of robots intended for a variety of age groups in a low-risk environment. The Robot Playground demonstrates applied programming, further emphasizes that everyone can code, and is a viable way to use computer science in practicing skills in other subject areas. During pilots, the Robot Playground included Code & Go Mouse robot, Botley robot, VEX 123 robot, VEX Go robot and Dash robot. Information on the robots and example activities can be found in the Resource section later in this guide. The quantity of each robot varied depending upon the expected numbers, event schedule, and allotted space. However, any robots can be used for the playground, and if robots are not available, you can use VEX VR instead. VEX VR is a free virtual robot that can be programmed to complete different mazes and challenges available on VEX's site.

Elementary students work together to code their VEX Go robot through the maze.



Mother and daughters discuss how to complete the Code and Go robot social studies activity.

Pilot Models

Below are 4 models used in piloting community events. Any models can be adjusted based on prior student practice with Scratch or size of the event. If students have no Scratch practice, anytime family banner is in the agenda, include a brief Scratch tutorial before families start on Family Banner Creation. Otherwise, Family Banner Creation is a time for students to lead their parents in creating a family banner using the driver-navigation model, where the parents are the drivers, and their child(ren) are the navigator(s). Navigators are not allowed to touch the computer but only tell the driver what to do, and drivers are not allowed to do anything on the computer without being told by the navigator.

Model 1 - Small Group

5:30 - 5:40 PM	Welcome and Industry Guest Speaker
5:40 – 6:00 PM	Gallery Walk
6:00 – 6:35 PM	Scratch Family Banner Creation
6:35 – 7:00 PM	Robot Playground
7:00 PM	Refreshments and release

This model is best for a small event (30 participants or less) with students who have had prior Scratch practice in their classrooms and where all participants rotate through the event elements together as a whole group. In this model, the Robot Playground can either 1) have multiple robot stations setup where participants try the robots they want to and move between robots when desired or 2) have multiple robot stations setup where participants are divided up equally between the stations and rotate through all the stations every few minutes on a set schedule to keep order and try all of the robots. This model needs the fewest volunteers at 4 because the volunteers will rotate with the entire group and help in all elements.

Model 2 – Medium Group

5:30 - 5:50 PM	Welcome and Industry Guest Speaker
5:50 - 6:10 PM	Gallery Walk
6:10 – 6:35 PM	Group 1: Scratch Family Banner Creation
	Group 2: Robot Playground
6:35 – 7:00 PM	Group 1: Robot Playground
	Group 2: Scratch Family Banner Creation
7:00 PM	Refreshments and release

This model is best for a medium-sized event (30-60 participants) with students who have had prior Scratch practice in their classrooms. Participants are divided into 2 groups after the Gallery Walk. One group starts with Scratch Family Banner Creation while the other group starts with the Robot Playground, then the groups swap. In this model, it is recommended the Robot Playground have multiple robot stations setup where participants are divided up equally between the stations and rotate through all the stations every few minutes on a set schedule to keep order and try all of the robots. This model needs to have at least 1 volunteer per robot station in the Robot Playground but given the design, all volunteers can help with Gallery Walk before being split between Scratch Family Banner Creation and Robot Playground. More information on volunteer roles and approximate numbers can be found later in this guide.

Model 3 – Large Group

5:30 - 5:50 PM	Welcome and Industry Guest Speaker
5:50 - 6:10 PM	Group 1: Gallery Walk
	Group 2: Scratch Family Banner Creation
	Group 3: Robot Playground
6:10 – 6:35 PM	Group 1: Scratch Family Banner Creation
	Group 2: Robot Playground
	Group 3: Gallery Walk
6:35 – 7:00 PM	Group 1: Robot Playground
	Group 2: Gallery Walk
	Group 3: Scratch Family Banner Creation
7:00 PM	Refreshments and release

This model is best for a large event (60+ participants) with students who have had prior Scratch practice in their classrooms. Participants are divided into 3 groups after the Industry Guest Speaker. Each group rotates between the 3 event elements using a set schedule. In this model, it is recommended the Robot Playground have multiple robot stations setup where participants are divided up equally between the stations and rotate through all the stations every few minutes on a set schedule to keep order and try all of the robots. This model requires the most volunteers. Recommended volunteers needed as a minimum: 1 with Gallery Walk, 2 with Scratch Family Banner Creation and 1 per robot station in the Robot Playground. More information on volunteer roles and approximate numbers can be found later in this guide.

Model 4 – No prior student Scratch practice needed

5:30 - 5:45 PM	Welcome and Industry Guest Speaker
5:45 – 6:20 PM	Group 1: Scratch (Tutorial then Family Banner Creation)
	Group 2: Robot Playground
6:20 – 6:55 PM	Group 1: Robot Playground
	Group 2: Scratch (Tutorial then Family Banner Creation)
7:00 PM	Refreshments and release

Since this model is designed for students with limited or no prior Scratch practice in the classroom, it is best to keep this event group to under 60 participants to have a successful event. In this model, participants are divided into 2 groups after the Industry Guest Speaker. One group starts with Scratch while the other group starts with the Robot Playground, then the groups swap. If there are fewer than 30 participants, it would best to rotate as a whole group rather than dividing into two. In this model, it is recommended the Robot Playground have multiple robot stations setup where participants are divided up equally between the stations and rotate through all the stations every few minutes on a set schedule to keep order and try all of the robots. Given the students' experience level, this model needs to have enough volunteers to have at least 2 volunteers with Tutorial & Scratch Family Banner Creation and 1 volunteer per robot station in the Robot Playground. More information on volunteer roles and approximate numbers can be found later in this guide. During the Tutorial & Scratch Family Banner Creation, the facilitator should use the Animate a Name tutorial as a guide and teach how to create the first letter before turning it over to families to complete their banners. The facilitator should provide challenges like adding a background and making letter spin for families to incorporate in their banners.

Welcome is critical

Starting each event with a Welcome is critically important. It sets the stage for the entire event. For one pilot where the Welcome was not a distinct whole group segment, the event did not flow as intended which caused unintended consequences. Even though schedules were given to each family upon arrival, it became a more free-flowing and move-at-your-own-pace event than intended. Therefore, although the Welcome is short, it has been found to be extremely important.

Tutorial Time

In the circumstance where students have not had any experience practicing Scratch in the classroom prior to the event, have a 15-minute Scratch Tutorial for the entire group just before families start on the family banner and adjust the times on the corresponding agenda accordingly. As mentioned before in the Tutorial component above, this allows a teacher to discuss each area of the Scratch platform and explain what it is used for. The teacher then should walk the group through how to program the first letter of the family banner.

Another deviation could be to have a facilitator creating their own family banner and explaining the steps along the way at the same time as families are creating if they need ideas or help. In this deviation, it would not be expected for families to follow along; however, if a family is struggling or stuck, they would have an example to follow along with without everyone else in the room knowing.

A student assists their parents in creating a family banner project during an event.

Flexibility

When determining which agenda option is best for a specific event, it is important to keep in mind the number of expected participants and the number of available volunteers. It is highly recommended that a pre-registration (request, not mandate) is publicized heavily within a couple of weeks of the event, so the organizer has an estimate of attendance for planning purposes. In the pilots, it was common to have approximately 4 times the number of participants show up to Recruit the Community Events than pre-registered. Be prepared to be flexible on the night of the event. For example, you may have planned your event for model 3 large group but only half of the participants show up. You may need to adjust to model 1 small group on the fly. Just be prepared to make adjustments if the event does not go exactly as planned.

Additionally, specific events may require adjustments based on the students' level of Scratch experience prior to the Recruit the Community Event. If an event has participants with a wide range of Scratch practice in attendance, it would be best to split the students into groups by experience with Scratch. This way students with less practice with Scratch prior to the event can have a tutorial during their Scratch time and the group of students who are familiar with Scratch can spend more time on the family banner. Based on pilots, the Family Banner Creation should be the longest portion of the event. Parents get very invested in their creation!

Materials & Personnel Needed

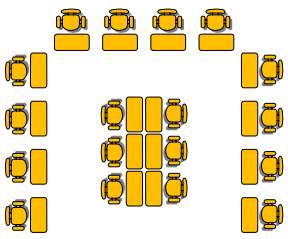
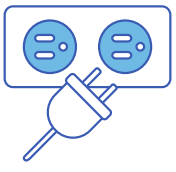
Venue

- Large room for whole-group Welcome
- Breakout rooms or space for rotations
- Tables and chairs for Scratch room (Family Banner Creation and Tutorial if needed) to facilitate working in family groups
- Open space for Robot Playground
- Tables for Gallery Walk to facilitate students' devices setup and parents and guests walking between them
- Setup can be one large room like a gym or cafeteria for the entire event if spread out enough and setup appropriately to accommodate all rotations. Another option is to have the Gallery Walk and Scratch Family Banner Creation in a large room and Robot Playground in the hallway or all rotations in separate rooms if they are smaller spaces. Setup should be adjusted based on the model chosen, size of the event and venue layout.

Technology

- 1 charged device for every student/family in attendance at the Recruit the Community event
- 1 projector
- 1 laptop to display Scratch
- WIFI
- Microphone and speakers
- Electrical strips and device chargers in the event devices are not charged before the Recruit the Community event



Materials & Personnel Needed

Robot Playground

- Robots (recommended minimum based on the models: 2 Code & Go Mouse robots, 2 Botley robots, 2 VEX 123 robots, 2 VEX Go robots, 2 Dash robots; however any robots that a school has available is acceptable to use)
- 1 laptop needed for each VEX Go robot used
- 1 iPad/Chromebook/iPhone for each Dash robot used
    - Based on time limitations, manual controller can be used instead of free play programming, but a lot of space is needed for manual controller
- 1 premade Code & Go Mouse board with a specific activity sheet to complete for each Code & Go Mouse robot used
- 1 Botley maze for each Botley robot used
- 1 maze and/or specific activity sheet to complete for each VEX 123 robot used
- 1 maze and/or specific activity sheet to complete for each VEX Go robot used
- Information on the robots and example activities can be found in the Resource section later in this guide.

Students and parents work together during the robot playground to navigate the Botley robot.

Students and parents work together to code their VEX Go robot through the maze.

Materials & Personnel Needed

Volunteers

A minimum of 4 volunteers are needed to help run the Recruit the Community event with about 30 participants in attendance.

Logistics lead - 1 Person

This lead will pick up and setup refreshments and staff the sign-in table.

- Recommended refreshments:
  - 1 mini water bottle and 1 pizza slice per participant
  - Plates
  - Napkins

Gallery Walk lead - 1 Person

This lead will facilitate the Gallery Walk by setting the stage for the flow and goals of the Gallery Walk and keep time.

This lead will explain the Gallery Walk is a time for students to show their parents and other guests their Scratch project from class. Students will have their programs displayed on their devices and as parents walk around to watch or play a program, each student will talk about how they created their program and answer questions. Students should first share their Scratch program with their parents before parents start rotating around the room to view and ask questions about other students' programs. The lead should encourage parents to visit as many students as time allows and students to use their prepared prompts to get conversations started.

Scratch Family Banner Creation lead - 1 Person

This lead will be in charge of setting up the family banner room to best accommodate family groups working together and displaying their computer to show Scratch.

This lead will facilitate the Tutorial, if needed, by providing an overview of the Scratch platform, what it is used for, and an overview of the screen where new projects are created. Whether a Tutorial is needed or not, the lead then should walk the group through how to program the first letter of the family banner and give ideas to families on what they could do for the remainder of their family banner creation (i.e. make letters spin, add a background, etc.). The lead should encourage each family to work together to create an animated family banner that is unique to their family, culture and values and that parents actually code the family banner while their child(ren) direct them and tell them what to click and what to do. The lead needs to explain that this strategy is called driver-navigator, where the parents are the drivers, and their child(ren) are the navigator(s). Navigators are not allowed to touch the computer but only tell the driver what to do, and drivers are not allowed to do anything on the computer without being told by the navigator. Lasty, the lead should mention the result should be a completed family banner in Scratch that families can be proud of. A tutorial for the family banner is Scratch's Animate a Name which can be found at https://scratch.mit.edu/projects/editor/?tutorial=name. This lead should be prepared to answer questions families may have about Scratch or specifics about their family banner.

Materials & Personnel Needed

Volunteers

Robot Playground lead – 1 person

This lead will be responsible of all aspects of the robots.

This lead will be in charge of: ensuring all robots are charged or have full batteries before the event, setting up the Robot Playground, training other volunteers on how to operate the robot each is assigned to, explaining the activity of each robot each volunteer is assigned to, keeping time and announcing when it is time to rotate to another robot station, staffing at least 1 robot station and cleaning up the Robot Playground after the event is over.

Volunteers (Additional participants)

Add approximately 1 volunteer in each rotation for every 15 participants in each rotation; however, please consider your event format and student age group to determine the appropriate number of volunteers needed for your specific Recruit the Community event.

School faculty, industry leaders, students, and families gather to kick-off a Scratch Event.

SCRATCH

EXAMPLES AND RESOURCES

Sample Teacher Letter

Hello Teachers,

Our school or district is planning a special Recruit the Community event that will be held on the evening of _____ at _____. The school or district will be sending an invite to parents of ___ grade(s) students on _____. The event will allow students to show parents what they have done with CS in the classroom and provide an opportunity for families to work together and create something new through code, highlighting that everyone can code! We also plan to have someone from industry speak to the group to emphasize the workforce needs and the high wage employment opportunities CS skills provide.

We are asking your help in implementing 5 lessons in order to help students become familiar with the Scratch platform and programming language prior to the event on _____. The activities the students will complete in the classroom over those 5 days will be what students show to their parents at the event on _____. You can find easy to follow instructions to get your students onto the free Scratch platform and walk them through 5 different activities attached to this email.

We believe student retention of this knowledge will be best if these activities are done in 5 consecutive days. However, we recognize the unique circumstances that happen in every classroom, so we simply ask that you try to incorporate these activities as close together as possible.

If you have any questions, please contact us at _____.

Sincerely,

Sample Pre-event Student Prompts

At the Recruit the Community Event, you will be asked questions about your Scratch project. In order to be prepared to talk about it, please answer the question prompts below and bring this paper with you to the event in case you need to reference it.

1. What project did you make?

2. Did you learn a lot from creating this project?

3. What is your favorite part of your project? What was especially satisfying to you about either the process or the finished project?

4. What was the most challenging part of your project?

5. How did you respond/solve to the challenge?

6. What is a new command you learned?

7. What would you change/add if you had more time?

8. What is your favorite thing about computer science?

Guest Speaker Email Invite Example

Hello _____,

My name is _____ and I work at _____. Our students have been working extremely hard on a Scratch programming project and are very excited to show it to our community! We will be hosting a special Recruit the Community event on __(date)__ at __(time)__. This event will allow students to show parents what they have done with CS in the classroom and provide an opportunity for families to work together and create something new through code, highlighting that everyone can code!

To emphasize the importance of computer science in industry, we would love to have you come speak to students and families at the beginning of the event for about 10 minutes, if you are available. You are an excellent role model for students interested in a CS field to relate to but also proof to parents of the need for and importance of their children learning CS. Suggested talking points include: your path to a career involving CS, how you use CS regularly in your job, and employment opportunities CS skills provide. Although your talk will be at the beginning of the event, we invite you stay for the entire event to interact with students and parents, see their creations and answer questions from students and parents.

I am including an agenda below for the event for your reference. The location of the event is _____. If you are available to speak, please let me know by __(deadline date)__ and arrive by ___(time)___ on __(date of event)__. Thank you so much for your consideration in speaking at our Recruit the Community event!

Tentative Agenda:
(include agenda)

Please do not hesitate to reach out to me with any questions.

Thank you,

Scratch Event Closing Survey

I attended this event to support my child in _____ grade.

After what I learned and saw at this event, I believe that it is very important that my child learn more about computer science.

☐ Strongly Agree ☐ Somewhat Agree ☐ Disagree

This event helped me better understand the job opportunities available in computer science fields.

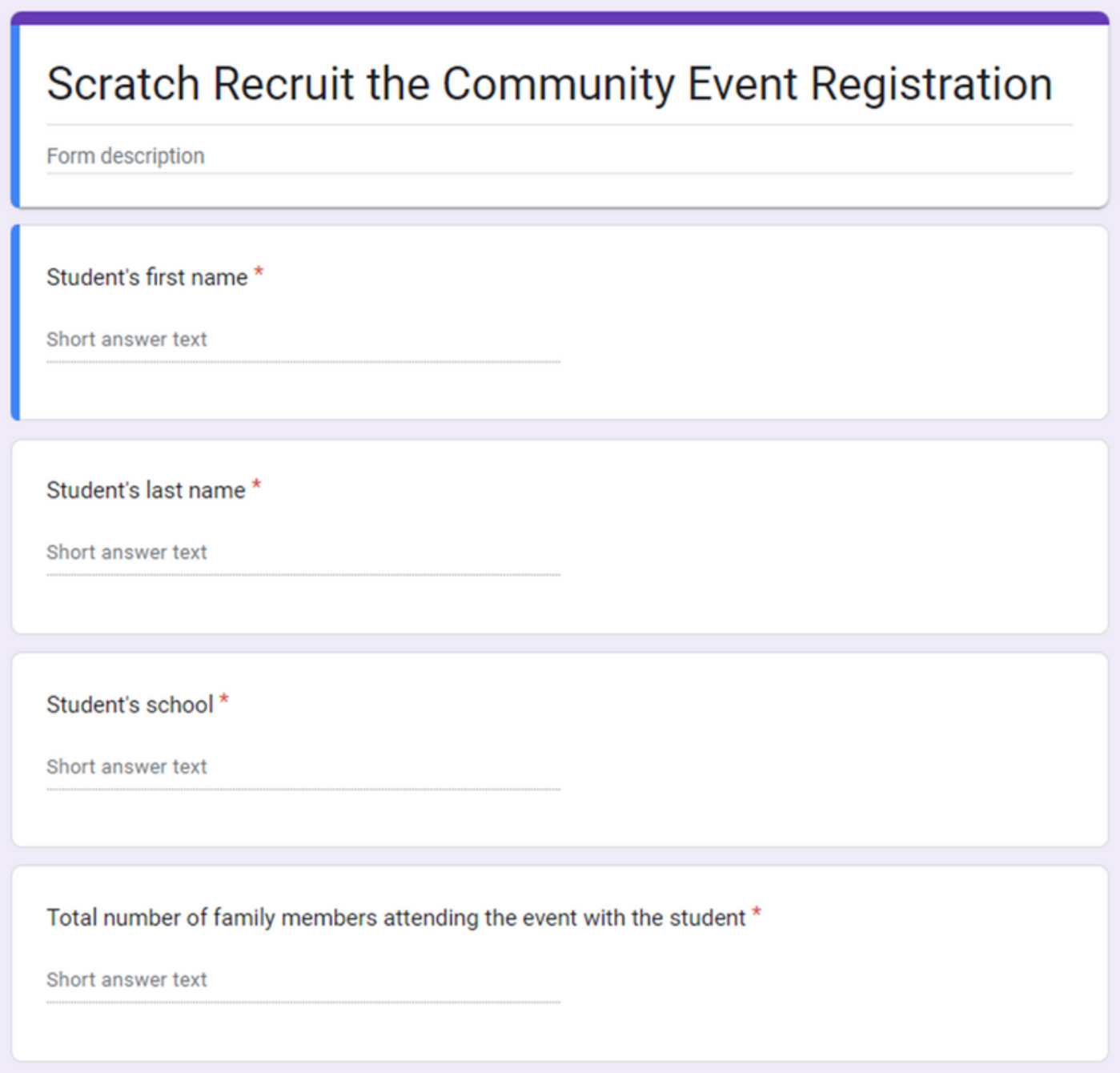
☐ Strongly Agree ☐ Somewhat Agree ☐ Disagree

This event helped me realize that computer science is something anyone can learn.

☐ Strongly Agree ☐ Somewhat Agree ☐ Disagree

Communication Examples

Event Registration From



Scratch Recruit the Community Event Registration

Form description

Student's first name *

Short answer text

Student's last name *

Short answer text

Student's school *

Short answer text

Total number of family members attending the event with the student *

Short answer text

Scratch Recruit the Community

Come find out how computer science will be important to your child's future career!

Date
Time
Location

For beginners of all ages!

Students will demonstrate a Scratch project they have been working on in class. Then families can participate in fun, hands-on STEM activities like programming and robots.

Come see what your student has been learning in computer science and hear from industry on the need for a workforce with computer science skills.

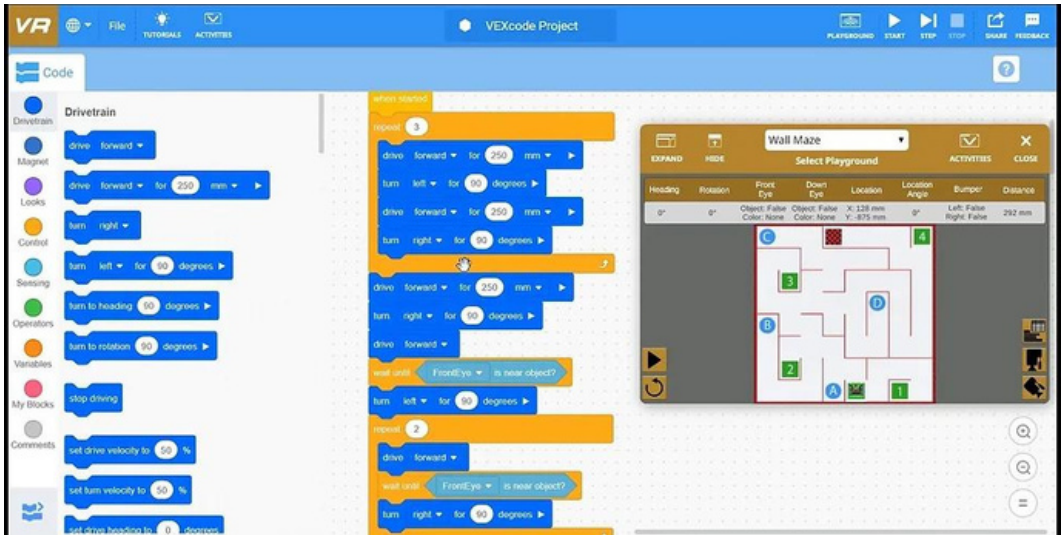
Did you know there are over 500,000 open jobs in the US and over 3,000 in Mississippi in computing?

Please register using the QR code.
Refreshments will be served.

Scan Me

Keep Programming at Home

VEX Virtual Robotics



Recommended for all ages! VEXcode VR is an easy to use platform that allows you to code a virtual robot using either block-based coding environment powered by Scratch Blocks, or a custom developed Text-based Python interface.

Scratch

Recommended for all ages! Scratch is a free programming language and online community where young people can create their own interactive stories, games, and animations.

Resources

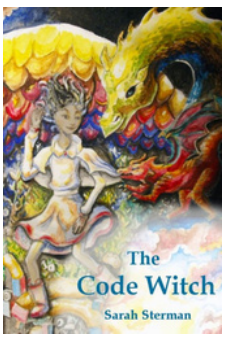
Scratch Resources

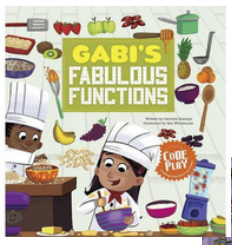
- Educator's Guide: https://cs4ms.org/wp-content/uploads/Scratch-Educators-Guide.pdf
- https://www.youtube.com/@ScratchTeam
- https://www.youtube.com/playlist?list=PLpfxVARjkP-953-E52NskKvbCBXEgHkwr
- https://csfirst.withgoogle.com/c/cs-first/en/curriculum.html
- https://mouse.org/scratchcreativecomputing
- https://scratched.gse.harvard.edu/guide/curriculum.html
- https://scratched.gse.harvard.edu/resources.html
- https://scratch.mit.edu/help/videos/

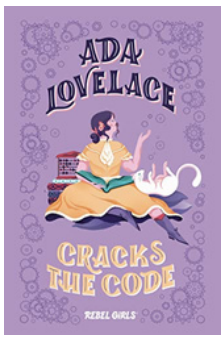
Activity Resources

Books to consider for animated book summaries – these are only suggestions to consider and not necessarily recommendations. We have not used all of these in a school setting and would recommend you read the book first to determine the appropriateness for your audience and community culture:

- The Code Witch by Sara Sterman: https://www.amazon.com/Code-Witch-Sarah-Sterman/dp/1494336065
- Code Play books by Caroline Karanja: https://www.amazon.com/Code-Play/dp/B0B4RSM394/ref=sr_1_2?crid=25Z2I3KRXVOG8&keywords=gabi%27s+if%2Fthen+garden&qid=1702047753&s=books&sprefix=gabi%27s+i%2Cstripbooks%2C95&sr=1-2
- Ada Lovelace Cracks the Code by Rebel Girls: https://www.amazon.com/Rebel-Girls-Presents-Lovelace-Stories/dp/1733329269/ref=sr_1_1?crid=3ELB95RW2SCMV&keywords=ada+lovelace+cracks+the+code&qid=1702049855&sprefix=ada+lovelace+cra%2Caps%2C94&sr=8-1

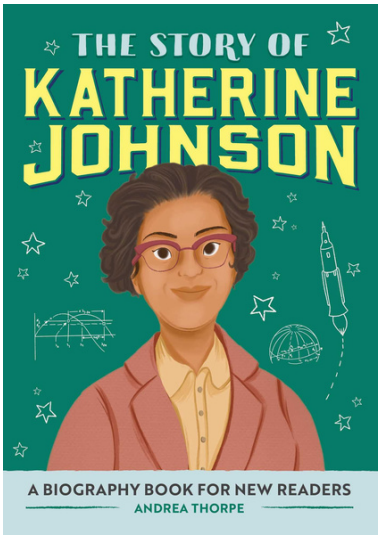


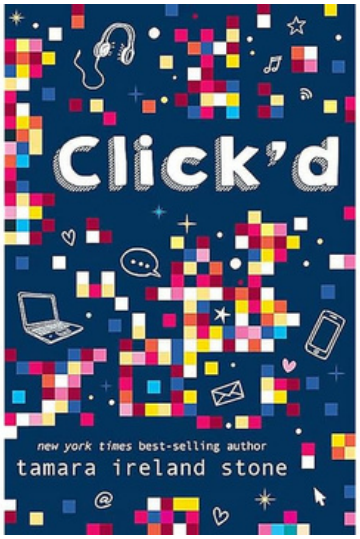


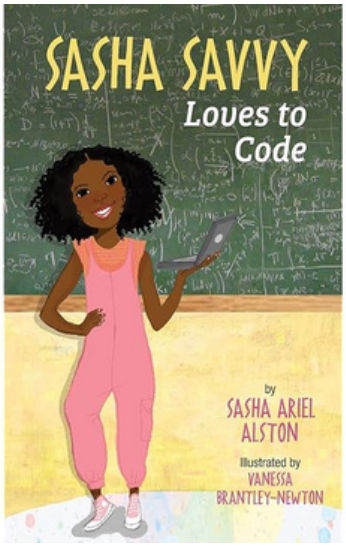


Activity Resources Continued

- The Story of Katherine Johnson by Andrea Thorpe: https://www.amazon.com/dp/1638070318/ref=syn_sd_onsite_desktop_0?ie=UTF8&psc=1&pd_rd_plhdr=t&aref=09E55DF832A6581B072B38394E3E2241838014D9326758DDB194787E74288C8B
- Click'd by Tarama Ireland Stone: https://www.amazon.com/Clickd-Book-Tamara-Ireland-Stone/dp/1484799240/ref=sr_1_3?crid=2U0Z0HFJYXXYI&keywords=clicked&qid=1702050501&sprefix=clicked%2Caps%2C101&sr=8-3
- Sasha Savvy Loves to Code by Sasha Ariel Alston: https://www.amazon.com/Sasha-Savvy-Loves-Ariel-Alston/dp/0997135425/ref=sr_1_1?crid=NLUYMQHBUCD7&keywords=sasha+savvy+loves+to+code&qid=1702050576&sprefix=sasha+love%2Caps%2C110&sr=8-1







Robot Information

Below are details, including pricing, for the robotic resources mentioned in this Guide.

Code and Go Mouse

$44.99 on Amazon

Great for all elementary-age students as a beginning tool to practice programming concepts and to engage with robots. Needs 3 AAA batteries.

Botley the Coding Robot

$56.24 on Amazon

Great for all elementary-age students as a beginning tool to practice programming concepts and to engage with robots. Use the remote control to program. Needs 5 AAA batteries and a small Phillips screwdriver.

Wonder Workshop Dash Robot

$149.95 on Amazon

Great for all elementary-age students as a beginning tool to practice programming concepts and to engage with robots. Dash responds to voice commands or any of our five free downloadable apps to sing, draw, and move around. Comes with a charging cable.

Robot Information

VEX 123

$119 on vexrobotics.com
Recommended for grades K-3
The VEX 123 robot can be manipulated with the forward, backward, left, and right arrows for beginning students. As students' understanding of coding grows, they can use the coder tablet and coding cards to visually see the layout of block coding. Finally, the VEX 123 can be programmed using an online block coding program.

VEX GO

$199 on vexrobotics.com
Recommended for grades 4-6
The VEX Go robot involves both coding and engineering. The students can build a robot with easy-to-follow steps from the Vex Go resources. After building the robot, the students can use block-based coding to program their robot.

Code and Go Activity

ELA Center

Directions: Read the sentence, below. Complete each task that follows.

The fluffy, hungry dog wagged his tail happily when he saw his favorite treat.

1) List the adjective(s) in this sentence and what word it modifies.

Adjective	Modifies
_____	_____
_____	_____
_____	_____

2) List the adverb(s) in this sentence and what word it modifies.

Adverb	Modifies
_____	_____
_____	_____
_____	_____

3) Code the mouse to leave "Home" and roll over each adjective and adverb you listed (the order does not matter) before ending on the cheese. Do not let the mouse rollover any other parts of speech. Draw the algorithm you used to program your mouse.
(→ , ↑ , ← , or ↓).

Think about it: Is there more than one path your mouse can take to achieve this goal?

_____
_____
_____

Code and Go Activity

ELA Center

Academic and Computer Science standards:

2nd Grade ELA Standard:

L.2.1e Use adjectives and adverbs and choose between them depending on what is to be modified.

K-2nd Grade Computer Science Standard:

AP.1A.5 Develop plans that describe a program's sequence of events, goals, and expected outcomes. Creating a plan for what a program will do clarifies the steps that will be needed to create a program and can be used to check if a program is correct.

AP.1A.5a Students should be able to develop and visually illustrate the plan for what a program will do.

AP.1A.7 Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops. Algorithms or programs may not always work correctly.

AP.1A.7a Students should be able to use various strategies, such as changing the sequence of the steps, following the algorithm in a step-by-step manner, or trial and error to fix problems in algorithms and programs.

Code and Go Activity

ELA Center - Materials

Place the following pieces on the code-and-go mouse board. The student will code the mouse to leave home and only touch the adjectives and adverbs. The robot should not touch any other part of speech.

Code and Go Activity

ELA Center - Materials

 HOME	happily	fluffy
hungry	dog	wagged
tail	saw	treat

Code and Go Activity

Math Center

Directions: Read the word problem, below. Complete each task following the word problem.

Travis went to the grocery store and bought 4 boxes of granola bars that contained 3 granola bars in each box. On the way home, Travis ate 5 granola bars. How many granola bars did he have left when he made it back home?

1. Write the math sentence used to solve this problem. You will use two math operations, such as addition, subtraction, multiplication, and/or division.
   When writing your number sentence, write your numbers in the order that they appear in the math problem.

   _____

2. Code the mouse to follow the path that represents your math sentence. Remember: the mouse will STOP on the number that represents your answer. Draw the algorithm you used to program your mouse.
   (→ , ↑ , ← , or ↓).

   _____
   _____
   _____

Code and Go Activity

Math Center

Academic and Computer Science standards:

3rd Grade Math Standard:

3.OA.8 Solve two-step (two operational steps) word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. Include problems with whole dollar amounts

3rd-5th Grade Computer Science Standard:

AP.1B.2 Create programs that use variables to store and modify data. [VARIABLES] (P5.2) Variables are used to store and modify data.

AP.1B.2a Students should understand how to use variables to store and modify data

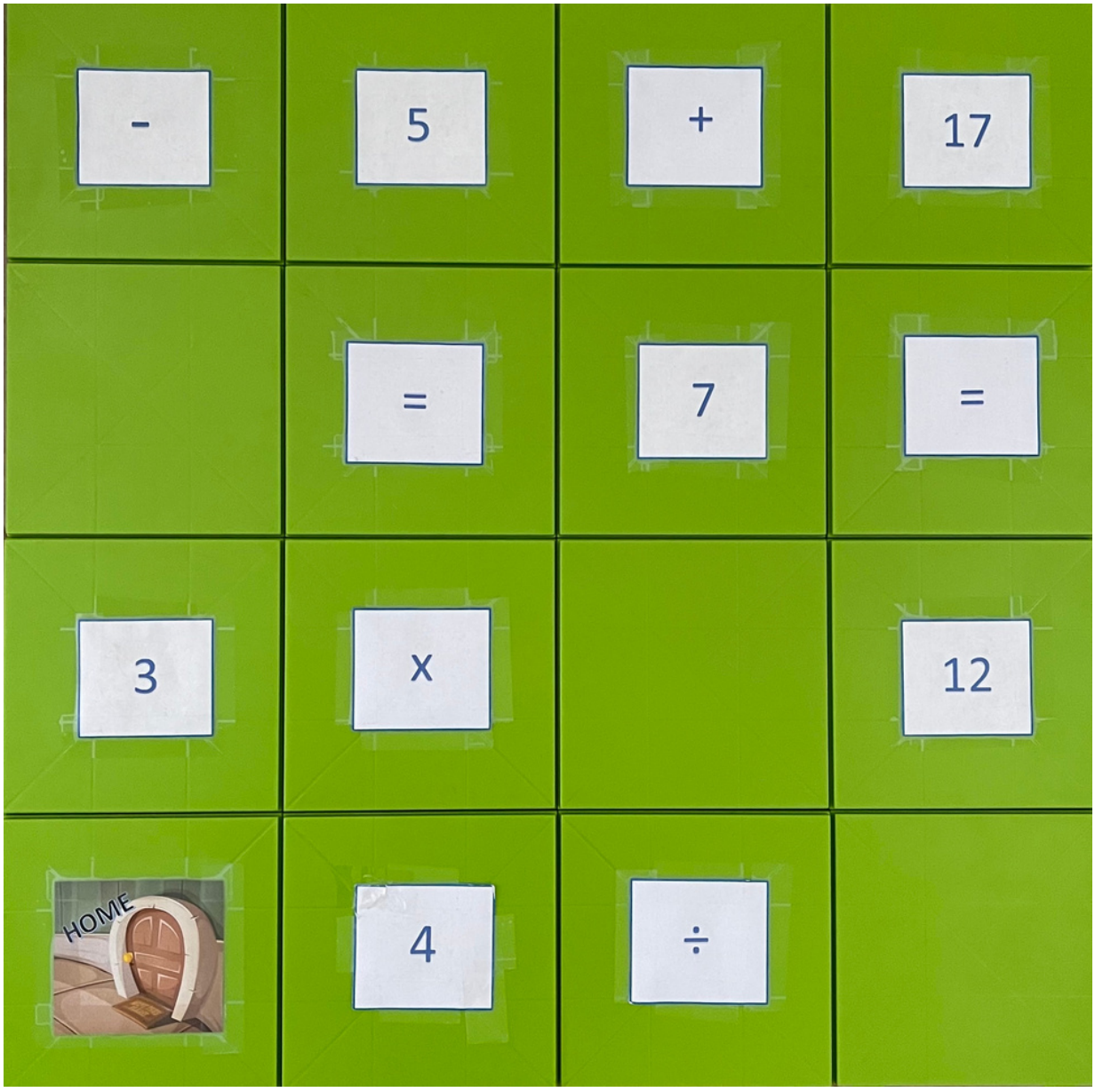
AP.1B.8 Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended. As students develop programs, they should continuously test those programs to see that they do what was expected and fix (debug), any errors.

AP.1B.8a Students should be able to identify and debug simple errors in programs they create and in programs created by others

Code and Go Activity

Math Center - Materials

Place the following pieces on the Code-and-Go mouse board. The student will code the mouse to leave "Home" and follow the number path for the math sentence (4 x 3 – 5 = 7). The mouse is not allowed to roll over any incorrect signs or numbers.



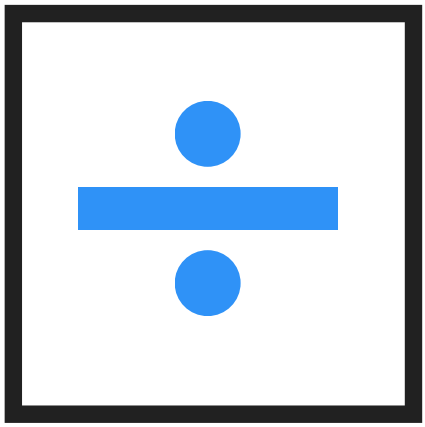
Code and Go Activity

Math Center - Materials

 HOME	-	5
+	17	=
7	=	3

Code and Go Activity

Math Center - Materials



Code and Go Activity

Science Center

Directions: Circle the living things in this picture.

Code the mouse to move from HOME and stop on ONE living thing.
Draw the algorithm you used to program your mouse.
(→ , ↑ , ← , or ↓).

_____
_____
_____
_____

Code and Go Activity

Science Center

Academic and Computer Science standards:

Kindergarten Science Standard:

L.K.1A Students will demonstrate an understanding of living and nonliving things.

L.K.1A.1 With teacher guidance, conduct an investigation of living organisms and nonliving objects in various real-world environments to define characteristics of living organisms that distinguish them from nonliving things (e.g., playground, garden, school grounds).

K-2nd Grade Computer Science Standard:

AP.1A.5 Develop plans that describe a program's sequence of events, goals, and expected outcomes. Creating a plan for what a program will do clarifies the steps that will be needed to create a program and can be used to check if a program is correct.

AP.1A.5a Students should be able to develop and visually illustrate the plan for what a program will do**.**

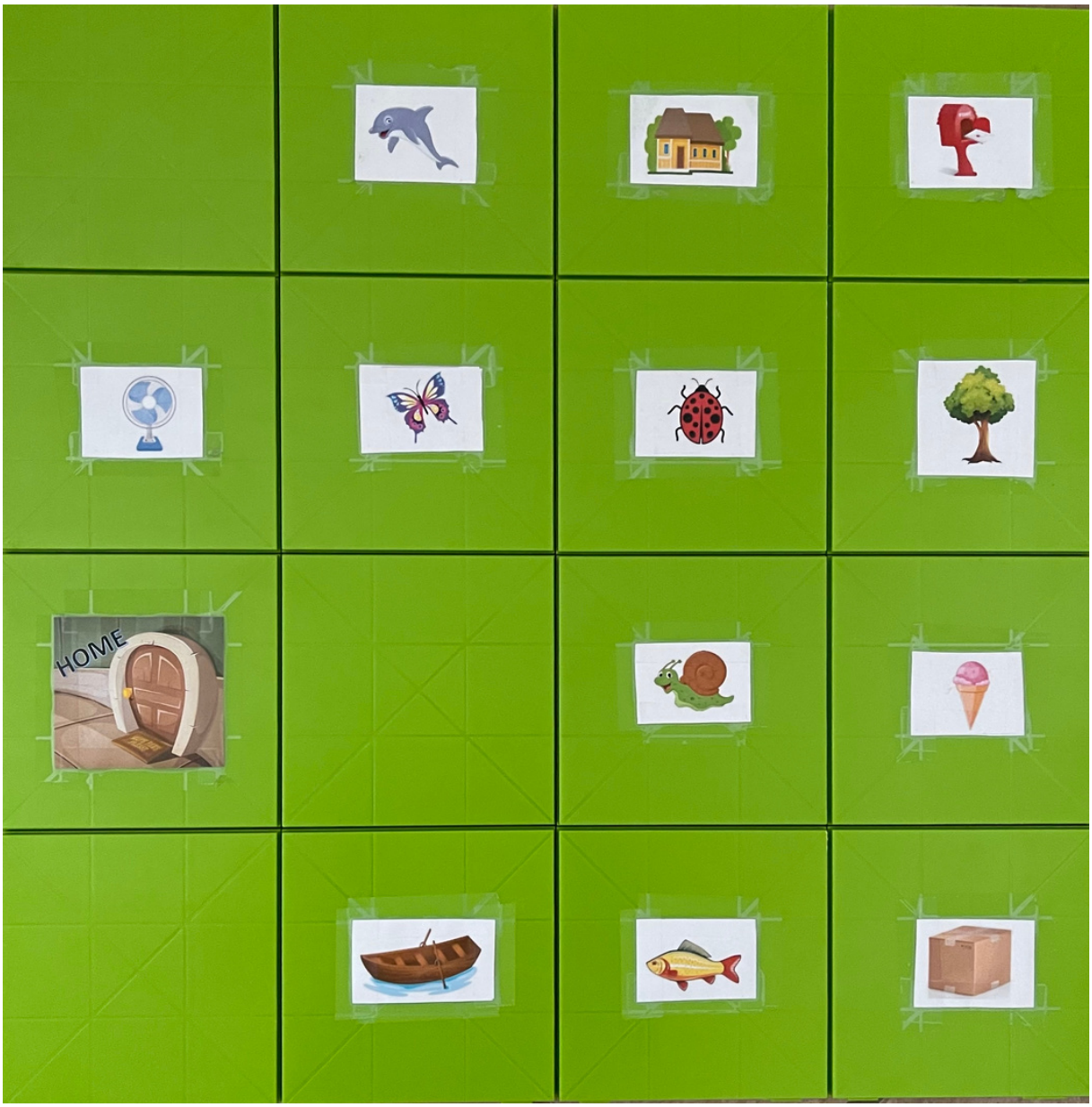
AP.1A.7 Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops. Algorithms or programs may not always work correctly.

AP.1A.7a Students should be able to use various strategies, such as changing the sequence of the steps, following the algorithm in a step-by-step manner, or trial and error to fix problems in algorithms and programs.

Code and Go Activity

Science Center - Materials

Cut the pictures apart and place them on the Code-and-Go mouse board. The student will code the mouse to go from “Home” to one or more living things. Do not let the mouse touch a non-living thing.



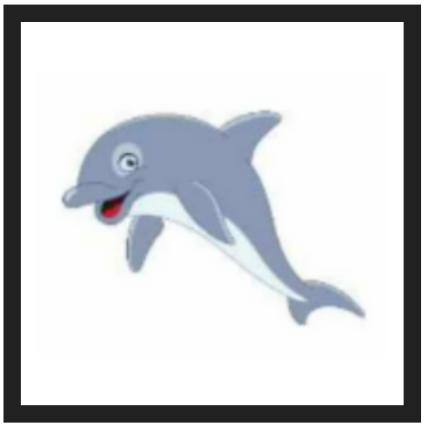
Code and Go Activity

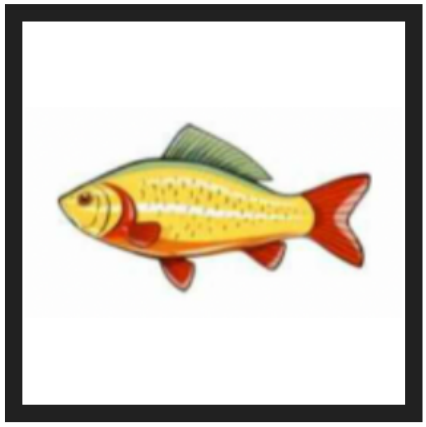
Science Center - Materials


HOME

Code and Go Activity

Science Center - Materials





Code and Go Activity

Social Studies Center

Directions: Answer the following questions about your state and local community leaders.

Who is the governor of Mississippi?

_____

Who is the mayor of (your town name)?

_____

Name a congressional leader for your area of Mississippi?

_____

Code the mouse to move from HOME to END. The mouse must touch each answer you provided above (order does not matter). DO NOT let the mouse roll over an incorrect answer.
Draw the algorithm you used to program your mouse.
(→ , ↑ , ← , or ↓).

_____
_____
_____
_____

Code and Go Activity

Social Studies Center

Academic and Computer Science standards:

4th Grade Social Studies Standard:

CI.4.2 Identify people in positions of power and how they can influence people's rights and freedom.

CI.4.2.1 Identify elected leaders of the community and state.

K-2nd Grade Computer Science Standard:

AP.1B.8 Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended. As students develop programs, they should continuously test those programs to see that they do what was expected and fix (debug), any errors.

AP.1B.8a Students should be able to identify and debug simple errors in programs they create and in programs created by others.

Code and Go Activity

Social Studies Center - Materials

The student will code the mouse to leave "Home" and end at the cheese. On his journey, the mouse must roll over each correct answer (the other does not matter) and avoid every incorrect answer. (You will need to fill in the correct and incorrect answers.)

Code and Go Activity

Social Studies Center - Materials

HOME

Botley Center

History

Part 1 Directions: Program your robot to move the shapes representing the facts of battles with the correct battle title. Write your code for each battle below as you complete them (→ , ↑ , ← , or ↓).

1. **Battle of Saratoga**

_____

_____

1. **Battle of Lexington and Concord**

_____

_____

1. **Battle of Bunker Hill**

_____

_____

Part 2 Directions: In the space provided below, write 2 additional facts about each battle.

1. **Battle of Saratoga**

_____

_____

1. **Battle of Lexington and Concord**

_____

_____

1. **Battle of Bunker Hill**

_____

_____

Part 3 Directions: Compare and discuss your answers above with a partner.

Botley Center

History Center Standards

Academic and Computer Science standards:

5th Grade Social Studies Standard:

5.6 Explain major events of the American Revolution**.**

5.6.2 Identify key battles of the American Revolution and their outcomes (e.g., Lexington and Concord, Bunker Hill, Saratoga, Cowpens, Yorktown, etc.).

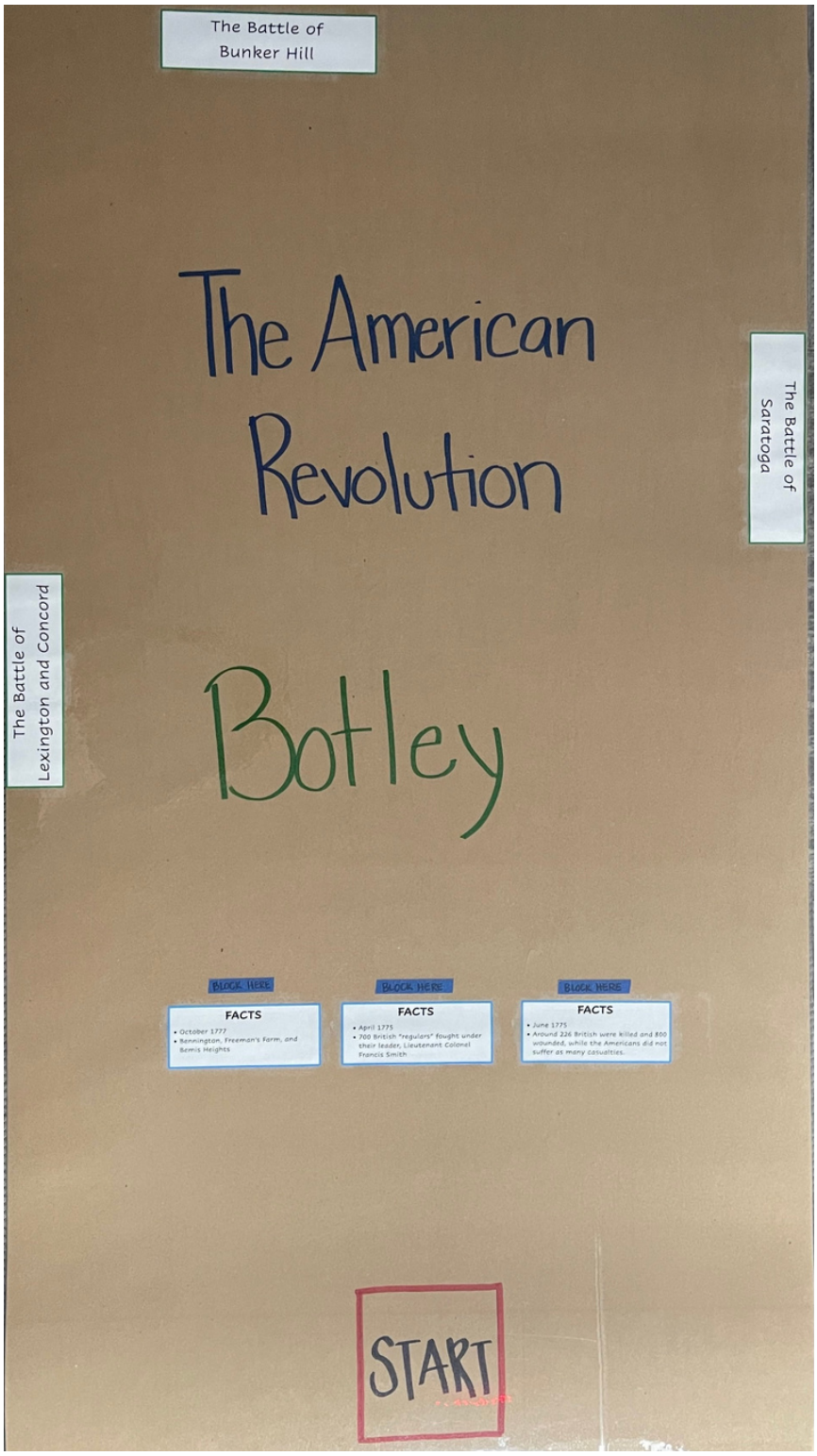
3rd-5th Grade Computer Science Standards:

AP.1B.1 Compare and refine multiple algorithms for the same task and determine which is the most appropriate.

AP.1B.1a Students should be able to look at different ways to solve the same task and decide which would be the best solution.

Botley Center

History Set-up Example



Botley Center

History Materials

Battle of Lexington and Concord

The Battle of Bunker Hill

Battle of Saratoga

Facts

- April 1775
- 700 British “regulars” fought under their leader, Lieutenant Colonel Francis Smith

Facts

- June 1775
- Around 226 British were killed and 800 wounded, while the Americans did not suffer as many casualties.

Facts

- October 1777
- Bennington, Freeman’s Farm, and Bemis Heights

Botley Center

History Materials

Botley Center

Math

Part 1 Directions: Draw a line to match each 3-dimensional shape with the corresponding 2-dimensional shape.

3-Dimensional Shape	2-Dimensional Shape
Sphere	Triangle
Cube	Circle
Pyramid	Square

Part 2 Directions: Program the Botley robot to begin at "START" and deliver each 3D shape to the corresponding 2D shape. Use arrows to write your program for each trip Botley takes to deliver a 3D shape. (→ , ↑ , ← , ↓)

Sphere

_____

_____

Cube

_____

_____

Pyramid

_____

_____

Botley Center

Math Center Standards

Academic and Computer Science standards:

1st Grade Math Standard:

1.G.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape and compose new shapes from the composite shape.

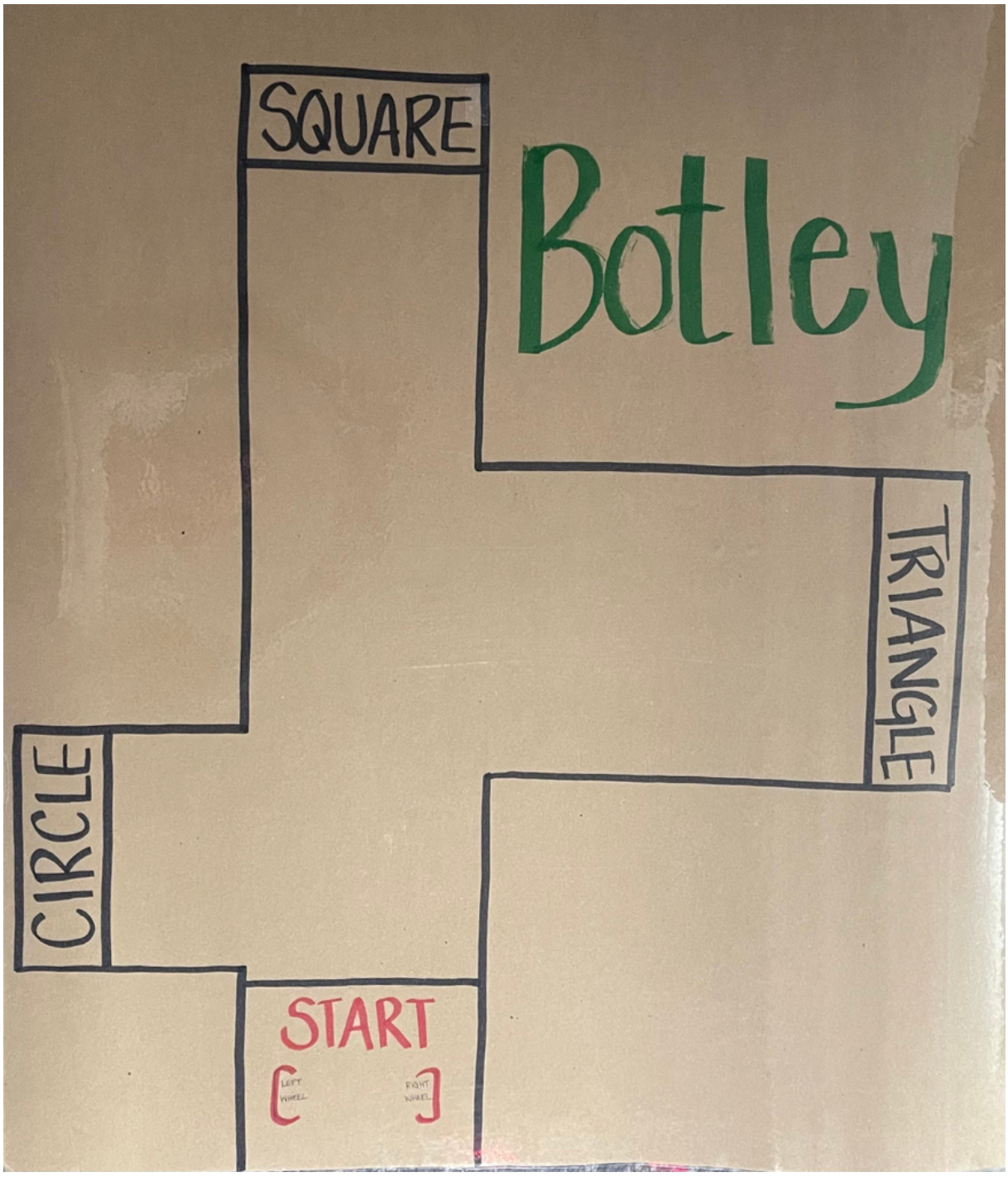
K-2nd Grade Computer Science Standards:

AP.1B.8 Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended. As students develop programs, they should continuously test those programs to see that they do what was expected and fix (debug), any errors.

AP.1B.8a Students should be able to identify and debug simple errors in programs they create and in programs created by others.

Botley Center

Math Set-up Example



Botley Center

ELA

Part 1 Directions: Summarize The Little Red Riding Hood story below, including details about characters, settings and proper sequence of the story.

_____

_____

_____

Part 2 Directions: In the space provided below, write where the characters in The Little Red Riding Hood first appear in the story.

Little Red Riding Hood (triangle) _____

Wolf (square) _____

Grandma (circle) _____

Part 3 Directions: Program your robot to place the characters of The Little Red Riding Hood on the correct scenes in which they first appear in the story beginning at Start each time. Write your code for each character below.
(→, ↑, ←, or ↓).

Little Red Riding Hood (triangle)

_____

_____

Wolf (square)

_____

_____

Grandma (circle)

_____

_____

Botley Center

ELA Center Standards

Academic and Computer Science standards:

2nd Grade English Language Arts Standard:

RL.2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.

RL.2.7 Use information gained from the illustrations and words in a print or digital text to demonstrate an understanding of its characters, setting, or plot.

K-2nd Grade Computer Science Standards:

AP.1B.8 Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended. As students develop programs, they should continuously test those programs to see that they do what was expected and fix (debug), any errors.

AP.1B.8a Students should be able to identify and debug simple errors in programs they create and in programs created by others.

Botley Center

ELA Set-up Example

Botley Center

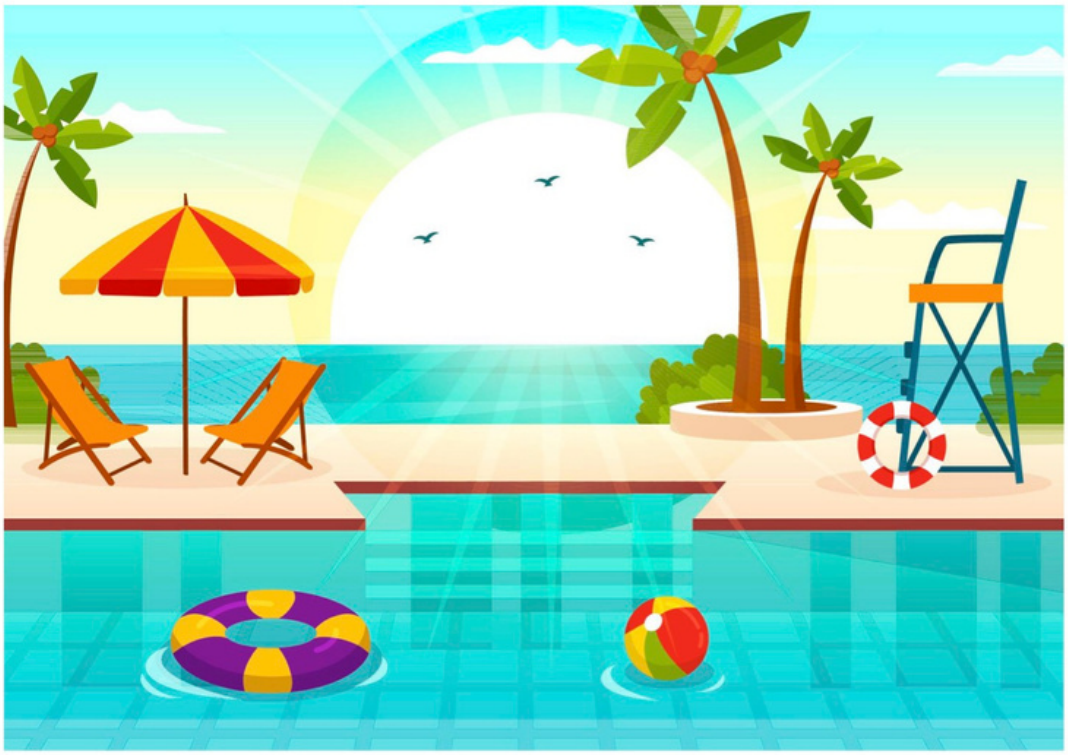
ELA Materials

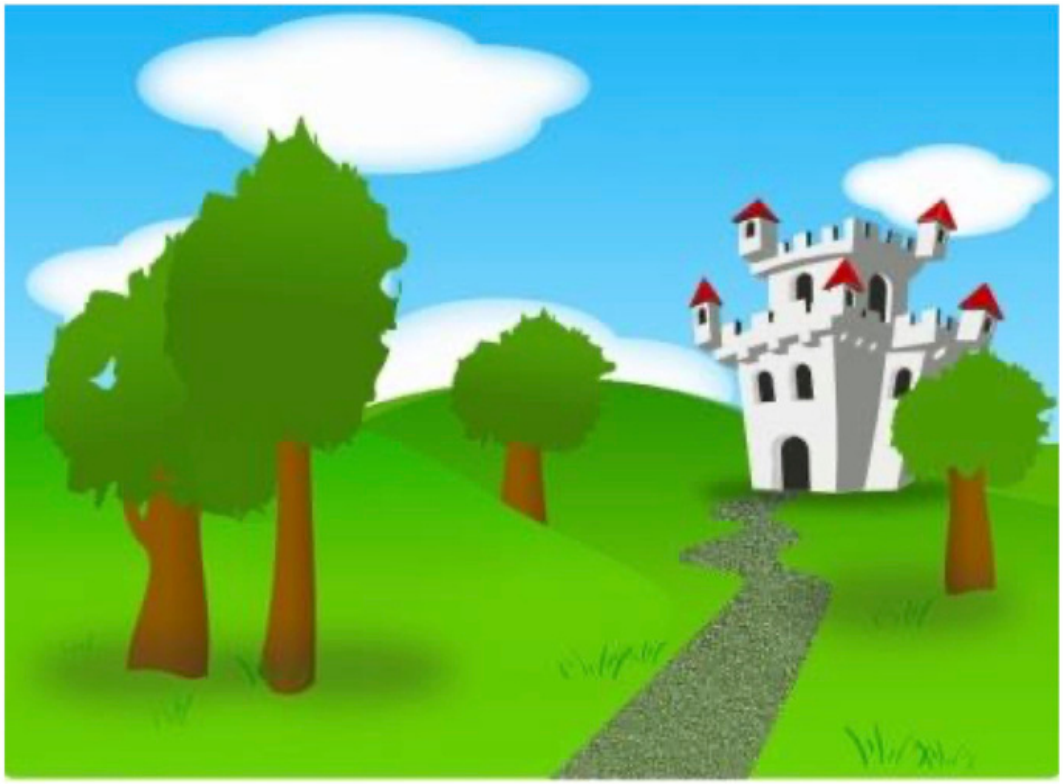
Botley Center

ELA Materials

Botley Center

ELA Materials





VEX 123 Center

Directions for Robot Use

1. Slide the VEX 123 backwards to turn the robot on.
2. Use the VEX coder cards, from the bag, and the coder tablet to program VEX 123 to move through the maze, from “START” to “FINISH.”
3. You must use all 10 coder cards to successfully fulfill the task.
4. When you are finish, please return all coder cards back to the bag and place the VEX 123 on “START.”

https://www.vexrobotics.com/123-coder-cards.html

VEX 123 Center

VEX 123 Center Standards

Academic and Computer Science standards:

K-2nd Grade Computer Science Standards:

AP.1B.8 Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended. As students develop programs, they should continuously test those programs to see that they do what was expected and fix (debug), any errors.

AP.1B.8a Students should be able to identify and debug simple errors in programs they create and in programs created by others.

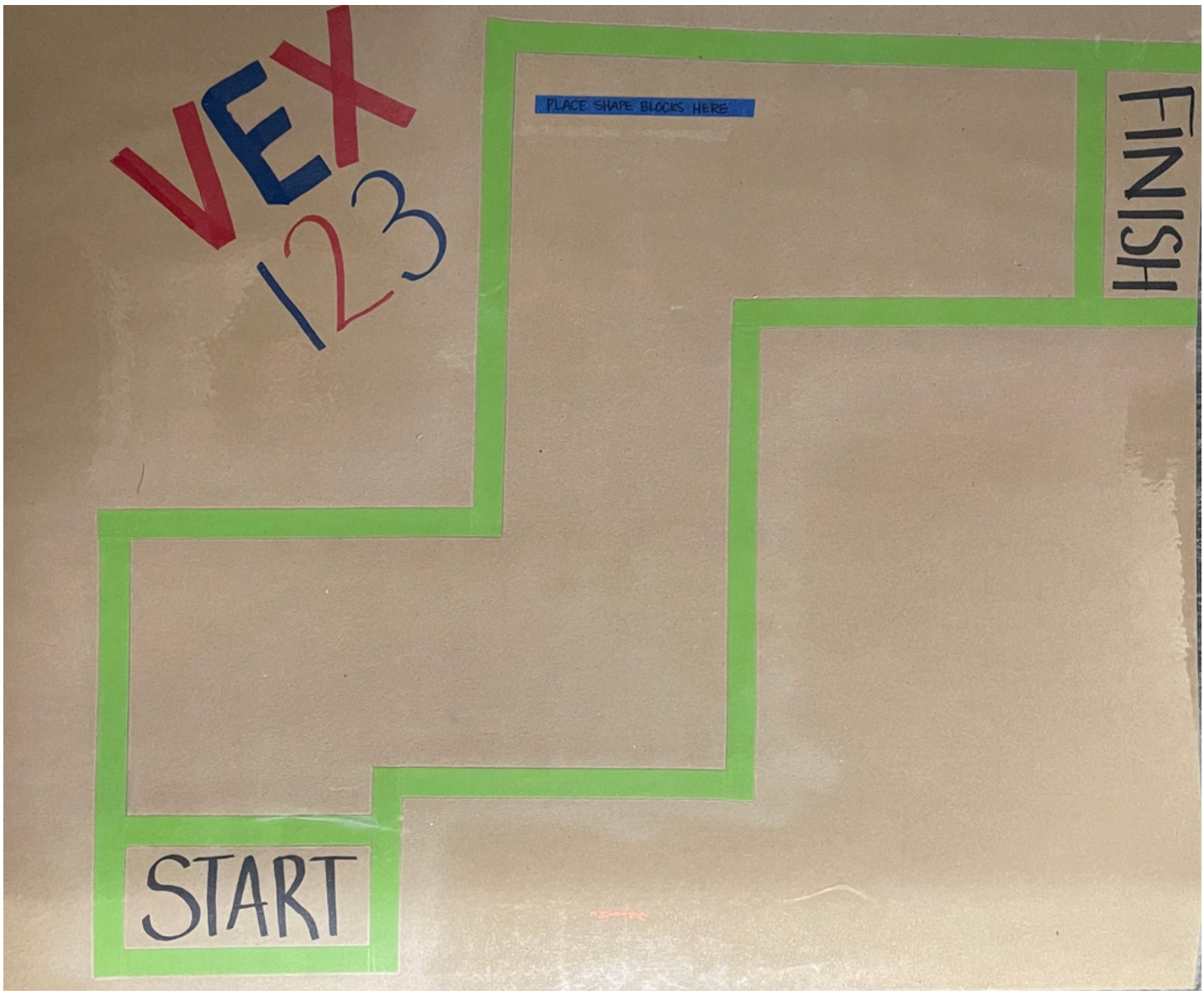
3rd-5th Grade Computer Science Standards:

AP.1B.1 Compare and refine multiple algorithms for the same task and determine which is the most appropriate.

AP.1B.1a Students should be able to look at different ways to solve the same task and decide which would be the best solution.

VEX 123 Center

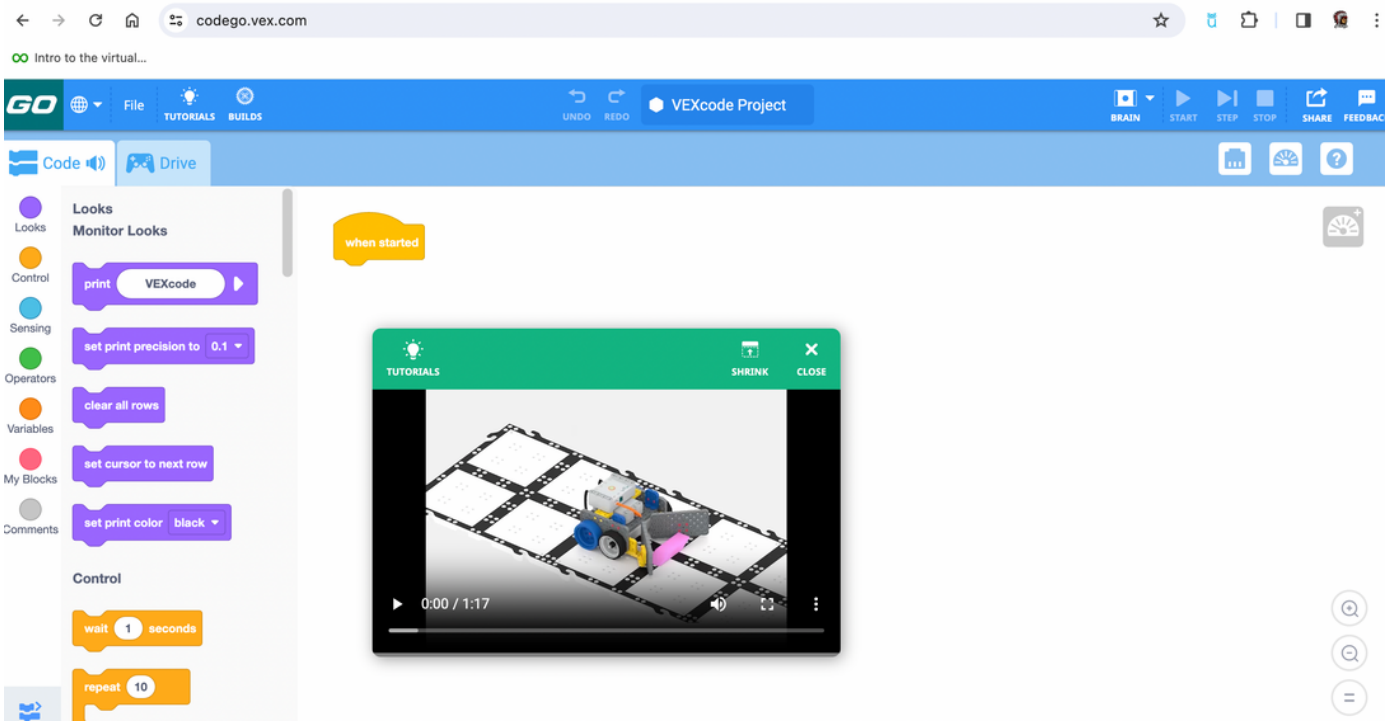
VEX 123 Sample Mat



VEX Go Center

Directions for Robot Use

1. Go to https://codego.vex.com
2. Your facilitator will walk you through connecting the Drive Train and Bluetooth for your robot.
3. Use the blocks to code the VEX Go to move through the maze, from “START” to “FINISH.”
4. Once you have coded the robot to complete the maze, explore the blocks to change VEX Go’s speed at which it moves through the maze.
5. When you are finished, please return to VEX Go to “START” and close out your coding window.



VEX Go Center

VEX Go Center Standards

Academic and Computer Science standards:

K-2nd Grade Computer Science Standards:

AP.1B.8 Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended. As students develop programs, they should continuously test those programs to see that they do what was expected and fix (debug), any errors.

AP.1B.8a Students should be able to identify and debug simple errors in programs they create and in programs created by others.

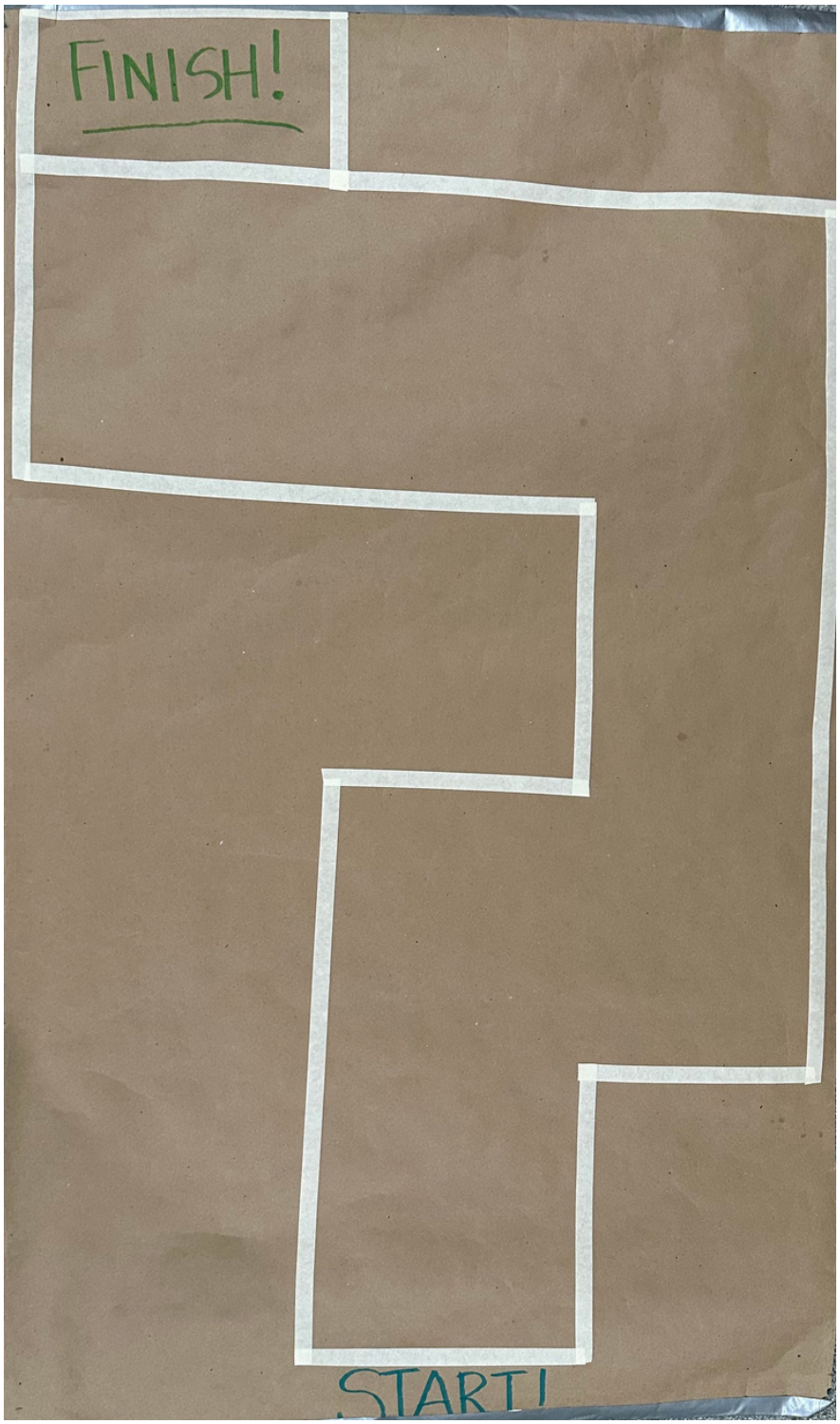
3rd-5th Grade Computer Science Standards:

AP.1B.1 Compare and refine multiple algorithms for the same task and determine which is the most appropriate.

AP.1B.1a Students should be able to look at different ways to solve the same task and decide which would be the best solution.

VEX Go Center

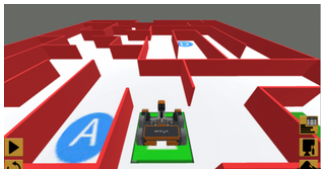
VEX Go Sample Mat



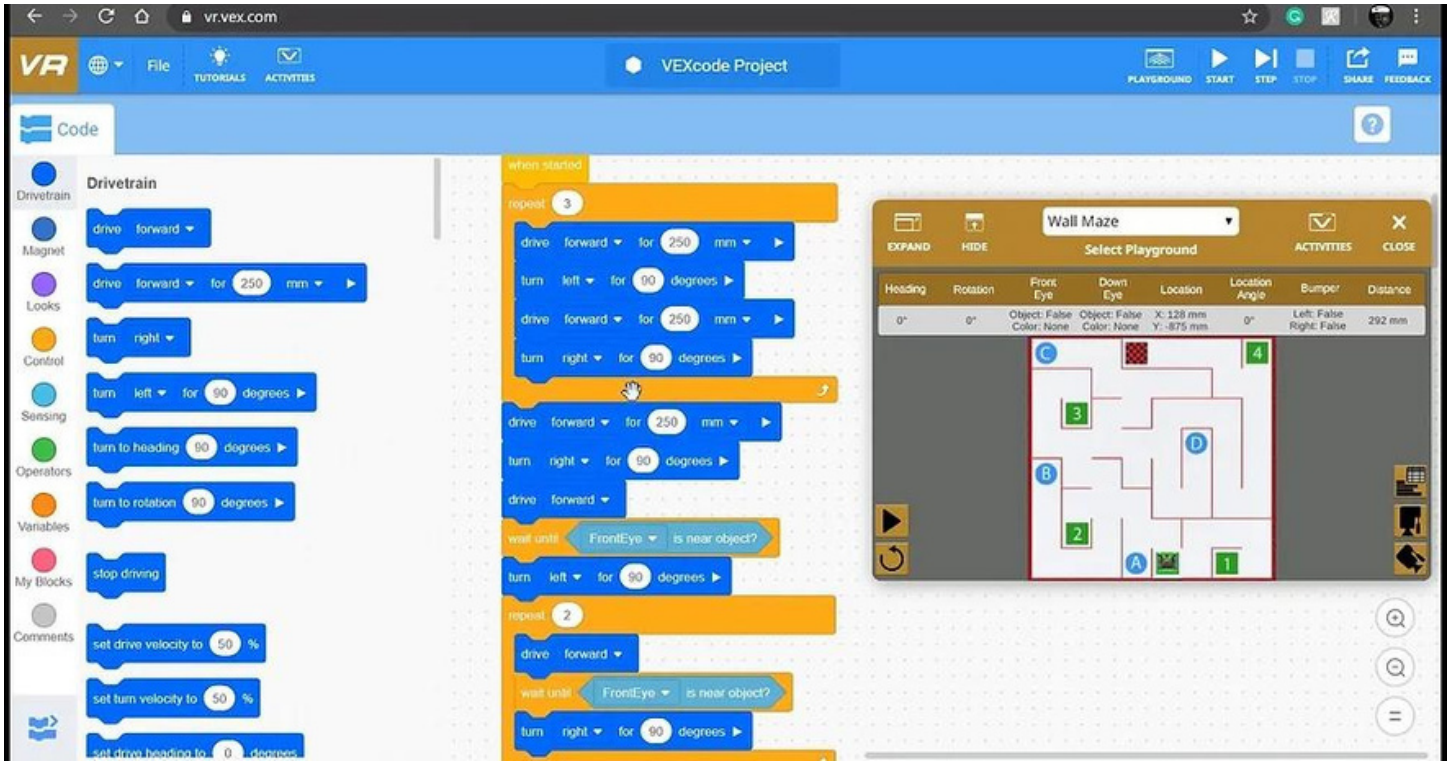
VEX VR Center

Directions for Robot Use

1. Go to https://vr.vex.com/
2. Select **Continue to Free** on the pop-up window.
3. Click **SELECT PLAYGROUND** in the top, right corner.



4. Choose the “Wall Maze” playground.
5. Use the blocks to code the robot to move through the maze.
6. Once you have coded the robot to complete the maze, explore the blocks to shorten the time it takes for it to complete the maze.



VEX VR Center

VEX VR Center Standards

Academic and Computer Science standards:

K-2nd Grade Computer Science Standards:

AP.1B.8 Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended. As students develop programs, they should continuously test those programs to see that they do what was expected and fix (debug), any errors.

AP.1B.8a Students should be able to identify and debug simple errors in programs they create and in programs created by others

3rd-5th Grade Computer Science Standards:

AP.1B.1 Compare and refine multiple algorithms for the same task and determine which is the most appropriate.

AP.1B.1a Students should be able to look at different ways to solve the same task and decide which would be the best solution.