Inspiring Youth:

Sharing Robotics, STEM and FIRST with Girl Scouts

Tactical Tech Tomato Turtles

Who We Are

- All attend Eagan High School In MN

- Participated in FLL for 2 years as a team (some had prior experience)

- 4th year in FTC

- Chose team name in FLL

- Motivate award winning team at 2021 MN state tournament

What will we cover

- **Why** do motivate events matter?

- **How** you can plan and deliver motivate events

- Highlights of our program

Why do motivate events matter?

- It inspires kids to get involved with STEM, robotics, & FIRST
- You directly help people learn
- You learn from teaching
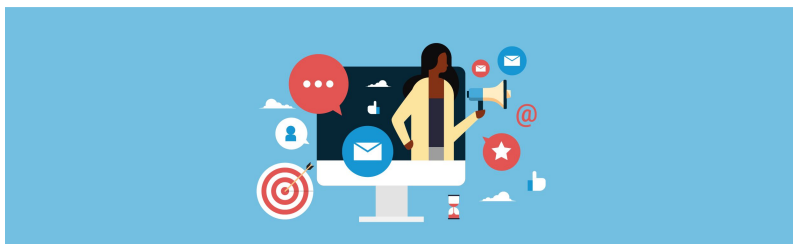- It's exciting to get people excited
- You can help your community

How Do You Plan Motivate Events?

1. Establish goals
2. Determine a strategy for accomplishing these goals
3. Create materials (presentations, kits, posters, etc.)

Sample: Outreach Goals

Type	Goal	Achieved
Motivate	Motivate at least 50 students to get interested in STEM	
Connect	Meet with at least 5 experts in STEM fields that can improve our abilities in FTC	
Motivate	Meet with at least 5 other FTC teams to exchange ideas and learn learn from one another	
...	...	

Our Strategy to Achieve Goals

4-Pronged Approach

Repeatable curricula for Girls Scout badges to generate interest in STEM and FIRST

Interaction events to demo our robot, talk about what we do, and generate interest in STEM and FIRST

Community service events

Mentoring FLL and FTC teams

Overview of Badge Process

- We offer sessions for free
- Presentation slides
- Interactive activities
- Combination of focus and fun
- Use virtual breakout rooms for hands-on activities
- Let them be creative!
- Girl Scout Troops are responsible for providing the girls with badges
- The girls earn certificates from us

Team 14556

Step Eleven: Final Touches

For the final step we want to add the math to make the game harder, making the game make the change the speed that "Enemy" clones. This is optional.

Remember you hit 🏳 to start the program.

Badges We Offer

STEM Badges
- Robot Badges
    - Programming
    - Designing
    - Showcasing
- Other Tech Badges
    - Entertainment Technology
- Cybersecurity Badges
    - Cybersecurity Basics
    - Cybersecurity Safeguards
    - Cybersecurity investigations

Examples: Robot Design and Showcasing Badges

Background
- Videos of robots
- Intro to biomimicry

Designing Robots
- Provide materials (prior to event)
- Give time to build

Showcasing Robots
- They show their robots perform
- They present their approach
  and what they learned

(In person event from a year ago)
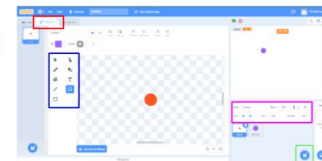
Programming Badge

Background:

- Teach them basic programming language
- Show them a beginner programming video

Scratch Activity

- Teach them how to make a simple game
- Step-by-step process with a team member
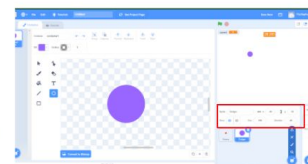- Customization and editing

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Step One: Make Your First Sprite

To make a sprite you need to go to the customize tab (red). To make a sprite you go down to choose a sprite (green) and select paint. For this sprite we will want to draw a circle using the circle tool found with the rest of the tools (blue). You will name this sprite "Enemy" (pink).

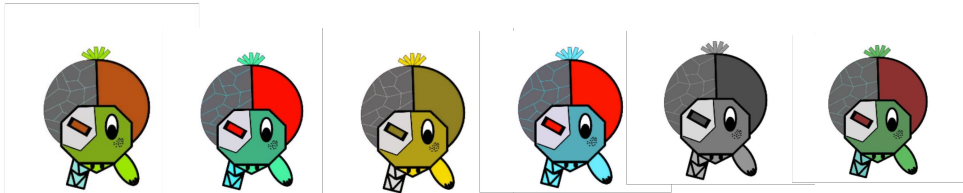
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Step Two: Make Your Second Sprite

Still in the Customize tab, you will want to create a new Sprite the same way you created the first one. This time making the circle much larger and a different color, using the same tools as before. You can change the name to something like "Dodger" and make sure your x and y are both 0, so the "Dodger" is centered.
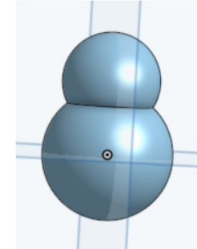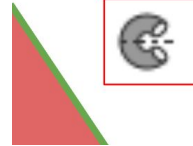
Entertainment Technology Badge

1. Intro to CAD
2. CAD activity
3. Sound design into
4. Sound activity
5. GIF activity
6. Color blindness

Step 2: Revolve!

- Click the revolve button (red)
- Click on any of the curves on your sketch (blue)
- Click on the vertical line
- Press the green checkmark

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How sound is used in entertainment

- Sound plays a large role in movies, songs, and social media
- Why is sound so important in entertainment?
- What sounds have you heard in your entertainment?
- Sound is involved in huge careers such as music, movies, and more!

Music Producer   Musicals and Acting   Video Creator or Streamer

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Tips for Delivering Motivate Events

1. Establish goals ✔
2. Determine a strategy for accomplishing these goals ✔
3. Create materials (presentations, kits, posters, etc.) ✔
4. Market outreach to interested groups
   a. Flyers, Facebook groups, Girl Scout Council, Email contacts
5. Prepare for outreach events
   a. Schedule the events with the people you communicated with
   b. Set up locations for events
      i. Sometimes virtual, sometimes at Churches, Homes, Libraries, ect.
6. Deliver the event
   a. Be an ambassador for FIRST
   b. Talk about FIRST during every presentation
      i. Give examples on how to form team, or share tournament info
7. Get feedback, learn and improve from the event

Sharing curriculum with other teams

1. We can share up to 7 badge curriculum with FIRST teams
2. Current delivery is virtual, requires Scouts to have tablets or PCs
3. For Designing robots, we send some materials to troop leader in advance
4. We communicate with Girl Scouts by:
   a. Going to local leader meetings and social media posts
   b. Troops reach out to us by email
   c. We send info on the badges and arrange time, send materials (if needed) and links
5. If you use our curricula, we ask you to send us the information about dates, number of girls, badges earned!
6. If this sounds good, we'd be happy to meet again to walk through specific badges in more detail.
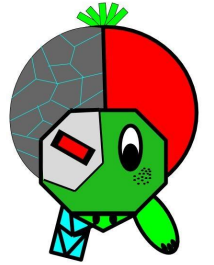
Thank You!

If you'd like a copy of these slides or are interested in using our curriculum, please contact us!

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Questions?