Event Activity Guide for Companies

How to Use This Guide

Use this guide when planning your IGNITE event to keep students excited and engaged while they actively learn about working at this particular company. Activities that are the most successful are simple and focused on interactive fun!

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Activity Options:

Your activity can be focused around critical thinking, skill-building, exploring cool workspaces, or anything that interactively engages students in STEM—this is your chance to get creative, highlight the unique work you do, and share your passions with students! Activities should be **hands-on, linked to your company, and focused on interaction.**

- **Critical Thinking:** In small groups, challenge students to brainstorm around a problem your company/industry is working to solve, or a problem facing their community. Critical thinking activities are great for engaging students with different experience and development levels!

- **Skill-Building (technical or soft skills)**: In small groups, introduce students to a skill you use at your company, and provide hands-on exploration time. Be sure to tie the activity they're engaged in to the work you do day-to-day.
    - Remember: the goal isn't to teach an entire skill, but to *introduce* a skill so students can try something new and get excited about exploring more through classes and clubs at school!

- **Interactive Tour:** Show off unique spaces during an extended, interactive tour. The key is *interactivity*—don't just show students the space, allow them to interact (touch, build, play) with products, equipment, and the work being done there. (Think of kids in a candy shop: they don't want to just look at the candy!)
    - Include product demos that students can directly participate in: trying on VR goggles, operating a robot, utilizing a touchscreen, or giving commands in a program.
    - Pass around tools, products, or product components—you can add an extra element of fun by asking questions to engage the students in what they're touching: "Who thinks they're strong enough to pick up this tool?" "How many of X do you think is used in each product?" etc.

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    - Stop in different conference rooms/workspaces to learn about topics and roles at the company from people who perform those roles.
    - Invite students to sit in unique hang-out spaces, write on whiteboards, or pose for selfies!

- **Scavenger Hunt:** While exploring a space, challenge students to find and interact with a product or answer a question using tools in the space, and/or ask questions to different volunteers about their backgrounds/jobs/the workspace Examples:
        - "Find the smart home display and ask Alexa to turn on the kitchen lights."
        - "What is the payload of the single-rotor drone? Ask a volunteer to help you lift an object within the payload range."
        - "Find a volunteer who was born in another state. Find one thing you both have in common."
        - "Interview 3 volunteers with the following questions..." (You can even have a pop quiz at the end testing their acquired knowledge!)

Prompts for Developing Your Activity

- Consider your audience and how to make your work relatable; some questions to reflect on:
    - What problems are you currently working on solving?
    - What types of decisions are you needing to make?
    - What kinds of hands-on skills are relevant to the work you do?
    - What might it be like to attend a board meeting at your company?
    - If you were to host a focus group, what question/issue would the group address?
- What hands-on exercise will engage students and introduce a new skill or concept?
- Prioritize interactivity over expertise! Your goal is merely to *introduce* a skill or concept. Keep the activity interactive and hands-on, as students crave and learn the most from interactive activities.
- Students are excited to be out of their school classrooms and exploring your company. They don't want to sit in a lecture!

Activity Requirements

All IGNITE Field Trips include an interactive, hands-on activity for students to participate in. Activities should be accessible, interactive, timely, and pre-approved by IGNITE.

1. Accessible content

- Non-web-based content is preferred to increase accessibility and emphasize interactivity.
    - Physical supplies are great! These must be provided by the company if outside pen/paper.
    - Simple supplies like pen/paper, whiteboards, and sticky notes can be very effective!

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2. Interactive activity that engages all students

- Company volunteers are there to introduce the activity and guide/support students, but students should spend most of the time actively participating, not watching.
- Provide context that demonstrates the real-world applicability of the activity so students understand how what they're learning impacts people and helps your company do what you do.
- Activities should be an experience rather than a lesson. Prioritize student interaction and engagement over completing a set number of steps—students should have a hands-on introduction and more exploration they can do if they have time.
    - Communicate instructions one step at a time, and check whether students have completed each step before moving on to the next
    - Ensure activities involve movement, are hands-on, or, for field trips, involve changing locations.
    - We recommend using handouts to use as a visual aid when introducing a process and new information. Remember your audience! Keep language on handouts brief and in terms that the students will understand.
- For skill-based activities, students who have experience with the topic can be empowered to share their experience and be group leader assistants. Small Group Leaders should ask: "Does anyone have experience with X?" and can follow up: "How did you learn X? How have you used it?"

3. Activity must be completed within the scheduled time

- The Activity Leader will have 5 minutes to introduce the activity. Students have 45 minutes in small groups to complete the activity.
- In addition to the activity, IGNITE events include important context for introducing students to STEM fields and a Panel and Q&A discussion so students hear from professionals they can relate to.
    - Your activity must fit into the Small Group portion of the agenda.
    - Also consider any extra time that might be needed to introduce the exercise, to help students get set up with tools, etc.
- Keep in mind, IGNITE events are designed to *introduce* students to a skill or concept so they will be inspired to continue exploring STEM through classes and clubs at school.

4. Share your activity plans with IGNITE to review at least 2 weeks prior to your event

- You can share a written template, handouts, PowerPoint slides, or discuss it in a meeting or email.
- IGNITE is here to provide support and guidance as you develop and refine your activity. Let us know if you would like to brainstorm or discuss your ideas!

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- Once IGNITE has reviewed the curriculum, **we highly encourage all company volunteers to meet for a pre-event "dress rehearsal" run-through to hone in on timing and logistics (include school-aged kids if possible!)**

Examples of Successful Activities

Click on event titles to view post-event reports with activity details, photos, and student feedback

Skill-Building Activities (Technical or Soft Skills)

- **Build it and Connect It with KPFF Consulting Engineers**
    - Small groups were tasked with creating a site plan for a building using printer boxes and supplies such as paper, popsicle sticks, and pipe cleaners. The students built detailed models of their structures, complete with utilities like power, internet, water, gas, and sewer lines, represented by different colored pipe cleaners, and including essential features such as parking lots and storm drainage systems constructed using paper towel rolls. To ensure functionality, the storm drains were tested by dropping marbles down the "pipes" to see if they flowed correctly into the rain garden.
    - As each group completed their project, they connected all utilities to main lines using streamers, providing a visual representation of how individual properties integrate into a larger urban system.
    - View Activity handout
- **Concept Boarding with TCF Architecture**
    - Mirroring a real-world architectural practice, student groups created concept boards for unique restaurant designs. First, groups brainstormed their restaurant ideas: theme, menu, design elements, restaurant name, etc, then they sketched the internal layout to include kitchen and dining spaces, doors and windows, bathrooms, and any special design features. Finally, they went "shopping" from a selection of flooring, fabric, paint, tile, and other materials, and included samples on their boards.
    - After completing their boards, student groups presented their ideas by pitching their restaurant to the "client."
    - View Activity Handouts
        - Handout 1
        - Handout 2
- **UX Design with Microsoft**
    - Students were given 8 different types of apps to choose from, and 8 different customer personas to create an app interface with a unique customer in mind. Each student sketched out

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their own design for an app of their choice. Some students collaborated in groups to create their design and some students worked individually.

    - View Activity Handout

- **Engineering Principles with Stryker**

    - Students were challenged to build structures using uncooked spaghetti and marshmallows. They discussed their design choices before testing their structures on a drop test fixture, capturing the action with a high-speed camera. This provided a fun yet practical demonstration of engineering principles and problem-solving and is relevant to the Automated External Defibrillator (AED) testing that Stryker does in the concept lab, where the activity took place.

- **Communication & Teamwork Lego Activity with lululemon**

    - Students were each assigned a role (project manager, architect, engineer, quality assurance) and made a lego set, with roles enforced by the volunteers. Roles were introduced by someone who actually does each type of work. The groups split up into small conference rooms so it was like they were having work meetings–a great use of the space!

- **Bridge-Building with WSP**

    - Students collaborated in groups to build a bridge using simple supplies like paper and string and had fun competing to construct the bridge that could hold the most weight! The activity fostered teamwork and provided hands-on experience with engineering principles.

- **Public Speaking for Future Leaders with Freeman Means Business**

    - After learning effective techniques to prepare and grab audience attention, students each presented an introduction and “elevator pitch” answering the question: “If you were elected to serve as the next President of the U.S., what would you do on your first day in office and why?”

- **Building Satellites with Starfish Space**
    - Students role-played in teams to simulate the guidance, navigation, and control (GNC) software used by satellites in order to dock with another object. One team member wrote down commands on the whiteboard for another student to use to guide a third blindfolded team member.

    - The goal was to slowly maneuver the blindfolded team member to the correct place on the whiteboard, where they would place a satellite magnet and “dock” with another satellite. This was meant to demonstrate how multiple systems work together on the satellite to dock successfully. Extra rules were added as the activity went on, such as only allowing the students to write commands using pictures instead of words.

- **Animation with Pixar** Students used pen and paper to make their own flipbook of a ball bouncing:

    - In small groups, each student made their own flipbook. The activity demonstrated how animation works, but also that it can be tricky and a surprising amount of work!

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- Materials needed for the activity were just pencil and paper.

Critical Thinking Activities

- **Design Thinking with Accenture**
  - Students were tasked with the prompt: "How might we improve the mornings of High School Students?" With a brainstorming session, ideas ranged from whimsical answers like fairies that gently wake them, to pragmatic solutions like restructuring the school day for enhanced nourishment and engagement.
  - Through collaborative discussions and with the support of Accenture mentors, the students distilled their visions into actionable proposals, which they presented to the full group.
  - View Activity Materials
- **Design Thinking with Afiniti** *(note two unique approaches to the same topic!)*
  - Students were introduced to design thinking as a user-centered approach to problem-solving and Empathy Maps as a tool to get inside the user's mind and understand their unique needs. As individual students or in groups, they were tasked with filling out an Empathy Map to help visualize ideas and features of a product that could solve a problem for the user. Ideas included a tracking device to locate lost glasses, a robotic arm to help with childcare, and a notebook that records the user's thoughts.
  - View Activity Materials
- **Smart Home Devices with Microsoft Azure Sphere** Students conceptualized a new smart home device (*Microsoft Azure Sphere specializes in cybersecurity of IoT devices/smart devices*):
  - Ideas that students came up with included: a smart closet that tracks the weather to help people decide what to wear, a smart fridge that can detect expired food, a smart animal feeder that can monitor how much pets are eating, etc.
  - Students discussed potential vulnerabilities in their designs, given what they were learning from the field trip about cybersecurity and problems to solve, and what steps they might need to have in place for their ideas to secure the devices.
- **Satellite Imagery with Planet** Students got to look at Planet satellite images in small groups and brainstorm how different parts of the images could help the world/solve issues:
  - One image showed a cattle ranch in Argentina, where students were able to brainstorm and discuss to figure out how these types of satellite images can help farmers predict food production and the best times to grow their crops.
  - Another image showed a yard with what looked to be abandoned airplanes somewhere in the desert. This turned out to be an airport in the Middle East and because of the pandemic, travel

had been halted and they had run out of space in the yard to house all of the airplanes that would normally be coming and going.

    - A third image showed a body of water with differently colored regions. Students were able to ascertain that it was a river that had been polluted, as some parts were purple, while others were a healthier green, allowing them to determine areas that were more heavily impacted.

- Tech Accessibility with Amazon Students brainstormed accessibility ideas for Alexa devices:
    - Each breakout room focused on a different device, and groups discussed features that the device could add value for different customers.
        - Students in the Echo Dot group thought of adding a feature that would allow lyricists the chance to put their work with harmony on the Echo Dot.
        - The Kindle group thought of adding a tab for languages and captions for the hard of hearing.
- Exploring the Capital Markets with PitchBook Data
    - Students brainstormed product ideas and then learned about the processes for expanding an idea into a business. Once they picked their products, groups discussed business names, a business plan, sales and marketing, and ideas for funding.

Interactive Tour

- Google Cloud Campus
    - In addition to a small-group activity, students enjoyed an extended tour, where they visited the wide array of unique employee areas—the bicycle garage, comfy meditation space, fitness studios, and soundproof music room—passing by nap pods and massage chairs on the way to the employee arcade, where they got to pass some free time! Apart from the arcade games, students were wowed by the stocked employee kitchens and the food court that supplies employees with complimentary meals and snacks.
- Microsoft Industry Experience Center
    - Students were led through a labyrinth of innovative interactive spaces and got a behind-the-scenes look at the ways Microsoft is helping to automate and modernize society, from product inventory and delivery to autonomous stores to self-driving cars. Students took turns trying on HoloLenses that allow surgeons to view scanned images as they operate.

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