WHO WE ARE:

**Washington STEM** advances excellence, equity, and innovation in science, technology, engineering, and math (STEM) education for all Washington students. Washington STEM works as a backbone organization to serve as a convener and catalyst for STEM education to dramatically increase the number of Washingtonians that are “future ready” -- individuals with the creative skills needed to thrive in today's jobs and in the unknown jobs of tomorrow.

**Project Pilgrimage** brings together interracial and intergenerational groups, in Washington state and beyond, to study, understand, and gain inspiration from movements and individuals committed to building a more just and equitable world.

**College Spark Washington** supports programs and strategies that help Washington's low-income students become college-ready and earn their degrees.
# TABLE OF CONTENTS

So You’ve Decided to Put on a STEM Learning Tour ................................. 4  
The Plays ........................................................................................................ 5  
  • Play 1: Learning Tour goals and agenda  
  • Play 2: Logistics and cash  
  • Play 3: Who is on the bus?  
  • Play 4: What do you do with all these people?  
  • Play 5: How do I let people know what’s happening?  
  • Play 6 - Event Agenda  
  • Play 7 - Facility and Food  
  • Play 8 - Handouts and Materials  
  • Play 9 - The Event!  
  • Play 10 - Evaluation  

Once You Get Off the Bus ............................................................................. 16

---

*Students at the Yakima Valley Technical Skills Center share their experiences.*
WHY A STEM LEARNING TOUR?

A STEM Learning Tour is a great way to mobilize (literally) your community around STEM education and Common Core/Next Generation Science Standards. STEM Learning Tours bring together community members engaged in STEM education (and those you want engaged in STEM education) to share ideas and conversation. Together, participant visit STEM teaching, learning, and business sites, and energize and mobilize themselves and the sites they visit. The STEM Learning Tours allow participants, and you, to be part of the effort to bring STEM education to every student in Washington.

Even at a basic level (putting a group on a bus and taking them from place to place), STEM Learning Tours offer a great, real time look at what STEM teaching and learning looks like in a region. With a bit more curation, preparation, and energy, a STEM Learning Tour can be an immersive experience that brings an organization long-term, highly-involved advocates for STEM education.

In 2016, Washington STEM ran two STEM Learning Tours to mobilize communities around STEM education. We engaged 80 people and created lasting relationships. We’ve put together our resources so you can create your own STEM Learning Tour and don’t have to re-invent the wheel. As you move forward in your planning process, please let us know what you discover so we can pass your learnings on to future Learning Tour creators!

#STEMontheroad

Teachers and parents at Bremerton’s West Hills STEM Academy talk STEM.
THE PLAYS

PLAY 1: LEARNING TOUR GOALS AND AGENDA

GOALS

Of course, the most important thing to decide when building your STEM Learning Tour is what you want to accomplish from the STEM Learning Tour.

Goalsetting sounds easy, but we realized pretty quickly that when you’re planning an event with many moving parts, many sites, and many people (all of whom have their own reasons for attending and participating), the goalposts can shift if you’re not paying attention.

We recommend choosing two to three driving issues that pertain to your organization or activity and crafting aligned, driving questions that will guide your thinking as you plan your sites and activities.

Our Washington STEM Learning Tour issues were:

• Access to STEM education
• The role of Common Core and Next Generation Science Standards (NGSS) in supporting STEM education
• STEM career opportunities and how students access them

Our Washington STEM Learning Tour agenda was developed with the goal of answering these driving questions:

• Who gets to participate in STEM in this community? Who may not? Do you see inequity?
• What’s the role of Common Core & NGSS in supporting STEM education in this community?
• What are the career opportunities in this community? What skills/experiences do students need to access them?

AGENDA

After we came up with our driving questions, we ran every proposed agenda item through this question set to see if we’d be able to answer the questions through our visit. This exercise made it easy for us to narrow a big list (there’s so many great examples of STEM teaching and learning in every community) down to a carefully curated list. Also, a side benefit to the process was that we came up with a lot of great sites to visit and people to talk to for future learning tours with different goals!

Here’s a short agenda/promo piece for our Puget Sound Learning tour, along with a detailed run of show.
Once we established our agenda, we worked with our stakeholders (in our case, regional leaders in our STEM community) to choose locations for site visits.

We examined several factors to pick the right spots to visit. We analyzed goals as well as logistics – how much time can we spend at each spot, how much does it take people to get physically on and off a bus, what questions do we want answered, what sites do we want to see on each tour, and where and what should people eat?

Keep in mind that while you certainly want to showcase your community work in a positive light, it’s also good to get a look at the challenges facing each community (i.e. dated equipment or not enough training available to get into STEM careers). Filling out an agenda in this way will create a balanced discussion.

**OUR LESSONS LEARNED:**

Everything takes far longer than you think it will when travelling from place to place and meeting interesting people and seeing interesting things. Less is more. Also, make time to talk to students – either on the bus itself or at the schools. As the end user, students often have great insights to their education and hearing from them will make a big difference!
PLAY 2: LOGISTICS AND CASH

LOGISTICS
Now it’s time to create your task list to get everything done. We found it most helpful to create a backwards planning calendar with a list of tasks.

Areas of logistics include securing tour sites, finalizing catering, figuring out accommodations, coming up with a detailed agenda of events, securing funding for the event, getting information out to bus attendees, and during and post event media planning.

<table>
<thead>
<tr>
<th>WASHINGTON STEM LEARNING TOURS</th>
<th>PLANNING CALENDAR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AUGUST</strong></td>
<td></td>
</tr>
<tr>
<td>• 8/19 Learning Tours are shared with networks</td>
<td></td>
</tr>
<tr>
<td>• Research/obtain housing location</td>
<td></td>
</tr>
<tr>
<td>• Confirm Network Availability</td>
<td></td>
</tr>
<tr>
<td><strong>SEPTEMBER</strong></td>
<td></td>
</tr>
<tr>
<td>• 9/5 Finalize Learning Tour Dates</td>
<td></td>
</tr>
<tr>
<td>• 9/14 Application Openings</td>
<td></td>
</tr>
<tr>
<td>• Developed MOU for Host Networks</td>
<td></td>
</tr>
<tr>
<td><strong>OCTOBER</strong></td>
<td></td>
</tr>
<tr>
<td>• 10/2 Applications Due</td>
<td></td>
</tr>
<tr>
<td>• 10/9 First round of applications reviewed</td>
<td></td>
</tr>
<tr>
<td>• 10/13 Yaksim Visit</td>
<td></td>
</tr>
<tr>
<td>• Finalize accommodations</td>
<td></td>
</tr>
<tr>
<td>• Send host networks Grant Agreements</td>
<td></td>
</tr>
<tr>
<td><strong>NOVEMBER</strong></td>
<td></td>
</tr>
<tr>
<td>• Participants are notified</td>
<td></td>
</tr>
<tr>
<td>• Inventory work session calls with host Networks</td>
<td></td>
</tr>
<tr>
<td>• Connect with Comm Lead Dept (Storytelling Intern)</td>
<td></td>
</tr>
<tr>
<td><strong>DECEMBER</strong></td>
<td></td>
</tr>
<tr>
<td>• 12/1 - STEM Summit</td>
<td></td>
</tr>
<tr>
<td>• 12/14 - Draft draft of Puget Sound tour Itinerary</td>
<td></td>
</tr>
<tr>
<td><strong>JANUARY</strong></td>
<td></td>
</tr>
<tr>
<td>• 1/5 Itinerary for Puget Sound tour finalized</td>
<td></td>
</tr>
<tr>
<td>• 1/8 Revised draft of statewide tour itinerary</td>
<td></td>
</tr>
<tr>
<td>• 1/20 Draft draft draft draft event survey</td>
<td></td>
</tr>
<tr>
<td>• Pre-departure meeting with Puget Sound Partners</td>
<td></td>
</tr>
<tr>
<td>• Census load Drafts, internal Drafts</td>
<td></td>
</tr>
<tr>
<td><strong>FEBRUARY</strong></td>
<td></td>
</tr>
<tr>
<td>• 2/5 Itinerary for statewide Tour Finalized</td>
<td></td>
</tr>
<tr>
<td>• 2/12 Pass event survey Finalized</td>
<td></td>
</tr>
<tr>
<td>• 2/19 - 3/15 - Puget Sound Tour</td>
<td></td>
</tr>
<tr>
<td>• Pre-departure meeting with Puget Sound Partners, Attendees</td>
<td></td>
</tr>
<tr>
<td><strong>MARCH</strong></td>
<td></td>
</tr>
<tr>
<td>• 3/16 - 4/15 - Statewide Learning Tour</td>
<td></td>
</tr>
</tbody>
</table>

Note: Office Closed 9/19

Download: [Sample Planning Calendar](#)
BUDGET

How much does a STEM Learning Tour cost? Well, do you want to get married at City Hall or the Four Seasons? Like many events, STEM Learning Tours can be created on a shoestring budget or stretched out with all the bells and whistles.

Major expense categories you may want to consider include:

- Getting to and from the bus
- Bus
- Meals/catering
- Lodging - if your Learning Tour is overnight
- Stipends – for students, substitute teacher expenses, clock hours
- Staff time
- Materials – first aid kits, logistics (tape, scissors, etc), snacks, folders, swag
- Event space rentals
- Additional event insurance

You can check out a sample budget template here.

We’ve found that many of these costs can be minimized by getting event space donated from schools you’ll be visiting, using Community & Technical Education catering companies, or getting sponsorships from local businesses. We didn’t charge for our STEM Learning Tours, but you might want to consider a minimal fee for attendance, depending on your goals.

OUR LESSONS LEARNED:

Know your audience. Some groups may be comfortable in shared housing retreat space while others are accustomed to their own hotel rooms. Also, have a backup plan in case catering or some other moving part falls through – we had to make an emergency grocery store fried chicken run after a taco truck mischeduled! And prepare to be flexible – every visit has something engaging and every visit will take longer than you anticipate.
PLAY 3: WHO IS ON THE BUS?

LOADING THE BUS

Once you’ve figured out your goal, purpose, and agenda, the next thing to do is fill your bus with participants. Our participant goals were:

- Bring together individuals across sectors, personal backgrounds, and areas of influence to create a mixed community of people who could share different perspectives and new ideas with each other
- Bring people on the bus who both wanted to be on the bus and wanted to do something with their learnings from the bus (this was especially important because a key outcome we were hoping for was to create a network of STEM Ambassadors across the state)

We developed a good idea of the breakdown of participants we wanted (for example, 30 percent educators, 30 percent legislators, 30 percent industry) so that when we found that we had less educators, we could amplify our recruitment and advertisement efforts to schools and teachers and so on.

We decided on a brief application process in order to create participation buy-in and ensure we’d have the ability to create a balanced bus experience. We created a simple survey monkey application and advertised through a curated series of channels—bringing our agenda/promo piece with us to in-person meetings, sending to our mailing list, and sending to lists through our regional STEM Networks.

We reviewed the applications internally and also reached out to regional leaders to get feedback on potential participants to see if they would be a good fit for the experience. We notified the participants by e-mail and asked them to reply within a week if they were interested in joining us on the bus.

We also created a wait list—a few people inevitably dropped out but we were able to quickly replace them. As a result of the careful application process out of almost 90 participants on each tour, we had only two people drop off the day of.
PREPARING THE PARTICIPANTS

Another key to a successful event is to set expectations with participants, to let them know that collectively we all build this experience. Because our participants were coming from across the state, we held a conference call with participants to acquaint them with the STEM Learning Tour’s goals and norms and to explain logistical expectations.

The bulk of the conversation, however, was people introducing themselves and sharing their expectations for the tour. We recommend this step as a great way to pre-set the energy and expectations for an immersive experience. We also sent out a list of participants to other participants before the tour and encouraged them to reach out to begin building community.

Download: Learning Tours - State Orientation

Welcome, introduction to the organization, the team and any partners.

Introduce participants to the concept of Learning Tours.

Review driving questions for the tour.

Driving Questions
- Who gets to participate in STEM in this community? Who may not? Do you see inequity?
- What’s the role of Common Core & NGSS in supporting STEM education in this community?
- What are the career opportunities in this community? What skills/experiences do students need to access them?
- What can I do - what’s my role?
Opening Exercise

a. We do this by being attentively engaged: speaking and listening

b. Like to ask each person on this call to introduce yourselves, where you currently live and what work you do, and tell us, without explanation, one significant hope/wish for this experience and one endearing essential thing about yourself. You can be shallow or deep in what you share, your decision.

c. To do this, facilitator says the name of the person and also the person who is “on deck,” so that person can prepare to unmute, etc., facilitator will say thank you at the end of each person. We will be doing this more or less randomly. Any questions?

d. We do it.

Walk through the basics of each timeslot and Project Pilgrimage interjects with what happens for the bus exercises.
OUR LESSONS LEARNED:

Depending on what sector you’re starting from, you may need to over recruit in some areas – for example, we had to reach out aggressively to the business sector or, in some cases, find other ways for them to be involved – like reviewing videos of STEM Learning Tour afterwards.

• Hotels - Roommate preference – both must request. Match based on smoker/non smoker or early riser/night owl
• Arrival & Departure Information
• Packing & Dress Code - Business casual side of casual. Each guest should plan to bring luggage that can be rolled easily or carried backpack-style.
• Travel Stipends

Closing comments.

Thank you so much for your focused time and engagement today. Great start to our very first learning tour. So excited.

Look for follow up email tomorrow.

Available for any questions or anything else you need.

Ask for questions.
PLAY 4: WHAT DO YOU DO WITH ALL THESE PEOPLE?

Facilitated discussions and exercises – during meals, on the bus, during reflective times before and after the site visits – is the “secret sauce” to a STEM Learning Tour. It’s key to get participants talking with each other to energize and motivate them to continue to engage once the Learning Tour is over. We worked with Project Pilgrimage to put together a series of thoughtful exercises and before and after debriefs. You may want to preselect some of these exercises for reflection and also assign two to three people on your planning team to be in charge of leading the exercises during the Tour.

You may also want to pass out a list of the overall tour driving questions to highlight what Learning Tour participants should look for when visiting different sites.

Relational Exercises

7. SHALLOW/DEEP

We believe that both of these are essential to true relationship-building. Beginning with shallow interactions builds a sense of community and trust, and upon that foundation people will be willing to delve deeper. Here’s a simple exercise we have used through shallow to get to the deep:

a. Have participants get into groups of three to four people. Randomization can be good but isn’t essential.

b. First have people take turns asking one another shallow questions — defined as questions that are light and allow for a short answer response. The respondent can only give a short response; she or he cannot elaborate their answer. Any one who asks a deeper question or attempts to explain an answer gets booted by others in the group.

c. Then have the group take turns asking each other deep questions — defined as more profound questions that merit a longer, deeper response. If the respondent does not wish to answer the question, they can pass and receive a new question. Otherwise, they are expected to provide a substantial, longer than surface response.

It would be best to first model this exercise to the participants.

Download: Sample Learning Tour Exercises

OUR LESSONS LEARNED:

Be flexible about what activities work for different groups – if something is falling flat don’t be afraid to pivot. That said, take risks – we’d never expect that a group of middle aged educators could be powerful spoken word poets until it happened! Additionally, remember there’s different levels of risk in different conversations, especially surrounding equity. Allow for time to decompres and provide multiple ways of engagement and participation.
PLAY 5: HOW DO I LET PEOPLE KNOW WHAT’S HAPPENING?

TRADITIONAL MEDIA

We had success pitching this story to local media channels. The story offers a good alternative to a traditional conference and creates some fun photographic and storyline opportunities. We put out a media advisory, generally to the media markets we work with, and made follow-up calls/emails to specific journalists. In some cases, we asked the communications people who worked with people on the bus to also make calls or make their own pitches to media. Here’s a copy of our statewide media advisory.

Cheney High School students present their STEM projects.

SOCIAL MEDIA

Everyone on the bus has the power to tell their own story about the STEM Learning Tour and hashtags are a great way to collect these stories. We used #stemontheroad and had participation from dozens of people both on and off the bus involved with the STEM Learning Tours. At the end of the trip we compiled these stories into a Storify - a free online tool that gathers and curates social media on different topics. Here’s the statewide and regional Storify links.

STORYTELLING

We also encouraged participants to tell their story about the experience of the Learning Tour through blog posts and to groups in their community. We held several storytelling workshops designed to engage participants and encourage them to share stories about their learnings with their communities. Here’s the link to our storytelling toolkit. This is a comprehensive collection of documents and resources around the STEM learning tours.

- Three Standards of Mathematical Practice as Exemplified on the Washington STEM Learning Tour
- Equity & STEM: An Interview with Dr. Gregory King, Tukwila School District
- The Washington STEM Learning Tours: Perspective and Planning from Inside the Yakima Valley
VIDEOS

We spent a significant portion of our budget on videographers coming with us on the Tours to record our experiences. The result was three high-quality videos sharing the lessons we learned on our tours. We’ve been able to distribute these videos widely through our channels and the participants’ channels.

OUR LESSONS LEARNED:

The most powerful deliveries come from people on the bus. Ask them to use their voices to share their own experiences both on the bus and after the tour and make it easy for them by using hashtags and moments on the bus to capture stories.
ONCE YOU GET OFF THE BUS

EVALUATION

After the STEM Learning Tour we immediately sent out an evaluation to receive feedback. We also touched base with the organizers of the tour to gauge their participation.

NEXT STEPS

A key part of the STEM Learning Tours involved encouraging follow-up work in STEM education with our newly minted STEM Ambassadors.

We sent out a menu of options they could take part in, and we contacted them at regular intervals to collect stories about the work they’d done in their communities. To our excitement – it worked! People gave presentations about their time on the Learning Tour, reached out to colleague organizations to talk about STEM education, and lobbied funders to include STEM education in their funding priorities.
Other ways of engaging your learning tour participants may be:

• Following up by inviting them to take part in your regional meetings
• Engaging them in a workgroup or subcommittee to tackle some of the issues you encountered on your journey
• Engaging them in advocacy work with local and state legislators
• Other?

We’re keeping an ongoing document with the results and regularly reach out to our STEM Ambassadors when we have events in their regions.
ENJOY THE RIDE!