Day One: Get-To-Know-You and Get-To-Know-Design2Learn	
9:00-9:50 JM	**Breakfast, Zombie Apocalypse Icebreaker (whole group), Intros** ● Breakfast is out and available as participants arrive ● Brief introductions (name, school/afterschool, something you hope for this training) ● Zombie Apocalypse Icebreaker (dowel structure-building activity) within educator teams
9:50-10:40 EB	**Program Overview** ● Photo slide show - D2L Year 1 ● Visualization exercise: *Design2Learn's mission is to determine whether **extra time** + **collaboration between classroom and afterschool** + **design-based learning** improves student engagement and achievement in STEM subjects. Imagine that Design2Learn is successful beyond our wildest dreams -- kids are excited, interested, engaged, can't get enough. What do you hear? See? Smell? Do?* This visualization should be your touch-point for the year. If your program doesn't feel like this, time to problem-solve, re-calibrate, ask for help so that it does. ● Buddy conversations: returning sites matched with new sites for guided informal conversation about the following topics: ○ Recruiting and on-boarding students ■ "Kick off activities", marketing ■ Including parents and school admin in the conversation ○ Scheduling ■ How to schedule with other competing activities ■ Weekday recommendations ■ 2 sessions vs. 1 longer session ○ Activity hours ■ Lesson plans for you to use, but there will be flexibility/requirement to develop/flesh out your own ○ Co-planning hours ■ When to schedule it and front-loading hours ■ Creative solutions (google docs, teleconference, "front-loading" hours) ● Questions?
10:40-10:55	**Overview of Day's Agenda, Overall Goals for Institute**

	● Agenda for the day: goal for today is to get to know and bond with your educator team, as well as gain a greater understanding of Design2Learn. It's also to introduce you to some fun, exciting, hands-on activities that could be good to use in the first few weeks of school as students are selecting activities/signing up for Design2Learn. ● Overarching goals for the week will be reviewed: comfort with content, building up facilitation skills, experience participating in and leading design challenges, opportunity to work with and tweak curricular resources for the program. ● Lastly, teams will record what they think "DESIGN" is, using the "First Word Last Word" strategy (FACTs book pg. 88).
10:55-11:15 JM	**Save Fred! (Small Groups)** Teams will work together to save Fred. This activity will specifically highlight 21st Century skills such as collaboration, perseverance, and critical thinking.
11:15-11:20 EB	**Dimensions of Success Introduction** ● Dimensions of Success Observation tool introduction ● 12 areas that high-quality STEM activities include ● Today's focus will be on: Participation, Relationships, and/or Youth Voice
11:20-12:00 EB (with Chez)	**STEM Identity Notebooks** ● Discussion of STEM identity ● Distribute blank notebooks to use for the Summer Institute, as well as a variety of collage materials ● Educators decorate their notebooks and share out some of the aspects of their STEM identity
12:00-12:30 Evaluation team	**Evaluation Orientation** ● Meet the research team ● Overview of evaluation activities throughout the year ● Review evaluation tools (survey, etc.) ● Q&A
12:30-1:00	**Lunch (Site Directors join)**
1:00-2:30 EB - JM identify room	**Site Director Session** ● Design2Learn overview and "need to knows" (D2L staff) ● Tips, tricks, and recommendations from returning Site Directors (Site Directors) ○ Recruiting and on-boarding students

	○ Student surveys ○ Activity hours ○ Co-planning hours ○ Observation site visits ○ Monthly site visits
1:00-1:10 JM	**Facilitation Skills Alignment** ● Gallery walk-style: Reflect on how the morning's activities have supported Participation, Relationships, and/or Youth Voice (definitions will be on poster paper posted on the wall). Write strategies on post-it notes and stick them on poster. These will be collected throughout the week and shared back with you to use next year.
1:10-2:00 JM	**Airzooka Design Challenge** Participants will be introduced to one of the states of matter (gas) through a fun voice changing demonstration (helium and sulfur hexafluoride). They will then harness this phase of matter to serve as ammunition for their Airzooka blasters. Teams will design the obstacle course and game that the Airzooka's will be used with. They can also design their own mini Airzookas! A fog machine will make the gas more visible for participants.
2:00-2:45 JM	**7 Norms of Collaboration** In their notebooks, educators will rate themselves and their team's collaborative culture so far. Participants will summarize individual/group areas of strengths and areas in need of improvement. Tips for improving collaboration and goal-setting will be discussed.
2:45-3:00 JM	**Facilitation Skills Alignment** ● Gallery walk-style: Reflect on how the morning's activities have supported Participation, Relationships, and/or Youth Voice (definitions will be on poster paper posted on the wall). Write strategies on post-it notes and stick them on poster. These will be collected throughout the week and shared back with you to use next year.

Day Two: Geology	
9:00-10:00	**Breakfast, Mineral Madness Stations Warm-up**

JM	• Breakfast is out and available as participants arrive • Participants will sharpen observation skills while learning about minerals, how they are different than rocks, and how they are classified through their various properties. Sort mineral samples by color and luster, and perform a streak test to identify minerals. • Participants will make connections between the previous strong shapes/structures activity and real rock/mineral structures.
10:00-10:45 JM	**Strong Shapes Warm-up** • Participants are prompted to make 2D models of squares and triangles using two methods (popsicle sticks & brass fasteners as well as straws & pipe-cleaners • Participants test their shapes for strength and stability • Debrief on strongest shapes and refer back to the dowel challenge from yesterday (show photos with triangles from previous designs) •
10:45-11:30 JM	**Strong Structures Design Challenge** • Participants build 3D models of strong shapes using the straw & pipe-cleaner method • Participants will test their designs using wood blocks; the more weight that is held, the better the design • Participants can modify and retest
11:30-11:45 JM	**Deconstructing NYSCI's Philosophy of Design-Make-Play** • Participants will reflect on the engineering design process they experienced in "Strong Structures" using a reflective tool. • Participants will also learn more about NYSCI's DMP learning strategy.
11:45-12:00 JM	**Next Generation of Science Standards 101** • Participants will be introduced to NGSS. They will learn what it is, when it came out, why it exists, and how it intersects with NYC standards. We will focus on three engineering practices and in their journals they will reflect on these three practices using Strong Structures as an example.
12:00-12:30	**Lunch**
12:30-1:15 JM	**Building Content (& Dessert!): Edible Earth** • Participants will build an Earth layer model and explain its components.

	• They will model and explain the plate tectonic movements with Oreo cookies or an alternative (Graham Cracker/ Cool Whip) • They will explain how the biosphere (living components of our planet) is affected by the geosphere (land: core, mantle, & crust of the Earth)
1:15-2:15 JM	**Earthquake Design Challenge** • Participants will build their own DIY shake table and learn about NYSCI's version as well as they review plate tectonics, p & s waves, etc. • Participants will design buildings, bridges, or structures that can withstand a simulated earthquake and/or the weight of Godzilla!
2:15-2:30 JM	**Scope & Sequence Standards 101** • Participants will be introduced to the new Scope & Sequence standards (what it is, when it came out, why it exists, what does it look like, etc.). • We will briefly dissect the format of the document and teams will practice navigating through the 7th grade units.
2:30-2:45 JM	**Scope & Sequence Standards Alignment** • In a Think-Pair-Share, participants will list the activities of the day and align them with the major understandings of the 7th grade Scope & Sequence; What unit would it fit nicely in? Major understandings?

2:45-3:00 EB/JM	**Facilitation Skills Alignment** • Gallery walk-style: Reflect on how today's activities have supported STEM content Learning, Purposeful Activities, and Engagement with STEM (definitions will be on poster paper posted on the wall). Write strategies on post-it notes and stick them on poster. These will be collected throughout the week and shared back with you to use next year.

Day Three: Matter and Energy	
9:00-10:00	**Breakfast, Mixology Station Warm-up**

JM	• Breakfast is out and available as participants arrive • Participants explore various chemistry stations such as Homemade Ice/Heat pads, Glow Test Tubes, Butter Making, and Powerful Polymers. By concocting a variety of chemicals they will learn about substances, their characteristics, mixtures/solutions, physical/chemical reactions/changes, interactions, even heat energy (exo/endo thermic). • End with a literal bang by "exploding" Elephant Toothpaste together!
10:00-11:00 JM	**Chem Car Design Challenge!** • Participants will learn about chemical changes and reactions. • They will design a car that will be powered by baking soda and vinegar!
11:00-12:00 JM/EB (compare)	**Oobleckian Science Exploration** • Participants will conduct a series of tests to determine if this mysterious "oobleck" is a solid, liquid, or gas. • They will reflect on a student centered approach vs. a teacher driven teaching approach, using this Flubber video: • https://www.youtube.com/watch?v=V8SIrX-yi4U
12:00-12:30 Explainer	**Chemistry Floor Demo** • Participants will observe NYSCI's Chem demo and reflect on the Explainer's facilitation and inquiry styles with the audience.
12:30-1:00	**Lunch**
1:00- 1:45 JM	**Building Content (& Dessert!): Ice Cream Making!** • Participants will review states of matter and phase changes as they make their own homemade ice cream of their choice! • Can you design your own shaking mechanism/tool?!
1:45-2:30 JM	**Slime Design Challenge** • Participants will become toy engineers as they investigate a slime product gone wrong with a list of bad reviews. They will design and create better recipes for a new and improved product that will be sure to sell!
2:30-2:45 JM	**Scope & Sequence Standards Alignment** • In a Think-Pair-Share, participants will list the activities of the day and align them with the major understandings of the 7th grade Scope & Sequence; What unit would it fit nicely in? Major understandings?

2:45-3:00 JM	**Facilitation Skills Alignment** ● Gallery walk-style: Reflect on how today's activities have supported Reflection, Inquiry, and Relevance (definitions will be on poster paper posted on the wall). Write strategies on post-it notes and stick them on poster. These will be collected throughout the week and shared back with you to use next year.
3:00-5:00	**Design2Learn Happy Hour** Provide snacks and drinks and encourage educators to stay and socialize after the workshop to get to know each other and network across sites

Day Four: Inquiry, Facilitation, and Co-planning	
9:00-9:45 JM	**Breakfast & Zoom Warm Up**
9:45-10:00 EB	**Next Generation Science Standards 102** ● Participants will review the NGSS Practices using the "what counts as inquiry?" handout from ExpandED. ● Participants will pick their favorite design challenge from Day 1, 2, or 3. ● Participants will look for which of the NGSS practices the design challenge "covers." Even though it's listed on the lesson plan, they have to make the case to their group mates that the lesson adequately covers this standard. ● Bonus points: can you identify any other NGSS practices touched on by this lesson?
10:00-10:45 EB/JM	**What is Inquiry? Scavenger Hunt** ● Educator teams will receive a Scavenger Hunt handout; their job is to identify examples of different inquiry practices out and about in the museum. They must take a picture for each inquiry practice -- bonus points if they catch an Explainer in action! (20 minutes to hunt) ● Share out of inquiry practices in action (20 minutes share out)
10:45-11:45 EB	**Co-Teaching Models** ● Teaching team reflection questions (25 mins) ○ When did you know you wanted to be a teacher or work with kids? ○ What's your favorite part about working with kids?

	○ How would you describe your teaching style? ○ Where are you "at" with teaching science right now? ○ What do you like to do (your hobbies, passions)? Is there any way these could help build the program? ○ What's something new you want to try in your work as a school-day/afterschool teacher? ● Develop your team's reflection rubric: How will we know the co-teaching relationship is working? (20 mins) ● Some areas to consider… ○ Purchasing/finding materials ○ Setting up the classroom ○ Developing lesson materials (if necessary) ○ Taking the lead at different times during the lesson ○ Interacting with students in a productive way ○ Coming up with facilitation ideas ○ Cleaning up ● Review of co-teaching models (7 mins) ● Educator team discussion of co-teaching models (7 mins) *http://www.tolerance.org/sites/default/files/general/Seamless%20Teaching%20Handout.pdf*
11:45-12:00 EB	**Logging Co-Planning Hours** ● What is the purpose of co-planning? ● Distribute co-planning checklist ● Introduce online monthly logs ● Logs should be already shared with educator teams ● Reiterate yearly time expectation (36 hours) ● Explain that participants will be provided time to start co-planning today and tomorrow, and those hours should be logged here and "count" for the year
12:00-12:30	**Lunch**
12:30 - 1:30	**Co-planning session** ● Participants will choose one of the provided lesson plans for Year 2. They'll have an hour to co-plan (as they will during the school year). Questions to consider: Which element of Dimensions of Success will we focus on? What part of the engineering design process is this focused on? How is this lesson facilitated? Which co-teaching model will we use? Do we want to make any tweaks or adjustments to the

	lesson? What materials are needed?
1:30-2:15	**Facilitation Practice and Feedback** ● Participants will facilitate the lesson they chose in the previous section for another group (30 mins). ● The group being "taught" will provide feedback on the Dimensions of Success area selected by the team during the co-planning session (15 mins).
2:15-3:00	**Facilitation Practice and Feedback** ● The teams switch. ● Participants will facilitate the lesson they chose in the previous section for another group (30 mins). ● The group being "taught" will provide feedback on the Dimensions of Success area selected by the team during the co-planning session (15 mins).

Day Five: Co-Planning	
9:00-10:00	**Breakfast & Co-Planning** ● Participants will choose one of the provided lesson plans for Year 2. They'll have an hour to co-plan (as they will during the school year). Questions to consider: Which element of Dimensions of Success will we focus on? What part of the engineering design process is this focused on? How is this lesson facilitated? Which co-teaching model will we use? Do we want to make any tweaks or adjustments to the lesson? What materials are needed? ● Teams log their co-planning hour in their on-line log.
10:00-10:15 EB/JM	**School Support Visits and Observational Tools from Jasmine and Emma** Jasmine and Emma show participants the tools they'll be using to support schools on site visits.
10:15-11:15	**Facilitation Practice and Feedback** ● Participants will facilitate the lesson they chose in the previous section for another group (40 mins). ● The group being "taught" will provide feedback on the Dimensions of Success area selected by the team during the co-planning session (using Emma's Observation Tool) and the Engineering Design Process (using Jasmine's Observation Tool) (20 mins)

11:15-12:15	**Facilitation Practice and Feedback** ● The teams switch. ● Participants will facilitate the lesson they chose in the previous section for another group (40 mins). ● The group being "taught" will provide feedback on the Dimensions of Success area selected by the team during the co-planning session (using Emma's Observation Tool) and the Engineering Design Process (using Jasmine's Observation Tool) (20 mins)
12:15-12:45	**Lunch**
12:45 - 2:00	**Open Co-Planning Hour** ● Teams have open co-planning time to get started working on planning for Year 2. Suggested topics for co-planning: 1) Student recruitment planning 2) Start-Up activities for the first weeks of school 3) Curricular mapping for the first semester: which activities will you do in the after-school and when? 4) Continue working on your co-teaching ideas 5) Reflection checklist from lesson facilitation 6) Review 7 norms of collaboration goals from Day 1 -- what progress have you made?
2:00-2:30 JM/EB	**Whole Group Debrief & Takeaways** Gallery walk of all the divergent solutions pertaining to the engineering design challenge lessons. Participants reflect and share out some of the great ideas they received from colleagues and how they learned from each other.
2:30-3:00 JM/EB	**Next Steps, Questions, Membership Forms, and Evaluations** Upcoming NYSCI workshop Bulletin will be shared and reviewed as well as any final logistics. Final questions will be addressed. Participants will fill out permanent and/or temporary membership forms.