BRAIN POWER:
A DAY OF ENGAGING ADVANCED LEARNERS

Sunday, October 30, 2016
University of Washington
ARCHITECTURE ADVENTURES
9:00am-9:55am / Room 206
Using just candy and toothpicks, how tall can you make a free-standing tower? What shapes are the strongest and why? As students get to know one another and the day’s facilitators, they will plan and build their towers; discuss their designs, challenges, and successes; work with others; and consider how they might use everyday items to explore the world around them.

MATH IS ALL AROUND YOU
10:00am-10:55am / Room 206
“You know, you can think of almost everything as a math problem.” This quote from the book Math Curse begins the workshop as students look at the math they encounter throughout their day. Once students realize how math can help us better understand our world, they turn to answering these problems. Participants will use different strategies to figure out the next number in a series, determine which friend is the best at video games, decide who ate more pizza, and even decode a secret message as they realize there are multiple paths to starting and solving a mathematical problem.

FOOD FOR THOUGHT
11:00am-11:55am / Room 206
There are many living and non-living parts around us. All of those parts combine in complex ways to form the different ecosystems that make up our planet. In this session, students will identify living and non-living components, explore the relationships between individual organisms and their ecosystem, and discover the process non-living parts play in sustaining the environment.

WHAT IS IT AND WHERE SHOULD IT GO?
PART 1
1:00pm-1:55pm / Room 206
Before a scientist discovers a cure for cancer or identifies a new frog in the rainforest, she or he must first master the basic skills that underlie strong science methods and content expertise. Science process skills, a set of broadly transferable abilities, help explain the world and allow scientists to do science. In this double session, students explore observation and classification, two basic science process skills necessary for a strong experiment, as well as everyday life. Using shoes, literary characters, and finally their own fingerprints, students learn how and why we organize objects and events.

WHAT IS IT AND WHERE SHOULD IT GO?
PART 2
2:00pm-2:55pm / Room 206
A continuation from Part 1. See above.
SUPPORTING THE SPACE NEEDLE AND BEYOND
9:00am-9:55am / Room 251
How can buildings such as the Space Needle, Empire State Building, and Burj Kalifa stand with seemingly few visible supports? What factors do engineers need to consider when building a skyscraper that can sustain extreme weather and natural disasters? In this session, students learn the importance of design and specifically how supports affect stability. Through discussion and hands-on activities students explore the intricacies of architecture.

TRASH TALK: THE SURPRISING THINGS THAT RUBBISH CAN SAY ABOUT PEOPLE & CULTURE
10:00am-10:55am / Room 251
Archaeology, the study of ancient and recent human past, helps us to understand where and when people lived on Earth. Even more, it helps us to gain insight in HOW they have lived. More than many other sources of evidence, ancient trash bins and garbage heaps have provided incredible discoveries about ancient and more recent cultures. Join us for “Trash Talk” to learn the methods of “garbology” and challenge yourself to extract as much information as you can about plain old rubbish!

EXPLORING IDEAS: ARE KIDS REALLY FREE?
11:00am-11:55am / Room 251
Kids are always being told what they can and can't do. They're usually told how to think, too! If kids are told what to do and how to think, then do they have any freedom at all? In this workshop we're going to explore our ideas and questions about freedom. Everyone will have a chance to share their perspective, refine their ideas, and exercise their freedom of thought using the tools of philosophy!

THIS IS MY STORY
1:00pm-1:55pm / Room 251
Join master storyteller Peter Donaldson in exploring how stories are structured. We will read aloud and act out several classic archetypal stories to analyze “what makes a really good story”? With a clear understanding of story structure, we will challenge our own brain power individually and as a group to “see” the story we are living. Who is actually writing the story of me?

A POLAR BEAR, PELICAN AND CLOWNFISH WALK ONTO A SANDBAR…
WHAT DO THEY HAVE IN COMMON?
2:00pm-2:55pm / Room 251
While these biotic (living) and abiotic (non-living) factors seem to have little in common, in this session we will explore the complex relationships between a variety of living and non-living factors in many ecological environments. Students will examine why specific factors are in some habitats and not in others, and discuss what happens if a habitat loses one of its key factors.
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**6th-8th Grades**

**PHILOSOPHY AND CRITICAL THOUGHT: FREEDOM AND RESPONSIBILITY**

9:00am-9:55am / Room 231

Together we can grapple with some of the toughest and most exhilarating questions imaginable. For example, Freedom seems to be important to everyone, but we don't always have a clear idea of what it means. Using the tools of philosophy, including questions, ideas, and critical thought, we're going to flesh out our own sophisticated views about this confounding concept.

**PROOF OF IMAGINATION**

10:00am-10:55am / Room 231

Join facilitator Peter Donaldson in chasing down the power of your own imagination. What is the root word of imagination? Do you think mostly in images? Can you “see” your own thinking? If it is within our power to perceive our brain imagining, then how can we use this awareness to improve our problem solving skills at home, at school, and in the community to make a better world?

**TAKING A CHANCE: GAME SHOW MATH**

11:00am-11:55am / Room 231

Ever wonder what the odds of winning big on a game show really are? In this session, students explore just this. From the deceptively tricky Monty Hall problem from the classic show Let’s Make a Deal to seeing where chips fall in the game PLINKO from the Price is Right, students see how chance and a good bit of luck come into play in some game shows. Should you stick or switch? Where is the best place to drop a chip? Students walk away with insight into how probability can help develop a winning strategy in game shows and beyond.

**ZOMBIES ATTACK!: A MODEL UN SIMULATION**

1:00pm-1:55pm / Room 231

The United Nations brings together the international community to solve the World’s most important and challenging problems – but it’s never had to deal with hordes of flesh-eating ghouls! Join us for a fun session exploring the UN as we work to solve the impending zombie crisis. You’ll become part of a country delegation and will work with others to make compromises and coalitions as we forestall the apocalypse. Don’t forget to bring your braaains!

**STUDENT PANEL: LESSONS AND EXPERIENCES FROM PEERS**

2:00pm-2:55pm / Room 241

What does it mean to show academic talent? What are some of the biggest challenges heading into high school or college? Is perfectionism innate or learned, and what are some strategies to overcome it? In this session, students ask and hear from students who have recently been in their positions. Moderated by experienced UW and CTY staff, students participate in a large group discussion in which they can learn tips to navigate advanced academics.
INTRODUCTION· CHALLENGING ADVANCED LEARNERS: HOW DO WE DO THIS?
9:00am-9:55am / Room 389
All children need to be challenged to grow. In this presentation, participants will be introduced to three strategies for challenging advanced learners in the classroom: choice, inquiry, and representation. These strategies foster creativity, critical thinking, and student autonomy. To create challenging learning environments teachers must have the skills, belief systems, and desire to make their classrooms inviting safe zones for exploration, collaboration, and high achievement in all domains. The presenter will engage the audience in activities and discussion about ways to support these creative learning environments that foster talent development.

PHILOSOPHY AND CRITICAL THOUGHT: LIFE AND LIBERTY
10:00am-10:55am / Room 271
The concept of Freedom is central to our identity as a nation, but do we really have a clear idea of what it means to be free? Our thoughts on this powerful idea have the potential to alter how we look at our relationships, our justice system, and our nation. Using the tools of philosophy, including questions, ideas, and critical thought, we're going to flesh out our own sophisticated views about this confounding concept.

BRAAAAINS POWER!: A MODEL UN SIMULATION
11:00am-11:55am / Room 271
Delegations to the United Nations expect to debate important issues: economics, development, security - but what will happen when news breaks of a zombie virus in the Korean Peninsula? Join us as we put global affairs into action: you’ll take on the role of a country delegate, aiming to achieve the goals of your own state while keeping the shambling hordes at bay. You’ll practice complex problem solving, critical thinking, and collaboration skills and learn about world politics as we work to stop the outbreak before pandemic crisis results. Don’t forget to bring your braaains!

FLOATING DISKS: INVESTIGATING ENZYME ACTION
1:00pm-1:55pm / Room 271
Healthy cells are happy cells! Cell chemistry relies upon hundreds to thousands of ubiquitous and humble enzymes. Processes such as the chemical digestion of food, manufacturing new cell parts, and eliminating harmful chemicals are all performed by enzymes. Join us for “Floating Disks” to investigate how enzyme type, concentration, and temperature affect the behavior of these cellular dynamos!

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WHEN SMART KIDS STRUGGLE: STRATEGIES FOR ADDRESSING SOCIAL AND ACADEMIC DIFFICULTIES
10:00am-10:55am / Room 389
Children who are gifted are not immune to social and academic difficulties. If a child can’t seem to stay organized, has trouble connecting with peers, struggles with time restraints in school, or just can’t seem to focus, there are strategies that can help. This session will examine some of these strategies and provide resources for exploring more. Whether a child has a diagnosed disability that leads to struggles or just has a relative weakness compared to his or her strengths, this session will discuss proven approaches for helping to ensure struggles don’t overpower a child’s gifts.

LEARNING AND TEACHING IN THE YEAR 2050
11:00am-11:55am / Room 389
Join facilitator Peter Donaldson in a lively thought experiment on what teaching and learning will look like in the year 2050. What drivers and creative disruptions might impact our current mental model of “school”? Will the schedule, the facilities, and the curriculum be the same in 2050 as it is in 2016? Given this futuristic picture, what do we do now in interdependent roles as learners, teachers, and parents?

BARRIERS TO TALENTED GIRLS PURSUING STEM: HOW CAN WE HELP THEM OVERCOME THEM?
1:00pm-1:55pm / Room 389
Girls and women continue to be underrepresented in many STEM initiatives and career fields, particularly in engineering and the physical sciences. This session will explore the personal and societal factors that appear to limit them from achieving their full potential in these fields at various developmental stages, and will discuss steps that parents and educators might take to help their girls overcome any barriers that exist. One focus will be on the many out-of-school clubs, classes, and other supplemental opportunities that support STEM learning in the company of like-minded peers.

PARENT PANEL: PARENTING ADVANCED LEARNERS IN ACCELERATED PROGRAMS
2:00pm-2:55pm / Room 389
Join us for a conversation about what it means to parent young advanced learners in accelerated learning programs. Our panel, parents of students in either the UW Academy or Early Entrance Program, will talk about how they addressed the needs of their children, the impact of accelerated learning not only on their children but also on siblings and family dynamics, and how accelerated learning has “accelerated” other aspects of their children’s growth. Questions from the audience are encouraged.
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**DEVELOPING MATHEMATICAL TALENT**

10:00am-10:55am / Room 241

Parents’ attitudes toward mathematics and stereotypical beliefs about their child’s abilities are among the factors that may hinder the development of mathematical talent in children. Parents are the key to recognizing and promoting mathematical talent. This session will focus on the ways to nurture children’s mathematical talent. We will then discuss what parents need to know about encouraging their child in mathematics and the ways they can explore mathematics at home.

**SUPPORTING YOUR CHILD’S DECISIONS**

11:00am-11:55am / Room 241

We all want our children to grow up to be healthy adults who can make good choices for themselves, but how does that happen? How involved are you when your child makes new friends, wants to spend the night away from home, or asks to stop music lessons? We will talk about how you can support your children at any age as they learn to make decisions about the world around them while avoiding the dichotomy of it’s either up to you or up to them. We’ll look at real world examples and you’ll leave with practices to take home to try out right away.

**MORE THAN “A” IN ENGLISH: THE IMPORTANCE OF WRITING**

1:00pm-1:55pm / Room 241

Students often approach writing with trepidation, if not dread. Yet learning to articulate one’s thoughts in writing is essential to academic and professional success, regardless of discipline or profession. Whether writing essays for college applications, requesting funding for a research grant, or even responding tactfully to a difficult e-mail, those who can write with clarity and precision have a distinct advantage. This session explores common challenges to good writing as well as provides strategies to address those obstacles that support and encourage emerging writers.

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