SATURDAY ENRICHMENT PROGRAM: FALL 2017

HOW TO BE AN INVENTOR

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Course Description

In this program, students will take an exciting journey to becoming an inventor, starting with the earliest stage of coming up with novel ideas, to prototyping and finalizing their inventions.

It is projected that by 2030, one in three traditional jobs will be lost to automation. Jobs that will do well will rely on the unique human capability of creative thinking - the ability to think of *novel* ideas. Unfortunately, creativity scores among children in the US have been declining steadily since the 1990s. Our mission is to help students become more innovative thinkers.

In this course, children will experience Creativity and Design Thinking to make their own invention, in a highly collaborative setting. Students learn different creativity techniques through fun exercises and apply them in their project. They also learn to evaluate ideas and give constructive feedback. Finally, students can also submit their ideas for a national level invention competition!

Essential Questions

- What is Creativity?
- How our brain works as an associative engine
- How do we create new ideas?
- What is design thinking?
- What are patents and how are they useful?

Learning Outcomes

What students will know:

- The different components of creativity

What students will understand:

- How their brain works as an associative engine and how different cognitive techniques help in thinking creatively.
- How design thinking and taking different perspectives help in making better products.

What students will be able to do:

- Apply creative thinking techniques to come up with novel ideas and evaluate them from an innovation perspective
- Apply design thinking principles to improve their idea.

Instructional Strategies

Most of the learning takes place through Play (group games, improv warm-ups) and Discussions (guided by Questioning). A small part of each class uses Direct instruction.

Student Assessment

- Oral Questioning
- Portfolio Check
- Self Assessment
- Group Assessment

Resources and Materials

*All material will be provided by the instructor

Tentative Course Schedule

Date	Topic(s)	In-Class Activities
Week 1	Who is an Inventor and what is Creativity?	• Get to know each other • 10-circles (Put to Another Use Skill) • Group Tabulation to assess originality
Week 2	How our brains work as an associative engine	• Free association game • Create a group association map • Discussion on main topic
Week 3	MindMapping and Brainstorming	• Group example of MindMapping • Individual MindMapping worksheet
Week 4	Associative Thinking	• Random association group game (Wacky Inventions) • Associative Thinking worksheet
Week 5	Evaluating Ideas	• Overview of different metrics • Individual self-evaluations • Diagramming worksheet
Week 6	Design Thinking	• Discussion on empathy and design thinking • Design Thinking worksheet
Week 7	Prototyping	• Individual activity to build prototypes
Week 8	Invention Application & Presenting Idea	• Fill out invention application • Group presentations