

Cold Lake High School Workshop for Osum Oil Sands

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What is the best way to bring design thinking to an entire high school?

How might you inspire 100 high school science students?

Osum Oil Sands is a young oil firm in Calgary with a developing interest in Cold Lake, a community of about 14,000 in the Lakeland region of eastern Alberta, Canada. Looking to both inspire a new generation of scientists and to strengthen community ties, Osum sponsored a two-day event at Cold Lake's impressive new high school campus, in which they had also funded the construction of the science labs.

In a conservative industry, Osum has distinguished itself as an innovator by pursuing new methods for oil extraction that use less energy. This commitment to innovation and design thinking led to the creation of the **Osum Science of Innovation and Sport Challenge**, held October 7-8, 2009, in the indoor Energy Center attached to the high school.

To begin the day, we twice gave a 60-minute presentation titled **THiNK Like a Designer**, first to 300 9th and 10th graders, then to 380 11th and 12th graders. In these talks, we discussed how design thinkers approach problem-solving, ran a creative thinking exercise, and showed a short video on the design process. The talk ended with **THiNK**, an acronym for our keys to thinking like a designer: *Teamwork, Heart, Iteration, Needs, Knowledge*. (While we talked, the other group listened in a nearby hall as world champion speed skater Catriona Le May-Doan told her inspiring story of overcoming failure and winning gold medals in two consecutive Olympic games.)

After lunch, the main event began. The next day and a half would be devoted to a design workshop with the 100-plus students of the 11th and 12th grade science classes. The theatre seating gave way to 15 tables lining the walls, and we dived into our design challenge: **Create a New Winter Sport**.

We led the teams through **brainstorming** a list of winter activities, and then explained how designers use **observations and interviews** to learn from experts and extreme users. Osum had arranged for 15 members of the local Junior A and Junior B league hockey teams the Bonnyville Pontiacs and the Cold Lake Ice to visit. Each table interviewed a couple players, asking questions about their skills and motivations as full-time athletes. Next came **synthesis** and an exercise in "forced combinations," as the teams generated dozens of ideas for a new sport, and the day ended with **evaluate**, as the students worked on building consensus and went home to think about their new winter sport overnight.

Day two began with the 20-minute **Spaghetti Tower Challenge**, a classic exercise that promotes teamwork, creative thinking, rapid prototyping, and using your hands. Then, back into the main event, as the students reviewed their choice from the day before, and then sat down to **refine** their game, selecting rules, venue, uniforms, equipment -- everything necessary to take a simple idea and give it depth.

Next the teams ran through **prototyping for learning**, using quick and dirty modeling to test which ideas worked, and which didn't. Then, **prototyping for storytelling** followed. Now the teams worked on giving presentations, using techniques like props, stories, and play-acting. Finally, the last hour of the day, 13 teams gave their two-minute **presentations**, showing off an amazing variety of new sports, including a combination of lacrosse and paintball and a complex chase game that used an entire forest for its playing field.

When we finished, we had a lot of tired but exhilarated students and adults, and the kids were extremely proud of their accomplishments. Many of the teachers felt this may have served as a life-changing event, and we were pleased to have been given the opportunity to enrich the lives of a terrific group of kids.