Technical Package for Schools 2019

(March edit)

Location, Facility, and Date

Thursday, May 23, 2019
Sturgeon Composite High School
24400 AB-37, Sturgeon County, AB T8T 0E9

Events will take place in the South Gymnasium. There will be a additional activities to participate during the times students are not competing. Active supervision is required by school teams if your students participate in these areas.

a) Learning Commons MakerSpace/Board Games
b) BreakOut Room
c) North Gymnasium - Activities
d) CTS Courses - Demo
e) Outside - Archery

Inquiries

If you have any questions or inquiries about the event, please contact Jonathan Konrad at jonathan.konrad@sturgeon.ab.ca or 780 939-4341 ext. 1276.

Registration

Schools can enter one team per level per event. Teams consist of 2-3 students. At least one teacher must accompany each school team. Schools may want to consider parent volunteers to help supervise.

Registration for STEAM Games 2019 will open in early April. Schools will register students teams through the Sturgeon STEAM Games Registration Form website (SPSD Learning & Innovation).

Team packages will be provided upon arrival at Sturgeon Composite High School. There will be one package per school.

Entry Deadline and Process

- Final entries must be received by **Thursday, May 16th at 4:00pm**.
- All teams must be entered through the Sturgeon STEAM Games Registration Form site.

Eligibility

- All Sturgeon students (grades 1-12) are eligible to participate in STEAM Games 2019.

Skill Categories

Primary	This category is for students in grades 1 to 4.
Elementary	This category is for students in grades 5 to 6.
Junior High	This category is for students in grades 7 to 9.
High School	This category is for students in grades 10 to 12.

General Rules

- All teams are required to check in at their event competition area at least 10 minutes prior to the scheduled event start time. When checking in, please have your event project entry. (See Event Information details about events.)
- Each team **MUST be** accompanied by one coach at their event competition.
- Teams will be given **ONE** attempt at their challenge. Unless otherwise indicated.
- Robots must **be brought** to this event and built beforehand.
- Teams have 90 seconds to begin their attempt after notified by the event official. If teams do not start within the allotted time frame, their attempt will be scored as **DID NOT START (DNS)**.
- All attempts will be evaluated by a panel of judges using predetermined scoring criteria.
- Spectators are to use the designated area for observing the competition.

Sturgeon STEAM Games 2019 - Events

Event	Primary	Elementary	Junior High	Senior High
Prototype Challenge - Build It	x	x	x	x
Delivery Challenge - Test It	x	x	x	
Artistic Design Challenge	x	x	x	x
3D Printing Challenge	x	x	x	x
Programming Challenge	x	x	x	x

Schedule

- 9:15 - 9:45 Welcome and Kick Off
- 9:45 - 11:30 Prototype Challenge - BUILD
- 11:00 - 12:00 Artistic Design Challenge | 3D Printing Challenge
- 12:00 - 12:30 Lunch
- 12:30 - 1:30 Delivery Challenge - TEST
- 1:00 - 2:00 Programming Challenge
- 2:00 - 2:15 Clean Up
- 2:15 - 2:30 Awards, Prizes and Closing Remarks

Proposed Scoring Criteria

CATEGORY	5	3	1
Challenge Completion	Submission fully completed the proposed challenge.	Submission partially completed the proposed challenge.	Submission completed little of the proposed challenge.
Accuracy & Efficiency	Submission used time efficiently. Submission was accurate in navigation.	Submission used time somewhat time efficiently. Submission was somewhat accurate in navigation.	Submission did not use time efficiently. Submission was not accurate in navigation.
Design	Submission assembly was creative and effective.	Submission assembly was somewhat creative and effective.	Submission assembly was not creative nor effective.

Event Information

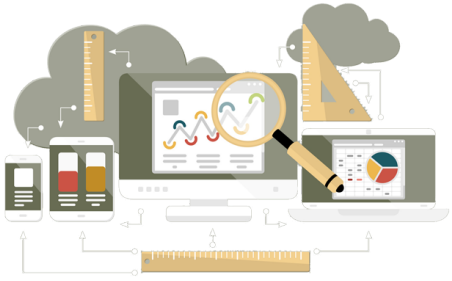
Connect with Nature

Technology is all around us, but it is often in conflict with nature and the environment. There is a growing movement to ensure people get outside and connect with their natural surroundings. In Sturgeon, we have an opportunity to bring students outside and open up a natural area for celebrating and learning. We would like this space to work in harmony with technology instead of in conflict.

Evidence on the site suggest it was once used as a traditional travelling route for indigenous people. In anticipation of student learners and explorers visiting the site, there will need to be some preparation and construction to reduce impact to ecosystems, and honour the lands history.

The challenges presented in STEAM Games 2019 closely resemble challenges faced by those professionals working with the environment.

1. Prototype Challenge - BUILD IT



Student teams will be presented with the challenge of designing and building a useable structure or pathway system to the site to enhance learning. There are several sensitive ecosystems that we do not wish to disrupt. Students should consider how to get to the learning area and how to enjoy it with minimal impact. Any development should be in harmony with nature, respectful of the land, and enhance learning. Designs should be accompanied with an identified budget.

Additional Details

- Low tech materials will be provided to teams on site to use for constructing their prototype.
- There will be an environmental expert on site. Teams should ensure they consult with that person during this challenge. Younger age levels will be provided with guiding questions to ask.
- Students will present and demonstrate their prototype immediately after the 60 minutes has lapsed. Presentations will be limited to 90 seconds.
- Prototypes will be reviewed and judged according to pre-set criteria.

2. Delivery Challenge - TEST IT

Student teams must program a robot to deliver a package or transport a group of students to and around our learning site without disturbing several sensitive ecosystems or wildlife.

Primary	Teams can use a remote controlled solution.
Elementary	Teams can use an out of the box robot. However, teams demonstrate programming skill (not remote control).
Junior High	Teams should create a customized robot that demonstrates programming skill.

Additional Details

- **Robot entries must be brought to the event**.
- Student teams will have one attempt at this challenge.
- Attempts will be judged and awarded points according to pre-set criteria.

3. Artistic Design Challenge

Works of art are commonly added to new constructions to honor the original intentions, community, and history of the area. Student teams may submit a creative work to display at the entry to the land preserve, or learning structure. STEAM skills, materials, maintenance, and sustainability should be considered in designs, which should be intended to stand outside for viewing. In addition to the design entry, teams must also provide an estimate of cost to create their design to scale.

Additional Details

- Entries must be created in advance. Teams will bring their submission to STEAM Games 2019.
- Submissions must not be any larger than 18”x18”x18”.
- Students will present and speak to their submission at the STEAM Games.
- Submissions will be reviewed and judged according to pre-set criteria.

4. 3D Printing Challenge

3D printing continues to enhance all areas of science and research, especially in remote areas where it is difficult to purchase needed supplies.

Primary/Elementary	Students should create a piece of equipment or an item that would help them survive and thrive in nature or the outdoors.
Junior/Senior High	Students will also create items that help them or scientists in nature, however, they should attempt to create an item made up of two or more parts that fit together to function.

Additional Details

- Entries must be created in advance. Teams will bring their submission to STEAM Games 2019.
- Students will present and speak to their submission at the STEAM Games.

- Submissions will be reviewed and judged according to pre-set criteria.

5. Programming Challenge

Programming and computational thinking is often required to solve mathematical problems. Teams will be posed with a mathematical problem that must be solved with programming skills.

Primary Teams will be posed with a physical scenario. They will have to consider the number of different algorithms to solve the problem. Teams are not required to bring any equipment.

Elementary Teams will be posed with a mathematical problem. They will have to solve the problem using the Scratch platform. Teams should bring a chromebook.

Junior High Teams will be posed with a mathematical problem. They will have to solve the problem using any language or IDE they would like. Teams should bring their own technology.

Senior High Teams will be posed with a mathematical problem. They will have to solve the problem using any language or IDE they would like. Teams should bring their own technology.

Additional Details

- Student teams will have 30 minutes to solve the challenge.
- Attempts will be judged and awarded points according to pre-set criteria.