

ROCKETING INTO INQUIRY

MICHELLE TERRA-ALLEN (/USERS/MICHELLE-TERRA)

Learning Goal:

Is to understand the use of pneumatics, hydraulics or both and to have the knowledge demonstrated by launching a self-created aerodynamic vehicle.

Inquiry/Critical Thinking:

The focus of this assignment is to have students direct their own learning to discover the purposeful use of pneumatics and hydraulics and how to incorporate technology to create a useful and stable design. Students were provided a background about fluids through a variety of activities to enable the students a starting point. This incorporates inquiry and critical thinking because the students have to determine their own plan and design. The students have to look at all the variables present such as potential for wind and weight of the vehicle to critically examine the best method of design and to be able to explain how these variables affected their project.

What the Students Learned:

Through this the students learned:

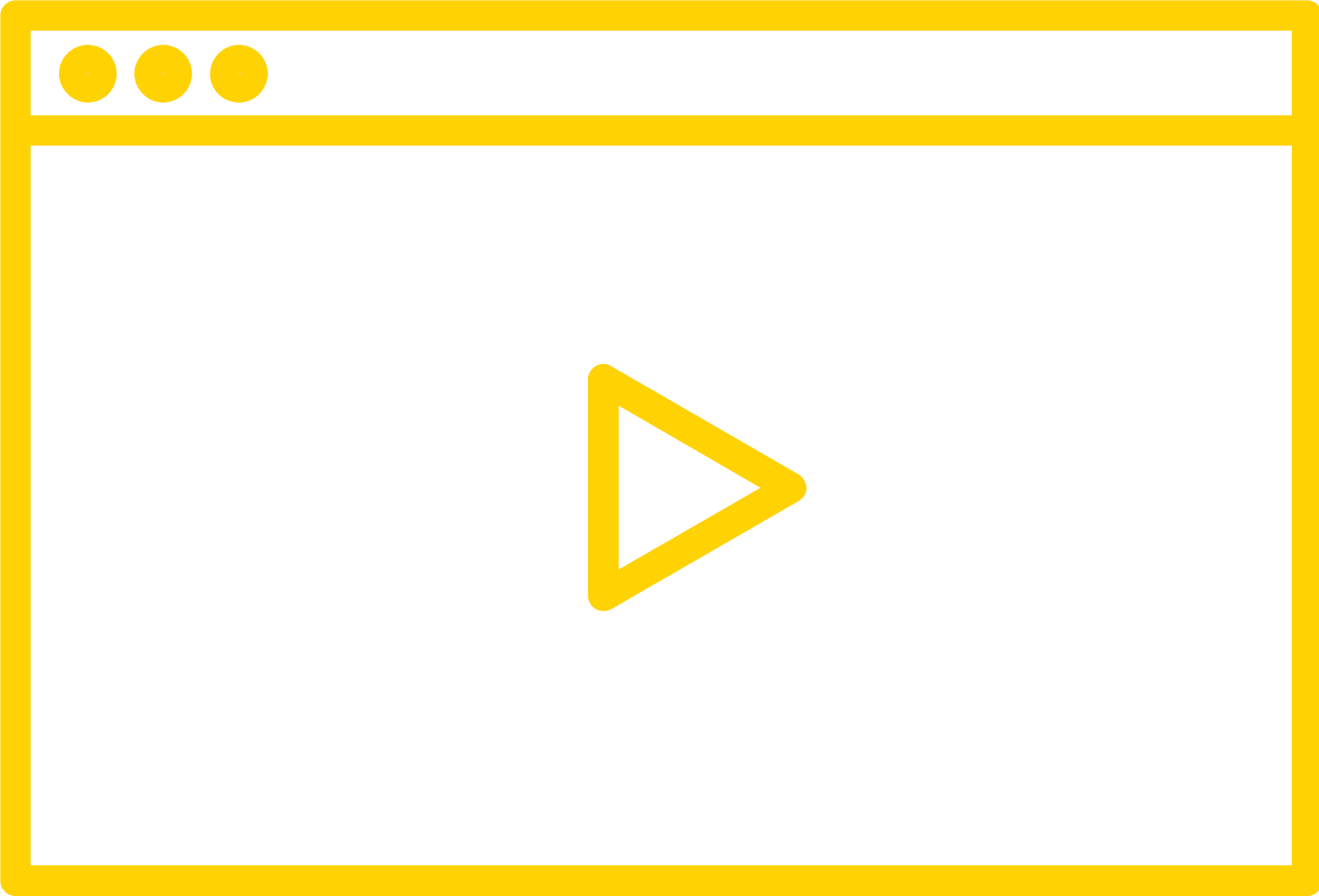
- It is ok to be wrong - it is how we learn
- That there are many ways to solve the same problem
- That pneumatics has a different purpose than hydraulics
- That design matters - form and function plays a role when creating a successful launch pad
- That making a vehicle more aerodynamic will enable a more successful launch
- How to use a variety of tools to create a stable structure that will incorporate a pneumatic/hydraulic system



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WATCH THE VIDEO

01:22 min

(//www.youtube.com/embed/4HPnp_phNoU?width=800&height=450&iframe=true)

RESOURCES

-  Assignment Outline (https://connex.stao.ca/sites/default/files/aim_higher_final_assignment_0.docx)
-  Prototype launch pad prior to initial testing (<https://connex.stao.ca/sites/default/files/prototype.jpg?width=521px&height=593px&iframe=true>)

-  Launch pad after adjustments (<https://connex.stao.ca/sites/default/files/e968cc52-a979-c533-ada1-8d110e6dd0f5-37.jpg?width=800px&height=609px&iframe=true>)
-  Launch pad with wind blocker (https://connex.stao.ca/sites/default/files/ea85db3e-e47d-ec2d-4a8d-ec02152c137d-37_0.jpg?width=800px&height=600px&iframe=true)
-  Prototype launch pad after testing (<https://connex.stao.ca/sites/default/files/232d51fd-f7c0-4f0a-20a5-177b6305d308-37.jpg?width=800px&height=600px&iframe=true>)
-  Final design with adjustments (<https://connex.stao.ca/sites/default/files/1e054fe0-915c-7945-f1b9-6af635877a57-37.jpg?width=600px&height=800px&iframe=true>)
-  Angled design (<https://connex.stao.ca/sites/default/files/4b9f4dcf-d9f8-506c-b48f-095c8cd497d9-37.jpg?width=600px&height=800px&iframe=true>)
-  Assessment Rubric (https://connex.stao.ca/sites/default/files/launch_pad_rubric_0.docx)
-  Safety Contract for Tool Usage (https://connex.stao.ca/sites/default/files/science_lab_safety_contract_2016.docx)

ELEMENT

 Inquiry (/expert-elements/inquiry)




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