Inquiry is a great way to allow students to explore learning in a more hands on way.

The assessment for this momentum unit will include this inquiry plus a smaller than normal test/ assessment. This assignment plus reflection will demonstrate your knowledge and understanding.

Momentum Inquiry

Teacher: Roz Van Dyk
Please message me if you have any questions

Inquiry Question

- How could we as momentum and impact specialists create a device that contributes positively to a community or group of people?

In everyday language: Make something that helps someone or something have reduced pain, suffering, or damage due to a hard landing (impact).
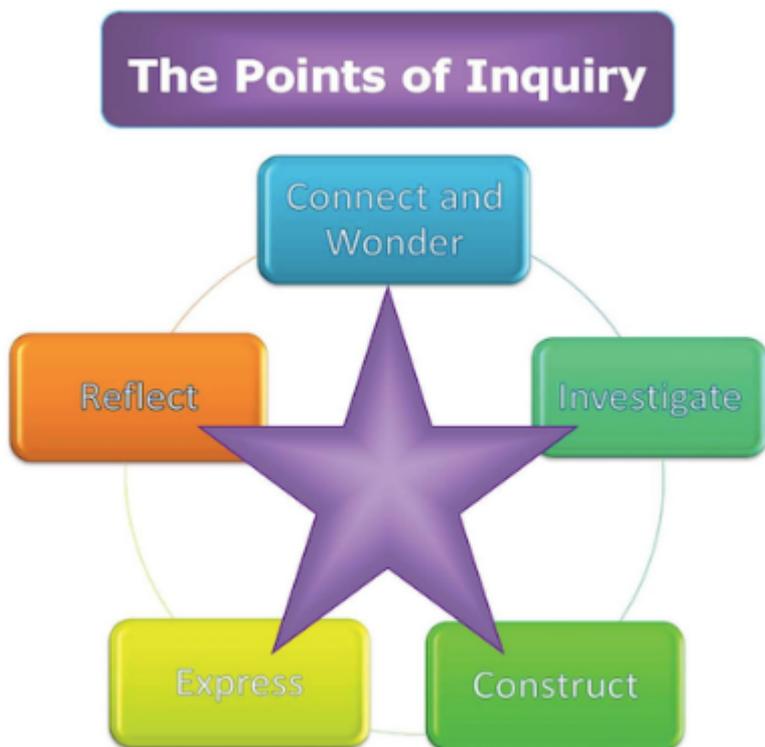
Expectations

- You are going to go through the cycle of inquiry. I will guide you through each phase of this in the pages that follow.

- You can create a device or model(on paper, model, drawing, using drafting software, or any other way you desire).

- You can submit your completed project in any desired format that makes you happy! Ex. Web page, video, physical model and student teacher conference, model with a written explanation…

The Inquiry Cycle

Link to these in Course Information

The Points of Inquiry

Connect and Wonder • Investigate • Construct • Express • Reflect

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Connect and Wonder	• What do you already know? • What do you wonder? • How will you gather information? • How will you share what you have learned?	
Investigate	• Locate and collect information (is it reliable?) • Select and evaluate relevant information • Establish a focus for your inquiry	
Construct	• Organize the pertinent information • Make connections and inferences • Make a plan for your inquiry • Create a product / get feedback • Revise and edit	
Express	• Use your product to present new understandings • How are you sharing it with a broader community?	
Assess	• What worked? • What would you do differently next time?	
Reflect	• Reflect on the inquiry process • How can you transfer your learning to new situations? • What are your new questions?	

Let's Get Started:
1. Wondering and Thinking

| Connect and Wonder | • What do you already know?
• What do you wonder?
• How will you gather information?
• How will you share what you have learned? | |

Step One: Wondering and Thinking Stage
Think about something that interests you or are passionate about and consider what you know about it and how momentum is involved. Could a person or object be harmed by the impact of this potential momentum?

What is a problem that needs to be solved? Consider ways to soften the impact. Research this for a bit and generate some ideas for possibilities. You might need to Google impact issues to develop your ideas.

Consider how you might want to demonstrate this idea or device to me/ what are you submitting.

2. Investigating

| Investigate	• Locate and collect information (is it reliable?) • Select and evaluate relevant information • Establish a focus for your inquiry	

Step 2: Investigating and starting to gather useful information
Once you have generated some ideas, start to research if a device already exists for this, if so you may need to consider a new problem.

What factors (mass, materials, lift, environmental variables, etc.) do you need to consider for creating the device that will reduce it's impact.

Make sure to consider these factors when developing your device/ model.

3. Construct / Make it!
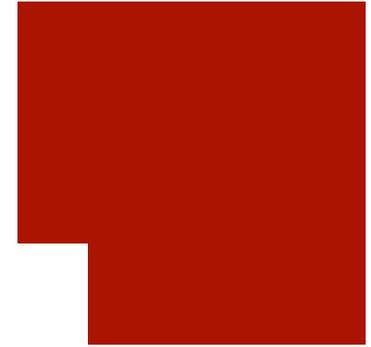
Construct	
	• Organize the pertinent information
	• Make connections and inferences
	• Make a plan for your inquiry
	• Create a product / get feedback
	• Revise and edit

Step 3: Construct / Make your device or model
Take your ideas and considerations for construction and develop a device (model, video, drawing, etc.) that demonstrates your ideas and the application of content knowledge around momentum and impulse.

This device does is not being marked based on looks or perfection. **Please focus on the physics used to build your device / artifact.**
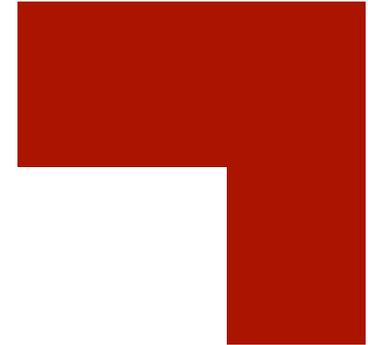
4. Express your Learning

Express

- Use your product to present new understandings
- How are you sharing it with a broader community?
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Step 4: Express your Learning

1. Once you have completed your assignment, <u>submit the device and the explanation of the device</u> using momentum language (apply your learning and make sure to fully explain the connections between momentum and impulse). If you would like to present this to the tutorial group please let me know, as it would be great for other students to see these!

2. <u>Post a picture and brief description</u> of your device in the Momentum Inquiry forum in Moodle. This is a way to share ideas about your learning and thinking.

5. Assess: What did you Learn?

Assess	• What worked? • What would you do differently next time?	
Reflect	• Reflect on the inquiry process • How can you transfer your learning to new situations? • What are your new questions?	

5. Assessment and Reflection

Please include the following self reflection questions within your submission:

1. What worked?
2. What would you do differently next time?
3. How could you take this further in a different situation?
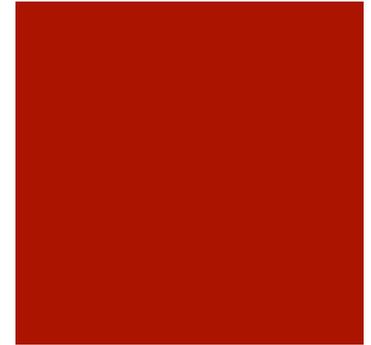
Overview

What do you have to **DO:**

- Create something that helps someone or something have reduced pain, suffering, or damage due to a hard landing (impact).
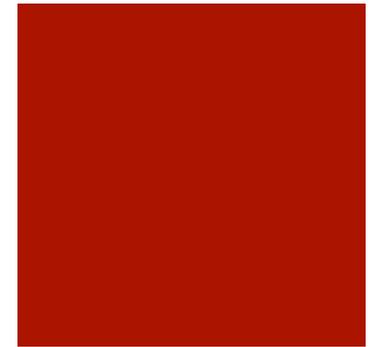
What do you have to **HAND IN:**

1. Your device (however you chose to make it)

2. An explanation that outlines and explains your device and the physics involved (momentum and impulse)

3. The three reflection questions

4. Post a picture and description to Forum

How are you being **MARKED**

- Refer to the rubric on the next page.

Assessment: Your Mark!

	Emerging	Developing	Proficient	Exemplary
Focus: momentum, impulse, and the relationship between variables				
Questioning and predicting	Is thinking about: demonstrating a curiosity about a scientific problem of interest.	Is practicing: demonstrating a curiosity about a scientific problem of interest.	Does a good job of: demonstrating a curiosity about a scientific problem of interest.	Exceeds at: demonstrating a curiosity about a scientific problem of interest.
Processing and analyzing data and information	Is thinking about: analyzing cause-and-effect relationships	Is practicing: analyzing cause-and-effect relationships	Does a good job of: analyzing cause-and-effect relationships	Exceeds at: analyzing cause-and-effect relationships
Evaluating	Is thinking about: critically analyzing primary and secondary information and applying it to solve problems.	Is practicing: critically analyzing primary and secondary information and applying it to solve problems.	Does a good job of: critically analyzing primary and secondary information and applying it to solve problems.	Exceeds at: critically analyzing primary and secondary information and applying it to solve problems.
Applying and Innovating	Is thinking about: finding solutions to problems through inquiry	Is practicing: finding solutions to problems through inquiry	Does a good job of: finding solutions to problems through inquiry	Exceeds at: finding solutions to problems through inquiry
Communicating	Is thinking about: communicating ideas using evidence based arguments and scientific language	Is practicing: communicating ideas using evidence based arguments and scientific language	Does a good job of: communicating ideas using evidence based arguments and scientific language	Exceeds at: communicating ideas using evidence based arguments and scientific language