

Amplify Science

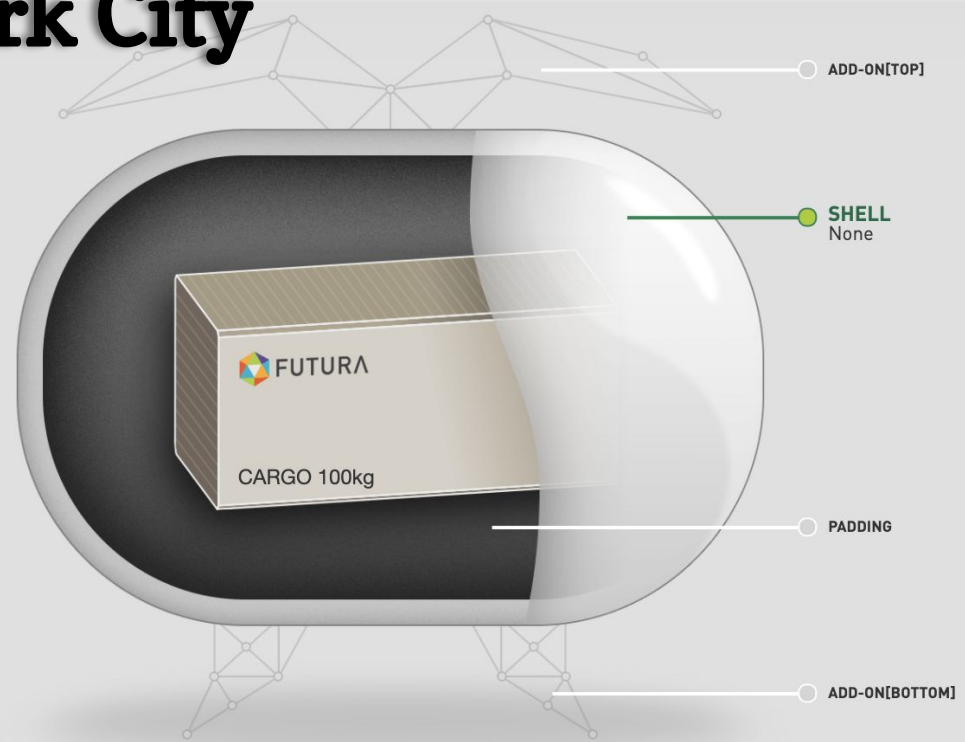
New York City

Guided Unit

Internalization

Force and Motion

Engineering Internship



Who's in the Room?

Represent for your Borough!



Share your name, role, borough.

1- Brooklyn North

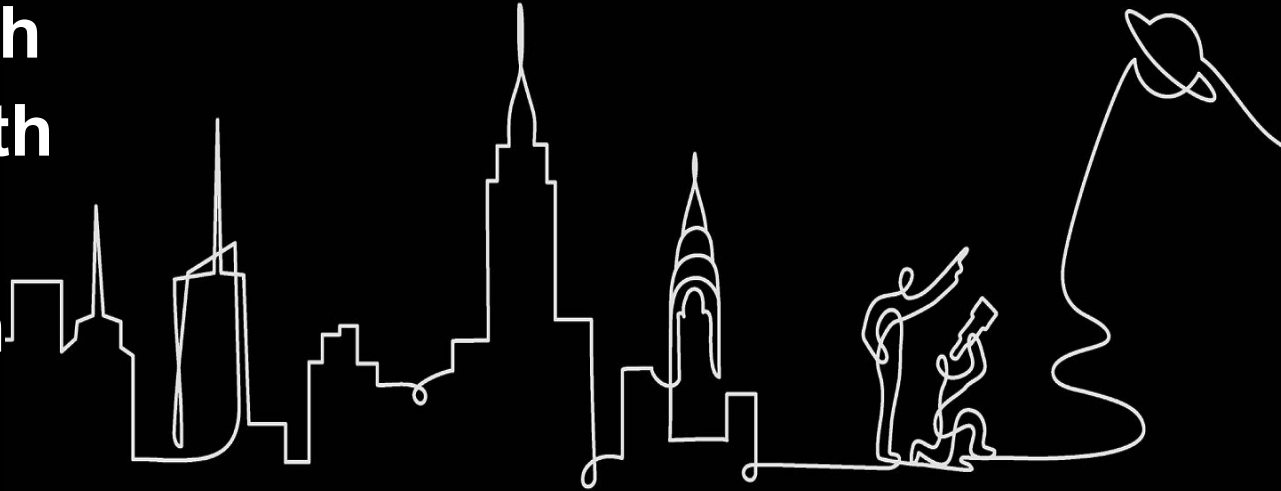
2- Brooklyn South

3- Queens North

4- Queens South

5- The Bronx

6- Staten Island



Workshop Norms



- **Please keep your camera on, if possible.**

- **Take some time to orient yourself to the platform**



- **Mute your microphone to reduce background noise unless sharing with the group**



- **The chat box is available for posting questions or responses to during the training**



- **Make sure you have a note-catcher present**



- **Be an active participant - chat, ask questions, discuss, share!**

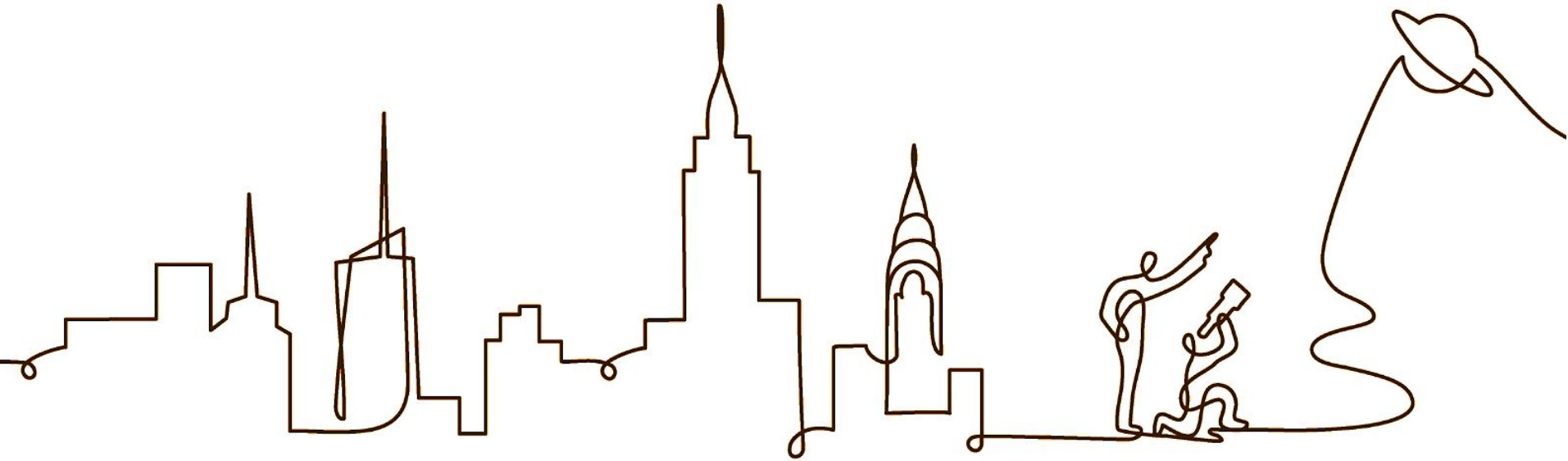
Workshop Goals

By the end of this workshop, you will be able to:

- Make instructional decisions about remote or hybrid learning
- Develop a plan for using @Home resources within your class schedule and instructional format.

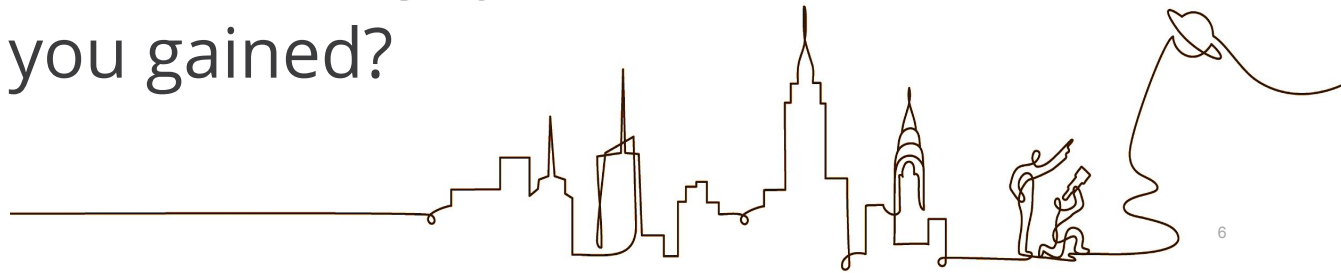


Reflection and Goal Setting



Reflect- then in chat Choose One: While teaching through new instructional models (Hybrid/Remote)

- What is **one** challenge, problem, or roadblock you or your students experienced?
- What are **two** successes you or your students experienced?
- What are **three** new things you learned or new insights you gained?



Amplify Science New York City

Guided Unit Internalization With @Home Resources



Guided Unit Internalization

Part 1: Unit-level internalization

Unit title:	
What is the phenomenon students are investigating in your unit?	
Unit Question:	Student role:
By the end of the unit, students figure out ...	
What science ideas do students need to figure out in order to explain the phenomenon?	

Participant Materials

AmplifyScience@Lesson Adaptation Tool (Remote/Hybrid)

Lesson:	Date:
Lesson purpose: <small>(Lesson brief, Overview)</small>	3-D connections and formative assessment opportunities:
What the students will learn in this lesson and potential challenges.	How will the students be practicing the multiple modalities during this lesson?

Plan for the day

- Framing the day
- Unit Internalization
- Explore EI Components
- Planning
- Reflection and closing



NYC Middle School Unit Pacing Calendar 20-21*

	Sept.			Oct.			Nov.			Dec.		Jan.		Feb.		Mar.			Apr.		May		Jun.															
	9/14	9/21	9/28	10/5	10/12	10/19	10/26	11/2	11/9	11/16	11/23	11/30	12/7	12/14	12/21	1/4	1/11	1/18	1/25	2/1	2/8	2/15	3/1	3/8	3/15	3/22	3/29	4/12	4/19	4/26	5/3	5/10	5/17	5/24	5/31	6/7	6/14	6/21
6th Grade																																						
	Launch Unit: Harnessing Human Energy			Thermal Energy			Ocean, Atmosphere, and Climate			Weather Patterns		Populations and Resources			Matter and Energy in Ecosystems			Earth's Changing Climate																				
7th Grade																																						
	Launch Unit: Microbiome			Metabolism			Phase Change			Chemical Reactions		Plate Motion			Engineering Internship Plate Motion:			Rock Transformations			Engineering Internship: Earth's Changing Climate																	
8th Grade																																						
	Launch Unit: Geology on Mars			Force and Motion			Engineering Internship: Force and Motion			Earth, Moon, and Sun		Magnetic Fields			Light Waves			Traits and Reproduction			Natural Selection			Evolutionary History														
	9/14	9/21	9/28	10/5	10/12	10/19	10/26	11/2	11/9	11/16	11/23	11/30	12/7	12/14	12/21	1/4	1/11	1/18	1/25	2/1	2/8	2/15	3/1	3/8	3/15	3/22	3/29	4/12	4/19	4/26	5/3	5/10	5/17	5/24	5/31	6/7	6/14	6/21

*Updated Sequence for the 2020-2021 School Year

Middle School Curriculum New York City Edition

Grade 6

- Launch: *
Harnessing Human Energy
- Thermal Energy
- Ocean, Atmosphere, and Climate
- Weather Patterns
- Populations and Resources
- Matter and Energy in Ecosystems
- Earth's Changing Climate

Grade 7

- Launch: *
Microbiome
- Metabolism
- Phase Change
- Chemical Reactions
- Plate Motion
- Engineering Internship:
Plate Motion
- Rock Transformations
- Engineering Internship:
Earth's Changing Climate

Grade 8

- Launch:
Geology on Mars
- Force and Motion
- Engineering Internship:
Force and Motion
- Earth, Moon, and Sun
- Magnetic Fields
- Light Waves
- Traits and Reproduction
- Natural Selection
- Evolutionary History



Unit	@Home Unit Release	@Home Videos Release
<i>Chemical Reactions</i>	January 15	December 11
<i>Earth's Changing Climate</i>	March 13	March 26
<i>Earth, Moon, and Sun</i>	January 10	December 11
<i>Evolutionary History</i>	February 26	March 26
<i>Light Waves</i>	December 17	October 26
<i>Magnetic Fields</i>	November 15	N/A (already posted)
<i>Matter and Energy in Ecosystems</i>	March 21	March 26
<i>Natural Selection</i>	February 20	February 12
<i>Ocean, Atmosphere, and Clime</i>	January 17	December 11
<i>Phase Change</i>	December 19	October 26
<i>Populations and Resources</i>	February 20	February 12
<i>Rock Transformations</i>	November 6	N/A (already posted)
<i>Thermal Energy</i>	December 13	October 26
<i>Traits and Reproduction</i>	November 4	N/A (already posted)
<i>Weather Patterns</i>	February 17	February 12

Amplify Science@Home Schedule



Written by Amplify

Updated over a week ago

@Home Resources Release Dates

<https://my.amplify.com/help/en/articles/4562101-amplify-science-home-schedule>

Classroom Slides Release Dates

<https://my.amplify.com/help/en/articles/4004263-amplify-science-classroom-slides-for-grades-6-8>

1st and 2nd unit of each grade: August 2020

- Microbiome
- Geology on Mars
- Harnessing Human Energy
- Metabolism
- Plate Motion
- Force and Motion

3rd unit of each grade: September 2020

- Metabolism Engineering Internship
- Plate Motion Engineering Internship
- Force and Motion Engineering Internship

4th unit of each grade: October 2020

- Traits and Reproduction
- Rock Transformations
- Magnetic Fields

5th unit of each grade: November 2020

- Thermal Energy
- Phase Change
- Light Waves

6th unit of each grade: December 2020

- Ocean, Atmosphere, and Climate
- Plate Motion Engineering Internship
- Earth, Moon, and Sun

7th unit of each grade: February 2021

- Weather Patterns
- Chemical Reactions
- Natural Selection

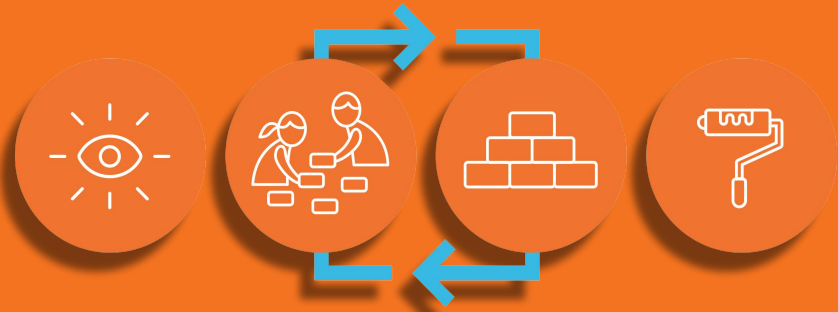
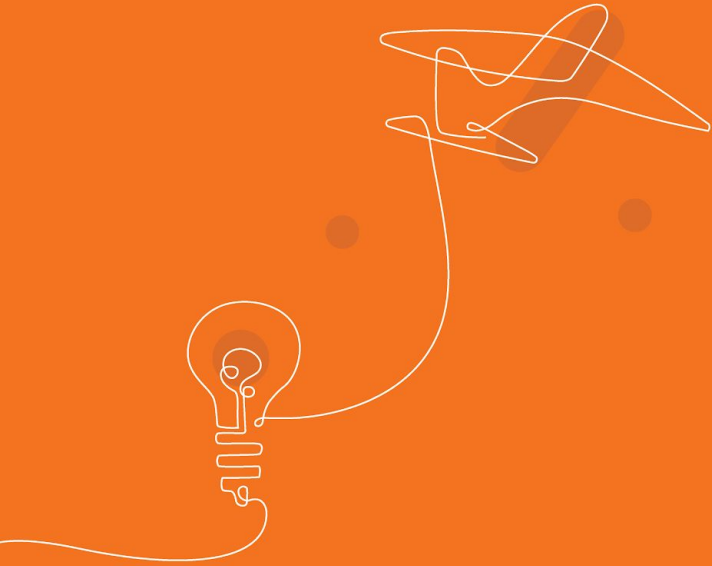
8th unit of each grade: March 2021

- Earth's Changing Climate
- Populations and Resources
- Natural Selection Engineering Internship

9th unit of each grade: April 2021

- Earth's Changing Climate Engineering Internship
- Matter and Energy in Ecosystems
- Evolutionary History

Revisiting the Amplify Science approach





Questions
Reflections
Connections

Unit 2 Planning Notes

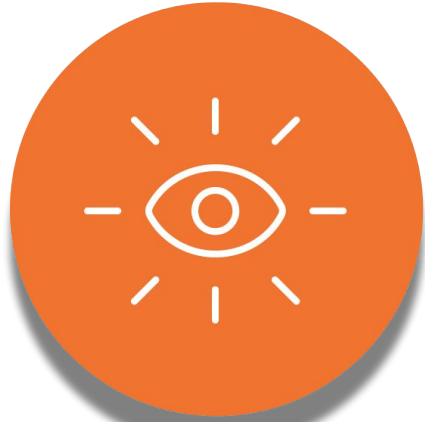
Amplify Science Approach Review:

Note Taking Opportunities

A version of this presentation will be available to you.

However, you may want to record some of the presenter's comments and suggestions from your colleagues!

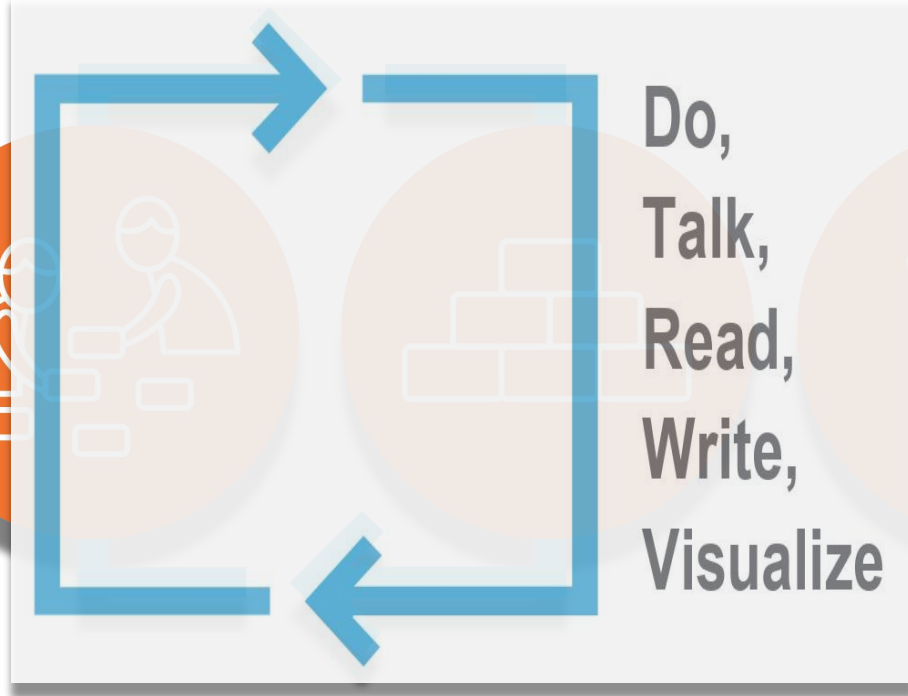
The approach



**Introduce a
phenomenon/real
world problem**



**Collect evidence
from
multiple sources**



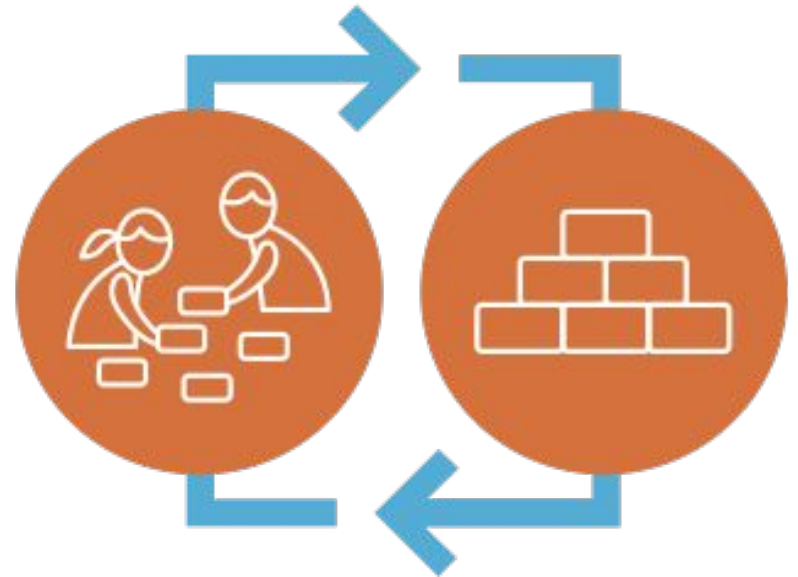
**Build
increasingly
complex
explanations**

**Apply knowledge to
solve a different
problem**

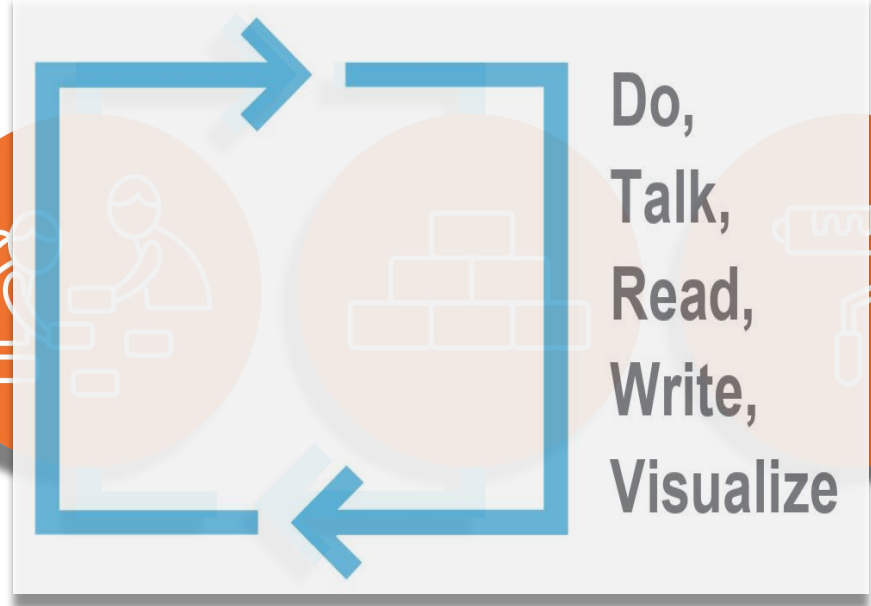
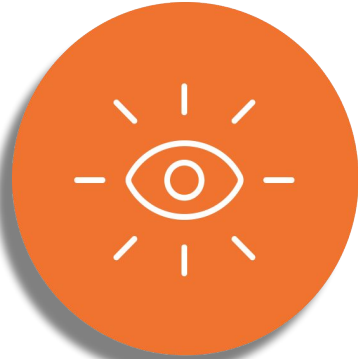
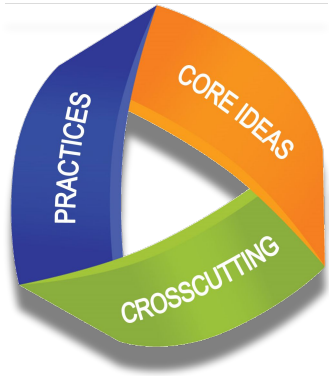
Multimodal Phenomenon-based approach

The anchor phenomenon drives instruction through a whole unit

Taking on the **roles** of scientists and engineers, students gather evidence and use it to build **increasingly complex explanations** about a rich, real-world anchoring phenomenon.



Using three dimensions to figure out





Questions?

Plan for the day

- Framing the day
- **Unit Internalization**
- Explore EI Components
- Planning
- Reflection and closing



Design Problem: Design a supply drop pod for areas affected by natural disaster.

Force and Motion Engineering Internship

**Day 1: Introducing the
Engineering Internship**

Activity 1

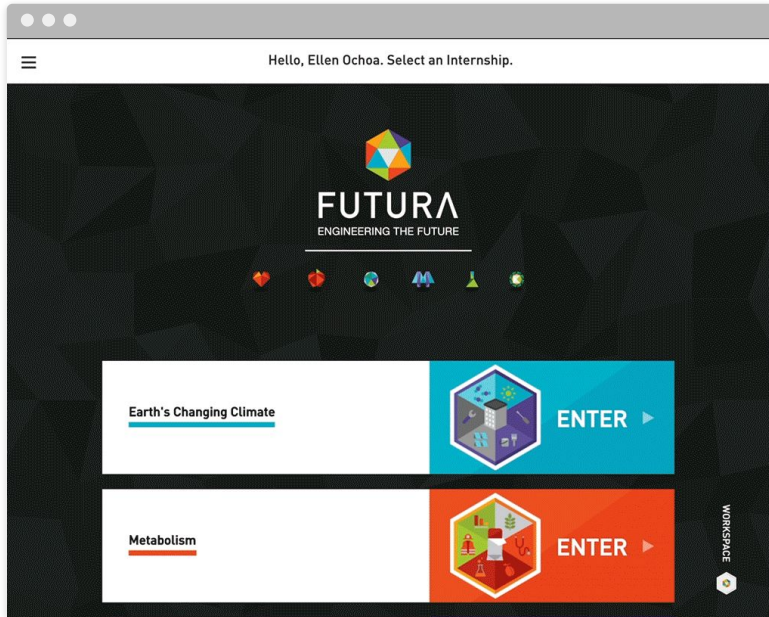
Connecting to Futura Workspace





Starting today, you will be working as **mechanical engineering interns** for a company called Futura.

You will start each day of your internship by reading a new message.



You'll open **Futura Workspace** and select *Force and Motion Engineering Internship*.

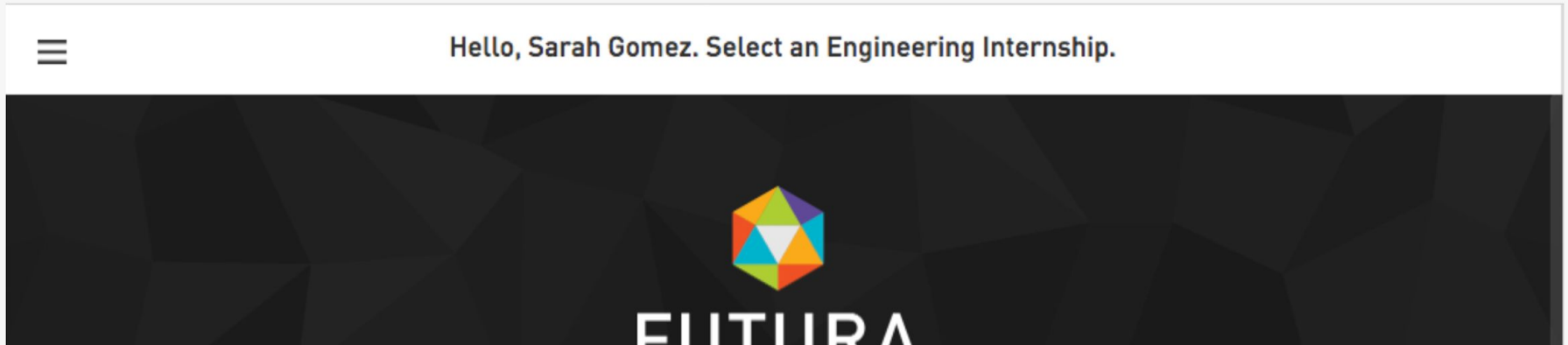
Then, you'll open the Day 1 message to read about your new internship.



Connecting to Futura Workspace

Open [Futura Workspace](#):

1. Select the **Force and Motion Engineering Internship** from the login page.
2. Select the **Welcome to Futura!** message to open and read about your new internship.



Activity T

Introducing Futura



Welcome, engineering interns! I will be your internship coordinator, and I'll guide you through this project with Nisha Kar, your project director.



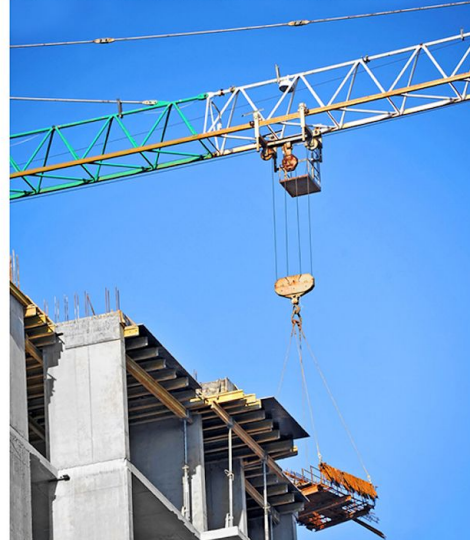
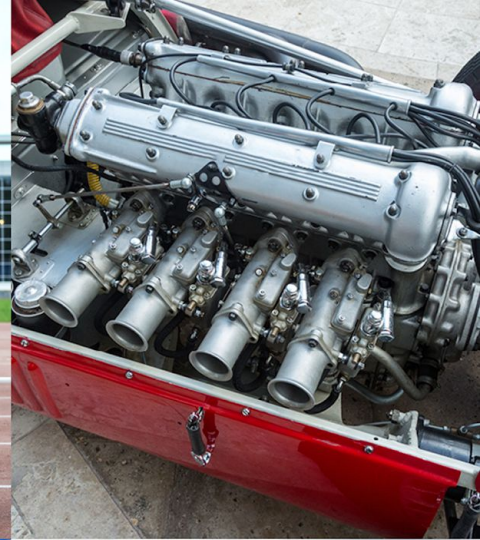
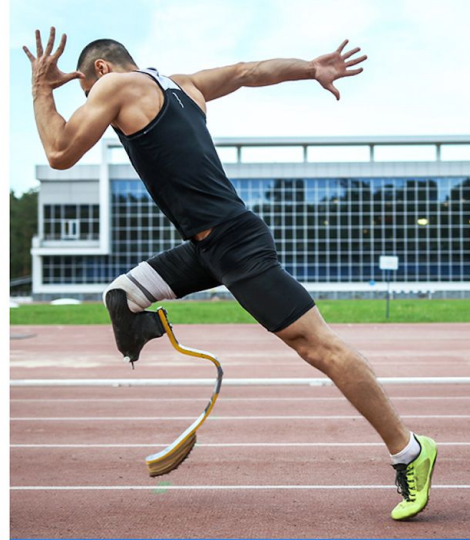
Where have you heard the word **engineer** before? What kind of work do engineers do?

What about **mechanical engineers**? What do you think they do?

Mechanical engineers apply physics concepts to build structures, machines, and everyday objects that help people.

They work on:

- new and improved materials for building
- structures at the nanoscale
- machines that build machines
- structural analysis to learn at what point structures fail





Your **project director** is Nisha Kar.

Nisha has sent a video message to explain more about Futura and your engineering project.



Nisha Kar
Project Director
Mechanical Engineering Division



Nisha wants you to design supply pods for disaster aid.



What are some possible **requirements** that might be important to ensure a successful supply pod design?

FUTURA

Nisha Kar
Project Director
Mechanical Engineering Division



Let's discuss what you learned in the video about your internship.



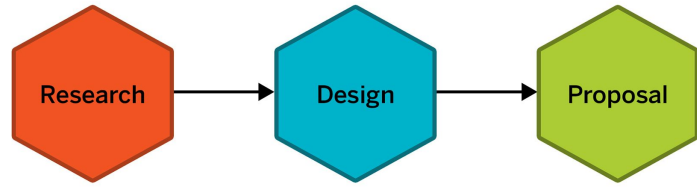
What is the **project** you will work on?

Do you have any **questions?**

As **mechanical engineering interns**, you will use what you learned about force and motion to solve a real and important problem.

Remember, Nisha Kar will be the **project director** for this internship. She will send you messages, assign you tasks to do, and give you feedback on your work.

Futura Internship Phases



Your internship will have **three phases:** Research, Design, and Proposal.

I'll give you a quick overview of what will happen in each phase.

criteria: standards by which something may be judged

At Futura, we have many *criteria* for every product.



Let's discuss the **three criteria** for your supply pods and why each one is important:

1. minimize cargo damage
2. maximize shell condition
3. keep costs low

constraint: a limit or restriction

At Futura, we must keep our creative ideas
within our clients' *constraints*.

Our project has some **constraints**:

1. The pod must be dropped from a **helicopter**.
2. It must be dropped from the **same** height.



Activity T

Exploring SupplyDrop



SHELL		
	Mass (kg)	Cost (\$)
<input checked="" type="radio"/> Acrylic	10.0	400.00
<input type="radio"/> Aluminum	20.0	100.00
<input type="radio"/> Fiberglass	1.0	200.00
<input type="radio"/> Steel	30.0	50.00
<input type="radio"/> Wood	5.0	150.00

PADDING

ADD-ON(TOP)

ADD-ON(BOTTOM)

ADD-ON(TOP)

SHELL None

PADDING

ADD-ON(BOTTOM)

Total Pod Mass | Total Pod Cost
100.0kg | \$0.00

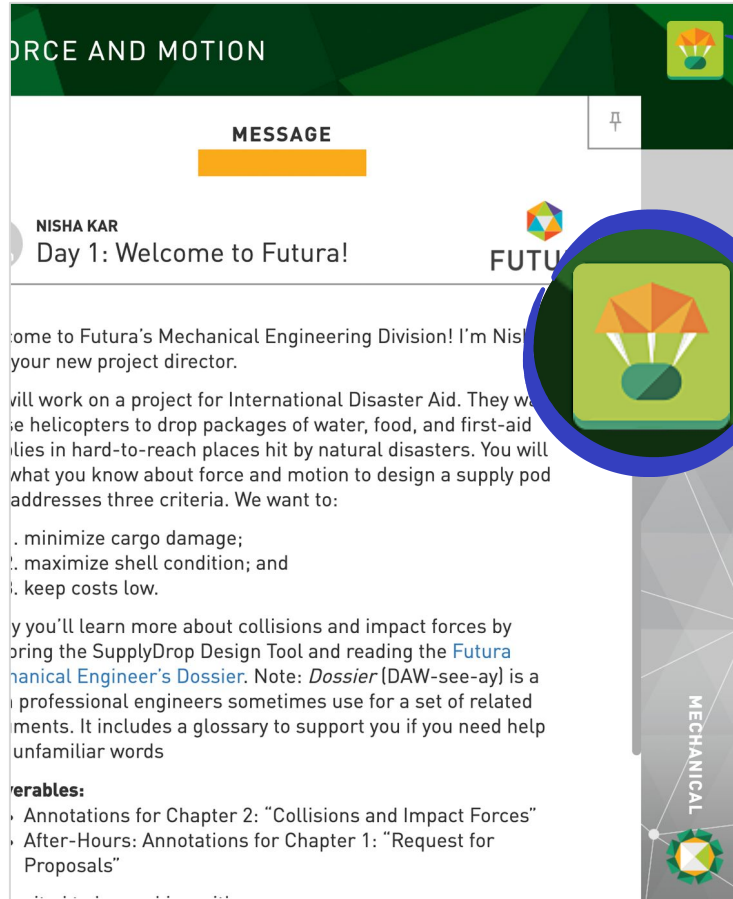
TEST RESET

Futura designed the **SupplyDrop** Design Tool.

It is a **digital model** of a supply pod. It allows you to **build and test** several supply pod designs.



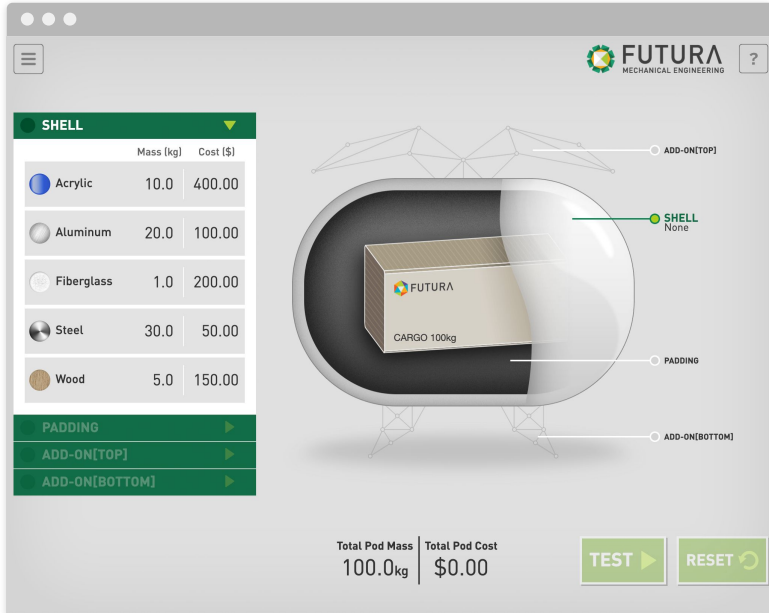
Why might engineers use **models** in their work?



The screenshot shows a mobile workspace interface. At the top, the title 'FORCE AND MOTION' is displayed. Below it, a 'MESSAGE' header is visible. The message is from 'NISHA KAR' and says 'Day 1: Welcome to Futura!'. The message content includes a welcome to Futura's Mechanical Engineering Division, a project description for International Disaster Aid involving helicopters, and a list of criteria for a supply pod: minimize cargo damage, maximize shell condition, and keep costs low. It also mentions learning about collisions and impact forces through the SupplyDrop Design Tool and a 'Futura Mechanical Engineer's Dossier'. A blue circle highlights a green button with a white icon of a person dropping a package, located in the top right corner of the workspace. A blue arrow points from this button towards the text on the right.



Press the button in the top right corner of Futura Workspace to **open SupplyDrop.**



FUTURA
MECHANICAL ENGINEERING

SHELL		
	Mass (kg)	Cost (\$)
Acrylic	10.0	400.00
Aluminum	20.0	100.00
Fiberglass	1.0	200.00
Steel	30.0	50.00
Wood	5.0	150.00

ADD-ON(TOP) ?

SHELL None

PADDING

ADD-ON(BOTTOM)

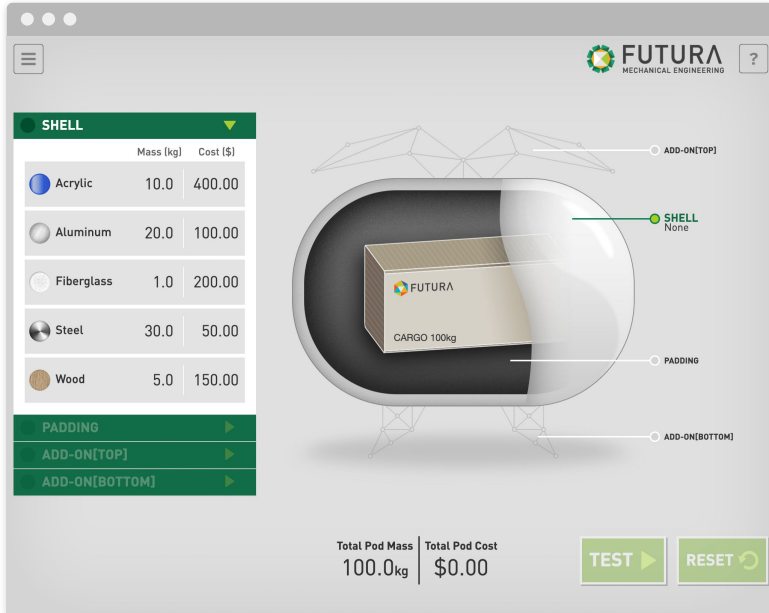
Total Pod Mass | Total Pod Cost
100.0kg | \$0.00

TEST RESET



Explore **SupplyDrop**.

As you explore, share what you notice or find interesting with your colleague.



The screenshot shows a web-based simulation interface for a pod design. On the left, a table lists shell material options with their respective masses and costs. The 'SHELL' section is currently selected, showing Acrylic (10.0 kg, \$400.00), Aluminum (20.0 kg, \$100.00), Fiberglass (1.0 kg, \$200.00), Steel (30.0 kg, \$50.00), and Wood (5.0 kg, \$150.00). Below the table are buttons for 'PADDING', 'ADD-ON(TOP)', and 'ADD-ON(BOTTOM)'. The central 3D model shows a pod with a 'FUTURA' cargo box inside. Callouts point to 'ADD-ON(TOP)', 'SHELL None', 'PADDING', and 'ADD-ON(BOTTOM)'. At the bottom, the 'Total Pod Mass' is 100.0 kg and the 'Total Pod Cost' is \$0.00. 'TEST' and 'RESET' buttons are also visible.

	Mass (kg)	Cost (\$)
Acrylic	10.0	400.00
Aluminum	20.0	100.00
Fiberglass	1.0	200.00
Steel	30.0	50.00
Wood	5.0	150.00

Total Pod Mass | Total Pod Cost
100.0 kg | \$0.00

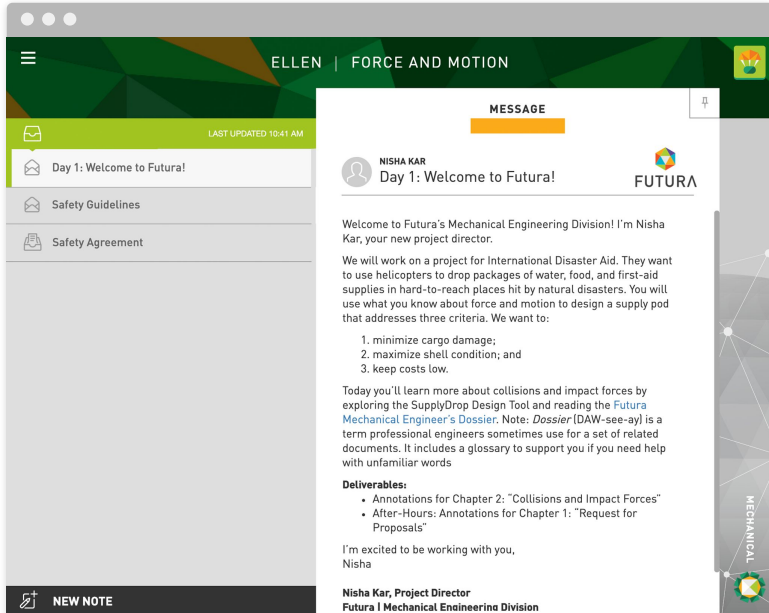


What did you notice about SupplyDrop?

Activity T

Reading About Collisions and Impact Forces





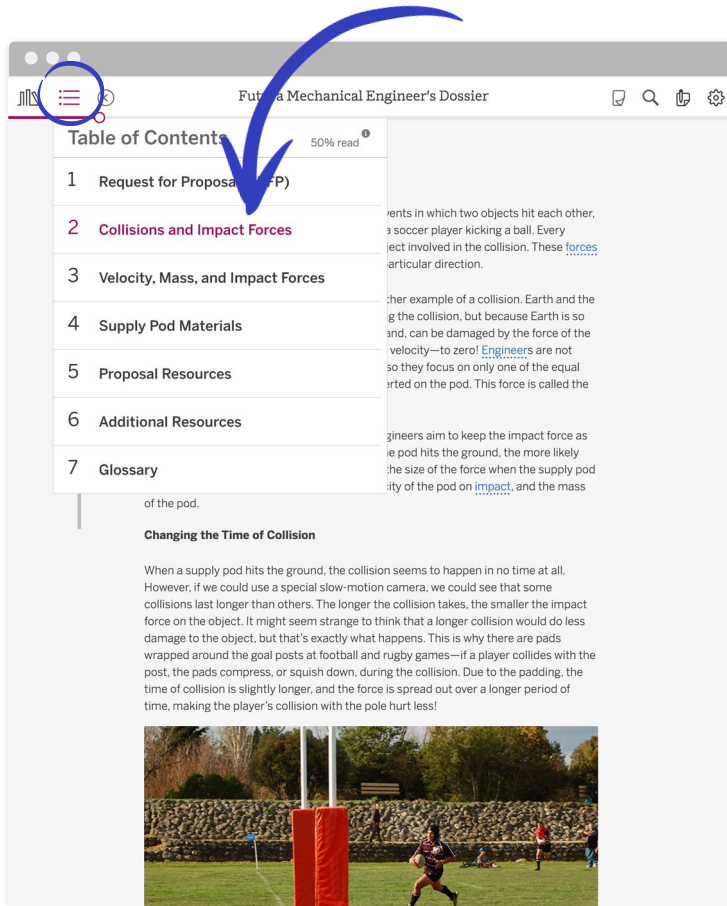
Throughout your internship, you'll be using **Futura Workspace** to get messages, record notes, and submit work. Let's see how it works.



FUTURA MECHANICAL ENGINEER'S DOSSIER



You will begin your **research** on collision and impact forces by reading part of the **Futura Mechanical Engineer's Dossier.**




The screenshot shows a web browser window with the title 'Futura Mechanical Engineer's Dossier'. The browser's address bar and navigation icons are visible at the top. The main content area features a 'Table of Contents' with a '50% read' indicator. The table lists seven items, with the second item, 'Collisions and Impact Forces', highlighted in pink. A blue arrow points from the 'Table of Contents' header to this second item. Below the table, the text of the second item is partially visible, discussing collisions and impact forces. The page also includes a section titled 'Changing the Time of Collision' and a photograph of a soccer game.

Table of Contents	
1	Request for Proposal (RFP)
2	Collisions and Impact Forces
3	Velocity, Mass, and Impact Forces
4	Supply Pod Materials
5	Proposal Resources
6	Additional Resources
7	Glossary

of the pod.

Changing the Time of Collision

When a supply pod hits the ground, the collision seems to happen in no time at all. However, if we could use a special slow-motion camera, we could see that some collisions last longer than others. The longer the collision takes, the smaller the impact force on the object. It might seem strange to think that a longer collision would do less damage to the object, but that's exactly what happens. This is why there are pads wrapped around the goal posts at football and rugby games—if a player collides with the post, the pads compress, or squish down, during the collision. Due to the padding, the time of collision is slightly longer, and the force is spread out over a longer period of time, making the player's collision with the pole hurt less!



It is essential that you understand collisions and impact forces, so you'll read **Chapter 2**.

You can use the Table of Contents to find the chapter you need.

Engineers read like scientists: **reading multiple times, taking notes, and asking critical questions.**

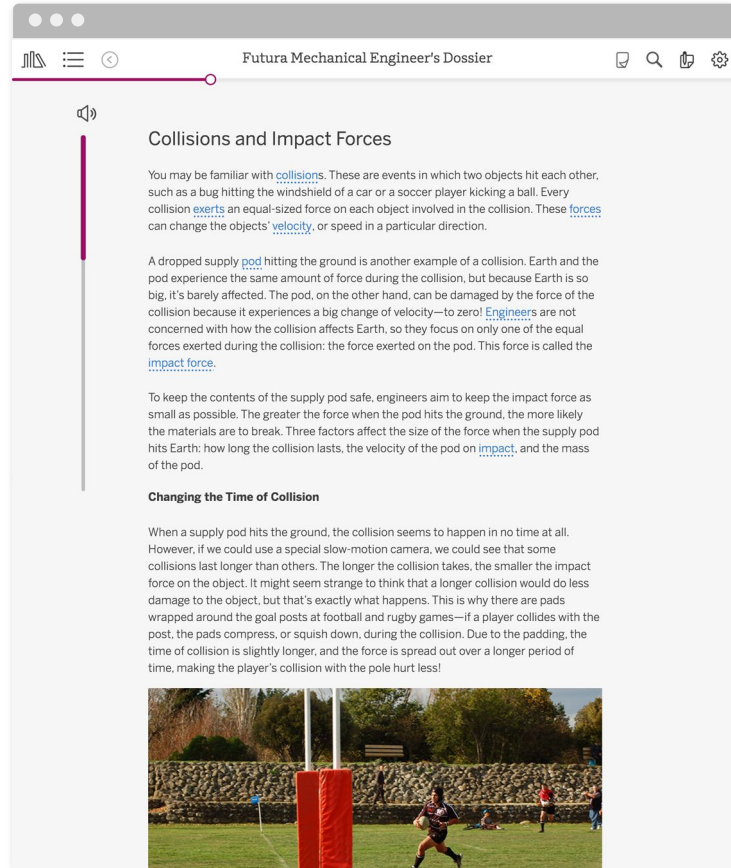
As engineering interns, you should practice these skills, just as you have been doing in science class by using **Active Reading.**

Active Reading Guidelines

- 1.** Think carefully about what you read. Pay attention to your own understanding.
- 2.** As you read, annotate the text to make a record of your thinking. Highlight challenging words and add notes to record questions and make connections to your own experience.
- 3.** Examine all visual representations carefully. Consider how they go together with the text.
- 4.** After you read, discuss what you have read with others to help you better understand the text.

How does collision time affect impact forces?

In addition to recording your own questions and connections as you read, you can make annotations to help you answer this **focus question**.



The screenshot shows a web browser window with the address bar displaying "Futura Mechanical Engineer's Dossier". The page content includes a speaker icon, a section header "Collisions and Impact Forces", and three paragraphs of text. The first paragraph discusses collisions and forces. The second paragraph describes a supply pod collision. The third paragraph discusses impact force and safety. Below the text is a sub-section "Changing the Time of Collision" with another paragraph and a photograph of a soccer game.

Collisions and Impact Forces


You may be familiar with [collisions](#). These are events in which two objects hit each other, such as a bug hitting the windshield of a car or a soccer player kicking a ball. Every collision [exerts](#) an equal-sized force on each object involved in the collision. These [forces](#) can change the objects' [velocity](#), or speed in a particular direction.

A dropped supply [pod](#) hitting the ground is another example of a collision. Earth and the pod experience the same amount of force during the collision, but because Earth is so big, it's barely affected. The pod, on the other hand, can be damaged by the force of the collision because it experiences a big change of velocity—to zero! [Engineers](#) are not concerned with how the collision affects Earth, so they focus on only one of the equal forces exerted during the collision: the force exerted on the pod. This force is called the [impact force](#).

To keep the contents of the supply pod safe, engineers aim to keep the impact force as small as possible. The greater the force when the pod hits the ground, the more likely the materials are to break. Three factors affect the size of the force when the supply pod hits Earth: how long the collision lasts, the velocity of the pod on [impact](#), and the mass of the pod.

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You can open the Dossier using the link in the Welcome message.



Read and annotate
Chapter 2: “Collisions and Impact Forces” in the Dossier.

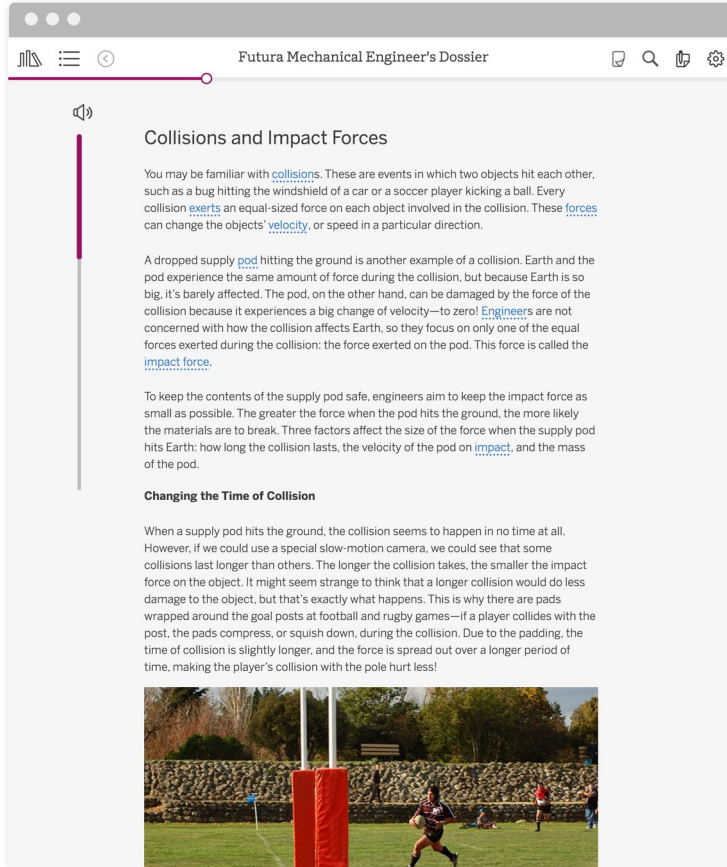


Discussing Annotations

After reading, discuss the following questions with your partner:

- While you were reading, what connections did you make to what you already know?
- What questions do you have about collisions and impact forces?
- What words are you unsure about?
- What information did you find to help you answer the focus question?

Impact force: the push exerted on one object when it has a collision with another object; just one of the pair of equal-sized forces in a collision



Futura Mechanical Engineer's Dossier

Collisions and Impact Forces


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When a supply pod hits the ground, the collision seems to happen in no time at all. However, if we could use a special slow-motion camera, we could see that some collisions last longer than others. The longer the collision takes, the smaller the impact force on the object. It might seem strange to think that a longer collision would do less damage to the object, but that's exactly what happens. This is why there are pads wrapped around the goal posts at football and rugby games—if a player collides with the post, the pads compress, or squish down, during the collision. Due to the padding, the time of collision is slightly longer, and the force is spread out over a longer period of time, making the player's collision with the pole hurt less!

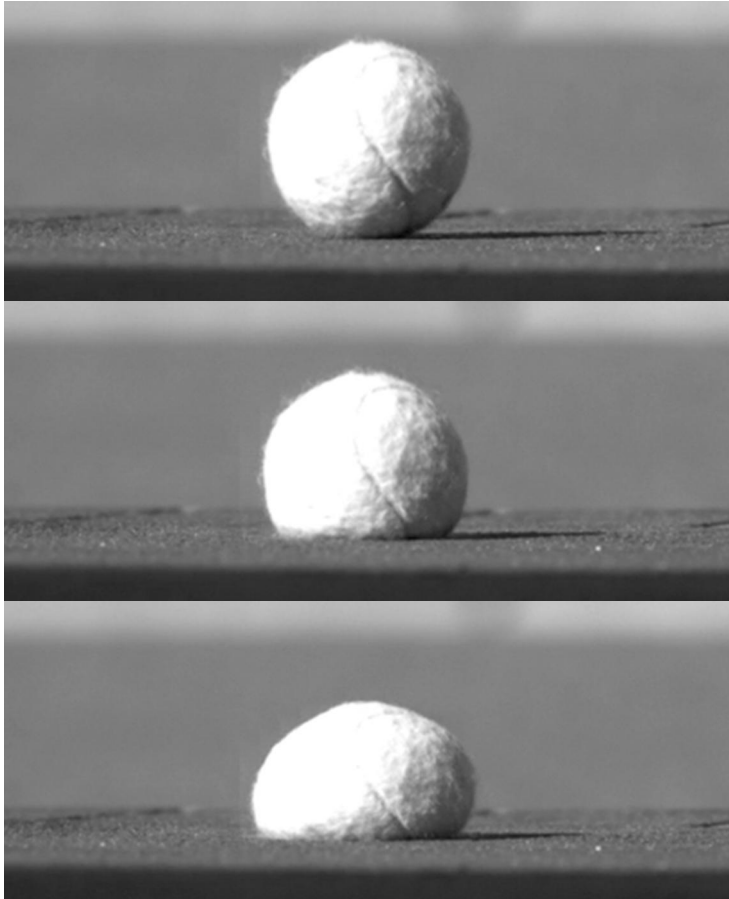


Let's work together to **summarize the key points** of what you read in Chapter 2.



+21.2 ms





When the tennis ball hits the surface, the collision doesn't happen all at once.

You see this as the ball changes shape when it collides with the surface.

Activity 2

Submitting Annotations



Submitting Annotations

Review your annotations for Chapter 2, answer the reflection question below the article, and then select HAND IN to submit your article.



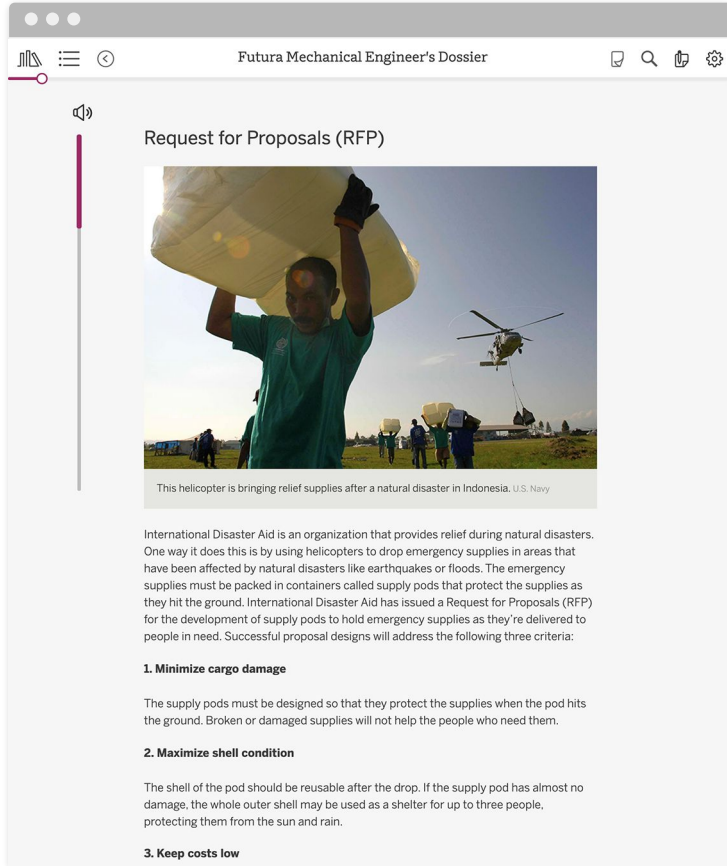
Request for Proposals (RFP)




Activity 3

After-Hours Work





Request for Proposals (RFP)



This helicopter is bringing relief supplies after a natural disaster in Indonesia. U.S. Navy

International Disaster Aid is an organization that provides relief during natural disasters. One way it does this is by using helicopters to drop emergency supplies in areas that have been affected by natural disasters like earthquakes or floods. The emergency supplies must be packed in containers called supply pods that protect the supplies as they hit the ground. International Disaster Aid has issued a Request for Proposals (RFP) for the development of supply pods to hold emergency supplies as they're delivered to people in need. Successful proposal designs will address the following three criteria:

- 1. Minimize cargo damage**

The supply pods must be designed so that they protect the supplies when the pod hits the ground. Broken or damaged supplies will not help the people who need them.

- 2. Maximize shell condition**

The shell of the pod should be reusable after the drop. If the supply pod has almost no damage, the whole outer shell may be used as a shelter for up to three people, protecting them from the sun and rain.

- 3. Keep costs low**

For this task, you'll **read and annotate** Chapter 1: "Request for Proposals (RFP)" in the Dossier.

Then, you'll submit your annotations and respond to some questions.



After-Hours Work

Return to [Futura Workspace](#) and be sure you've completed all internship tasks for the day.

- Open the Dossier.
- Read and annotate Chapter 1: "Request for Proposals" (RFP).
- Double-check your workspace inbox to see if there are Safety Guidelines to read and a Safety Agreement to submit.
- If your internship coordinator has told you to submit your annotations, move on the next student screen to hand them in.

Remember to select the Force and Motion Engineering Internship from the login page for the Futura Workspace.



End of Lesson



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HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

Amplify.

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Live Navigation



How is the Immersive Engineering Internship different from the core units?

Planning for the Unit

- Unit Overview
- Unit Map
- Getting Ready to Teach
- Materials and Preparation
- Science Background
- Standards at a Glance
- Immersive Engineering Internship**
- Teacher References
- Lesson Overview Compilation

Printable Resources

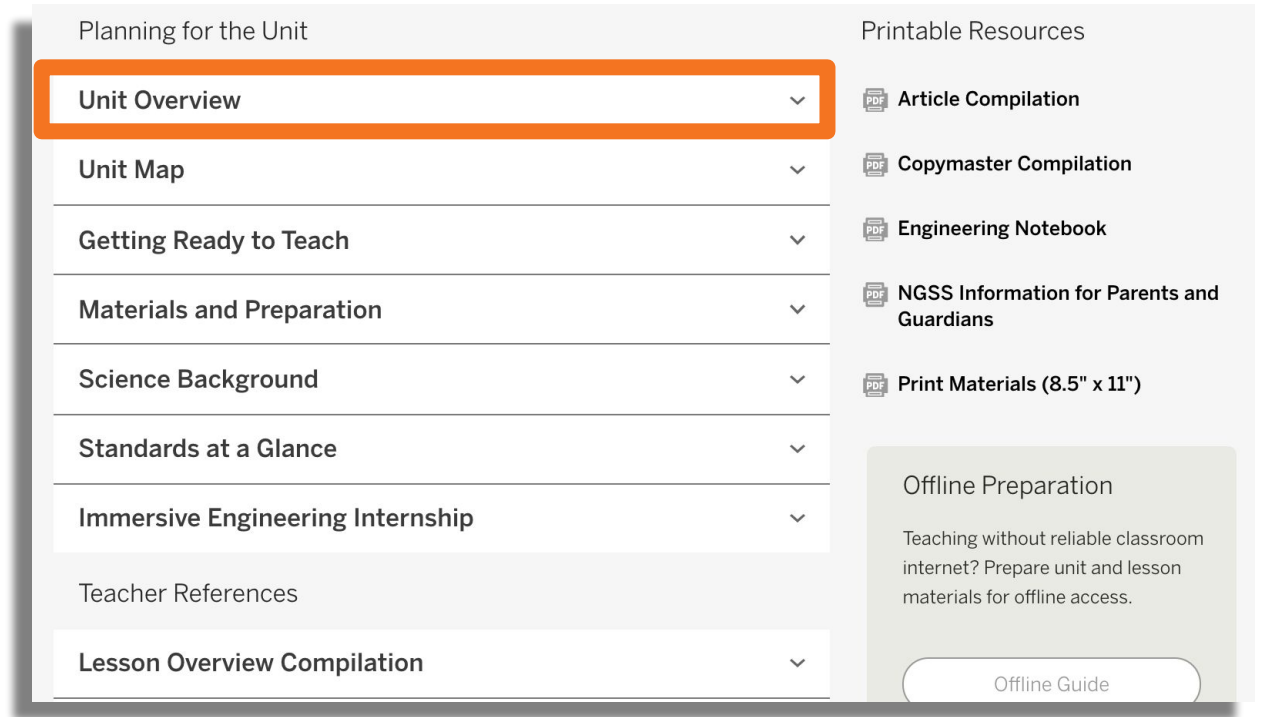
- Article Compilation
- Copymaster Compilation
- Engineering Notebook
- NGSS Information for Parents and Guardians
- Print Materials (8.5" x 11")

Offline Preparation

Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.






Offline Guide

Where do you find the Unit Design Problem?



The screenshot shows a navigation menu for a unit. The 'Unit Overview' option is highlighted with an orange border. The menu is organized into two main sections: 'Planning for the Unit' and 'Printable Resources'. The 'Offline Preparation' section is also visible at the bottom right.

Planning for the Unit	
Unit Overview	▼
Unit Map	▼
Getting Ready to Teach	▼
Materials and Preparation	▼
Science Background	▼
Standards at a Glance	▼
Immersive Engineering Internship	▼
Teacher References	
Lesson Overview Compilation	▼

Printable Resources	
 Article Compilation	
 Copymaster Compilation	
 Engineering Notebook	
 NGSS Information for Parents and Guardians	
 Print Materials (8.5" x 11")	

Offline Preparation

Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.

Offline Guide

Guided EI Unit Internalization Planner
Unit-level internalization

Unit title:

What is the Unit Design Problem?

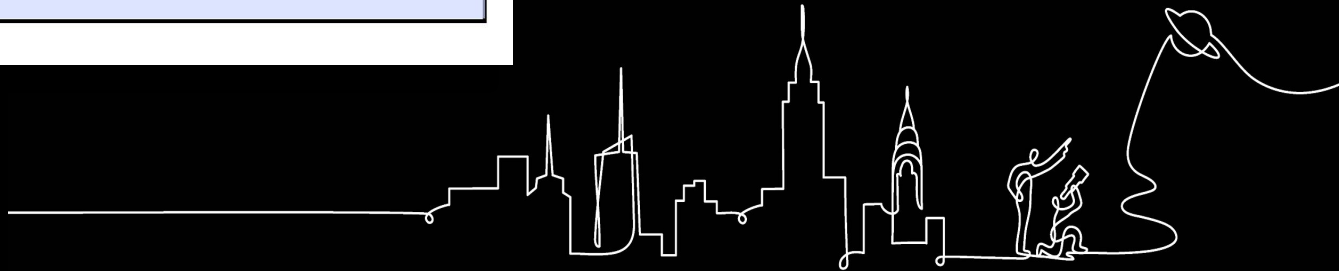
Unit Question:

Student role:

Unit Map:

How is the Immersive Engineering Internship different from the core and launch units?

Guided Unit Internalization Document



What is the student role? How is the Unit Map different in EI from Core Units?

Guided EI Unit Internalization Planner
Unit-level internalization

Unit title:	
What is the Unit Design Problem?	
Unit Question:	Student role:
Unit Map:	
How is the Immersive Engineering Internship different from the core and launch units?	

Planning for the Unit

- Unit Overview
- Unit Map
- Getting Ready to Teach
- Materials and Preparation
- Science Background
- Standards at a Glance
- Immersive Engineering Internship

Teacher References

- Lesson Overview Compilation

Printable Resources

- Article Compilation
- Copymaster Compilation
- Engineering Notebook
- NGSS Information for Parents and Guardians
- Print Materials (8.5" x 11")

Offline Preparation

Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.

Offline Guide

What do you need to do for interns on Day 4?

Guided EI Unit Internalization Planner
Unit-level internalization

Unit title:	
What is the Unit Design Problem?	
Unit Questions:	Student role:
Unit Map:	
How is the Immersive Engineering Internship different from the core and launch units?	

Planning for the Unit

Unit Overview



Unit Map



Getting Ready to Teach



Materials and Preparation



Science Background



Standards at a Glance



Immersive Engineering Internship



Teacher References

Lesson Overview Compilation



Printable Resources



Article Compilation



Copymaster Compilation



Engineering Notebook



NGSS Information for Parents and Guardians



Print Materials (8.5" x 11")

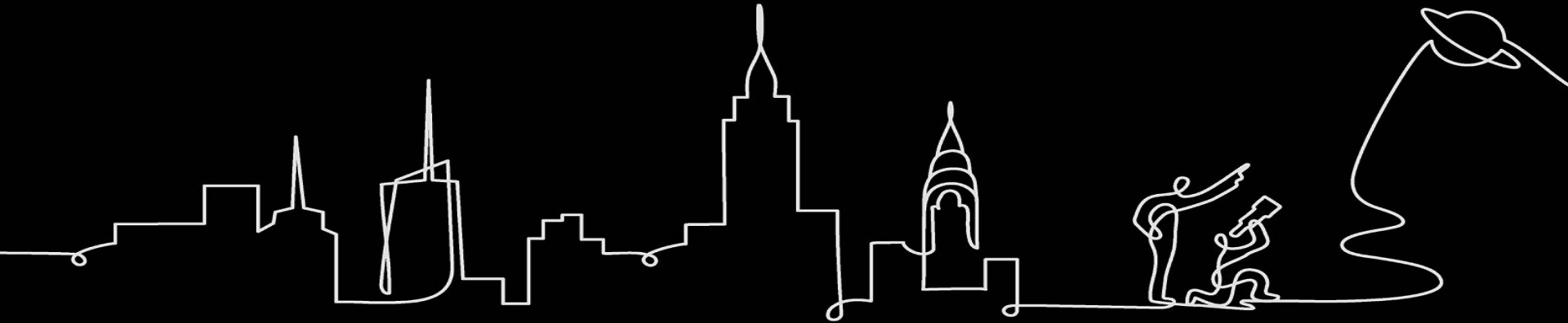
Offline Preparation

Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.

Offline Guide

Reflect-Type-Chat! Share and Learn

In two sentences or less, what do students figure out by the end of the unit?



By the end of
the unit what
will the
students
figure out?

Planning for the Unit

- Unit Overview
- Unit Map**
- Getting Ready to Teach
- Materials and Preparation
- Science Background
- Standards at a Glance
- Immersive Engineering Internship

Teacher References

- Lesson Overview Compilation

Printable Resources

- Article Compilation
- Copymaster Compilation
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- NGSS Information for Parents and Guardians
- Print Materials (8.5" x 11")

Offline Preparation

Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.

Offline Guide

Guided EI Unit Internalization Planner
Unit-level internalization

Unit title:

What is the Unit Design Problem?

Unit Question: Student role:

Unit Map:

How is the Immersive Engineering Internship different from a core unit?

Guided EI Unit Internalization Planner
Unit-level internalization

Unit title:	
What is the Unit Design Problem?	
Unit Question:	Student role:
Unit Map:	
How is the Immersive Engineering Internship different from the core and launch units?	

Planning for the Unit

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- Materials and Preparation
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- Standards at a Glance
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- Teacher References
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Offline Preparation

Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.

Offline Guide

Unit title:

What is the Unit Design Problem?

Unit Overview

Unit Question: **Lesson Overview Compilation**

Student role: **Unit Overview**

Unit Map:

Unit Map

How is the Immersive Engineering Internship different from the core and launch units?

Immersive Engineering Internship

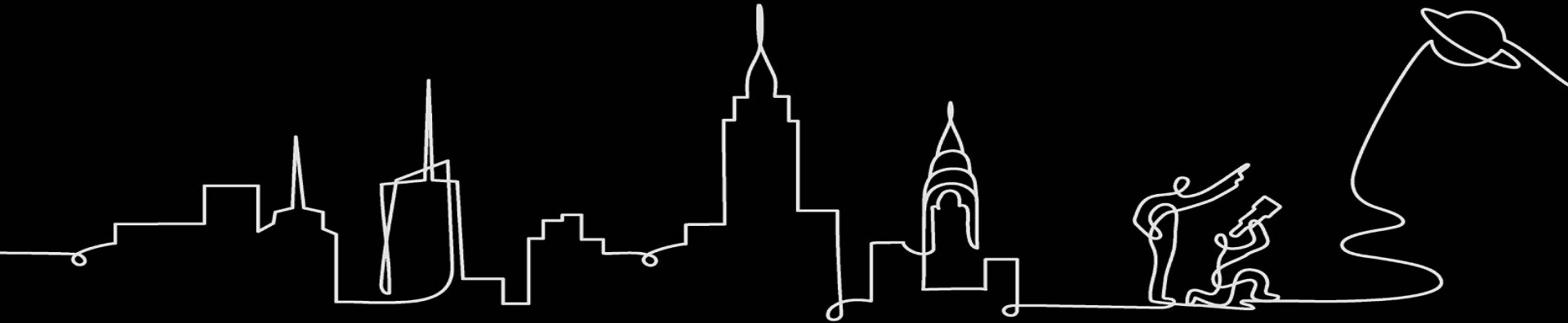
**Where to
Look!**

Interns Working from home?



Reflect-Type-Chat! Share and Learn

**How will you adjust the Engineering
Internship for your instructional
model?**





Questions?

Plan for the day

- Framing the day
- Unit Internalization
- **Explore EI Components**
- Planning
- Reflection and closing



**Read the Apps
in your Unit
Section of the
Teacher
References:
Futura
Workspace
and
Supply Drop
Simulation**

Teacher References

Lesson Overview Compilation



Standards and Goals



3-D Statements



Assessment System



Articles in This Unit



Apps in This Unit





FUTURA

ENGINEERING THE FUTURE



Earth's Changing Climate



Section 1



Section 2



WORKSPACE





Design Details

Shell Wood	Add-On (Top) Parachute - Large
Padding 20% Air Bags 20% Feathers 10% Metal Foam 20% Packing Peanuts	Add-On (Bottom) None

Test Results

Impact Force On Pod **200,737**
Newtons

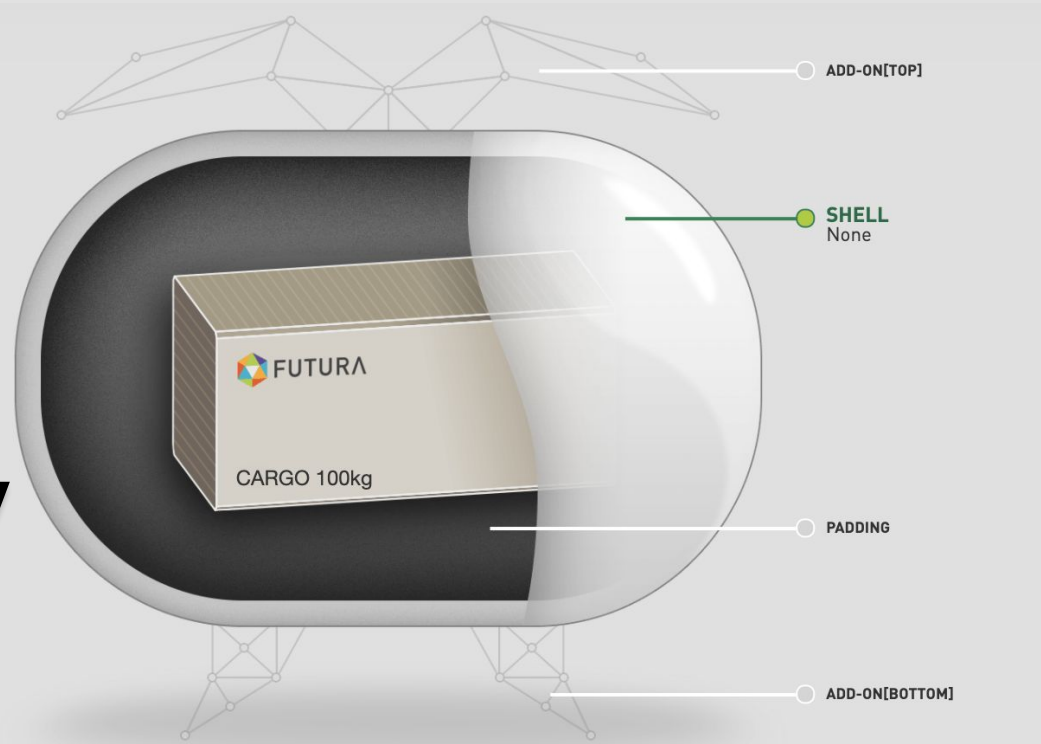
Total Pod Mass **122.9kg**
Velocity **15.7m/s**

Shell Condition
Building Materials

Total Pod Cost **\$1,377.00**
Cargo Damage **8.2 %**



Explore the Supply Drop Simulation. Locate the days that students will be using it and explore the activity sequence

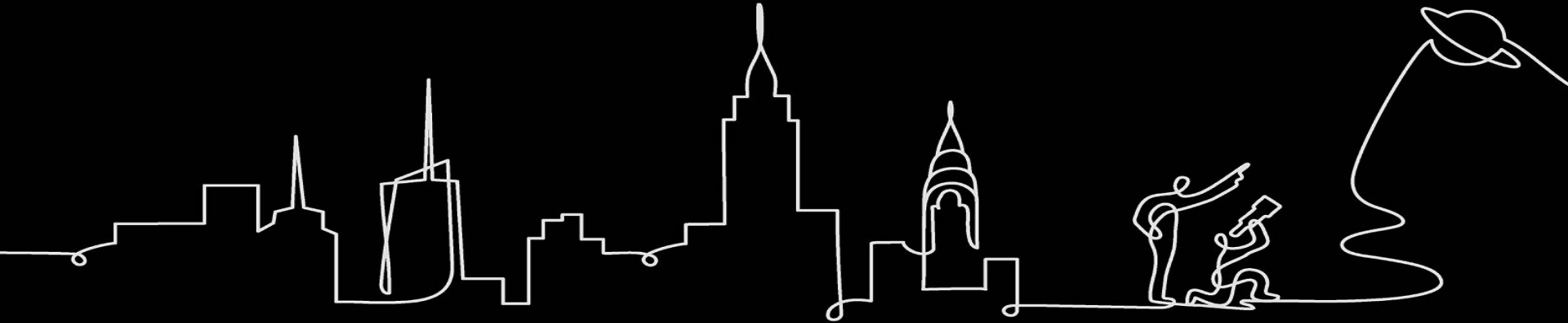


In Chat

What extra resources do you have to support your interns?

Reflect-Type-Chat! Share and Learn

**Which self-study resource on the
Program-Hub will you use most often
and why?**



Plan for the day

- Framing the day
- Unit Internalization
- Explore EI Components
- **Planning**
- Reflection and closing

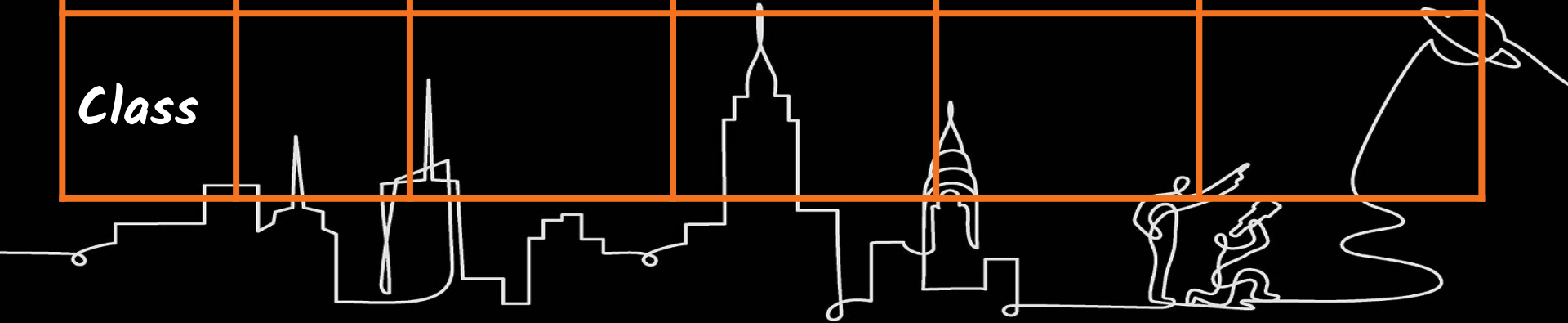


Think-Type-Chat

Share and Learn

Take a moment to think about your current instructional model. Please share in chat!

	M	T	W	Th	F
Class					
Class					



Guided Planning

Use the lesson adaptation tool to adjust an in-class lesson for remote and hybrid learning.



Lesson Adaptation Considerations

While planning consider the information below to select the appropriate resources:

- Do you have more, less, or the same time as last year for Science?
- Your classroom instructional model (Hybrid or Remote)
- Student's access to technology (packet or slides/sheets)
- The 3rd party applications will you pair with Amplify resources (if any)?
- Do I want to add a hands on component? (model via video? Or complete during in person synchronous instruction)

Lesson:	Date:
Lesson purpose: [Lesson Brief: Overview]	3-D connections and formative assessment opportunities:
What the students will learn in this lesson and potential challenges.	How will the students be practicing the multiple modalities during this lesson?

Amplify Science sample lesson planning template cont.

Part 2: Getting ready to teach

Look at the Classroom Slides, digital tools, and books, as well as the Step-by-Step, Teacher Supports, and Possible Responses tabs in the Instructional Guide.

	Teaching notes	Remote/Hybrid Adaptation notes
	<p>Consider:</p> <ul style="list-style-type: none"> • What will the students experience in each activity? • How does each activity support students in achieving the purpose of the lesson? • What do you feel comfortable with? • What challenges might you encounter in teaching this lesson, and how might you address these challenges? 	<p>Consider:</p> <ul style="list-style-type: none"> • Materials will you need to prepare • Differentiate • Time for lesson • Your classroom instructional model • Student's access to technology • 3rd party applications • Add a hands on component? (model via video Or complete during in person synchronous instruction)
Activity 1		
Time:		
Activity 2		
Time:		
Activity 3		
Time:		
Activity 4		
Time:		
Activity 5		
Time:		

Lesson Adaptation Tool for Remote and Hybrid Learning

Lesson:	Date:
Lesson purpose: [Lesson Brief: Overview]	3-D connections and formative assessment opportunities:
What the students will learn in this lesson and potential challenges.	How will the students be practicing the multiple modalities during this lesson?

Lesson Adaptation!

Choose a lesson and use the Lesson Adaptation Tool to begin recording planning information about the lesson.

Amplify Science sample lesson planning template cont.

Part 2: Getting ready to teach

Look at the Classroom Slides, digital tools, and books, as well as the Step-by-Step, Teacher Supports, and Possible Responses tabs in the Instructional Guide.

Teaching notes		Remote/Hybrid Adaptation notes
Consider:	<ul style="list-style-type: none">• What will the students experience in each activity?• How does each activity support students in achieving the purpose of the lesson?• What do you feel comfortable with?• What challenges might you encounter in teaching this lesson, and how might you address these challenges?	Consider: <ul style="list-style-type: none">• Materials will you need to prepare• Differentiate• Time for lesson• Your classroom instructional model• Student's access to technology• 3rd party applications• Add a hands on component? (model via video Or complete during in person synchronous instruction)
Activity 1		
Time:		
Activity 2		
Time:		
Activity 3		
Time:		
Activity 4		
Time:		
Activity 5		
Time:		

Lesson Adaptation!

With the Lesson Adaptation Tool begin adjusting the lesson for remote and hybrid learning. Note begin with in-class slides

Lesson Adaptation Considerations

While planning consider the information below to select the appropriate resources:

- Do you have more, less, or the same time as last year for Science?
- Your classroom instructional model (Hybrid or Remote)
- Student's access to technology (packet or slides/sheets)
- The 3rd party applications will you pair with Amplify resources (if any)?
- Do I want to add a hands on component? (model via video? Or complete during in person synchronous instruction)

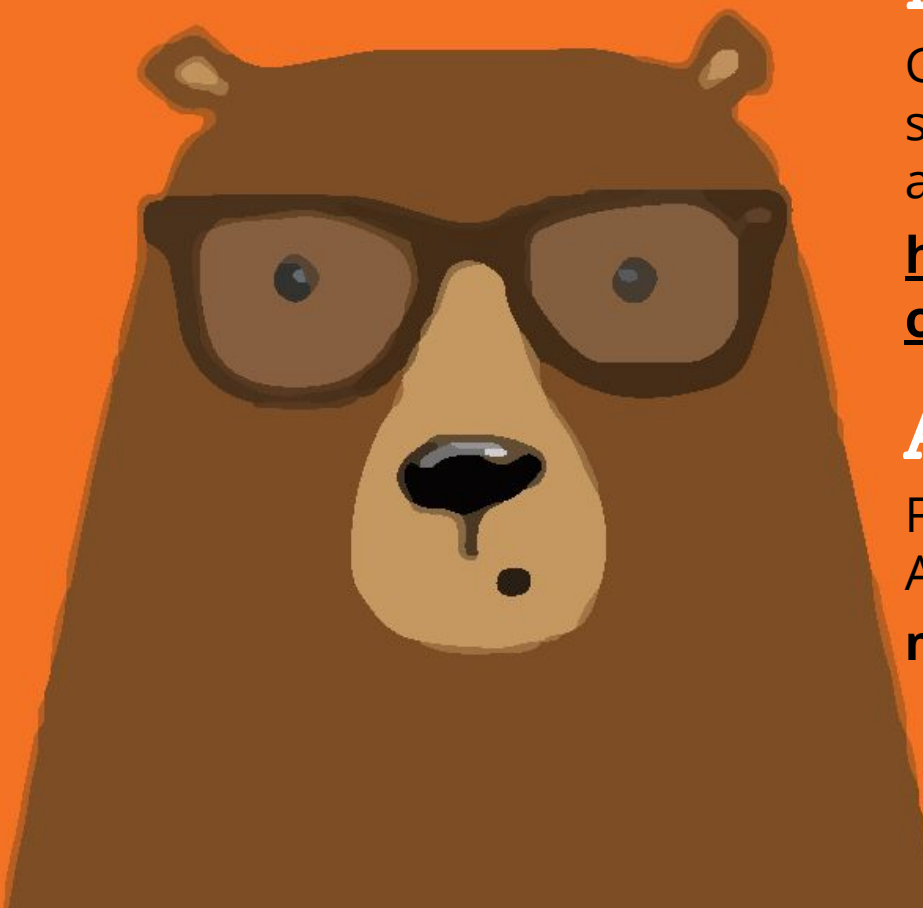
Plan for the day

- Framing the day
- Unit Internalization
- Explore EI Components
- Planning
- **Reflection and closing**





Questions?



NYC Program Guide

Glean additional insight into the program's structure, intent, philosophies, supports, and flexibility.

<https://my.amplify.com/programguide/content/national/welcome/nyc/>

Amplify Help

Find lots of advice and answers from the Amplify team.

my.amplify.com/help

Customer Care

Seek information specific to enrollment and rosters, technical support, materials and kits, and teaching support, weekdays 7AM-7PM EST.



scihelp@amplify.com



800-823-1969



Amplify Chat