Innovator Insights

Grades 6-8, 9-12

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Innovator Insights Senior – Complete Lesson Plans

Overview

Innovator Insights is a series of videos featuring high school students from Nebraska asking questions of innovators. The goal of having students watch and interact with the videos is to help children become aware of different types of innovation, connect content to career and technical education, to explore entrepreneurship and mentorship. Each video in this series is accompanied by a video guide with questions, key vocabulary and connections to career fields.

In addition to the video guides, each video has accompanying resources. The resources are divided by sections and contain a lesson plan, a design challenge and graphic organizers and worksheets to help facilitate the lesson. All together they make up this facilitators guide. The guide is divided into three main sections. Within each section, there are different steps in the design process. There is no specific order to those sections, and allows the instructor to choose how to navigate each component in the design process. The three main sections are:

Understanding and Identifying a Problems and Opportunities

In this section of the unit, the students will identify a problem by observing the world around them and conducting an interview with someone in their class/school. After conducting the interview, students will create a problem statement for the problem they have identified.

Creative Problem Solving

In the creative problem solving component of the lesson, students will attempt to address the problem or area for improvement by storyboarding a potential solution, and creating a prototype of their innovation. Students will also create a potential name for their business as well as create business cards that can share with others.

Testing and Sharing an Idea

In the testing and sharing portion of the unit, students will put their innovations to the test and get feedback from others in order to make their innovation better. The final product can be shared in a variety of ways but the students will end the unit by creating a shark tank (Minnow Pond) like pitch. Students will also create a potential name for their business as well as create business cards that can share with others.

Outcomes of The Design Process

Outlined in the table below are the components for each section of this unit and innovator insights videos recommended for each.

Lesson	Design Challenge	Insight Video	Resources
Introduce	Mentor Affinity List	Grain Weevil	Innovator Insights Notes Page Journal Entry Worksheet Affinity List Document or Electronic Resource
Understanding and I	Defining a Problem		
Empathize	Rapid Response Interview	Shemate	Interview Prep Sheet Interview Notes worksheet
Define	SMART Innovation Goal	Retail Aware	Debugging Graphic Organizer SMART Goal Graphic Organizer Step by Step Graphic Organizer
Ideation and Creativ	e Problem Solving		
Ideate	Idea Board	WhiteclayMushroomScience	Brainstorming Graphic Organizer Synthesizing Ideas Graphic Organizer
Prototype	Storyboard/Prototype/ Proof of Concept	Virtual Incision	Storyboarding Graphic Organizer Observe the Prototype in Action Observation Log
Testing and Sharing	an Idea		
Test	Test an Idea and Collect That Data	Opendorse	Data sheet or electronic spreadsheet Observe the Prototype in Action Observation Log
Share	Sales Pitch/Business Plan	American Outlaws	Business Plan Framework Document Observe the Prototype in Action Observation Log

Design Challenges

Design challenges accompany the video to provide an opportunity to engage with innovation more fully. Each challenge builds on the one before but can be used independently.

Introduction to Innovation

Design Challenge 1: Build an Innovator Affinity List

In this design challenge, students will begin to develop an affinity list of innovators/mentors based initially off of the innovator insights video and they will identify and classify these innovations based on career field, type of innovation, and impact or disruption the innovation is/will potentially have. As students progress through the unit, they will add other potential contacts/mentors to their list based on their own ideas and aspirations.

Understanding and Identifying Problems and Opportunities

In this section of the unit, the students will identify a problem by observing the world around them and conducting an interview with someone in their class/school, family or community. After conducting the interview, students will create a problem statement for the problem they have identified. They will also create an innovation goal using a SMART goal framework to help make the goal more manageable and achievable.

Design Challenge 2: Conduct an Interview and Create a Rapid Response

In order to help others solve problems, it is important to see the world from their perspective. In this design challenge, you will conduct an empathy interview. Use this as an opportunity to gain the perspective of others and help see opportunities for innovation.

Design Challenge 3: Define a problem and Create an Innovation Goal

To solve a problem, one must first clearly define what the problem is and how innovation attempts to solve that problem. In this design challenge you will identify the problem you are solving and create a goal for your solution. The goal should be Specific, Measurable, Achievable, Relevant, and Time bound or SMART.

Creative Problem Solving

In the creative problem solving component of the unit, students will attempt to address the problem or area for improvement by storyboarding a potential solution, and creating a prototype of their innovation. This could also be developed and presented as proof of concept where a video or animation is created as a demonstration of what would be possible. For Example, that could be a 3D Computer Aided Design or a structure the student would like to explore building.

Design Challenge 4: Ideate a Solution

Brainstorming is an important part of the innovative process. In this design challenge students will brainstorm many solutions to a problem and tell the story of how that problem could be solved.

Design Challenge 5: Create a Prototype!

Put your design to action by creating a prototype. A prototype is an early version of something that is meant to get better. In this design challenge students will create a working prototype of your innovation.

Testing and Sharing Ideas

In the testing and sharing portion of the unit, students will put their innovations to the test and get feedback from others in order to make their innovation better. The final product can be shared in a variety of ways but the students will end the unit by creating a shark tank (Minnow Pond) like pitch. Students will also create a potential name for their business as well as create business cards that can share with others.

Design Challenge 6: Test an Idea and Collect that Data

In this design challenge, students will identify potential measurables to determine the impact and success of their prototype. Depending on the type of innovation, this could be measured in forms of a survey or clicks on a website. The measurable portion of the innovation should relate back to that portion of their SMART goal.

Design Challenge 7: Develop a Business Plan and Share Your Idea

It's time to begin to develop a business plan for the innovations and identify potential contacts from the affinity lists as potential mentors. In this challenge students will begin to fill out the framework for a business plan, identify potential mentors or industry contacts, and develop a presentation to be used as a sales pitch for stakeholders, potential investors, or consumers of the innovation.

Types of Innovation

Product Innovation: This is when someone comes up with a new thing that they make. It could be a toy, a tool, or something else you can touch and use. An example would be if someone creates a brand new kind of bicycle with special features, that's product innovation.

Service Innovation: Services are things people do for you, like fixing your bike or giving you a haircut. Service innovation happens when someone thinks of a new and better way to do those things. For example, if someone starts a mobile haircutting van that comes to your house, that's service innovation.

Process Innovation: This is about finding new ways to do things faster, easier, or better. Imagine if people figured out a new way to make cookies in a shorter time without changing how yummy they are. That's process innovation because they improved the way of making cookies.

Technology Innovation: Technology means fancy tools and gadgets that help us do things. When someone makes a new gadget, like a robot that can clean your room, that's technology innovation.

Business Model Innovation: Think of a business like a lemonade stand. Business model innovation is when someone comes up with a cool idea to run their business in a different way. For example, if they start letting customers order lemonade online and deliver it to their homes, that's business model innovation.

Marketing Innovation: Marketing is how companies tell people about their products or services. If a company starts using funny videos on the internet to show how good their toys are, that's marketing innovation.

Social Innovation: Social innovation is all about making the world a better place by coming up with new ideas that help people or the environment. For instance, if kids in your school start a club to clean up the playground and plant more trees, that's social innovation.

Remember, all these types of innovation are like using your imagination to come up with new and exciting things that can make life more interesting or solve problems! Keep in mind, because innovation can be so different, these might not be the only types of innovation. If you feel like an innovation is something different, do be afraid to classify it differently.

Career Fields

Agriculture, Food, and Natural Resources:

This is all about taking care of our environment, plants, and animals. People in this field grow food like fruits and veggies, raise animals like cows and chickens, and make sure nature stays healthy. They also help make sure we have enough food to eat.

Business, Marketing, and Management:

Think of this like running a lemonade stand! People in this field know how to sell things and make money. They decide how much things should cost, how to tell others about what they're selling, and how to make sure the business runs smoothly.

Communication and Information Systems:

Imagine using a walkie-talkie or a computer to talk with friends far away. People in this field help us use phones, computers, and other gadgets to talk and share information. They make sure everything works properly so we can stay connected.

Health Sciences:

Health science strives to help people stay healthy and feel better when they're sick. Doctors, nurses, and other health professionals work in this field. They take care of us when we're not feeling well and teach us how to stay strong.

Human Sciences and Education:

Like being a teacher or a helper. People in this field work in schools and teach students many things like reading, math, and science. They also help kids learn about being kind and getting along with others.

Skilled and Technical Sciences:

Think of this as being a super handy person! People in this field know how to build, fix, and create things. They might fix cars, build houses, or even design cool video games. They use their hands and their brains to make stuff.

Introduction to Innovation

In order to become an innovator it's important to start seeing the world through an innovators lens. In this design challenge, you will create a collection of innovation, both from the innovators insights videos and in the real world by documenting different characteristics of the innovations you've observed.

Introduction to Innovation Lesson Plan

Objectives

Students will:

- Demonstrate an understanding of different types of innovations by observing, documenting and analyzing a variety of types of innovation.
- Identify the impact the innovation has on people and the environment, and its meaning for the career field in which the innovations are most closely aligned.
- Document key aspects of each featured innovator after watching and observing different types of innovation.
- Develop an affinity list to begin to build a list of contacts that could be reached to provide support during the innovation process.

Summary of Task

In this task, students are introduced to the concept of innovation and innovators through the innovator insights videos. As they watch each video, they will begin to document key insights from the interviews. As a facilitator, use key questions to prompt thinking and encourage engagement. Once they have watched the video, encourage discussion about how the innovation could be classified and who it helps. Students will be introduced to the concept of an affinity list. Encourage the students to expand their lists beyond the innovators in the videos to include other innovations they observe or are interested in.

Resources

- Innovator Insights Notes Page
- Journal Entry Worksheet
- Affinity List Document or Electronic Resource

Vocabulary

• Innovation: Innovation refers to the process of introducing new ideas, methods, products, or services that bring about significant improvements or advancements. It involves the application of creativity and problem-solving to address existing

challenges or meet unmet needs.

- Entrepreneur: An entrepreneur is an individual who takes the initiative to start and manage a business or venture. Entrepreneurs are typically characterized by their innovative mindset, willingness to take risks, and ability to identify opportunities in the market.
- **Ideation:** Ideation is the process of generating and developing new ideas or concepts. It involves brainstorming, creative thinking, and exploring various possibilities to solve problems or pursue opportunities.
- **Iteration:** Iteration refers to the process of repeating or revising a sequence of steps or actions in order to achieve improvement or desired outcomes. It involves the cyclical process of trying, learning, making adjustments, and trying again.
- Affinity List: An affinity list is a curated collection of people's contact information, like email addresses or social media profiles, who share a common interest, purpose, or connection. It's used to send out information, updates, or messages to everyone on the list who has a similar affinity or interest in the topic.

Key Questions

Use questions below to engage with the content of the video before, during and after. These could be used as bell ringers, journal writings and reflections, interview questions, or exit tickets.

- What are some things that make you happy?
- Can you create a list of people in your life that are important to you?
- What does the word persistence mean to you?
- Have you ever had a good idea that came from a really weird thought?
- What is something you learned from by failing?
- How does failure help in the innovative process?
- What is something you made a big improvement in that made you proud of yourself?

Engage: Watch the Innovator Insights Video

Use the following steps to watch the video. Pause the video as needed to allow for discussion or to highlight key information. The videos could also be used in a flipped or digital environment

- 1. Explore Key Questions for each video. Use those questions to engage before, during and after the videos.
- 2. Watch each video as a class, in small groups as a station, or individually.

- 3. Complete the innovator insights documentation log with key information about the innovator featured in the video.
- 4. Discuss in small groups or as a class:
 - a. The Type of Innovation
 - b. The Problem Being Solved
 - c. Who innovation helps
- 5. Write or record any additional questions you would like to ask the innovator.
- 6. Start an innovation journal to document your journey of innovation. Include key insights from the video or reflect on your first design challenge experience. This could be digital or a notebook/scrapbook or your choice.
- 7. Add the innovator to your affinity list and any potential others that may apply in a local setting.
- 8. Share the innovation idea with someone you think might be interested in.
- 9. As an extension to the video, complete the **Ideation Design Challenge: Create** an **Affinity List** from the innovator insights toolkit.

Explore: Have the students participate in the design challenge by following the steps below.

Each design challenge is designed to walk students through a component of the design process.

- Understand the Challenge: Carefully read and understand the challenge instructions. Your task is to build and continuously develop a list of innovators and contacts who can potentially support and enrich your innovative ideas. We will call this an affinity list.
- 2. Explore Innovator Insights: Begin by watching Innovator Insights video resources provided to you. These videos offer valuable insights into the stories, experiences, and advice of accomplished innovators. Additionally, as you go about your day, look for other innovations you notice. Do research to find out more about it and if you are able to identify a company or a person, add them to your list.
- 3. **Brainstorm Key Information:** While watching the videos, brainstorm key information or takeaways. Use the Innovator Insights Notes document to help walk you through the process of thinking about each innovation. Use the attached definitions to help understand and support some of the questions on that document.

- 4. **Identify Overlapping Themes:** Look for common themes or ideas that appear across multiple videos. These shared insights could be valuable principles to keep in mind as you develop your own innovative ideas.
- 5. **Find Actionable Insight:** Pay attention to any actionable advice or strategies mentioned by the innovators. These could be direct takeaways you apply to your innovation journey.
- 6. **Categorize Innovators:** Group the innovators based on their fields of expertise or the themes they discussed. This categorization will help you find relevant insights when needed.
- 7. **Continuously Update and Evolve:** Understand that this list is a living document that will grow over time. As you come across new resources, videos, or innovators, keep adding to and evolving your list.
- 8. **Plan Your Outreach Strategy:** Once you've developed your list, think about how you might reach out to these innovators for advice, mentorship, or collaboration. Be thoughtful in your approach. If you know of others with similar ideas or that you feel might be interested in the innovation, share the video.
- 9. **Reflect:** Consider the process of creating and developing your innovator affinity list. How did you identify key takeaways? How does this list align with your evolving innovation idea?

Extend

Consider using technology to store and catalog your innovation. This could be online resources like Google Forms and Google Sheets to help with the documentation. Have the students start by creating a list of people they know. Use a google form to submit the data to a spreadsheet. Create a contact group list in a contact app on a computer or smartphone.

Evaluate

Encourage Students to continue to add innovators and innovations they observe in the world. This could be something that interests them or relates to their innovation idea. It could be someone that could potentially serve as a mentor, coach or provide critical feedback. Have the student add additional information as they think of more information they would like to collect.

Grain Weevil - Viewing Guide

Learning Goals

Create and continue to develop an affinity list of innovators and contacts to potentially help develop and support ideas of innovation. Begin an innovation journal to document the process of innovation.

Resources

- Innovator Insights Notes Page
- Affinity List Document or Electronic Resource

Key Questions

- What are some things that make you happy?
- What does the word persistence mean to you?
- Have you ever had a good idea that came from a really weird thought?
- What is something you learned from by failing?
- How does failure help in the innovative process?
- What is something you made a big improvement in that made you proud of yourself?
- How are some possible ways to measure the success of this innovation?

Steps

- 1. Explore Key Questions for each video. Use those questions to engage before, during and after the videos.
- 2. Watch each video as a class, in small groups as a station, or individually.
- 3. Complete the innovator insights documentation log with key information about the innovator featured in the video.
- 4. Discuss in small groups or as a class:
 - a. The Type of Innovation
 - b. The Problem Being Solved
 - c. Who innovation helps
- 5. Write or record any additional questions you would like to ask the innovator.
- 6. Start an innovation journal to document your journey of innovation. Include key insights from the video or reflect on your first design challenge experience.
- 7. Add the innovator to your affinity list and any potential others that may apply in a local setting.
- 8. Share the innovation idea with someone you think might be interested in.

9. As an extension to the video, complete the **Ideation Design Challenge: Create an Affinity List** from the innovator insights toolkit.

Type of Innovation: Product, Technology

What does this innovation do:

- Introduces a new idea or way of doing something
- Changes the way something is done forever and makes old way obsolete or rare

Career Field Impact: Agriculture, Food, and Natural Resources

Key Terms/Ideas/Concepts:

- Innovation: Innovation refers to the process of introducing new ideas, methods, products, or services that bring about significant improvements or advancements. It involves the application of creativity and problem-solving to address existing challenges or meet unmet needs.
- Entrepreneur: An entrepreneur is an individual who takes the initiative to start and manage a business or venture. Entrepreneurs are typically characterized by their innovative mindset, willingness to take risks, and ability to identify opportunities in the market.
- Ideation: Ideation is the process of generating and developing new ideas or concepts. It involves brainstorming, creative thinking, and exploring various possibilities to solve problems or pursue opportunities.
- Iteration: Iteration refers to the process of repeating or revising a sequence of steps or actions in order to achieve improvement or desired outcomes. It involves the cyclical process of trying, learning, making adjustments, and trying again.
- Affinity List: An affinity list is a curated collection of people's contact information, like email
 addresses or social media profiles, who share a common interest, purpose, or connection. It's used
 to send out information, updates, or messages to everyone on the list who has a similar affinity or
 interest in the topic.

Questions from the video

Where do your ideas come from?
What advice would you give yourself as a kid now?
Talk about the importance of persistence.
Talk about identifying mentors.

What is your best advice for young innovators?

Innovator Insights Notes

General Innovator/Innovation Information

Name of Innovation/Innovator:		
Type of Innovation:	Product Service Process Technology Business Model Marketing Social Other	What are some ways this innovation could be measured for success or impact?
Career Field Impacted:	 Agriculture, Food, and Natural Resources Business, Marketing, and Management Communication and Information Systems Health Sciences Human Sciences and Education Skilled and Technical Sciences 	
How is this innovation:	Builds on an old idea Repurposes the way something is used or something is done Introduces a new idea or way of doing something Changes the way something is done forever and makes old way obsolete	
Beneficiaries of this Innovation		

/ocabulary, Key Concepts, Insights				
elated Local Mento	r			
Industry	Business	Person		
- Industry	Business	1 010011		
_				
uestions additiona	I would you like to ask the inno	vator?		

Affinity List

Email	Phone	Company	Career Field	Title	Notes
	Email	Email Phone	Email Phone Company Company Com	Email Phone Company Career Field	Email Phone Company Career Field Title

Understanding and Identifying Problems and Opportunities for Innovation

In this section of the unit, the students will identify a problem by observing the world around them and conducting an interview with someone in their class/school. After conducting the interview, students will create a problem statement for the problem they have identified.

Conduct an Interview/Create a Rapid Response Video Lesson Plan

Objectives

Students will:

- Discuss and construct interview questions for an interview
- Conduct an interview with another person
- Actively listen and take notes during the interview
- Synthesize and Share information from the interview in the form or a rapid response video

Summary of Task

Students will develop questions and conduct an interview of an individual. This could be a classmate at school, a family member or someone in their community. The purpose of the empathy interview is to learn more about the person they are interviewing and get a better understanding of problems they encounter or opportunities for innovation. At the conclusion of the interview students should synthesize the information and evaluate their findings. This could be produced as a rapid response video, news segment or podcast.

Resources

- Innovator Insights Notes Page
- Affinity List Document or Electronic Resource
- Empathy Interview Prep Sheet
- Empathy Interview Notes

Vocabulary

 Empathy: Empathy is understanding and feeling what someone else is going through. It's like putting yourself in their shoes to imagine their feelings and experiences.

- Name Image Likeness (NIL): Name Image Likeness, often referred to as NIL, means that college athletes can now earn money from their own fame, like getting paid for endorsements or appearances related to their sports skills and reputation.
- **Status Quo**: Status quo means the current situation or the way things are right now. It's like the regular routine or the usual state of affairs.
- **Collaboration**: Collaboration is when people work together on a project or task, combining their ideas, skills, and efforts to achieve a common goal.
- **Eagerness**: Eagerness is a strong and enthusiastic desire to do something. It's like feeling really excited and ready to jump into an activity.
- Ambiguity: Ambiguity is when something is unclear or can be understood in more than one way. It's like having a situation or statement that isn't straightforward and can be interpreted differently by different people.
- Rapid Response Video: A rapid response video in a student interview context is a quick video that students create in response to a specific question, topic, or situation. It's usually made in a short amount of time and aims to capture their immediate thoughts, opinions, or reactions. This type of video allows students to share their perspectives and insights promptly, often reflecting their genuine and unscripted reactions to the subject matter. It's a way to capture authentic and timely responses in a video format.

Key Questions

Use questions below to engage with the content of the video before, during and after. These could be used as bell ringers, journal writings and reflections, interview questions, or exit tickets.

- What is empathy?
- How does empathy impact the behaviors of you and others around you?
- How did the innovator in the video come up with their idea?
- When you design or create something for someone, why is it important to think about the world through the eyes of others?
- Think about a time when you felt differently about something than a friend or family member. What did you feel?
- How does empathy and understanding the perspective of others play a role in connecting the athletes in the video to different opportunities that match with their personalities and interests?
- Have you ever built something that you didn't think was possible?

Engage: Watch the Innovator Insights Video [15 Min.]

Use the following steps to watch the video. Pause the video as needed to allow for discussion or to highlight key information. The videos could also be used in a flipped or digital environment

- 1. Explore Key Questions for each video. Use those questions to engage before, during and after the videos.
- 2. Watch each video as a class, in small groups as a station, or individually.
- 3. Complete the innovator insights documentation log with key information about the innovator featured in the video.
- 4. Discuss in small groups or as a class:
 - The Type of Innovation
 - b. The Problem Being Solved
 - c. Who innovation helps
- 5. Write or record any additional questions you would like to ask the innovator.
- 6. Continue your innovation journal to document your journey of innovation. Include key insights from the video or reflect on the next design challenge experience.
- 1. Add the innovator to your affinity list and any potential others that may apply in a local setting.
- 7. Share the innovation idea with someone you think might be interested in.
- 8. As an extension to the video, complete the **Design Challenge #2: Create a Rapid Response Video** from the innovator insights toolkit.

Explore: Have the students participate in the design challenge by following the steps below.

Each design challenge is designed to walk students through a component of the design process.

- 1. Choose Your Interviewee: Decide who you want to interview. It could be a f
- 2. **Understand the Challenge:** Carefully read and comprehend the challenge instructions. Your task is to conduct an interview with a specific individual and then create a rapid response video based on that interview.
- 3. **Choose Your Interviewee:** Select an individual to interview who is knowledgeable about the topic you're focusing on. It could be a teacher, a mentor, an expert, or someone with relevant experience.
- 4. **Research Your Interviewee:** Gather information about your interviewee's background, expertise, and contributions. This will help you prepare thoughtful questions.

- 5. **Identify the Interview Focus:** Determine the specific topic or aspect you want to cover during the interview. This focus will guide your questions and discussion.
- 6. **Prepare Questions:** Develop a list of insightful questions that will lead to a meaningful conversation. Your questions should encourage your interviewee to share valuable insights. For help with your interview, use the Interviewing Quick Tips guide for helpful ideas.

Full web link address:

https://ded2p6uwhlbzl.cloudfront.net/documents/Interviewing_Workshop_Handout_-RadioActive.pdf

- 7. **Conduct the Interview:** Arrange a suitable time to conduct the interview. Ensure you have your questions ready and a recording device set up if you intend to record.
- 8. **Listen Actively:** During the interview, listen carefully to your interviewee's responses. Follow up with relevant questions to dig deeper into the topic.
- 9. **Capture Video Highlights:** As part of the interview, record key video segments where your interviewee shares particularly interesting or valuable insights.
- 10. Create the Rapid Response Video or Presentation: Review the recorded interview and select the most compelling segments. Use these segments to create a rapid response video that encapsulates the key takeaways. For more information, use the resources from StoryMaker. If no technology is available. Create a presentation or document that summarizes your interview as you outline the key points.
- 11. Edit and Enhance: Use video editing software to edit the interview segments, add visuals, text overlays, and transitions. Ensure your video is engaging and concise.
- 12. **Reflect:** Consider the process of conducting the interview and creating the rapid response video. How did you approach the interview? How did you condense the interview highlights into a short video?

Extend

Have the students record the interview using technology if it is available. After recording, produce the content into a final product. This could be done in the form of a podcast, rapid interview or a fictitious news segment. Use the resources from StoryMaker to support you in this process.

Full website links:

https://www.story-maker.org/library/how-to-record-a-podcast/

https://www.story-maker.org/library/how-to-record-a-rapid-response/ https://www.story-maker.org/library/what-makes-a-good-video-story/#overview

Evaluate

Share out the information as a class, in small groups or with partners. Once students have shared their interviews, group any common information and determine if any follow up information is needed. Determine what questions, if any still need to be answered or if there is information that remains unclear. Follow up with the interviewees as necessary and encourage students to thank the person they interviewed.

SheMate - Viewing Guide

Learning Goals

Conduct an empathy interview and produce a rapid response video summarizing that experience.

Resources

- Innovator Insights Notes Page
- Journal Entry Worksheet
- Affinity List Document or Electronic Resource
- Interview Prep Sheet
- Interview Notes worksheet

Key Questions

- What is empathy?
- How does empathy impact the behaviors of you and others around you?
- How did the innovator in the video come up with their idea?
- When you design or create something for someone, why is it important to think about the world through the eyes of others?
- Think about a time when you felt differently about something than a friend or family member. What did you feel?
- How does empathy and understanding the perspective of others play a role in connecting the athletes in the video to different opportunities that match with their personalities and interests?
- Have you ever built something that you didn't think was possible?

Steps

- 1. Explore Key Questions for each video. Use those questions to engage before, during and after the videos.
- 2. Watch each video as a class, in small groups as a station, or individually.
- 3. Complete the innovator insights documentation log with key information about the innovator featured in the video.
- 4. Discuss in small groups or as a class:
 - a. The Type of Innovation
 - b. The Problem Being Solved
 - c. Who innovation helps

- 5. Write or record any additional questions you would like to ask the innovator.
- 6. Continue your innovation journal to document your journey of innovation. Include key insights from the video or reflect on the next design challenge experience.
- 1. Add the innovator to your affinity list and any potential others that may apply in a local setting.
- 7. Share the innovation idea with someone you think might be interested in.
- 8. As an extension to the video, complete the **Design Challenge #2: Create a Rapid Response Video** from the innovator insights toolkit.

Type of Innovation: Product, Technology

What does this innovation do: Introduces a new idea or way of doing something

Career Field Impact: Agriculture, Food, and Natural Resources

Key Terms/Ideas/Concepts:

- **Empathy**: Empathy is understanding and feeling what someone else is going through. It's like putting yourself in their shoes to imagine their feelings and experiences.
- Name Image Likeness (NIL): Name Image Likeness, often referred to as NIL, means that college athletes can now earn money from their own fame, like getting paid for endorsements or appearances related to their sports skills and reputation.
- **Status Quo**: Status quo means the current situation or the way things are right now. It's like the regular routine or the usual state of affairs.
- **Collaboration**: Collaboration is when people work together on a project or task, combining their ideas, skills, and efforts to achieve a common goal.
- **Eagerness**: Eagerness is a strong and enthusiastic desire to do something. It's like feeling really excited and ready to jump into an activity.
- **Ambiguity**: Ambiguity is when something is unclear or can be understood in more than one way. It's like having a situation or statement that isn't straightforward and can be interpreted differently by different people.
- Rapid Response Video: A rapid response video in a student interview context is a quick
 video that students create in response to a specific question, topic, or situation. It's usually
 made in a short amount of time and aims to capture their immediate thoughts, opinions, or
 reactions. This type of video allows students to share their perspectives and insights
 promptly, often reflecting their genuine and unscripted reactions to the subject matter. It's a
 way to capture authentic and timely responses in a video format.

Questions/Prompts from the Video

Talk about the importance of risk taking.

Talk about collaborating with others.

Where do your ideas come from?
Talk about the importance of curiosity.
What's your best advice for young innovators who are passionate about changing the world?

Empathy Interview Prep Sheet

Introduce yourself. Explain the purpose of the interview. What are you hoping to learn and why? What are you hoping to learn from the interview?	Shift the focus from yourself to the person you are interviewing. Ask the person to introduce themself.
Specific Questions Get the person talking and sharing stories about what you want to learn about • Tell me about a time when • What's the best/worst?	Prompts to Get Unstuck I wonder why/ what if? Why do you think that? Can you say more about that? What happens next? What more do you want me to know about?

Last Chance

Signal that the interview is over, "As we conclude this interview, I would like to thank you for your time." Encourage any last thoughts, and offer a way to reconnect after the interview for any follow up questions or additional thoughts. .

Empathy Interview

What are you curious about?	For whom are you trying to solve this problem?
What Problem are you trying to solve?	Who will benefit from solving this problem?
Who will you interview?	
Draft Questions	Final Questions

Day in the Life

Spend time observing another person. First, observe the environment? What is happening? How As you are observing them, note any event or activity they experience. How do you perceive their emotions and if you have questions you would like to ask, record them in the corresponding column below.

Time of Day and Environment Record the time the event occurred. Could be a specific time or more general such as morning or afternoon. What else was happening?	Description Record of brief description of what occurred or an event of significance	Emotions How did you think the person seemed to feel? How did others around feel? Why do you think that? What cues did you pick up on?	Questions What questions do you have?

Define a Problem Lesson Plan

Objectives

Students will:

- Identify potential problem they would like to solve through innovation
- Construct a clear, concise problem statement
- Create an innovation goal to attempt to address the problem

Summary of Task

In this task, students will generate a wide range of potential solutions to a defined problem. After identifying a problem, the student will construct a problem statement to clearly define the issue they are trying to address. In the last part of the task, the students will create an innovation SMART goal as a way to define a target for their innovation.

Resources

- Debugging Graphic Organizer
- SMART Goal Graphic Organizer
- Step by Step Graphic Organizer

Vocabulary

- **Inspiration:** Inspiration refers to the profound and uplifting feeling that arises when encountering something deeply meaningful or extraordinary. It prompts a strong desire to engage in creative, purposeful, or innovative pursuits.
- Curiosity: Curiosity embodies the innate inclination to seek knowledge, explore, and comprehend the complexities of the world. It serves as a driving force behind the pursuit of understanding, encouraging individuals to inquire, investigate, and delve deeper into subjects of interest.

Key Questions

Use questions below to engage with the content of the video before, during and after. These could be used as bell ringers, journal writings and reflections, interview questions, or exit tickets.

- What is one thing from your youth that still influences you?
- Where do ideas come from?
- Talk about the importance of risk taking.
- Talk about the importance of curiosity.
- What's your best advice to young innovators?

Engage: Watch the Innovator Insights Video

Use the following steps to watch the video. Pause the video as needed to allow for discussion or to highlight key information. The videos could also be used in a flipped or digital environment

- 1. Explore Key Questions for each video. Use those questions to engage before, during and after the videos.
- 2. Watch each video as a class, in small groups as a station, or individually.
- 3. Complete the innovator insights documentation log with key information about the innovator featured in the video.
- 4. Discuss in small groups or as a class:
 - a. The Type of Innovation
 - b. The Problem Being Solved
 - c. Who innovation helps
- 5. Compare notes and discuss and make cases for different selections made. Retail Aware for example fits into multiple categories. This is also important when thinking about your own innovation and potential mentors.
- 6. Write or record any additional questions you would like to ask the innovator.
- 7. Continue your innovation journal to document your journey of innovation. Include key insights from the video or reflect on the next design challenge experience.
- 1. Add the innovator to your affinity list and any potential others that may apply in a local setting.
- 8. Share the innovation idea with someone you think might be interested in.
- As an extension to the video, complete the Design Challenge #3:Problem Statement/Create an Innovation Goal from the innovator insights toolkit.

Explore: Have the students participate in the design challenge by following the steps below.

Each design challenge is designed to walk students through a component of the design process.

- 1. **Review Your Interview:** Look at the notes or recordings from your interview. Think about the things you learned and the ideas that were shared.
- 2. **Identify a Problem:** Based on the information from the interview, think about a specific problem that you noticed. It could be something that needs improvement or a challenge that people are facing.
- 3. **Describe the Problem:** Write down a clear description of the problem. Explain what it is, who it affects, and why it's important to solve. Write the steps as specific as possible to the process or structure of the problem. Use the graphic organizer to help walk through the steps.
- 4. **Generate Ideas for Improvement:** Make a list of potential improvements or enhancements that could help solve the problem. Think about different ways to make things better. Use the debugging worksheet to help with this process.
- 5. **Set an Innovation Goal:** From the list of improvements, choose one that stands out as a potential goal. This should be an ambitious and exciting idea that could make a big impact.
- 6. **Define Your Innovation Goal:** Write down your innovation goal. This goal should explain what you want to create or change to solve the problem. Make sure it's clear and inspiring. Make your goal a SMART one. Smart is Specific, Measurable, Achievable, Relevant, and Time-Bound. For more information see the document below.
- 7. **Consider Necessary Information:** Think about what else you need to know to work on your innovation goal. Are there any specific facts, details, or skills you need to learn or gather?
- 8. **Reflect:** Think about what you've done in this challenge. Did you identify a real problem? Is your innovation goal exciting and achievable? This reflection can help you with future challenges.

Extend

Take photos using the technology available to document the areas or places where there are opportunities for innovation. Use these pictures potentially for before and after

photos. If you've identified a problem that centers around a process, use a video recording or a series of photos to show how the problem progresses.

Evaluate

Have the students share their problem statements with the class, with partners or individually. Identify common themes and innovations for potential partnerships. Ensure that each innovation is aligned to the SMART goal format to help facilitate success for the students.

Retail Aware - Viewing Guide

Learning Goals

To solve a problem, one must first clearly define what the problem is and how innovation attempts to solve that problem. In this design challenge you will identify the problem you are solving and create a goal for your solution.

Resources

- Debugging Graphic Organizer
- SMART Goal Graphic Organizer
- Step by Step Graphic Organizer

Key Questions

- What do you think of when you hear the word retail?
- In an ideal world, what would school look like for you?
- Have you ever tried to start a business or sell something like a lemonade stand?
- When is a time when you have asked the question why more than once? How did that help you understand the situation
- How is curiosity a part of the innovation process?
- When have you overcome a problem or challenge in your life?

Steps

- 1. Explore Key Questions for each video. Use those questions to engage before, during and after the videos.
- 2. Watch each video as a class, in small groups as a station, or individually.
- 3. Complete the innovator insights documentation log with key information about the innovator featured in the video.
- 4. Discuss in small groups or as a class:
 - a. The Type of Innovation
 - b. The Problem Being Solved
 - c. Who innovation helps
- 5. Compare notes and discuss and make cases for different selections made. Retail Aware for example fits into multiple categories. This is also important when thinking about your own innovation and potential mentors.

- 6. Write or record any additional questions you would like to ask the innovator.
- 7. Continue your innovation journal to document your journey of innovation. Include key insights from the video or reflect on the next design challenge experience.
- 1. Add the innovator to your affinity list and any potential others that may apply in a local setting.
- 8. Share the innovation idea with someone you think might be interested in.
- 9. As an extension to the video, complete the **Design Challenge #3:Problem Statement/Create an Innovation Goal** from the innovator insights toolkit.

Type of Innovation: Service, Product

What does this innovation do: Builds on an old idea

Career Field Impact: Business, Marketing, and Management

Key Terms/Ideas/Concepts:

Inspiration: Inspiration refers to the profound and uplifting feeling that arises when encountering something deeply meaningful or extraordinary. It prompts a strong desire to engage in creative, purposeful, or innovative pursuits.

Curiosity: Curiosity embodies the innate inclination to seek knowledge, explore, and comprehend the complexities of the world. It serves as a driving force behind the pursuit of understanding, encouraging individuals to inquire, investigate, and delve deeper into subjects of interest.

Questions/Prompts from the Videos

What is one thing from your youth that still influences you?

Where do ideas come from?

Talk about the importance of risk taking.

Talk about the importance of curiosity.

What's your best advice to young innovators?

Debugging

nat are some things that bug you? Take a few moments to draw or write down some thing at bug you or that you would like to see or change or that could be better.				

Smart Goal Template

Components	Description	Elaborate in each section about your goal
Specific	Make your goal about something narrow and focused. A specific goal is easier to achieve than a broad goal.	
Measureable	Make sure that you can define what success looks like and how you will identify progress toward it.	
Achievable	Make sure your goal is reasonable to accomplish in a short amount of time.	
Relevant	Make sure your goal aligns to larger things you seek to accomplish	

Time-Based	Put a timeframe on your goal that is reasonable to achieve.	

Step by Step Graphic Organizer

Use this graphic organizer to go step by step through the process that leads to the problem you have identified.

Step	What is Happening	What is the effect it is having?	Who is that impacting?
1			
2			
3			
4			
5			
6			
7			
8			
9			

Step	What is Happening	What is the effect it is having?	Who is that impacting?
1			
2			
3			
4			
5			
6			
7			
10			

Creative Problem Solving

In the creative problem solving component of the unit, students will attempt to address the problem or area for improvement by storyboarding a potential solution, and creating a prototype of their innovation. Students will also create a potential name for their business as well as create business cards that can share with others.

Brainstorm a Solution Lesson Plan

Objectives

Students will:

- Participate in a brainstorming process to think of many potential solution to a problem
- Create a list of solutions that could be considered a feasible solution
- Identify a possible solution they would like to prototype.

Summary of Task

In this task, students will participate in a brainstorming activity to think about many different ways to creatively solve the problem they have identified. After narrowing the list of ideas to a few possible solutions, the students will pick one potential idea they would like to focus on.

Resources

- What If Problem Solving Graphic Organizer
- Brainstorming Graphic Organizer
- Synthesizing Ideas Graphic Organizer

Vocabulary

Mycelium: A network of fungal threads that grow underground helping absorb nutrients for mushrooms.

Sustainability: A product or process designed to last over time without ill effects or compromise to its environment.

Culture: Ideas, customs, and ways of doing things that people share.

Tradition: A practice a group of people has been doing for a long time, like a special way of celebrating a holiday or an event. It is typically passed down from family or communities for generations.

Key Questions

Use questions below to engage with the content of the video before, during and after. These could be used as bell ringers, journal writings and reflections, interview questions, or exit tickets.

Mushroom Scientist Video

- What is the first thing that comes to mind when you hear the word failure?
- What is something you made a big improvement in that made you proud of yourself?
- What are some things you are uncertain about?
- What does uncertainty mean to you?
- What is something you learned from by failing?
- How does failure help in the innovative process?

Whiteclay Artist Questions

- What is something from the past that you've experienced that influences how you
 do or react to things now?
- Have you ever taught yourself how to do something? How did you go about learning that skill? Where did the resources come from for you to learn?
- How do traditions and culture play a role in the innovation process?
- What are some favorite traditions you have or participate in?

Engage: Watch the Innovator Insights Video

- 1. Explore Key Questions for each video. Use those questions to engage before, during and after the videos.
- 2. Watch each of the videos as a class, in small groups as a station, or individually.
- 3. Complete the innovator insights notes graphic organizer with key information about the innovator featured in the video.
- 4. Discuss in small groups or as a class:
 - The Type of Innovation
 - b. The Problem Being Solved
 - c. Who innovation helps
- 5. Write or record any additional questions you would like to ask the innovator.
- 6. Record the Insight Unlocked vocabulary words to the word wall document.
- 7. Use the synthesizing ideas graphic organizer to think about how the two innovations in the videos might combine into a new idea.

8. As an extension to the video, complete the **Ideation Design Challenge: Brainstorm a Solution!** from the innovator insights toolkit.

Explore: Have the students participate in the design challenge by following the steps below.

Each design challenge is designed to walk students through a component of the design process.

- Understand the Challenge: Read or listen carefully to the challenge instructions.
 Make sure you know that you're focusing on brainstorming ideas to solve a previously identified problem.
- 2. **Review the Problem:** Refresh your memory about the problem you identified in the previous challenge. Understand its details and why it's important to solve.
- Prepare Your Brainstorming Space: Find a quiet and comfortable place to brainstorm. Have some paper or a digital device ready to write down your ideas.
- 4. **Set a Time Limit:** Decide how much time you'll spend brainstorming. It could be 10, 15, or 20 minutes whatever works for you.
- 5. **Generate Ideas:** Start brainstorming ideas to solve the problem. Write down as many ideas as you can within the time limit. Don't worry about how good they are at this point.
- 6. **Think Creatively:** Let your imagination run wild. Come up with unusual, wild, or even funny ideas. Sometimes the most creative solutions come from thinking outside the box.
- 7. **No Criticism:** Remember, during brainstorming, there's no such thing as a bad idea. Don't criticize or judge any of your ideas just write them down.
- 8. **Review Your List:** After your brainstorming session, look at the list of ideas you've come up with. It's okay if some seem silly they might lead to something great!
- Identify Promising Ideas: Highlight or circle the ideas that stand out to you.
 These could be ones you think are interesting, feasible, or could have a big impact.
- 10. **Reflect:** Think about the brainstorming process. Did you enjoy coming up with different ideas? How did you feel when you were thinking creatively about solutions?

11. **Record:** Create a video reflection explaining different ideas and highlight the idea you think is most practical. Talk about the process, how you felt as you were thinking about different ideas. Highlight some of your off the wall ideas or something unusual.

Extend

Have the students record a video reflection explaining different ideas and highlight the idea you think is most practical. Talk about the process, how you felt as you were thinking about different ideas. Highlight some of your off the wall ideas or something unusual.

Evaluate

As the students share their potential solutions, make sure it aligns with the problem statement they created. If it doesn't align, it still may still be a good solution. It may just be an opportunity for students to revisit or rewrite their problem statement. Remember this is an iterative process and one will often find the opportunity to revisit old ideas.

Mushroom Scientist - Viewing Guide

Learning Goals

To solve a problem, one must first clearly define what the problem is and how innovation attempts to solve that problem. In this design challenge you will identify the problem you are solving and create a goal for your solution.

Resources

Innovator Insights Documentation Log Journal Entry Worksheet Affinity List Document or Electronic Resource Innovation Goal worksheet Five Whys Graphic Organizer

Key Questions

- What is the first thing that comes to mind when you hear the word failure?
- What is something you made a big improvement in that made you proud of yourself?
- What are some things you are uncertain about?
- What does uncertainty mean to you?
- What is something you learned from by failing?
- How does failure help in the innovative process?

Steps

- 1. Explore Key Questions for each video. Use those questions to engage before, during and after the videos.
- 2. Watch each video as a class, in small groups as a station, or individually.
- 3. Complete the innovator insights documentation log with key information about the innovator featured in the video.
- 4. Discuss in small groups or as a class:
 - a. The Type of Innovation
 - b. The Problem Being Solved
 - c. Who innovation helps

- 5. Compare notes and discuss and make cases for different selections made. Retail Aware for example fits into multiple categories. This is also important when thinking about your own innovation and potential mentors.
- 6. Write or record any additional questions you would like to ask the innovator.
- 7. Continue your innovation journal to document your journey of innovation. Include key insights from the video or reflect on the next design challenge experience.
- 1. Add the innovator to your affinity list and any potential others that may apply in a local setting.
- 8. Share the innovation idea with someone you think might be interested in.
- 9. As an extension to the video, complete the **Design Challenge #4:Problem Statement/Create an Innovation Goal** from the innovator insights toolkit.

Type of Innovation: Process

What does this innovation do: Introduces a new idea or way of doing something

Career Field Impact: Agriculture, Food, and Natural Resources

Key Terms/Ideas/Concepts:

- **Mentor:** A mentor is an experienced and knowledgeable individual who guides, advises, and supports another person in their personal or professional development. Through sharing insights, providing guidance, and offering wisdom, a mentor nurtures the growth and learning of the mentee.
- **Uncertainty**: Uncertainty characterizes situations where outcomes or events are not definitively predictable or known. It denotes a lack of surety and involves managing ambiguity, making decisions based on incomplete information, and acknowledging the potential for diverse outcomes.
- Improvement: Improvement signifies the act of enhancing or advancing the quality, condition, or performance of something. It involves refining processes, skills, or attributes through intentional efforts, aiming to achieve better results or outcomes.
- **Mycelium:** Mycelium refers to the intricate network of thread-like structures produced by fungi. Serving as the foundation of fungal growth, mycelium facilitates nutrient absorption and distribution. It operates beneath the surface, connecting organisms and contributing to ecosystem health.

Questions/Prompts from the Videos

Talk about pursuing your passion through the work you do? What advice would you give your teen self now? Talk about Identifying Mentors.

What excites you?

Talk about learning from failure.

What is your best advice for young innovators who are hoping to drive change in the world?

Whiteclay Artist - Viewing Guide

Learning Goals

Put your design to action by creating a prototype. A prototype is an early version of something that is meant to get better. In this design challenge you will create a working prototype of your innovation.

Resources

Resources to create a physical prototype. Craft material like cardboard, tape, pencils and colors could potentially be helpful

Space to create your prototype.

Digital tool and access to the internet. (optional)

Storyboarding Graphic Organizer

Key Questions

- What is something from the past that you've experienced that influences how you do or react to things now?
- Have you ever taught yourself how to do something? How did you go about learning that skill? Where did the resources come from for you to learn?
- How do traditions and culture play a role in the innovation process?
- What are some favorite traditions you have or participate in?

Steps

- 1. Explore Key Questions for each video. Use those questions to engage before, during and after the videos.
- 2. Watch each video as a class, in small groups as a station, or individually.
- 3. Complete the innovator insights documentation log with key information about the innovator featured in the video.
- 4. Discuss in small groups or as a class:
 - a. The Type of Innovation
 - b. The Problem Being Solved
 - c. Who innovation helps

- 5. Compare notes and discuss and make cases for different selections made. This is also important when thinking about your own innovation and potential mentors.
- 6. Write or record any additional questions you would like to ask the innovator.
- 7. Continue your innovation journal to document your journey of innovation. Include key insights from the video or reflect on the next design challenge experience.
- 8. Add the innovator to your affinity list and any potential others that may apply in a local setting.
- 9. Share the innovation idea with someone you think might be interested in.
- 10. As an extension to the video, complete the **Design Challenge #5:Create a prototype** from the innovator insights toolkit.

Type of Innovation: Service, Social

What does this innovation do: Repurposes the way something is used or something is done

Career Field Impact: Human Sciences and Education

Key Terms/Ideas/Concepts:

Tradition: Beliefs, practices, customs, and rituals that are passed down through generations. It holds significance in preserving cultural heritage, fostering a sense of continuity, and connecting people to their historical roots and shared values.

Reservation: A reservation refers to a designated area of land set aside for specific purposes, often involving the protection and preservation of natural resources, culture, or the rights of indigenous communities. Reservations can serve as spaces for cultural, social, and environmental conservation.

Culture: The collective values, beliefs, customs, behaviors, and artistic expressions that define a particular group, society, or community. It shapes individuals' identities and interactions, influencing how they perceive the world, communicate, and pass on knowledge from one generation to another. Culture reflects the unique history, traditions, and shared experiences of a people.

Questions/Prompts from the Videos

Talk about pursuing your passion?

Talk about collaborating with others and how this enriches your work?

What excites you?

Talk about learning from failure.

What is your best advice to young innovators?

What If Problem Solving

Think of how we might make our school, or our community better. Let's brainstorm some ways to do that.

Challenges (What is challenging about the problem now)	How might we fix the challenges?
What is the	e problem?
Dreams (What we hope it looks like if the problem is solved)	What are the steps to achieve the dream?

Brainstorming

Use this page to draw, write, share all the ways you can think of to solve the problem you identified earlier.			
What is the idea or problem you are trying to solve?			
What are some possible solutions?			

Share these ideas with someone else. Circle the ones that you think are the best possible solutions. Star the one you think is the best. Have someone else do the same.

Synthesizing Ideas

Think of two different ideas you have throughout the brainstorming process. They could be similar or completely different. Draw or write down each below.

Idea 1	Idea 2			
What if those ideas combine. Think of all the different ways something new could emerge. Create the new idea in the space below.				
·				

Create a Prototype Lesson Plan

Objectives

Students will:

- Create a storyboard depicting how their innovation will impact users or participants of a process
- Work to develop a prototype or proof of concept of their idea
- Identify key benchmarks or milestones for their innovation

Summary of Task

In this task, students will develop a storyboard to outline how the innovation works and a working prototype to demonstrate how their innovation works. If the concept is large to develop initially or in the time frame allotted for this task, students could create a proof of concept to demonstrate exactly how their innovation works. They could also break down their innovation into smaller goals or milestones and complete the first initial portion of the innovation. A storyboard should focus on how the innovation impacts the users and environment.

Resources

- Resources to create a physical prototype. Craft material like cardboard, tape, pencils and colors could potentially be helpful
- Space to create your prototype.
- Digital tool and access to the internet. (optional)
- Storyboarding Graphic Organizer
- Observe the Prototype in Action Observation Log

Vocabulary

- Virtual: Virtual pertains to an environment or experience that is simulated or created electronically, often using computers or digital technologies. It encompasses situations that appear real, yet are constructed in a digital realm, allowing users to interact and engage without physical presence.
- **Incision**: Incision denotes a deliberate and controlled cut made, typically with precision, on a surface or material, often in medical or surgical contexts. It involves careful planning and execution to achieve specific objectives, such as

- accessing or repairing underlying structures.
- **Invasive**: Invasive describes processes or procedures that involve entering or intruding into a space, environment, or organism with the intent to examine, modify, or extract information or substances. It implies a level of intrusion that necessitates careful consideration of potential impacts and consequences.

Key Questions

Use questions below to engage with the content of the video before, during and after. These could be used as bell ringers, journal writings and reflections, interview questions, or exit tickets.

- When and how do you learn the fastest?
- How do you handle a situation that doesn't go according to plan?
- Think of a time when you made adaptations and things turned out better than expected. Explain that situation.
- What are some of your interests? What are some things you didn't think you
 would be interested in but found out later you were.
- What are some things you watch, read or listen to that inspire you?
- Make a list of things you are really good at doing.
- How is making mistakes in the medical profession different from making mistakes in other areas or professions? How do you think that impacts innovation?

Engage: Watch the Innovator Insights Video

- 1. Explore Key Questions for each video. Use those questions to engage before, during and after the videos.
- 2. Watch each of the videos as a class, in small groups as a station, or individually.
- 3. Complete the innovator insights notes graphic organizer with key information about the innovator featured in the video.
- 4. Discuss in small groups or as a class:
 - a. The Type of Innovation
 - b. The Problem Being Solved
 - c. Who innovation helps
- 5. Write or record any additional questions you would like to ask the innovator.
- 6. Record the Insight Unlocked vocabulary words to the word wall document.
- 7. Use the synthesizing ideas graphic organizer to think about how the two innovations in the videos might combine into a new idea.
- 8. As an extension to the video, complete the **Ideation Design Challenge: Brainstorm a Solution!** from the innovator insights toolkit.

Explore: Have the students participate in the design challenge by following the steps below.

Each design challenge is designed to walk students through a component of the design process.

- 1. **Understand the Challenge:** Read or listen carefully to the challenge instructions. You're now moving on to planning your prototype by creating a storyboard.
- 2. **Review Your Innovation Goal:** Refresh your memory about the innovation goal you set in the previous challenge. Keep this goal in mind as you create your storyboard. Focus on how the users interact with the innovation.
- 3. **Choose a Storyboarding Tool:** Decide which tool you'll use to create your storyboard. You can use graphic organizers, Google Slides, Jamboard, Apple Keynote, or any tool that allows you to arrange images and text.
- 4. **Plan Your Storyboard:** Think about the steps involved in your innovation. Break down how it will work from start to finish. Each step will be a "scene" in your storyboard.
- 5. **Create Scenes:** Using your chosen tool, create individual scenes for each step of your innovation. Add images, drawings, or icons that represent what will happen in each step.
- 6. **Add Descriptions:** Alongside each scene, write a short description or caption to explain what's happening. Keep it simple and clear so anyone looking at your storyboard can understand.
- 7. **Arrange the Storyboard:** Arrange your scenes in the order they'll happen just like a comic strip. Make sure the flow of the innovation is easy to follow.
- 8. **Review and Adjust:** Take a step back and review your storyboard. Does it make sense? Is it showing the progression of your innovation effectively? Make any necessary adjustments.
- Share Your Storyboard: If you'd like, share your completed storyboard with friends, family, or your teacher. Explain your innovation goal and how your storyboard represents it.
- 10. **Reflect:** Think about the process of creating your storyboard. Did it help you visualize your innovation? How did it feel to see your idea mapped out?

Extend

Have students create a storyboard using presentation software or animation software. Potentially use an artificial intelligence program to create the images for your storyboard to help show how your innovation will have an impact on users and the environment in which it functions. Have the students create a timeline for steps in the project using a spreadsheet or to do lists.

Evaluate

As the students share their storyboards, determine if it is possible to scale up the project. Is it possible to build? Is it a process that could be implemented permanently or piloted? If the answers to these questions are yes, encourage students to further develop their ideas or potentially identify others who could provide feedback.

Virtual Incision - Viewing Guide

Learning Goals

To solve a problem, one must first clearly define what the problem is and how innovation attempts to solve that problem. In this design challenge you will identify the problem you are solving and create a goal for your solution.

Resources

- Innovator Insights Documentation Log
- Journal Entry Worksheet
- Affinity List Document or Electronic Resource
- Innovation Goal worksheet
- Five Whys Graphic Organizer

Key Questions

- When and how do you learn the fastest?
- How do you handle a situation that doesn't go according to plan?
- Think of a time when you made adaptations and things turned out better than expected. Explain that situation.
- What are some of your interests? What are some things you didn't think you would be interested in but found out later you were.
- What are some things you watch, read or listen to that inspire you?
- Make a list of things you are really good at doing.
- How is making mistakes in the medical profession different from making mistakes in other areas or professions? How do you think that impacts innovation?

Steps

- 1. Explore Key Questions for each video. Use those questions to engage before, during and after the videos.
- 2. Watch each video as a class, in small groups as a station, or individually.
- 3. Complete the innovator insights documentation log with key information about the innovator featured in the video.
- 4. Discuss in small groups or as a class:
 - a. The Type of Innovation
 - b. The Problem Being Solved
 - c. Who innovation helps

- 5. Compare notes and discuss and make cases for different selections made. Retail Aware for example fits into multiple categories. This is also important when thinking about your own innovation and potential mentors.
- 6. Write or record any additional questions you would like to ask the innovator.
- 7. Continue your innovation journal to document your journey of innovation. Include key insights from the video or reflect on the next design challenge experience.
- 1. Add the innovator to your affinity list and any potential others that may apply in a local setting.
- 8. As an extension to the video, complete the **Design Challenge #5: Create a Prototype** from the innovator insights toolkit.

Type of Innovation: Technology

What does this innovation do: Introduces a new idea or way of doing something

Career Field Impact: Health Sciences

Key Terms/Ideas/Concepts:

- **Virtual**: Virtual pertains to an environment or experience that is simulated or created electronically, often using computers or digital technologies. It encompasses situations that appear real, yet are constructed in a digital realm, allowing users to interact and engage without physical presence.
- **Incision**: Incision denotes a deliberate and controlled cut made, typically with precision, on a surface or material, often in medical or surgical contexts. It involves careful planning and execution to achieve specific objectives, such as accessing or repairing underlying structures.
- Invasive: Invasive describes processes or procedures that involve entering or intruding
 into a space, environment, or organism with the intent to examine, modify, or extract
 information or substances. It implies a level of intrusion that necessitates careful
 consideration of potential impacts and consequences.

Questions/Prompts from the Videos

What is one thing you watch, read or listen to that drives innovation and creativity? How do you develop as an innovator and how are you still learning?

Storyboarding

sure you tell the story from the point of view of the end user. The end user in this case is the person you interviewed earlier in the process. It could also be someone who is experiencing the problem in a very similar way. A classmate or person in a similar situation for example.

Use the squares below to map out how the new product or process you envision will work. Make

Observe the Idea In Action

Spend time watching the use of your prototype or design. Be sure to record the areas that are successful and opportunities for improvement.

Time of Day and Environment of Use Record the time/date of the observation.	Description Record of brief description of how the prototype worked. What else was happening? Weather if outside, lighting inside, sounds? Anything that could change the function	Emotions What kind of emotional response did observing the prototype elicit? How did others around feel? Why do you think that? What cues did you pick up on?	Questions What questions do you have?

Testing and Sharing an Idea

In the testing and sharing portion of the unit, students will put their innovations to the test and get feedback from others in order to make their innovation better. The final product can be shared in a variety of ways but the students will end the unit by creating a shark tank (Minnow Pond) like pitch. Students will also create a potential name for their business as well as create business cards that can share with others.

Test an Idea and Collect That Data Lesson Plan

Objectives

Students will:

- Identify key metrics that could measure the effectiveness of prototype or interest in proof of concept
- Create a method for data collection and plan for collection
- Evaluate the results of data in relationship to SMART goal

Summary of Task

In this task students will identify how they are going to measure the success of their prototype or interest in the idea. Students may use various ways to measure impact. This could be data from an application, hits on a social media brand or surveys to gauge interest. The task should align back to the SMART goal they created in order to help ensure successful implementation. Remember that it is okay if their prototype is not generating the results they would like to achieve and the key is to gain insight from that data and to help pinpoint problems and opportunities.

Resources

- Digital tool and access to the internet. (optional)
- Reflection Document
- Data sheet or electronic spreadsheet
- Observe the Prototype in Action Observation Log

Vocabulary

- Social Media: Social media refers to digital platforms and online spaces that enable users to create, share, and interact with content, fostering virtual connections and communication among individuals and groups.
- **Marketing:** Marketing involves strategic activities aimed at promoting products, services, or ideas to a target audience. It encompasses various strategies, such as advertising, public relations, and market research, with the goal of increasing awareness, generating interest, and driving engagement.
- Persevere: To persevere means to persist steadfastly in the face of challenges, difficulties, or setbacks. It signifies maintaining determination and effort despite obstacles, displaying resilience and unwavering commitment to achieve desired goals.

• **Optimism:** Optimism is a positive outlook or attitude characterized by the expectation of favorable outcomes. It involves believing in the potential for good results, even in challenging situations, and maintaining a hopeful perspective on circumstances and possibilities.

Key Questions

Use questions below to engage with the content of the video before, during and after. These could be used as bell ringers, journal writings and reflections, interview questions, or exit tickets.

- Can you think of a time of transition in your life? How did it make you feel?
- What are some things that made that transition go better?
- What is a problem solver?
- What role does critical thinking play in innovation?
- When have you received information and adjusted a plan?
- Think of a time when you have achieved success. How did you know you were successful?

Engage: Watch the Innovator Insights Video

- 1. Explore Key Questions for each video. Use those questions to engage before, during and after the videos.
- 2. Watch each video as a class, in small groups as a station, or individually.
- 3. Complete the innovator insights documentation log with key information about the innovator featured in the video.
- 4. Discuss in small groups or as a class:
 - a. The Type of Innovation
 - b. The Problem Being Solved
 - c. Who innovation helps
- 5. Compare notes and discuss and make cases for different selections made. This is also important when thinking about your own innovation and potential mentors.
- 6. Write or record any additional questions you would like to ask the innovator.
- 7. Continue your innovation journal to document your journey of innovation. Include key insights from the video or reflect on the next design challenge experience.
- 8. Add the innovator to your affinity list and any potential others that may apply in a local setting.
- 9. As an extension to the video, complete the **Design Challenge #6: Build a Data Collection** from the innovator insights toolkit.

Explore: Have the students participate in the design challenge by following the steps below.

Each design challenge is designed to walk students through a component of the design process.

- Define Key Metrics: Identify the specific criteria that will determine the success
 of your prototype. These could include things like functionality, usability, speed,
 user satisfaction, or any other relevant aspect of your solution. Refer back to your
 SMART goal to help identify potential measurable outcomes.
- 2. **Plan Data Collection**: Determine how you'll collect data to measure these key metrics. Decide what tools, methods, and resources you'll need. This could involve surveys, observations, timing tests, or any other way to gather information. Make use of digital tools if they are available. This may be a quick survey or measurable outcome depending on your innovation type.
- 3. **Test with Users**: If applicable, ask people to use your prototype. This could be classmates, friends, teachers, or family members. Observe how they interact with the prototype and encourage them to provide honest feedback.
- 4. **Collect Data**: Use your data collection tools to gather information during the testing phase. Record the results of each test or interaction. Be organized and consistent in your data collection process. This could also be observations of people using or experiencing your innovation.
- 5. **Analyze Results**: Once you've collected enough data, analyze it to understand how well your prototype is performing. Look for patterns, trends, and areas where the prototype may need improvement.
- 6. **Identify Strengths and Weaknesses**: Based on the analysis, determine the strengths and weaknesses of your prototype. What aspects of your solution are working well, and what areas need improvement?
- 7. **Iterate and Improve**: Use the insights from the data analysis to make improvements to your prototype. Address the weaknesses and build upon the strengths to enhance the overall performance.
- 8. **Finalize Design and Documentation**: Incorporate the improvements into your prototype's design. Update any documentation, diagrams, or materials that describe your solution. At this point you may begin to think about a name or brand for your prototype. Use the innovator insights notes worksheet to document your own innovation. What type is it? What career field does it impact?

Extend

Create data collections using online tools such as Google Forms or Google Sheets. These tools can help streamline data collections and facilitate analysis to provide insight into your prototype.

Evaluate

As the students share their storyboards, determine if it is possible to scale up the project. Is it possible to build? Is it a process that could be implemented permanently or piloted? If the answers to these questions are yes, encourage students to further develop their ideas or potentially identify others who could provide feedback.

Opendorse - Viewing Guide

Learning Goals

Put your prototype to the test by determining key metrics for success and build a data collection to analyze the results. Ask others to use your prototype if applicable to see how it works.

Resources

Digital tool and access to the internet. (optional)

Data sheet or electronic spreadsheet

Observe the Prototype in Action Observation Log

Key Questions

- Can you think of a time of transition in your life? How did it make you feel?
- What are some things that made that transition go better?
- What is a problem solver?
- What role does critical thinking play in innovation?
- When have you received information and adjusted a plan?
- Think of a time when you have achieved success. How did you know you were successful?

Steps

- 1. Explore Key Questions for each video. Use those questions to engage before, during and after the videos.
- 2. Watch each video as a class, in small groups as a station, or individually.
- 3. Complete the innovator insights documentation log with key information about the innovator featured in the video.
- 4. Discuss in small groups or as a class:
 - a. The Type of Innovation
 - b. The Problem Being Solved
 - c. Who innovation helps

- 5. Compare notes and discuss and make cases for different selections made. This is also important when thinking about your own innovation and potential mentors.
- 6. Write or record any additional questions you would like to ask the innovator.
- 7. Continue your innovation journal to document your journey of innovation. Include key insights from the video or reflect on the next design challenge experience.
- 8. Add the innovator to your affinity list and any potential others that may apply in a local setting.
- 9. As an extension to the video, complete the **Design Challenge #6: Build a Data Collection** from the innovator insights toolkit.

Type of Innovation: Technology, Marketing, Social

What does this innovation do: Introduces a new idea or way of doing something

Career Field Impact: Skilled and Technical Sciences

Key Terms/Ideas/Concepts:

Social Media: Social media refers to digital platforms and online spaces that enable users to create, share, and interact with content, fostering virtual connections and communication among individuals and groups.

Marketing: Marketing involves strategic activities aimed at promoting products, services, or ideas to a target audience. It encompasses various strategies, such as advertising, public relations, and market research, with the goal of increasing awareness, generating interest, and driving engagement.

Persevere: To persevere means to persist steadfastly in the face of challenges, difficulties, or setbacks. It signifies maintaining determination and effort despite obstacles, displaying resilience and unwavering commitment to achieve desired goals.

Optimism: Optimism is a positive outlook or attitude characterized by the expectation of favorable outcomes. It involves believing in the potential for good results, even in challenging situations, and maintaining a hopeful perspective on circumstances and possibilities.

Questions/Prompts from the Videos

Talk about learning from failure.

What is one thing from your youth that still influences you?

Talk about the importance of curiosity.

How does collaborating with others help you?

What is your best advice for young innovators who are passionate about inventing or driving change in the world?

Reflection Document

Watch someone use your prototype or observe how it performs. What are some things you notice?

Success! Are there new insights or positive outcomes?	Challenges. Things you missed or negative outcomes?
Questions. What new questions emerge by observing the prototype?	Ideas/Next Steps What are the next areas to be addressed in your design process?

Observe the Idea In Action

Spend time watching the use of your prototype or design. Be sure to record the areas that are successful and opportunities for improvement.

Time of Day and Environment Record the time the event occurred. Could be a specific time or more general such as morning or afternoon. What else was happening?	Description Record of brief description of what occurred or an event of significance	Emotions How did you think the person seemed to feel? How did others around feel? Why do you think that? What cues did you pick up on?	Questions What questions do you have?

Share Your Idea Lesson Plan

Objectives

Students will:

- Develop a business plan
- Identify potential mentors and key stakeholders to share idea and solicit feedback
- Determine the best method to share their idea in formal and informal settings
- Share their innovation with someone!

Summary of Task

In this task students will use all of the information and ideas created to develop a business plan framework and identify potential contacts to provide input and serve as a potential mentor and share their ideas.

Resources

- Business Plan Framework Document
- Elevator Pitch
- Affinity List (from Introduction to Innovation Lesson)
- Identifying Mentors Worksheet
- Electronic spreadsheet

Vocabulary

- **Engineer:** An engineer is a skilled professional who applies scientific knowledge, creativity, and technical expertise to design, develop, and construct various solutions, systems, and structures that address practical problems and needs.
- **Collaboration:** Collaboration is the cooperative effort of multiple individuals or groups working together to achieve a common objective. It involves sharing ideas, skills, and resources to create synergistic outcomes and capitalize on diverse perspectives.
- **Communicate:** To communicate is to convey information, thoughts, ideas, or emotions through verbal, written, or nonverbal means. Effective communication involves clarity, precision, and an understanding of the audience to ensure the accurate transmission of messages.

- **Consistency:** Consistency refers to the quality of being steady, reliable, and uniform in behavior, performance, or approach. It involves maintaining the same level of effort, quality, or behavior over time and across different situations.
- Persistence: Persistence is the act of continuing efforts and actions in spite of challenges, obstacles, or setbacks. It involves demonstrating determination and resilience to overcome difficulties and achieve goals through consistent dedication.

Key Questions

Use questions below to engage with the content of the video before, during and after. These could be used as bell ringers, journal writings and reflections, interview questions, or exit tickets.

- What is the first thing that comes to mind when you hear the word failure?
- Have you ever had an idea you thought could change the world? What was it?
- Why is brainstorming important when coming up with new ideas?
- When you experience something new, how do you approach it? How does it make you feel?
- Is there an example of prototyping in the video? Is there a time when you sketched or drew something that inspired you to be creative?

Engage: Watch the Innovator Insights Video

- 1. Explore Key Questions for each video. Use those questions to engage before, during and after the videos.
- 2. Watch each video as a class, in small groups as a station, or individually.
- 3. Complete the innovator insights documentation log with key information about the innovator featured in the video.
- 4. Discuss in small groups or as a class:
 - a. The Type of Innovation
 - b. The Problem Being Solved
 - c. Who innovation helps
- 5. Compare notes and discuss and make cases for different selections made. This is also important when thinking about your own innovation and potential mentors.
- 6. Write or record any additional questions you would like to ask the innovator.
- 7. Continue your innovation journal to document your journey of innovation. Include key insights from the video or reflect on the next design challenge experience.
- 8. Add the innovator to your affinity list and any potential others that may apply in a local setting.
- 9. As an extension to the video, complete the **Design Challenge #7: Share Your Idea** from the innovator insights toolkit.

Explore: Have the students participate in the design challenge by following the steps below.

Each design challenge is designed to walk students through a component of the design process.

- 1. **Compile Your Work:** Gather all the information you've collected throughout the design process, including problem definition, solution prototype, data analysis, and SMART goal.
- 2. **Understand Business Plan Basics:** Familiarize yourself with the key components of a business plan. Use the business plan template to align your work with the different components of the plan.
- 3. **Customize the Business Plan:** Tailor the business plan components to fit your specific project. Use the insights from your SMART goal, prototype testing, and data analysis to strengthen the plan.
- 4. **Craft an Executive Summary:** Summarize your entire project in a clear and concise manner. Highlight the problem, your innovative solution, potential impact, and key goals. This can be pulled from other design challenges.
- 5. **Define the Problem:** Clearly articulate the problem you are addressing and its significance. Use data and insights from your research to showcase the problem's relevance.
- 6. **Describe Your Solution:** Detail your prototype and how it addresses the identified problem. Emphasize the unique aspects of your solution that set it apart from alternatives.
- 7. **Identify Audience or Market for Your Idea:** Define your target audience who will benefit the most from your solution? Describe their needs, demographics, and preferences.
- 8. **Identify Contacts and Mentors:** Consider individuals who could provide valuable input or mentorship. Look for people in your network, industry experts, teachers, professionals, or community members. Focus using your Affinity List as a source for potential contacts.
- 9. **Contact Potential Mentors:** Reach out to the contacts you've identified. Clearly explain your project, your need for their expertise, and the value they could bring. Share your ideas and gather feedback on your innovation.
- 10. **Refine and Finalize Your Plan:** Incorporate the feedback you receive into your business plan. Adjust your strategy, assumptions, or approach based on the valuable insights from your contacts.
- 11. **Prepare for Presentations:** If required, prepare a presentation to share your business plan with stakeholders, potential investors, or anyone else interested in

your project. Use the Elevator Pitch graphic organizer to help define your innovation. For more information on creating a sales pitch, see the <u>resources from StoryMaker</u>. Here is the direct link. https://www.story-maker.org/library/pitch-your-story/#overview

12. **Continued Networking:** Even if your project doesn't immediately attract mentors or investors, continue networking. Building relationships in your chosen industry can be invaluable for future endeavors. Use the Identifying Mentors worksheet to help identify individuals or organizations that could potentially help with the next steps in your project.

Extend

Extend the reach of your potential idea using the internet. Create a website for your idea or social media account to potentially reach a larger audience. Follow other innovators and industry experts in the career field your innovation impacts.

Evaluate

Students should reflect on their ideas in some capacity. Create a reflection journal to share their thoughts about the innovation process. How might they apply their learning to a new setting, environment, or industry. What were the successes and challenges along the way? Use the reflection as a self evaluation of their work.

American Outlaws - Viewing Guide

Learning Goals

Use all of the information and ideas you've created to develop a business plan framework and identify potential contacts to provide input and serve as a potential mentor and share your idea.

Resources

Business Plan Framework Document Affinity List Data sheet or electronic spreadsheet Observe the Prototype in Action Observation Log

Key Questions

- What is the first thing that comes to mind when you hear the word failure?
- Have you ever had an idea you thought could change the world? What was it?
- Why is brainstorming important when coming up with new ideas?
- When you experience something new, how do you approach it? How does it make you feel?
- Is there an example of prototyping in the video? Is there a time when you sketched or drew something that inspired you to be creative?

Steps

- 1. Explore Key Questions for each video. Use those questions to engage before, during and after the videos.
- 2. Watch each video as a class, in small groups as a station, or individually.
- 3. Complete the innovator insights documentation log with key information about the innovator featured in the video.
- 4. Discuss in small groups or as a class:
 - a. The Type of Innovation
 - b. The Problem Being Solved
 - c. Who innovation helps

- 5. Compare notes and discuss and make cases for different selections made. This is also important when thinking about your own innovation and potential mentors.
- 6. Write or record any additional questions you would like to ask the innovator.
- 7. Continue your innovation journal to document your journey of innovation. Include key insights from the video or reflect on the next design challenge experience.
- 8. Add the innovator to your affinity list and any potential others that may apply in a local setting.
- 9. As an extension to the video, complete the **Design Challenge #7: Share your Idea** from the innovator insights toolkit.

Type of Innovation: Marketing, Social

What does this innovation do: Introduces a new idea or way of doing something

Career Field Impact: Human Sciences and Education

Key Terms/Ideas/Concepts:

Engineer: An engineer is a skilled professional who applies scientific knowledge, creativity, and technical expertise to design, develop, and construct various solutions, systems, and structures that address practical problems and needs.

Collaboration: Collaboration is the cooperative effort of multiple individuals or groups working together to achieve a common objective. It involves sharing ideas, skills, and resources to create synergistic outcomes and capitalize on diverse perspectives.

Communicate: To communicate is to convey information, thoughts, ideas, or emotions through verbal, written, or nonverbal means. Effective communication involves clarity, precision, and an understanding of the audience to ensure the accurate transmission of messages.

Consistency: Consistency refers to the quality of being steady, reliable, and uniform in behavior, performance, or approach. It involves maintaining the same level of effort, quality, or behavior over time and across different situations.

Persistence: Persistence is the act of continuing efforts and actions in spite of challenges, obstacles, or setbacks. It involves demonstrating determination and resilience to overcome difficulties and achieve goals through consistent dedication

Questions/Prompts from the Videos

Talk about pursuing your passion through the work that you do.

What is one thing from your youth that still influences you?

Talk about collaborating with others.

Talk about the importance of persistence.

What is your best advice for young innovators?

Business Plan

Executive summary: This is a brief overview of the entire business plan, highlighting the key points and objectives of the business.	
Business description: This section should describe the business, its products or services, target market, and competition.	
Market audience: This section should research and analyze the target market, including demographics, needs, and trends.	
Marketing and sales strategy: This section should outline the methods you will use to reach and sell to your target market, including pricing, promotions, and distribution.	
Operational plan: This section should describe how the business will operate on a day-to-day basis, including details on location, suppliers, and personnel.Define the Problem: Clearly articulate the problem you are addressing and its significance. Use data and insights from your research to showcase the problem's relevance	
Financial plan: This section should include financial projections, including projected income statements, balance sheets, and cash flow statements.	

Appendices: This section should include any additional information that supports the business plan, such as resumes, permits, and contracts

Elevator Pitch

What did you invent? What is the name of your innovation?	How did you come up with the idea?
What problem does your innovation solve?	Who will benefit from your innovative idea?
What questions do you still have?	How will they benefit from your innovative idea?

How does your innovation make you feel?	What are your next steps?

Identifying Mentors

Industry or Idea to Explore	Person/Place to contact	Questions you have