



Topics

Innovation, Metaphor:
“Necessity is the Mother of
Invention”, history of surfing
and surfboard design

Grades

6-12

Duration

45-60 minutes

Materials

- Pencil or pen, ruler
- Chromebook (optional-[virtual tour](#))
- Worksheet: “SHACC Scavenger Hunt: Innovations”

Standards

CCSS

NGSS

Practices:

- *Engaging in Argument from Evidence*
- *Obtaining, Evaluating, and Communicating Information*

Crosscutting Concepts:

- *Cause and Effect*
- *Patterns*

Title: “SHACC Scavenger Hunt: Innovations”

Focus Question

- What innovations led to the evolution of surfboard design over time?

Objectives/Outcomes

- Students will explore the Surfing Heritage and Culture Center (SHACC) museum timeline.
- Students will identify examples of innovation in the design of surfboard design and production.
- Students will propose possible motivations that led to specific historical innovations and how it relates to the age old adage: “Necessity is the mother of invention”.
- Student will complete accompanying worksheet while conducting tour (Tour can be **in-person** visit or [virtual tour](#))

Key Terms

- Innovation, Innovator, metaphor

Outline

- Pass out worksheet “SHACC Scavenger Hunt: Innovations” and read background and directions on the activity together with the class.
- Prior to visit, teacher will review the definition of the terms metaphor, innovation, and innovator.
- This activity can be conducted during a classroom visit to SHACC or virtually by viewing [SHACC Virtual Tour](#).
To schedule a physical tour of SHACC contact SHACC at (949) 388-0313
- Students will view the SHACC Surfboard Timeline and identify specific innovators and innovations that helped drive the evolution of surfboard design and complete accompanying worksheet.
- Teacher will mediate a classroom discussion and have students share, describe, and defend their particular choices.

Assessment

1. Student engagement and participation.
2. Completion of worksheet: SHACC Scavenger Hunt: Innovations



Materials

- Pencil or pen
- Chromebook (optional-[virtual tour](#)) with Internet access
- Worksheet: “SHACC Scavenger Hunt: Innovations”
- SHACC Student Journal (Optional) Click [here](#) for digital version

GUIDED INSTRUCTION:

1. Determine whether you would like to schedule a visit to SHACC with your class or have them conduct the tour virtually by clicking on [SHACC Virtual Tour](#). To schedule a physical tour of SHACC contact SHACC at (949) 388-0313

2. Review the terms **innovation** and **metaphor** with your students and give some other examples to your students.

- **Innovation**- something new or to a change made to an existing product, idea, or field.
- **Metaphor**- a thing regarded as representative or symbolic of something else, especially something abstract .
 - Metaphor Examples:
 - The classroom was a zoo.
 - The computers at school are old dinosaurs.
 - The snow is a white blanket.
 - You are my sunshine.
 - My big brother is a couch potato.

3. Pass out **worksheet “SHACC Scavenger Hunt: Innovations”** and review directions with your students. As they explore the SHACC surfboard timeline they should complete the **data table** and list 6 different innovations, innovators, and describe the ‘purpose’ or motivation for innovation, and the date it occurred.

4. Have students answer **conclusion questions** when they have completed the data table. Students should respond in complete sentences.

5. When students are finished with worksheet give students an opportunity to share their chosen innovation/innovator and share with the class. Ask them if there chosen innovation is an example of the metaphor “Necessity is the Mother of Invention”.

6. **OPTIONAL:** Students can create a **written research paper** or narrative essay, a **digital slide presentation** (*i.e. Google Slides, PowerPoint*), or both on their selected innovator/innovation. (*see attached rubrics for description and guidelines. You can adjust rubric requirements based on student group*).



EXTENSION: Students can complete a essay or prepare a digital presentation. Rubrics attached.

SHACC has a variety of lesson plans that you might find fun for you students. Visit <https://shacc.org>





SHACC Scavenger Hunt: Innovations

DIRECTIONS: Explore the Surfing Heritage and Culture Center (SHACC) surfboard timeline and identify innovators and innovations that led to the evolution of surfboard design and performance and complete the data table and answer Conclusion Questions. This can be completed by either physically touring the SHACC Museum or virtually by clicking [HERE](#).

SHACC Scavenger Hunt: Innovations Identify 6 different innovations you identified			
Innovation <i>What was the specific change in design</i>	Innovator <i>Who is responsible for innovation</i>	Result of Innovation <i>How did it help the performance?</i>	Date <i>When did it happen?</i>
1.			
2.			
3.			
4.			
5.			
6.			



CONCLUSION QUESTIONS: *(answer in complete sentences)*

1. Which **innovation** do you think had the greatest impact on the evolution of **surfboard design**? *(be specific and explain your reasoning)*

2. What does the **metaphor** “Necessity is the Mother of Invention” mean”

3. What was the “**motivation**” for your chosen innovation? *(Think of metaphor: “Necessity is the Mother of Invention”. What were the innovators trying to accomplish?)*

4. What **historical events** were taking place at the same time that your innovation was occurring and how did it help or hinder (*hurt*) the innovators efforts?



GRADING RUBRIC: RESEARCH ESSAY

CATEGORY	8-10 points	5-7 points	2-4 points	0-1 points	SCORE
Introduction (Thesis)	Thesis clearly stated and appropriately focused	Thesis clearly stated but focus could have been sharper	Thesis phrasing too simple, lacks complexity; or not clearly worded	Thesis not evident	
Quality of Information & Evidence	Exceptionally researched, extremely detailed, and historically accurate and information clearly relates to the thesis	Information relates to the main topic and paper is well-researched in detail and from a variety of sources	Information relates to the main topic, few details and/or examples are given and shows a limited variety of sources	Information has little or nothing to do with the thesis and information has weak or no relevance	
Support of Thesis and Analysis	Relevant and consistent connections made between evidence and thesis. excellent analysis	Consistent connections made between evidence and thesis good analysis	Some connections made between evidence and thesis. some analysis	Limited or no connections made between evidence and thesis. lack of analysis	
Conclusion	Excellent summary of thesis with concluding ideas that impact the reader	Good summary of topic with clear concluding ideas. introduces no new information	Basic summary of topic with some final concluding ideas. introduces no new information	No summary of topic	
INCLUDES: 1. MLA Formatting 2. Title Page 3. Bibliography (3) 4. Word Count 5. 250-500 words 6. Vocabulary and/or historical figures	Contains ALL project requirements	Missing 1-2 project requirement	Missing 3-4 project requirements	Missing 5-6 project requirements	

TOTAL = /50



GRADING RUBRIC: DIGITAL PRESENTATION

CATEGORY	10 points	9-7 points	6-4 points	3-1 points	SCORE
Required Elements	The google slides include all required elements as well as additional in formation <i>(Title page, min. 7 slides, graphics, bibliography)</i>	All required elements are included on the google slides	All but 1 of the required elements are included on the google slides	Several required elements are missing	
Graphics-Relevance	All graphics are related to the topic and make it easier to understand	All graphics are related to the topic and most make it easier to understand.	All graphics related to the topic.	Graphics do not relate to the topic.	
Attractiveness	The google slides are exceptionally attractive in terms of design, layout, and neatness	The google slides are attractive in terms of design, layout, and neatness.	The google slides are acceptably attractive though it may be a bit messy.	The google slides are distractingly messy or very poorly designed. It is not attractive.	
Grammar	There are no grammatical/mechanical mistakes on the google slides.	There are 1-2 grammatical/mechanical mistakes on the google slides.	There are 3-4 grammatical/mechanical mistakes on the google slides.	There are more than 4 grammatical/mechanical mistakes on the google slides	

TOTAL = /40