



FUNCTION VS. FASHION

Overview

Book: *The Maze Runner* by James Dashner

Grades 6-12

In this science and art PBL, students will create the worst possible shoe for running and the best possible shoe for running.

Standards

MS-ETS.1-2	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
RST.9-12.1	Cite specific textual evidence to support analysis of science and technical texts.
VA:Cr2.3.8	Select, organize, and design images and words to make visually clear and compelling presentations.
SL.7-12.4	Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and range of formal and informal tasks.

Objectives

Students will research to find out what makes a good shoe for running.

Students will create a design of a terrible shoe for running.

Students will create a design for an optimal shoe for running.

Students will share their designs and rationale for each type of shoe.

Materials Required

Paper

Colored pencils

Glue

Shoe catalogs or wide variety of shoe photos

Access to internet to view video

Procedure

1. Tell students the project is to understand what makes a shoe optimal for running and in turn, what would make a shoe terrible for running.
2. View the video: *The Maze Runner at NIU - The Science of Running* found at <http://www.stemread.com/the-maze-runner/>
3. Students should then extend their research by finding out how running shoes are constructed. Note: you might want to open this up for student choice by letting students select shoes from other sports as their focus.
4. Give students access to a variety of shoe catalogs or other images to analyze and review using information they have gathered.
5. Have students use paper and colored pencils to create the two types of shoes.
6. Allow time for students to share creations and answer questions.
7. Provide time for students to change their designs after hearing feedback on the design.

Extensions

W.7-12.3	Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.
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VA:Re7-1.8	Explain how a person’s aesthetic choices are influenced by culture and environment and impact the visual image that one conveys to others.
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1. Have students write a paragraph about selecting shoes for a specific purpose. This could be for participating in a sporting event or for a social function.
2. Have students create a T-chart. Left side is labelled *Function* and the right side is labelled *Fashion*. Have students find photos of various shoes and place them on the side of the chart that they feel best describes the purpose of the shoe.
3. Have students select a historical figure. Write a paragraph about what type of shoe this person might have worn. Why? How did the time period, culture, or environment affect this selection?
4. Read about famous runners at <https://www.biography.com/people/groups/track-and-field-athletes>
5. Show the movie *Prefontaine*.
6. See how a waffle iron inspired Nike shoe developer. <http://www.popularmechanics.com/technology/gadgets/a21841/nike-waffle-iron/>

Rubric

RUBRIC	Exceeds (3)	Meets (2)	Partially Meets (1)	Does Not Meet (0)
Research	Student cites 5 or more resources used in research	Student cites 3-4 resources used in research	Student cites 1-2 resources used in research	No resources are cited
Terrible running shoe	Image is extremely well drawn and characteristics are logical to the rationale.	Image is well drawn and characteristics generally are logical to the rationale.	Image is poorly drawn and characteristics vaguely relate to the	Image is poorly drawn and there is no relationship between characteristics

			rationale.	and rationale.
Great running shoe	Image is extremely well drawn and characteristics are logical to the rationale.	Image is well drawn and characteristics generally are logical to the rationale.	Image is poorly drawn and characteristics vaguely relate to the rationale.	Image is poorly drawn and there is no relationship between characteristics and rationale.
Presentation	Information presented very clearly and rationale for characteristics is well thought out.	Information presented clearly and rationale for characteristics is present.	Information poorly presented and rationale for characteristics is vague.	Information poorly presented with now rationale for characteristics.
Total N/12				

STEM Read and SmartSpace@NIU are part of Northern Illinois University's STEAM Works Initiative.

