

Curriculum Unit
Title

Engineering Innovations of Ancient Egypt

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KEY LEARNING, ENDURING UNDERSTANDING, ETC.

My students will use the Engineering Design Process to create their own pyramid prototypes. Standards will target asking questions, making observations, and gathering information about how ancient Egyptians solved their problem about memorializing their dead. Students will develop physical models of pyramids by making mudbrick blocks and then assembling them in pyramid form. Students will then work to improve the structure of blocks and compare the strengths and weaknesses of their models.

ESSENTIAL QUESTION(S) for the UNIT

Who built the pyramids? How old are the pyramids? Why were the pyramids built? Why are pyramids shaped the way they are? How did these structures evolve? Why was the Nile so important? How were the pyramids built? How long did it take to build a pyramid? What tools were used? What are some ways the Egyptians made their work easier? Did they use simple machines? How can you tell which simple machines were used?

CONCEPT A

Egyptian mythology and the belief of afterlife

CONCEPT B

The Nile River and Egyptian landscape

CONCEPT C

Simple machines

ESSENTIAL QUESTIONS A

What drove the ancient Egyptian civilization to erect burial monuments that have a specific pyramid shape?

ESSENTIAL QUESTIONS B

How did the earth materials of Egypt contribute to the unique building components of pyramids?

ESSENTIAL QUESTIONS C

How did ancient engineers refine their tools and techniques to make work easier?

VOCABULARY A

mythology, mummy, creation myth, chaos (Nu), benben stone, Ra (the Sun God), obelisk, pyramidion, capstone, mastabas, step pyramid

VOCABULARY A

mudbricks, sand, clay, humus, irrigation, polish, quarry, limestone, array, fertile, desert, floodplain, shaduf, survey, level, stonecutter, mortar, delta, sea, river, valley

VOCABULARY A

lever, fulcrum, wheel and axle, pulley, inclined plane, wedge, screw, ramps, boning rods,

ADDITIONAL INFORMATION/MATERIAL/TEXT/FILM/RESOURCES

Building the Great Pyramid http://www.bbc.co.uk/history/ancient/egyptians/great_pyramid_01.shtml

Materials and Techniques <https://www.khanacademy.org/humanities/ancient-art-civilizations/egypt-art/beginners-guide-egypt/a/materials-techniques>