

Curriculum Unit
Title

Catching Water

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KEY LEARNING, ENDURING UNDERSTANDING, ETC.

My students will use the Engineering Design Process to create their own dew extractor prototype. Standards will target asking questions, making observations, and gathering information about the unique qualities of the water molecule, the water cycle, inventions that harvest water.

ESSENTIAL QUESTION(S) for the UNIT

How can different kinds of matter exist in solid, liquid, and gas? What qualities do solid water, liquid water, and water vapor have? How do people in drought-ridden areas get water? Where can people who live in deserts find water? How can you get water out of the air? When are the best times during the day to collect water? How can heating water change its form? How can chilling water change its form? How can you change frozen water to liquid water? How can you change liquid water to water vapor?

CONCEPT A

CONCEPT B

CONCEPT C

H₂O: The molecular structure of water

The Water Cycle

Extracting water vapor

ESSENTIAL QUESTIONS A

ESSENTIAL QUESTIONS B

ESSENTIAL QUESTIONS C

Why is water so unique? What is water made of? What are the forms of water? How does water change forms?

How does water get into the air? How do water drops make up a cloud? Where does the water go when it rains?

How can you catch water in the air? What type of frame could you build? What materials will catch the water vapor and condense it?

VOCABULARY A

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adhesion, atom, bond, cohesion, gas, hydrogen, investigation, liquid, molecule, oxygen, solid

collection, condensation, evaporation, gas, liquid, precipitation, solid, transpiration, vapor

basin, condense, dew, extract, foil, frame, funnel, material, mesh

ADDITIONAL INFORMATION/MATERIAL/TEXT/FILM/RESOURCES

CER info: <https://www.teachingchannel.org/videos/support-claims-with-evidence-getty> H₂O info: https://www.nsf.gov/news/special_reports/chemistrynow/chem_water.jsp Warka Water info: https://video.search.yahoo.com/yhs/search?fr=yhs-pty-pty_maps&hsimp=yhs-pty_maps&hspart=pty&p=warka+water+tower+video#id=1&vid=a1a5b0cef44dd6d4ca569b4cced074cc&action=click