

THE ORION MISSIONS

TERRA McMILLAN, THOMSON MIDDLE SCHOOL, HOUSTON COUNTY SCHOOLS

GRADE LEVEL AND CONTENT: 6th grade English Language Arts, Engineering, Mathematics, Science, and Visual Arts

OVERVIEW

The Orion missions are NASA-sponsored missions to send astronauts to the Moon and then to Mars by 2030. In the unit plan, students collaborate to apply sixth grade earth science and math standards, as well critical thinking and problem solving skills to design solar panels for the shuttle missions to Mars. Following the engineering design process, students construct a solar panel prototype that incorporates the use of coding to tilt and rotate to obtain the maximum amount of sunlight each day.

STANDARDS ADDRESSED

English Language Arts: ELAGSE6W1

Engineering: ENGR-STEM 3, ENGR-STEM 4, ENGR-STEM 5, MGSE6.RP.3b, MGSE6.RP.3d, MGSE6.G.4

Science: S6E6, S6E6.a

Visual Arts: VA6.CR.2, VA.6.CR.2b, VA.6.CR.2c

AVAILABLE MATERIALS

- Video of Unit
- Daily Lesson Plans
- Calculating Kilowatt and Unit Rate
- Final Solar Panel Rubric



ABOUT THE TEACHER

Terra McMillan is a NASA enthusiast with an innate passion for teaching science. She began her teaching career in Miami, Florida in 2001, and after 4 years of teaching, was awarded National Board Certification in Early Adolescence Science. Over her 17-year career, Terra has won several awards and grants to include the 2015-2016 Air Force Association State Teacher of the Year Award and the 2017 NSTA Vernier Technology Award. When teaching her 6th grade Earth Science classes, Terra loves to incorporate coding and mathematics to enrich the lessons. She is currently the STEM Coordinator, Science Department Chair, and NSBE Jr. Club Advisor at Thomson Middle School in Houston County, Georgia. Terra holds a Bachelor of Science degree in Biology from Barry University. She has a Master's of Science in Education degree in Curriculum, Instruction, and Assessment from Walden University.