

Virginia Space Grant Consortium Space-Themed Middle Grades CTE Professional Development

Week # 1 – July 10, 2023 - July 14, 2023

| | Monday | Tuesday | Wednesday | Thursday | Friday |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00-12:00 | Introducing Technology | Select materials based on their properties when designing a technology | Model electronic circuits used in inventions and innovations | Describe the information and communication contexts of technology and engineering | Research careers and the technology used in them |
| | KH 206 | ESB 1113 | M-Lab | KH 125 | KH 125 |
| | With Counselor and Administrator Partners 1. Welcome, overview of activities (Mary Sandy and Dr. Jovanovic) 2. NASA Speaker: Space Technology and The Future of Space Exploration 3. Ice Breaker Activity | Structural Design of Lunar Habitat Dr. Seek, Civil Engineering Technology Design of Lunar Habitat | Satellite and Orbits Dr. Otilia Popescu, Electrical Engineering Technology Calculating Solar Power in space Collecting Light: Inverse Square Law Demo Rudo Kashiri, VSGC | Remote Sensing and Radio Communications Dr. Dimitrie Popescu, Electrical Engineering, ODU Deep Space Communication Kari Espada, VSGC | NASA Visit Wallops Flight Facility (WFF) and Virginia's Mid Atlantic Regional Spaceport 1. Speakers 2. Tours of NASA Facilities, launch pads, Payload processing Facility and Integration and Control Facility |
| 12:00-1:15 | Lunch: Broderick Dining Commons | | | | |
| | Introducing Technology | Identify how technology has emerged through the use of engineering | Model electronic circuits used in inventions and innovations | Demonstrate types of measuring | Careers in Space Explorations |
| 1:15-4:15 | KH 206 | ESB 1113 | KH 202 | | KH 125 |
| | Careers and Career Pathways Speakers: 1. Karen Miller- NASA 2. Julie Young, VPCC 3. VSGC STEM Programs 4. Kahoot Quiz on Aerospace and Careers with Prizes | Technology innovations: Dr. Ayala, Mechanical Engineering Technology Hands-on Vacuum Environment Rudo Kashiri, VSGC Daily Debrief | Circuits and Snap circuit kits Dr. Otilia Popescu, Electrical Engineering Technology, ODU Solar Cells Demos Daily Debrief | Sounding rockets and small satellites Dr. Dimitrie Popescu, Electrical Engineering, ODU Build a Satellite Kari Espada, VSGC Daily Debrief | (NASA WFF and Virginia's Mid Atlantic Regional Space Port Continued) |
| 4:15 | Break - Move to Lab Tour | | | | |
| 4:30-5:00 | OCEAN XYZ | Kaufman Hall | | | |
| | Resilient Infrastructure Lab | Solis Lab Tour | M-Lab Tour | ODU Ground Station Tour | |

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Week # 2 – July 17, 2023 - July 21, 2023

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| | Monday | Tuesday | Wednesday | Thursday | Friday |
| | KH 125 | NASA Visit | ESB 1125 | KH 206/EMIC | PCC |
| | Create sketches and drawings | Research careers and the technology used in them | Describe the computation, automation, AI, and robotics contexts of technology and engineering | Select materials based on their properties when designing a technology | Demonstrate the use of Engineering design process |
| 9:00-12:00 | Intro to Engineering Design Dr. Jovanovic, Mechanical Engineering Technology | NASA Langley Research Center Langley Overview Model Shop Tour Fabrication (ISAAC) Tour Structures Tour | MARS Rover Robotics Dr. Hsiung, Electrical Engineering Technology | 1. Test Materials for Radiation Shielding 2. Experiment with Water Filtration | It's a Drag Kristen Duprey, VSGC Low-Density Supersonic Decelerator Touchdown Activity Kristen Duprey, VSGC Parachute Design Kristen Duprey, VSGC |
| 12:00-1:15 | Lunch: Broderick Dining Commons | | | | |
| | Create sketches and drawings | Research careers and the technology used in them | Describe the computation, automation, AI, and robotics contexts of technology and engineering | Identify the six simple machines that make mechanical technology work | Wrap up |
| | KH 125 | KH 206/EMIC | | PCC | With Counselor and Administrator Partners |
| 1:15-4:15 | MARS Rover Robotics Dr. Hsiung, Electrical Engineering Technology Daily Debrief | Practicing Professionals Panel Wind Tunnel Tour Maker Space Tour Daily Debrief | MARS Rover Robotics Dr. Hsiung, Electrical Engineering Technology Daily Debrief | STEMonstrations: Simple Machines/Astro-Tools Heavy Lifting: Design Activity Kristen Duprey, VSGC Roving on The Moon Kristen Duprey, VSGC Daily Debrief | Closing Discussion 1. Next Steps: Plan for academic year professional development 2. Teachers present preliminary academic year implementation plans |
| 4:15 | Break - Move to Lab Tour | | | | |
| 4:30-5:00 | KH 115 | | KH 116 | ODU | |
| | Manufacturing Lab Tour | | Robotics Lab Tour | ODU | |

