

**An Implementation Plan for a Voyage Scale Model Solar System in
Lake Charles, Louisiana for Region 5 (Allen, Beauregard, Calcasieu, Cameron, Jeff Davis,
and Vernon parishes)**

SECTION 1

Date of Submission: March 16th, 2021

Lead Organization

Organization Name: Region 5 STEM Center under the auspices of the Calcasieu Parish
School Board (CPSB)

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Partner Organization

Organization Name: City of Lake Charles
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Karl Bruchhaus, CPSB Superintendent



Today's Date

SECTION 2

City Demographics

2017 Population: 77,117
2015 MSA Population: 205,605
Square miles: 43.105
Square acres: 27,587
Location

The City of Lake Charles is conveniently located off Interstate-10 between Houston, TX and New Orleans, LA. Our sandy beaches make up the shores of the Calcasieu River just 30 miles upstream from the Gulf of Mexico. Lake Charles is connected to the Gulf by means of a deep-water ship channel and is the seat and port of entry of Calcasieu Parish.

Distance to Major Cities (in miles)

Atlanta: 670.2
Baton Rouge: 129.4
Dallas: 358.8
Houston: 142.8
New Orleans: 205.2

Local and State Government

Municipal Government - Mayor, City Council
Lake Charles City Court
Calcasieu Parish Police Jury
Louisiana Official State Government Site

Public Safety

Lake Charles Police Department
Lake Charles Fire Department
Calcasieu Parish Sheriffs Office
Ward 3 Marshal

Tourism

Lake Charles/SWLA Convention & Visitors' Bureau
LA Dept. of Culture, Recreation & Tourism

Surrounding Communities

City of Westlake
City of Sulphur
City of DeQuincy
Town of Vinton
Town of Iowa

SECTION 3

Region 5 STEM Center Objectives: *The description of how a Voyage exhibition would help meet some of these goals follows those goal in italics.*

1. Develop, implement, maintain, and promote a seamless and collaborative communication system with other Louisiana STEM Regions so that there is open and continuous sharing and development of resources, opportunities, and promising practices, particularly those that span Regions. *Voyage would help meet this objective by providing a focal point for communication in coordinating visits/field trips to the exhibit and sharing of educational materials across the region.*
2. Create and maintain a comprehensive catalog and asset map of STEM activities and resources within each Region that is shared and promoted. *The Voyage exhibit and educational materials would be included in this catalog/asset map.*
3. Be the “voice” of and for STEM in all meetings and venues within each Region and convene region-wide dialogues to build awareness of interest in and shared beliefs about STEM related activities and opportunities. *The Voyage exhibit opportunities would be shared during regional meetings.*
4. Foster the involvement of businesses in the Region to help advance STEM education and work experiences, in addition to teacher development. *Local industry, businesses, and civic organizations will have the opportunity to donate resources (time, funds, equipment, etc.) to bring this exhibit to our community.*
5. Work with the LaSTEM Program Administrator to identify, inventory, and lead discussions of regional workforce gaps and needs and convene key groups and individuals to explore and develop initiatives to address those needs.
6. Develop and address Regional STEM Goals in alignment with statewide LaSTEM Advisory Council Goals through comprehensive Statements of Work and Action Plans [Strategic Plan] based on data and deliverables. *The metrics data obtained from the Voyage exhibit field trips/visits would help inform how to develop and address other regional STEM goals by providing input on how to communicate, collaborate, & share resources.*
7. Measure and refine all STEM initiatives and goals regionally and contribute to a statewide STEM expansion process.
8. Collaborate and provide oversight, as needed, for existing and new STEM related programs at community and regional levels under direction from the LaSTEM Advisory Council and give accounts to the Council according to established guidelines. *The Voyage exhibit has already allowed collaboration and some oversight for this new program even though we are just in the planning stages. To name a few, we have collaborated with McNeese University, the Mayor’s office, a science consultant, and Calcasieu Parish School Board officials. We have also reached out to the other parishes to inform them of this great opportunity.*
9. Lead collaborative efforts to identify and leverage funding and other resources to support regional initiatives. *During the above-mentioned collaboration, the Mayor’s office has agreed to donate \$10,000 toward this project as well as install & maintain the exhibit.*

SECTION 4 – Proposed Community Engagement

ACT 392 of the 2017 Legislative Session creates the LaSTEM Advisory Council to oversee the creation and delivery of STEM programs in Louisiana.

The Louisiana **Science, Technology, Engineering, and Mathematics** Advisory Council (LaSTEM) under the auspices of the Board of Regents is tasked to coordinate and oversee the creation, delivery, and promotion of STEM education programs, to increase student interest and achievement in the fields of STEM, to ensure the alignment of education, economic development, industry, and workforce needs, and to increase the number of women who graduate from a postsecondary institution with a STEM degree or credential. The following list of examples of how the Voyage exhibit would serve as the focal point of community engagement are just some of the ways to involve the community in meeting our STEM initiatives.

- **Field trips**
 - Students from all over the 6-parish region will have opportunities to visit the STEM Center in Lake Charles with the Voyage exhibit as a focal point
 - McNeese University students or SOWELA community college students could serve as docents to walk students through the exhibit and field any questions
 - This could serve as an opportunity for our district to recruit potential teachers
- **STEM Nights**
 - The STEM Center at LCB will serve as the hub for various STEM Nights where families bring their children to engage in hands on activities and demonstrations. The Voyage exhibit would serve as a starting or ending point for selected activities
 - Rocketry
 - Astrology
 - Earth science
 - Climate
 - Biology
 - Engineering
 - Math (scale & proportion)
 - Technology (Lunar lander, Mars rover, etc)
- **Summer Camps**
 - NASA Astro Summer Camp would be a perfect opportunity to showcase the exhibit and use it as an entry point, or highlight it as the culminating event when students start or finish the camp
 - Students K-12 from the entire region will be welcome to attend any of the summer camps held at the Region 5 STEM Center
 - NASA Astro Summer Camp
 - Campers engage with Voyage as model for space travel
 - Shell Energy Summer Camp
 - Campers engage with Voyage as model for resources in our solar system
 - Master of Disaster Emergency Preparedness Summer Camp

- Campers engage with Voyage in terms of factors for weather/climate on the various planets
 - VEX Robotics Summer Camp
 - Campers engage with Voyage to gain an understanding of the vast use of robotics in space
 - Space Shuttles, robotic arms, Rovers, drones, etc
 - Sphero Coding Summer Camp
 - Campers engage with Voyage and space flight engineers to gain an understanding of how coding plays an integral part for remote exploration due to certain constraints such as time delay
- Teacher PD
 - Providing teachers with a hands-on approach to STEM will help them think-outside-the-box to improve their pedagogy. For example, one of the LA science standards is Earth's Place in the Universe. Teachers will experience the scale model proportions of the solar system that so many textbooks misrepresent.
 - Teachers could then go from the exhibit to a Moon phase activity in the STEM Center with a better understanding of scale & proportion.
 - Experts leading the PD could identify and address any misconceptions in a safe community environment.
- Community event venue (weddings, music events, etc.)
 - This could be a passive or active use of the Voyage exhibit, depending on the needs
- Astrology workshop (STAR Lab, stargazing, etc.)
 - The Voyage exhibit could be incorporated into a star-gazing event open to the community
 - The Voyage exhibit could be incorporated into a STAR Lab event open to the community