

***2023 Young Learners Science Exposition (K-5 Science Fair) hosted by the Department of Chemistry, Physics and Engineering within the School of Arts and Sciences at Cameron University***



Mae Carol Jemison (born October 17, 1956) is an American engineer, physician, and former NASA astronaut. She became the first black woman to travel into space when she served as a mission specialist aboard the Space Shuttle Endeavour. Jemison joined NASA's astronaut corps in 1987 and was selected to serve for the STS-47 mission, during which she orbited the Earth for nearly eight days on September 12–20, 1992. Jemison graduated from Stanford University with degrees in chemical engineering. She then earned her medical degree from Cornell University. Jemison was a doctor for the Peace Corps from 1983 until 1985. She later formed a non-profit educational foundation. (Photo borrowed from MIKE COPPOLA—GETTY IMAGES; NASA)

Monday, April 3

Display Set-Up

4:00-5:30 pm

Public Viewing

5:30-7:00 pm

McMahon Centennial Complex,

McCasland Ball Room

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Tuesday, April 4

Judging

8:00 am – 1:30 pm

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Tuesday, April 4

Awards Ceremony 7:00 pm

McMahon Centennial Complex,

McCasland Ball Room

**The Department of Chemistry, Physics, and Engineering with the School of Arts and Sciences at Cameron University invite your students to participate in the Young Learners Science Exposition (K-5 Science Fair) Tuesday, April 4<sup>th</sup>. Public viewing is available Monday evening on April 3<sup>th</sup>.**

**Entry registration CANNOT be received any later than Friday, March 31.**

We gratefully acknowledge the Wichita Falls-Duncan Section of the American Chemical Society for their gracious financial support in the purchase of trophies, ribbons, and certificates.

## 2023 Young Learners Science Exposition Rubric for Project Evaluation

[After scoring, clearly indicate in the left margin your ranking of the top three projects.]

Category & Entry Type: \_\_\_\_\_

**For each of the categories rate the science fair project displays as follows:**

- 5-** Thorough/attention to detail is evident  
 Clear/well organized/reads easily  
 Neat/proofreading is evident  
 Obviously done by child  
 Shows learning/study/understanding/creativity
- 3-** Average  
 Parts are incomplete  
 Sometimes hard to understand  
 Probably done by a child  
 Shows some effort/study/creativity
- 1-** Much missing/no attention to detail  
 Quite incoherent/lacks organization  
 Carelessly done/proofreading is not evident  
 Shows little or no effort by child

Project Code Number	Sum ratings (up to 20 points)	Question/Problem Hypothesis Experiment Materials Procedure Constants Variables Analysis of Results Graphs Tables Pictures Conclusion	Data Presentation Organization related to topic visualization	Project Display	Report/ Journal
		5 3 1	5 3 1	5 3 1	5 3 1
		5 3 1	5 3 1	5 3 1	5 3 1
		5 3 1	5 3 1	5 3 1	5 3 1
		5 3 1	5 3 1	5 3 1	5 3 1
		5 3 1	5 3 1	5 3 1	5 3 1
		5 3 1	5 3 1	5 3 1	5 3 1
		5 3 1	5 3 1	5 3 1	5 3 1
		5 3 1	5 3 1	5 3 1	5 3 1
		5 3 1	5 3 1	5 3 1	5 3 1
		5 3 1	5 3 1	5 3 1	5 3 1

## **The Cameron University Science Exposition (YLSE) rules and expectations:**

1. Each display must not be larger than three (3) feet by three (3) feet on a table top. There is no height restriction.
2. Displays or any part of the display cannot be placed on the floor.
3. NO electrical outlets are provided.
4. The display is a static, stand-alone display. Students will **not** be present during judging.
5. Students are invited to the public viewing to stand with their projects (evening prior to the actual science fair). Judges will be walking through at that time as well.
6. Display items must fit in front of the display board. Displays can be decorated with visual aids. No live animals can be displayed; chemicals used for the display are done so in empty bottles; plants used in a display must be cared for; and safety and welfare of living organisms is required (shown in the journal).
7. Each display must be accompanied with a science notebook or journal.
8. All entries must be endorsed by the student's school, including those students home-schooled or attending private schools.
9. Entry registration forms should be received the FRIDAY [March 31] before the fair.
10. Student entries categories include geography, mathematics, natural sciences, behavioral sciences, and engineering.
11. The project entry types can be an experiment, a model or demonstration, a collection, or a science illustration.
12. Group projects are allowed but there is only one award (trophy, ribbon, etc.). Group projects are more often allowed in the lower grades (K-3).
13. Students, while completing the entry form, must clearly identify their project as an experiment, model/demonstration, collection, or science illustration.
14. Students, while completing the entry form, must clearly identify their project category as geography, mathematics, natural sciences, behavioral sciences, or engineering.
15. Each school can expect to enter only **two** (2) project per grade level (K-5). **Twelve** (12) projects total per school but only two (2) per grade level. For example, if only grades 3-5 are completing projects at their school, only six (6) projects at most can be expected to be entered. **The school's science fair coordinator should sign the 2023 Entry Form to authorize representation of their school at YLSE.**
16. All set up must be completed on Monday; no set up will be allowed on the Tuesday morning.

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## **The Cameron University Young Learners Science Exposition (K-5 Science Fair) Definitions:**

### **1. Categories:**

- a. Students may select to complete a project in **behavioral science** which includes psychology, sociology, and family science for consideration for the **GAYLORD NELSON TROPHY**.
- b. Students may select to complete a project in **natural science** which includes biology, chemistry, physics, agriculture, space science, and earth science for consideration for the **MARIE CURIE TROPHY** for primary grades and for the **ALDO LEOPOLD TROPHY** at the intermediate grades.
  - i. In addition, the **AMERICAN CHEMICAL SOCIETY TROPHY** will be considered for chemistry and chemical engineering projects.
  - ii. In addition, the **COPERNICAN TROPHY** will be considered for physics projects.
- c. Students may select to complete a project in **engineering science** which includes such disciplines as computer engineering, civil engineering, mechanical engineering, aerospace engineering, electrical engineering, and agricultural engineering for consideration for the **MAE JEMISON TROPHY**.
- d. Students may select to complete a project in **mathematics** for consideration for the **LEIBNIZ TROPHY**.
- e. Students may select to complete a project in **geography/geosciences** which includes a study in locations and places, people and events, and landscapes for consideration for the **JAMES HUTTON TROPHY**.

### **2. Project Type:**

- a. Experiments: students conducting an experiment follow the experimental design of collecting evidence to disprove a stated hypothesis (scientific method) for consideration for the best in methodology **CAMERON UNIVERSITY AGGIES TROPHY**.
- b. Science Illustrations/Drawing: Students can present a science image (art display). Illustrations can provide an interface between pictures and science and can both educate and excite the public about science. Illustrations are placed on ~19 inch by 20 inch foam core board for consideration for category trophies.
- c. Models/Demonstrations: Models or demonstrations are designed and built to represent a mathematics, geography, or science concept or law or theory. Models help illustrate a concept that is otherwise difficult to visualize. Models are often used to demonstrate a concept. Note: Many projects, even though thought to be an experiment, are usually demonstrations of some phenomena for consideration for category trophies.
- d. Collections: Collections, such as a leaf collection or a mineral collection, are useful in the sciences for consideration for category trophies.

- 3. Notebook:** The notebook (lab journal) is a day by day “diary” of the student’s activities while selecting and completing a project. The notebook is a writing activity intent on communicating scientific ideas to others. The notebook or journal provides a public record of thinking and transforms a vague idea into a clear concept (Holiday, Yore, and Alvermann, 1994). The science notebook are embedded in the development and completion of the science (math, geography, design) project and assist students in making evidence-based explanations of their investigation or research. The student notebook is a record of data or observations that students collect (photos, measurements, etc.), facts they learn, and procedures they conduct. The notebook is also a record of student reflection, questions, predictions, claims, and conclusions leading to an understanding of a bigger idea. The notebook becomes a direct measure of student understanding. The results as evidenced in the notebook are then displayed on a project board or design (NSTA Reports, 2008).

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# The Young Learners Science Exposition (K-5 Science Fair)

2023 Entry Form

(Schools/Teachers: Make additional Copies as Needed)

EMAIL Entry Form

[clintb@cameron.edu](mailto:clintb@cameron.edu)

FAX Entry Form

580.581.7958 (Must Attention Dr. Clinton Bryan)

MAIL Entry Form

Department of Chemistry, Physics, and Engineering, 2800 West Gore Blvd., Lawton, OK 73505

## **ENTRY DUE DATE: March 31, 2023**

Student's Name: \_\_\_\_\_

Student's Grade Level:    K    1    2    3    4    5

School Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contact Phone Number: \_\_\_\_\_

Project Category **(MUST Circle One Below):**

Agricultural Sciences	Geography/Geosciences
Behavioral Sciences	Mathematics
Biological Sciences	Physics
Chemistry	Space Sciences
Engineering	

Project Type **(MUST Circle One Below):**

Experiment
Model/Demonstration
Drawing/Scientific Illustration
Collection

Project Title: \_\_\_\_\_

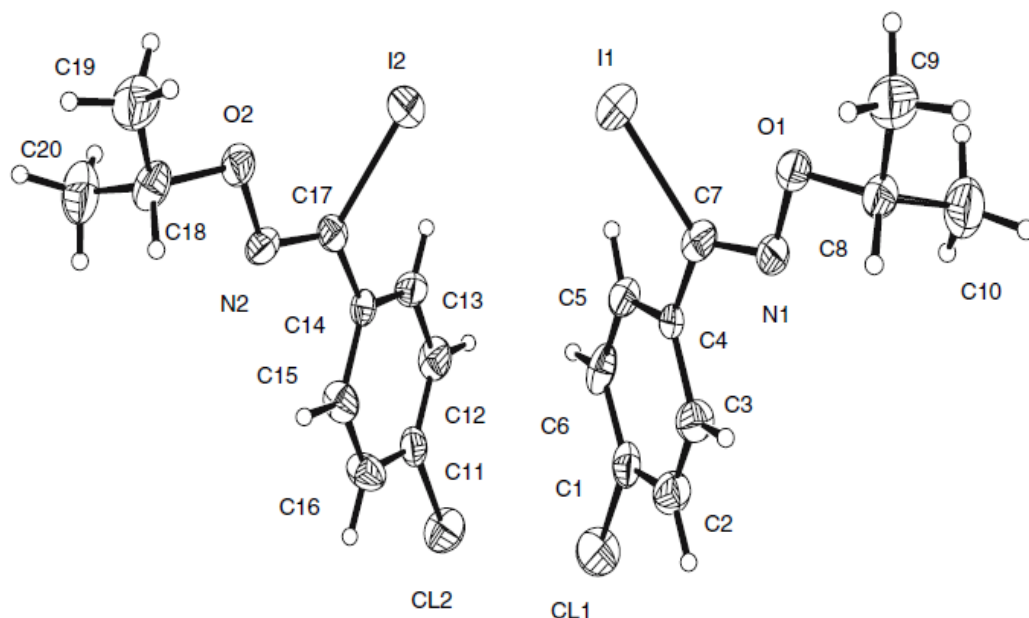
Elementary School Science Fair Coordinator Confirmation of Qualification; please sign:

Office Use only \_\_\_\_\_

Date Received \_\_\_\_\_ Entry Code: \_\_\_\_\_

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**Fig. 1** X-ray crystal structure of 1Zm



Structure determined at Cameron University on Cameron University instrument by Cameron University student published:

*Journal of Chemical Crystallography* (2007) 37:837–846 [DOI 10.1007/s10870-007-9257-y]

“Synthesis of O-Alkylbenzohydroximoyl Iodides and a Comparison of their Structures to other Oxime Derivatives”

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