STEM Fall 2026: Week 7

Complete before the class on Mon, Oct 26th

STEM Assembly				
- Supplies: Pencil, folder with paper, scientific calculator				2 points
- Books: LifePac Science, CAP Robotics, Mathematics Book				
Write down a Bible verse that mentions "salt" and be prepared to discuss in class.				3 points
General Sciences				
	Topic	**Reading**	**Exercises**	**Grading**
LifePac 7th Grade Unit 7	Climate: General	pg. 5-6	1.5-1.6	10 points
		pg. 6-7	1.7-1.11	
		pg. 7-10	1.12-1.25	
			1.011-1.020	
			1.021-1.026	
Robotics				
	Topic	**Reading**	**Exercises**	
Introduction to Robotics Booklet	Robotic Arm	Skim-read the article on Robot Singularities and watch the embedded videos & gifs. Write a paragraph explaining each of the three basic singularities in industrial robot arms: *Wrist Singularities, Elbow Singularities & Shoulder Singularities*.		5 points
		Velocity Jacobian Matrix Calculator Go the bottom of the webpage and read the answers to the first three FAQs. Go back up to the Visualizer at the top of the webpage and set the first Joint Angle to 90 and the second Joint Angle to 180. What is the Determinant for this configuration? Which direction of motion is restricted for this configuration? Draw a picture and write sentences to explain.		3 points
		Watch the video *Robot Kinematics: Path Planning* and be prepared to discuss in class.		2 points
		Bring the miniArm Robotic Arm to class with the batteries fully charged (carry the robotic arm in a separate box or bag).		

Science Fair				
Gather all materials to run the science experiement. Be prepared to discuss in class.				5 points
Run preliminary trials of the science experiment to determine how much table salt to dissolve in water during the actual experiment, e.g.: **Baseline Salinity Level:** No salt **Low Salinity Level:** x tablespoons salt per 1 cup water **Moderate Salinity Level:** y tablespoons salt per 1 cup water **High Salinity Level:** z tablespoons salt per 1 cup water				5 points
Mathematics				
The "inverse" is a mathematical operation that undoes or reverses another mathematical operation. For example: **Operation:** "Add 10" **Inverse:** "Subtract 10" **Operation:** "Multiply by 2" **Inverse:** "Divide by 2" What is the inverse of squaring a number? Demonstrate with an example.				3 points
What is the inverse of adding zero? What is the inverse of multiplying by zero?				2 points