STEM Fall 2026: Week 11

Complete before the class on Mon, Nov 23rd

STEM Assembly				
- Supplies: Pencil, folder with paper, scientific calculator				2 points
- Books: LifePac Science, CAP Robotics, Mathematics Book				
Divide and Conquer is a design paradigm underlying many algorithms such as the bisection algorithm. Watch the Divide and Conquer video and be prepared to discuss in class.				3 points
General Sciences				
	Topic	**Reading**	**Exercises**	**Grading**
LifePac 8th Grade Unit 4	Foods and Digestion	pg. 3-6	1.1-1.5	10 points
		pg. 7-8	1.17-1.22	
			1.23-1.35	
		pg. 15-16	1.37-1.40	
			1.41-1.48	
		Self Test 1	1.01-1.015	
			1.016-1.035	
			1.038-1.042	
Robotics				
	Topic	**Reading**	**Exercises**	
Introduction to Robotics Booklet	Energy and Power	pg. 54-55	Complete Problems 1 & 2 in *SpaceMath: Gravity and Energy*.	4 points
		Total energy is measured in Joules (J) whereas the rate at which energy is transfered, aka Power, is measured in Joules per second, aka Watts (W). If a humanoid robot battery pack holds 2.3 kilowatt hours of total energy, how much total energy is that in Joules? If a solar panel delivers 400W of power then how long would it take to charge the humanoid robot battery pack?		4 points
		Refer to the Arduino Language Reference link. Under *Variables* read about the *void* data type, and under *Structure* read about the *switch...case* control structure.		2 points
		Do NOT bring the miniArm Robotic Arm to the next class. Instead, work on completing Arduino Lesson B.		

Science Fair				
Finalize your Science Fair Oral Presentation and practice delivering it to your parents. Your total presentation delivery time should be 2-3 minutes plus any additional time to answer questions. Feel free to use index card prompts to help you remember your presentation.				5 points
Bring your Science Fair posterboard to class and be prepared to deliver your presentation.				5 points
Mathematics				
Use the Bisection Algorithm FlowChart to calculate the root of $f(x) = x^2 - 5x + 1$. Use initial interval endpoints a = 0 and b = 1 and tolerance tol = 0.001. Show your work in each iteration.				5 points