

## STEM Fall 2025: Week 4

Complete before the class on Mon, Oct 6th

### STEM Assembly

Complete at least one day on the Weekly Gratitude sheet.

Write down a line from one of your favorite worship songs.

### General Sciences

	Topic	Reading	Exercises	
LifePac 7th Grade Unit 2	Area		Measure the area of your kitchen in ft <sup>2</sup> . Convert your result to m <sup>2</sup> .	
			Measure the area of a piece of paper in in <sup>2</sup> . Convert your result to cm <sup>2</sup> .	
	Volume	pg. 18-19	1.55 - 1.62	pg. 18-19
			1.64 - 1.65, 1.67	pg. 21
	Mass	pg. 22-24	1.69 - 1.72	pg. 23
			1.80 - 1.85	pg. 25
	Metric System	pg. 26	1.016 - 1.031	pg. 30
			Watch the video explaining how Dijkstra's Algorithm is used by Google Maps to find the shortest path between two point.	

### Aerospace

	Topic	Reading	Exercises	
AEX II Activity Booklet	Bleriot Construction		Watch the video of the Bleriot XI replica flight demonstration.	
			Read the Smithsonian "Long Description" of the Bleriot XI.	
			Complete the table in Exercise 17, pg. 51 at home with your model Bleriot plane that you built in class. Adjust the different variables in the first four columns (Angle of fishing line, Mass of plane by gluing quarters onto the wing, Length of fishing line, Position of control stick) and record your results in the last column.	
	Gyroscopes & Rotational Motion	pg. 54-55	Read about gyroscopes and Gravity Probe B.	
		pg. 57-58	Read about rotational motion.	

### Hybrid Mathematics

The odd powers of two are  $2^1=2$ ,  $2^3=8$ ,  $2^5=32$ ,  $2^7=128$ , etc. Use your calculator to find the sum of the reciprocals of the odd powers of two accurate to 3 decimal places:  $1/2^1 + 1/2^3 + 1/2^5 + 1/2^7 + \dots$

**Bonus:** Derive a formula based on geometric series where the sum is taken over only odd powers.