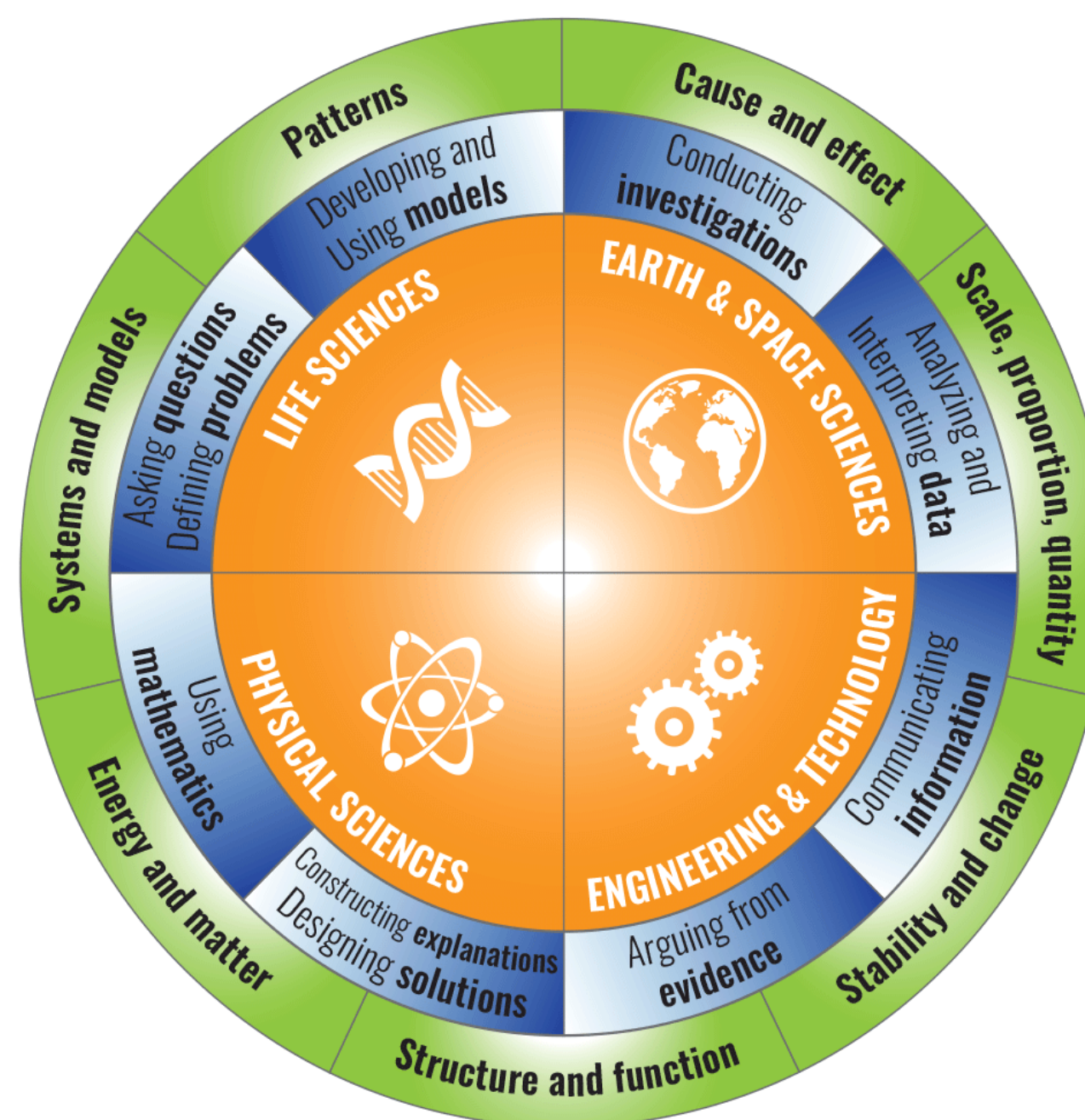


Next Generation Science Standards Put to the Test

By Jacob Geer

Abstract

College sciences are one of the hardest courses to prepare for. High School teachers are the ones that must best prepare us for this reality. To do this feat, they use the Next Generation Science standards to create their lesson plans and introduce us to the sciences that we focus on in college. In order to research how they go about doing this, a general topic of biofilms was used to delve into the foundations of these Next Generation Science standards. We found that our Next Generation Science standards are lacking in a few key areas. They focus on developing skills such as critical thinking, data analysis, and problem solving



*Picture Courtesy of Google images

Conclusion and Discussion

Unfortunately, due to time constraints and covid-19 the gathering of data during the school year of 2020 was next to impossible. The next step in my research would be to gain data from teachers and compare how current science courses stand up to the test of college preparation. Given that the data for the past school year clearly suggests that our high school educators are doing a good job teaching high school students basic science level topics. The next topic to look at would be how AP scores in biology, chemistry and physics stack up to the average grades of students completing those courses continuing into a degree relating to one of those topics. Another interesting research topic in this area would be grades of those that graduated during covid times and seeing if those college grades were high or lower compared to traditional learning. Would it be beneficial for students to learn at home and on their own time then being forced to attend in person classes?

Results

The next generation science standards focus on all areas of education. However, we were focused mostly on the science portions of the standards. An in-depth observation of the life sciences part of figure 1 to the left was prepared for. The next step included taking standardized testing results from the science portions specifically and comparing those scores to that of average college intro biology and chemistry courses. After doing some final calculations the average score according to standardized tests was 764. That score means that the average student is in level 3 which meets the expectations of a junior year high schooler.

WCAS - Fall 2021 - HS SCALE SCORES			
WCAS Scale Score	Frequency	Percent	Cumulative Percent (Percentile Rank)
390	643	1.3	1.3
538	2098	4.3	5.6
596	3425	7.1	12.7
650	4555	9.4	22.1
663	5173	10.7	32.8
700	5156	10.6	43.4
711	5018	10.3	53.7
732	4393	9.1	62.8
752	3909	8.1	70.8
771	3207	6.6	77.4
791	2806	5.8	83.2
811	2303	4.7	88.0
833	1906	3.9	91.9
857	1476	3.0	95.0
885	1128	2.3	97.3
921	723	1.5	98.8
977	431	0.9	99.7
1190	168	0.3	100.0

*Data taken from State of Washington Education Superintendents Office