

Measures of Schools and Students in Pembroke School District

September 2024

Inequitable education funding in New Hampshire impacts reach beyond the taxpayer. Students' educational experiences can be drastically different all over the state. This paper presents information about the students in the Pembroke School District and how they compare to the rest of the state.

Students and Student Characteristics

Pembroke School District directly operates three schools: Pembroke Hill School, Three Rivers Middle School, and Pembroke Academy. Several other towns tuition their students to Pembroke Academy. This paper covers schools only in the Pembroke School District.

Table 1 shows enrollment in October of the 2023-24 school year by grade, including postgraduate students, of which Pembroke had none.

Table 1

Pembroke Schools	Pre	K	1	2	3	4	5	6	7	8	9	10	11	12	PG	Totals
Pembroke Academy	0	0	0	0	0	0	0	0	0	0	245	175	195	146	0	761
Pembroke Hill School	0	55	72	67	69	67	0	0	0	0	0	0	0	0	0	330
Three Rivers School	0	0	0	0	0	0	79	84	73	83	0	0	0	0	0	319

Table 2

	American Indian or Alaskan	Asian or Pacific Islander	Hispanic	Black Non-Hispanic	White Non-Hispanic	Multi Race	Total
Pembroke	2	10	67	24	1246	61	1410
Percentage	0.1%	0.7%	4.8%	1.7%	88.4%	4.3%	100.0%
State Total	306	5,117	14,242	3,400	135,903	6,034	165,002
Percentage	0.2%	3.1%	8.6%	2.1%	82.4%	3.7%	100.0%

Table 2 displays racial enrollments for students at Pembroke Schools as of October 2023.¹ There is less racial diversity among Pembroke students than there is statewide. Only 12% of Pembroke students are not white compared to 18% statewide.

Of the 1,022 Pembroke students in the 2023-24 school year, 229 were eligible for free/reduced lunch based on their family income being below the Federal Poverty Level. While 24.1% of students statewide were eligible, 22.4% of the students at Pembroke were eligible.

¹ The totals in tables 1 and 2 differ but are what were reported by the NH Department of Education.

Also in the 2022-23 school year, 212 students were receiving special education services with an Individual Education Plan (IEP). This was 20% of the 1,022 students, a little more than the statewide average of 19.7%.

Only 4 of the 1,022 students were not native English speakers in 2023-24.

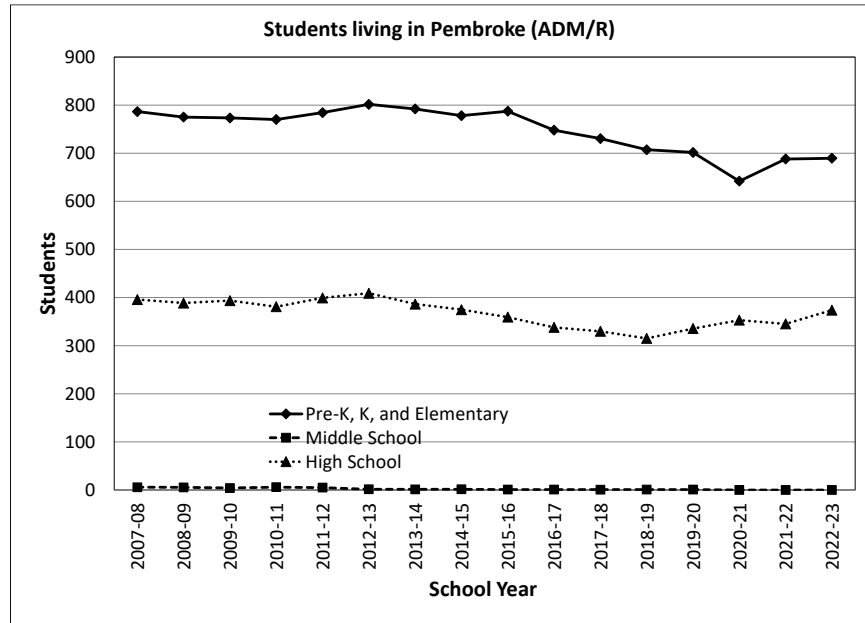
How Have Student Numbers Changed Over Recent Years in Pembroke?

Average Daily Membership in Residence (ADM/R) is one way in which enrollment is measured. It measures the number of public school students living in the district averaged over the school year.

ADM/R has been in slow decline in New Hampshire in recent years, attributable to declining birth rates.

Between 2006-07 and 2022-23 students at Pembroke declined 10.5%. Pembroke Middle School students are counted with High School.

Figure 1



How Do Pembroke Students Do on State Standardized Tests?

Students first take state standardized tests when they are in third grade. One is a reading test. The other is a math test. There are similar tests in grades 4-8. Eighth grade also includes a science test. These tests are part of the Statewide Assessment System (SAS). While these tests, like all standardized tests, are limited in what they cover or measure, they provide data on how well each New Hampshire student is doing. Each student's test is given a scale score by SAS and those are grouped into four levels. Students at levels 3 and 4 are considered "proficient or above." Table 3 shows results by percent proficient or above for Pembroke students and some surrounding districts in both 2023 and 2022.

Table 3

2023 State Standardized Test Results							
District	3rd Grade		6th Grade		8th Grade		
	% of Students Proficient or Better		% of Students Proficient or Better		% of Students Proficient or Better		
	Reading	Math	Reading	Math	Reading	Science	Math
Chichester	54%	54%	55%	55%	46%	46%	46%
Concord	39%	43%	43%	27%	43%	25%	29%
Epsom	39%	37%	50%	24%	59%	42%	27%
Pittsfield	15%	10%	60%	47%	35%	30%	15%
Pembroke	51%	56%	64%	42%	53%	28%	33%
New Hampshire	46%	52%	53%	42%	51%	35%	35%
2022 State Standardized Test Results							
District	3rd Grade		6th Grade		8th Grade		
	% of Students Proficient or Better		% of Students Proficient or Better		% of Students Proficient or Better		
	Reading	Math	Reading	Math	Reading	Science	Math
Chichester	48%	65%	36%	57%	64%	64%	68%
Concord	40%	43%	42%	26%	40%	29%	25%
Epsom	88%	81%	67%	33%	49%	37%	37%
Pittsfield	25%	40%	56%	44%	31%	31%	11%
Pembroke	42%	35%	55%	46%	47%	30%	46%
New Hampshire	45%	51%	53%	39%	46%	33%	33%

The percentage of Pembroke students who ranked as proficient or better was generally above the state averages. As seen, averages can change drastically over one year.

What Sports Have Been Available to Pembroke Academy Students?

The New Hampshire Interscholastic Athletic Association (NHIAA) organizes high school sports competitions in New Hampshire. Of the 33 sports listed by NHIAA for the school year 2019-20, 23 were available to students at Pembroke Academy (PA). Table 4 shows the available sports and Table 5 shows those that were not available.

The number of sports available is strongly related to enrollment at a high school. Figure 2 shows that PA has the expected number of sports for its school enrollment.

Interscholastic sports available at any high school in any particular year will depend, of course, on the availability of coaches and whether enough students sign up.

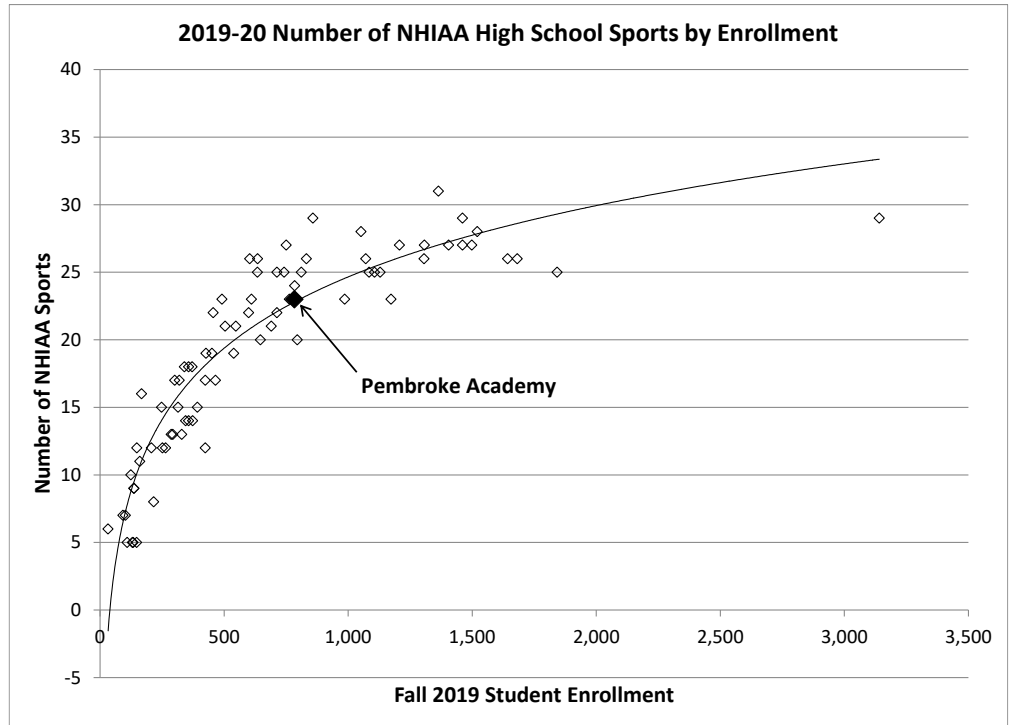
Table 4

Available Sports
Boys Ice Hockey
Bass Fishing
Boys & Girls Cross Country
Field Hockey
Football
Boys & Girls Golf
Boys Soccer
Girls Soccer
Spirit
Boys Basketball
Girls Basketball
Boys & Girls Indoor Track
Boys & Girls Alpine Skiing
Swimming & Diving
Unified Basketball
Baseball
Softball
Boys Lacrosse
Girls Lacrosse
Outdoor Track
Girls Tennis
Boys Tennis
Unified Volleyball

Table 5

Sports Not Available
Coed Unified Soccer
Girls Volleyball
Boys Volleyball
Girls Ice Hockey
Boys & Girls Nordic Skiing
Ski Jumping
Girls Gymnastics
Boys Wrestling
Ten-Pin Bowling
Unified Track

Figure 2



How Many Credits Are Required to Graduate from Pembroke Academy?

The State of New Hampshire sets 20 credits as the minimum that each student must complete to graduate. Some New Hampshire districts have higher graduation requirements than the state minimum. A few require as many as 28 units to graduate. The average is 24. PA requires 24 credits.

Table 6

Subject Area	Credit Requirements for Graduation 2021	
	NH Minimum	Pembroke Academy
Total	20.0	24.0
Arts	0.5	0.5
Information Technologies	0.5	0.5
English	4.0	4.0
Mathematics	3.0	3.0
Physical Science	1.0	1.0
Biological Science	1.0	1.0
Other Science	0.0	1.0
US/NH History	1.0	1.0
US/NH Government & Civics	0.5	0.5
Economics	0.5	0.5
World History, Geography	0.5	1.0
Health	0.5	0.5
Physical Education	1.0	1.0
Electives	6.0	8.5

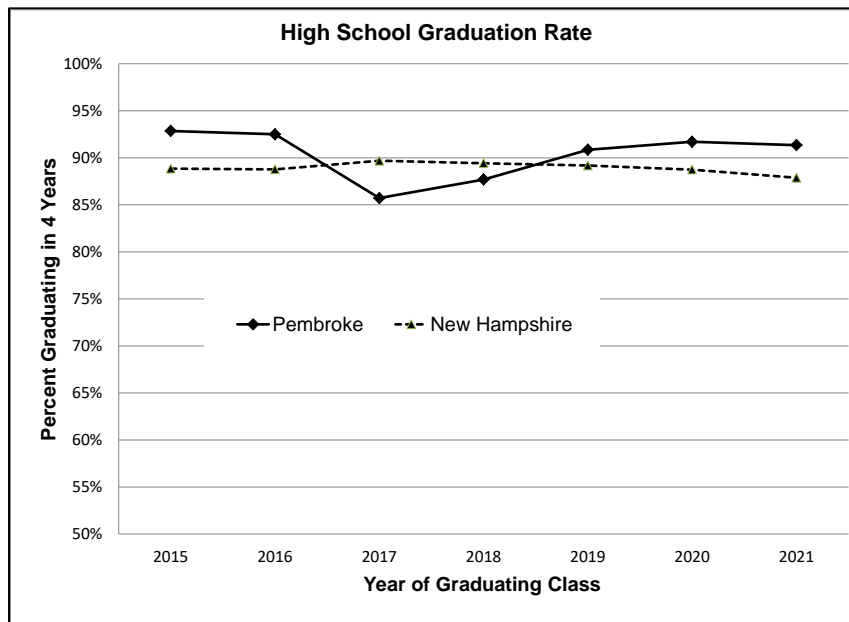
Table 6 shows the subject area requirements. Highlighted are those subjects where PA's requirements are higher than the minimum set by State regulations.

What Has Been the High School Graduation Rate?

PA graduated 1,243 students in graduating classes from 2015 through 2021. The graduation rate over those seven years averaged 90.4%. This was slightly above the state average of 88.9%.

Ranking the 81 public high schools in New Hampshire with the highest graduation rate as (1) and the high school with the lowest graduation rate as (81), PA ranked 41.

Figure 3



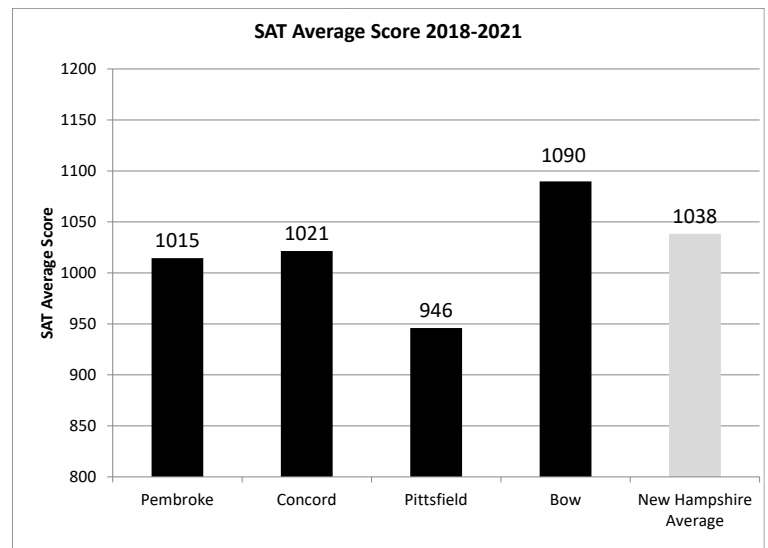
How Well Have Pembroke Academy Students Done on the Annual SAT Exam?

The standardized exam used by New Hampshire to measure student achievement in high school is the SAT of the College Board. There are two parts: Mathematics and Evidence-Based Reading and Writing. The possible range of combined scores is 400 to 1600.

Over the four years from 2018 through 2021, 660 PA students took the SAT exams in the spring of their junior year. The average score of those students was 1015 while the New Hampshire average was 1038.

Ranking the 79 public high schools for which data were available, the school with the highest average score as (1) and the lowest as (79), PA ranked 41.

There were 712 students enrolled as juniors at PA over the four years. As a percentage of enrollment, 7.3% of juniors were not tested, much better than the 12.2% statewide.



What Courses are Available for Pembroke Academy Students?

Course availability is an important measure of a student's educational opportunity. The Course of Studies documents for 2021-22 were collected from our public high schools. Counts of courses available in each subject area were compiled. Table 7 shows that PA offers a similar number of courses in all subject areas as the average public high school in New Hampshire.

The availability of courses is tied to several factors. The size of a school plays a large role. Larger schools have economies of scale, more teachers, and a student population with more diverse interests. Other factors include transportation and teacher licensure.

Table 7

Number of Courses Available 2021-22		
Availability of Courses	Pembroke Academy	Average NH High School
World Languages	12	14
Advanced Placement	8	9
English Electives	12	11
Math courses	12	17
Social Study Electives	11	10
Computer Technologies	5	6
Career tech	22	26
Arts /Performing Arts	25	23
Science Electives	12	13

What Have Advanced Placement Results Been at Pembroke Academy?

The College Board offers Advanced Placement (AP) exams in 38 subjects every May. The exams are the culmination of students' participation in Advanced Placement courses in their high school. Those courses follow a standard syllabus and use nationally standard materials. There is no requirement for New Hampshire high schools to offer any AP courses, or for students to take an AP course. Those who do take an AP course do not have to take the exam at the end of the year.

One purpose of the AP courses and their exams is to allow students to get college credit in advance of entering college, thus potentially skipping certain introductory college courses. Among students who desire to attend a four-year college after graduation, there is considerable incentive to take AP courses and their associated exams.

The College Board grades each test on a scale from 1 to 5. Most colleges grant advanced credit to students whose score is a 3, 4, or 5. A few highly selective colleges may not accept scores of 3 or 4.

Table 8 lists the results of AP tests over the four years 2018-2021.

Table 8

High School	2018-2021 Exam Takers	2018-2021 Exams	2018-2021 Scores 3,4,5	2017-2020 Fall enrollment	Takers as % of Enrollment	Exams per Taker	3+ as % of Exams	3+ per 100 enrollment
Pembroke	229	359	205	3,069	7.5%	1.57	57.1%	6.7
Pittsfield	10	14	0	620	1.6%	1.40	0.0%	0.0
Bow	478	818	502	2,566	18.6%	1.71	61.4%	19.6
Statewide	22,966	36,355	25,108	216,266	10.6%	1.58	69.1%	11.6

PA students are less likely to take AP tests and also less likely to be successful in the exams as the statewide averages. During this period only 7.5% of PA students took at least one AP test, lower than the statewide average of 10.6%. Of the AP exams taken, 57.1% resulted in a score of 3-5, lower than the statewide average of 69.1%.

How Likely Are Students from Pembroke Academy to Apply, Earn Admittance, and Enroll at The University of New Hampshire?

The University of New Hampshire (UNH) is the flagship of New Hampshire's public higher education institutions. It is very common for seniors who are considering attending college to apply to UNH.

The UNH Admissions Office provided counts of applications, admissions, and enrollments from each New Hampshire public high school for freshman years 2017 through 2021. By aggregating data over five years, the need to suppress small numbers was greatly reduced, and year-to-year variations were smoothed, especially for smaller high schools. For comparisons among high schools of greatly varying sizes, senior year enrollments are used as the base for calculating what percentage of a school’s students have applied, been admitted, and finally enrolled at UNH.

Students who plan to attend college after graduating from high school often apply to as many as 8 to 10 colleges. Thus, even when accepted to UNH, a vast majority of students will choose to go elsewhere, and a much smaller number will enroll. Understanding this, UNH (and other colleges and universities) offer admission to many more applicants than they could accept.

On average over the five years 2017-2021, 28.8% of senior-year students of New Hampshire’s public schools applied for admission to UNH. Of PA’s 791 seniors, 214 (27.1%) applied to UNH. Statewide 24.4% of the high school seniors were admitted and 8.0% chose to enroll at UNH after high school. Among the 54 PA seniors, 22.9% were admitted to UNH and 6.6% did enroll, slightly below state averages in both instances.

Table 9

High School	Senior Year October Enrollments 2016-2020	Applications for Admission to UNH 2017- 2021	Percent of Seniors Applying	Admissions by UNH	Percent of Seniors Admitted	Actual Enrollments	Percent of Seniors Actually Enrolled at UNH
Pembroke	791	214	27.1%	181	22.9%	52	6.6%
Bow	781	291	37.3%	262	33.5%	88	11.3%
Concord	1,953	526	26.9%	426	21.8%	151	7.7%
Pittsfield	130	31	23.8%	22	16.9%	7	5.4%
State Total	64,145	18,455	28.8%	15,653	24.4%	5,101	8.0%

Note: Data used in this report are taken from reports, spreadsheets, and websites of the NH Department of Education, the University of New Hampshire, the College Board, and the New Hampshire Interscholastic Athletic Association. Graduation requirements and number of courses offered were collected from Programs of Study from 79 of the 81 New Hampshire public high schools.