	Average Daily Attendance Rate					
	97	98	99	00	01	02
G9	92.5%	92.2%	91.5%	91.0%	91.6%	93.8%
G10	93.5%	93.4%	94.5%	92.7%	94.6%	94.2%
G11	92.1%	93.8%	93.5%	94.0%	94.6%	95.1%
G12	92.6%	93.7%	93.7%	94.3%	94.2%	95.0%
Tot	92.7%	93.2%	93.2%	92.9%	93.6%	94.5%

The above chart shows the average daily attendance rates (ADR) at CHS from 1997 – 2002. To calculate the ADR, we need to know the Average Daily Membership (ADM) and Average Daily Attendance (ADA).

ADM = average number of students over the 180 day school year who are enrolled in a specific grade level at CHS
ADA = average number of enrolled students who are in attendance throughout the year
ADR = ADA / ADM = Percent of the total number of students who actually attend school on any given day

We can see from the chart that the average daily attendance rate has steadily improved from under 93% in 1997 to 94.5% in 2002. This corresponds to around 68 students missing class each day. The annual attendance rate at CHS has decreased only once since the 1996-97 school year.

We can also see that the 9th grade class almost always has the lowest attendance rate at CHS. I graphed the 9th grade attendance rates (in red) versus the students in grades 10-12 (blue) below. You can see that the gap between 9th grade students and students in grades 10-12 has generally increased since 1997. It looks as though the gap will be cut sharply this year, most likely due to the closed campus for 9th graders.

I also added a gray line representing the attendance rate for the previous year's 8th graders. This may give us an idea of what we should expect from 9th grade students in terms of attendance rates. You can see that the attendance rate from 8th to 9th grade drops for each class of students.

Average Daily Attendance Rates 1997-2002
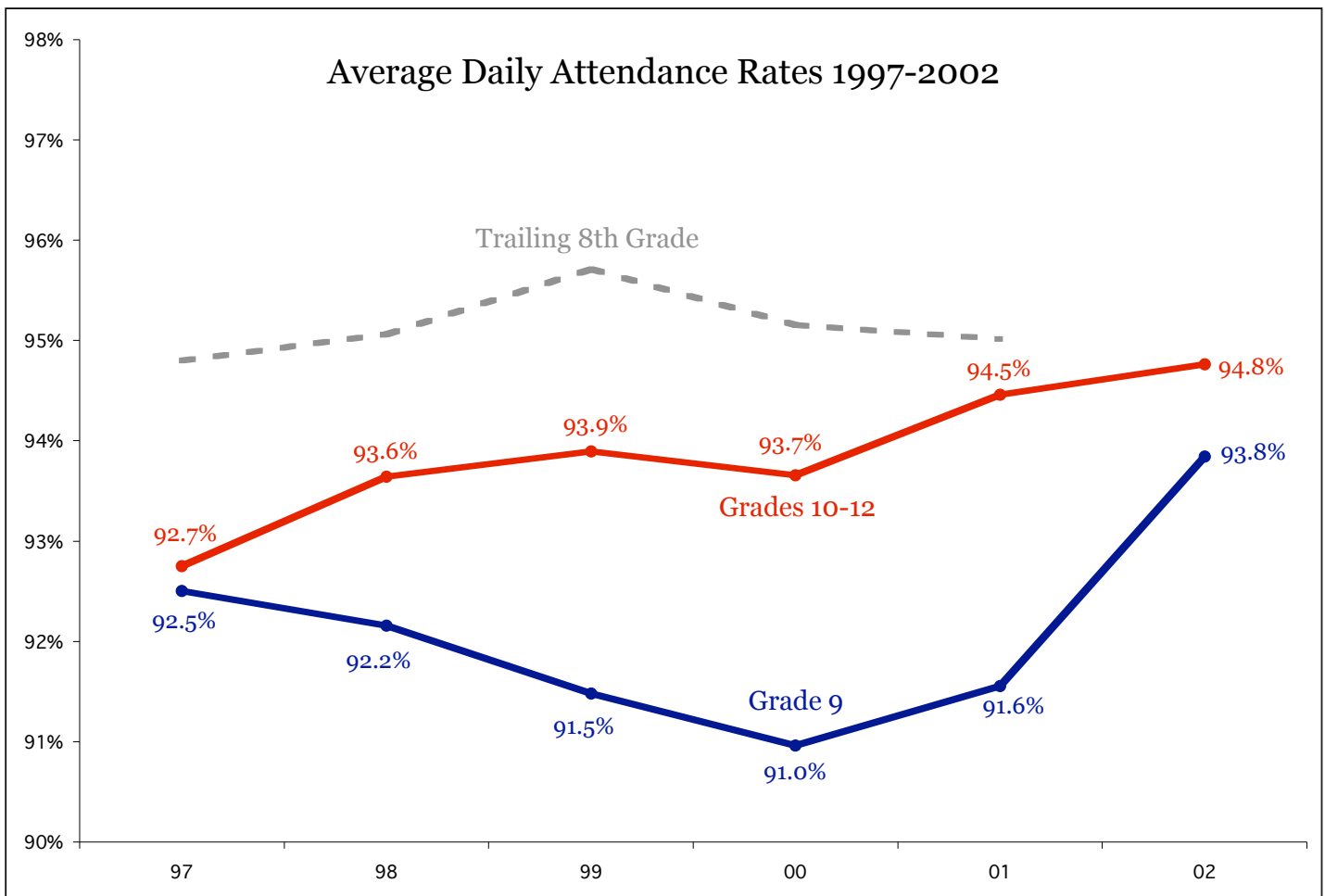
Average daily attendance rates give us a good measure of building-wide attendance, but they aren't particularly useful at the student level. If we wish to concentrate on students rather than the building as a whole, we must look at the average number of days missed by students each year. This chart shows us the average number of days absent for students at CHS.

	Avg. Days Absent						
	1996	1997	1998	1999	2000	2001	2002*
G9	14.67	12.12	14.09	13.38	16.14	13.57	9.22
G10	14.60	10.61	10.86	9.28	12.66	9.11	8.92
G11	14.45	12.43	10.70	11.03	10.81	9.51	7.22
G12	15.30	11.34	11.12	10.82	9.31	9.85	7.58
Total	14.73	11.62	11.80	11.30	12.46	10.73	8.31
* 2002 Data is based on 162 Possible Days (Until 5/7/02)							

The information in these tables once again indicates that attendance has generally improved at CHS since 1996. Five years ago, students missed an average of almost 15 days of school. This has decreased to just under 11 days missed in 2001.

These numbers might seem to be too high. Surely the average student at CHS isn't missing over 10 days each year. In statistics, there are several methods of calculating an "average." The data in the previous table are calculated using means, which are impacted by outliers. A small number of students missing a large number of days in a year (like the students who miss more than 60 days of school) have a significant impact on the mean number of days missed by the total student population. To get rid of the impact of the outliers, we must calculate a median instead of a mean.

	Median Days Absent						
	1996	1997	1998	1999	2000	2001	2002*
G9	8.52	5.14	4.39	6.32	5.36	5.89	4.48
G10	10.05	5.12	4.52	4.12	4.64	3.84	4.82
G11	9.38	7.66	4.12	4.12	4.12	4.38	3.70
G12	11.48	6.45	5.12	4.51	3.74	4.50	4.12
Total	9.72	5.98	4.48	4.56	4.38	4.82	4.24
* 2002 Data is based on 162 Possible Days (Until 5/7/02)							

The median tells us the number of days missed by 50% of the students. For example, half of all students missed more than 6 days in 1997 (conversely, half of all students missed less than 6 days that year). You will notice that the median number of days absent each year is lower than the mean number of days absent. This is due to the fact that the median eliminated the impact of those outliers who missed a large number of days in a given year. We can use the medians to generalize the statement: The average student at CHS now misses between 4-5 days of school in a year.

Median Days Missed 1996-2002
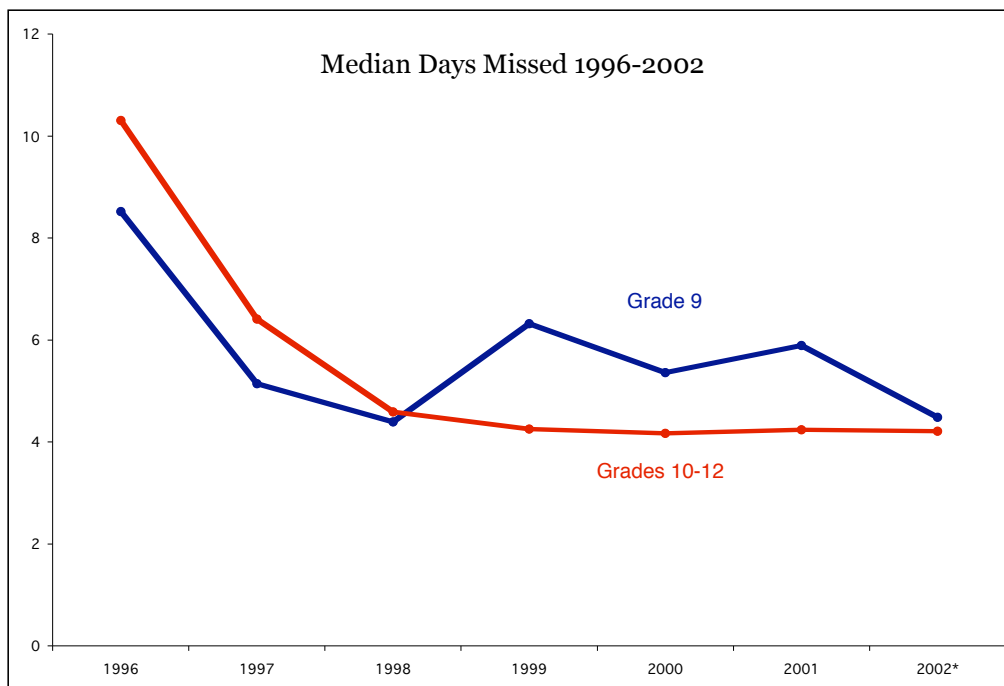
The graph on the last page shows the median days missed for 9th grade students and those students in grades 10-12. This shows us that the average student at CHS misses about the same number of days, regardless of grade level. So why is the 9th grade average daily attendance rate so much lower than the other grade levels? The 9th grade tends to have more outliers than the other grade levels (more students who miss an unusually large number of days each year). This lowers their overall attendance rate, while not impacting the median number of days missed each year.

Using "Average Days Missed" rather than "Average Daily Attendance Rates" is encouraged for another reason – we can break the data down and look at specific student subgroups over a particular period of time. For example, looking over the data broken down by semester, it appears as though students miss more days in the second semester. Here is a chart showing the average number of days missed in 2001-2002 by semester.

	1st Semester	2nd Semester
	89 Days	73 Days
G9	4.18	4.39
G10	4.11	4.19
G11	3.01	3.51
G12	3.85	3.56
Total	3.82	3.95

Even though we have only completed 72 days of school in the second semester, we already see students have missed more days than they did in the first semester. We also see that seniors miss fewer days during the second semester than they do during the first semester. Looking back over a couple years of attendance data broken down by semester, we see the same basic trends. This increase in average days missed during the second semester may be caused by a variety of factors

We can also use the average number of days missed to examine differences among student subgroups (socioeconomic status, special education status, race, gender, At Risk status). The following tables show the average number of days missed for each subgroup (along with the number of students in each subgroup) from 1998 – 2002. The numbers represent the mean days missed, so they are affected by outliers.

G9		1998	1999	2000	2001	2002
	FRM	24.09	24.44	28.06	22.94	13.38
		80	110	112	94	118
	NoFRM	11.55	10.17	12.07	10.83	7.46
		345	373	319	332	279
	IEP	31.93	24.77	33.26	23.94	15.31
		55	94	78	82	79
	NoIEP	11.23	10.68	12.46	11.01	7.70
		370	389	353	344	318
	Female	14.16	13.45	15.76	12.26	8.47
		214	233	218	212	184
	Male	13.67	13.39	16.71	14.73	9.86
		211	250	213	214	213
	AtRsk	16.50	15.78	23.71	23.03	14.12
		66	28	40	69	112
	NoRsk	13.44	13.28	15.46	11.66	7.29
		359	455	391	357	285
	AmInd	43.44	18.17	13.96	9.97	0.00
		1	4	2	2	0
	Asian	5.89	2.29	4.35	3.65	3.91
		6	4	7	5	5
	Black	17.36	21.70	25.57	26.57	9.49
		21	24	23	20	25
	White	13.68	13.02	16.15	13.08	9.31
		395	442	388	393	362
	Hispanic	33.07	14.03	7.24	7.14	6.44
		2	9	11	6	5

G10		1998	1999	2000	2001	2002
	FRM	17.20	16.97	21.99	15.63	14.92
		76	78	77	63	63
	NoFRM	9.47	8.58	11.18	8.45	7.43
		353	327	320	312	252
	IEP	19.16	21.20	22.46	19.15	14.40
		62	52	66	61	57
	NoIEP	9.43	8.57	11.44	7.81	7.71
		367	353	331	314	258
	Female	10.65	10.22	13.80	9.15	8.72
		215	208	198	194	158
	Male	11.02	10.17	12.75	10.19	9.13
		214	197	199	181	157
	AtRsk	10.71	15.13	17.70	31.80	14.65
		62	17	18	1	50
	NoRsk	10.86	9.98	13.06	9.59	7.84
		367	388	379	374	265
	AmInd	9.73	0.00	18.58	8.64	7.02
		2	0	2	2	1
	Asian	7.23	7.94	1.77	3.19	2.92
		6	7	4	6	5
	Black	23.04	20.78	18.48	18.73	11.26
		22	22	18	22	11
	White	10.19	9.43	13.12	9.32	8.99
		391	372	364	336	292
	Hispanic	11.74	27.24	12.80	4.32	6.51
		8	4	9	9	6

G11

		1998	1999	2000	2001	2002
G11	FRM	15.68	19.69	17.70	17.62	13.93
		42	64	51	49	50
	NoFRM	10.38	10.35	10.52	8.41	5.89
		319	305	313	314	252
	IEP	27.73	21.74	20.66	19.18	14.57
		41	57	50	52	46
	NoIEP	8.85	10.19	10.07	8.06	5.90
		320	312	314	311	256
	Female	9.57	12.97	12.41	8.91	6.55
		184	186	188	190	157
	Male	12.48	10.96	10.57	10.47	7.95
		177	183	176	173	145
	AtRsk	13.76	13.76	0.00	0.00	15.26
		38	38	0	0	30
	NoRsk	10.67	11.77	11.52	9.65	6.33
		323	331	364	363	272
	AmInd	0.00	32.99	0.00	13.38	0.00
		0	2	0	2	0
	Asian	11.36	7.66	8.21	2.51	4.88
		5	6	6	4	6
	Black	21.46	16.69	20.47	19.26	14.09
		17	14	17	18	18
	White	10.32	11.80	11.02	9.21	6.87
		336	343	339	331	269
	Hispanic	26.90	6.23	30.48	8.87	5.60
		3	4	2	8	9

G12

		1998	1999	2000	2001	2002
G12	FRM	14.65	18.67	15.86	13.42	12.46
		31	44	44	33	49
	NoFRM	10.81	9.57	9.69	9.32	6.66
		262	267	330	308	261
	IEP	25.45	32.93	16.86	20.35	13.52
		30	33	56	45	49
	NoIEP	9.59	8.24	9.29	8.10	6.46
		263	278	318	296	261
	Female	11.11	9.82	11.72	9.59	6.91
		146	155	188	174	153
	Male	11.32	11.89	9.10	9.85	8.23
		147	156	186	167	157
	AtRsk	12.11	12.11	0.00	0.00	13.39
		27	27	0	0	22
	NoRsk	11.12	10.74	10.42	9.72	7.13
		266	284	374	341	288
	AmInd	39.58	0.00	41.72	0.00	8.36
		1	0	2	0	1
	Asian	6.67	4.19	13.72	9.79	2.58
		6	3	6	7	4
	Black	16.01	15.46	17.36	17.60	12.98
		12	11	13	17	16
	White	10.91	10.66	9.97	9.24	7.32
		270	293	348	315	280
	Hispanic	17.46	17.65	7.59	18.18	8.25
		4	4	5	2	9

All Grades

		1998	1999	2000	2001	2002
All Grades	FRM	18.98	20.58	22.66	18.61	13.66
		229	296	284	239	280
	NoFRM	10.53	9.68	10.86	9.27	6.87
		1279	1272	1282	1266	1044
	IEP	25.77	24.39	24.22	21.02	14.56
		188	236	250	240	231
	NoIEP	9.83	9.50	10.87	8.81	6.99
		1320	1332	1316	1265	1093
	Female	11.46	11.76	13.52	10.05	7.70
		759	782	792	770	652
	Male	12.17	11.72	12.47	11.50	8.89
		749	786	774	735	672
	AtRsk	13.49	14.08	21.84	23.15	14.33
		193	110	58	70	214
	NoRsk	11.57	11.56	12.66	10.15	7.15
		1315	1458	1508	1435	1110
	AmInd	25.62	23.11	24.75	10.66	7.69
		4	6	6	6	2
	Asian	7.63	6.16	7.35	5.27	3.69
		23	20	23	22	20
	Black	19.84	19.46	21.05	20.64	11.75
		72	71	71	77	70
	White	11.35	11.33	12.68	10.35	8.22
		1392	1450	1439	1375	1203
	Hispanic	18.27	15.75	10.88	7.56	6.75
		17	21	27	25	29

Those tables present a lot of information, but they are hard to read. We need a chart to display the information we are really interested in. It seems to me that we are interested in making sure one subgroup of students is not missing more days of school each year than another subgroup of students. The following chart shows the "attendance gap" between groups of students based on their race, economic status, special education status, and At-Risk status.
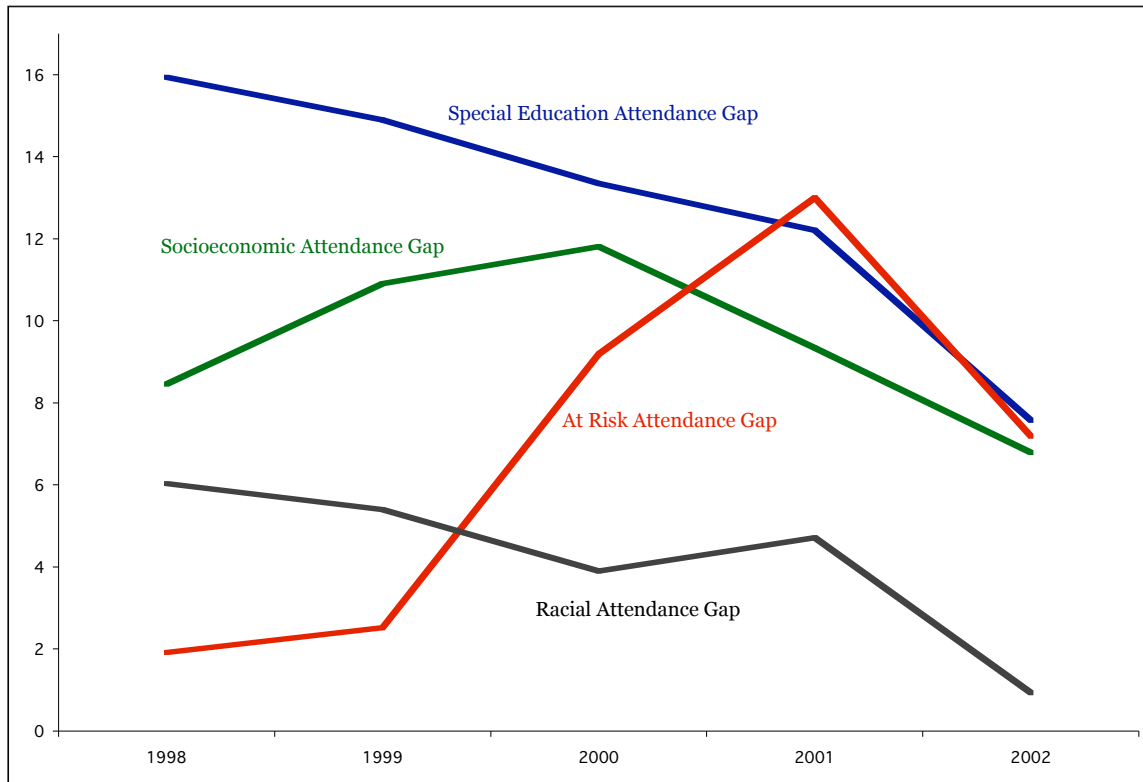
We can see that the attendance gaps among the subgroups have been decreasing. In fact, the gap between special education students and non-special education students has been cut in half since 1998. We also see that the difference in days missed among racial subgroups is almost nonexistent.

For comparison, here is that same graph for the middle schools. You can see the middle schools have a big racial attendance gap, while having smaller differences for the other student subgroups.

Attendance Gaps at the Middle Schools
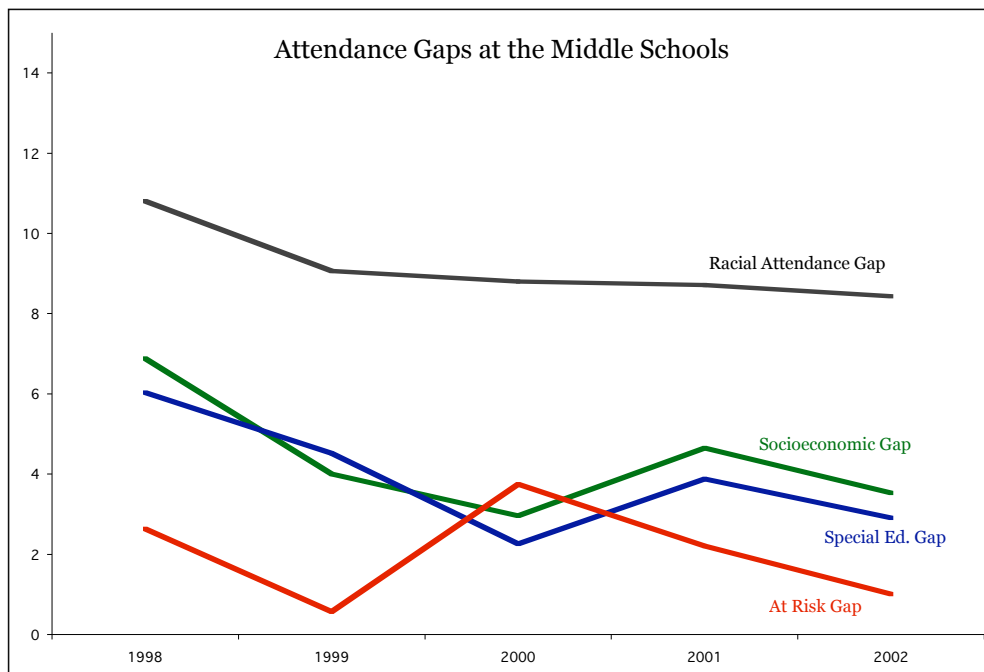
The following pages show the distribution of days missed by students from 1995 – 2002. Here is a sample to explain how to read the tables.

Abs = number of days missed by students

| | Grade | | | | |
Abs	9	10	11	12	PR
0	32	20	23	16	93
1	47	38	47	41	80
2	50	31	41	50	67
3	34	30	34	28	58
4	36	30	22	33	48
5	15	24	17	20	43

These numbers are percentile ranks. They represent the percent of students missing a greater number of days.

For example, this shows us that 93% of students missed more than 0 days of school each year. 43% of students missed more than 5 days that year.

The numbers in the table represent the number of students who missed that many days over the course of the school year.

For example, 32 students in 9th grade missed 0 days of school. 20 students in grade 12 missed exactly 5 days of school.

Since CHS is moving to block scheduling next year, I thought we should develop a new set of data to use as a baseline comparison for attendance. I created this baseline data by combining the information from the 1995 – 2002 distribution charts.

The following page shows the baseline number of days missed and percentile ranks we may use as a comparison in the future. I have condensed the information into the following chart:

Baseline Days Missed & Percentile Ranks					
Abs	%ile Rank	Abs	%ile Rank	Abs	%ile Rank
0	93	23	14	46	4
1	82	24	14	47	4
2	71	25	13	48	4
3	61	26	12	49	3
4	53	27	11	50	3
5	48	28	11	51	3
6	43	29	10	52	3
7	40	30	9	53	3
8	37	31	9	54	3
9	35	32	8	55	2
10	32	33	8	56	2
11	30	34	8	57	2
12	28	35	7	58	2
13	27	36	7	59	2
14	25	37	6	60	2
15	23	38	6	61	2
16	22	39	6	62	2
17	21	40	5	63	2
18	20	41	5	64	2
19	18	42	5	65	2
20	17	43	5	66	2
21	16	44	4	67	1
22	16	45	4		

We can now use this list of percentile ranks exactly like we use percentile ranks from the ITBS. If we assume the previous 5 years are a good measure of historical attendance at CHS (i.e. they aren't unusual in any way), this chart shows us what attendance we should expect from high school students. For example, we expect 93% of students to miss at least one day of school each year. We also expect about half our students to miss more than 5 days each year. These percentile ranks can give us a good set of goals for improving attendance in the near future.

Examples of goals we may set, using this baseline data:
      1) Decrease the percent of students missing more than 2 days of school from 71% to 75%
      2) Increase the percent of students missing 5 days or less from 52% to 60%
      3) Have 1% of students miss 50 days of school or more, instead of the 3% currently.

Using percentile ranks, we don't have to concentrate on the students with the worst attendance or the "average" student. We can set goals and track progress anywhere along the distribution.

Instead of creating a separate table or chart for each possible combination of student subgroup, I've created one pivot table that displays just about every piece of attendance data you could want. Pivot tables allow you to select a group of students based on gender, race, economic status, special education status, and At-Risk status. You can then see the average number of days missed by the students in that subgroup.

Unfortunately, it is just about impossible to show the power of a pivot table on paper. I have printed out some output from my pivot tables on the next several pages. These pages will give you an idea about how pivot tables work.

You will be receiving a couple Microsoft Excel files from me containing these pivot tables. They allow you to compare attendance data from 1996 – 2002 for student subgroups.