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ABSTRACT

This report presents projections of classroom teaching positions in kindergarten through grade 12 for regular public schools in New York State. Two basic assumptions underlying the projections of classroom teachers needed for 1992-93 through 1996-97 were: (1) the numbers of teachers in all subject areas in the base year, 1991-92, were adequate to meet the educational needs of the public schools of the State; and (2) the number of teachers needed is largely determined by the number of students enrolled. No assumptions were made concerning future economic, social, or political conditions which might impact on need for teachers. The document is organized into three sections, each consisting of three tables. Tables 1-3 display projections of the classroom teaching force, classroom teacher vacancies, and vacancies to be filled by new teachers through 1995-97 for the whole State. The same projections are shown for the New York City public schools in tables 4-6 and for the State, exclusive of New York City, in tables 7-9. A complete description of the methodology is included in appendices A and B; the number of provisional teaching certificates issued in major subject areas from 1970 to 1991 is furnished in appendix C. (LL)

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Projections of

**PUBLIC SCHOOL
CLASSROOM
TEACHERS**

NEW YORK STATE

1992-93 TO 1996-97

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THE STATE EDUCATION DEPARTMENT
Information Center on Education
Albany, New York 12234

**PROJECTIONS OF PUBLIC SCHOOL
CLASSROOM TEACHERS**

NEW YORK STATE

1992-93 TO 1996-97

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Information Center on Education
June 1992

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LIST OF TABLES AND APPENDICES

		<u>Page</u>
Table 1:	Trends and Projections of Public School Classroom Teachers, New York State, 1988-89 To 1996-97	2
Table 2:	Trends and Projections of Public School Classroom Teacher Position Vacancies, New York State, 1988-89 To 1996-97.	3
Table 3:	Trends and Projections of Classroom Teacher Positions to be Filled by New Teachers, New York State, 1988-89 To 1996-97	4
Table 4:	Trends and Projections of Public School Classroom Teachers, New York City, 1988-89 To 1996-97	5
Table 5:	Trends and Projections of Public School Classroom Teacher Position Vacancies, New York City, 1988-89 To 1996-97	6
Table 6:	Trends and Projections of Classroom Teacher Positions to be Filled by New Teachers, New York City, 1988-89 To 1996-97	7
Table 7:	Trends and Projections of Public School Classroom Teachers, New York State Exclusive of New York City, 1988-89 To 1996-97.	8
Table 8:	Trends and Projections of Public School Classroom Teacher Position Vacancies, New York State Exclusive of New York City, 1988-89 To 1996-97	9
Table 9:	Trends and Projections of Classroom Teacher Positions to be Filled by New Teachers, New York State Exclusive of New York City, 1988-89 To 1996-97	10
Appendix A:	Methodology For Projections of Public School Classroom Teacher Needs For Major Subject Areas and For Teacher Positions to be Filled.	11
Appendix B:	Methodology For Projections of Public School Classroom Teacher Vacancies to be Filled by New (First-Year) Teachers.	13
Appendix C:	Number of Provisional Teaching Certificates Issued in Major Subject Areas, New York State, 1970 To 1991.	14

FOREWORD

This report presents projections of classroom teaching positions in kindergarten through Grade 12 for regular day public schools in New York State. Excluded are positions in prekindergarten, nonpublic schools and Boards of Cooperative Educational Services (BOCES).

There were two basic assumptions underlying the projections of classroom teachers needed for 1992-93 through 1996-97, namely:

1. The numbers of teachers in all subject areas in the base year, 1991-92, were adequate to meet the educational needs of the public schools of the State;
2. The number of teachers needed is largely determined by the number of students enrolled.

No assumptions were made concerning future economic, social or political conditions which might impact on need for teachers. A complete description of the methodology is included as Appendices A and B.

The report is organized in three sections, each consisting of three tables. Tables 1-3 display projections of (1) the classroom teaching force, (2) classroom teacher vacancies and (3) vacancies to be filled by new teachers through 1996-97 for the total State. The same projections are shown for the New York City public schools in tables 4-6 and the State exclusive of New York City in tables 7-9. Also included are the number of provisional teaching certificates issued in selected years from 1970 to 1991 (Appendix C).

HIGHLIGHTS

- o The number of teachers is projected to increase from 172,605 to 191,887 between 1991-92 and 1996-97 (table 1).
- o In New York City, the number of teachers is expected to increase by 7,622 over the five year period (table 4) while the remainder of the State shows an anticipated increase of 11,660 (table 7).
- o Of the estimated 175,387 teaching positions in the State's public schools in 1992-93, 16,992 will be vacancies needed to be filled (table 2). Cumulative vacancies over the five-year period are estimated to be 94,947. Cumulative vacancies are projected to be 42,112 in New York City and 52,835 outside New York City (tables 5 and 8).
- o Of the 94,947 anticipated vacant positions to be filled between 1992-93 and 1996-97, 22,077, or 23 percent of those positions, are expected to be filled by new teachers. The remaining 72,870 vacancies will be filled by experienced teachers not currently employed in the public school sector.
- o After declining for a number of years, the number of Provisional Teaching Certificates issued has begun to increase. Over 20,000 such certificates were issued in 1991 (Appendix C).

TABLE 1
TRENDS AND PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHERS
NEW YORK STATE
1988-89 TO 1996-97

Subject Area	Number of Teachers (Full-time Equivalent)								
	***** Actual *****				***** Projected *****				
	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Elementary (K-6)									
Kindergarten	6,692	6,868	7,117	7,035	7,253	7,507	7,777	8,109	8,223
Common Branch	44,629	45,156	45,680	44,433	45,254	46,137	47,100	48,253	49,640
Other (a)	8,969	10,061	10,562	10,311	10,516	10,741	10,985	11,280	11,584
Total	60,290	62,085	63,359	61,779	63,023	64,385	65,862	67,642	69,447
Secondary (7-12)									
English	10,809	10,795	10,772	10,830	11,007	11,239	11,503	11,732	11,962
Foreign Languages	5,504	5,646	5,737	5,505	5,594	5,712	5,847	5,963	6,081
Mathematics	10,691	11,467	11,638	11,272	11,459	11,701	11,974	12,210	12,448
Science	9,417	9,513	9,592	9,308	9,459	9,658	9,886	10,083	10,283
Social Studies	9,606	9,672	9,700	9,553	9,710	9,914	10,147	10,348	10,551
Occupational Education	9,375	9,261	8,935	8,202	8,334	8,509	8,710	8,885	9,062
Other (b)	12,458	12,751	12,543	11,740	11,935	12,186	12,471	12,716	12,964
Total	67,860	69,105	68,917	66,410	67,498	68,919	70,538	71,937	73,351
Combined Elementary and Secondary Education (K-12)									
Special Education	21,518	22,741	23,563	22,713	22,753	23,227	23,759	24,303	24,861
Physical Education and Recreation	7,943	8,148	8,248	7,945	8,083	8,253	8,442	8,634	8,831
Library	3,099	3,180	3,118	2,996	3,048	3,111	3,181	3,253	3,328
Reading	5,779	5,958	6,195	5,993	6,103	6,234	6,379	6,527	6,679
Bilingual Education	3,409	3,997	4,539	4,769	4,879	4,997	5,125	5,255	5,390
Total	41,748	44,024	45,663	44,416	44,866	45,822	46,886	47,972	49,089
GRAND TOTAL	169,898	175,214	177,939	172,605	175,387	179,126	183,286	187,551	191,887

a Includes English, foreign languages, mathematics, science, social studies, art, music, industrial arts, health education and home economics.

b Includes art, music, home economics (nonoccupational) and "other" unclassified secondary subjects.

NOTE: BOCES teachers are not included.



TABLE 2
TRENDS AND PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHER POSITION VACANCIES
NEW YORK STATE
1988-89 TO 1996-97

Subject Area	Number of Position Vacancies (Full-time Equivalent)								
	***** Actual *****					***** Projected *****			
	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Elementary (K-6)									
Kindergarten	712	656	810	713	761	817	862	955	771
Common Branch	3,347	3,788	3,874	3,004	4,160	4,329	4,542	4,890	5,315
Other (a)	1,691	1,929	1,398	1,860	1,138	1,179	1,225	1,307	1,355
Total	5,750	6,373	6,082	5,577	6,059	6,325	6,629	7,152	7,441
Secondary (7-12)									
English	550	830	847	1,632	1,051	1,138	1,205	1,206	1,239
Foreign Languages	637	702	660	652	639	684	716	717	735
Mathematics	491	1,599	1,005	1,235	1,061	1,150	1,217	1,224	1,262
Science	556	797	823	711	879	950	1,011	1,014	1,047
Social Studies	653	743	790	1,241	914	996	1,066	1,073	1,112
Occupational Education	401	722	534	906	858	913	957	956	985
Other (b)	1,225	1,351	1,067	2,369	1268	1350	1417	1410	1447
Total	4,513	6,744	5,726	8,746	6,670	7,181	7,589	7,600	7,827
Combined Elementary and Secondary Education (K-12)									
Special Education	2,559	3,310	3,032	3,232	2,128	2,549	2,637	2,688	2,746
Physical Education and Recreation	420	705	596	1,002	635	690	731	763	792
Library	284	338	203	500	294	311	323	334	344
Reading	492	619	729	1,032	592	626	659	680	700
Bilingual Education	485	942	979	1,208	614	631	653	667	687
Total	4,240	5,914	5,539	6,974	4,263	4,807	5,003	5,132	5,269
GRAND TOTAL	14,503	19,031	17,347	21,297	16,992	18,313	19,221	19,884	20,537

a Includes English, foreign languages, mathematics, science, social studies, art, music, industrial arts, health education and home economics.

b Includes art, music, home economics (nonoccupational) and "other" unclassified secondary subjects.

NOTE: BOCES teachers are not included.

TABLE 3
TRENDS AND PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHER POSITIONS TO BE FILLED BY NEW TEACHERS
NEW YORK STATE
1988-89 TO 1996-97

Subject Area	Number of Teachers (Full-time Equivalent)								
	***** Actual *****					***** Projected *****			
	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Elementary (K-6)									
Kindergarten	250	234	266	155	237	237	240	237	256
Common Branch	1,319	1,258	1,422	812	1,203	1,197	1,201	1,166	1,274
Other (a)	322	303	336	183	305	291	290	283	312
Total	1,891	1,796	2,024	1,150	1,745	1,725	1,731	1,686	1,842
Secondary (7-12)									
English	192	216	246	164	208	215	218	212	224
Foreign Languages	195	231	214	135	193	196	191	188	202
Mathematics	238	239	261	143	227	222	221	213	231
Science	230	221	271	175	225	226	232	225	239
Social Studies	247	197	235	190	221	217	225	224	233
Occupational Education	189	164	158	107	141	138	138	138	147
Other (b)	349	329	336	178	286	280	276	268	292
Total	1,640	1,597	1,721	1,092	1,501	1,494	1,501	1,468	1,568
Combined Elementary and Secondary Education (K-12)									
Special Education	728	728	764	454	674	664	658	645	699
Physical Education and Recreation	128	143	152	90	128	130	129	126	137
Library	59	48	57	29	48	45	46	44	48
Reading	75	57	104	64	77	78	84	80	85
Bilingual Education	176	194	252	170	234	235	239	233	250
Total	1,166	1,170	1,329	807	1,161	1,152	1,156	1,128	1,219
GRAND TOTAL	4,697	4,563	5,074	3,049	4,407	4,371	4,388	4,282	4,629

a Includes English, foreign languages, mathematics, science, social studies, art, music, industrial arts, health education and home economics.

b Includes art, music, home economics (nonoccupational) and "other" unclassified secondary subjects.

NOTE: BOCES teachers are not included.

TABLE 4
TRENDS AND PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHERS
NEW YORK CITY
1988-89 TO 1996-97

Subject Area	Number of Teachers (Full-time Equivalent)								
	***** Actual *****					***** Projected *****			
	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97

Elementary (K-6)									
Kindergarten	2,374	2,454	2,559	2,476	2,606	2,721	2,836	2,923	2,954
Common Branch	13,868	13,997	14,145	13,353	13,630	14,027	14,438	14,929	15,523
Other (a)	2,594	3,326	3,488	3,204	3,295	3,387	3,492	3,609	3,738
Total	18,836	19,777	20,192	19,033	19,581	20,135	20,766	21,461	22,215
Secondary (7-12)									
English	2,927	3,102	3,128	3,036	3,100	3,168	3,234	3,287	3,336
Foreign Languages	1,437	1,526	1,529	1,425	1,455	1,487	1,518	1,543	1,566
Mathematics	3,104	3,556	3,725	3,578	3,653	3,733	3,811	3,874	3,932
Science	2,360	2,512	2,574	2,423	2,474	2,528	2,581	2,623	2,663
Social Studies	2,501	2,653	2,673	2,704	2,761	2,821	2,880	2,927	2,971
Occupational Education	2,349	2,451	2,353	2,005	2,047	2,092	2,135	2,171	2,203
Other (b)	3,551	4,185	4,029	3,638	3,715	3,796	3,875	3,938	3,997
Total	18,229	19,985	20,011	18,809	19,205	19,625	20,034	20,363	20,668
Combined Elementary and Secondary Education (K-12)									
Special Education	10,155	10,946	11,241	10,748	11,072	11,331	11,615	11,901	12,198
Physical Education and Recreation	1,779	1,964	2,006	1,873	1,920	1,969	2,021	2,074	2,129
Library	718	762	712	625	641	657	674	692	711
Reading	1,711	1,838	2,041	1,951	2,000	2,051	2,105	2,160	2,218
Bilingual Education	2,698	3,186	3,601	3,815	3,911	4,010	4,116	4,224	4,337
Total	17,061	18,696	19,601	19,012	19,544	20,018	20,531	21,051	21,593
GRAND TOTAL	54,126	58,458	59,804	56,854	58,330	59,778	61,331	62,875	64,476

a Includes English, foreign languages, mathematics, science, social studies, art, music, industrial arts, health education and home economics.

b Includes art, music, home economics (nonoccupational) and "other" unclassified secondary subjects.

TABLE 5
TRENDS AND PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHER POSITION VACANCIES
NEW YORK CITY
1988-89 TO 1996-97

Subject Area	Number of Position Vacancies (Full-time Equivalent)								
	Actual					Projected			
	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Elementary (K-6)									
Kindergarten	284	314	390	293	393	389	402	386	340
Common Branch	1,461	1,621	1,763	1,133	1,820	1,873	1,978	2,109	2,274
Other (a)	503	1,057	585	687	489	504	531	559	590
Total	2,248	2,992	2,738	2,113	2,702	2,766	2,911	3,054	3,204
Secondary (7-12)									
English	263	506	435	599	428	445	453	451	455
Foreign Languages	155	253	204	221	203	212	214	214	216
Mathematics	250	840	601	597	510	526	534	534	537
Science	206	411	377	39	328	337	345	342	347
Social Studies	138	427	404	664	404	420	433	431	439
Occupational Education	113	405	254	322	296	300	301	300	303
Other (b)	405	1,027	448	1,220	526	544	557	554	564
Total	1,530	3,869	2,723	3,662	2,695	2,784	2,837	2,826	2,861
Combined Elementary and Secondary Education (K-12)									
Special Education	1,104	1,900	1,533	1,675	1,476	1,439	1,486	1,517	1,557
Physical Education and Recreation	60	350	222	351	215	226	237	248	256
Library	100	120	47	150	84	87	90	93	97
Reading	239	339	454	476	296	304	316	325	335
Bilingual Education	335	791	788	1,030	530	540	559	571	588
Total	1,838	3,500	3,044	3,682	2,601	2,596	2,688	2,754	2,833
GRAND TOTAL	5,616	10,361	8,505	9,457	7,998	8,146	8,436	8,634	8,898

a Includes English, foreign languages, mathematics, science, social studies, art, music, industrial arts, health education and home economics.

b Includes art, music, home economics (nonoccupational) and "other" unclassified secondary subjects.

TABLE 6
TRENDS AND PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHER POSITIONS TO BE FILLED BY NEW TEACHERS
NEW YORK CITY
1988-89 TO 1996-97

Subject Area	Number of Teachers (Full-time Equivalent)								
	***** Actual *****					***** Projected *****			
	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97

Elementary (K-6)									
Kindergarten	90	97	89	66	90	92	92	93	98
Common Branch	642	557	636	328	532	520	525	511	569
Other (a)	138	113	124	58	116	104	104	103	116
Total	870	767	849	452	738	716	721	707	783
Secondary (7-12)									
English	89	111	122	83	103	107	108	105	110
Foreign Languages	47	68	57	48	54	57	55	56	58
Mathematics	119	123	142	67	119	116	115	109	119
Science	87	83	103	61	84	83	85	82	87
Social Studies	85	89	104	87	96	98	101	100	103
Occupational Education	68	79	63	52	58	59	58	60	62
Other (b)	128	120	119	58	102	97	95	92	101
Total	623	673	710	456	616	617	617	604	640
Combined Elementary and Secondary Education (K-12)									
Special Education	354	409	409	262	368	372	368	364	391
Physical Education and Recreation	29	38	36	29	33	34	34	35	37
Library	14	13	13	7	11	10	10	10	11
Reading	36	28	54	25	38	38	40	37	41
Bilingual Education	150	166	217	150	203	204	208	203	218
Total	583	654	729	473	653	658	660	649	698
GRAND TOTAL	2,076	2,094	2,288	1,381	2,007	1,991	1,998	1,960	2,121

a Includes English, foreign languages, mathematics, science, social studies, art, music, industrial arts, health education and home economics.

b Includes art, music, home economics (nonoccupational) and "other" unclassified secondary subjects.

TABLE 7
TRENDS AND PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHERS
NEW YORK STATE EXCLUSIVE OF NEW YORK CITY
1988-89 TO 1996-97

Subject Area	Number of Teachers (Full-time Equivalent)								
	Actual					Projected			
	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Elementary (K-6)									
Kindergarten	4,318	4,414	4,558	4,559	4,647	4,786	4,941	5,186	5,269
Common Branch	30,761	31,159	31,535	31,080	31,574	32,110	32,662	33,324	34,117
Other (a)	6,375	6,735	7,074	7,107	7,221	7,354	7,493	7,671	7,846
Total	41,454	42,308	43,167	42,746	43,442	44,250	45,096	46,181	47,232
Secondary (7-12)									
English	7,882	7,693	7,644	7,794	7,907	8,071	8,269	8,445	8,626
Foreign Languages	4,067	4,120	4,208	4,080	4,139	4,225	4,329	4,420	4,515
Mathematics	7,587	7,911	7,913	7,694	7,806	7,968	8,163	8,336	8,516
Science	7,057	7,001	7,018	6,885	6,985	7,130	7,305	7,460	7,620
Social Studies	7,105	7,019	7,027	6,849	6,949	7,093	7,267	7,421	7,580
Occupational Education	7,026	6,810	6,582	6,197	6,287	6,417	6,575	6,714	6,859
Other (b)	8,907	8,566	8,514	8,102	8,220	8,390	8,596	8,778	8,967
Total	49,631	49,120	48,906	47,601	48,293	49,294	50,504	51,574	52,683
Combined Elementary and Secondary Education (K-12)									
Special Education	11,363	11,795	12,322	11,965	11,681	11,896	12,144	12,402	12,663
Physical Education and Recreation	6,164	6,184	6,242	6,072	6,163	6,284	6,421	6,560	6,702
Library	2,381	2,418	2,406	2,371	2,407	2,454	2,507	2,561	2,617
Reading	4,068	4,120	4,154	4,042	4,103	4,183	4,274	4,367	4,461
Bilingual Education	711	811	938	954	968	987	1,009	1,031	1,053
Total	24,687	25,328	26,062	25,404	25,322	25,804	26,355	26,921	27,496
GRAND TOTAL	115,772	116,756	118,135	115,751	117,057	119,348	121,955	124,676	127,411

a Includes English, foreign languages, mathematics, science, social studies, art, music, industrial arts, health education and home economics.

b Includes art, music, home economics (nonoccupational) and "other" unclassified secondary subjects.

NOTE: BOCES teachers are not included.

TABLE 8
TRENDS AND PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHER POSITION VACANCIES
NEW YORK STATE EXCLUSIVE OF NEW YORK CITY
1988-89 TO 1996-97

Subject Area	Number of Position Vacancies (Full-time Equivalent)									
	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	
Elementary (K-6)										
Kindergarten	428	342	420	420	368	428	460	569	431	
Common Branch	1,886	2,167	2,111	1,871	2,340	2,456	2,564	2,781	3,041	
Other (a)	1,188	872	813	1,173	649	675	694	748	765	
Total	3,502	3,381	3,344	3,464	3,357	3,559	3,718	4,098	4,237	
Secondary (7-12)										
English	287	324	412	1,033	623	693	752	755	784	
Foreign Languages	482	449	456	431	436	472	502	503	519	
Mathematics	241	759	404	638	551	624	683	690	725	
Science	350	386	446	672	551	613	666	672	700	
Social Studies	515	316	386	577	510	576	633	642	673	
Occupational Education	288	317	280	584	562	613	656	656	682	
Other (b)	820	324	619	1,149	742	806	860	856	883	
Total	2,983	2,875	3,003	5,084	3,975	4,397	4,752	4,774	4,966	
Combined Elementary and Secondary Education (K-12)										
Special Education	1,455	1,410	1,499	1,557	652	1,110	1,151	1,171	1,189	
Physical Education and Recreation	360	355	374	651	420	464	494	515	536	
Library	184	218	186	350	210	224	233	241	247	
Reading	253	280	275	556	296	322	343	355	365	
Bilingual Education	150	151	191	178	84	91	94	96	99	
Total	2,402	2,414	2,495	3,292	1,662	2,211	2,315	2,378	2,436	
GRAND TOTAL	8,887	8,670	8,842	11,840	8,994	10,167	10,785	11,250	11,639	

a Includes English, foreign languages, mathematics, science, social studies, art, music, industrial arts, health education and home economics.

b Includes art, music, home economics (nonoccupational) and "other" unclassified secondary subjects.

NOTE: BOCES teachers are not included.

TABLE 9
TRENDS AND PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHER POSITIONS TO BE FILLED BY NEW TEACHERS
NEW YORK STATE EXCLUSIVE OF NEW YORK CITY
1988-89 TO 1996-97

Subject Area	Number of Teachers (Full-time Equivalent)									
	***** Actual *****					***** Projected *****				
	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	

Elementary (K-6)										
Kindergarten	160	137	177	89	147	145	148	144	158	
Common Branch	677	702	786	484	671	677	676	655	705	
Other (a)	184	190	212	125	189	187	186	180	196	
Total	1,021	1,029	1,175	698	1,007	1,009	1,010	979	1,059	
Secondary (7-12)										
English	103	105	124	81	105	108	110	107	114	
Foreign Languages	148	163	157	87	139	139	136	132	144	
Mathematics	119	116	119	76	108	106	106	104	112	
Science	143	138	168	114	141	143	147	143	152	
Social Studies	162	108	131	103	125	119	124	124	130	
Occupational Education	121	85	95	55	83	79	80	78	85	
Other (b)	221	209	217	120	184	183	181	176	191	
Total	1,017	924	1,011	636	885	877	884	864	928	
Combined Elementary and Secondary Education (K-12)										
Special Education	374	319	355	192	306	292	290	281	308	
Physical Education and Recreation	99	105	116	61	95	96	95	91	100	
Library	45	35	44	22	37	35	36	34	37	
Reading	39	29	50	39	39	40	44	43	44	
Bilingual Education	26	28	35	20	31	31	31	30	32	
Total	583	516	600	334	508	494	496	479	521	
GRAND TOTAL	2,621	2,469	2,786	1,668	2,400	2,380	2,390	2,322	2,508	

a Includes English, foreign languages, mathematics, science, social studies, art, music, industrial arts, health education and home economics.

b Includes art, music, home economics (nonoccupational) and "other" unclassified secondary subjects.

NOTE: BOCES teachers are not included.

APPENDIX A

METHODOLOGY FOR PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHER NEEDS FOR MAJOR SUBJECT AREAS AND FOR TEACHER POSITIONS TO BE FILLED

There were two basic assumptions underlying the projections of classroom teachers needed for 1992-93 through 1996-97. They are:

1. The numbers of teachers in all subject areas in the base year, 1991-92, were adequate to meet the educational needs of the public schools of the State.
2. The number of teachers needed is largely determined by the number of students enrolled.

No assumptions were made concerning future economic, social or political conditions which might impact on need for teachers.

The overall projection strategy was to develop independent projections for New York City and for the State exclusive of New York City. The two projections were added to arrive at a total New York State projection. Projections were done for fifteen major subject areas grouped within grade-level ranges: elementary, secondary and elementary/secondary combined.

The first step in the projection process for each of the two geographic sectors was to examine the trends in pupil/teacher ratios for each subject area for 1985-86 through 1991-92. In most cases, pupil/teacher ratios decreased through 1990-91 and then increased in 1991-92. The ratios were projected to remain constant at the 1991-92 value over the five-year projection period for all subject areas. All teacher counts used in the above calculations are full-time equivalents (FTE's). The official FTE counts for 1988-89 through 1991-92 were calculated by adding the number of full-time teachers to one-half of the number of part-time teachers reported by public school districts, excluding teachers at Boards of Cooperative Educational Services (BOCES). Counts by subject area based on aggregating data from individual personnel records were adjusted slightly to meet the official FTE's.

Following the projection of pupil/teacher ratios, the number of teachers required for each year in each subject area was projected by dividing projected enrollment* for the appropriate grade level by the projected pupil/teacher ratio for a given year. For example, the projected pupil/teacher ratio for secondary English for 1996-97 in New York City was 127.26. Dividing projected enrollment in New York City in grades 7-12 in 1996-97 (424,573) by 127.26 resulted in 3,336 secondary English teachers for 1996-97.

It should be noted that appropriate projected enrollment bases were used to project teachers at four different levels: kindergarten enrollment for kindergarten teachers, Grade 1-6 enrollment for common branch and "other elementary" teachers, grade 7-12 enrollment for secondary subject area teachers and grade K-12 enrollment for combined elementary/secondary subject teachers, except special education. Special education teachers were projected based on the historic ratio of special education teachers to enrollment of ungraded handicapped students. These trends were extrapolated and applied to projected enrollment.

After teachers in each subject area were projected, they were added to the appropriate grade-level subgroups and then to a grand total. Total New York State projections were computed by adding New York City projections to the projections of teachers in the remainder of the state.

Following the projection of teacher need, by subject area, through 1996-97, a projection of current teachers expected to remain in the profession through 1996-97 was done.

The most recent file of classroom teachers was compared with the file for the prior year to determine what proportion of teachers appeared on both files. In other words, it was determined what proportion of teachers remained as teachers in New York State from one year to the next. This proportion, or retention rate, was determined for each major subject area for the following age groups: under 35, 35-39, 40-44, 45-49, 50-54, 55-59, and 60 and over. The retention rates from 1990-91 to 1991-92 were unusually low because of layoffs and early retirement incentives. Because this is a temporary phenomenon, the retention rates used for the projection were calculated by averaging the rates from the two years prior to 1991-92 (1988-89 to 1989-90 and 1989-90 to 1990-91).

The number of teachers in 1991-92 for each subject area was distributed into the above age intervals and used as the entering group for a cohort survival projection. By multiplying each subgroup of teachers in 1991-92 by the appropriate retention rate, the number of teachers from the original group expected to remain in 1992-93 was projected for each age group within major subject areas. The same retention rates were then used to project 1993-94 teachers remaining by using the projected 1992-93 figures. In this manner the projection was carried through 1996-97.

Finally, for each school year, the number of classroom teachers expected to remain was subtracted from the projected number of classroom teachers to obtain the number of positions to be filled.

The above procedure was applied to New York City and the State exclusive of New York City as independent sectors. The projection for the total State was accomplished by adding the two sectors.

* From Projections of Public and Nonpublic School Enrollment and High School Graduates to 2000-01, The University of the State of New York, Information Center on Education, May, 1991.

APPENDIX B

METHODOLOGY FOR PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHER VACANCIES TO BE FILLED BY NEW (FIRST-YEAR) TEACHERS

Past experience has shown that only a minor proportion of all teacher vacancies are filled by first-year (or "new") teachers. Most vacancies are filled with teachers with prior experience. A projection of "new" teachers is an indication of how many newly-certified teachers will be needed.

A sixteen-year trend analysis (1976 to 1991) of teacher vacancies, net position changes and positions filled by new teachers was examined. From 1976 to 1981, the percent of new teachers in filled vacancies remained relatively stable, close to 20 percent. Since then the percent has fluctuated from a low of 13 percent in 1982 to a high of 32 percent in 1988 and down to 14 percent in 1991. Because of the instability of this statistic in recent years it has only limited value as a factor in projecting new teachers.

A second approach to projecting new teachers is to relate new teachers to the total number of teachers in the teaching force. Based on this approach, trends and projections of the percent of new teachers in the teaching force for 1985-86 through 1996-97 were developed and examined for New York State, New York City and the State exclusive of New York City. Data for 1985-86 through 1990-91 show relative stability of percentage of new teachers for each of the sectors followed by a one-year decrease in 1991-92, probably due to staff cuts resulting in a decline in the need to hire new teachers. This percentage was projected by using a four-year moving average, beginning with an average of 1988-89 through 1991-92 to project 1992-93 and ending with an average of 1993-94 through 1995-96 to project 1996-97. The numbers of new teachers were projected by multiplying the projected percentages by projected total teachers.

APPENDIX C
NUMBER OF PROVISIONAL TEACHING CERTIFICATES ISSUED IN MAJOR SUBJECT AREAS
NEW YORK STATE
1970 TO 1991

Certification Area	Year									
	1970	1980	1984	1986	1988	1989	1990	1991		
Elementary	14,643	6,374	6,733	6,656	7,641	8,035	8,283	8,182		
English	3,057	774	816	1,059	1,081	1,295	1,368	1,395		
Social Studies	3,218	704	723	936	1,179	1,331	1,398	1,569		
Mathematics	1,616	458	700	955	989	1,140	1,164	1,164		
Foreign Languages	1,909	494	472	798	917	943	918	763		
Sciences	2,997	551	1,050	1,645	1,612	1,642	1,681	1,471		
Art	1,149	541	474	572	631	670	641	529		
Business	855	394	422	384	428	435	454	453		
Industrial Arts	632	276	209	203	137	149	158	125		
Home Economics	569	187	132	154	126	109	126	93		
Music	883	746	736	785	696	680	707	598		
Physical Education	1,518	1,051	924	805	754	843	770	664		
Health	419	217	198	199	206	244	217	208		
Vocational	200	161	193	288	380	234	289	295		
Handicapped	948	3,420	3,493	3,256	2,944	3,000	2,958	2,930		
Total	34,613	16,348	17,275	18,695	19,721	20,750	21,132	20,439		

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