

# ONTEORA CENTRAL SCHOOL DISTRICT

## *ENROLLMENT PROJECTION* *2016-2025*

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Live Births vs Kindergarten Enrollment - Live Births Base Projection

Enrollment Projection Breakdown - Live Births (K-4, 5-8, 9-12)

Grand Total Enrollment Projection - Live Births

# INTRODUCTION

The following enrollment projection has been prepared by FACTS at the request of the Onteora Central School District.

Data and information from the following sources were utilized in compiling this report:

- School District
- United States Census Bureau
- New York State Department of Health
- Local Building Inspector(s)

FACTS has utilized diligent research and generally accepted formulas and procedures in preparing these projections. It must be recognized, however, that given the many variables comprising such projections, that caution must be exercised in the interpretation and application of these projections. A thorough review for accuracy of the data contained in this report should be conducted by the school district and prompt notification of any discrepancies provided to FACTS for correction.

## PROJECTION METHODOLOGY

The Cohort Survival Method has been used in preparing these projections. This formula has proven to be highly reliable and is used extensively for enrollment projections for school districts in New York State.

The calculation of enrollment projections is based on the following data and procedures:

- Six years of actual district enrollment by grade
- Calculation of the survival ratios by grade level
- Projection of kindergarten enrollment based on resident live births

The survival ratio expresses a quantitative relationship between the numerical size of a grade in a given year in comparison to the size of the next lower grade in the previous year. The number of students in a grade in a given year is divided by the number of students in the next lower grade in the previous year (i.e.; Grade 5 in 2011 divided by Grade 4 in 2010). If the quotient is greater than 1.0, the number of students has increased; conversely, if the quotient is less than 1.0, the number of students has decreased. Five years of actual survival ratios are calculated for each grade 1-12 and the five-year average is determined. This average is then applied by grade to determine the ten-year projected enrollment for each grade 1-12.

The calculation of projected kindergarten enrollment is based on the analysis of resident live birth data. A ten-year history of live birth data is collected. Each of the first five years of live birth data is compared to the actual kindergarten enrollment five years hence and the survival ratio is calculated (i.e.; 2006 live births to 2011 kindergarten enrollment, etc.). The five annual survival ratios are averaged and that average is applied to the next five years of live birth data to obtain the first five years of annual projected kindergarten enrollment (i.e.; 2011-2015 live births to project 2016-2020 kindergarten enrollments). For purposes of providing a ten-year enrollment projection, the kindergarten enrollment is projected for the last five years of the projection at the same number appearing in the fifth year.

In addition, the following factors which could potentially impact these projections are also researched and analyzed:

- Significant changes in residential construction
- Major changes in the local employment base
- Shifts in the non-public school population

The reliability of any enrollment projection must clearly be understood. Projections based on current and historical actual enrollments are the most reliable. Those based on historical live birth data are somewhat less reliable. In addition, the time frame and subset of the projections also play an important part in the reliability. Projections for the immediate future will be more reliable than those in later years, for example. Projections for the total K-12 district enrollment will also be more reliable than those for any particular grade in any given year. Therefore, these projections should be updated annually to reflect the latest live birth and actual enrollment data.

For the purposes of this study, data for the Towns of Hurley, Olive, Shandaken and Woodstock have been researched.

Annual Updates: Annual updates of original projections prepared by FACTS are limited to the collection and research of the following information:

- Live births
- District enrollment
- District non-public school enrollment

The collection of information regarding future residential construction programs are not included in the annual update pricing fee.

# DEMOGRAPHIC DATA

## POPULATION TRENDS:

Table I reflects the population data from the 1990, 2000 and 2010 census as provided by the U.S. Census Bureau. The Towns of Hurley and Woodstock experienced a minimal decline in population between 1990 and 2000 and continued to lose population between 2000 and 2010. The Towns of Olive and Shandaken experienced moderate increases in population between 1990 and 2000 and both lost population between 2000 and 2010. Ulster County experienced moderate growth between 1990 and 2000 and a minimal gain between 2000 and 2010. Since these trends are already reflected in the District's historical enrollments, no adjustments to the projection formulas are necessary.

<b>TABLE I POPULATION TRENDS</b>						
Town/Village	1990	2000	1990-00 % Change	2010	2000-10 % Change	1990-10 % Change
Hurley	6,741	6,564	-2.63	6,314	-3.81	-6.34
Olive	4,086	4,579	12.07	4,419	-3.50	8.15
Shandaken	3,013	3,235	7.37	3,085	-4.64	2.39
Woodstock	6,290	6,241	-0.78	5,884	-5.72	-6.46
Ulster County	165,304	177,749	7.53	182,493	2.67	10.40

Source: U.S. Census Bureau

## RESIDENT LIVE BIRTHS:

Table II shows the actual number of resident live births for the nine-year period 2006-14. For 2015 the total of 84 is estimated at the average for 2013 and 2014.

<b>TABLE II RESIDENT LIVE BIRTHS</b>										
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015*
District	98	113	96	94	84	78	75	79	81	84

\* Estimated  
Source: New York State Department of Health

**RESIDENTIAL HOUSING UNITS:**

Table III reflects the number of building permits issued for new single family home residential construction by town for the past five years. The number of permits issued as shown in the table are the most recent available.

The results of discussions with the building inspectors are as follows:

- Town of Hurley - The results of discussions with the building departments will be provided separately.
- Town of Olive -
- Town of Shandaken -
- Town of Woodstock -

TABLE III RESIDENTIAL HOUSING UNITS						
Town/ Village	2010	2011	2012	2013	2014	Average
Hurley	0	6	4	3	2	3
Olive	8	0	0	2	10	4
Shandaken	N/R	0	N/R	N/R	0	N/R
Woodstock	8	11/52**	7	6	9	8
TOTAL*	16	69	10	11	21	15*

\*Excludes the fifty-two apartments

\*\*Eleven single family homes and fifty-two apartments.

**NONPUBLIC SCHOOL ENROLLMENT:**

Table IV reflects this District's non-public school enrollment for a five-year period and has averaged 164 students per year. Any major change in this pattern may require a recalculation of the projection.

TABLE IV NONPUBLIC SCHOOL ENROLLMENT					
2011	2012	2013	2014	2015	5 Year Average
170	170	157	163	160	164

# ENROLLMENT PROJECTIONS

## HISTORICAL ENROLLMENT:

Table V depicts the district's actual enrollment by grade level for a six-year period. The grade by grade survival ratios shown in Table VI were calculated from this information.

<b>TABLE V HISTORICAL ENROLLMENT</b>						
Grade	2010	2011	2012	2013	2014	2015
Pre-Kindergarten	26	36	22	23	43	34
Kindergarten	77	86	116	98	88	80
First	114	86	81	128	91	91
Second	108	112	85	93	124	94
Third	94	115	106	96	99	130
Fourth	107	91	121	105	94	94
<b>Total Pre K-4</b>	<b>526</b>	<b>526</b>	<b>531</b>	<b>543</b>	<b>539</b>	<b>523</b>
<b>% Change</b>	<b>-7.88</b>	<b>0.00</b>	<b>0.95</b>	<b>2.26</b>	<b>-0.74</b>	<b>-2.97</b>
Fifth	98	109	86	120	111	90
Sixth	111	101	102	100	120	105
Seventh	114	105	105	106	102	129
Eighth	123	110	106	106	101	107
<b>Total 5-8</b>	<b>446</b>	<b>425</b>	<b>399</b>	<b>432</b>	<b>434</b>	<b>431</b>
<b>% Change</b>	<b>-11.33</b>	<b>-4.71</b>	<b>-6.12</b>	<b>8.27</b>	<b>0.46</b>	<b>-0.69</b>
Ninth	154	125	114	118	113	106
Tenth	139	138	114	109	108	106
Eleventh	147	136	132	120	102	106
Twelfth	145	141	129	136	115	99
<b>Total 9-12</b>	<b>585</b>	<b>540</b>	<b>489</b>	<b>483</b>	<b>438</b>	<b>417</b>
<b>% Change</b>	<b>-2.34</b>	<b>-7.69</b>	<b>-9.44</b>	<b>-1.23</b>	<b>-9.32</b>	<b>-4.79</b>
<b>Total Pre K-12</b>	<b>1,557</b>	<b>1,491</b>	<b>1,419</b>	<b>1,458</b>	<b>1,411</b>	<b>1,371</b>
<b>% Change</b>	<b>-6.94</b>	<b>-4.24</b>	<b>-4.83</b>	<b>2.75</b>	<b>-3.22</b>	<b>-2.83</b>
Ungraded Elem	0	0	0	0	0	0
Ungraded Sec	2	0	0	0	0	0
<b>Grand Total</b>	<b>1,559</b>	<b>1,491</b>	<b>1,419</b>	<b>1,458</b>	<b>1,411</b>	<b>1,371</b>
<b>% Change</b>	<b>-7.20</b>	<b>-4.36</b>	<b>-4.83</b>	<b>2.75</b>	<b>-3.22</b>	<b>-2.83</b>



## SURVIVAL RATIOS:

The district's historical loss or gain of students from one grade level to the next grade level is reflected in Table VI. These ratios reflect the number of students in a particular grade in one year as compared to the number of students in the next higher grade in the following year. A ratio higher than 1.0 indicates a gain in students and conversely a ratio of less than 1.0 reflects a loss of students. These ratios, by grade level, were calculated individually for a five-year period and the five-year average for each grade level determined. The five-year average was then used to project future enrollments for each grade level.

Grade	2011	2012	2013	2014	2015	5-Year Average
K-1	1.1169	0.9419	1.1034	0.9286	1.0341	1.0250
1-2	0.9825	0.9884	1.1481	0.9688	1.0330	1.0241
2-3	1.0648	0.9464	1.1294	1.0645	1.0484	1.0507
3-4	0.9681	1.0522	0.9906	0.9792	0.9495	0.9879
4-5	1.0187	0.9451	0.9917	1.0571	0.9574	0.9940
5-6	1.0306	0.9358	1.1628	1.0000	0.9459	1.0150
6-7	0.9459	1.0396	1.0392	1.0200	1.0750	1.0240
7-8	0.9649	1.0095	1.0095	0.9528	1.0490	0.9972
8-9	1.0163	1.0364	1.1132	1.0660	1.0495	1.0563
9-10	0.8961	0.9120	0.9561	0.9153	0.9381	0.9235
10-11	0.9784	0.9565	1.0526	0.9358	0.9815	0.9810
11-12	0.9592	0.9485	1.0303	0.9583	0.9706	0.9734

**PROJECTED KINDERGARTEN ENROLLMENT:**

The annual ratios were calculated for a five-year period reflecting the ratio between the actual kindergarten enrollment in each year and the number of live births in each of the preceding five years (i.e.; 2011 actual kindergarten enrollment to 2006 live births, etc.). The five-year average was calculated and applied to the most recent five years of live births to project the subsequent five years of kindergarten enrollment for each projection. Years six through ten of kindergarten enrollment were projected at the same number as the fifth projected year.

TABLE VII PROJECTED KINDERGARTEN ENROLLMENT - LIVE BIRTHS						
Year	Live Births	Year	K-Enroll	Birth/K Ratio	Year	Projected K-En
2006	98	2011	86	0.8776		
2007	113	2012	116	1.0265		
2008	96	2013	98	1.0208		
2009	94	2014	88	0.9362		
2010	84	2015	80	0.9524		
FIVE-YEAR AVERAGE SURVIVAL RATIO				0.9627		
2011	78				2016	75
2012	75				2017	72
2013	85				2018	82
2014	83				2019	80
2015	84*				2020	81
					2021	81
		2022	81			
		2023	81			
		2024	81			
		2025	81			

\* Estimated

**TEN-YEAR ENROLLMENT PROJECTION:**

Table VIII provides a summary by grade groupings of the projections shown in Table IX comparing the projected fifth and tenth years to the base year of 2015.

Since there is no methodology for projecting pre-kindergarten and attendance is not mandatory and is often dictated by staff, space and /or financial resources, we have projected a constant at the 2014 and 2015 average of students of thirty-nine. Pre-kindergarten are included in the Pre-K - 4 and Pre-K- 12.

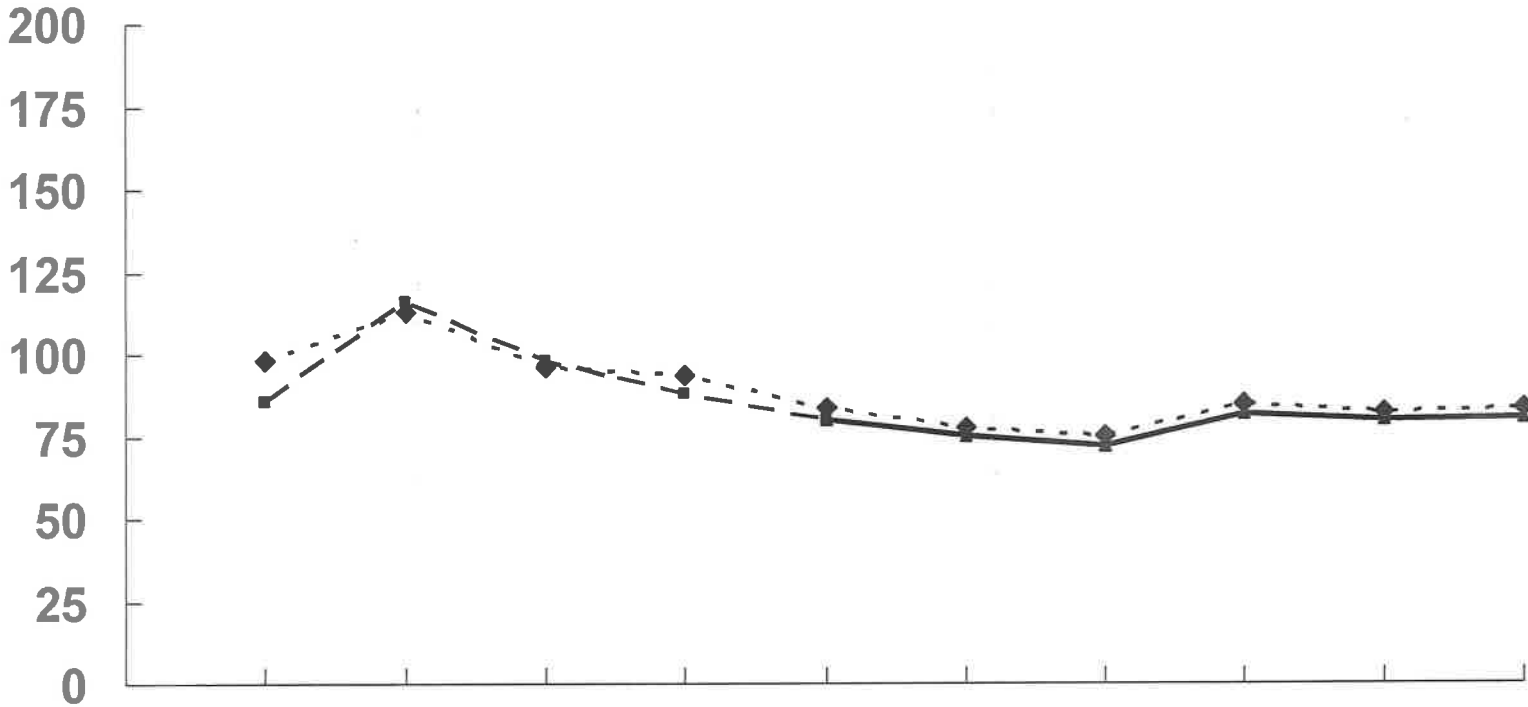
<b>TABLE VIII ENROLLMENT PROJECTION SUMMARY</b>					
	2015	2020	% Change	2025	% Change
<b>Pre-K-4</b>					
Live Birth	523	450	-13.96	465	-11.09
<b>5-8</b>					
Live Birth	431	415	-3.72	347	-19.49
<b>9-12</b>					
Live Birth	417	416	-0.24	365	-12.47
<b>Pre-K-12</b>					
Live Birth	1,371	1,281	-6.57	1,177	-14.15

**TABLE IX  
TEN-YEAR ENROLLMENT PROJECTION - LIVE BIRTHS**

Grade	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Pre- Kindergarten	39	39	39	39	39	39	39	39	39	39
Kindergarten	75	72	82	80	81	81	81	81	81	81
First	82	77	74	84	82	83	83	83	83	83
Second	93	84	79	76	86	84	85	85	85	85
Third	99	98	88	83	80	90	88	89	89	89
Fourth	128	98	97	87	82	79	89	87	88	88
Total Pre K-4	516	468	459	449	450	456	465	464	465	465
% Change	-1.34	-9.30	-1.92	-2.18	0.22	1.33	1.97	-0.22	0.22	0.00
Fifth	93	127	97	96	86	82	78	88	86	87
Sixth	91	94	129	98	97	87	83	80	89	87
Seventh	108	93	96	132	100	99	89	85	82	91
Eighth	129	108	93	86	132	100	99	89	85	82
Total 5-8	421	422	415	422	415	368	350	342	342	347
% Change	-2.32	0.24	-1.66	1.69	-1.66	-11.33	-4.89	-2.29	0.00	1.46
Ninth	113	136	114	98	101	139	106	105	94	90
Tenth	98	104	126	105	91	93	128	98	97	87
Eleventh	104	96	102	124	103	89	91	126	96	95
Twelfth	103	101	93	99	121	100	87	89	123	93
Total 9-12	418	437	435	426	416	421	412	418	410	365
% Change	0.24	4.55	-0.46	-2.07	-2.35	1.20	-2.14	1.46	-1.91	-10.98
Total Pre K-12	1,355	1,327	1,309	1,297	1,281	1,245	1,227	1,224	1,217	1,177
% Change	-1.17	-2.07	-1.36	-0.92	-1.23	-2.81	-1.45	-0.24	-0.57	-3.29

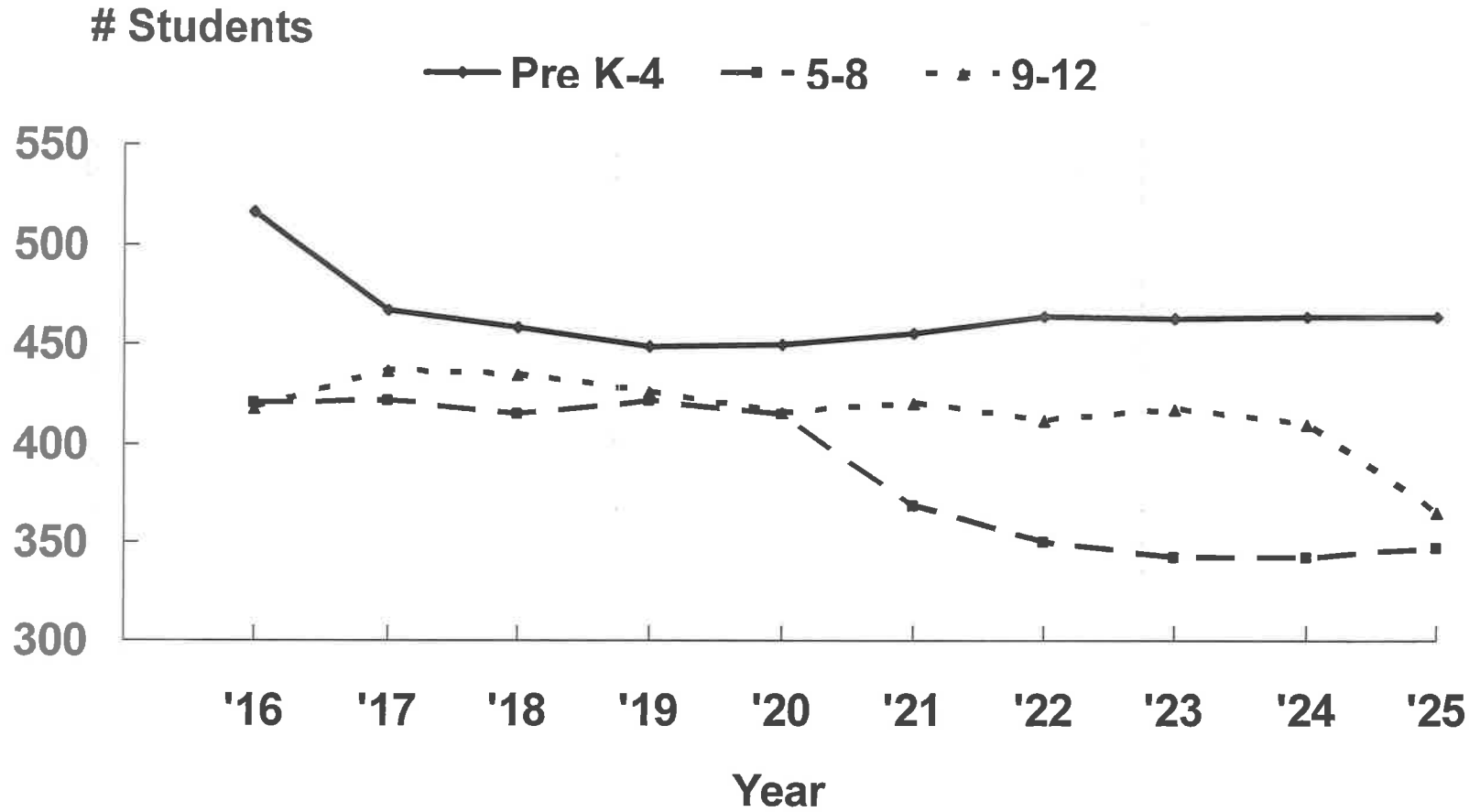
# Live Births vs Kindergarten Enrollment Comparison Baseline Projection

# Students ◆ - Births    -■- K Enroll Actual    —▲— K Enroll Projected



Births	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Enroll	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
	Years									

# Enrollment Projection Breakdown Based on Live Births



# Pre K-12 Enrollment Projection Based on Live Births

# Students

