

Technical Notes

The following technical note provides information that describes calculations in the data visualization. The visualization draws upon publicly available information from the Indiana General Assembly as prepared by the Indiana Legislative Services Agency. The information was obtained from the websites for the Indiana House Republican caucus¹ and the Indiana Senate Republican caucus.² The information used in this visualization was current as of April 21, 2015.

Overarching Considerations

Per pupil amounts presented in this visualization are in reference to each funding category amount divided by the number of students enrolled in the school corporation. Throughout this technical note, the term pupil and student are used interchangeably.

Amounts from Mitch Daniels and Choice scholarships were removed from the analysis, since they do not pertain to funding public school corporations.

Amounts for new charter schools in 2016 and 2017 were retained in calculating the total costs of funding public school corporations, but not used in determining the number of school corporations that would experience gains or losses in 2017 regular funding per pupil.

The number of students in each category is based on the average daily membership (ADM) projected at school corporations in each category for FY2017. The sections below reference calculations made using the data from the House's proposed budget.

The change in amounts were calculated by subtracting FY2015 amounts from FY2017 amounts.

The percentage of students in a school corporation who receive free or reduced price lunch was derived from the FY2015 Complexity Index as defined by the 2013/15 funding formula as approved by the Indiana General Assembly. The calculation that was used to derive FRL is specified as:

If Complexity Index ≤ 0.35 then %FRL = Complexity Index x 2
If Complexity Index > 0.35 then %FRL = Complexity Index + 0.35

¹ A copy of the House proposal can be obtained from the following website
<http://www.indianahouserpublicans.com/clientuploads/PDF/1617formula.pdf>

² A copy of the Senate proposal can be obtained from the following website
<http://www.indianasenaterepublicans.com/clientuploads/Documents/2015/2015%20budget/Sch%20Form%202016%2017%20Mishler%2023.pdf>

The percentage of students in a school corporation who receive free lunch was derived from Complexity Index values for FY2017 as specified below:

Percentage of Students Receiving Free Lunch = Complexity Index x 2

Tab 3. Complexity Grant (1st tier)

On this tab, the Complexity Grant was calculated as follows:

2015 Complexity Grant = %FRL X 0.5 X 4,587 (since no more than 70% FRL is shown)
Simulated complexity amount = %FRL X user specified Complexity Grant per FRL pupil

Other calculations include the 2015 regular amount and the simulated regular amount, with each being calculated as:

2015 regular amount = 2015 Complexity Grant +4,587
Simulated regular amount = simulated complexity amount + 4,587

Tab 4. Extra funding for high poverty districts

On this tab, the 2015 Complexity Grant amount was calculated as follows:

if %FRL<=0.7, 2015 Complexity Grant = 4,587 X 0.5 X %FRL
if %FRL>0.7, 2015 Complexity Grant = (%FRL + 0.35) X 4,587

On this tab, the simulated Complexity Grant amount was calculated as follows:

if %FRL<=specified threshold, 2015 Complexity Grant = 4,000 X 0.5 X %FRL
if %FRL> specified threshold, 2015 Complexity Grant = (%FRL - specified threshold/2) X 4,000

On this tab, regular funding amounts were calculated as follows:

2015 regular funding = 2015 Complexity Grant + 4,587
Simulated regular amount = simulated complexity amount + 4,587

Tab 5. Simulation tab (choose your own formula)

The simulation presented on this tab uses the percentage of students receiving free or reduced price lunch in 2015 or the percentage of students receiving free lunch 2017 as derived above, projected ADM for 2017, and parameters specified by users.

On this tab, the simulated Complexity Grant amount was calculated as follows:

if %low income < specified threshold, 2015 Complexity Grant = %low income X user specified Complexity Grant amount (per FRL pupil)³

if %low income >= specified threshold, 2015 Complexity Grant = 2 X %low income X user specified Complexity Grant amount – user specified threshold X user specified Complexity Grant amount⁴

On this tab, the simulated regular funding amount was calculated as follows:

Simulated regular funding = user specified foundation amount + simulated Complexity Grant

Tab 6. Proposed Senate changes

The only part of the visualization that does not use the data noted above is the “Proposed Senate changes tab.” Data for this tab came from the Indiana Senate Republicans website. Relevant calculations were analogous to those in the other sections. Per pupil Complexity Grant funding was the Complexity Grant divided by ADM. Per pupil regular funding is the Total Regular amount divided by ADM.

Percent free or reduced price lunch derived from Complexity Index values for FY 2015:

If Complexity Index <= 0.35 then %FRL = Complexity Index X 2
If Complexity Index > 0.35 then %FRL = Complexity Index + 0.35

Derivation of Simulation Formula

In FY2015 the Complexity Index was calculated as follows:

- Step 1: 0.5 X % Free or reduced price lunch students (%FRL)
- Step 2a: If the result of Step 1 was less than 0.35, then the result of Step 1 is the Complexity Index
- Step 2b: If the result of Step 1 was greater than 0.35, then go to Step 3
- Step 3: Subtract 0.35 from the result of Step 2b
- Step 4: Add the difference from Step 3 to the result of Step 2b – this is the Complexity Index

More generally, the relevant percent where the second tier calculation begins can be defined as the threshold amount. This may be found as the percentage where the Step 1 calculation equals the comparison point:

- (1) $0.5 \times \%FRL = 0.35$
- (2) $\%Threshold = 0.70 (0.35 \times 2)$

When the percentage of FRL is greater than or equal to 70%, Steps 2b can be summarized as:

³ This assumes the proposed Complexity Index will be calculated in a similar way as the Complexity Index in FY 2015, except using the percentage of free lunch students instead of the percentage free or reduced price lunch students (i.e., the Complexity Index will no longer include 2nd tier calculation).

⁴ See the section entitled, “Derivation of Simulation Formula” for more details.

$$(3) \text{ Complexity Index} = 0.5 \times \%FRL + (0.5 \times \%FRL - 0.35)$$

This may be reduced to:

$$(4) \text{ Complexity Index} = \%FRL - 0.35$$

The Complexity Grant is equal to the Complexity Index amount times the amount as specified in the funding formula (In FY 2015 it was equal to the foundation amount; for the House proposal it is \$4,000).

$$(5) \text{ Complexity Grant} = \text{Complexity Index} \times 4,000$$

Substituting in the Complexity Index from (4)

$$(6) \text{ Complexity Grant} = (\%FRL - 0.35) \times 4,000$$

To make it more generalizable to a new threshold for hypothetical tier 2 calculations, equation 2 may be substituted for 0.35:

$$(7) \text{ Complexity Grant} = (\%FRL - 0.5 \times \% \text{Threshold}) \times 4,000$$

For ease of interpretation the \$4,000 may be converted to the amount per free or reduced price lunch student (\$2,000 in the House proposal):

$$(8) \text{ Complexity Grant} = (2 \times \%FRL - 2 \times 0.5 \times \% \text{Threshold}) \times 2,000$$

This may be simplified to:

$$(9) \text{ Complexity Grant} = (2 \times \%FRL - \% \text{Threshold}) \times 2,000$$

User specified Complexity Grant amount per low income student is then:

$$(10) \text{ Complexity Grant} = (2 \times \% \text{low income} - \% \text{Threshold}) \times \text{User specified Complexity Grant Amount}$$

The user specified Complexity Grant amount may be distributed to yield the formula from footnote 4:

$$(11) \text{ Complexity Grant} = 2 \times \% \text{low income} \times \text{user specified Complexity Grant amount} - \text{user specified threshold} \times \text{user specified Complexity Grant amount}$$