MTC4SJ: A Circle Founded on Social Justice

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Joint Mathematics Meetings SIGMAA Special Session on Math Circle Outreach Activities that Engage Diverse Audiences

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MTC4SJ Framework



How do public schools get funded?

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Where does the money come from?





Connecticut Sources of School Funding

4.3% Federal \$0.5B

Meaning over 95% from state and local sources!

> 58.3% Local \$7B

Property tax revenues



Source:

37.5% State \$4.5B

Includes: Special Education, Education Cost Sharing (ECS) Formula, and more







What factors would YOU consider when distributing money to schools and/or districts?

Activity #1: Split the Pie!

- Each group will get 10 data cards for <u>1 of 4 different school districts</u> in Connecticut. (It's real data!)
- You will also see overall statistics for the state of Connecticut.
- The 4 districts together are allocated a total of **\$128,000,000**.

<u>Your Goal</u>: Using your district's data, propose an amount of money you think would be *fair* to receive from the pool of \$128 million.

Your Process:

- On your group's Jamboard, move the cards (factors) to reflect whether you think the information is a key factor or not in your thinking about what your district should receive.
- Ultimately, propose and amount. Be prepared to briefly share what factors were drivers for you and why.
- Initially, you will not see the other groups' data. As a next step, you will see their data and have an opportunity to adjust.





Overall Data for Connecticut





Spreadsheet with CT Data



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How would you divide the \$128 million among the four districts? ð

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Connecticut and the Education Cost Sharing (ECS) Formula

This formula distributes about \$2 billion every year to public school districts in the state.

There are other versions for charter schools, technical HS, magnet schools, Open Choice, etc.



Connecticut and the Education Cost Sharing (ECS) Formula 3 main parts: Foundation Student Need Weights Base Aid Ratio

Is this fair?





Foundation

This amount represents the estimated cost of educating a general education student with no additional learning needs.

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\$11,525

Set by law. Can change over time.

Student Need Weights

Low-Income Student Weight

Measured by eligibility for free or reduced-price lunch.

Increases foundation amount by **30%**.

Concentrated Poverty Student Weight

> Threshold of at least 60% of students considered economically disadvantaged in a district.

Increases foundation amount by **15%** for each student over the 60% threshold. English Learner Weight

Students that need additional English-language skills.

Increases foundation amount by **25%**.

Weighted Student Counts

	A	В	С	D
Resident Student Count	1,580	8,027	8,588	7,390
Low Income Student Count	464	5,050	1,891	4,288
English Language Learners Count	49	1,076	353	521

District A: 1,580 + $(0.3^{*}464)$ + 0 + $(0.25^{*}49)$ = 1,731 District B: 8,027 + $(0.3^{*}5050)$ + $(0.25^{*}1076)$ + $(0.15^{*}8027^{*}(5050/8027-0.6))$ = 9,846

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Base Aid Ratio

Based on resources of town to support themselves. Less money = more state aid. Gives the percent of the cost that the town can cover, and the percent the state will cover.

Property Wealth Factor (70%) Income Wealth Factor (30%)

Percent covered by the state has 2 other influences:

- 3-6 percentage points added for lowest 19 towns
- Minimum = 10% for Alliance districts, 1% in general

Base Aid Ratio

Base aid ratio represents the share of total education cost that is funded by the ECS grants. It is calculated as:

base aid ratio = $1 - \left[70\% \times \frac{\text{town ENGL per capita}}{1.35 \times \text{median (town ENGL per capita)}} + 30\% \times \right]$

town median household incomea1.35 × median (town median household income).

ENGL = equalized net grand list (full fair market value of taxable properties)

ECS Formula Projection

Foundation X Weighted X Base Aid Ratio = Initial Grant Student Count

District A \$11,525 × 1,731 × 44.45% = \$8,869,950

2022 Money Allocated

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	(A) Mansfield	(B) East Hartford	(C) Greenwich	(D) Manchester
Resident Student Count	1,580	8,027	8,588	7,390
Low Income Student Count	464	5,050	1,891	4,288
English Language Learners Count	49	1,076	353	521
Median Household Income	\$56,807	\$55,468	\$142,819	\$70,736
ECS Grant Money	\$9M	\$69M	\$1M	\$49M



Discussion

What do you think about each component? What do you think about the ECS formula ? What do you think is "fair"?

Types of School Funding Models

Student-based foundation

- Base amount per student, money added for particular needs
- Used in over 30 states

Resource-based allocation

- Minimum number of resources (staffing) by district, often based on teacher-to-student ratios
- Used in about 10 states

Guaranteed tax base

- Equalizes taxes paid on base amount of property in district
- Used in 2 states (Vermont, Wisconsin)

Hybrid

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• Used in about 5 states



Nationwide Comparison

- All 50 states have separate funding for special education
- All states but 2 (Mississippi and Montana) allocate funding for ELL
- All states but 6 (AK, AZ, FL, GA, ID, SD) allocate funding for
 - low-income students
- 35 states allocate funding to gifted and talented
- 34 states allocate funding to small/isolated schools

Possible Activity #2

Working more with Factors and Weights

- Give the formula for another state, compare/contrast the factors and weights
- What does the formula tell us about the values of a state?

School Funding Formula Proposal

- What factors and weights would you include in a school funding formula? Feel free to create your own or adjust the existing formula.
- This activity isn't about the political aspect (some factors may be accounted for in other pools of money) but rather about **mathematizing** and **fairness**.

Can we quantify equity?



Discussion

How did you use math in this activity? What kinds of mathematical reasoning were used? What societal use of math was reflected in this activity?

What would you want your students or colleagues to know about school funding formulas?

Math Teachers' Circle 4 Social Justice

- Monthly workshops, all resources on website
- Summer Stars cohort

 Leading workshops
- Connecting Mathematics & Social Justice: Lessons and Resources for Secondary Math Teachers
 - Open-access book
- Spotlight educator features







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Additional Discussion Questions

- Why do we allocate more money for students from low-income backgrounds? What resources need to be/should be/are provided by those \$?
- Why would % minority students or # of students of color be included? Or why
 might one include \$ based on the number of students from specific racial or ethnic
 groups be part of a formula?

For each of these we're trying to **unpack the logic of the formula**. If you allocate \$ for something, what is your theory about how those \$ get converted into student experience or students achievement/outcomes?

Why would funding formulas vary by state? Is that legitimate? Should we use one good/fair one for all states? Are there important variations by state that would appropriately be reflected in the state's formula?

