Early Math Fluency with Immigrant Families

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Envision someone who does math well. Do you consider yourself to be good at math?

Personally, I am a mother in recovery from struggling with math anxiety.

Why would I be involved in an early math fluency initiative with immigrant parents in Chicago?
Emergent Bilinguals and Immigrant Families

- 1/3 of Chicago preschoolers are Emergent Bilinguals
- ¼ of Chicago Kindergartners are Emergent Bilinguals
- 1/3 of all Chicago Public School students are or were an Emergent Bilingual
How did we reach immigrant families?

- Article 14C of the Illinois Bilingual Mandate and Bilingual Parent Councils
- Chicago Public Schools has a significant and long-standing relationship with its Bilingual Parent Councils. They were a key partner of the Forum to reach parents and schedule workshops.
- Early morning or evening workshops for 90 minutes. Range of parents 20 to 300
  - Forum’s reach: 2,800 parents
Why was this work successful?

- Tapped into existing Bilingual Parent Councils yearning for strong workshop material in Spanish and English
- Myth busting regarding innumeracy
- Relating to participants’ home country experiences with math
- Exposing families to practical linguistically and culturally relevant math skill building and game ideas
The Hamburger Conundrum
US Math Knowledge

- Study of adults ages 16 to 65 in 20 countries: US ranks in the bottom 5 for understanding numeracy
- Example: Third Pounder (1/3) hamburger vs. McDonald’s Quarter Pounder (1/4)
- We suffer from innumeracy (not understanding math concepts) – the mathematical equivalent of not being able to read
- Why a child might write 1002 vs. 102

What is different about math?

- **US**: Covering many topics
- **Other countries**: Covering less topics with more depth

- **US**: The *right* answer is most important vs. *understanding*
- **Other countries**: How you get to the answer is just as important as the answer itself
What is different about math (cont.)?

- **US**: Memorizing formulas and multiplication tables
- **Other countries**: Discovering procedures and proofs – critical thinking

- **US**: Past state exams valued the answer
- **Other countries**: No multiple choice; partial credit on the process
What is different about math (cont.)?

- **US**: Less emphasis on connecting previous learning
- **Other countries**: Connect prior knowledge to current lesson
Linguistically and Culturally Relevant Math Games

- Subitizing (*subito en espanol*)
- Pathway games and their benefits
- Guessing number between 2 and 71
- Games in the car
  - Counting cars that pass
  - Add numbers on the signs
  - Gas price rounding
  - License plate totals
- Dominos
- Card games – importance of family time
“If you talk to a man in a language he understands, that goes to his head. If you talk to a man in his own language, that goes to his heart.” – Nelson Mandela
## Examples of Spanish Cognates for Fractions Unit

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<th><strong>English</strong></th>
<th><strong>Spanish</strong></th>
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Impact and Future Needs

- Hard to measure impact
- Generic survey from Chicago Public Schools
- Tried for funding – and there is still hope 😊
Contact Information

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