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Big Data for Little Kids:

Data Modeling with Young Learners and their Families

DRL1614663

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Research Questions

Design and develop a 6-week workshop curriculum that will deepen our understanding of:

- How 5-8 year-olds define, collect, represent, interpret data
- How parents engage with children in data inquiry activities

…in an informal learning environment

Goals

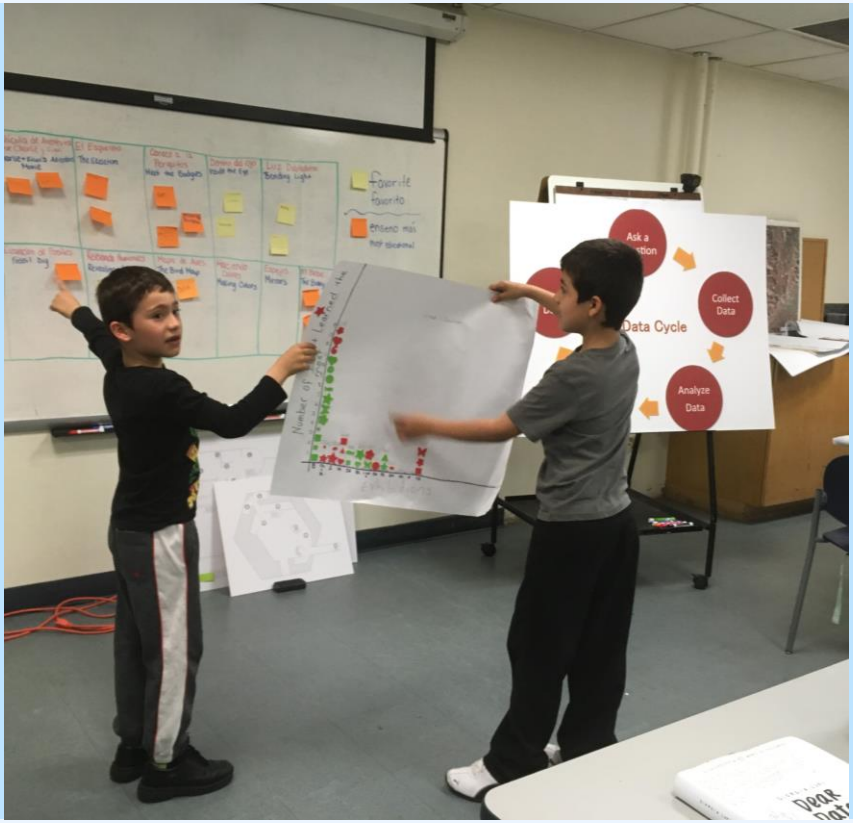
- Create a meaningful learning experience through scientific inquiry that centers on key concepts of data modeling:
  - variation
  - measurement error
  - data aggregation
  - interpretation
  - prediction

- Observe how families may support young children's emergent thinking about why and how to gather and use data

Museum Makers: Designing with Data

- 8 families, 4 Spanish-speaking
- 12 children
- 6 workshops, each 2 hours, once a week for 6 weeks
- “Make your own museum exhibit”

Museum Makers:
Designing with Data



Workshop 1:

- Intro to data cycle
- Explore museum exhibits
- Pick favorites and vote
- Collect and interpret data

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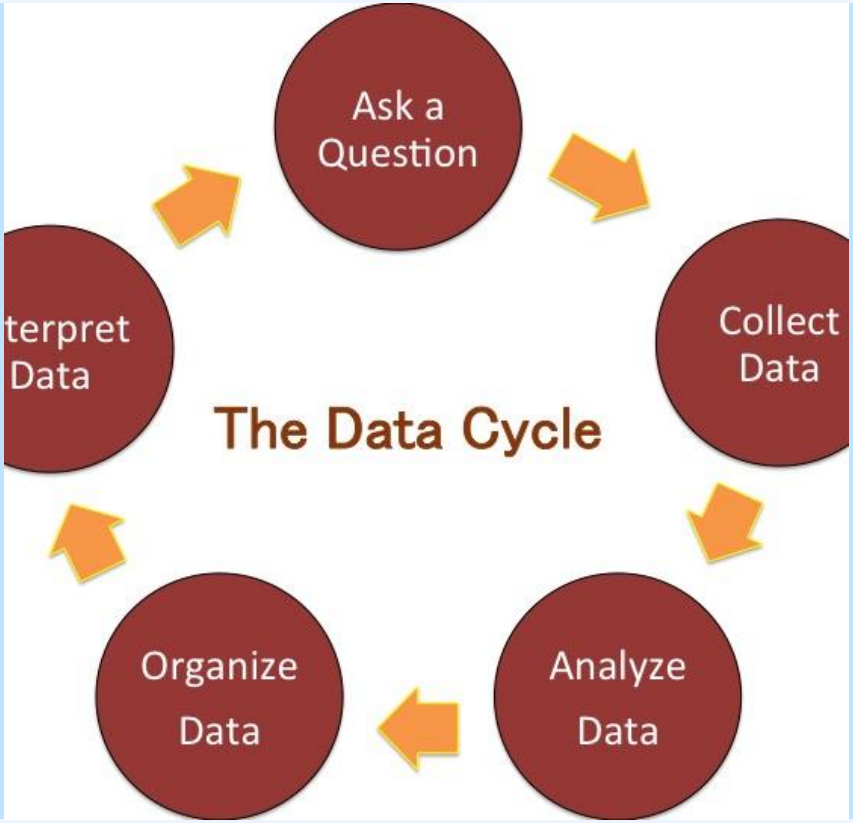

Data cycle:

- Start with asking a question!
- Collect
- Analyze
- Organize
- Interpret

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Workshop 2:

- Units of measurement
- Variation

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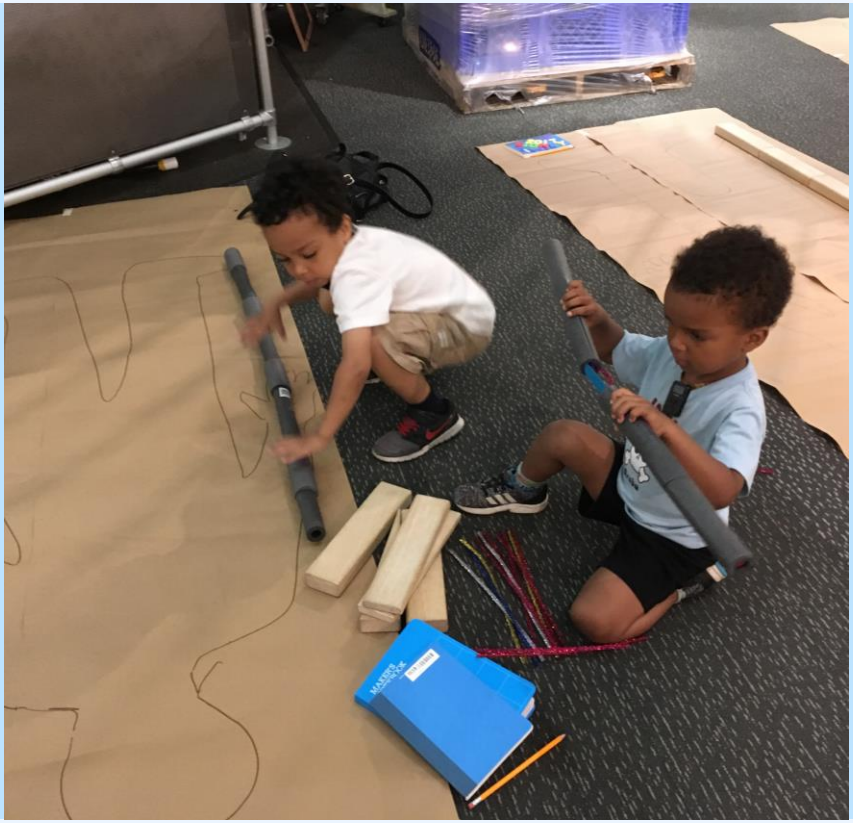

Workshop 2:

- Units of measurement
- Variation

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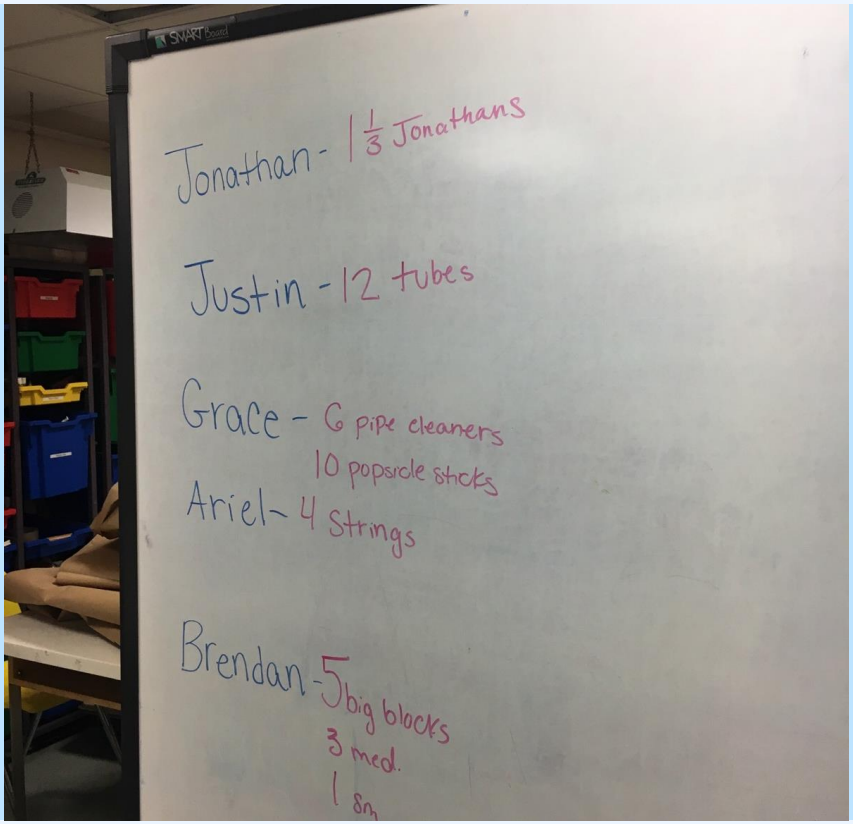

Workshop 2:

- Data analysis

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Workshop 2:

- Measure exhibits; collect data

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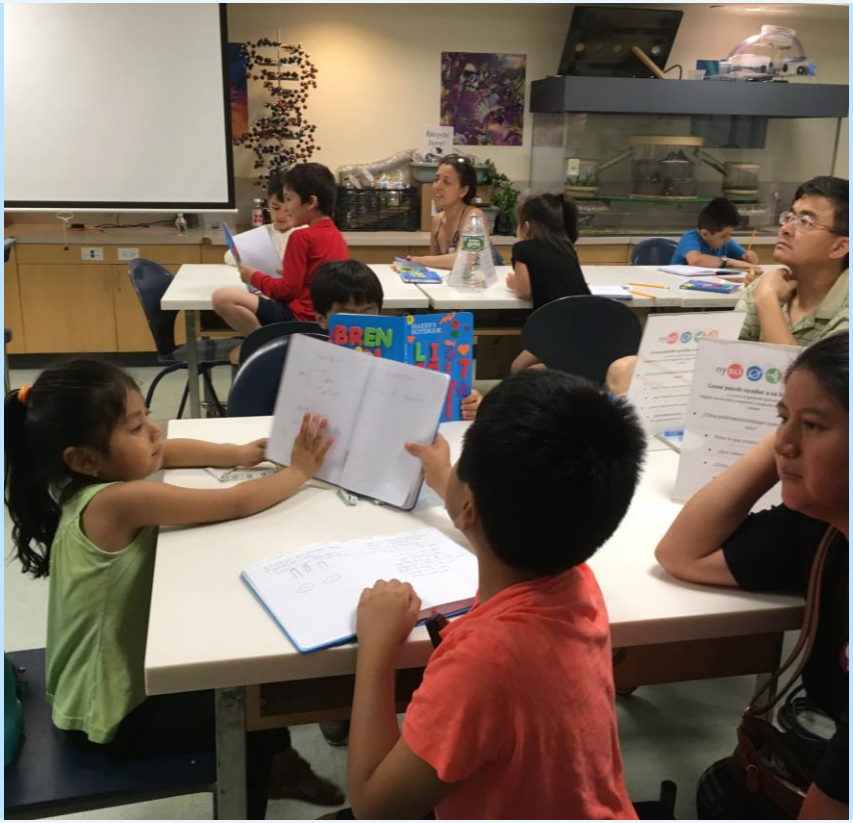

Workshop 2:

- Data analysis

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Workshop 3:

- Time
- Interval data vs. categorical data

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Workshop 3:

- How long does it take to complete a puzzle?

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Workshop 3:

- How long do people interact with exhibits?

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Workshop 3:

- Organize data

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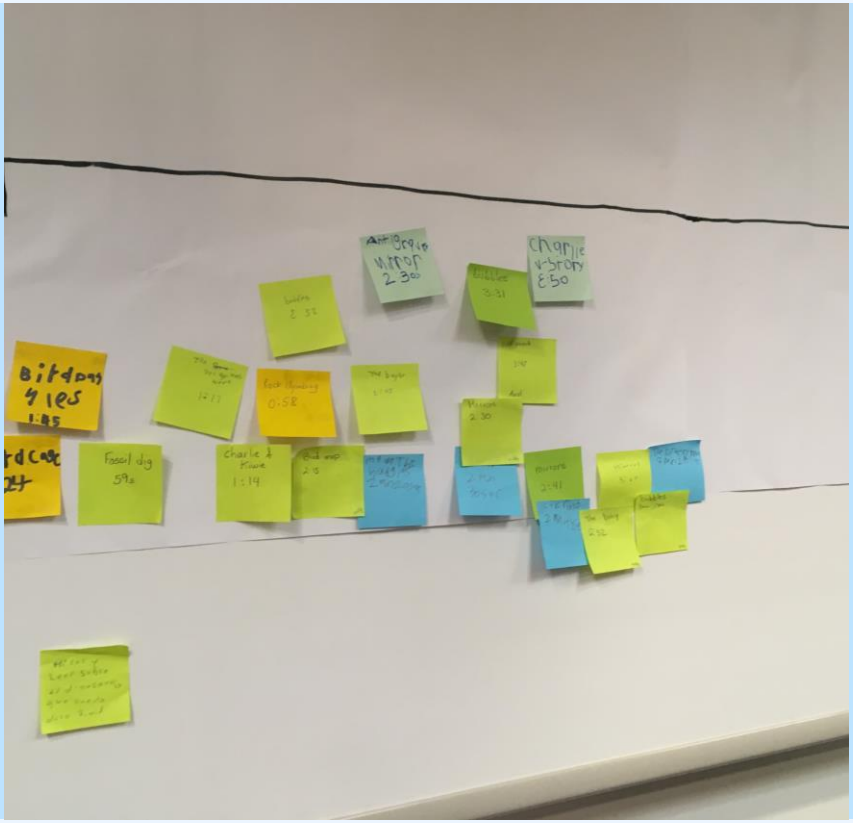

Workshop 3:

- Interpret data

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Designing with Data

Workshop 4:

- Make a toy that you can enjoy together

Museum Makers:
Designing with Data

Workshop 4:

- Make a toy that you can enjoy together
- How many features does it have?

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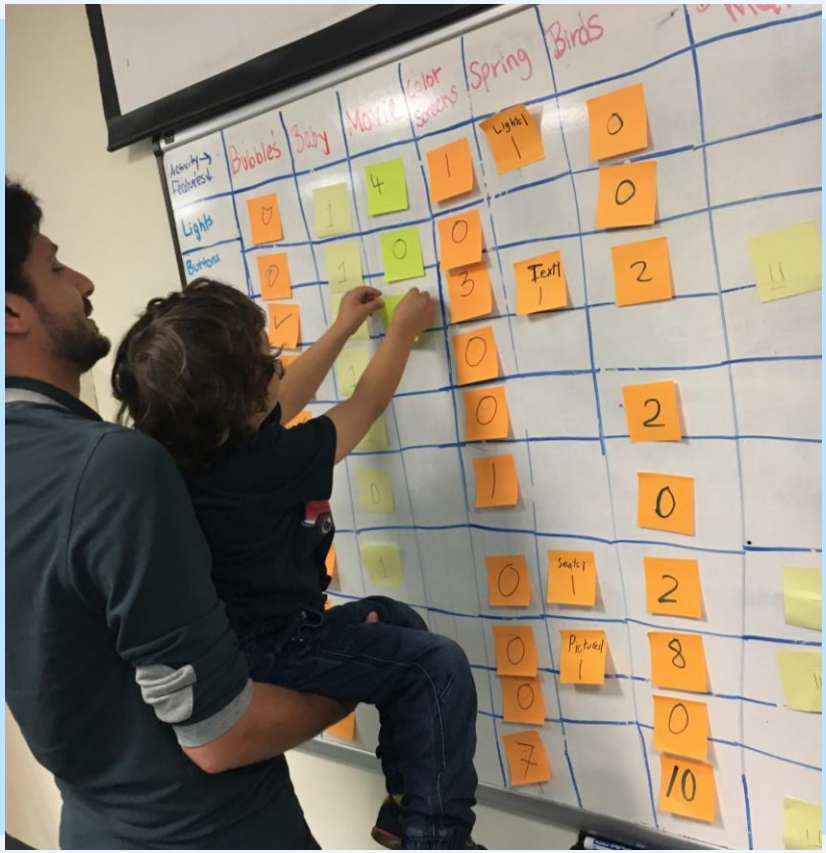
Workshop 4:

- Count features on a museum exhibit
- Organize data

Museum Makers: Designing with Data



Workshop 4:

- Organize data

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Workshop 4:

- Interpret data

Prompts:

- Any exhibit have all features?
- Any feature in all exhibits?

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Workshop 5:

Design your exhibit

Workshop 6:

Public display!

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Next steps:

- Refine curriculum
- Repeat workshop series in October

New York Hall of Science