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Computational Thinking: Using Magnets to Teach Children

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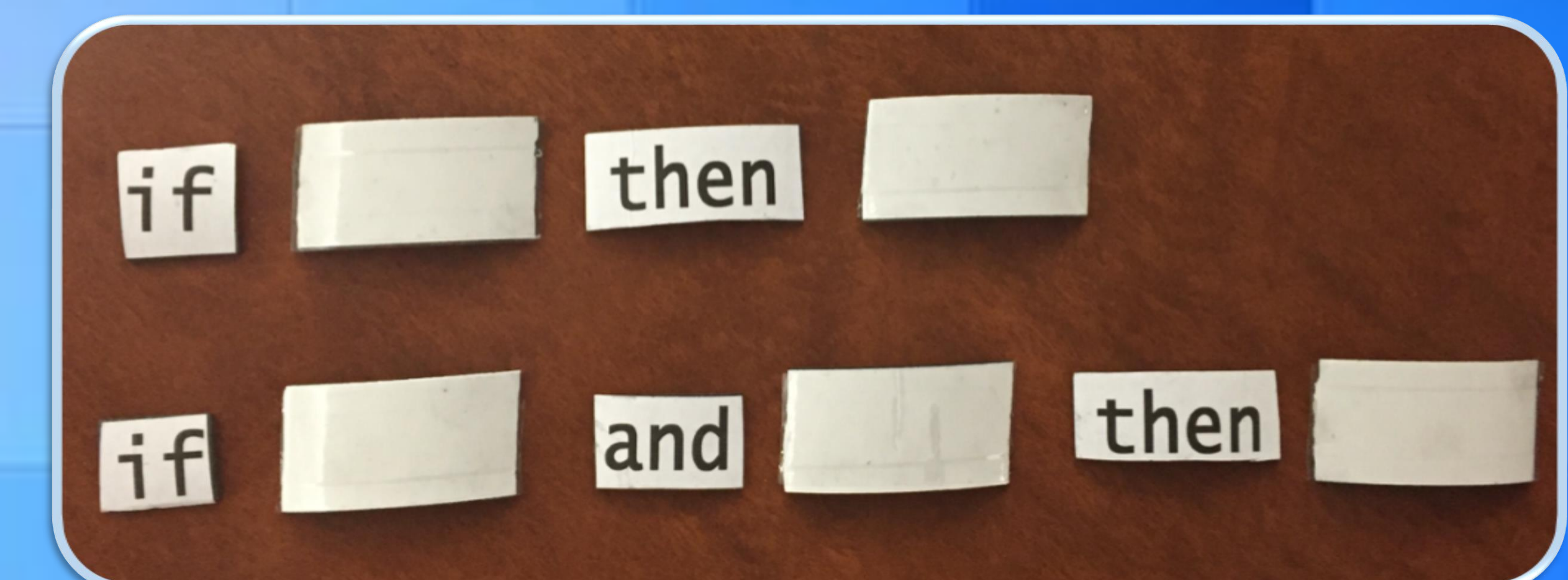
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Problem

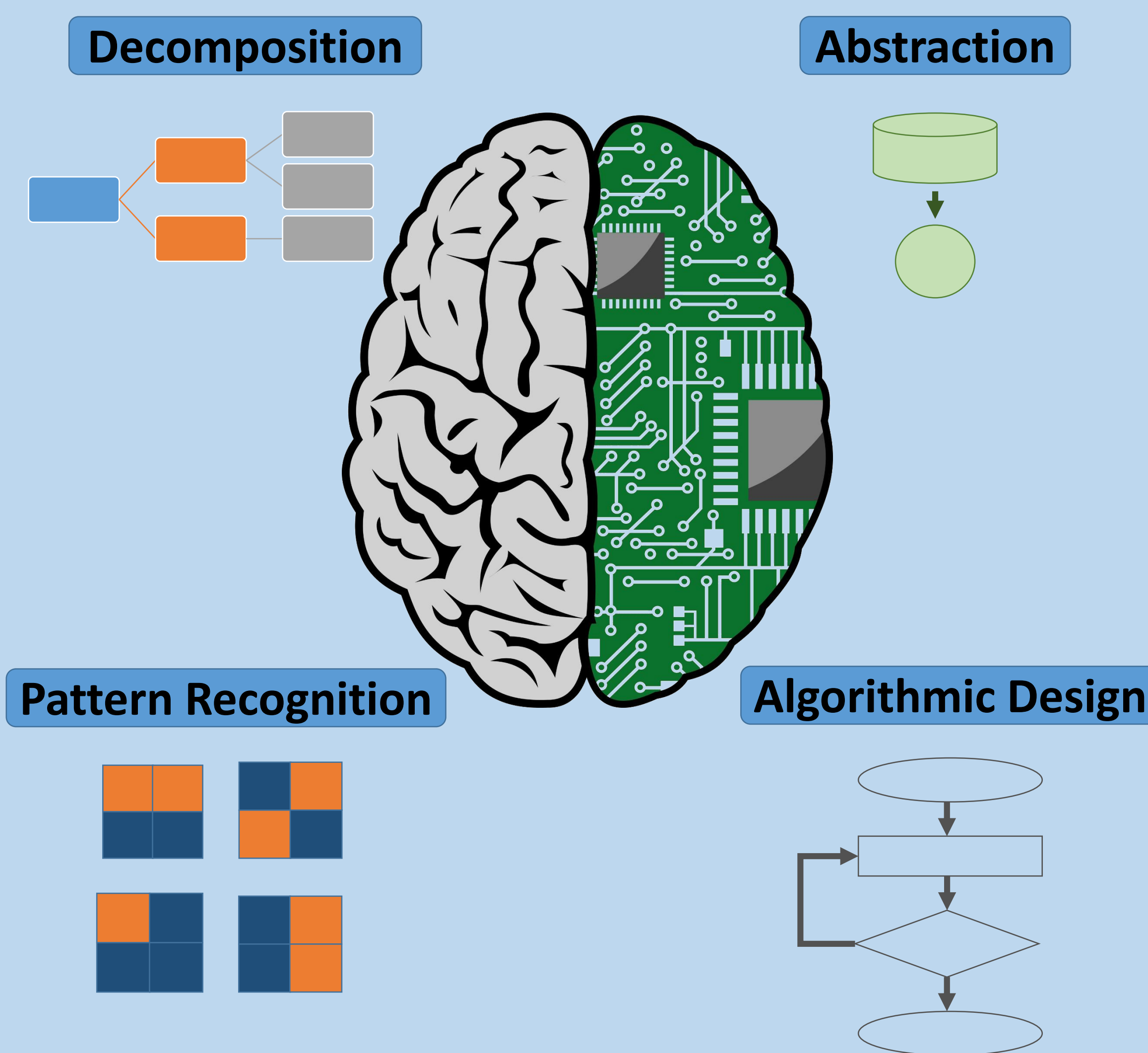
- Students are not learning about computer science in school
- Tools that teach basic computational thinking are not easy to find

Assessment

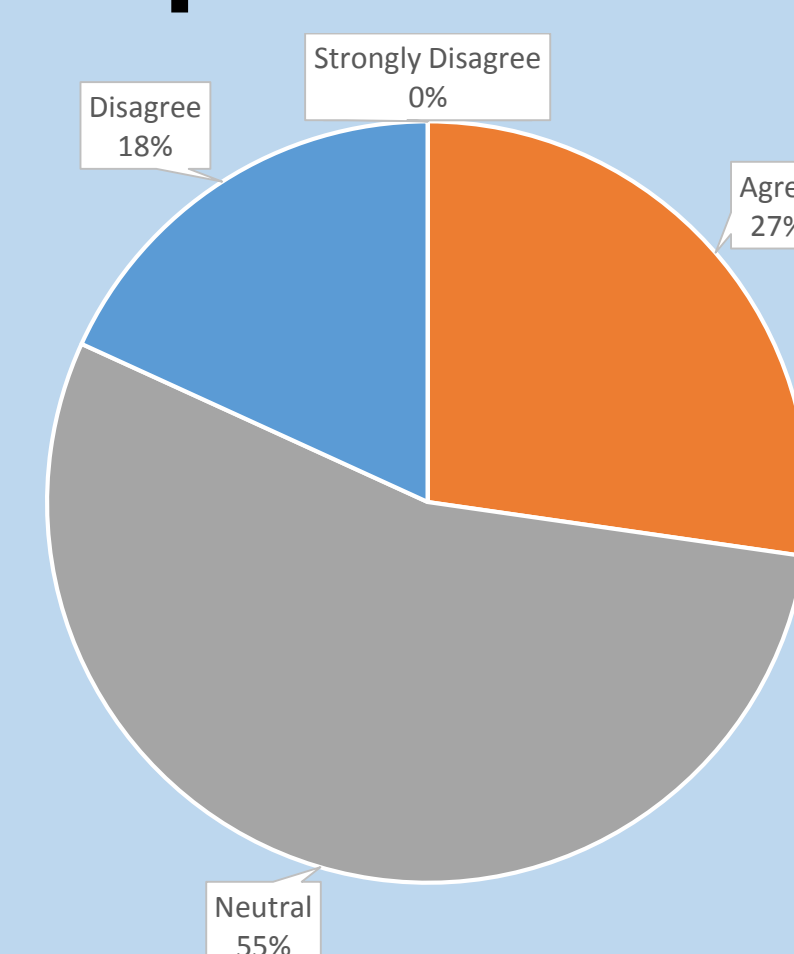
- Students were asked to solve a problem with the help of the magnets
- Both the students and the teacher were surveyed



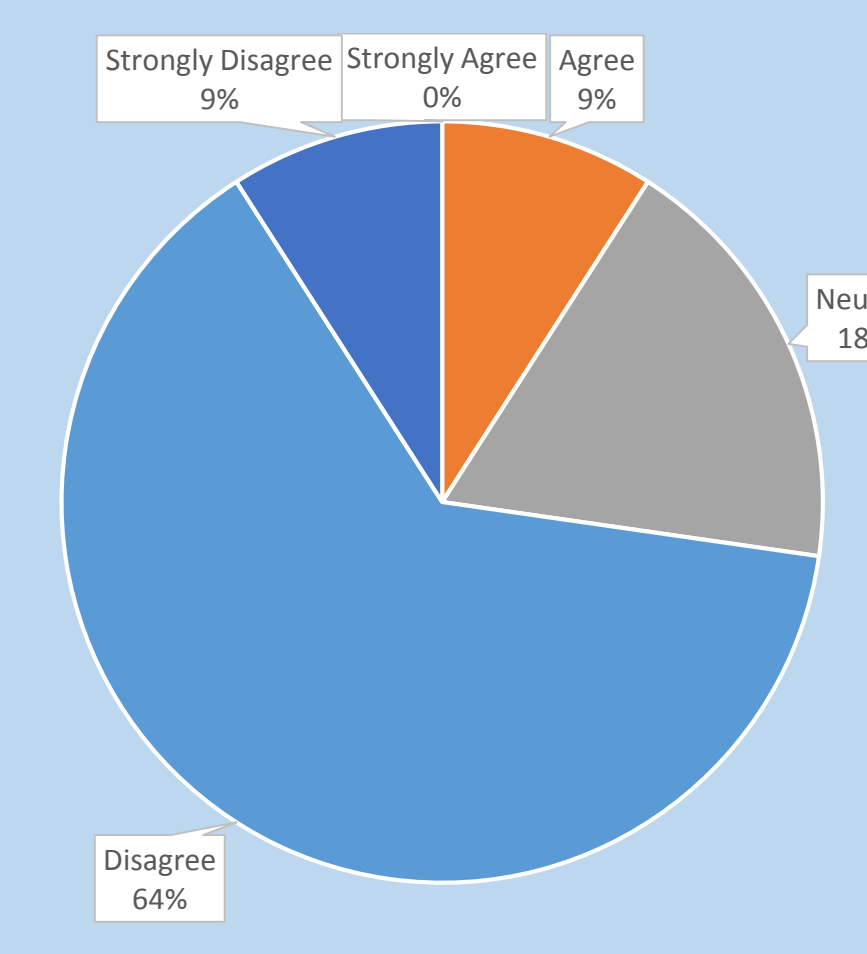
Computational Thinking



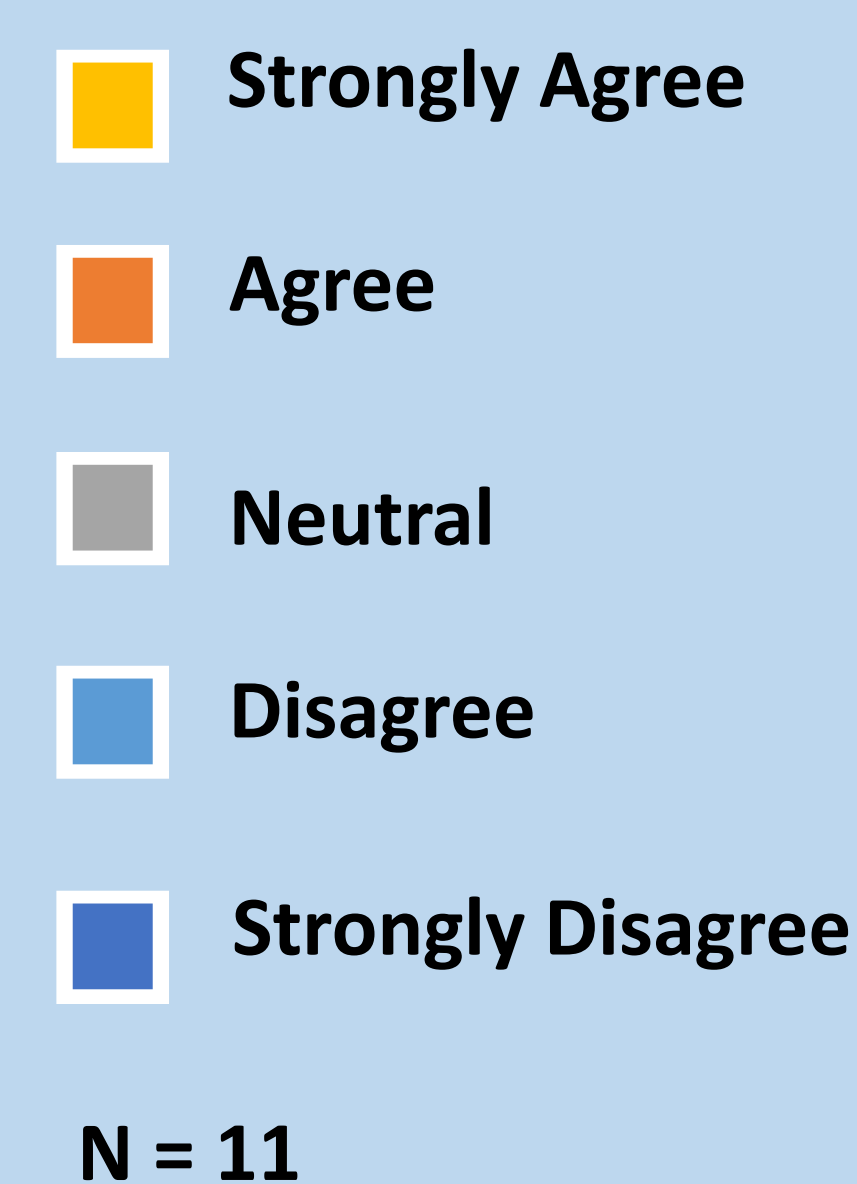
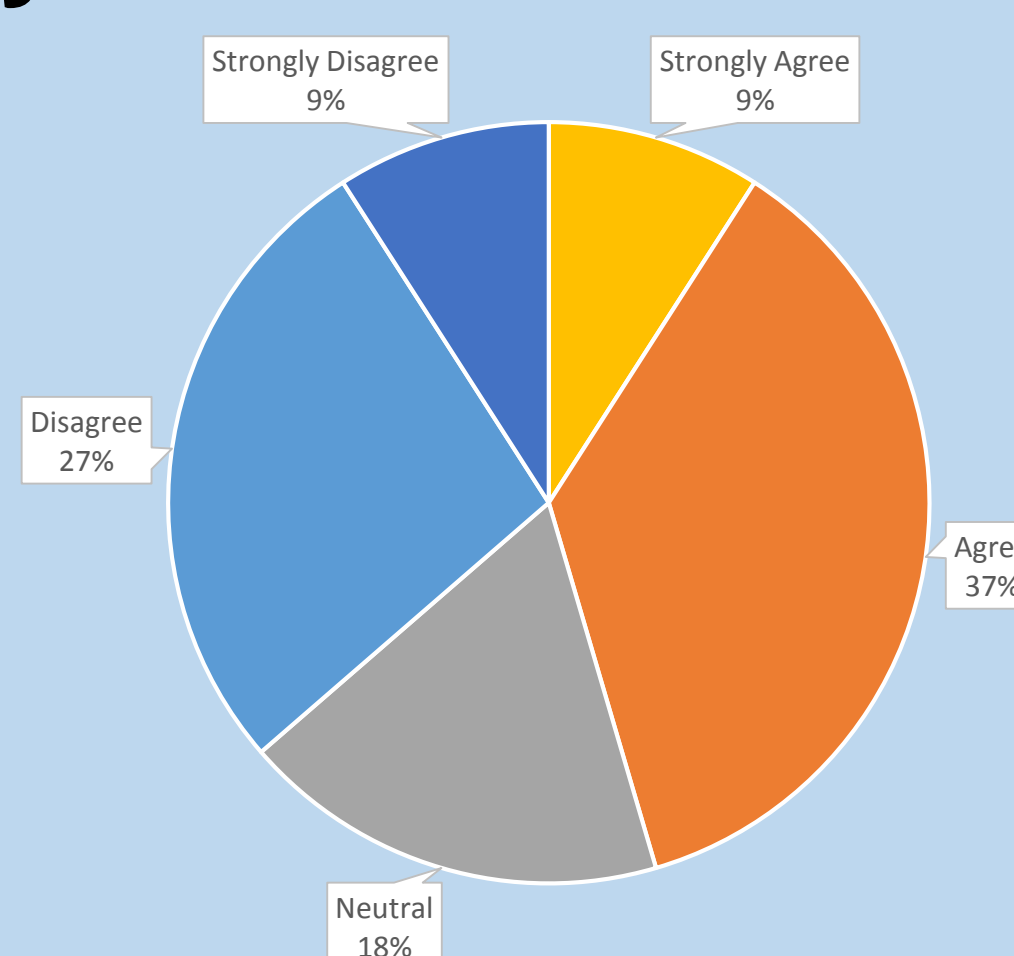
Did you enjoy the problem?



Did you find the magnets helpful?



Did the problems make you think differently?



Conclusions

- Magnets on their own are not sufficient
- The pilot problem was too hard
- One part of the pilot problem was unclear
- Students need more practice to think computationally

Acknowledgements

- John Jay High School
- Thaddius Herman

Solution

- A set of magnets with pseudocode (These promote a programming mindset)

Further Developments

- Magnets with different shapes, words, and symbols
- Adaptable for any kind of problem
- Could be made into tiles

References

- Google for Education. (n.d.). Retrieved December 9, 2015.
 Introduction to computational thinking. (n.d.). Retrieved December 9, 2015.
 Prisoners' Dilemma. (2008). Retrieved December 9, 2015.
 Wing, J. (2008). Computational Thinking and Thinking About Computing. Retrieved December 9, 2015.