

ENGAGING STUDENTS IN A MEANINGFUL MATHEMATICS HARKNESS

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I. Explanation of Harkness topic to participants and expectations for Harkness (*see attached topic and grading rubrics*)

II. Witness/participate in Harkness

III. How to plan/manage mathematics Harkness

A. One week ahead notice (provide both topic and grading rubric)

B. Email all parents same day as notify students (provide both topic and grading rubric)

C. Fishbowl technique

1. Clear instructions on fishbowl/switching

2. Grading (peer, self, teacher)

3. Passion/depth/questioning/listening

D. After Harkness, read and respond to all students

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IV. Why?

- A. Disrupt the systematic teach/test mentality associated with math classes
- B. Math classes are breeding grounds for dialogue, questions, intuitions, imagination
- C. Wonder and awe in mathematics (Dominion)

V. Resources

- A. Broad, open-ended ideas (no right answers)
- B. *Mathematics for Human Flourishing* by Francis Su
- C. *Mathematics Through the Eyes of Faith* by James Bradley and Russell Howell
- D. *Fermat's Last Theorem* from BBC's 1996 documentary

VI. Student comments/questions