HMAT: Great Discoveries in Mathematics

DAY	WHAT	HOW
1	Origin of numbers Base conversions Introduction to Babylonian culture and the Babylonian Number System Create your own number system	Group activity where the students take turns answering the question – why are numbers important (they write it on a paper in groups and then we share them together). Worksheet - switching back and forth between different bases. Worksheet – converting back and forth between number systems. Group project where the student apply everything they have learned about bases and the Babylonians and create their own number system including a worksheet for the class and a poster and a new civilization
2	Finish number systems project Introduction to the Ancient Chinese culture and Chinese Rod Numerals Magic squares –Presentations on number systems – The students present their number systems and give out their worksheet that they created in their number system and then act as teachers as they help their fellow students if they have questions on their worksheet. Presentations on number systems	Worksheet: Chinese Rod Numerals Worksheet – magic square patterns including learning about the legend of the Magic Square. Create your own magic square and discover of the properties of magic squares. Presentations of the student's number systems and including teaching worksheets that they created in their number systems.
3	Continued work with the Chinese culture including Chinese version of Pascal's triangle and binomial expansion Egyptian Culture and their number system – mini lecture that is interactive with kids representing the length of the Rhind Papyrus. Worksheets on the number system, addition and subtraction and Egyptian Multiplication follow. Egyptian town project	Worksheet on binomial expansion Mini lecture that is interactive with kids representing the length of the Rhind Papyrus. Worksheets on the Egyptian number system, addition and subtraction and Egyptian Multiplication follow. In pairs students pretend to be Egyptian landlords and f gure out how long it takes for them to break even with their plots of land. They also deal with the potential of the Nile f ooding and losing rent on some parts of their land.
4	Introduction to the Greek Culture and Thales Pythagorean theorem construction activity and the Proof of the Pythagorean theorem. Life of Pythagoras Pythagorean theorem video	Inductive and deductive reasoning discussion - intro to proof. The students talk about what inductive and deductive arguments mean and have a little debate on good, poor and fair inductive arguments. Beginning constructions where the