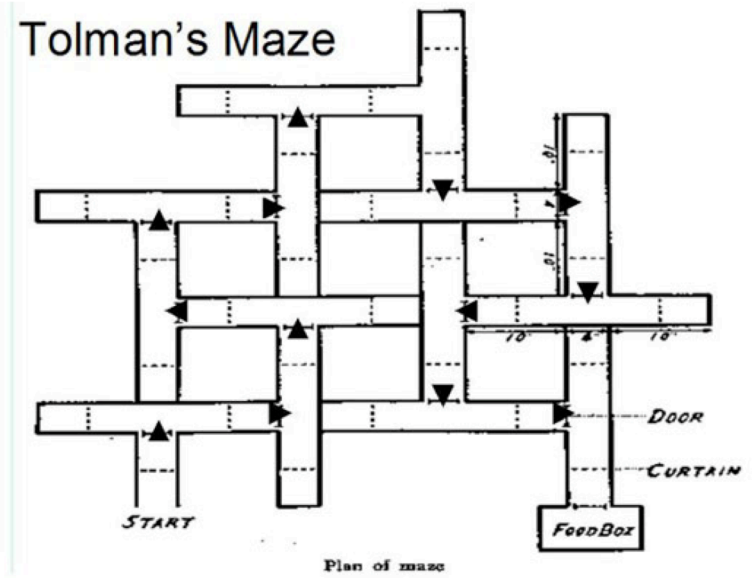


3. Vinny went to China for five days. He took \$950 in cash to spend in China, and figured he could convert the US dollars (USD) into Chinese Yuan Renminbi (CNY) upon arrival at the airport. The conversion rate on the day he arrived was 6.95570 CNY per 1 USD. After a week, Vinny had spent 5372 CNY. Before leaving China, he wanted to convert the remaining CNY back into USD. How much USD does Vinny have upon his departure from China?

4. In the 1920's Tolman, a behaviorist, did experiments with rats in mazes to study "latent learning." A photo of Tolman's famous maze depicts, with arrows, the route of a rat to successfully get to the food box. List the directions to the food box. Then list the reverse steps to get back to the "Start". Enumerate the steps and use "left" and "right" to describe the steps.

To the Food Box	Back to the Start



5. Most people (including Mrs. Musa) who first attempt to solve a Rubik's cube do not read the directions that accompany the cube. The directions contain *algorithms* that help in solving the cube. An *algorithm* is a set of rules to be followed in calculations or other problem-solving operations.

PRE-REQUISITE INFORMATION

The parts of a Rubik's cube are edge pieces (have two colors), corner pieces (have three colors), and center pieces (one color that sits in the center of any side, this piece dictates the color of the side). Notice that the white and yellow center pieces are always opposite of each other, the green and blue center pieces are always opposite of each other, and the orange and red center pieces are always opposite of each other. The algorithms refer to the right face (R), left face (L), up face (U), down face (D), front face (F), and back face (B). Each face can be turned either clockwise or counter clockwise. Counter clockwise is indicated by an "i" after the face symbol. Example: An "R" would mean turn the right face clockwise, an "Ri" would mean turn the right face counter clockwise. Each turn represents a 90 degree turn or $\frac{1}{4}$ turn.

If additional explanation is required, please see the Rubik's cube directions at the front of the classroom.

GET & SHARE A RUBIK'S CUBE

Work in a group. If the cube is not scrambled, scramble it before starting. Use the Rubik's instruction (copies in front of classroom) to solve the white colored side of the Rubik's cube with the appropriate edges. Once the white side and edges are solved, with the white side facing up, perform the following algorithm:

Ri D B Li Fi Ui R

The white side of your cube should now be scrambled. Write the reverse algorithm below. Then perform the reverse algorithm on the cube.

If your reverse algorithm was correct, you should have gotten the white colored side completed.

If not, go back to the start and try again. Double-check how you wrote the reverse algorithm.

If your reverse algorithm was correct, would it be possible to have any other outcome other than a completed white side? Why or why not?