**Name(s)**
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**Project Number**
J0335

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**Abstract**
Can learning time of a maze be reduced by adding stimuli related to the senses of sight, sound, touch, or smell, and if this is true, then which sense will be the most effective? My project is important because it studies the learning process and shows how stimuli can speed up this process.

**Objectives/Goals**
Can learning time of a maze be reduced by adding stimuli related to the senses of sight, sound, touch, or smell, and if this is true, then which sense will be the most effective? My project is important because it studies the learning process and shows how stimuli can speed up this process.

**Methods/Materials**
I constructed five different mazes and tested 6 hamsters. Maze #1 was used to determine a learning curve for each hamster from which I chose the control hamsters. Maze #2 (Sight) included block markers at each correct turn. Maze #3 (Sound) included a bell at each correct turn. Maze #4 (Touch) included clear glue drops along the correct path. Maze #5 (Smell) included a peppermint odor along the correct path. I kept track of total time, time per trial, and the number or wrong turns.

**Results**
Maze #1 established two control hamsters, one female, one male. Maze #2 (Sight) the hamsters ran 20% faster total time, 7% faster per trial, and made 30% fewer wrong turns. Maze #3 (Sound) the bell distracted the hamsters. Maze #4 (Touch) had mixed results - the controls ran 1.8% faster, but there was no difference in wrong turns. Maze #5 (Smell) most effective - 19% faster total time, 29% faster time per trial, and 50% fewer wrong turns.

**Conclusions/Discussion**
My hypothesis was correct. Learning time was enhanced by adding stimuli relating to smell. The sight stimuli was the second most effective. It is interesting to note that each hamster made great improvement in their maze running ability. My research discussed that keeping a hamster in a stimulating environment can increase their number of brain cells. I believe that running these mazes every night has increased their brain. This explains the steady increase in ability for each of the hamsters. Hamsters really are amazing!

**Help Received**
Grandfather used electric saw to construct maze pieces.