

## 2025 TNTSA Virtual Regional Conference

### HS Technology Problem Solving Prompt

#### “You foiled my plans”

#### Required Materials:

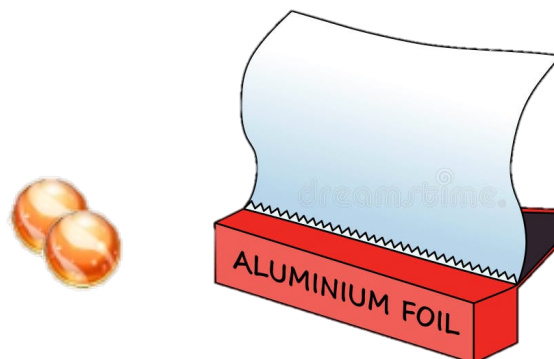
- 1 sheet of aluminum foil cut to 12 inches x 36 inches
- Ten (10) tongue depressors or large popsicle sticks
- Fifteen (15) index cards
- Ten (10) drinking straws
- One (1) roll of masking tape
- Two (2) paper/foam plates
- Ten (10) sheets of cardstock/thick paper
- Scissors
- Two (2) marbles

#### Challenge:

1. The goal of this challenge is to keep 2 marbles rolling simultaneously for the longest amount of time.
2. The marbles must be placed in a position so that their motion intrinsically starts. (i.e. Participants aren't allowed to push the marbles to start their motion)
3. The marbles may only ever touch aluminum foil—though the body of the track can be composed of any of the building materials listed above.
4. Students may only use the materials outlined above. The scissors may be used as a tool but cannot be part of the final solution.
5. Teams may decide if they start both marbles simultaneously or one after the other.

#### Scoring Guidelines:

- The time will not start until both marbles are in motion and will stop as soon as one marble ceases moving.
- If at any point the marble touches a material other than aluminum foil, the entry will be disqualified.
- The longest duration of both marbles moving will win.
- In the case of a tie, the team that submits their solution faster wins.



## 2025 TNTSA Virtual Regional Conference

### MS Problem Solving Prompt

#### “Overbooked”

##### Required Materials:

- Twenty (20) tongue depressors or large popsicle sticks
- Fifteen (15) index cards
- One (1) roll of masking tape
- Five (5) paper/foam plates
- Ten (10) sheets of cardstock/thick paper
- Two (2) Drinking Cups
- Scissors

##### Challenge:

1. The goal of this challenge is to create the tallest tower that can support the weight of a book.
2. The tower must be free-standing, meaning that it may not be taped/connected to the table in any way.
3. The textbook may not adhere to the tower in anyway, meaning that tape cannot be used on the book to hold it in place.
4. Scissors may be used as a tool to build the tower but should not be included in the final solution.

##### Scoring Guidelines:

- The height of the tower will be measured from the surface of the table to the surface on which the book rests.
- The same book will be used to test each team.
- Teams may choose how to orient the book on their solution.
- In the event of a tie, the team who submitted their solution first will win.

