Spontaneous Problem: Heads and Tails

A. When the team enters the room, tell them, "This is a Hands-On problem. In an actual tournament you will have one minute to select five team members to compete. The others can leave or stay to watch, sitting in seats away from the table. If they stay in the room, they cannot assist in solving the problem and cannot talk at ANY time. However, today all team members can participate.

B. JUDGE READS TO TEAM:

1. This problem is in two parts. In part one, you will have 5 minutes to develop and practice your solution. You may talk and ask questions during this practice time, however, time will continue. In part two you will have 3 minutes to demonstrate your solution. You may not talk during part 2.

2. Your problem is to develop a system of communication that uses the supplied unsharpened pencils. The pencils may not be modified. You have pencils, pennies, a "solution" grid and a "blank" grid to practice with during part one. The goal of this problem is to communicate the correct placement of coins on the "blank" grid as shown on the "solution" grid and to maximize your score.

3. During part two you will divide your team into two groups, communicators and listeners. The communicators will receive the pencils and a new "solution" grid. The "solution" grid may not be shown to the listeners. The listeners will receive the pennies and a new "blank" grid. Communicators may not use anything but pencils to communicate with the listeners. There is no talking during part two.

4. Scoring (approximately 120 point maximum):
   - 1 point for each square with a penny showing a head that is correct.
   - 5 points for each square with a penny showing a tail that is correct.
   - 10 points for each blue square that is left with no coin.
   - 0-20 points for teamwork.
   - 20 bonus points if the number of squares with heads is equal to the number of squares with tails.

6. Penalties deducted from the score will include:
   - 20 points each time voices, hand motions, nodding heads or anything not pencils are used by the communicators during part two.

7. Once again, **your problem is to devise a system of communication system that uses pencils. The goal of the communication is to correctly fill in the squares of a blank grid to maximize your score.**

C. FOR JUDGES ONLY

1. Materials needed for setup: 2 tables, chairs, approximately 15 pencils, 25 pennies, two "blank" five by five grids, two "solution" five by five grids".

2. Place the pencils and practice "solution" grid on one table. Place the pennies and practice "blank" grid on the other. Arrange the tables to be approximately fifteen feet apart. Set up the chairs in two groups facing each other.

3. The pencils may not be modified.

4. As soon as the practice time is over, have the "communicators" move to their positions facing the table with pencils and give them a new "solution" grid. Arrange to have the "solution" grid attached to a folded manila folder so it can stand up and can't be seen by the others. Have the listeners move to their positions near the table with the pennies. Give the listeners the "blank" chart for part two. Say "Begin". Call out "30 seconds remaining" appropriately. At the end of time, say "Stop"

5. Nothing other than the pencils may be used to communicate any part of the solution by the communicators. If the team seems to be pursuing any method that uses anything other than the pencils, ask them to read rule number two.

7. The following charts are set up for use.

North Carolina Odyssey of the Mind Eastern Region

2013

Team Copy

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6. Penalties deducted from the score will include:
   - 20 points each time voices, hand motions, head nodding or anything other than pencils are used by the communicators during part two.

North Carolina Odyssey of the Mind Eastern Region

2013 – Part 1 “Solution” Chart

H	H	T	T	T
T	T	H	H	H
H	H	T	T	H
H	T	T	T	H
H	T	T	H	H

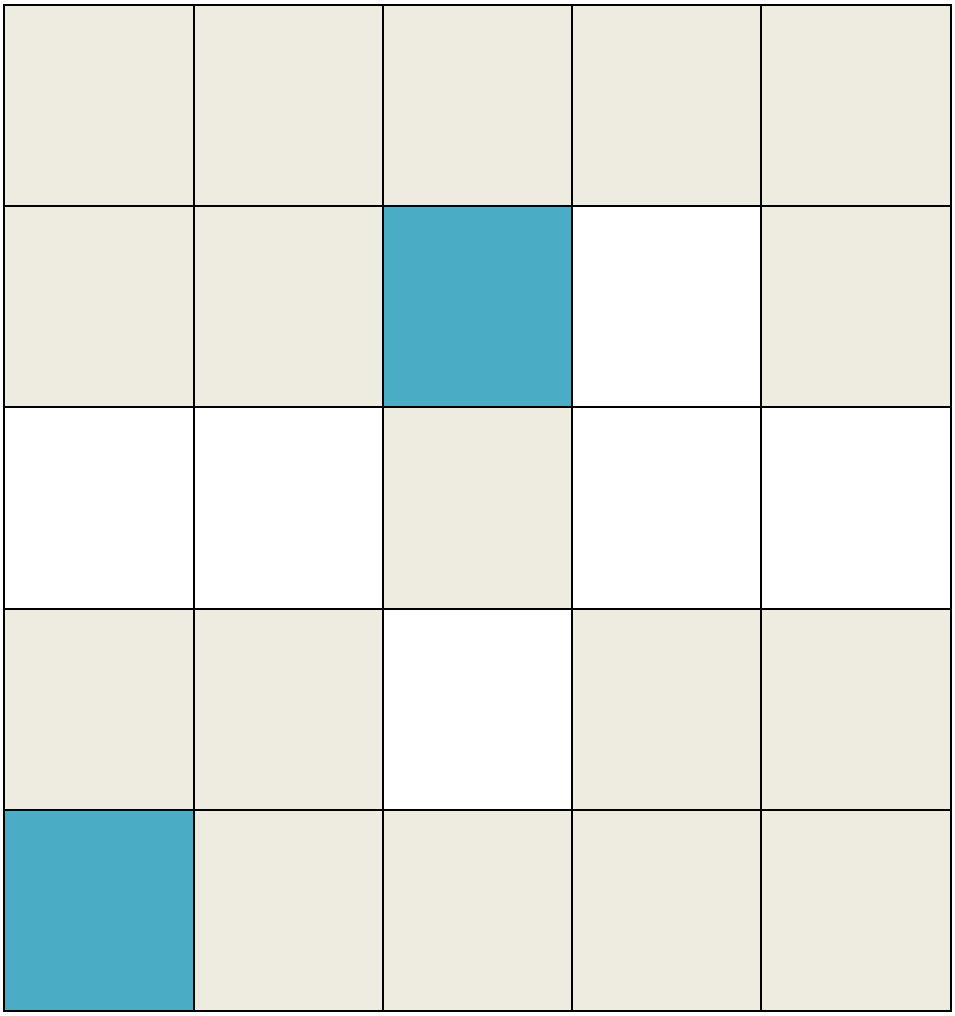
North Carolina Odyssey of the Mind Eastern Region

2013 – Part 2 “Solution” Chart

H	H	H	T	T
T	T	H	T	T
H	H	H	T	H
H	T	H	T	H
H	T	H	H	H

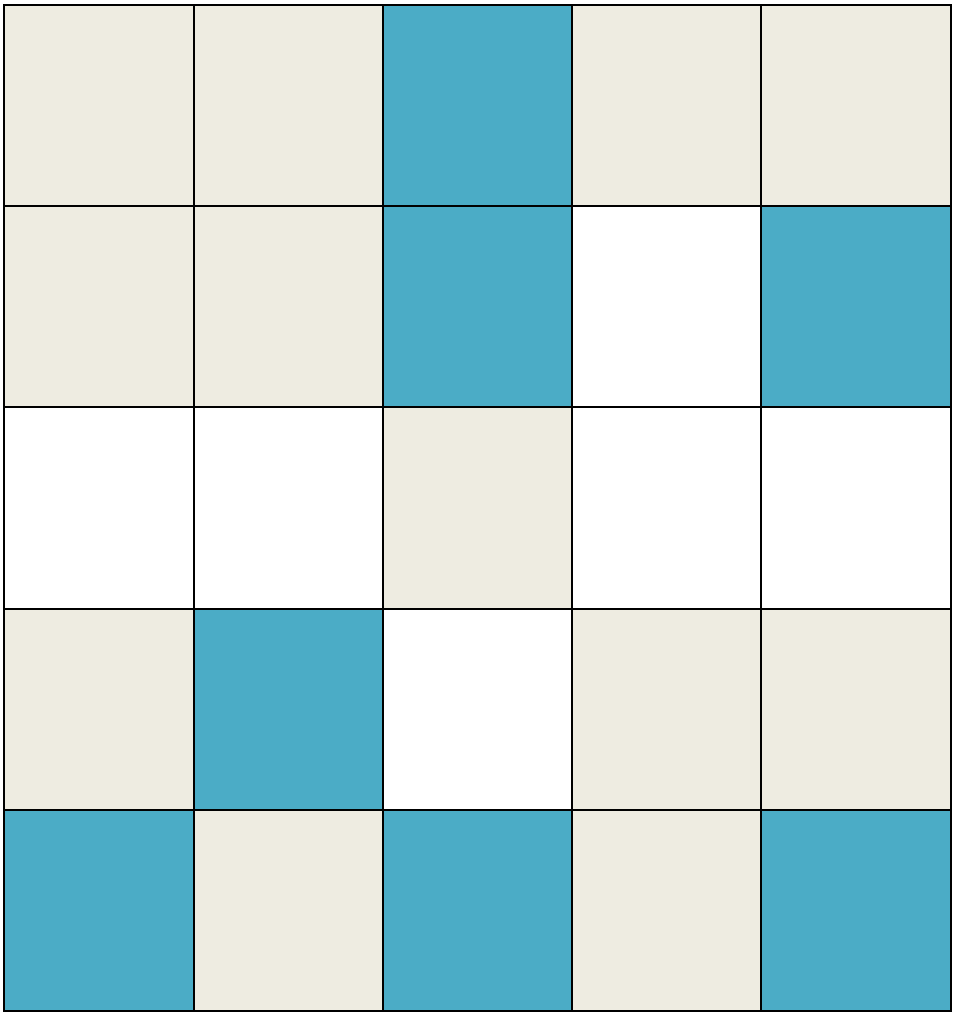
North Carolina Odyssey of the Mind Eastern Region

2013 - Part 1 Blank Chart



North Carolina Odyssey of the Mind Eastern Region

2013 - Part 2 Blank Chart



North Carolina Odyssey of the Mind Eastern Region

2011- Problem X - Notes for Coaches

Notes for Coaches Only

This is a difficult problem. Sometimes, though, in practice sessions, you can learn more from a failure than from a success. So, if your team has trouble with this one, it may prove good for them in the long run.

1. It is important to follow the rules! For this problem, the communicators must only use the pencils, not grunts or gestures. Explore what the possibilities are with the pencils. What other ways might you communicate if the rules were different? What about if the materials were different? What other parts of the rules might easily be misinterpreted? It can be a good idea to have one team member who is assigned the task of continually rereading the problem and making sure that the team is interpreting the problem correctly. They should be encouraged to ask the judges questions if they are unclear on anything, or if they think one or more of their teammates might be confused.

2. In any communication problem, it is important to clearly identify the items that must be communicated. In this problem, you need to communicate two things:
   - Which position (row and column, or sequentially numbered location) is being described
   - Which of heads or tails should be used
   -

   What other things might you need to communicate? If the listeners can communicate back to the communicators, it might be useful to have a signal for "start over" if things are going totally wrong.

3. It is difficult to make a communication scheme and remember it unless it has some kind of mnemonic memory device. It is also important to decide early, so you have time to practice. Sometimes you might talk about many different options, then finally pick one, and then in the second part you might not be able to remember if the scheme was something you decided, or just something you talked about.

4. One of the important features of this problem is the scoring. Note three things: 1.) There are a lot of blue squares in part 2, so figure out what to do! 2.) You get points for not filling in blue squares. (Read! Listen!) 3.) You get the bonus by giving up a heads or tails penny – you lose one or five but gain twenty!

5. This problem has a very limited time frame, so teams need to have a decision process. Teams need to be able to efficiently and agreeably decide on the signaling system, and make sure that everyone is clear on it.

If at all possible, you want to have time left to practice your solution. Practicing is the easiest way to reveal any problems with your communication system (and how well everyone remembers it). It will also help you figure out who will have what role during the solution.