STEP Technology Initiative Questionnaire Summer 2003

Dear Student:

Congratulations on successfully completing STEP. Please take a few moments to answer the questionnaire and return it to your teacher. Your answers will be kept confidential and will be used only for research purposes.

Enjoy the rest of the summer!

The Robotics Initiative Team

1. Informat	tion						
Your name:							
Age:	Grade:	Email: (Optional)					
Gender:	Male	emale					
2. Backgro	ound						
How did you c	ome to join STEP?	?					
		e? Yes No [
ir yes, what	t do you want to m	ajor in?					
3. Previous	s Courses						
Indicate the nu subjects.	umber of high scho	ool courses that you hav	e successfull	y comple	ted in the	following	
					nber of Cou		
			0	1	2	3	4+
1. Mathe	ematics						
2. Science	ce						
3. Comp	uters						
4. Robot	ics						

4. Course Interests

Based on your experiences, please indicate your level of interest in the following subjects. (N/A = Not Applicable, 1 = Very Low, 2 = Low, 3 = Neutral, 4 = High, 5 = Very High.)

		VERY LOW			,	VERY HIGH
	N/A	1	2	3	4	5
1. Mathematics						
2. Science						
3. Computers						
4. Robotics						
5. Programming						
 5. Personal Ability Based on your experience, rate your ability level in the following subjects. (N/A = Not Applicable, 1 = Very Poor, 2 = Poor, 3 = Average, 4 = Strong, 5 = Very Strong.) 						
		VERY POOR	⇔	-	•	VERY STRONG
A Nath-matin	N/A	1	2	3	4	<u>5</u>
1. Mathematics						
2. Science						
3. Computers						
4. Robotics						
5. Programming						
Do you think you could build a robot? Yes No Have you ever built a robot before STEP? Yes No Computer Use						
Does your family own a computer? Yes	No					
Please indicate approximately how many hours you spend each week using the computer for the following reasons:						
	Number of hours per week ⇔ □ □ □ □ □ □ □ □					
		0-1	1-2	3-4	4-5	5+
Looking for Information						
2. Entertainment (Games, movies etc)						
3. Homework						
4. Communications (Email, IM etc)						

7. Problem Solving

Challenge 1:

You have a CD player and a CD with your favorite song on it. All you want to do is play you're your favorite over and over again. You put the headphones on and nothing happens. What are some of the possible reasons it did not work? How would you go about fixing the possible problems?

Challenge 2:

Start	State
Otall	Otate

Goal State

1	3	4
8	6	2
7		5

1	2	3
8		4
7	6	5

Arrange the tiles so that all the tiles in the start state are in their correct positions in the goal state. You do this by moving tiles. You can move a tile up, down, left, or right, so long as the following conditions are met:

- A. There's no other tile blocking you in the direction of the movement; and
- B. You're not trying to move outside of the boundaries/edges.

Use the grids below to show your progression from the start state to the goal state. Make sure to write down every step. If you make a wrong move do not erase; just move on to the next grid. Please circle the grids that lead to the final solution. (Note: you do not need all these grids to solve the problem.)

Challenge 3:

David planted a lovely garden with flowers of every color. He has not been able to enjoy it, though, because deer from the forest nearby have been nibbling on his plants, killing some of them. He would like to keep the deer out of his garden. His grandmother said that in the old days, she kept deer away by spraying an herbal tea -- lacana -- in her garden. She said:

"If you spray lacana tea on your flowers, deer will stay out of your yard."

This sounded dubious. So David convinced some of his neighbors to spray their flowers with lacana tea, to see what would happen. You are interested in seeing whether any of the results of this experiment violate Grandma's rule.

The cards below represent four yards near David's house. Each card represents one yard. One side of the card tells whether or not lacana tea was sprayed on the flowers in a yard, and the other side tells whether or not deer stayed out of that yard.

Please circle only the card(s) you definitely need to turn over to see if what happened in any of these yards violated Grandma's rule:

"If you spray lacana tea on your flowers, deer will stay out of your yard."

Cards:

Sprayed with lacana tea	N	lot sprayed with lacana tea	Deer stayed away	Deer did not stay away
Why did you pick the	e card(s)	you circled?		