

Name _____ Period _____ Date _____



Mental Rotation

STEM Sims

Lesson 1: Can You Dance?

A number of researchers have connected the ability to mentally rotate and manipulate figures with success in a science-related career. For instance, many engineering jobs require strong spatial orientation abilities. Others researchers have reported links between dancing, athleticism, and mental rotation abilities. Do you have the ability to dance and to transform objects in your mind?

Doing the Science

1. Start the Mental Rotation Simulation by clicking on the “Sim” tab.
2. Click the “Begin” button.
3. Use the sliders to rate your experience and abilities, and then click the “Done” button.
4. Read the on-screen instructions and click the “Begin Test” button to start testing.
5. After completing the test, note and record in Table 1 your score displayed on the screen.
6. Collect and record in Table 1 the scores of ten of your classmates. Do not include their names in the table.
7. Copy the 11 Raw Scores and Dancing Ability ratings (yours and the ten classmates) into a spreadsheet. Run a correlation between the Raw Scores and Dancing Ability ratings. Record the result in Table 1.
8. Repeat step 7 for Raw Scores and Athletic ability.
9. Repeat step 7 for Raw Scores and Experience with Spatial Orientation problems.

Table 1.

Student	Raw Score	Dancing Ability	Athletic Ability	Experience with Spatial Problems
You				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Correlation				

Do You Understand?

1. Which factor, Dancing Ability, Athletic Ability, or Experience with Spatial Problems had the strongest correlation with the students’ Raw Scores? Propose a possible reason for the strongest correlation.