

# Marvelous Meaningful Monthly Math

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*Central Area Tech Prep, Mitchell Technical Institute, and Bridges*

## Arts, Audio-Video Technology and Communications December

### Career – Museum Curator

#### Math Activity

Temperature, air and light can all affect an artifact over a long period of time. An object in a museum may be ruined if it is exposed to the wrong conditions for too long.

Often, it is the museum curator who must make sure the environment in the museum is just right. By using their math skills to control humidity and room temperature, curators can ensure the objects in a museum will be preserved for generations to come.

The average exhibit needs an environment with 50 percent relative humidity -- the amount of moisture in the air -- which is at a temperature of 71 F. The amount of relative humidity rises or falls by 5 percent as the temperature rises or falls 1 degree.

If the air temperature of an area in a museum is 74 degrees, what is the relative humidity? How many degrees will the temperature have to drop to reach the right humidity levels?

Name \_\_\_\_\_ School \_\_\_\_\_ Teacher \_\_\_\_\_

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#### Solution

**71 F = 50 percent humidity**

Humidity drops by 5 percent for each degree the temperature is raised.

**74 degrees = 3 degrees higher than the 71 degree ideal**

**3 degrees x 5 percent humidity = 15 percent below ideal humidity level**

If the air temperature in the museum is 74 degrees, then the relative humidity will be 35 percent.

The temperature will need to fall by 3 degrees to achieve the right humidity levels.

Curator Philip Lambert says he uses math to measure his research subjects. "In my research, just doing a lot of measurements of parts, looking for the mean sizes and doing some statistics," he says.