

## Humidity makes air feel hotter





Weather agency looks into heat warnings

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The National Weather Service begins testing today on a system of heat-stress advisories to provide earlier warnings for people vulnerable to heat and humidity. The system has three categories:

 Heat watch, when heat-stress conditions are expected in the next 24 to 48 hours.

 Heat advisory, when higher levels of discomfort are expected within 24 hours. Excessive heat warning, when the danger requires such steps as seeking air-conditioned buildings, drinking extra water and avoiding outdoor activities.

The tests are being conducted in Louisiana, Arkansas, Mississippi and Tennessee. Officials said it could be expanded nationally. The weather service will continue to use the heat index, a number based on a combination of temperature and humidity. Alerts are triggered when the index is likely to reach 105 degrees by day and 80 at night over 48 hours.

## **Activity Overview**

The USA TODAY Snapshot "Humidity makes the air feel hotter" shows the relationship between humidity, air temperature, and heat index. The heat index (HI) is a measure used to describe how humidity and temperature interact to affect the way you feel on a hot day. You will create two scatter plots and determine the model for each scatter plot. Then you will describe the behavior of the dependent variable for each model as the independent variable increases. You will use the models to predict (interpolate) the heat index values for a given relative humidity at different temperatures.

## **Focus Questions**

Q. Which type of equation (regression model) do you think would best fit the graph? Try the following equations when making your decision.

- A. Linear: y=mx + b
- B. Quadratic:  $y=ax^2 + bx$ + c
- C. Cubic:  $y=ax^3 + bx + c$

Q. What will the air temperature be when the relative humidity is 0% and the heat index is 105°F?