

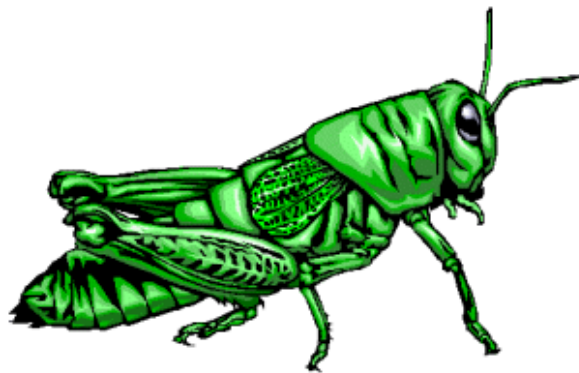
Scatter Plot Activity #2

Task

Create a scatter plot of the data found below regarding the striped ground cricket. Insert a trendline and include the equation and R^2 -value of the trendline. Print when you are finished, making sure that it fits on one page.

Questions(put your answers on your printout)

1. Explain whether or not your trendline is a good fit to represent this data.
2. What does x represent in your equation?
3. What does y represent in your equation?
4. If the ground temperature reached 95°F, then at what approximate rate would you expect the crickets to be chirping? HINT: Use the equation from your scatter plot on the printout.
5. With a listening device, you discovered that on a particular morning the crickets were chirping at a rate of 18 chirps per second. What was the approximate ground temperature that morning? HINT: Use the equation from your scatter plot on the printout.
6. If the ground temperature should drop to freezing(32°F), what happens to the cricket's chirping rate?



Pierce (1948) *mechanically* measured the frequency (the number of wing vibrations per second) of chirps (or pulses of sound) made by a striped ground cricket, at various ground temperatures. Since crickets are ectotherms (cold-blooded), the rate of their physiological processes and their overall metabolism are influenced by temperature. Consequently, there is reason to believe that temperature would have a profound effect on aspects of their behavior, such as chirp frequency.

Chirps/Second	Temperature (° F)
20.0	88.6
16.0	71.6
19.8	93.3
18.4	84.3
17.1	80.6
15.5	75.2
14.7	69.7
15.7	71.6
15.4	69.4
16.3	83.3
15.0	79.6
17.2	82.6
16.0	80.6
17.0	83.5
14.4	76.3