Inspired Instruction, LLC.

Standards Solution Holding

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Algebra 1
Interpreting Functions: F-IF.6
Rate of Change

Goal:
The goal is for students to interpret rate of change of a function in the context of a real-world problem. Students will then estimate the rate of change from a graph.

Materials:

- Pencils
- ***Rate of Change*** worksheet

Procedures:

- Break students into small groups and distribute a ***Rate of Change*** worksheet to each student.
- Instruct groups to complete the worksheet; circulate to support groups. If students are struggling with Problem 1, ask, "What do you think of when you hear the phrase *rate of change*?" Students should know that rate of change shows the relationship between two changing quantities. When data are linear, as they are in this example, the rate of change is constant and is represented by the slope of the line. Ask, "So, what is the slope of this line?" Students should be able to quickly identify the slope of the line as –4. Then ask, "So what does the slope of the line represent in the context of the problem?" Help students to realize that a slope of –4 represents the paraglider's rate of descent in feet per second. So, in other words, during her 63-minute descent, the paraglider descends at a rate of 4 feet per second.
- Once students have completed the worksheets, review and discuss their results as a class.

Rate of Change Worksheet

Problem 1:

The table shows the altitude of a paraglider during her linear descent.

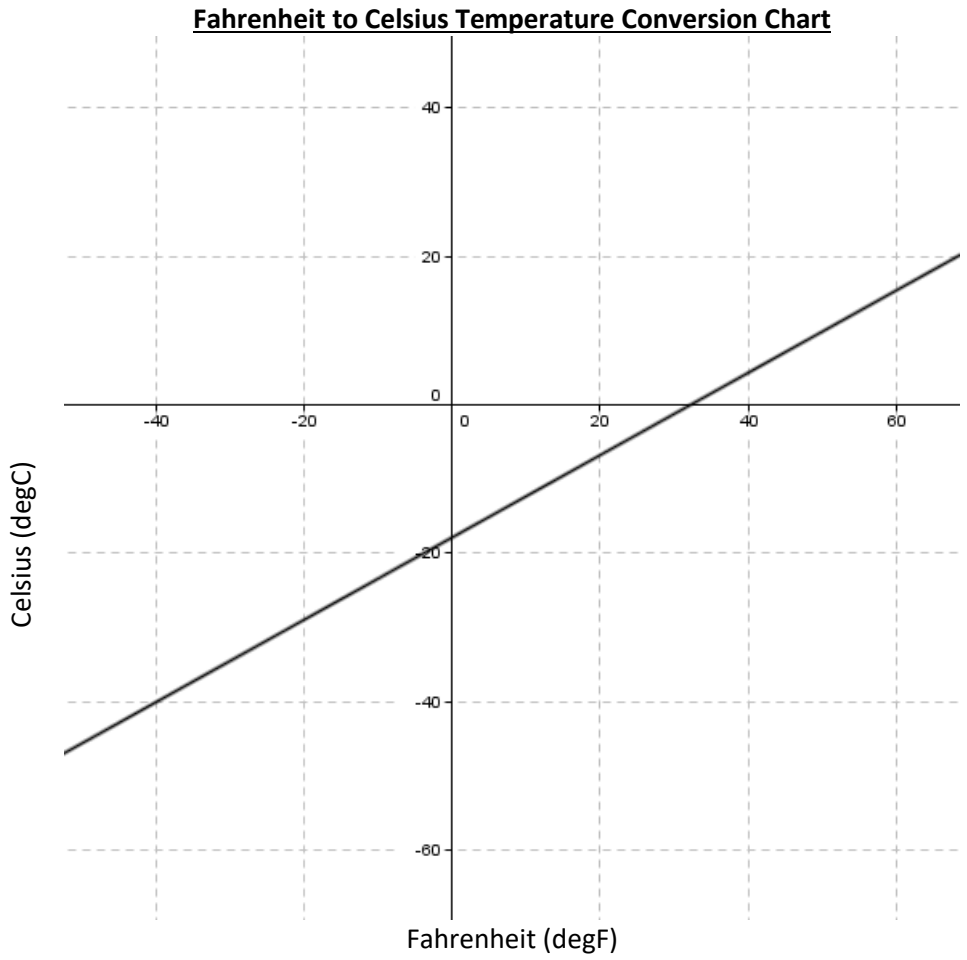
Paraglider's Descent	
Time, *t* (s)	**Altitude, *h* (ft)**
30	15,000
40	14,960
80	14,800
90	14,760

- Is the paraglider's rate of change in altitude over time constant? Justify your reasoning.

- What does the rate of change represent?

Problem 2:

The graph below represents the relationship between the temperature given in degrees Fahrenheit (°F) and the temperature given in degrees Celsius (°C).



- Estimate the rate of change in the Fahrenheit temperature *F* for every one-degree change in the Celsius temperature *C*. Be prepared to explain how you made your estimate.