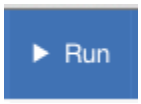
Student Activity Guide: Limitations of Representing Numbers with Bits Name _____
Unit 1 Lesson 8

Activity 3: JSFiddle and the alert() method

1. Open a browser window and go to http://jsfiddle.net. This website enables you to simulate code in a web page. We will use the part of page that has the label JavaScript.	
2. In JavaScript, the alert() method enables the user to create output in the form of an alert box. Place your cursor in the JavaScript box and enter the command: `alert("Hello Friends!")` The quotation marks are important because they tell JavaScript that 'Hello Friends!' Is the exact text that you want outputted.	
3. Now, find the Run button and click on it.	
4. If you typed the command correctly, you should see an alert box like this one. Click OK to continue.	
5. You can also use the alert() method to make calculations. Try to calculate how many seconds there are in one day. Use the * key for multiplication.	alert (60 * 60 * 24)

Activity 4: Precision Errors in Addition

1. Change the alert() command to: alert(4 + 7). Write the answer in the space to the right.	
2. Try this one: alert(0.1 + 0.2) Write the answer in the space to the right.	
3. Why do you think the computer produced this answer?	
4. Experiment on your own to find two other numbers that give an addition error. Write the numbers, and the incorrect answer in the space to the right.	
5. Investigate why these errors happen by entering in numbers such as 0.1 and 0.2 into a Binary-Decimal Converter. (http://www.mathsisfun.com/binary-decimal-hexadecimal-converter.html) What happened when the decimal numbers were converted to binary that can explain the addition errors?	