



Activity type	classroom <input checked="" type="checkbox"/> homework <input type="checkbox"/> independent learning <input type="checkbox"/> other <input type="checkbox"/>		
Activity objectives(s)	Understand the need for different types of test data Understand how to create a trace table for a sub program		
Activity resources(s)	Programming language		
Delivery mode	teacher led <input checked="" type="checkbox"/> student led <input type="checkbox"/>	Collaboration type	individual <input checked="" type="checkbox"/> pairs <input type="checkbox"/> groups <input type="checkbox"/>
Task description	<p>Students should create a short program which uses the input validation function in SCHOLAR Unit 1 Topic 7.6.</p> <p>They should then create a set of test data for the program which covers the three types of test data: normal, extreme, and exceptional. They should test their program with this data and document the output of the program.</p> <p>Note that the function should be tested using number of different parameters as well as sets of test data.</p> <p>They should then create a trace table for their program for each of the tests performed.</p> <p>If time is available, students could investigate the various debugging tools available in their chosen programming environment.</p>		



SCHOLAR Lesson Outline

Differentiation (Alternative use)	The first part of this activity could be used with National 5 students.
Hints & Tips	<p>Encourage students to create enough test data to generate a wide variety of trace tables by calling the function with a number of different parameters. If possible the trace table should cover calling the function with variables as well as values.</p> <p>The following pseudocode can be supplied to students:</p> <pre>FUNCTION getvalidItem(lowerlimit, upperlimit) RETURNS INTEGER RECEIVE userInput FROM (INTEGER) KEYBOARD WHILE userInput < lowerLimit OR userInput > upperLimit DO SEND "Input must be between "& lowerLimit "& " and "& upperLimit TO DISPLAY RECEIVE userInput FROM (INTEGER) KEYBOARD END WHILE RETURN userInput END FUNCTION</pre>
Notes	<p>SCHOLAR links:</p> <p>Unit 1 Topics 7.6, 8.2 and 8.4.2</p>