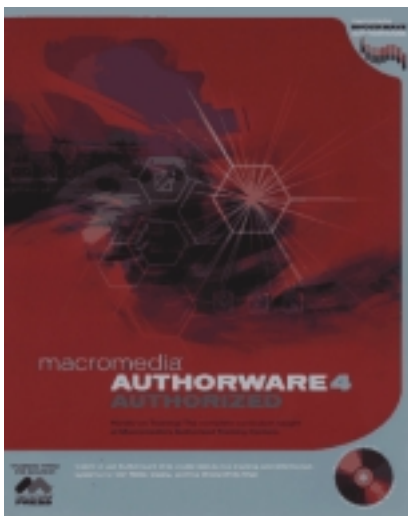


# HOW TO

# CREATE A COMPUTER-BASED TEST

## WITH AUTHORWARE

This guide will show you how to create a computer-based test using Authorware 4.0 or higher. These instructions are for use on both Macintosh and IBM (Windows) computers.



**It is recommended that you purchase *Macromedia Authorware 4 Authorized*, by Macromedia Press to accompany this guide.** The textbook can be found at most major bookstores and on the Internet for \$40.00. In the back of the book, there is a CD-ROM containing a demo version of Authorware 4.0. The demo version of the software can also be downloaded for free at [www.macromedia.com](http://www.macromedia.com). The textbook outlines a variety of means to create a computer-based test with Authorware.

**There are four main steps in creating a computer-based test:**


- |  |                |
|--|----------------|
| 1. Start Authorware & Design a Background          | <i>Page 1</i>  |
| 2. Write Your Test Questions & Create Interactions | <i>Page 12</i> |
| 3. Create a Score Display                          | <i>Page 56</i> |
| 4. Package Your Piece                              | <i>Page 65</i> |

# 1. Start Authorware & Design a Background



It is important to design a background so that you can build upon it in future steps.

## Action Steps

What you type or do	What Happens
1. Click the <b>Start</b> button:  	Start options are viewed.
2. Select the <b>Programs</b> folder.	Program options are listed.
3. Locate the <b>Macromedia Authorware</b> folder.	Folder options are listed.
4. <b>Click the Authorware icon.</b>	The Authorware application begins.
5. From the top menu bar, select <b>Modify</b> , and then <b>File</b> , and then <b>Properties</b> .	The <i>Properties</i> window appears.



If you are a Macintosh user, locate the Authorware icon and double-click it to open it.



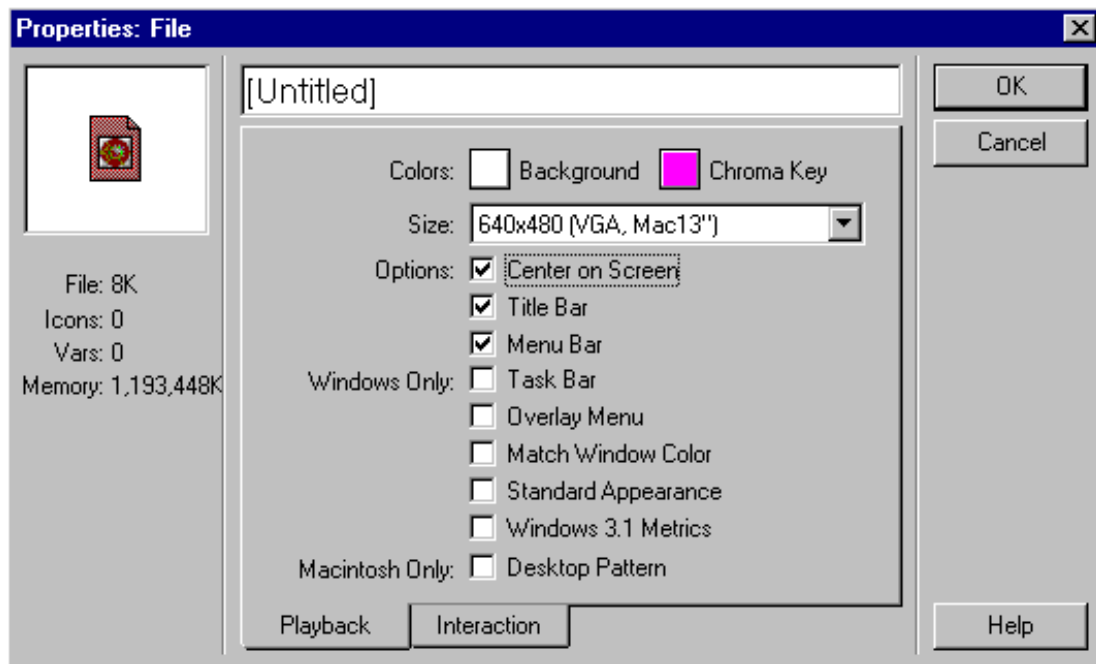
If you are using Authorware 5 or higher, quit out of the *Knowledge Objects* window.



Or, press the Control key, the Shift key, and the letter D at the same time (*Ctrl+Shift+D.*)



Continued....



### Action Steps

What you type or do	What Happens
6. In the <b>Size</b> pull down menu, select <b>640x480 (VGA, Mac13”)</b> if not already selected.	The screen size for the program piece will be set to a common screen size.
7. <b>Click the Center on Screen box</b> so that it is check marked.	The window will be centered on the screen when the Authorware piece is packaged and made into an application.
8. <b>Click the Title Bar box</b> so that it is check marked.	A title bar will appear on the window of the application when it is packaged.
9. <b>Click the Menu Bar box</b> so that it is check marked.	A top menu bar will be created with “Quit” as one of the menu options.

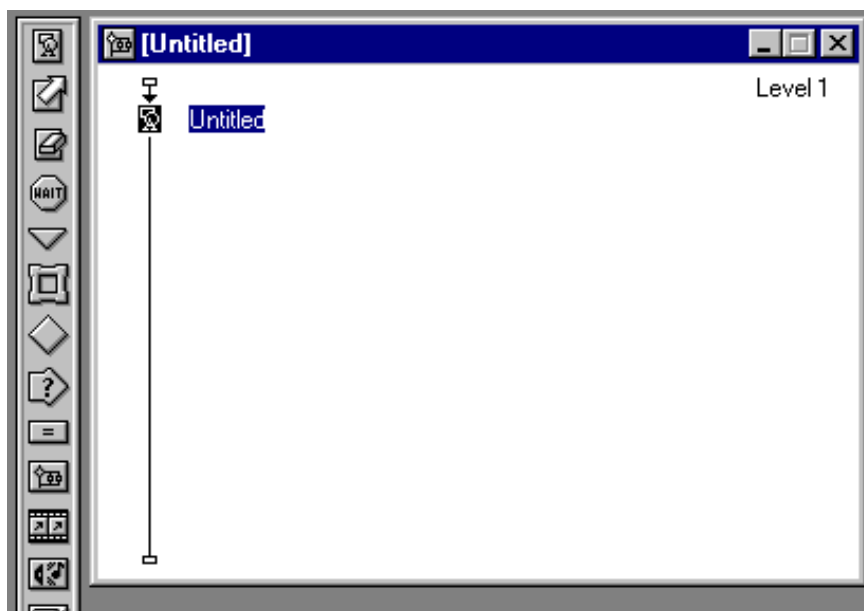
*Continued....*

**Action Steps**

What you type or do	What Happens
<p>10. <b>Click the OK button.</b></p>	<p>The file property settings are set.</p>
<p>11. <b>Locate the Display icon</b> (the icon on the top of the Icon Palette located to the left of the screen).</p> <div> </div>	<p>The <i>Display</i> icon is located.</p>
<p>12. Place the mouse over the Display icon, hold the left mouse button down, and <b>drag the Display Icon onto the flowline</b> as shown below:</p>	<p>A <i>Display</i> icon will be placed on the flowline.</p> <p><i>Drag</i> is a term used to describe the procedure of holding the mouse button down over an object and moving the object to a new location.</p>



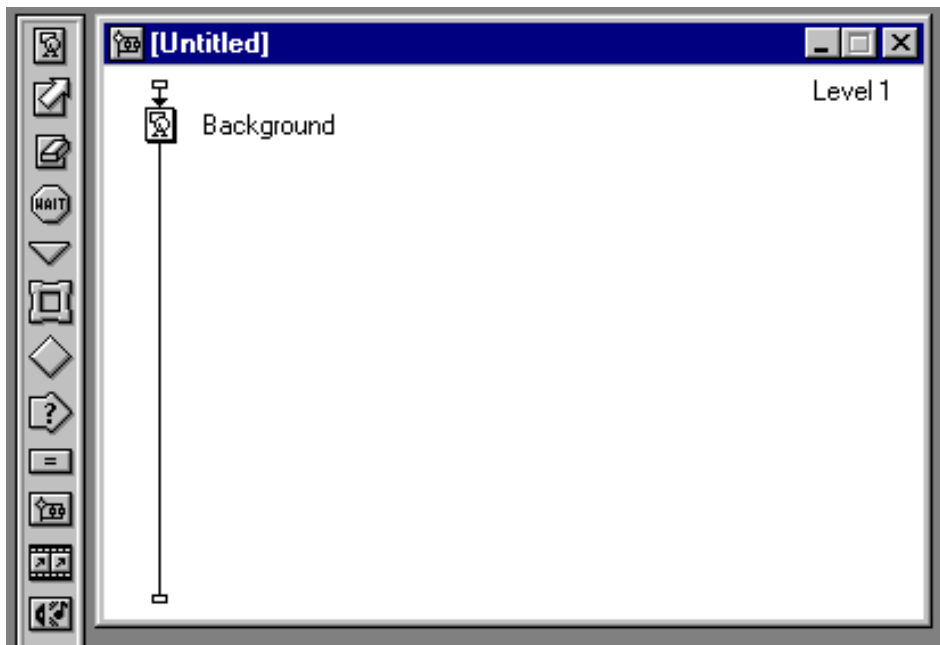
The Icon Palette looks like this:



*Continued....*

### Action Steps

What you type or do	What Happens
13. Type: <i>Background</i>	The <i>Display</i> icon is named "Background".



14. <b>Double-click the Background Icon</b> to open it.	A blank Presentation Window appears. The Presentation Window displays how your application will look.
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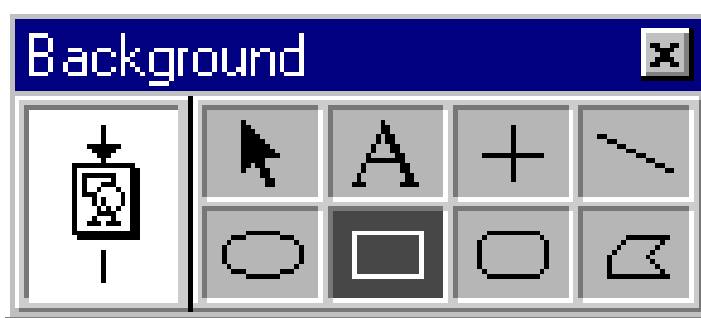
*Continued....*

### Action Steps

What you type or do	What Happens
15. <b>Click the Rectangle Tool</b> from the <i>Background Tool Palette</i> .	The <i>Rectangle Tool</i> is selected.

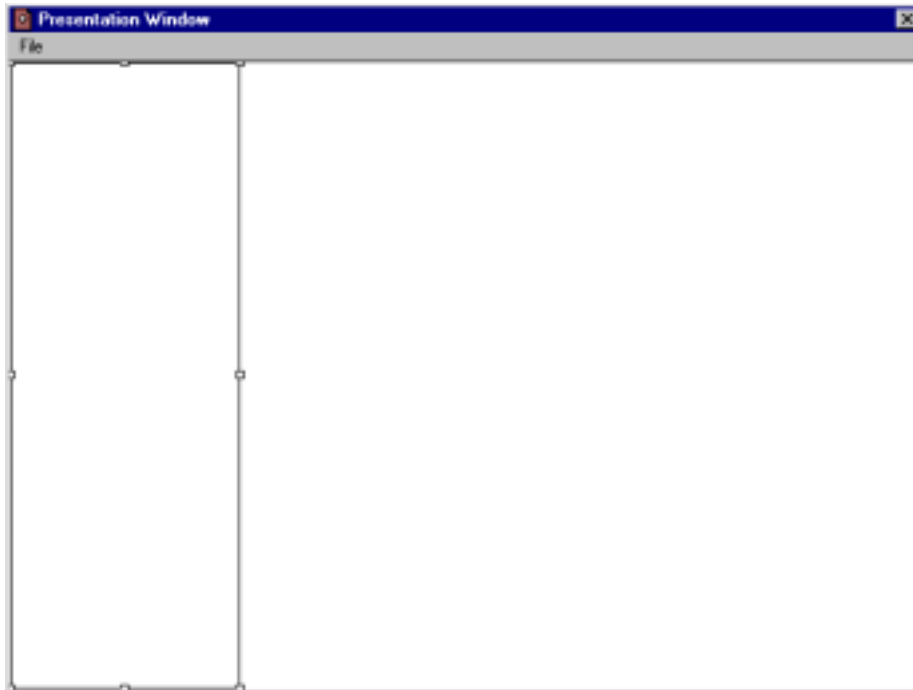


The Tool Palette is located to the right of your screen.



16. From the top left corner of your Presentation Window, <b>draw a rectangle in the left-hand corner of the Presentation Window</b> by holding the left mouse button down and dragging the mouse to the right (as shown on the next page).	A rectangle is drawn.
---	-----------------------

*Continued...*



## Action Steps

What you type or do	What Happens
17. From the top menu bar, select <b>Window</b> , <b>Inspectors</b> , and then <b>Fills</b> .	The <i>Fills</i> palette is displayed.



The Fill Palette can also be displayed by pressing the *Control* key and the *D* key at the same time (Ctrl+D).



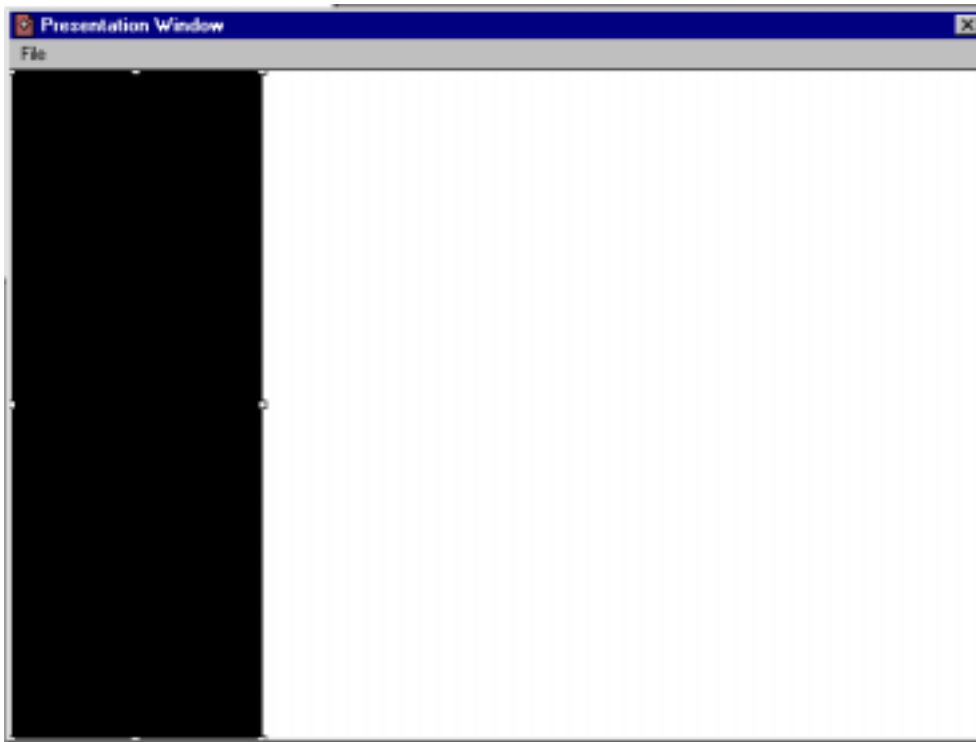
*Continued....*

### Action Steps

What you type or do	What Happens
18. <b>Click the black box</b> on the <i>Fill Palette</i> .	Solid fill is selected, and the rectangle becomes solid black.



Other fills can be selected depending upon the design you want to create.



19. Repeat Action Steps #8 and #9 on Page 4 of this guide and <b>create another box in the Presentation Window as shown on the next page.</b>	Another rectangle is drawn.
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*Continued....*



## Action Steps

What you type or do	What Happens
20. <b>From the top menu bar, select <i>Window</i>, then <i>Inspectors</i>, and then <i>Colors</i>.</b>	The Colors Palette will appear.



You can also activate the Color Palette by pressing Control+K on the keyboard.



*Continued....*

### Action Steps

What you type or do	What Happens
21. <b>Click a yellow box</b> in the <i>Color Palette</i> .	The rectangle changes to yellow.
22. <b>Click the Pointer Tool</b> on the Background Tool Palette.	The <i>Pointer Tool</i> is selected.
23. <b>Click on the rectangle you most recently drew.</b>	White boxes appear around the rectangle.
24. Hold the mouse button down over the rectangle <b>and move rectangle so that it touches the left of the first rectangle</b> as shown below:	The two rectangles touch towards the top of the screen.



If the rectangle did not change color, click on the rectangle and repeat this step.



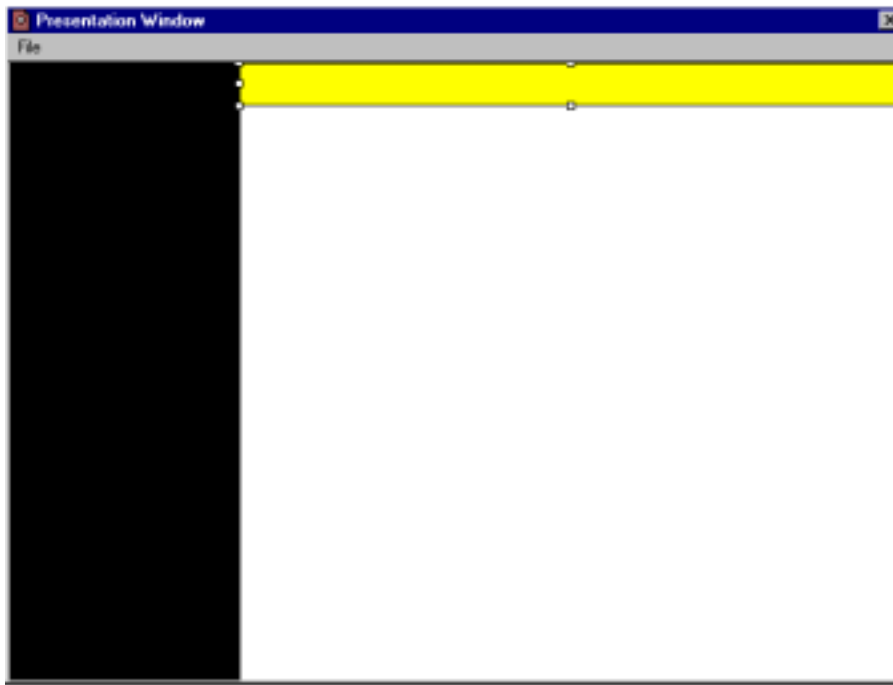
Continued....

## Action Steps

What you type or do	What Happens
25. Click on one of the white boxes to the right of the rectangle, hold the mouse button down, and <b>stretch the rectangle to the right</b> .	The rectangle is stretched to reach the left-hand side of the Presentation Window.



Dragging a white square on an object allows you to resize the object.



26. It is now time to save your work.  From the top menu bar, select <b>File</b> , and then <b>Save As</b> .	The rectangle is stretched to reach the left-hand side of the Presentation Window.
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*Continued....*



### Action Steps


What you type or do	What Happens
27. From the top <i>Save In</i> pop down menu, <b>locate the Desktop</b> .	The contents of the Desktop are displayed.
28. <b>In the File Name textbox, type: <i>Quiz</i></b>	The file is named “Quiz”.
29. <b>Click the Save button.</b>	The file is saved.

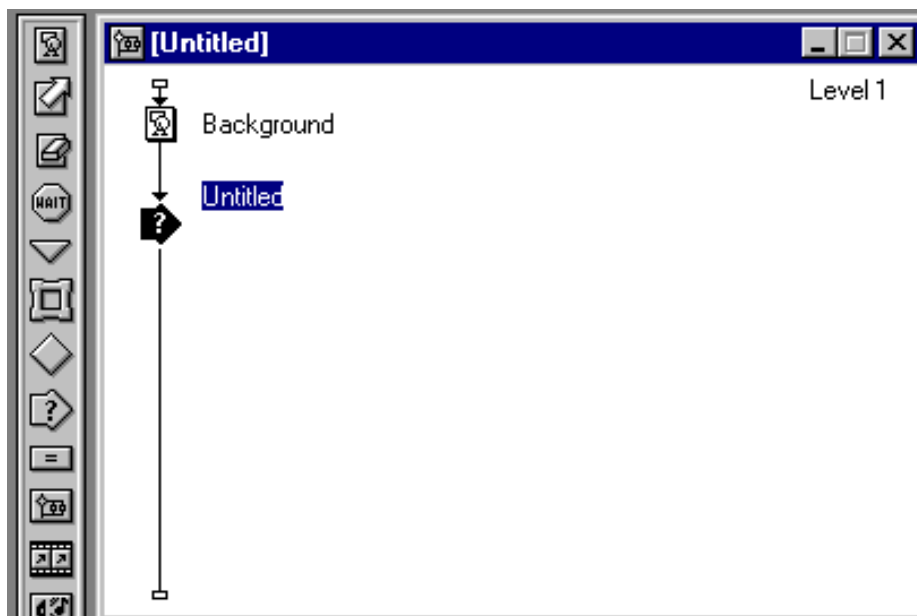
## 2. Write Your Test Questions & Create Interactions



Now that the background is completed, interactions for test questions can be created.

### Action Steps

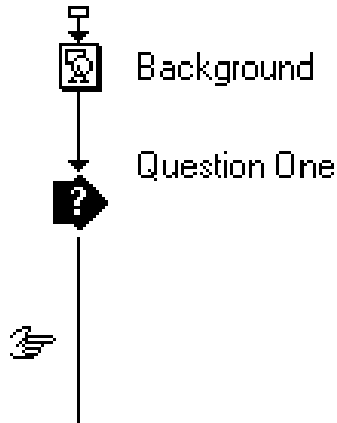
What you type or do	What Happens
1. <b>Click on the Flowline.</b>	The <i>Untitled Flowline</i> becomes the active window.
2. <b>Drag an Interaction Icon onto the Flowline</b> as shown below:  	An <i>Interaction Icon</i> from the <i>Icon Palette</i> is placed on the <i>Flowline</i> .



Continued....

**Action Steps**

What you type or do	What Happens
3. <b>Type: <i>Question One</i>.</b>	The Interaction Icon is named <i>Question One</i> .



4. <b>Hold the Shift Key down on the keyboard and double-click the Question One Icon.</b>	The <i>Question One</i> Interaction Icon will open with the Background displayed.
5. <b>Click the Text Tool from the Question One Tool Palette:</b>	The Text Tool is selected.




If the background disappears, click on the Background Icon and repeat this step.

*Continued....*

## Action Steps

What you type or do	What Happens
6. <b>Click the left side of the blank white space on your background</b> where you would like type a question.	A text box appears.



7. From the top menu bar, select <b>Text</b> , then <b>Font</b> , and then <b>Times New Roman</b> .	Times is selected as the font.
8. From the top menu bar, select <b>Text</b> , then <b>Size</b> , and then <b>14</b> .	A text will appear with the default text at size 14.
9. <b>Click the Bold button from the top toolbar:</b> 	The text will be bold.

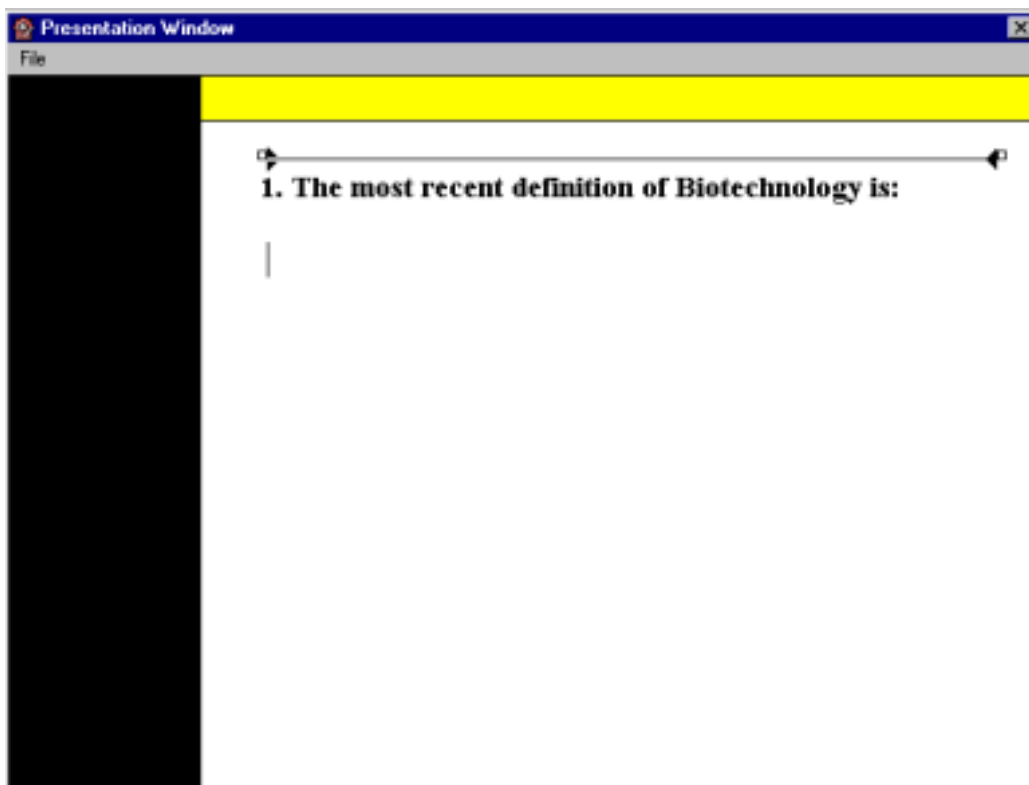
*Continued....*

## Action Steps

What you type or do	What Happens
10. <b>Type the beginning of your first multiple choice question, and then press return twice.</b>	The question is typed.



You may need to resize the background if your questions do not fit. (See Action Steps 23 through 25, Page 9, for review)



11. <b>From the top menu bar select Text, and then Size, and then 12.</b>	The font size for the possible answers has been changed to a smaller size.
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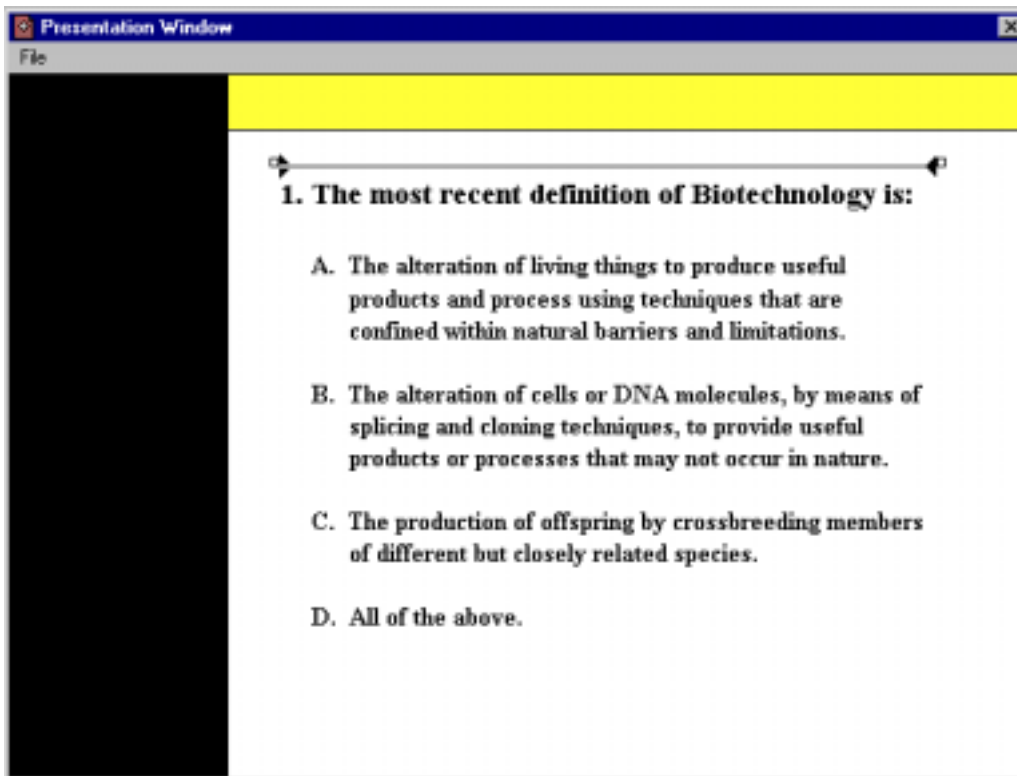
*Continued....*

**Action Steps**


What you type or do	What Happens
12. <b>Type the possible answers to the question.</b>	Possible answers A, B, C, and D are typed.



Use the return key and the spacebar to line up the text as illustrated below.

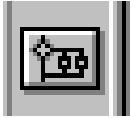


Tab features are available in Authorware, but are beyond the scope of this guide. Review books on Authorware for additional information.

13. <b>Click the Save All button on the top toolbar:</b>  	The work is saved.
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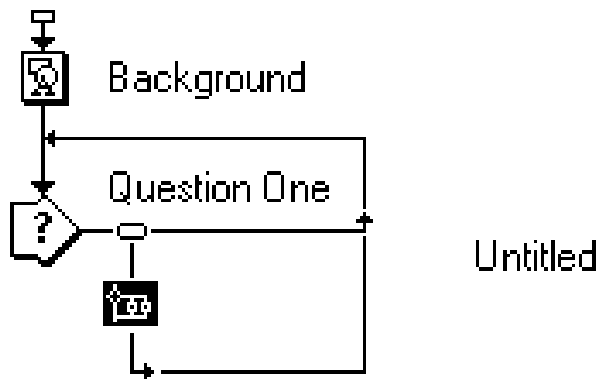
*Continued....*

### Action Steps

What you type or do	What Happens
14. <b>Click the Flowline.</b>	The <i>Flowline</i> becomes active.
15. <b>Drag a Map Icon to the right of the Question One icon on the Flowline.</b>  	A <i>Response Type</i> prompt appears.



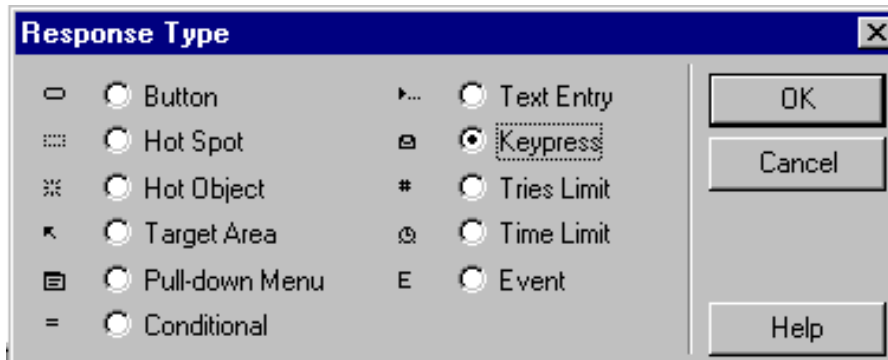
The Map Icon is used to group a set of icons together on the flowline.



*Continued....*

## Action Steps

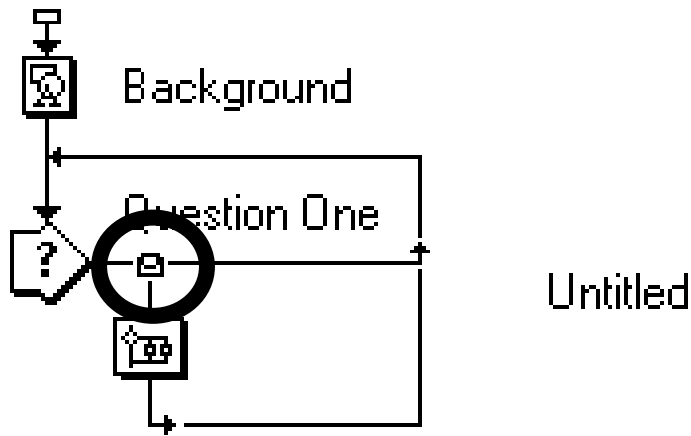
What you type or do	What Happens
16. From the <i>Response Type</i> prompt, that automatically appeared when you placed the Map Icon to the right of the Question One Icon, <b>select Keypress and then click the OK button.</b>	A <i>Keypress</i> response for the Question One interaction is selected.



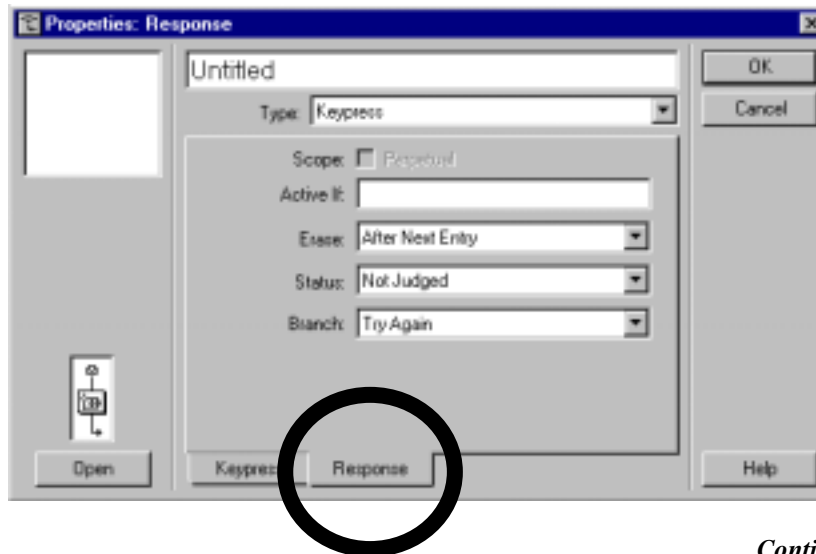
*Continued....*

**Action Steps**

What you type or do	What Happens
17. <b>Double-click the Keypress icon</b> (circled below) at the top of the Map Icon.	The properties of the <i>Keypress</i> interaction are displayed.



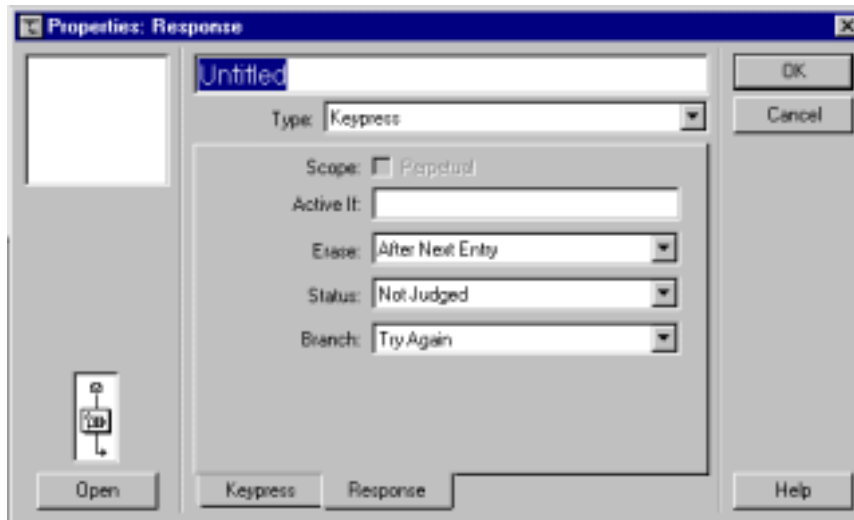
18. <b>Click the Response tab</b> near the bottom of the <i>Properties Response</i> window.	The response options are displayed.
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Continued....

## Action Steps

What you type or do	What Happens
19. Double-click the word <i>Untitled</i> .	<i>Untitled</i> is highlighted.



20. Type: a A	The line “ ” in Authorware means “or”.
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The line key “|” can be found on most keyboards directly above the *Return* or *Enter* key.

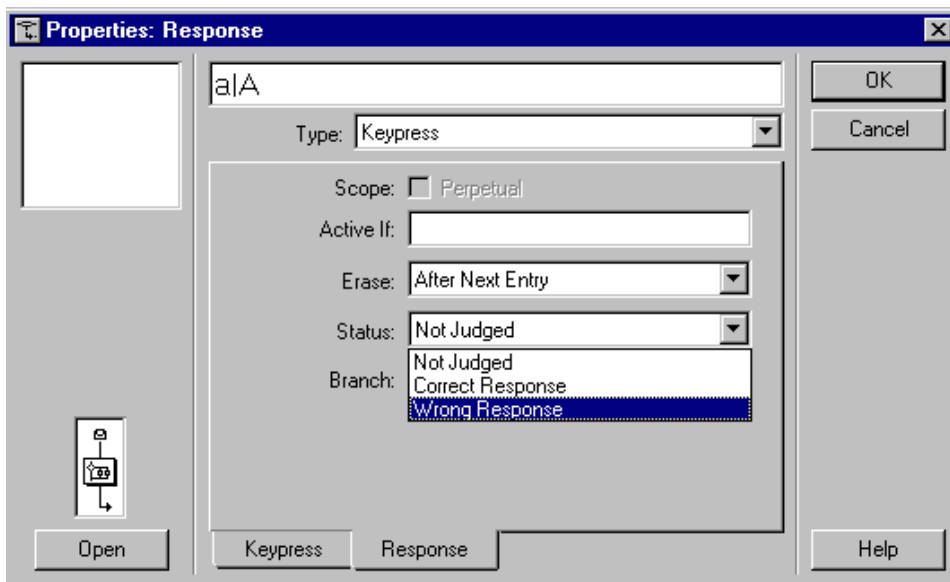
*Continued....*

**Action Steps**

What you type or do	What Happens
21. From the <i>Status</i> option, click the <b>down arrow</b> and select <b>Wrong Response</b> .	The response of letter “a” or “A” will be judged as the wrong answer to question one.

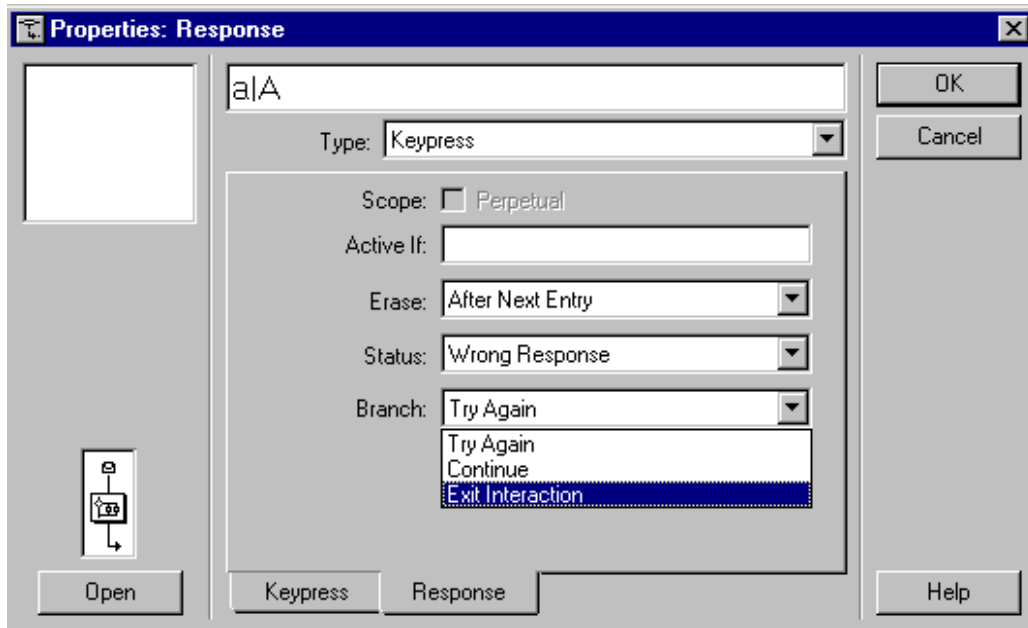


If “A” is the correct answer to Question One, select *Correct Response* from the Status option.



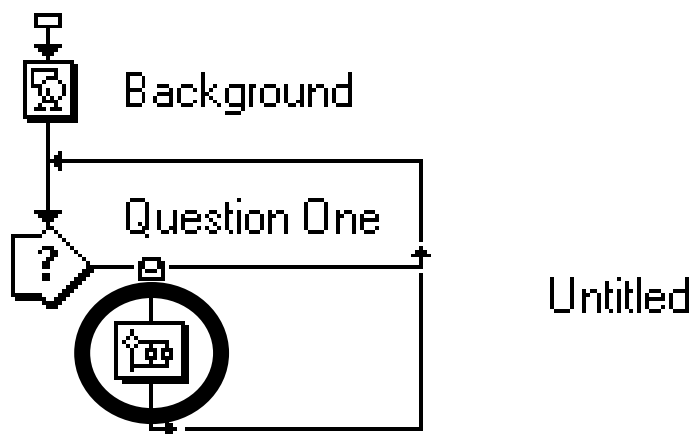
22. In the <i>Branch</i> option, click the down arrow, and select <b>Exit Interaction</b> as displayed on the next page.	<i>Exit Interaction</i> is selected.
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*Continued....*



**Action Steps**

What you type or do	What Happens
23. <b>Click the OK button.</b>	The Response Properties are set and you return to the Flowline.
24. <b>Double-click the Map Icon on the flowline:</b>	The contents of the Map Icon are displayed.



*Continued....*

### Action Steps

What you type or do	What Happens
25. <b>Drag a Display Icon from the Icon Palette onto the Flowline of a A as shown below:</b>	A new <i>Display Icon</i> is placed on the flowline within the a A Map icon.



When the letter “A” is pressed on the keyboard as a response, the contents of this new display icon will be shown.




26. <b>Type: <i>Feedback</i></b>	The <i>Display Icon</i> is named <i>Feedback</i> .
27. <b>Hold the Shift key down, and double-click the Feedback icon.</b>	The tool pallet will appear to prompt you to create a display for the <i>Feedback</i> icon.

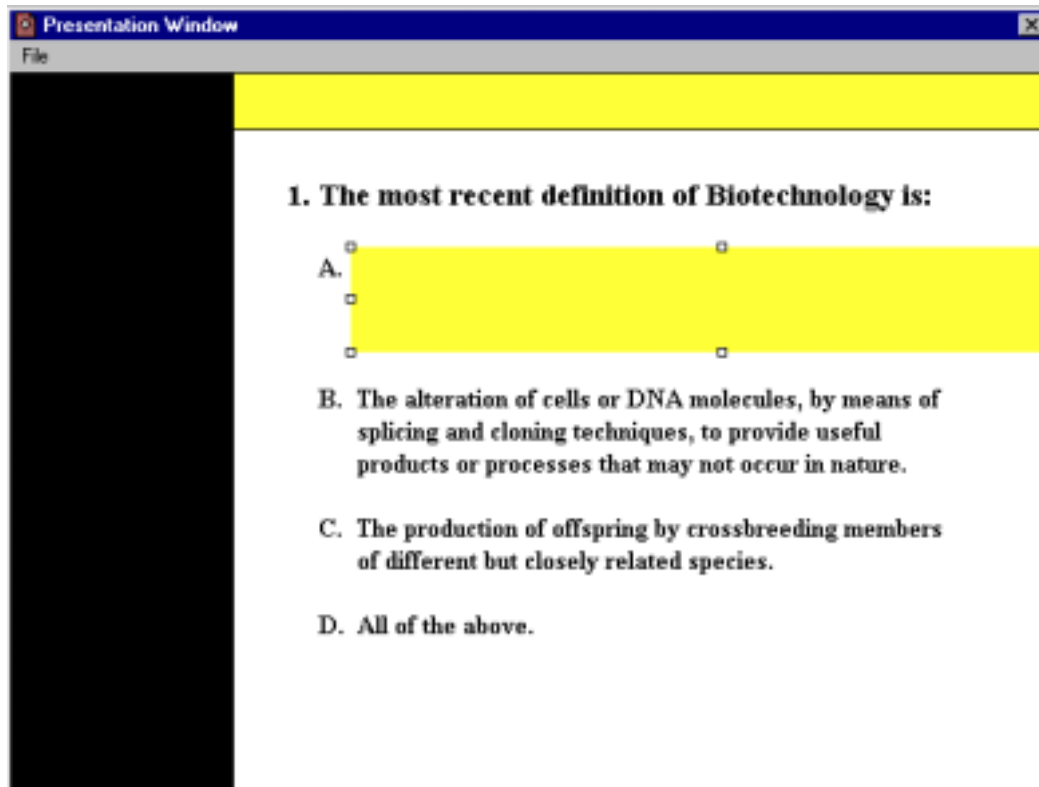


If you forget to hold the *Shift* key down, all the contents on the screen will no longer be displayed. If this happens, hold the *Shift* key down and click the *Background*, the *Question One* icon and the *Feedback* icon.

*Continued....*

### Action Steps

What you type or do	What Happens
<p>28. <b>Click the Rectangle tool from the Feedback Palette:</b></p>  <p>The screenshot shows a 'Feedback' palette window with a grid of icons. The icon for a rectangle is highlighted with a dark background, indicating it is the selected tool.</p>	<p>The <i>Rectangle Tool</i> is selected.</p>
<p>29. <b>Draw a rectangle that covers answer A as shown below:</b></p>	<p>A box for feedback text is created.</p>



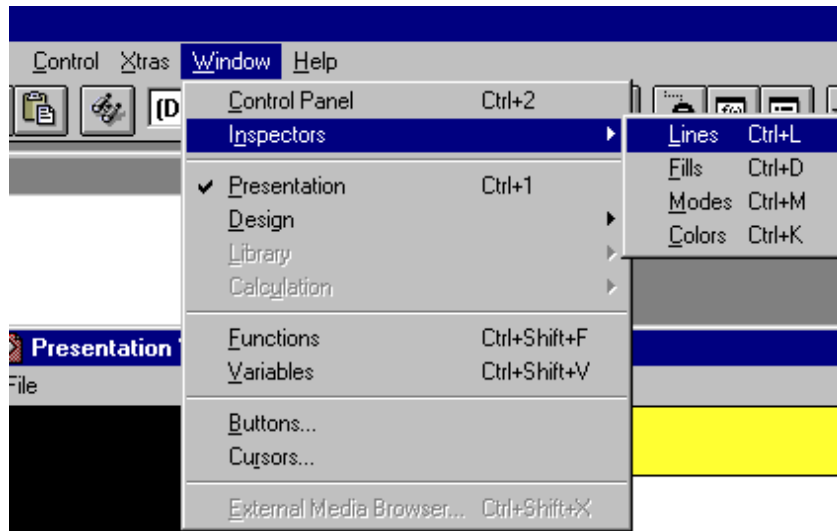
Continued...

### Action Steps

What you type or do	What Happens
30. <b>From the top menu bar, select Window, then Inspectors, and then Lines.</b>	The <i>Line Palette</i> appears.



The *Line Palette* can also appear by pressing the Control key and the letter “L” at the same time (*Ctrl+L*)

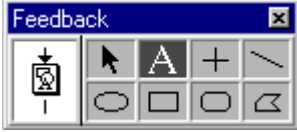



31. <b>Click the dotted “No Line” option on the Line Palette so that it is selected as shown below:</b>	There is no line around the feedback box.
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*Continued....*

## Action Steps

What you type or do	What Happens
<p>32. <b>Click the Text tool from the Feedback Palette:</b></p> 	<p>The Text tool is selected.</p>
<p>33. <b>Click the mouse over the top left corner of the feedback box so that a text box appears.</b></p>	<p>A text box is created.</p>
<p>34. From the top menu bar, select <b>Text</b>, and then <b>Font</b>, and select <b>Times New Roman</b>.</p>	<p>The Times font is selected.</p>
<p>35. From the top menu bar, select <b>Text</b>, and then <b>Size</b>, and select <b>12</b>.</p>	<p>The font size of 12 is selected.</p>
<p>36. <b>Click the Bold button on the top toolbar.</b></p> 	<p>The font will be in bold.</p>

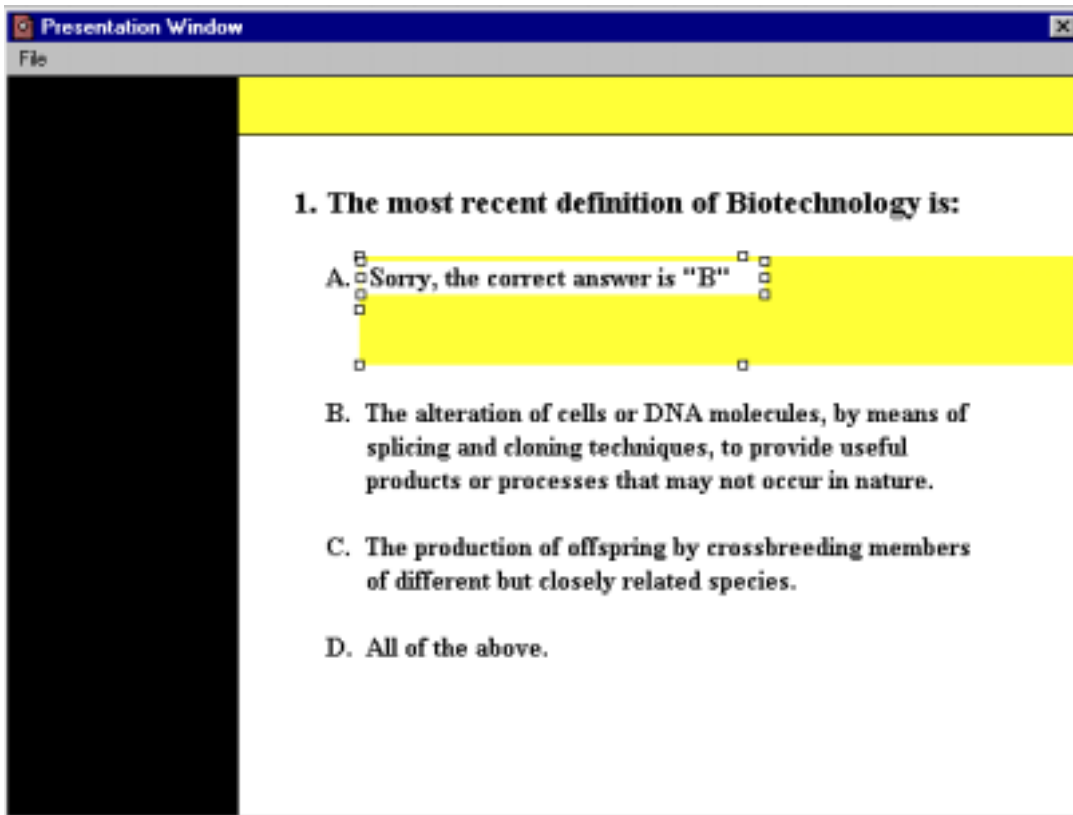
*Continued....*

**Action Steps**

What you type or do	What Happens
37. <b>Type the feedback for selecting the letter “A”.</b> (ie. Sorry, the correct answer is “B”)	A feedback statement is entered.

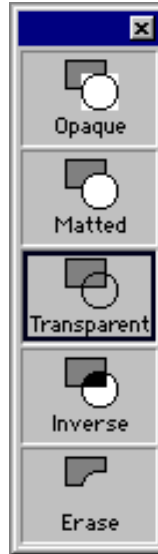


If the letter “A” is the correct answer, type a positive feedback statement in the feedback box. (i.e. That’s correct!)



38. From the top menu bar select <b>Window</b> , then <b>Inspectors</b> , and then <b>Mode</b> .	The mode options are displayed.
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*Continued....*



**Action Steps**

What you type or do	What Happens
39. <b>Click the Transparent box</b> so that it is selected.	The text box of the feedback becomes transparent, allowing the background color (yellow) to show through.
40. <b>Use the arrow keys on the keyboard to line up the text with the letter A</b> as shown below:	The text is aligned with the question text.

A.  Sorry, the correct answer is "B"

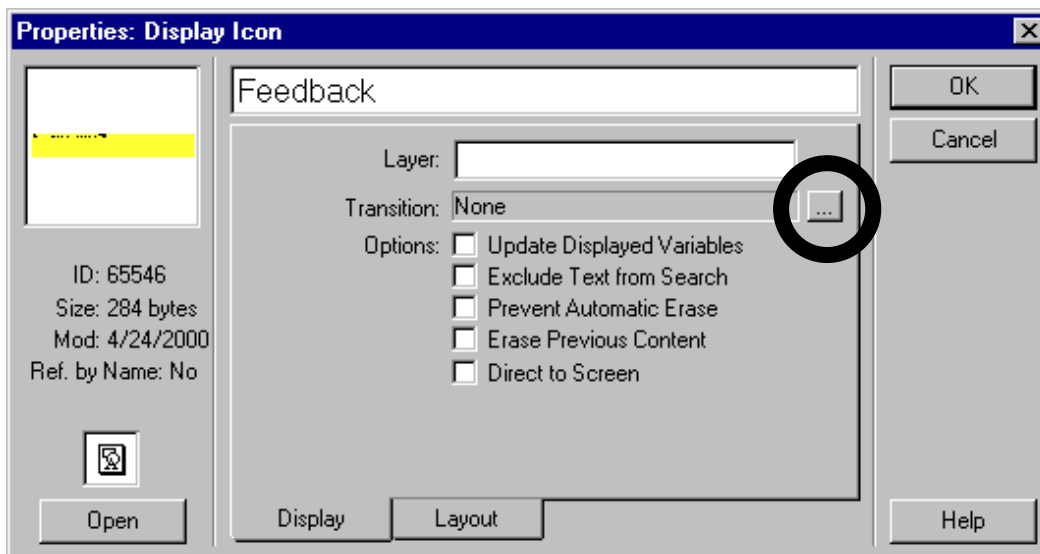
*Continued....*


**Action Steps**

What you type or do	What Happens
41. <b>Click once on the Feedback icon on the flowline.</b>	The flowline becomes active, and Feedback is highlighted.
42. <b>Press Ctrl+I</b> (The Control key and the letter I on the keyboard at the same time).	The Properties window for the Feedback Icon are displayed.

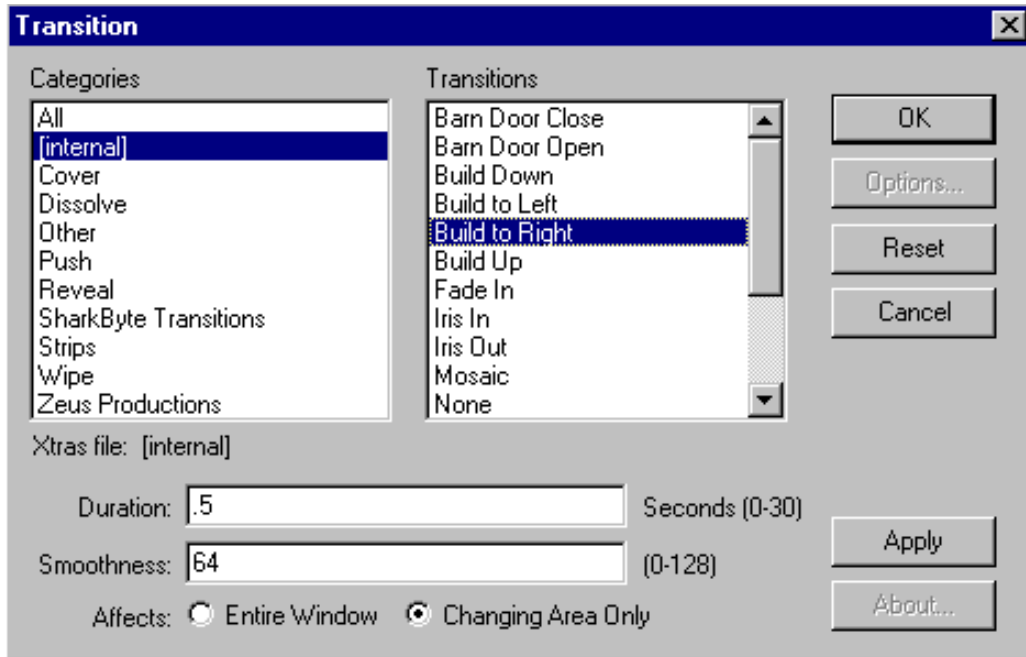


Or, from the top menu bar, select *Modify*, and then *Icon*, and then *Properties*. All icons have property options that allow you to perform more functions.



<p>43. <b>Click the dotted square</b> next to the Transition text box <b>which is circled in the above illustration:</b></p> <div style="text-align: center;">  </div>	The flowline becomes active, and Feedback is highlighted.
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*Continued....*



### Action Steps

What you type or do	What Happens
44. In the right-hand Transitions column, <b>Click once on Build To Right</b> so that it is highlighted.	The <i>Build To Right</i> transition is selected so that the <i>Feedback</i> box will build to the right when the letter A is pressed on the keyboard.
45. <b>Click the OK button.</b>	The transition is set.
46. <b>Click the OK button</b> again to exit the <i>Properties Display</i> Icon window.	The settings are accepted.



Although a variety of transitions are available, select *Build to Right* for now.

If the transition is not visible, select *Internal* in the left-hand column as shown in the above illustration.

*Continued....*

## Action Steps

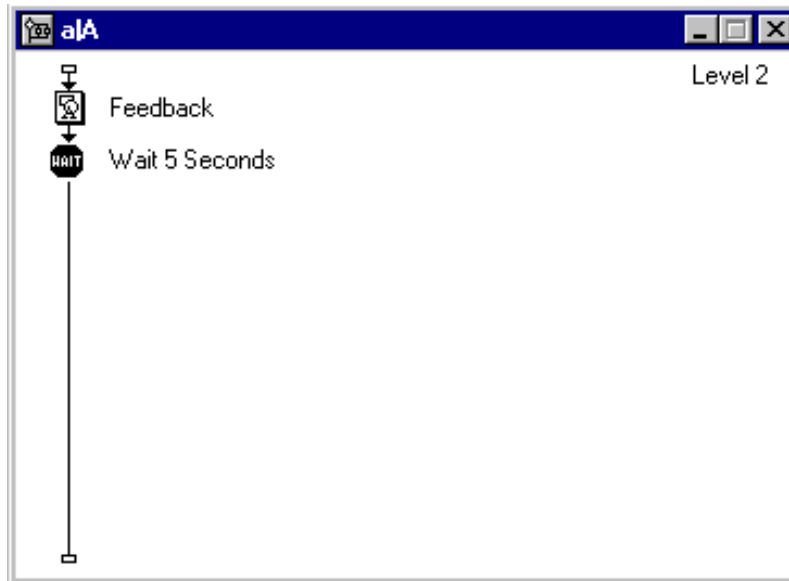
What you type or do	What Happens
<p>47. <b>Drag a <i>Wait</i> icon from the Icon Palette <b>onto the Flowline, below the <i>Feedback</i> icon as shown below:</b></b></p> <div> </div>	<p>A Wait icon is placed on the flowline.</p>
<p>48. <b>Type: <i>Wait 5 Seconds</i></b></p>	<p>A name is given to the Wait icon.</p>



The *Wait* icon allows you to specify a pause before the next action is taken on the flowline.

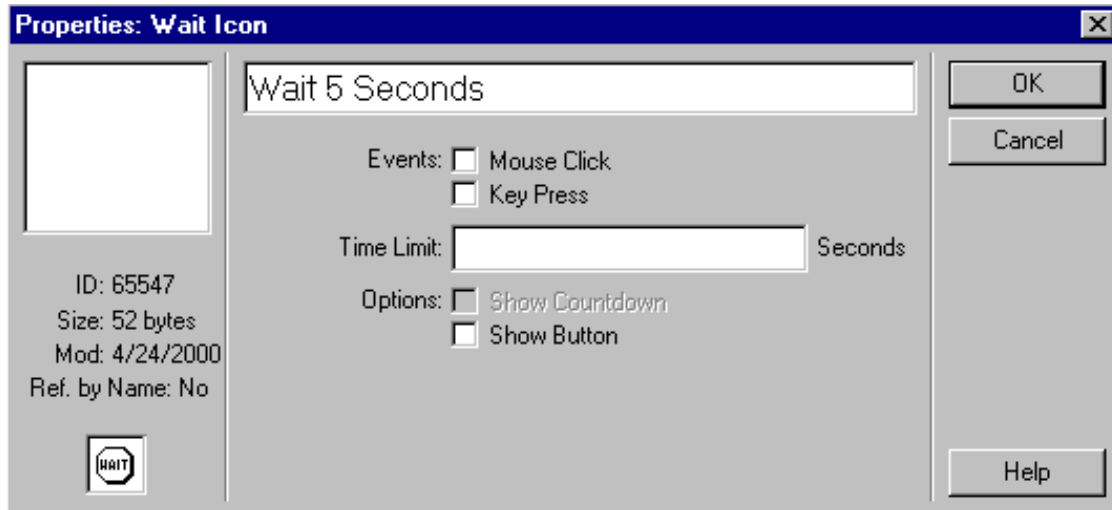


Names for most icons are optional. They do not always control what the icon does. However, it is a good practice to name every icon you place on the flowline. See the *IconTitle* Variable in the Authorware text for more information.



<p>49. <b>Double-click the Wait icon.</b></p>	<p>The properties of the Wait icon are displayed.</p>
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*Continued....*



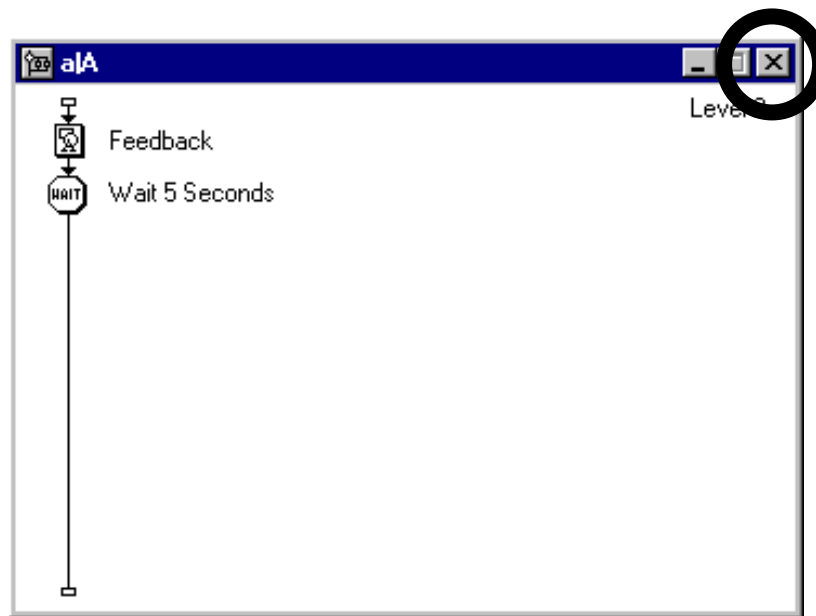
### Action Steps

What you type or do	What Happens
50. <b>Deselect the Key Press check box</b> so that there is no check mark as shown above.	The presentation will pause without a press of a key by the user on the keyboard.
51. <b>Deselect the Show Button check box</b> so that there is no check mark as shown above.	A “Continue” button will not be placed in your presentation, requesting the user to press before continuing.
52. <b>In the Time Limit text box, type: 5</b>	The presentation will pause for five seconds before moving to the next display on the flowline.
53. <b>Click the OK button.</b>	The wait settings are accepted.

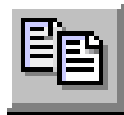
*Continued....*

## Action Steps

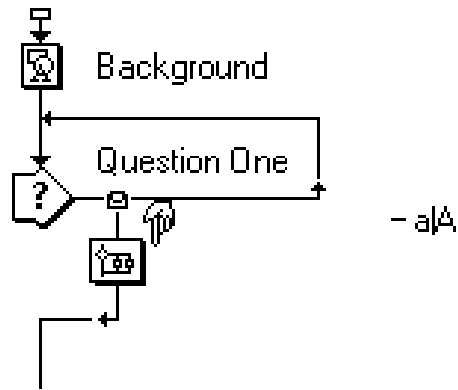
What you type or do	What Happens
54. <b>Click the close box for the a A window.</b> <i>(Click the “X” circled below)</i>	The flowline for the a A response is closed.




55. <b>Click the Copy button</b> on the tool bar located at the top of your screen.	The Map Icon is copied.
---	-------------------------




*Continued....*

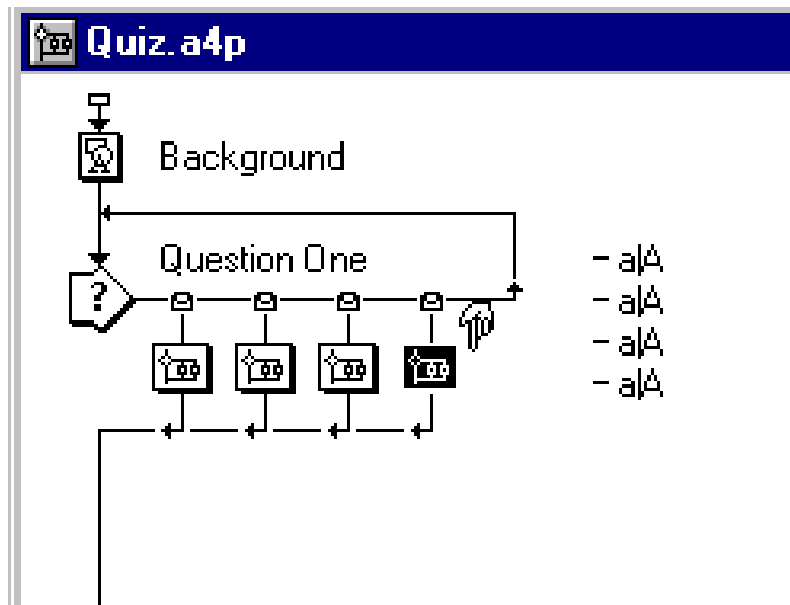


**Action Steps**

What you type or do	What Happens
56. <b>Click to the right of the Map icon so that a hand appears as illustrated above.</b>	A hand object appears to indicate where you can paste an object.
57. <b>Click the Paste button.</b>  	A new Map Icon is pasted to the left of the <i>-a/A</i> Icon.
58. <b>Click the Paste button again.</b>	Another Map Icon is created.
59 <b>Click the Paste button once more</b> so that the flowline appears the same as the illustration on the next page.	An additional Map Icon appears.

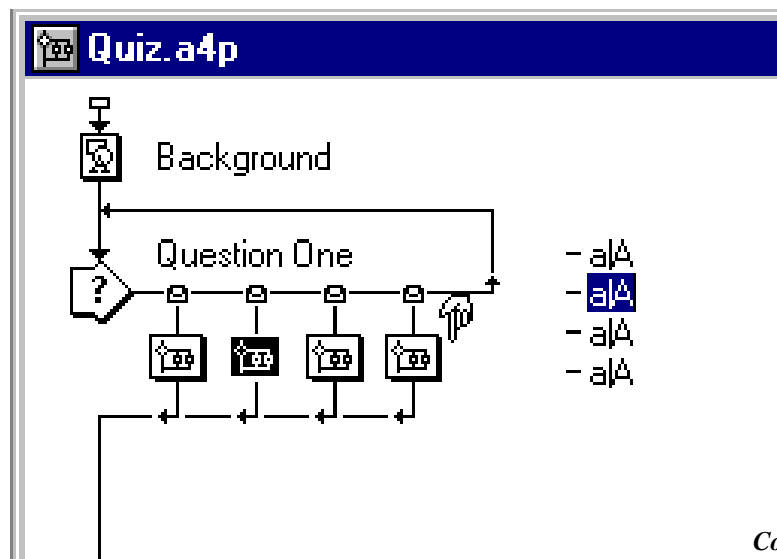
 By using the Paste button, you will create responses for B, C, and D.

*Continued....*



**Action Steps**

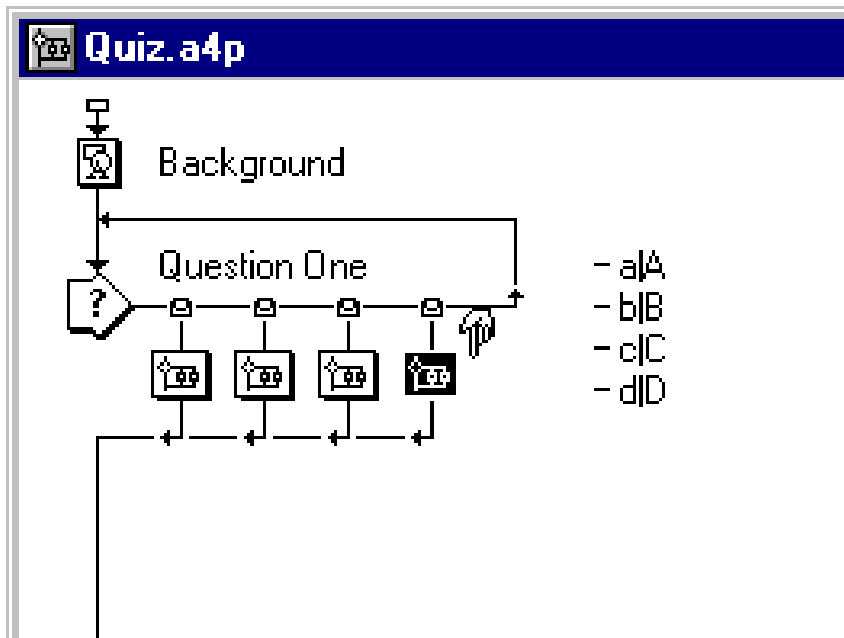
What you type or do	What Happens
60. <b>Click the second Map icon so that it is highlighted</b> as shown below:	The second from the right Map Icon is highlighted.



*Continued....*

### Action Steps

What you type or do	What Happens
61. <b>Type: <i>b/B</i></b>	b B is typed .
62. <b>Press Return</b> (or Enter) on the Keyboard.	The next Map Icon is highlighted.
63. <b>Type: <i>c/C</i></b>	c C is typed.
64. <b>Press Return</b>	The next Map Icon is highlighted.
65. <b>Type: <i>d/D</i></b>	d D is typed.



*Continued....*

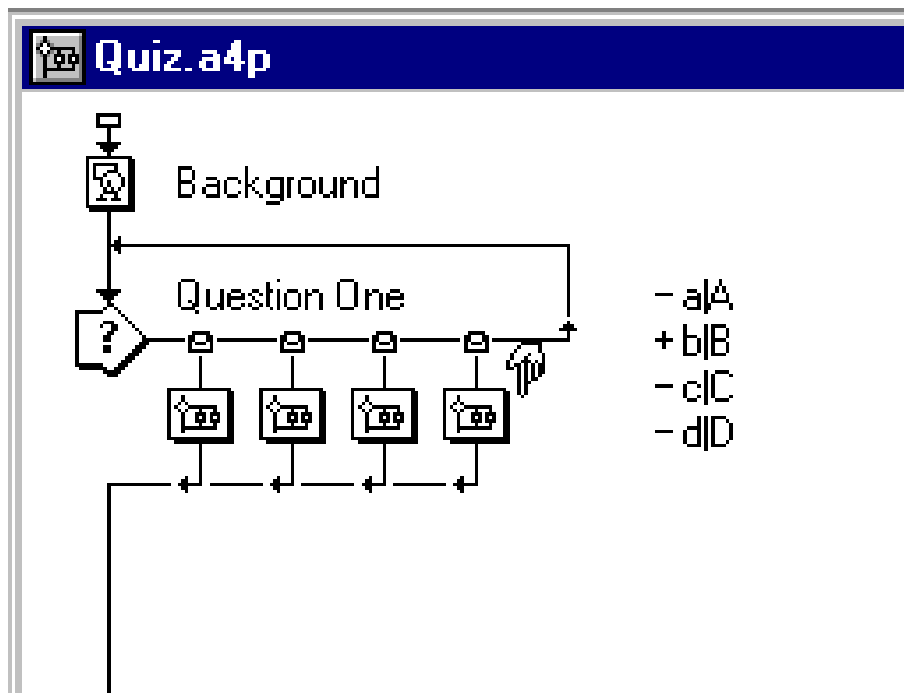
### Action Steps

What you type or do	What Happens
<p>66. <b>Hold the Control Key (Ctrl) down on the keyboard and Click the <i>negative sign</i> on the b B Icon until it becomes a positive.</b></p> <p><i>NOTE: If “B” is not the correct answer to your question, locate the correct answer, and click the negative sign on the letter until it becomes positive.</i></p>	<p>The b B Keypress response becomes the correct answer.</p>



A negative symbol indicated a wrong answer and a positive symbol indicates a correct answer.

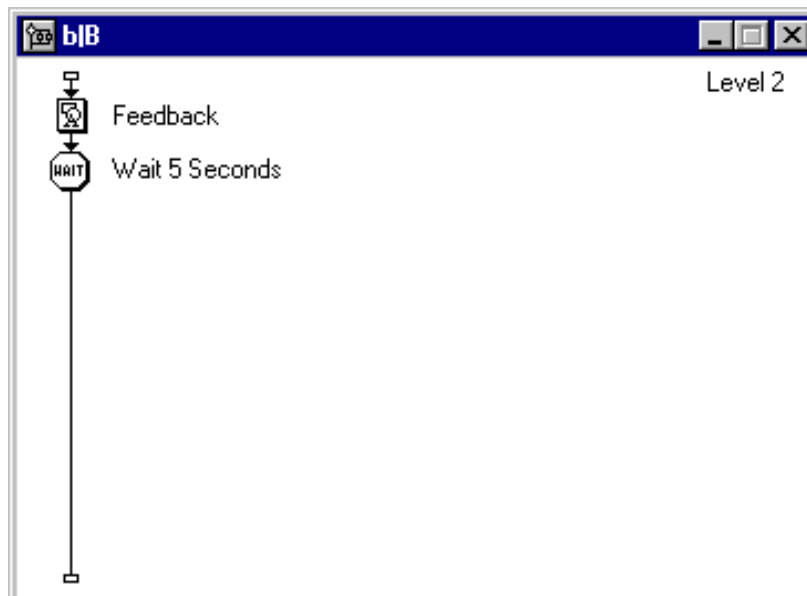
Opening the *Response Properties Window* as outlined in Action Steps 41 and 42 can also change responses.



Continued....

### Action Steps

What you type or do	What Happens
67. <b>Save your work</b> by clicking the save button on the top toolbar.	Your work is saved.
68. <b>Double-click the b B Map icon.</b>	The Feedback flowline for the “B” response becomes visible.

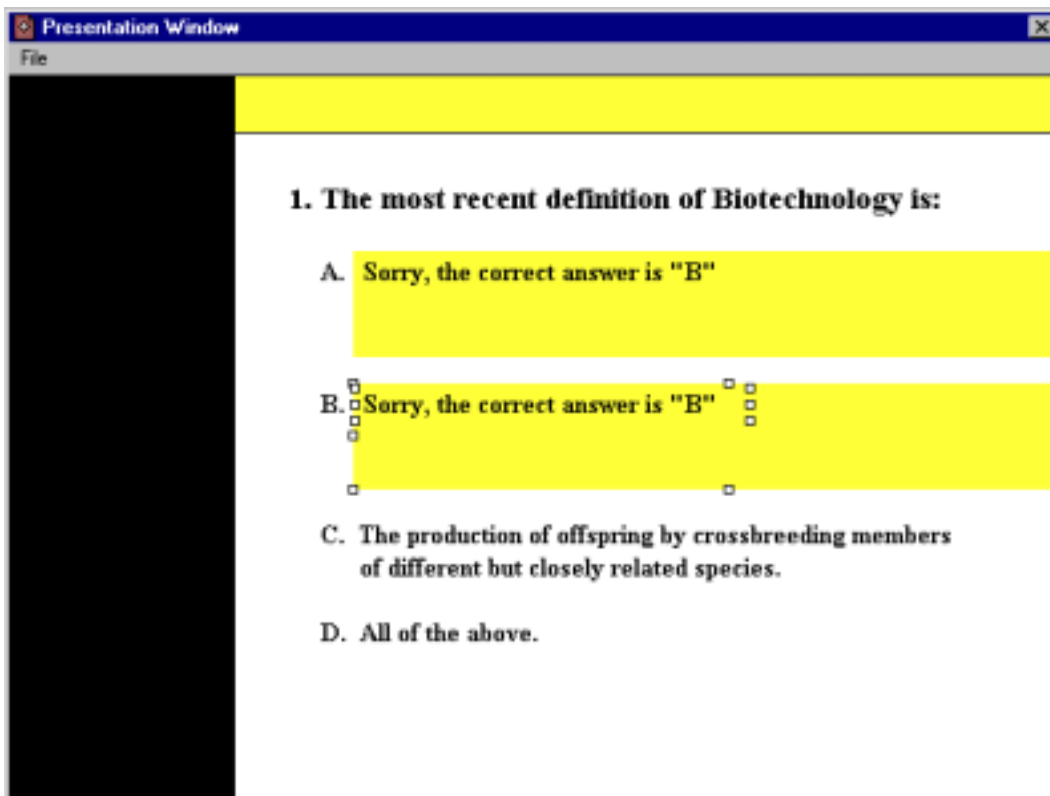


69. <b>Hold down the Shift key and click the Feedback icon.</b>	The contents of the response B feedback are displayed.
---	--

*Continued....*

**Action Steps**

What you type or do	What Happens
70. <b>Press the down arrow key on the keyboard and move the selected feedback to the letter B as illustrated below:</b>	The response to “B” is moved to the B position.



71. **Click the Text Tool from the tool palette:**



The Text Tool is selected.

*Continued....*

### Action Steps

What you type or do	What Happens
<p>72. <b>Highlight the B feedback text.</b>  <i>(Click the mouse at the end of the feedback response for B and drag the mouse to the right so that the text is highlighted.)</i></p>	<p>The text is highlighted.</p>

**1. The most recent definition of Biotechnology is:**

A. **Sorry, the correct answer is "B"**

B. **Sorry, the correct answer is "B"**

C. **The production of offspring by crossbreeding members of different but closely related species.**

D. **All of the above.**

73. **Type a positive feedback response (i.e. Great Job!) and supporting facts.**  
  
*NOTE: If "B" is not a correct response, proceed to Action Step #76*

A positive feedback response is entered.



If "B" is not a correct response, proceed to Action Step #77.

*Continued....*

### Action Steps

What you type or do	What Happens
<p>74. <b>Stretch the text box to the right if needed.</b>  <i>(Place the mouse over the right white square, hold the mouse button down, and move the white box to the right.)</i></p>	<p>The text box is enlarged to contain all the text.</p>

**1. The most recent definition of Biotechnology is:**

- A. **Sorry, the correct answer is "B"**
- B. **That's correct! The definition of biotechnology now includes the term "cloning" in its definition.**
- C. **The production of offspring by crossbreeding members of different but closely related species.**
- D. **All of the above.**

<p>75. <b>Close the b B flowline window.</b></p>	<p>The b B flowline is closed.</p>
<p>76. <b>Double-click the c C Map icon.</b></p>	<p>The c C flowline appears.</p>

Continued....

### Action Steps

What you type or do	What Happens
77. <b>Hold the Shift key down and double-click the Feedback icon</b> in the c C flowline.	The contents of the c C feedback are displayed.
78. <b>Press the down arrow key on the keyboard to move the feedback to the C position</b> as illustrated below:	The feedback is moved to the correct position.

**1. The most recent definition of Biotechnology is:**

A. **Sorry, the correct answer is "B"**

B. **That's correct! The definition of biotechnology now includes the term "cloning" in its definition.**

C.  **Sorry, the correct answer is "B"**

D.  **All of the above.**

79. **Resize the box around the text if needed.**

The box behind the text is resized.

*Continued....*

### Action Steps

What you type or do	What Happens
80. <b>Close the c C flowline.</b>	The flowline is closed.
81. <b>Double-click the d D Map icon.</b>	The contents of the d D Map icon are displayed.
82. <b>Hold the Shift key down and double-click the Feedback icon.</b>	The contents of the Feedback icon are displayed.
83. <b>Press the down arrow on the keyboard to move the feedback response to the D position as shown below:</b>	The feedback box is moved to the D position.


**1. The most recent definition of Biotechnology is:**

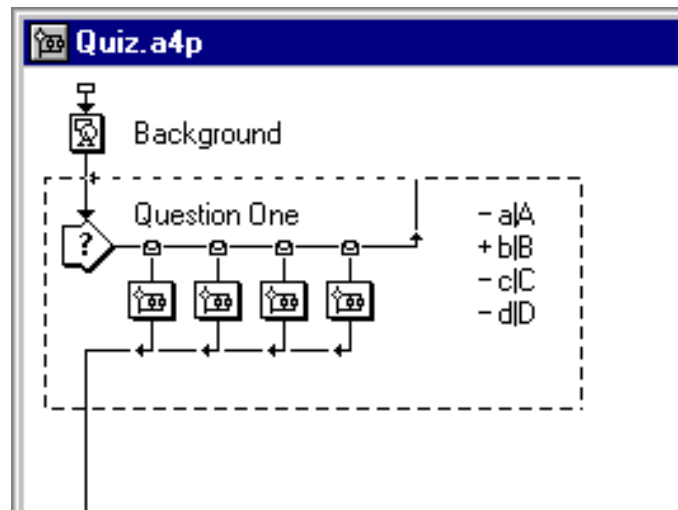
- A. **Sorry, the correct answer is "B"**
- B. **That's correct! The definition of biotechnology now includes the term "cloning" in its definition.**
- C. **Sorry, the correct answer is "B"**
- D. **Sorry, the correct answer is "B"**

*Continued....*

### Action Steps

What you type or do	What Happens
84. <b>Resize the feedback box if needed.</b>	The box, and/or the text box is resized.
85. <b>Close the d D flowline.</b>	The flowline is closed.
86. <b>Click once on the Quiz flowline.</b>	The main flowline becomes active.
87. <b>Place the mouse to the left of the Flowline, just above the Question One Icon.</b>	The mouse is moved to the left of the Question One Icon.
88. <b>Hold the mouse button down and move the mouse down and to the right to create a dashed square (lasso) around Question One as shown below:</b>	A lasso is created to select Question One.

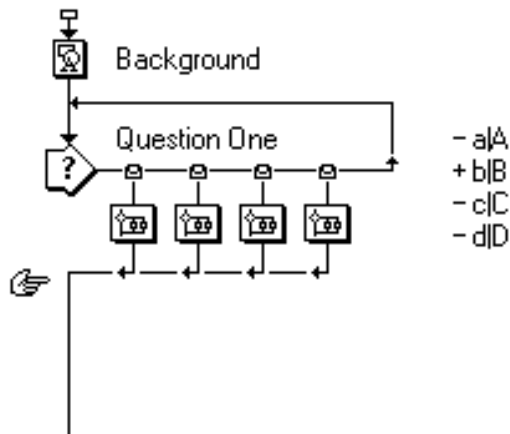
 Review Action Step 76 if needed.



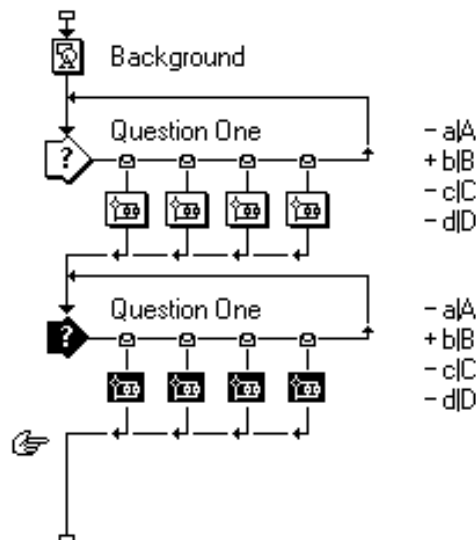
Continued....

**Action Steps**

What you type or do	What Happens
89. <b>Click the Copy button</b> on the top tool bar.	Question One and its interactions are copied.
90. <b>Click the Flowline</b> below Question One.	A hand is place below Question One, indicating where an object can be pasted.



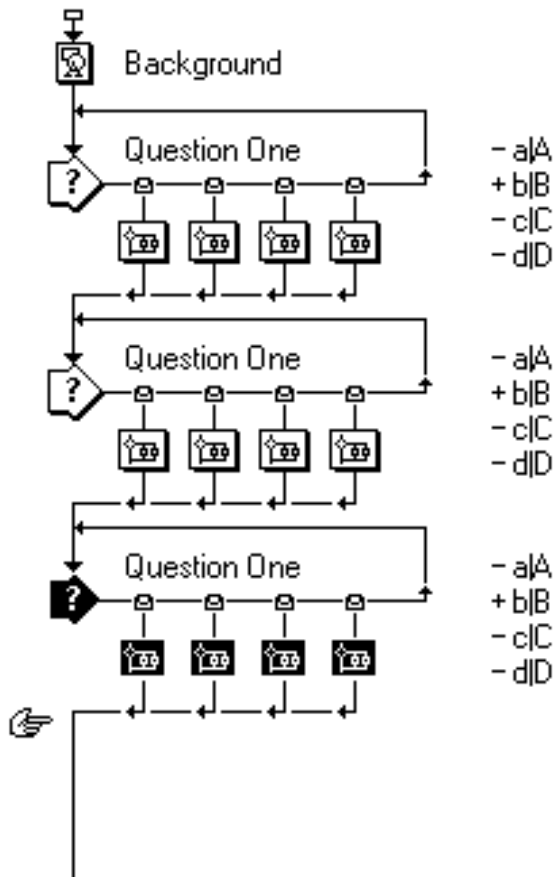
91. <b>Click the Paste button.</b>	Another Question One is placed below the first.
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*Continued....*

### Action Steps

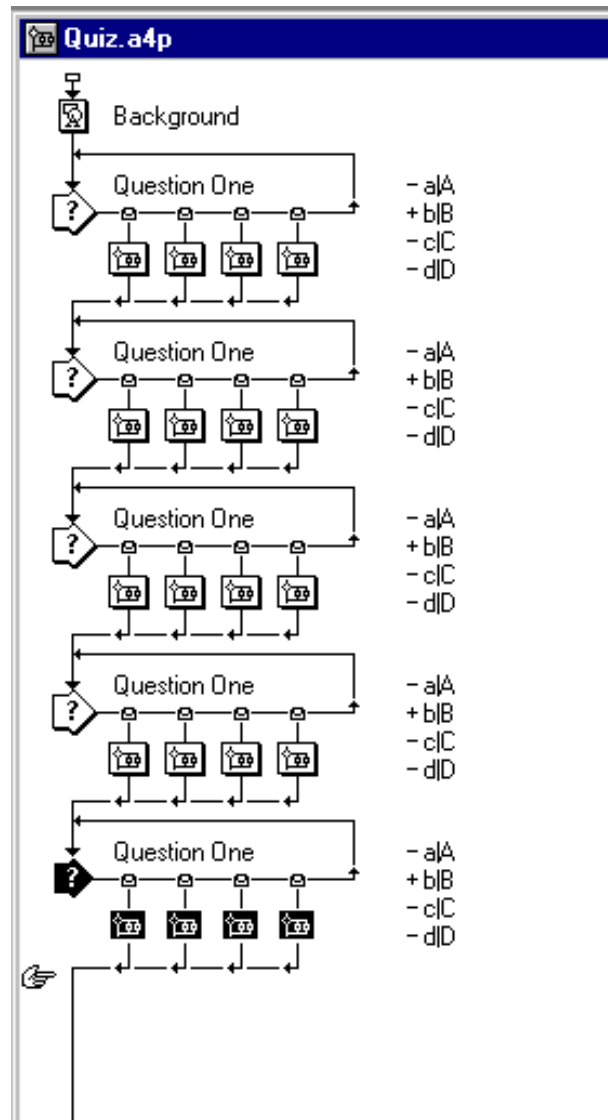
What you type or do	What Happens
92. <b>Click on the edge of the Flowline Window</b> so that a double-sided arrow appears, <b>and then drag the mouse to increase the size of the Window.</b>	The Quiz flowline window increases.
93. <b>Click the Paste button</b> again.	A third Question One is created.



*Continued....*

Action Steps

What you type or do	What Happens
94. Click the Paste button two more times.	A fourth and fifth Question One is created.



Continued....

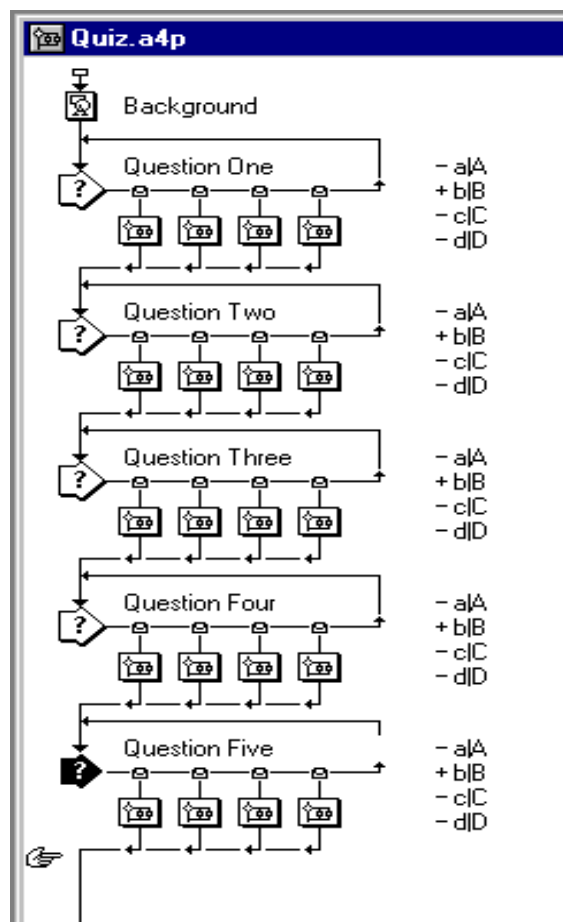
**Action Steps**

What you type or do	What Happens
95. <b>Click the second question icon</b> on the flowline.	The second question is selected.
96. <b>Type: <i>Question Two</i></b> .	The second Interaction Icon is named <i>Question Two</i> .
97. <b>Click the third question icon</b> on the flowline.	The third question is selected.
98. <b>Type: <i>Question Three</i></b>	The third Interaction Icon is named <i>Question Three</i> .

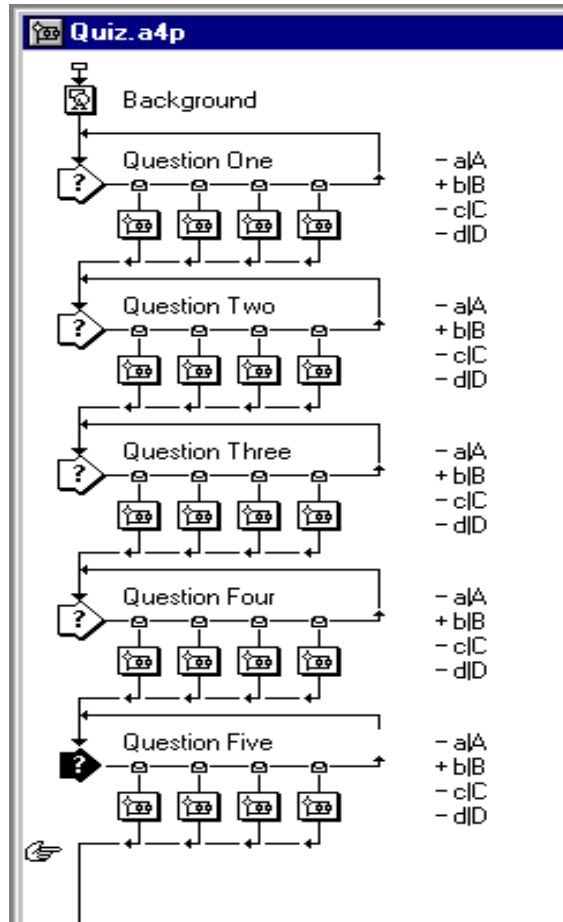


The flowline is limited in the number of icons that it can display at one time.

For example, if you want to have more questions in your test, you will have to drag a new Map icon onto the flowline, title it "Questions 1 through 10" (for example), then select your questions by creating a lasso around them, and then cut and paste them into the Map Icon.



Continued....



### Action Steps

What you type or do	What Happens
99. <b>Click the forth question icon on the flowline.</b>	The forth question is selected.
100. <b>Type: <i>Question Four</i></b>	The forth Interaction Icon is named <i>Question Four</i> .
101. <b>Click the fifth question icon on the flowline.</b>	The fifth question is selected.
102. <b>Type: <i>Question Five</i></b>	The fifth Interaction Icon is named <i>Question Five</i> .

Continued....

**Action Steps**

	<b>What you type or do</b>	<b>What Happens</b>
103.	<b>Double-click the Question Two Interaction Icon</b> (the icon with the Question Mark, second one down).	The Question from Question One appears without the background.
104.	<b>Click the Text tool.</b>	The Text Tool is selected.
105.	<b>Highlight the Question.</b>	The text is selected.



The background will disappear because the Shift key was not held down. But, not to worry, the background is still contained in the Background Icon on the flowline. If you wish to see it again, hold the Shift key down and double-click the Background icon on the flowline.

**1. The most recent definition of Biotechnology is:**

- A. The alteration of living things to produce useful products and process using techniques that are confined within natural barriers and limitations.
- B. The alteration of cells or DNA molecules, by means of splicing and cloning techniques, to provide useful products or processes that may not occur in nature.
- C. The production of offspring by crossbreeding members of different but closely related species.
- D. All of the above.

*Continued....*

**Action Steps**

	<b>What you type or do</b>	<b>What Happens</b>
106.	<b>Type your question two.</b>	Question Two is entered.
107.	<b>Highlight A through D.</b>	The possible answers are highlighted.



**2. The goal of the Human Genome Project is to:**

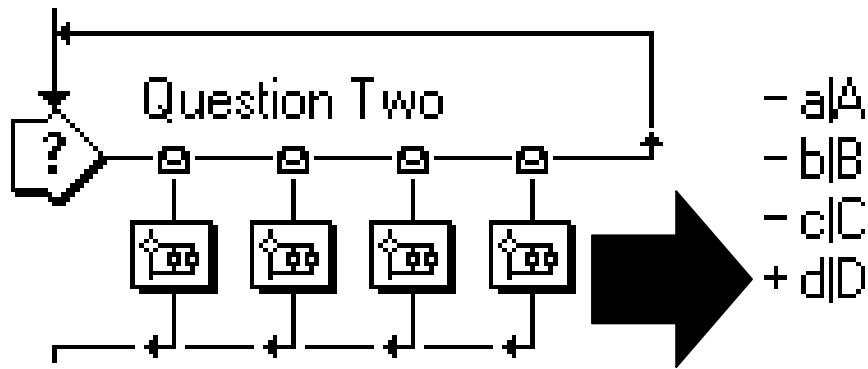
- A. The alteration of living things to produce useful products and process using techniques that are confined within natural barriers and limitations.**
- B. The alteration of cells or DNA molecules, by means of splicing and cloning techniques, to provide useful products or processes that may not occur in nature.**
- C. The production of offspring by crossbreeding members of different but closely related species.**
- D. All of the above.**

108.	<b>Type your possible answers (A through D).</b>	Question Two is entered.
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*Continued....*

**Action Steps**

What you type or do	What Happens
109. <b>Click on the flowline so that it is active.</b>	The flowline is activated.
110. Change the responses so that the correct answer has a positive sign and the wrong answers have a negative sign.  <b>Hold down the Control key (Ctrl) and click on the positive or negative sign to change it.</b>	The response judgements are changed.



111. <b>Click on the a A Map icon for Question Two.</b>	The flowline for a A is revealed.
---	-----------------------------------

*Continued....*

### Action Steps

What you type or do	What Happens
112. <b>Hold the Shift Key down and double-click the Feedback icon.</b>	The contents of the Feedback icon for a A is revealed.
113. <b>Click the text tool and highlight the feedback text.</b>	The text is highlighted.
114. <b>Edit the text to change the feedback.</b>	The text is edited.
115. <b>Resize as needed.</b>	The textbox or the feedback box is resized.

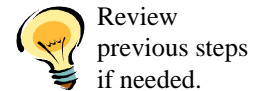
### 2. The goal of the Human Genome Project is to:

- ↔
- A. **Sorry, the correct answer is "D"**
  - B. **To gain an understanding of the functions of most of the genes in the human DNA code.**
  - C. **To expand the use of gene therapy - compensating for, or even correcting, genetic defects at the molecular level.**
  - D. **All of the above.**

*Continued....*

**Action Steps**

What you type or do	What Happens
116. Once a A has been edited, <b>close the a A flowline, double-click the b B Map icon of Question Two.</b>	The b B flowline is revealed.
117. <b>Edit the Feedback for the B response.</b>  <i>(Hold the shift key, and double-click the Feedback icon, then select the Text tool to make your edits.)</i>	The feedback for the B response is edited.



**2. The goal of the Human Genome Project is to:**

- A. **Sorry, the correct answer is "D"**
- B. **Sorry, the correct answer is "D"**
- C. **To expand the use of gene therapy - compensating for, or even correcting, genetic defects at the molecular level.**
- D. **All of the above.**

118. Repeat steps 117 and 118 and <b>edit all of the responses to Question Two. Be sure to hold down the Shift key when double-clicking the Feedback icon for each edit.</b>	The b B flowline is revealed.
--	-------------------------------

*Continued....*

### Action Steps

What you type or do	What Happens
119. <b>Edit Questions Three through Five</b> by following the previous action steps.	All questions are edited.
120. <b>Save your work.</b>	The Quiz is saved.




Review Steps 103 through 118 (page 50).

### 3. Create a Score Display



*Feedback is important for a computer-based test in order to let users know how well they are doing. Authorware uses variables to display scores.*

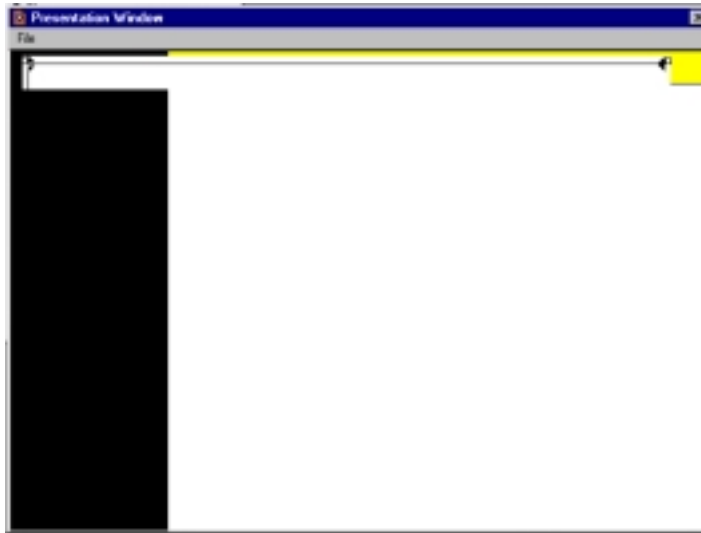
#### Action Steps

What you type or do	What Happens
<p>1. <b>Click the Restart button</b>, located on the top tool bar, to run your test piece:</p> <div style="text-align: center;">  </div>	<p>The test runs.</p>
<p>2. <b>Select an answer by pressing a key on the keyboard</b> for each question. (A,B, or C)</p>	<p>The test is taken.</p>
<p>3. A running score is needed to make the test more interesting.</p> <p>When the test is finished, displaying only the background, <b>Double-click the black rectangle on your background.</b></p>	<p>The test stops running and the Background Icon is selected.</p>
<p>4. <b>Click the Text tool</b> in the Background Tool Pallete.</p>	<p>The Text tool is selected.</p>

*Continued....*

## Action Steps

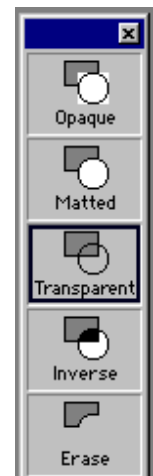
What you type or do	What Happens
5. <b>Click the top left-hand portion of the black rectangle.</b>	A textbox is created.



6. <b>From the top menu bar select <i>Window</i>, then <i>Inspectors</i>, and then <i>Modes</i> (if needed).</b>	The <i>Modes Palette</i> is displayed.
7. <b>Click <i>Transparent</i> from the Modes Palette (if needed).</b>	The Mode is changed form Opaque to <i>Transparent</i> .




The Modes Palette can also be displayed by pressing *Ctrl+M* on the keyboard.

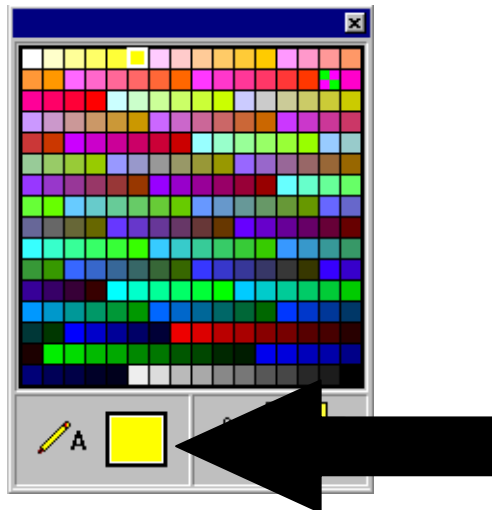


*Continued....*

**Action Steps**

What you type or do	What Happens
8. <b>In the Color Pallete, locate the box next to the pencil, and click it.</b>	The text color is selected.

 If the Color Palette is not visible, press the Control key and the letter K at the same time (Ctrl+K).



9. <b>Select a yellow color.</b>	Yellow is selected as a text color and is displayed in the box next to the pencil.
10. From the top menu bar, select <b>Text</b> , and then <b>Font</b> , and then <b>Arial</b> .	The font is changed.
11. From the top menu bar, select <b>Text</b> , and then <b>Size</b> , and then <b>9</b> .	The font size is changed.
12. <b>Type: TOTAL CORRECT:</b>	The text "TOTAL CORRECT:" is typed.

*Continued....*

### Action Steps

What you type or do	What Happens
<p>13. <i>Variables</i> are containers for information. A variable represents a value that Authorware stores, and can be used in many ways. This value can change (or <i>vary</i>).</p> <p>From the variables listed below, which one do you think would display the <b>Total Correct number</b> of answers?</p> <ul style="list-style-type: none"> <li>• {TotalCorrect}</li> <li>• {TotalWrong}</li> <li>• {PercentCorrect}</li> </ul> <p>The answer is {TotalCorrect}</p> <p><b>Type: {TotalCorrect}</b> next to “Total Correct:”</p>	<p>A variable is added to the display.</p>



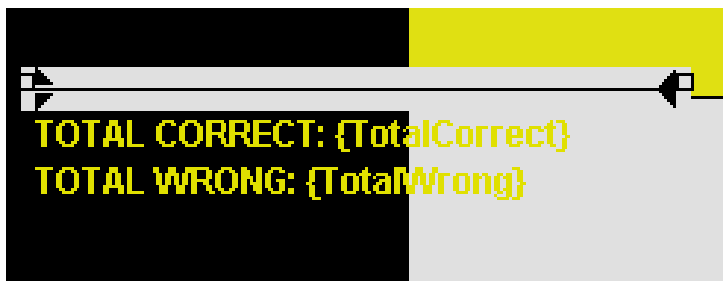
Be sure to type the variable exactly as shown. Include the brackets {}, and type the variable as one word with no spaces. If the variable name is not correctly typed, it will not work properly.



Continued....

**Action Steps**

What you type or do	What Happens
<p>14. <b>Press return on the keyboard and type: <i>Total Wrong</i>:</b></p>	<p>The text “Total Wrong” is typed.</p>
<p>15. Which variable do you think would display the Total Wrong number of questions in the test?</p> <ul style="list-style-type: none"> <li>• {TotalCorrect}</li> <li>• {TotalWrong}</li> <li>• {PercentCorrect}</li> </ul> <p>The answer is {TotalWrong}</p> <p><b>Type {TotalWrong} next to <i>Total Wrong</i>.</b></p>	<p>Another variable is displayed in the background.</p>

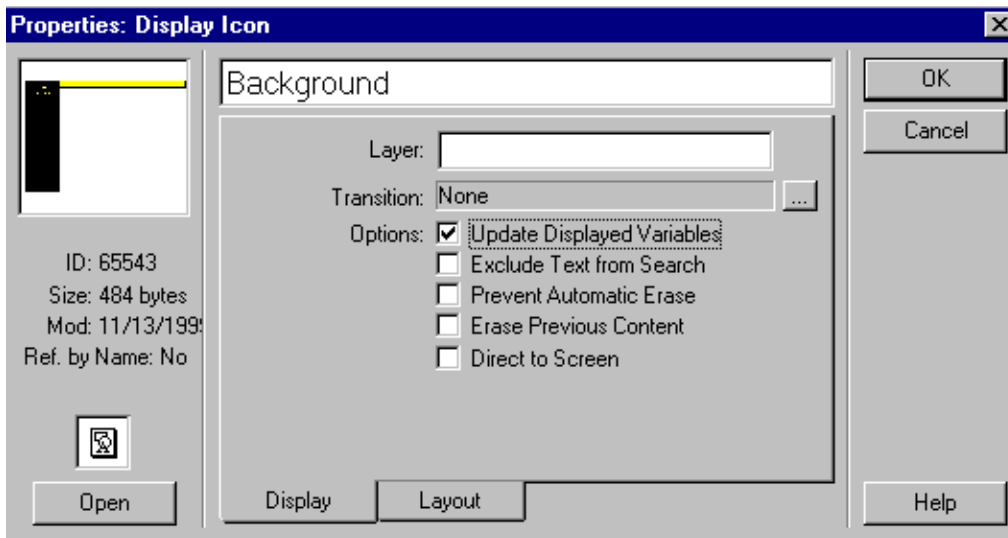


<p>16. <b>Click once on the Background Icon on the <i>Flowline</i>.</b></p>	<p>Background on the flowline is active and is highlighted.</p>
<p>17. <b>Press “Control” and “I” at the same time on the keyboard (<i>Ctrl+I</i>).</b></p>	<p>The icon properties are displayed.</p>

*Continued...*

**Action Steps**

What you type or do	What Happens
18. <b>Click the box next to “Update Displayed Variables”.</b>	The text “Total Wrong” is typed.
19. <b>Click OK.</b>	Variables displayed on the background are updated as the test is taken.



20. <b>Run the piece</b> , answer the test questions on the keyboard, and watch the score be tabulated.	The number of Total Correct and Total Wrong is updated with each response to a test question.
---	---



Click the *Restart* button to run the piece:




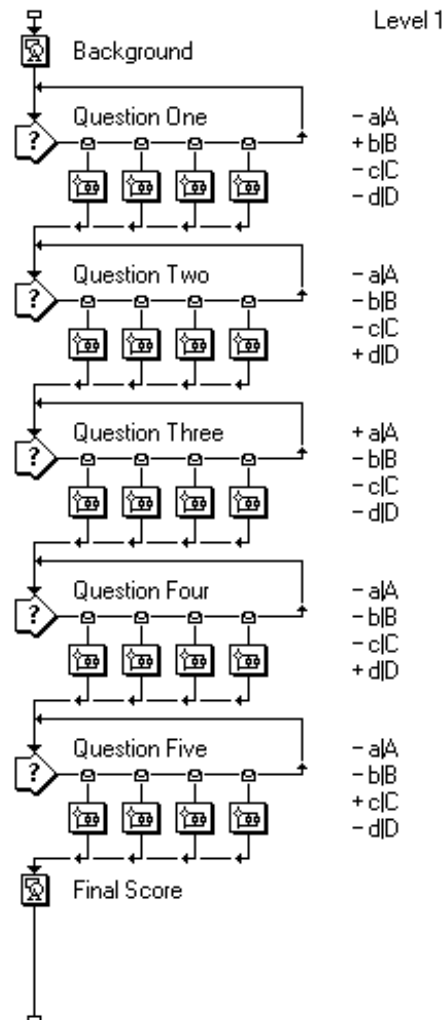
The button is located on the top tool bar as explained in previous steps.

*Continued...*

**Action Steps**

What you type or do	What Happens
21. A final percentage score needs to be displayed at the end of the test.  <b>Double-click the Background Icon on the Flowline.</b>	The background is displayed and the piece stops running.
22. <b>Drag a Display Icon to the bottom of the flowline and name it <i>Final Score</i>.</b>	A “Score Display” is created.

 Review previous steps in this guide if needed.



Continued....

## Action Steps

What you type or do	What Happens
<p>23. <b>Hold the <i>Shift</i> key and double-click the <i>Final Score</i> Icon.</b></p>	<p>The display for the <i>Final Score</i> Icon is shown.</p>
<p>24. Which variable would you use to display the Percent of Correct answers in a test?</p> <ul style="list-style-type: none"> <li>• {TotalCorrect}</li> <li>• {TotalWrong}</li> <li>• {PercentCorrect}</li> </ul> <p>The answer is {PercentCorrect}</p> <p><b>Type:</b> <i>You finished the test with a score of {PercentCorrect}%</i></p>	<p>A variable is added to the Final Score display.</p>
<p>25. <b>Highlight the entire text by dragging your mouse over the text.</b></p>	<p>The text is highlighted.</p>
<p>26. From the top menu bar select <b>Text</b>, then <b>Alignment</b>, and then <b>Center</b>.</p>	<p>The text is centered.</p>
<p>27. <b>Place a return after the word “of”.</b></p>	<p>The percentage score will be centered on its own line.</p>



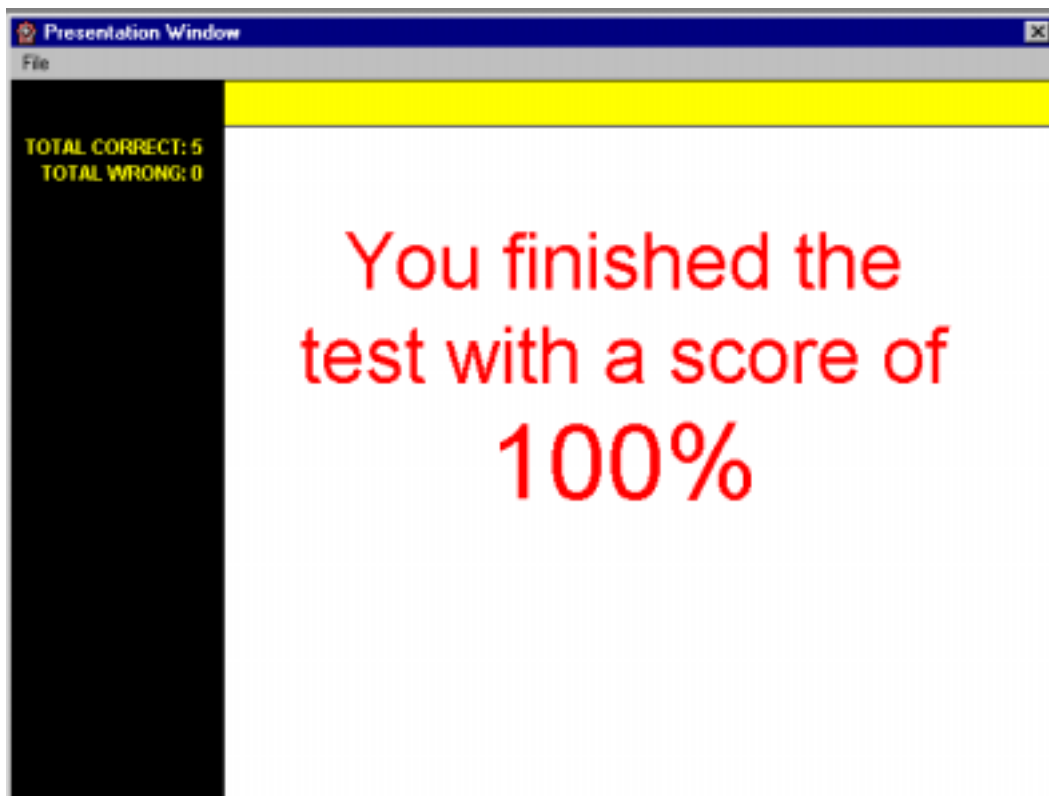
Choose a color and a large font size for your display. See previous steps if needed.

You may want to make your score extra large by selecting 60 for your size!

*Continued....*

### Action Steps

What you type or do	What Happens
28. <b>Click the Final Score on the flowline and press Ctrl+I on the keyboard to update the display variables.</b> (See Action Steps 16 through 19, Page 60, if needed.)	The display variables are updated.
29. <b>Save your work!</b>	The work is saved.
30. <b>Run the piece.</b>	The final score is displayed in a percentage at the end of the piece.



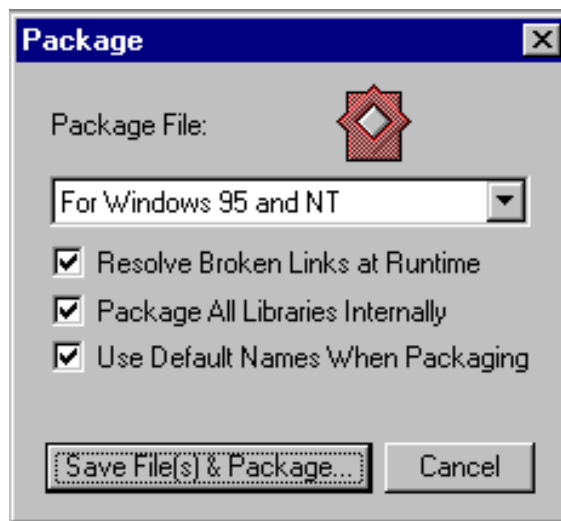
## 4. Package Your Piece



Now that the quiz is completed, you will need to package your piece to make it into a program (or .exe) file.

### Action Steps

What you type or do	What Happens
1. From the top menu bar, select <b>File</b> , and then <b>Package</b> .	The Package window appears.



2. <b>Select the settings as displayed above.</b>	The settings are set.
3. <b>Click the Save File(s) &amp; Package button.</b>	A program file is created in the same folder as your Quiz.a4p (or a5p) file.



The above settings are for Windows only. For Macintosh settings consult an Authorware textbook.

*Continued....*

**Action Steps**

What you type or do	What Happens
4. When the packaging is finished, select <b>File</b> , and then <b>Quit</b> out of Authorware.	The application is exited.
5. On your hard drive, <b>locate the Quiz.exe file.</b>	The executable, program file is found.
6. <b>Double-click the Quiz file icon to start the program.</b>  From the top menu bar, select <b>File and then Quit</b> when finished.	Your program begins.
7. <b>Place the program file on a floppy disk, or CD-ROM, and distribute the quiz to your students!</b>	The test is taken by students at a computer, leaving you more time for individualized instruction.  <i>Congratulations on creating your first computer program!</i>



Save your work if needed.



If you are unable to find it, go to *Start*, select *Find*, and then *Files & Folders*, and then type *Quiz.exe*