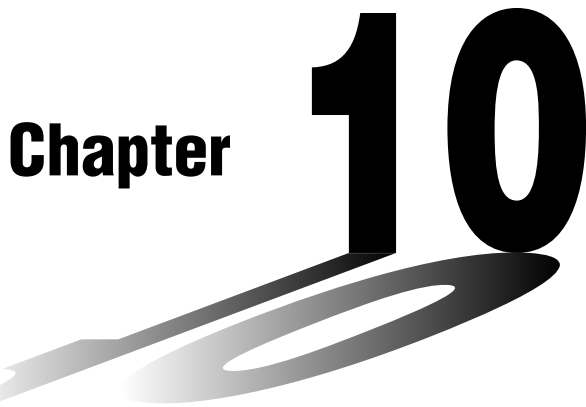


Chapter 10



Using the eActivity Application

An eActivity is both a documentation tool, and a student notebook. As a documentation tool, a teacher can create electronic examples and practice problems with accompanying text, mathematical expressions, 2D and 3D graphs, geometric drawings, and tables. eActivities provide the student the means to explore problems, document their learning and problem solving by entering notes, and share their learning by saving their work to a file.

10

10-1 eActivity Application Overview

10-2 Creating an eActivity

10-3 Inserting Data into an eActivity

10-4 Working with eActivity Files

eActivity Data Download Center

A variety of eActivity files are available for download at the CASIO Website. Visit the URL below for more information.

http://world.casio.com/edu_e/

- After you download an eActivity file, you will need to use special ProgramLink software to transfer it from you computer to your ClassPad. See the instructions provided at the CASIO Website for more information.


10-1 eActivity Application Overview

The eActivity application lets you input and edit text, mathematical expressions, and ClassPad application data, and save your input in a file called an “eActivity”. The techniques you will use are similar to those of a standard word processor, and they are easy to get used to.

Starting Up the eActivity Application

Use the following procedure to start up the eActivity application.

- **ClassPad Operation**

On the application menu, tap .

This starts the eActivity application and displays the eActivity window.

eActivity Application Window



The eActivity application can be used to create a file called an “eActivity”. A basic eActivity can contain text along with application data, which is embedded as a row or a strip. A row can be a “Text Row”, a “Calculation Row”, or a “Geometry Link”. A strip can be an “application data strip” (Main, Geometry, Graph & Table, Conics, Sequence, and so on). Creating an eActivity is as simple as typing in text and adding application data using the toolbar.

The diagram illustrates the eActivity application interface. On the left, the 'eActivity window' has a menu bar (File, Edit, Insert, Action) and a toolbar. It contains text describing parametric equations for a ball's path: $x(t) = t \times v_0 \times \cos(\theta)$ and $y(t) = t \times v_0 \times \sin(\theta) - \frac{g \times t^2}{2}$. Below the text is a 'Graph strip' containing the same equations with specific values: $g = 32 \frac{\text{ft}}{\text{sec}^2}$, $v_0 = 40$, $\theta = 45$. At the bottom of this window are mode buttons: 'Alg', 'Standard', 'Cplx', 'Rad', and an 'Expand button'. On the right, the 'Expanded graph window' has a menu bar (Edit, Zoom, Analysis) and a toolbar. It displays the text 'graph of the ball's motion is...' followed by the same equations with values. Below the text is a graph showing a parabolic path of a ball. At the bottom of this window are mode buttons: 'Rad', 'Cplx', and an 'Expand button'.

Example eActivity Windows

eActivity Application Menus and Buttons

This section explains the operations you can perform using the menus and toolbar buttons of the eActivity application.

- For information about the  menu, see “Using the  Menu” on page 1-5-4.

■ File Menu














To do this:	Select this File menu item:
Start a new eActivity	New
Open an existing eActivity	Open
Save the current eActivity to a file	Save

■ Edit Menu

To do this:	Select this Edit menu item:
Undo the last operation or redo an operation that was just undone	Undo/Redo
Cut the currently selected string and place it onto the clipboard	Cut
Copy the currently selected string and place it onto the clipboard	Copy
Paste the current clipboard contents onto the screen	Paste
Select all rows and strips on the display	Select All
Delete the contents of the line where the cursor is located	Delete Line
Clear the eActivity window	Clear All



■ Insert Menu






To do this:	Tap this button	Or select this Insert menu item:
Insert a calculation row	—	Calculation Row
Insert a text row	—	Text Row
Insert a Geometry-linked data row	—	Geometry Link
Insert an application data strip		Main
		Geometry
		Graph
		Graph Editor
		3D Graph
		3D Graph Editor
		Conics Graph
		Conics Editor
		Stat Graph
		List Editor
		NumSolve
		Sequence Editor
		Notes

■ Action Menu

To do this:	Do this:
Insert a command (page 2-7-1)	Tap [Action].

■ Other Buttons

The operations described below are available from the toolbar only. There are no corresponding menu commands for these buttons.

To do this:	Tap this button:
Open the Files dialog box (page 10-2-2)	
Toggles a calculation result between standard (fractional result) and decimal (approximate result)	
Bold the entire line of text where the cursor is located	
Converts a text row to a calculation row	
Converts a calculation row to a text row	

eActivity Application Status Bar

The information that appears in the eActivity application status bar is same as the Main application status bar information. See “Using Main Application Modes” on page 2-1-4.


eActivity Key Operations

In the eActivity application, the cursor key,  key, and  key operate differently than they do in other modes.




Cursor Key

- The cursor key moves the cursor around the eActivity window.
- Though you can always move the cursor up and down, you may not always be able to move it left and right. The left and right cursor key operations move the cursor left and right in the current row, but for the most part they cannot be used to move the cursor between rows of different types.
- Up and down cursor operations move the cursor between rows, regardless of type.

Key

- Pressing the  key deletes the character to the left of the current cursor position.

Key

- Pressing the  key while the cursor is in a text row inserts a carriage return and adds a new line.
- Pressing the  key while the cursor is in a calculation row re-calculates the expression of the current calculation row as well as all of the calculation rows below the current row.
- Pressing the  key while the cursor is in a Geometry Link row re-calculates the data in the link and updates the corresponding graph in the Geometry window.





10-2 Creating an eActivity

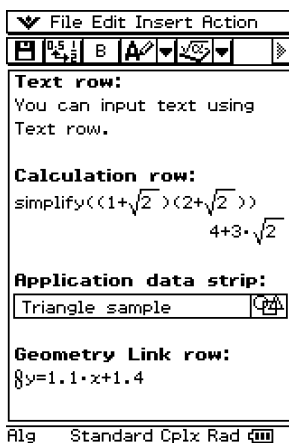
This provides a general overview of eActivity operations, from starting up the eActivity application to saving an eActivity file. It also presents precautions you need to keep in mind when managing eActivity files.

Basic Steps for Creating an eActivity

The following are the basic steps you need to perform when creating an eActivity. Detailed information about each step is provided in the other sections of this chapter.

• ClassPad Operation

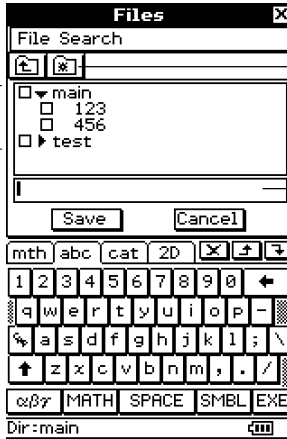
- (1) Tap  to display the application menu, and then tap  to start the eActivity application.
 - This displays the eActivity window as it appeared the last time it was used.
 - If you are already in the eActivity application and there is data on the display, tap [File] and then [New]. Note that [New] clears data from the display without saving it.
- (2) On the eActivity window, insert the text, expressions, application data, and other data you want to include in the eActivity.
 - There are four types of data you can insert into an eActivity: text rows, calculation rows, Geometry Link rows, and application data strips. For details about inserting each type of data, see “10-3 Inserting Data into an eActivity”.



(3) After the eActivity is the way you want, tap [File] and then [Save].

- This displays the Files dialog box.

This is a list of folders and files. Select the name of the folder where you want to save the eActivity file by tapping it.



Tap here to create a new folder.

Enter up to 20 characters for the eActivity file name.

(4) After selecting a folder and entering a file name, tap [Save] to save the eActivity.


Warning!

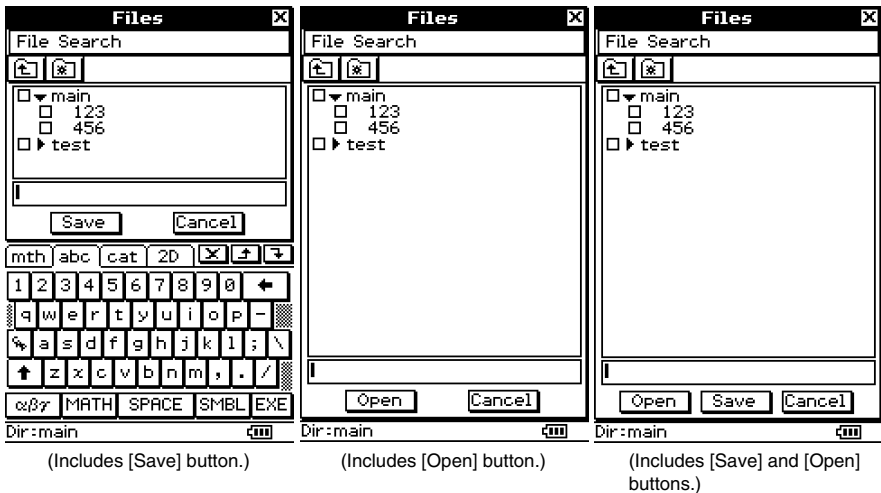
- If you do not save the eActivity you are creating before tapping ^{Menu} on the icon panel to display the application menu or before tapping ^{Main} to display the Main application, the unsaved eActivity data may be deleted.



Managing eActivity Files

This section covers file management operations like save, open, delete, rename, move, etc. Performing one of these operations displays a Files dialog box like the ones shown below. The buttons that appear in the dialog box depend on the operation you performed to display the Files dialog box.

Tap [File] and then [Save]. Tap [File] and then [Open]. Tap .



The operations you can perform on the Files dialog box are identical to those of the Geometry application Files dialog box, except that eActivity file names can contain up to 20 characters (bytes). For details, see “8-7 Managing Geometry Application Files”.

Important!

- eActivity files are stored in a memory area that is separate from that used for storing other types of data (variable data, Geometry data, Presentation data, etc.) Because of this, you cannot access eActivity files data using the Variable Manager. You have to use the eActivity application to perform eActivity file management operations.

10-3 Inserting Data into an eActivity

The following describes the four types of data you can insert into an eActivity.

Text Row

A text row can be used to insert text data and mathematical expression text in natural format. You can also bold the text in a text row.

Calculation Row

Use the calculation row to insert any of the calculation operations that are available in the Main application.

Application data strip

The application data strip lets you display a window from a ClassPad application (Main, Graph & Table, Geometry, etc.) and use the window to create data, which is inserted into the eActivity.

Geometry Link Row

Use this row to insert data that is linked with a Geometry window figure.

Inserting a Text Row

Text rows make it possible to display and edit text directly in the eActivity window. Text rows can contain multiple lines, as well as mathematical expressions. A mathematical expression contained in a text row is not evaluated. Pressing EXE , while in the Text Input mode, will advance you to the next line without displaying results. Individual text rows can scroll horizontally, but not vertically. The entire eActivity page can be scrolled vertically.

Tip





- You can also use the 2D soft keyboard to input mathematical expressions into a text row.

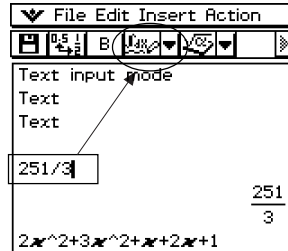
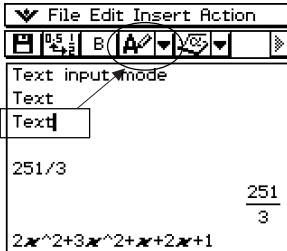
To select the input mode



- (1) On the eActivity window, tap the first down arrow button on the toolbar.
- (2) On the icon palette that appears, tap A to select the Text Input mode, or M to select the Calculation Input mode.

A button indicates the Text Input mode is selected.



Tip

- You can toggle back and forth between the Text Input and Calculation Input modes by tapping  / .
- The toolbar button for switching between input modes appears as  while the cursor is located in a text row, and  while the cursor is located in a calculation row.

**To insert a Text Row**

- Tap  to change a row to the Text Input mode.
 - If the cursor is located in a line that already contains input data, place the cursor at the end of the line, tap [Insert] and then [Text Row]. This inserts a text row on the next line.
- Use the soft keyboard or keypad keys to input the text you want.
 - You can use the alphabet (abc) keyboard to input alphabetic characters.
 - Use the other keyboards to input mathematical expressions, commands, etc. Note that any mathematical expressions or commands you input into a text row are treated as text. They are not executed.
 - Note that word wrap is not performed when inputting text into a text row. Because of this, you need to tap  to input carriage returns as required.

To bold text

- Move the cursor to the line of text you want to bold.
- Tap .
- To unbold the text, tap  again.





Inserting a Calculation Row

Calculation rows let you perform calculations in an eActivity. When you input a mathematical expression, the output expression (result) appears, right justified, in the next line. An eActivity that contains only calculation rows looks very much like the Main application window. Note that you can edit the input expression, but not the output expression (result). You can also copy, paste, drag and drop input and output expressions. Both the input and output rows scroll independently in a horizontal direction.


Tip

- If the input expression of a calculation row is not a valid expression, the row will contain only the input expression, without an output expression.

• To select the input mode





- (1) On the eActivity window, tap the first down arrow button on the toolbar.
- (2) On the icon palette that appears, tap  to select the Text Input mode, or  to select the Calculation Input mode.

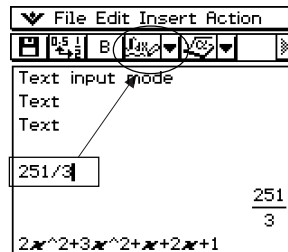
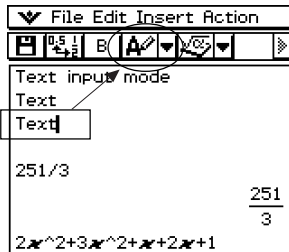


 button indicates the Calculation Input mode is selected.



This mark is displayed at the head of the line while the Calculation Input mode is selected.

Tip



- You can toggle back and forth between the Text Input and Calculation Input modes by tapping  / .
- The toolbar button for switching between input modes appears as  while the cursor is located in a text row, and  while the cursor is located in a calculation row.




• To insert a Calculation Row


- (1) Tap  to change a row to the Calculation Input mode.
 - If the cursor is located in a line that already contains input data, place the cursor at the end of the line, tap [Insert] and then [Calculation Row]. This inserts a calculation row on the next line.
- (2) Use the soft keyboard or keypad keys to input the mathematical expression you want.
 - Mathematical expression input techniques are identical to those in the Main application. See Chapter 2 for more information.
- (3) Press  after inputting an expression to display its result.

251/3		Line 1: Expression you input
	$\frac{251}{3}$	Line 2: Result
$2x^2+3x^2+x+2x+1$		
	$5 \cdot x^2 + 3 \cdot x + 1$	


- If you want to input an expression without displaying its result, do not press . Instead, tap [Insert] and then [Text Row] to input a text row. Or you could change the current row to a text row by tapping  while the cursor is in the row.


Important!

- If you edit the expression in an existing calculation row and then press , all of the expressions following the line you edited are re-calculated and their results are refreshed. Even mathematical expressions you originally input into the eActivity without calculating their results are calculated, and their results appear.


Changing “ $10 \Rightarrow b$ ” to “ $20 \Rightarrow b$ ” in the example below and pressing  causes all of the expressions under “ $20 \Rightarrow b$ ” to be re-calculated.

File Edit Insert Action	
$5 \Rightarrow a$	5
$10 \Rightarrow b$	10
$a+b$	15
$a-b$	-5
a/b	$\frac{1}{2}$
<input type="text"/>	

Alg Standard Cplx Rad 

- Tap to the right of “10”.
- Press  twice, and then input “20”.

File Edit Insert Action	
$5 \Rightarrow a$	5
$20 \Rightarrow b$	20
$a+b$	25
$a-b$	-15
a/b	$\frac{1}{4}$
<input type="text"/>	

Alg Standard Cplx Rad 

- Press .

Inserting an Application Data Strip



An application data strip can be used to embed data from other ClassPad applications into an eActivity. An application data strip contains the elements shown below.
















Title
You can enter a title, if you want.

Expand button
Tap here to display the application data in the lower window.

■ To insert an application data strip into an eActivity

Tap the [Insert] menu or the  down arrow button next to the  button, and then select the command or button that corresponds to the type of application data you want to insert.

To insert this type of application data:	Select this [Insert] menu item:	Or tap this button:
Main application work area window data	Main	
Geometry application Geometry window data	Geometry	
Graph & Table application Graph window data	Graph	
Graph & Table application Graph Editor window data	Graph Editor	
3D Graph application 3D Graph window data	3D Graph	
3D Graph application 3D Graph Editor window data	3D Graph Editor	
Conics application Conics Graph window data	Conics Graph	
Conics application Conics Editor window data	Conics Editor	
Statistics application Statistical Graph window data	Stat Graph	
Statistics application List Editor window data	List Editor	
NumSolve application Numeric Solver window data	NumSolve	
Sequence application Sequence Editor window data	Sequence Editor	
Notes window*	Notes	

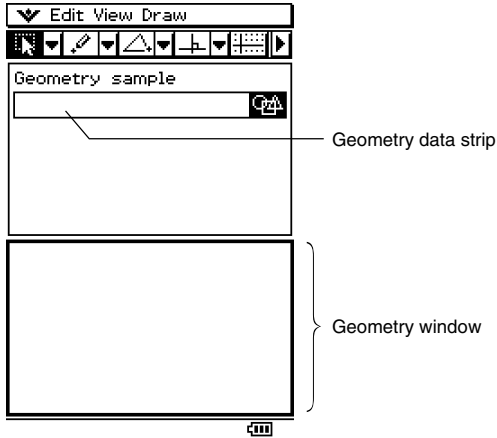
* The Notes window is a function you can use within the eActivity application.

Example 1: To insert a Geometry data strip

• **ClassPad Operation**

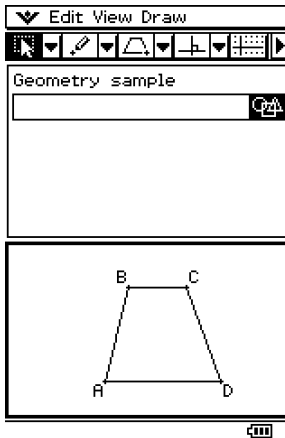
(1) From the eActivity menu, tap [Insert] and then [Geometry].


- This inserts a Geometry data strip, and displays the Geometry window in the lower half of the screen.



(2) On the Geometry window, draw the figure you want.

- For details about Geometry window operations, see Chapter 8.



(3) After you finish performing the operation you want on the Geometry window, tap  and then [Close] to close the Geometry window and return to the eActivity window.

- (4) Tap the title box of the Geometry data strip and enter the title you want.



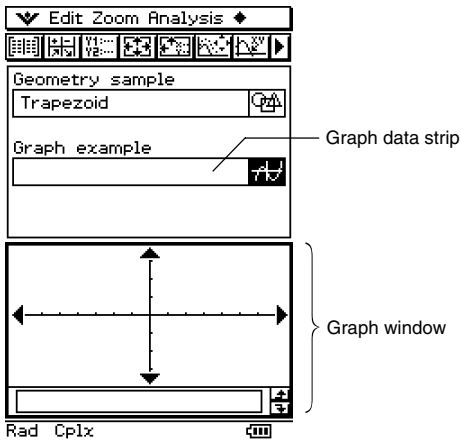
- If you want to input more data into the eActivity, tap the next line or use the [Insert] menu to select the type of strip you want to insert next.

Example 2: To insert a Graph data strip


• **ClassPad Operation**

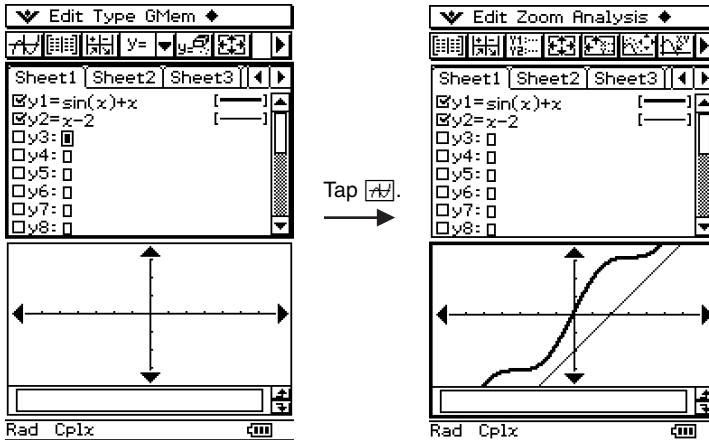
- (1) On the eActivity window, tap [Insert] and then [Graph].

- This inserts a Graph data strip, and displays the Graph window in the lower half of the screen.





(2) On the Graph window, draw the graph you want.

- Tap the  button to display the Graph application's Graph Editor window, enter a function to graph, and then graph the function. For details about inputting functions on the Graph Editor window and graphing functions, see Chapter 3.

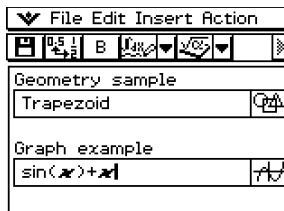


Display the Graph Editor window and input the function.

Graph the function.

(3) After you finish performing the operation you want on the Graph window, tap  and then [Close] to close the Graph window. You will also need to tap the Graph Editor window, and then select  then [Close] to return to the eActivity window.

(4) Tap the title box of the Graph data strip and enter the title you want.



- If you want to input more data into the eActivity, tap the next line or use the [Insert] menu to select the type of row or strip you want to insert next.

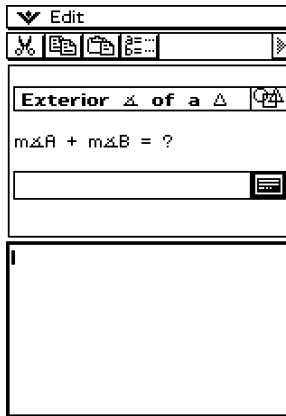
Example 3: To use Notes in an eActivity

Notes is a simple text editing tool for taking notes or including in-depth explanations within an eActivity. You can use Notes to store information for later use, or as a place to jot down ideas.

• ClassPad Operation

(1) On the eActivity window, tap [Insert] and then [Notes].


- This inserts a Notes strip and displays the Notes window in the lower half of the screen.

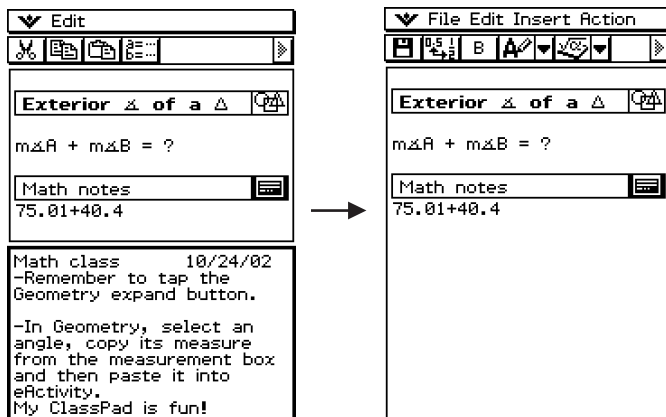


(2) Enter text you want in the Notes window.

- You can use the Edit menu and toolbar to perform following operations while the Notes window is on the display.

To do this:	Select this Edit menu item:	Or tap this button:
Undo the last operation or redo an operation that was just undone	Undo/Redo	—
Cut the currently selected string and place it onto the clipboard	Cut	
Copy the currently selected string and place it onto the clipboard	Copy	
Paste the current clipboard contents onto the screen	Paste	
Select all text on the Notes window	Select All	—
Clear all text from the Notes window	Clear All	—
Display the Variable Manager (page 1-8-1)	—	

- (3) After you finish entering text, you can close the Notes window by tapping  and then [Close].



Tip

- You can use the Notes window to enter notes, homework assignments, in-depth details, etc.
- All information you enter is treated as text.
- When inputting text into a Notes window, the cursor will jump down to the beginning of the next line when the right edge of the current line is reached.
- Notes does not support 2D math symbols.
- The Notes application is available only in eActivity.

Moving Information Between eActivity and Applications

An eActivity is like an interactive notebook or textbook that allows you to explore the world of mathematics right on the page. You can take almost any expression from an eActivity page and send it to another application. You can also take information from an application and insert it into an eActivity page.

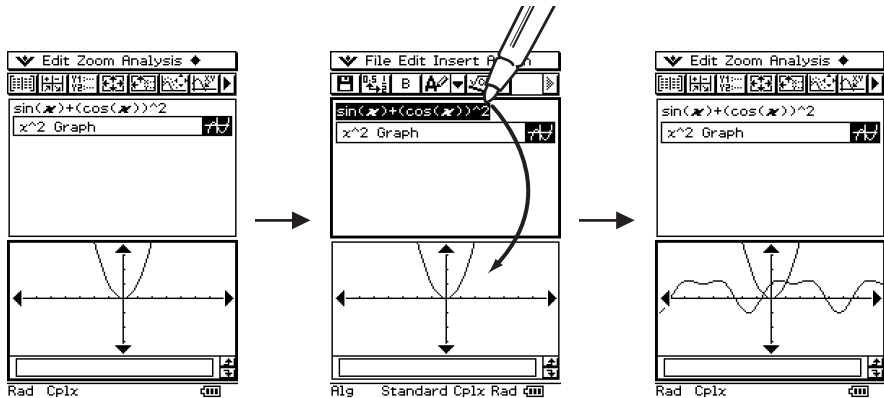
■ Cut, Copy, and Paste

You can cut, copy, or paste text or mathematical expressions between the eActivity and any other application. You can also cut, copy, and paste text and mathematical expressions inside an eActivity.

Depending on the application, you can cut or copy, and paste text and mathematical expression data into an eActivity. For example, you can copy a line in the Geometry measurement box and paste it into an eActivity as an expression.

■ Drag and Drop

You can drag and drop text or mathematical expressions between eActivity and other applications. You can also drag and drop within an eActivity. Depending on the application, you can drag text and mathematical expressions from an eActivity to another application window. For example, you can drag an equation from the eActivity directly onto a graph window.



(1) Graph strip is expanded in the lower window.

(2) Expression is selected in the eActivity.

(3) Expression has been dragged into the graph window.

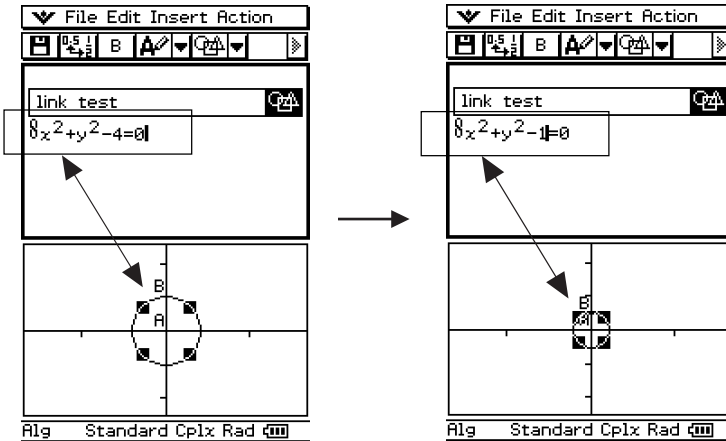
Tip

- For details about what you can drag and drop between the eActivity window and Geometry window, see “8-6 Using the Geometry Application with Other Applications”.

Inserting a Geometry Link Row

A Geometry Link row dynamically links data in the Geometry window with the corresponding data in an eActivity. You can display lines and figures drawn in Geometry as values and mathematical expressions in a Geometry Link row.

Dragging a line or figure from the Geometry window to a Geometry Link row in an eActivity converts the line or figure to its mathematical expression. This expression is interlinked with its Geometry window figure, so modifying one causes a corresponding change in the other.



Example of inserting a Geometry Link row

Modifying the equation in a Geometry Link updates the figure in the Geometry window. Conversely, changing the shape, position, or some other parameter of the figure on the Geometry window updates the equation in the Geometry Link.

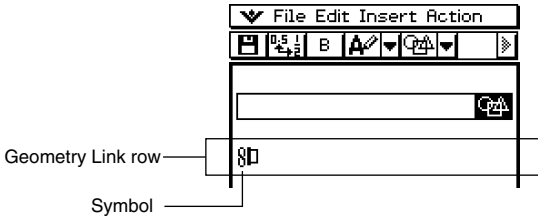
• To input a Geometry Link row

Example: To drag one side of a triangle drawn on the Geometry window and link it to an eActivity

- (1) Open the eActivity application. Next, tap [Insert] and then [Geometry] to insert a Geometry strip.
- (2) On the Geometry window that appears in the lower half of the screen, draw a triangle.
 - For details about Geometry window operations, see Chapter 8.
- (3) Tap the eActivity window just below the Geometry strip.
 - This makes eActivity the active window.

(4) Tap [Insert] and then [Geometry Link].

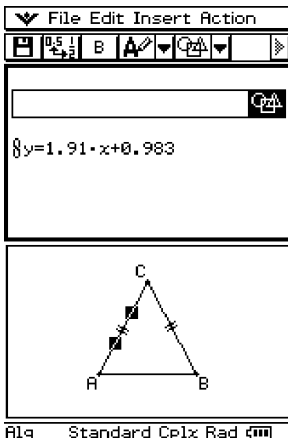
- This inserts a Geometry Link row in the next line.



(5) Tap the Geometry window to make it active.

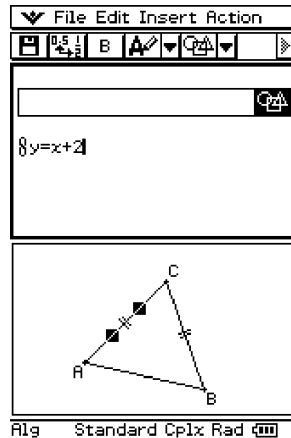
(6) Tap one side of the triangle to select it, and then drag it to the link symbol in the eActivity window.

- This inputs the equation of the line that represents the side of the triangle into the link.
- Modifying the equation in the Geometry Link row and pressing EXE causes a corresponding change in the Geometry window (lower right screenshot).
- The example below shows how the isosceles triangle ABC ($CA = BC$) changes when the equation in the Geometry Link row is changed from $y = 1.91x + 0.983$ to $y = x + 2$.



Alg Standard Cplx Rad ☰

- Drag the stylus across $1.91x + 0.983$.



Alg Standard Cplx Rad ☰

- Input $x + 2$.
- Press EXE .

Tip

- Dragging a line or figure from the Geometry window to a text row or calculation row in an eActivity also converts the figure to its value or equation. In this case, however, data in the text row or calculation row is not interlinked with the Geometry window figure.
- Pressing EXE after changing data in a Geometry Link updates the corresponding figure in the Geometry window.
- Changing the figure in the Geometry window will cause the linked data in an eActivity to update accordingly.

10-4 Working with eActivity Files

You can perform basic file operations on eActivity files. You can open previously saved files, edit an existing file, and save a file under a new name.

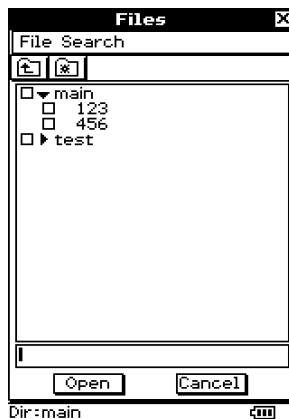
Opening an Existing eActivity

Perform the following steps to open an existing eActivity file.

• ClassPad Operation

(1) On the eActivity window, tap [File] and then [Open].

- This displays the Files dialog box.



(2) Select the name of the eActivity file you want to open by tapping it.

(3) Tap [Open].

- This opens the eActivity you selected in step (2).

Browsing the Contents of an eActivity

- When you first open an eActivity, its data appears on the window starting from line 1. Use the scroll bar to scroll the window contents if necessary.
- To view the contents of an application data strip in the eActivity, tap the expand button (which is the icon in the data strip). For more information, see “Expanding an Application Data Strip” below.

Expand button

File Edit Insert Action

The parametric equations for the path of ball are...

$$x(t) = t \times v_0 \times \cos(\theta)$$

$$y(t) = t \times v_0 \times \sin(\theta) - \frac{g \times t^2}{2}$$

If a ball were thrown at a 45 degree angle at 40 feet per second, the graph of the ball's motion is...

$g = 32 \frac{\text{ft}}{\text{sec}^2}$	$v_0 = 40$	$\theta = 45$
---	------------	---------------

Path of a ball

$$x(t) = t \times 40 \times \cos(45)$$

$$y(t) = t \times 40 \times \sin(45) - 16t^2$$

Alg Standard Cplx Rad

Editing the Contents of an eActivity

To edit an eActivity, you can use the same procedures that you used when you created it. For more information, see “10-3 Inserting Data into an eActivity”.

Expanding an Application Data Strip

Tapping the expand button of an application data strip expands the application data in the lower window. The expand button of a data strip is highlighted to indicate that it is expanded in the lower window.

File Edit Insert Action

Example containing two graphs

Example1

Example2

Alg Standard Cplx Rad

Indicates Example 1 is expanded.

File Edit Insert Action

Example containing two graphs

Example1

Example2

Alg Standard Cplx Rad

Indicates Example 2 is expanded.

Modifying the Data in an Application Data Strip

Modifying application data on an application window in the lower eActivity window causes the eActivity data to be modified as well. If you change the equation in the eActivity Graph window, for example, the new graph will become the data of the eActivity.

This means that when you save and then reopen an eActivity file, tapping the application data strip's expand button again will cause the new graph to be displayed.

Saving an Edited eActivity

As with any other file, there are two ways to save an edited eActivity: resaving the original eActivity with the newly edited eActivity, or saving the edited data under a different file name as a new eActivity, without changing the originally opened eActivity.

• To replace the original eActivity file with the newly edited version

(1) On the eActivity window, tap [File] and then [Save].

- This displays the Files dialog box.




Current eActivity file name

(2) Tap [Save] without changing the displayed file name.

- This causes the original eActivity file to be replaced by the newly edited version.

• To save an edited eActivity under a different name

- (1) On the eActivity window, tap , or tap [File] and then [Save].
 - This displays the Files dialog box.
- (2) If you want, tap the name of the folder where you want the new eActivity file to be saved.
- (3) Tap the file name input box, and input the new file name you want to use.
- (4) When everything is the way you want, tap [Save].
 - This saves the eActivity as a new file under the file name you specified.

