TEXAS INSTRUMENTS

TI-84 Plus CE-T
Periodic Table App

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Learn More

For more information, view the expanded Apps Guidebook at
education.ti.com/go/download.
Choose **Applications** as your technology, and then select:
Guidebook for TI-83 Plus/TI-84 Plus.
Note: The expanded guidebooks contain comprehensive information, but some content may refer to older versions of the App.

The TI-83 Plus/TI-84 Plus App guidebooks contain:

• Getting started activities

• Comprehensive feature information

• Step-by-step functional details

Note: Some functionality may differ on the CE graphing calculators.

Contents

Using Periodic Table App

This App provides a graphical representation of the elements of the Periodic Table.

Note: This guide uses the CRC Handbook of Chemistry and Physics, 94th Edition.

> For v5.5 and higher, selected elements have been updated using the Royal Society of Chemistry : http://www.rsc.org/periodic-table © Royal Society of Chemistry 2020.

This application allows you to:

• Observe and explore the Periodic Table of the Elements

• Find property data and useful information about the known elements

• Sort the elements by atomic number, alphabetically by name or alphabetically by symbol

• Identify groups of elements by region (noble gasses, halogens, etc.) and block (p-, d-, s- and f-)

• Export property data to lists for further analysis

• Graph the major properties (atomic radii, electronegativities, etc.) against atomic number to illustrate the periodic nature of the elements

## *Example Activity – Periodic Table*

Use this activity to learn the basics of the App.

Tip: Options display at the bottom of the screen to help you navigate and perform specific tasks.
To select one of these options, press the graphing key directly below it.
For example, to select **[TBL]**, press trace.
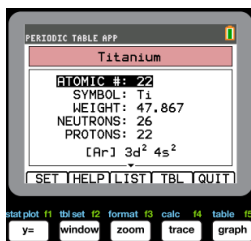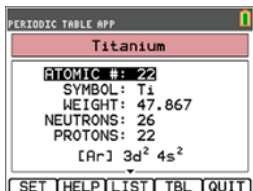
1. To begin:
   a) Press apps.
   b) Choose **Periodic** using the ▲ ▼ keys.
   c) Press any key to dismiss the splash screen.
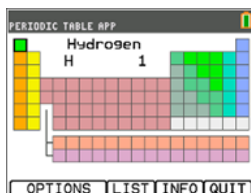
2. To find a specified element:
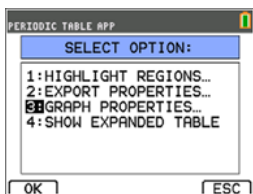   a) Use ◀ ▶ ▲ ▼ to find the element.
   b) Press entrer.
   c) Use the ▲ ▼ keys to examine and explore 15

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properties of the specified element.


```
PERIODIC TABLE APP
        Titanium
   ATOMIC #: 22
     SYMBOL: Ti
     WEIGHT: 47.867
   NEUTRONS: 26
    PROTONS: 22
        [Ar] 3d² 4s²
[ SET ][HELP][LIST][ TBL ][QUIT]
```

3. Press **[TBL]** (trace) to return to the main Periodic Table screen.

4. Press **[OPTIONS]** (window).

5. Choose **GRAPH PROPERTIES**.


```
PERIODIC TABLE APP
      SELECT OPTION:
1:HIGHLIGHT REGIONS...
2:EXPORT PROPERTIES...
3:GRAPH PROPERTIES...
4:SHOW EXPANDED TABLE
[ OK ]                    [ ESC ]
```

6. Choose **ATOMIC RADIUS**.


```
PERIODIC TABLE APP
   ATOMIC NUMBER VERSUS:
1:ATOMIC RADIUS
2:1ST IONIZATION ENERGY
3:ELECTRONEGATIVITY
4:DENSITY
5:MELTING POINT
[ OK ]                    [ ESC ]
```
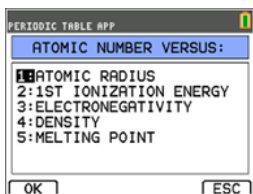
7. Use ◄ ► to explore how atomic radius relates to each element (notice that the element symbol changes in one of the "soft keys"). This graph is patterned to show distinct regions; in this case, it shows the elements that occupy the lower points of each region.

8. Press **[TBL]** (trace) to return to the Periodic Table main screen.

9. Press **[QUIT]** (graph) to quit the app.
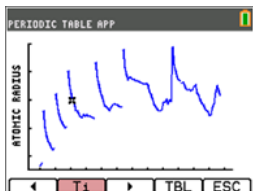
Menus and Functions

• The app will continue running until it is turned off. Press apps and then select **Periodic**. Select **2: Quit Periodic**.

Menus	Functions
Periodic Table	
Options	Select the options menu.

Menus	Functions
List	Display the list of elements.
Info	Display the opening screen with the version number.
Quit	Exits the Periodic Table application.
Option Menu	
1: Highlight Regions...	Select one region to highlight on the Periodic Table.
	The regions are: ALL, ALKALI METALS, ALKALINE METALS, TRANSITION
	ELEMENTS, INNER-TRANSITION, HALOGENS, NOBLE GASES,
	METALLOIDS, NON-METALS, ACTINIDE SERIES, LANTHANIDE SERIES,
	and METALS
2: Export Properties...	Creates two lists, each with 118 items. ÙNUM, contains the atomic numbers for every element.
1:Atomic Radius	Select to create the second list ÙRAD..
2: 1st Ionization Energy	Select to create the second list ÙION.
3: Electronegativity	Select to create the second list ÙENEG.
4: Density	Select to create the second list ÙDEN
5: Melting Point	Select to create the second list ÙMP.
3: Graph Properties...	Select the property values included in a Y list. The calculator graphs the Y-list versus the constant X list labeled ATOMIC NUMBER.
1:Atomic Radius	Highlight one of the options as the Y-list and select **OK** to display the graph. Select ◁ or ▷ to trace the graph.
2: 1st Ionization Energy	
3: Electronegativity	
4: Density	
5: Melting Point	
4: Show Expanded Table	
S	Highlights the s-block of elements
D	Highlights the d-block of elements ▢

Menus	Functions
P	Highlights the p-block of elements ⏎
F	Highlights the f-block of elements ⏎
OK	Select the block.
ESC	Returns to the Periodic Table.
Element Detail Screen	
Set	While highlighting any numerical value on this menu, select SET to send the value to your calculator's home screen.
Help	Displays units of measurement and definitions.
List	Displays a **LIST** of the Periodic Table elements.
Tbl	Returns to the Periodic Table.
Quit	Exits the Periodic Table application.
List Menu	
Reset	Reset list to sort by the default setting: atomic number.
Sort	Sort the list by atomic number, name, or symbol.
Tbl	Returns to the Periodic Table.
Quit	Exits the Periodic Table application.

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