

Getting to Know your TI-84 Plus

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Time Frame 65 Minutes

Essential Question(s)

Which mechanics of the TI-84 Plus are essential to know?

Summary

Would you like to provide students the opportunity to get to know their TI-84 Plus prior to its actual use? This resource provides an overview so students feel comfortable and confident with the device from the start. With this resource, students engage in hands-on exploration of the TI-84 Plus and learn basic operations in an active and collaborative manner.

Learning Goals

- Explore the TI-84 Plus mechanics for calculations, graphs, geometric conceptual development, and data analysis.
- Demonstrate the use of technology to enhance the learning of mathematics in the classroom.

Attachments

- BINGO_ Find Someone Who Can...—Getting to Know the TI-84 Plus.docx
- Scavenger Hunt—Getting to Know the TI-84 Plus.docx
- Session Slides—Getting To Know The TI-84 Plus.pptx

Materials

- Session Slides (attached)
- Scavenger Hunt (attached; 1 per student)
- BINGO: Find Someone Who Can... Card (attached; 1 per student)
- Writing implement
- Scratch paper, post-it notes, or index card
- TI-84 calculator (1 per student)

5 minutes

Engage

Facilitator's Note: Scavenger Hunt Preparation

In the Explore, students complete a scavenger hunt. The document is seven pages long and includes task cards specific to multiple content areas. Consider printing only the pages with the task card for your specific content area. Alternatively, there is a digital copy of the Scavenger Hunt that students can download onto a device.

Use the attached **Session Slides** to guide this learning experience. Use **slides 2–4** to introduce the topic, essential question, and learning objectives.

Move to **slide 5** and introduce the Magnetic Statements strategy to the class. On the next few slides, students read statements on the slides (**slides 6-10**) and move to the side of the room that attracts them. Adjust the number of questions and time allowed for each statement, if needed.

20 minutes

Explore

Move to **slide 11** and pass out the attached **Scavenger Hunt**, one per student. Ask students to work individually or with partners to learn about the basic functions of the calculator. After completing the Scavenger Hunt on the first two pages, ask students to explore a task card activity that directly aligns with their content area. Students can choose from pre-algebra & algebra I, geometry, algebra II, and pre-calculus.

After 20 minutes, or if students finish the task cards, bring the group back together to discuss the calculator in more depth. Move to **slide 12** and ask students to Say Something!. Slide 12 provides sentence starters, but students can also come up with their own statement.

15 minutes

Explain

Move to **slide 13** to show the diagram of the calculator. Discuss the use of each key highlighted in the diagram. Allow time for students to investigate these keys on their own as each key is introduced. Move to **slide 14** to provide the use of each key.

After students have had a chance to familiarize themselves with each key in the diagram, move to **slide 15**. Ask students to use the sentence starters to once again Say Something! or come up with their own statement.

20 minutes

Extend

Move to **slide 16** and give each student a copy of the attached **BINGO: Find Someone Who Can…** card. Ask students to take a few moments to circle any spaces on the BINGO card that describe something they already know how to do on the TI-84 Plus. When students have circled the spaces for tasks they can complete, have them find someone who can teach them how to perform a task they cannot complete.

After collaborating for about 10 minutes, students go back to their seats to begin a whole-group discussion. Move to **slide 17**. Ask students their Muddiest Point or to share out which boxes describe an action they are still not sure how to do.

5 minutes

Evaluate

Facilitator's Note: Activity Preparation

Find an empty trash can, plastic box, or tub and place it in the front of the room to collect the papers that students "toss."

Move to **slide 18** and pass out a piece of scratch paper, sticky note, or index card to each student. Introduce the Commit and Toss strategy to the class and ask them to write down one thing they learned and one thing they still want to know.

After students have an opportunity to respond, ask them to throw their paper in the designated container as they leave for the day. If time permits, ask a few students to pull a paper from the container, read it aloud, and say whether they agree and why.

Research Rationale

Technology can play a fundamental role in mathematics education. The use of calculators in the classroom enables students more time to develop deeper mathematical understanding and reasoning. Integrating graphing calculators into mathematics instruction helps students make their learning more concrete and meaningful (Kandemir & Demirbag-Keskin, 2019). Research suggests students who lack mathematical skills, such as formulas, facts, and procedures, have difficulties in tasks that involve problem solving (Parrot & Leong, 2018). Research suggests graphing calculators to be an effective tool in promoting learning and problem-solving skills (Parrot & Leong, 2018). Graphing calculators provide opportunities for exploring problem-solving and increasing students' confidence in the classroom.

Resources

- K20 Center. (n.d.). Magnetic Statements. Strategies. https://learn.k20center.ou.edu/strategy/166
- K20 Center. (n.d.). Commit and Toss. Strategies. https://learn.k20center.ou.edu/strategy/119
- K20 Center. (n.d.). Muddiest Point. Strategies. https://learn.k20center.ou.edu/strategy/109
- K20 Center. (n.d.). Say something. Strategies. https://learn.k20center.ou.edu/strategy/778
- Kandemir, M.A. & Demirbag Keskin, P. (2019). Effect of graphing calculator program supported problem solving instruction on mathematical achievement and attitude. *International Journal of Research in Education and Science (IJRES)*, 5(1), 203-223.
- Parrot, M.A.S. & Leong, K.E. (2018). Impact of using graphing calculator in problem solving. *International Electronic Journal of Mathematics Education*, 13(3), 139-148.