

Creating Custom CalcPad Problem Sets

The Calculator Pad consists of >2500 problems organized them into >300 problem sets. But we anticipated that teachers might want to re-organize the problems into their own problem sets and even write their own problems to it. So we've included a **Problem Builder** and **Assignment Builder** with The Calculator Pad tool. The **Problem Builder** allows teachers to write their own problems that include randomized numbers. And the **Assignment Builder** allows teachers to create their own problem sets from problems we have made, problems they have made, or a blend of our problems and their problems. The directions below describe how to use Task Tracker to create your own custom problem set.

Planning the Problem Set

Determine the name or the ID of all problems you wish to use. The name appears in the grey bar at the top of each problem as viewed in any of our problem sets when navigating the CalcPad section of the website. The ID of a problem is listed with the problem in the **Assignment Builder** (you must be in the Assignment Builder to view it). In the **Tools** panel at the top of the **Assignment Builder**, select **ID** in order to display the ID for each problem. It is listed in the grey field at the top of the problem (as shown below). The name is listed there as well. You can use any Problem ID present in our system, including an ID associated with a problem written by a colleague or one that you have written. Because the IDs are very long, it is best to copy the ID and paste it into a text document. In fact, we recommend gathering all the names and IDs in a text document; you will use this text document later.

The screenshot shows the 'Tools' panel at the top with a 'Select' label. Below it are checkboxes for 'Show: All', 'None', 'Help/Hints', 'Equations', 'Tags', and 'Id'. The 'Id' checkbox is checked and circled in red. Below this is a 'Jump to Problem:' section with numbers 1 through 9. A large red arrow points from the 'Id' checkbox to a problem entry below. The problem entry consists of a grey bar with the number '2.' and the name 'NL5Q2', and a white box containing the long ID '9b11501d-f058-4a55-bc5d-e7d8978d04ee'. Red arrows point from the labels 'Name' and 'Problem' to the respective parts of the problem entry.

Creating the Problem Set

1. Log into Task Tracker and open the Class you'll be creating a problem set for.

2. Tap on the **Add Tasks** button to add a new task. But instead of searching for an existing task using the filters and search functionality, tap on the **Create Your Own CalcPad Assignment** button. Then tap the **Add Selected Task** button.

The screenshot shows the 'New Task' form. At the top, there is a dropdown menu with 'Add New Public Assignment' selected. Below it is a blue button labeled 'Create Your Own CalcPad Assignment'. Below this are three input fields: 'Text' with a search bar, 'Task Type' with a dropdown menu, and 'Task Category' with a dropdown menu. At the bottom, there is a blue button labeled 'Search' and a grey button labeled 'Add Selected Task'. Red arrows point from the text '1) Tap button.' to the 'Create Your Own CalcPad Assignment' button and from '2) The tap this button.' to the 'Add Selected Task' button.

3. Fill out the short form for your custom problem set. Give the task a name, enter a message for students to see, and set all desired date information.

When you are satisfied, tap on the **Submit Final Task** button.

Create New CalcPad Task

Task:

Teacher Message:

Visible By Date:

Due Date:

Can Submit Late: ☐

4. After you submit the information, you will be prompted to launch your new (and empty) CalcPad problem set in the **Assignment Builder**. Tap on the **Yes** button. (If you tap **No**, then you can launch the problem set later using the **Launch** button (🔑) located to the left of the assignment's name in the **Task Table**.

Launch CalcPad Assignment Builder

Do you want to launch the CalcPad Assignment Builder for this task?

☐ Don't Ask Again

5. The new problem set launches in the **Assignment Builder**. But there's not much to it since you haven't added any problems yet. Tap on the **Add New Problem** button located at the bottom of the **Assignment Builder**. A dialogue box appears. Tap on the **Select Existing Problem** button.

(Tapping the **Create Blank Problem** button will open the **Problem Editor** where you will begin writing your own problem.

Are you sure?

Do you want to add a blank problem or select an existing one?

6. A Search window opens that allows you to search for the problem(s) you wish to add to your problem set. You can find the problem by typing the name or ID (or better yet, copying the name or ID into the **Text or ID** field of the Search window. If using a problem name, it is useful to select the **Problem Owner** from the pull-down menu.

Text or ID: **1) Enter the problem name (or part of it) here.**

Problem Owner: **2) "Public" means Physics Classroom written problems.**

Topics:

Tags:

Difficulty:

3) Tap Search button. Results are returned below.

4) Scroll results. Tap Select Problem for any desired problem. A list of selected problems is built. Tap Add Problems when ready.

K13Q1
Difficulty: **Medium** Id: 9bec1389-d1c4-4730-a83c-69e479b8875e

A car coasts into a hill at [vi].0 m/s. It slows down with a uniform acceleration of -1.0 m/s/s.

a. What is the car's speed after [t1].0 s?

Speed m/s

b. What is the car's displacement after [t1].0 s?

3 Problems Selected

| | |
|-------|---|
| K13Q2 | <input type="button" value="Deselect"/> |
| K13Q3 | <input type="button" value="Deselect"/> |
| K13Q5 | <input type="button" value="Deselect"/> |

Problems written by The Physics Classroom fall under the category of **Public**. Tap the **Search** button. All problems matching the entered search criteria will be returned. If using the ID, there should be only one returned search result. If using a portion of the problem name – like K13Q instead of K13Q6 – and selecting Public as the problem owner, you will get all the problems used in problem set K13 (not just question #6). Tap on the **Select Problem** button(s) to add the problem or problems to your problem set. As you do, a list of selected problems is built and displayed in the lower right of the browser window. You can add as many problems as you wish. And you can repeat the search and selection process as many times as you wish. The Deselect button (bottom right) allows you to remove one of your selections if desired. Tap the **Add Problems** button when satisfied with your selection. The Assignment Builder will refresh the page with your selected problems.

7. At some point, you will need to configure your settings for the CalcPad assignment. This is done with the **Assignment Configuration** panel. Settings that will need configuring include the error allowance, the attempt settings, and the

The image shows the 'Assignment Config' panel. It is divided into two main sections: 'Scoring Settings' and 'Attempt Settings'. The 'Scoring Settings' section includes 'Default Point Value' (set to 1) and 'Total Possible Points' (set to 10). The 'Attempt Settings' section includes 'Default Error Allowance' (set to 2%), 'Default Max Attempts' (set to 10), 'Default Unpenalized Attempts' (set to 6), and 'Default Penalty %' (set to 25%). Red arrows point from the labels to their respective sections.

score settings. These are discussed in detail in our **Configuring a CalcPad Problem Set** document. The settings you select in the **Assignment Configuration** apply to all problems and their parts in the problem set. They are **default** settings. If you wish to override any setting for a particular problem or part of a particular problem, then you must use the **Custom Configuration** panel. Tap on the Show Custom Configuration button next to any of the parts of a problem. Then use the provided fields to override the default settings that apply to all the problems. The changes you make only affect the problem whose settings you customized.

The image shows the 'Custom Configuration' panel for a specific problem part. It includes a title bar with '8. K13' and a 'Total Point Value' of 2. A red box highlights the 'Additional controls to add/remove problems, to edit problems, or to move problems.' section, which contains icons for adding, removing, and editing. Below this, there are two parts of a problem, each with an 'Acceleration' input field and a 'Show Scoring Customization' button. Red arrows point from the 'Override buttons for individual problem parts' label to these buttons.

8. You can repeat the process of selecting more problems as many times as you wish. When the problem set is blank (after its initial creation), you tap on the **Add New Problem** button to add problems. The button disappears after you have added problems. The task of adding a new problem involves tapping on the **+** button found in the Name and Controls panel for any problem. See screenshot above. The name of every problem is listed in the Assignment Builder above the problem. A set of controls are located to the right of the name. Tapping on the **+** button for Problem 4 will allow you to add new problems directly after Problem 4. The Search pop-up window appears (after tapping **Add Existing Problems**) and you repeat the process of searching for and adding problems to your custom problem set. See Step 6 of these directions.
9. Periodically tap on the **Save Assignment** button at the top of the problem set. Use the **Preview Assignment** button at the top of the **Assignment Builder** to preview your new creation. If you find errors when previewing, then return to the **Assignment Builder** to make edits. Tap the **Back to Assignment Builder** button to return.
10. When finally done creating your custom CalcPad problem set, tap on the **Close** button (breadcrumbs section of page) or simply close the browser tab.