

Previewing and Customizing Concept Checkers

One of the benefits of having a Teacher Account for Physics Interactives with Concept Checkers is the ability to customize an assigned task. You don't have to use the Concept Checker as it is made. You can tailor it so that it is suitable for the specific class you are teaching. But before you get too excited, let's talk about what you can and can't customize.

Unwanted Question Groups

A Concept Checker comes with questions organized into Question Groups. A student must correctly answer one question from each Question Group. When you preview a specific Concept Checker, you are likely to run across a few questions that you don't care for. You may not like the wording or you may find that the *Select all that apply* questions are too difficult for the class you teach or you may not cover or value a specific aspect of the topic that a question targets. We anticipate this and give you the ability to *remove* a Question Group from a Concept Checker. *Removing* a Question Group means that you tag that particular Question Group number so that it is not presented to the student during the assignment.

The Health Penalty

Task Tracker keeps track of student progress when done in **Sudden Death** mode. Sudden Death mode features a Progress Bar and a Health Bar. The Health Bar percent can decrease when a question is missed. If the percent decreases to 0 percent, then the student must start the Concept Checker over. (We discuss the rationale and effects of this approach in our page titled **The Health Bar, the Health Penalty, Learning, and Mental Health**. It is a highly recommended read.) The actual percentage by which the Health Bar decreases can be customized to your class. Making it a smaller value means that the possibility of starting over is decreased. Making it a larger value means starting over is more likely to occur.

What You Can't Customize

A Concept Checker comes with questions organized into Question Groups. These are hard coded into the HTML and can't be changed. The wording of the questions, the terminology that is used, and the questions themselves are all fixed. You can't add to the questions nor change them. You cannot selectively remove one question from a Question Group while leaving the others. You can only tag the entire Question Group so that it is not presented to the student.

Teacher Preview Mode

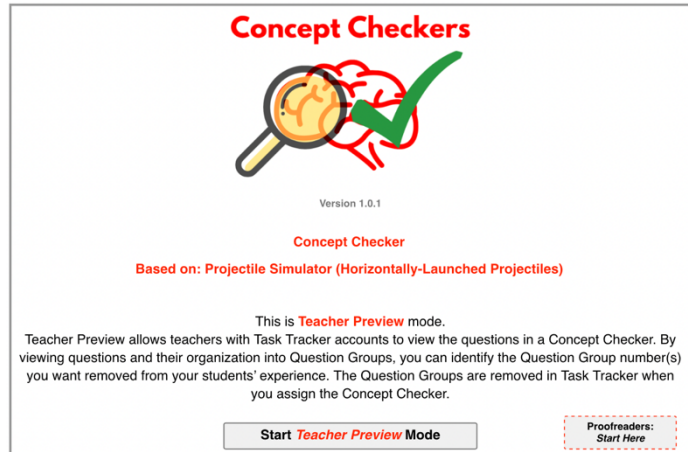
We always recommend that teachers preview a Concept Checker before they assign it. Previewing is easy and it doesn't need to take long. Our preview files are located in the **Teacher Resources** section of Task Tracker. You must be logged in to your teacher account in order to view this section. Students and guests do not have access to this area. If you are logged into your teacher account, you will find a link to Teacher

Resources on your Account page. There is also a link at the bottom of the left-side navigation column under the heading of Task Tracker. In Teacher Resources, you will find a link to the **Concept Checkers – Teacher Preview** page. Once there, navigate to the topic and to the Concept Checker that you wish to preview. When you open the Concept Checker in Teacher Preview mode, it is the same Concept Checker that students use except that it is

equipped with a navigation panel that allows you to quickly navigate through the task, view the questions, and see their organization into Question Groups. Teacher Preview mode does not allow you to enter and check answers. There are two main reasons we provide teachers with this mode:

1. Teacher Preview mode allows teachers to identify the Question Group numbers that they would like removed from the assigned Concept Checker.
2. Teacher Preview mode is the perfect tool for whole-class display, allowing teachers to discuss a specific question with the class.

Answers are not stored in Teacher Preview mode (or anywhere inside the browser).








Identify the Question Group # of the Question Groups you want removed. You can remove these groups when you assign the Concept Checker.

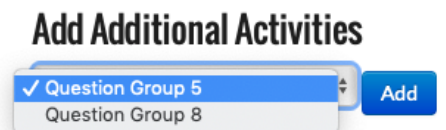
Navigation Display

The screenshot shows the 'Teacher Preview' navigation panel. It has a title 'Teacher Preview' and a description: 'Teacher Preview Mode helps you to decide which Question Groups (if any) you wish to remove from a Concept Checker. As you toggle through the Groups, make a note of any Question Group #s you wish to remove.' Below that is the 'Mission Description: 6 Question Groups, 24 Questions'. It says 'Currently displaying ...' and shows 'Question Group 5' with 'Previous' and 'Next' buttons. Below that, it says 'There are 4 questions in Question Group 5.' and shows 'Question 18' with 'Previous' and 'Next' buttons. At the bottom, there are two icons: 'Save & Exit' (a floppy disk) and 'Help Me!' (a book titled 'PHYSICS HELP & HINTS').

Removing a Question Group









Question Groups are removed inside of Task Tracker on the Task page for the Concept Checker assignment. All assigned Concept Checkers ("tasks") can be viewed on the **Topics** page (Account → Classes → Specific Class → Topics). You can tap on the **View** (👁️) icon next to a previously assigned Concept Checker. Or you can assign a new Concept Checker by tapping on the **Create**      Name That Motion **New Task** button. If assigning a new Concept Checker, a **Back to Task** button appears once the assignment is saved. Tap the **Back to Task** button to navigate to the **Task** page.

The Question Groups in a Concept Checker are displayed in the **Task Activities** section of the Task page. A trash can appears next to each Question Group. Tapping on the trash can removes that Question Group from the student experience. Any Question Group removed from a task will be added to the **Add Additional Activities** pull-down menu. If you change your mind about the removed Question Group, it can be added back into the task from this menu. Select it and tap on the **Add** button.



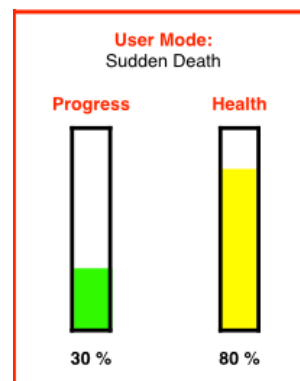
Task Activities

Here are the current Activities for this Task.

Actions	Name
	Question Group 1
	Question Group 2
	Question Group 3
	Question Group 4
	Question Group 6
	Question Group 7
	Question Group 9
	Question Group 10

About the Progress Bar and Health Bar

When a student does a Concept Checker in Sudden Death mode, a Progress Bar and a Health Bar are displayed on the screen. The Progress Percent increases when a question is correctly answered. If there are 10 Question Groups in a task, then it increases by 10% for each correct answer. For the same 10-question group task, the Health Bar also increases by 10% for each correct answer. (Unbeknownst to any observer, this Health percent can actually exceed 100% ... we just don't display it that way.) When a question is missed, the Health Percent will decrease by an amount known as the Health Penalty. Every Concept Checker has its own default value for the Health Penalty. It is typically set to 10%. Having a Physics Interactives with Concept Checker teacher account allows you to over-ride the default value for the Health Penalty and set it to whatever value you wish. Before you go to crazy making changes, let's use the following table to illustrate the relationship between correct and incorrect answers and the Progress and Health %.



Assume 10 Question Groups, Health Penalty = 50%

Before Checking Answer					After Checking Answer	
# Correct	# Incorrect	Progress %	Health %*	Correct or Incorrect?	Progress %	Health %*
2	0	20	100 (120)	C	30	100 (130)
4	1	40	90	I	40	40
5	2	50	50	C	60	60
7	3	70	20	C	80	30
9	3	90	40	I	90	-10 (Loss)
9	3	90	40	C	100 (Win)	50

* Health Percent can be greater than 100% but never displays as anything above 100%.

In general, if we let **X = # of Question Groups** used in the task and **H = Health Penalty**, then the progress percent and the health percent can be calculated from the # of correct answers and the # of wrong answers using the formulae:

$$\text{Progress \%} = \# \text{ Correct} * (1/x)$$

$$\text{Health \%} = 100 + \# \text{ Correct} * (1/x) - \# \text{ Wrong} * H$$

A student earns credit for a Concept Checker if the Progress Bar reaches 100% before the Health Bar reaches 0%. A student's completion attempt on a Concept Checker is programmed to start over if the Health Bar reaches 0% before the Progress Bar reaches 100%. While starting over seems like a terrible thing, it does provide additional practice and repetition for students and gives a mastery learning feel to the activity. It also heightens concentration and reduces guessing. And it dramatically slows the student down to a pace that promotes logic and reasoning. Nonetheless, it's effect on student performance and morale needs to be monitored. The 10% default Health Penalty is very low and it will take a miserable performance to deplete the Health Bar to 0%. While many teachers may be tempted to increase the health penalty, we think you should first give consideration to where this activity lies within your learning cycle on the topic. If the Interactive is done rather early in the learning cycle, then we would expect the student conception of the topic to still be in the early stages of development. Expecting early mastery would not be realistic. If you still feel the need to increase the Health Penalty, we suggest you give extra careful attention to any ill-effects on student morale.

The value of the Health Penalty can be customized for your specific class. The default value for the Health Penalty is displayed when you first open the **Task Properties** page for any Concept Checker. The value can be altered and saved.

Health Penalty:

20 = 20% Reduction in Health per wrong answer.

ALTERING WILL ERASE ALL PARTIALLY COMPLETED STUDENT PROGRESSES.

All who finish will still have complete.