

Previewing and Customizing Missions

One of the benefits of having a Teacher Account for Minds On Physics is the ability to customize a mission. You don't have to use the mission 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 Minds On Physics mission comes with questions organized into Question Groups. A student must correctly answer one question from each Question Group. When you preview a specific mission, 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 mission. *Removing* a Question Group means that you tag that particular Question Group number so that it is not presented to the student during a mission.

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 mission 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 Minds On Physics mission 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.

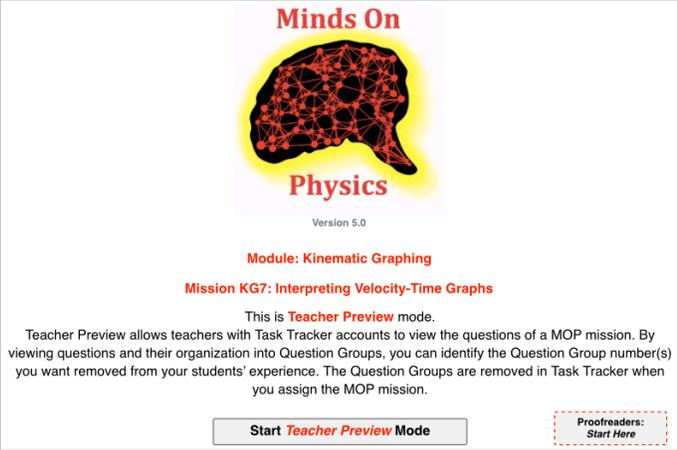
Teacher Preview Mode

We always recommend that teachers preview a mission 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 **Minds On Physics – Teacher Preview** page. Once there, navigate to the topic and to the Minds On Physics mission that you wish to preview. When you open the mission in Teacher Preview mode, it is the same mission that students use except that it is equipped with a navigation panel that allows you to quickly navigate through the missions, 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 mission.
2. Teacher Preview mode is the perfect tool for whole-class display, allowing teachers to discuss a question with the class.

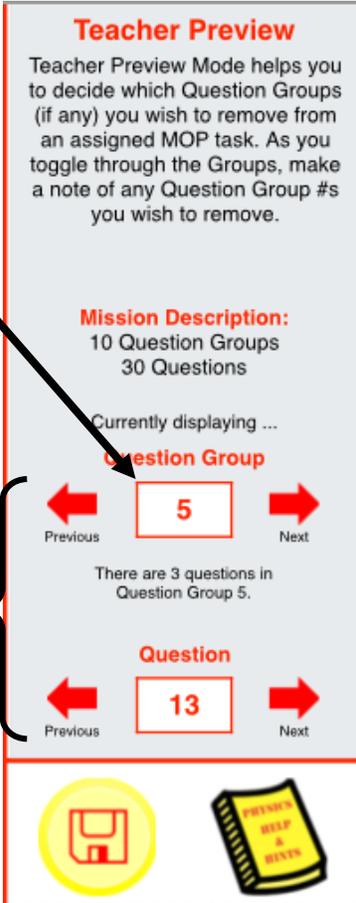
Answers are not stored in Teacher Preview mode (or anywhere inside the browser).



The screenshot shows the 'Minds On Physics' interface. At the top, it says 'Minds On Physics' with a brain icon. Below that, it indicates 'Version 5.0', 'Module: Kinematic Graphing', and 'Mission KG7: Interpreting Velocity-Time Graphs'. A paragraph explains that this is Teacher Preview mode, allowing teachers to view questions and their organization into Question Groups, and to identify Question Group numbers to be removed from students' experience. At the bottom, there is a 'Start Teacher Preview Mode' button and a 'Proofreaders: Start Here' link.

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

Navigation Display



The screenshot shows the 'Teacher Preview' navigation panel. It includes a 'Mission Description' section with '10 Question Groups' and '30 Questions'. Below that, it says 'Currently displaying ...' followed by 'Question Group 5'. There are 'Previous' and 'Next' buttons with arrows, and a central box containing the number '5'. Below this, it says 'There are 3 questions in Question Group 5.' and 'Question 13'. There are again 'Previous' and 'Next' buttons with arrows, and a central box containing the number '13'. At the bottom, there are two icons: a yellow floppy disk icon and a book icon labeled 'PREVIEW HELP & HINTS'.

Removing a Question Group

Question Groups are removed inside of Task Tracker on the Task page for the MOP mission. All assigned MOP missions ("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 mission.

Or you can assign a new MOP mission by tapping on the **Create New Task** button. If

creating a new mission, a **Back to Task** button appears once the mission is saved. Tap the **Back to Task** button to navigate to the **Task** page.



The Question Groups in a mission 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

Add Additional Activities

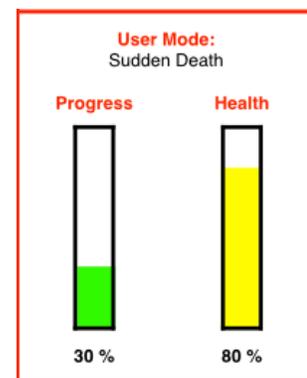


About the Progress Bar and Health Bar

When a student does Minds On Physics 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 mission, then it increases by 10% for each correct answer. For the same 10-question group mission, 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 Minds On Physics mission has its own

default value for the Health Penalty. It is generally a higher percent for missions with a small number of Question Groups and a lower percent for missions with a large number of Question Groups. Having a Minds On Physics teacher account allows you to override 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 mission and **H = Health Penalty**, then the progress percent and the health percent can be calculated from the # of correct answers and the 3 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 Minds On Physics mission if the Progress Bar reaches 100% before the Health Bar reaches 0%. A student's completion attempt on a Minds On Physics mission 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 need to be monitored. Students need to be coached through the use of Minds On Physics in the early goings until buy-in occurs. Coaching doesn't involve giving the students the answers. Rather it involves instructing them about the role of thought/logic/reasoning, concentration, reliance on already used resources (class notes, slide decks, worksheets, practice sessions, lab work, demonstrations, etc.) and those that are provided by The Physics Classroom (like the **Help Me!** button, the Tutorial section, and the Video Tutorial section).

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 mission. The value can be altered by typing in a new value and submitting to the database. Avoid making changes after the task has been assigned. Such changes will erase any progress a student has made towards the completion of the task.

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.