KOGNITY

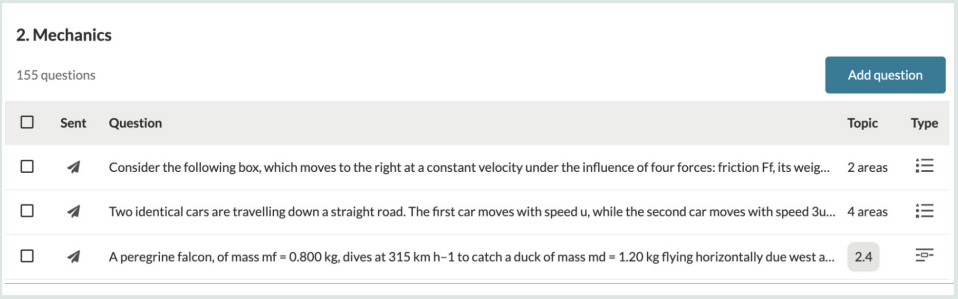
IBDP Physics
Teacher to Teacher Tips

Kognity is designed to help you prepare your students for success in their studies, while saving you time in the process. We have taken some of the most frequently asked questions from IBDP Physics teachers and asked other IBDP Physics teachers to provide the answers to them. Explore them below!

How can I get the most out of the question banks / question assignments?

Question assignments are your basic tool to gauge a student's skill in a particular topic. Questions can be selected from different sections or topics. Question sets can be assigned to the whole group, or they can be tailored and assigned to specific students (say, students requiring extra practice).

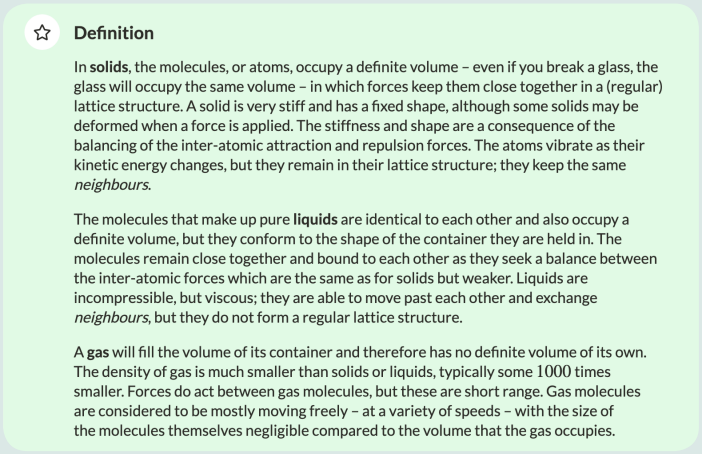
Teachers can also write their own questions (and add the answers, so that Kognity will grade these) and assign them just as they would others. These questions can be labelled with a specific section so that they are easy to look up afterwards.



What should students focus on when reading the textbook?

All subtopics are divided into sections, just as they are in the IB Physics curriculum. Each section has one or more boxes within the text for items such as definitions and important information that cover key information which students should pay attention to. The last section in each subtopic is a checklist - these highlight key concepts from the entire subtopic.

When reviewing, have students focus on these specific features, so they can be as efficient as possible.



Definition

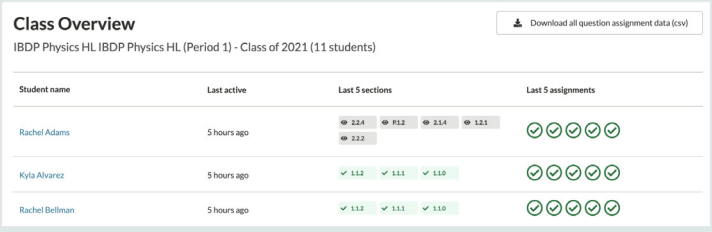
In **solids**, the molecules, or atoms, occupy a definite volume – even if you break a glass, the glass will occupy the same volume – in which forces keep them close together in a (regular) lattice structure. A solid is very stiff and has a fixed shape, although some solids may be deformed when a force is applied. The stiffness and shape are a consequence of the balancing of the inter-atomic attraction and repulsion forces. The atoms vibrate as their kinetic energy changes, but they remain in their lattice structure; they keep the same *neighbours*.

The molecules that make up pure **liquids** are identical to each other and also occupy a definite volume, but they conform to the shape of the container they are held in. The molecules remain close together and bound to each other as they seek a balance between the inter-atomic forces which are the same as for solids but weaker. Liquids are incompressible, but viscous; they are able to move past each other and exchange *neighbours*, but they do not form a regular lattice structure.

A **gas** will fill the volume of its container and therefore has no definite volume of its own. The density of gas is much smaller than solids or liquids, typically some 1000 times smaller. Forces do act between gas molecules, but these are short range. Gas molecules are considered to be mostly moving freely – at a variety of speeds – with the size of the molecules themselves negligible compared to the volume that the gas occupies.

How can I make sure students are working with Kognity on their own?

While questions answered in the practice centre will not generate an automatic report like assignments created by the teacher do, they will be registered in the class statistics. Head over to class statistics / performance overview, to see which students are working on their own and which ones are lagging behind. Use this to encourage students to take responsibility for their self-driven learning.



Class Overview

Download all question assignment data (csv)

IBDP Physics HL IBDP Physics HL (Period 1) - Class of 2021 (11 students)

Student name	Last active	Last 5 sections	Last 5 assignments
Rachel Adams	5 hours ago	2.2.4 P.1.2 2.1.4 1.2.1 2.2.2	✓✓✓✓✓
Kyla Alvarez	5 hours ago	1.1.2 1.1.1 1.1.0	✓✓✓✓✓
Rachel Bellman	5 hours ago	1.1.2 1.1.1 1.1.0	✓✓✓✓✓

Is there something in particular I can do to help students prepare for IBDP Physics Paper 1/2/3?

Papers 1 and 2 cover the basic syllabus (Chapters 1-8 for SL or 1-12 for HL).

Paper 3 covers laboratory skills, and the topics for one of the four Options.

Have students start by reading the textbook, paying particular attention to the Checklist at the end of each subtopic. You can ask students to build concept maps from these, which will help them organize and eventually recall all the information.

For Paper 1, have students go over the Strength Tests on their own, and assign multiple choice questions from the provided question banks. For this part, build assignments with a sample of questions from all subtopics.

Once students have practiced for Paper 1, move on to Paper 2. For this part, have students work on Exam-Style Questions that you have unlocked, and build assignments with the short-answer questions found in the question bank. Again, select a sample of questions from all subtopics.

For Paper 3, students should start by reading subtopic 1.2, and whatever option they studied. After this, they can practice laboratory skills by reading specific practicals from the Practicals section in the textbook and paying attention to the way data is analysed since these practicals also include review questions. For the option, they can prepare as they would for Paper 2.

Is there something in particular I can do to help students prepare for their Internal Assessment?

Writing a good Internal Assessment has a lot to do with organizing properly.

Have students read the Internal Assessment topic in the textbook. While sections here do not have review questions, you can add your own and assign them, to make sure students understand what is expected of them.

Check Practical 1.5 (on the refractive index) with your students, which has an example on linearizing values to graph them. Explain how they can start by collecting raw data, and what it means to "process" their data in order to write an appropriate analysis and conclusion.