KOGNITY

Assessment Prep with Kognity

IBDP Physics

What is this guide for?

This guide is designed to help you make the most out of Kognity as a tool to prepare students for success both in formative assessments and IBDP exam preparation.

How does Kognity help with assessment preparation for IBDP Physics?

According to John Hattie, Professor of Education and Director of the Melbourne Educational Research Institute at the University of Melbourne, Australia, feedback is an important driver for improving teaching and learning. Formative assessments play a large role in consistent feedback throughout the year as students prepare for their IBDP exams. Kognity provides efficient tools for immediate feedback to both the student and teacher.

> *Think of feedback as received, not given.*
>
> *- John Hattie*

For students:

Students can test their problem solving, interpretation and analysis skills in Physics through completing worked examples and receiving immediate feedback on their responses. In addition, at the end of each section, students can complete section questions that are auto-graded, allowing them to receive feedback right away on their progress.

For teachers:

Teachers get immediate feedback on their students' progress through the performance overview dashboard, located on the statistics page. Here, teachers can view a visual representation of student quiz and assignment scores. Teachers can then easily identify those students who need help, which makes intervention fast and efficient.

Below you will find some ways teachers can use Kognity's resources to successfully prepare their students for IBDP Physics assessment components. Click on each picture to explore more in Kognity Physics!

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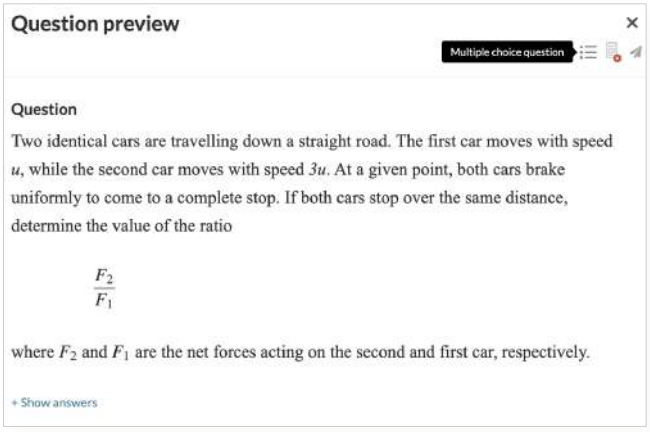
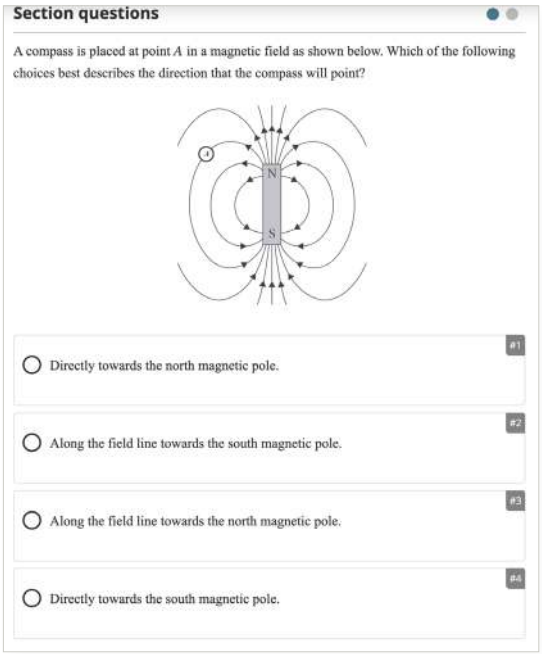
Question Drills

Kognity's question assignments can be used as question drills for review at the end of a unit. Teachers can drill students on different topics using multiple choice questions which appear on Paper 1. All question assignments are auto-graded, so students and teachers can immediately receive the results. Teachers can then revise any common mistakes before starting to teach new content.



Exit Tickets

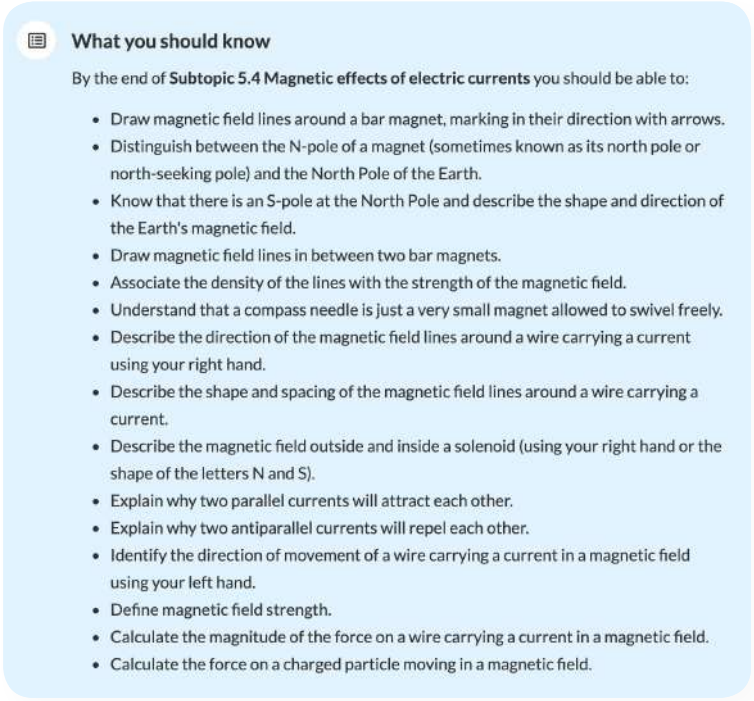
Exit tickets are a great type of formative assessment. At the end of class, students respond to a series of questions pertaining to the lesson to consolidate their knowledge and understanding. At the end of every Physics section are *section questions*, which teachers can set at the conclusion of the lesson. These questions are auto-graded, so both the students and the teacher get the results immediately.



How does Kognity help with formative assessments?

Notebook and Checklists

Kognity's notebook feature allows students to make their own notes and print out if necessary for consolidation. Students can use the notebook feature when they are performing self-assessment of knowledge and understanding at the end of each chapter with the checklists.



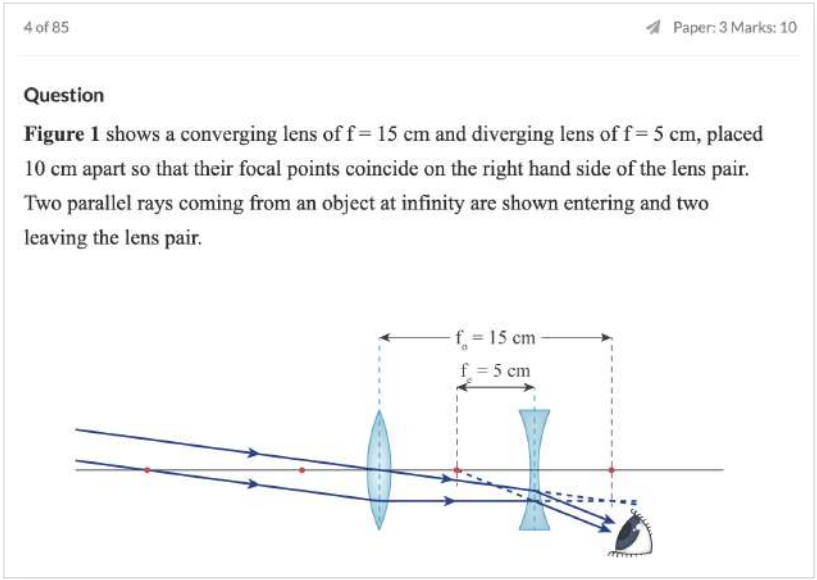
What you should know

By the end of **Subtopic 5.4 Magnetic effects of electric currents** you should be able to:

- Draw magnetic field lines around a bar magnet, marking in their direction with arrows.
- Distinguish between the N-pole of a magnet (sometimes known as its north pole or north-seeking pole) and the North Pole of the Earth.
- Know that there is an S-pole at the North Pole and describe the shape and direction of the Earth's magnetic field.
- Draw magnetic field lines in between two bar magnets.
- Associate the density of the lines with the strength of the magnetic field.
- Understand that a compass needle is just a very small magnet allowed to swivel freely.
- Describe the direction of the magnetic field lines around a wire carrying a current using your right hand.
- Describe the shape and spacing of the magnetic field lines around a wire carrying a current.
- Describe the magnetic field outside and inside a solenoid (using your right hand or the shape of the letters N and S).
- Explain why two parallel currents will attract each other.
- Explain why two antiparallel currents will repel each other.
- Identify the direction of movement of a wire carrying a current in a magnetic field using your left hand.
- Define magnetic field strength.
- Calculate the magnitude of the force on a wire carrying a current in a magnetic field.
- Calculate the force on a charged particle moving in a magnetic field.

Exam Practice Tasks

Kognity provides exam-style questions, marks schemes and model answers that teachers can use in a variety of different ways with their students. For example, teachers can go over a practice paper as a class, write the answer together, and focus on examiner comments.



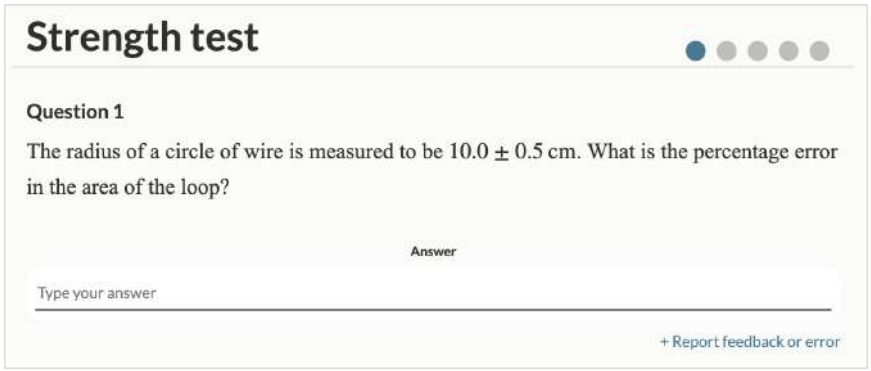
4 of 85 — Paper: 3 Marks: 10

Question

Figure 1 shows a converging lens of f = 15 cm and diverging lens of f = 5 cm, placed 10 cm apart so that their focal points coincide on the right hand side of the lens pair. Two parallel rays coming from an object at infinity are shown entering and two leaving the lens pair.

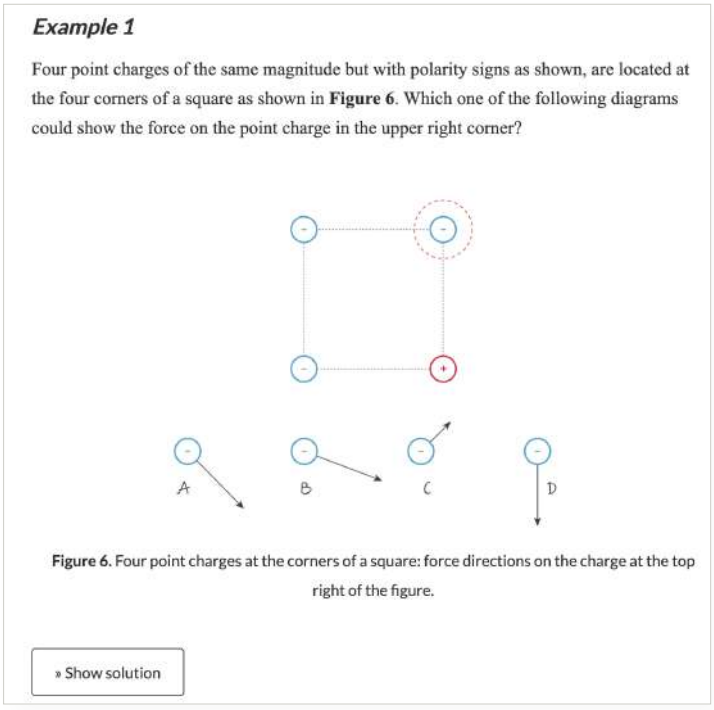
How does Kognity help with formative assessments?

To provide students with resources for self-directed active recall study, use strength tests and battles. Students can also use self-assessment checklists before a test or exam to help identify areas of weakness, and keep track of their progress with the strength bar.



Practicing data analysis in smaller, quick experiments

Using simulations to replace experiments which do not need to be carried out in a lab - where doing so would consume an excessive amount of time. This is great formative practice for IB assessment components.



How does Kognity help with formative assessments?

Concept Maps

Have students draw a concept map explaining the key ideas from a section or subtopic.

Electric charge

What do we know about charge? We know that it is some property of the particles that make up objects. The Greeks of 600 BCE realised that charge could be accumulated when animal fur was rubbed on various substances such as amber (fossilised tree resin; **Figure 1**).

Figure 1. Amber can become electrically charged.

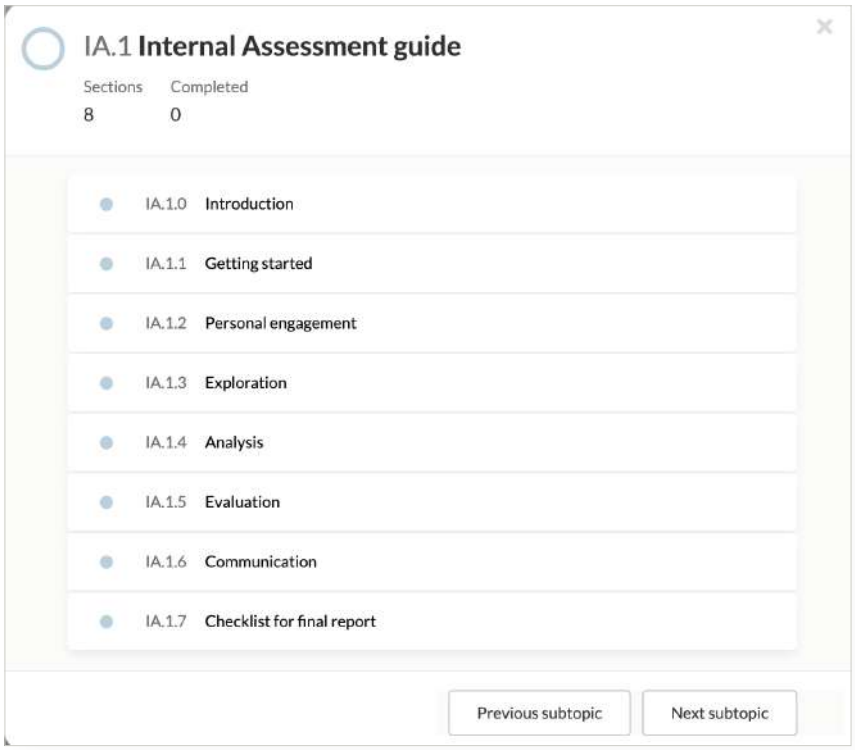
Credit: Evgeny_Kozhevnikov iStock

How does Kognity help with IB Assessment Preparation?

There are three big IB-specific components to the Physics class which all students must comply with: the required practicals, the internal assessment, and the exams. While the required practicals are not a part of a student's IB grade, all students are expected to have a working knowledge of these, and might eventually find questions relating to these in Paper 3.

Internal Assessment

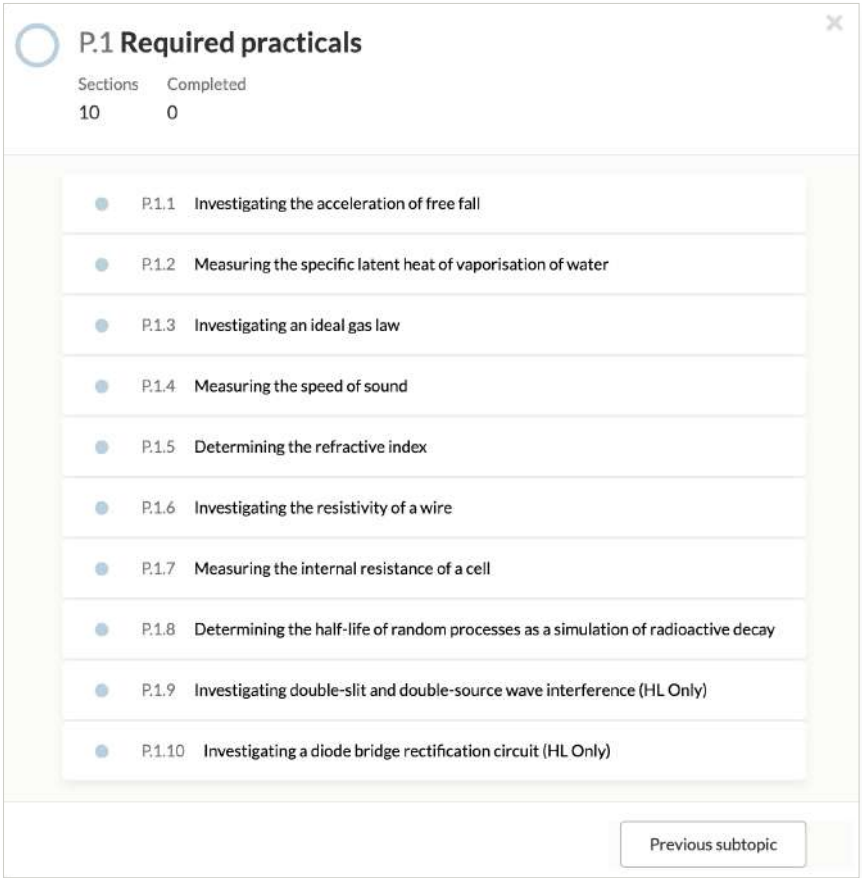
To ensure success in the IA, teachers must spend time introducing and explaining the criteria and responsibilities to their students. Users will find a detailed guide explaining what the Internal Assessment consists of, what students are expected to achieve, and how they will be evaluated. More importantly, students will find a section on how to get started on the IA, which is often the harder part of the process.



How does Kognity help with IB Assessment Preparation?

Practicals

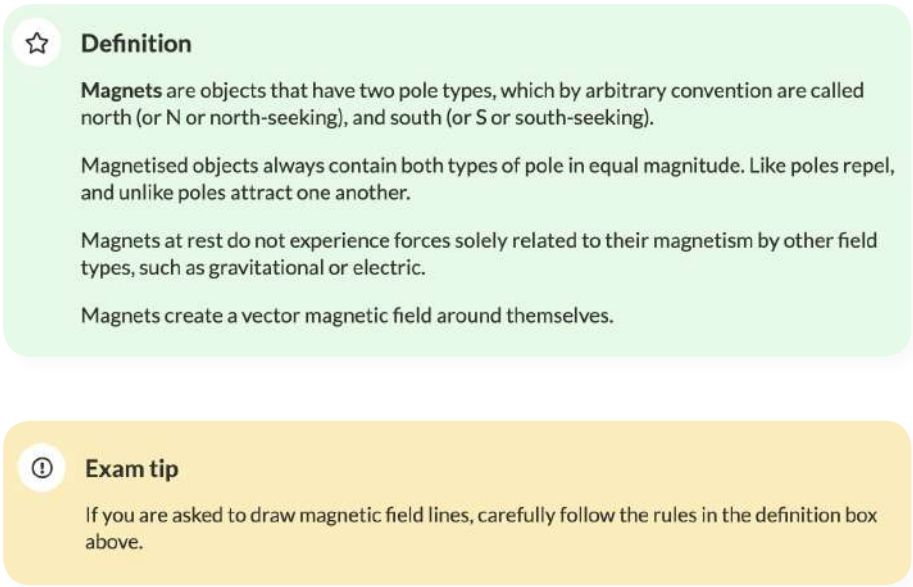
Kognity includes a step-by-step guide for each of the 10 required practicals. Students can follow along - or, once they get more experience, explore one of the suggested alternative experiments - comparing their data and their process, to make sure they understand everything. Each practical also includes a set of questions at the end.



How does Kognity help with IB Assessment Preparation?

IB Exam Papers

Exam prep is always something students worry about. Kognity is an invaluable tool for these final assessments: students will find that each section on the textbook includes a couple of boxes, all of which contain useful information, such as “Be aware” (things to watch out for, like common mistakes), “Definition” or “Important”, and perhaps more relevant, “Exam tip”, which as the name implies are useful tips to keep in mind when answering exams. Each subtopic has a Checklist at the end, recapping all the important ideas - students can quickly go over these when studying for their finals.



Kognity’s exam-style assignments are all based on Papers 1 to 3 and contain questions, example answers and commented mark schemes that provide students tips for success written by examiners. Just add a timer when using an exam-style assignment to model real exam conditions!