

Starting the School Year with Kognity

Topic: P1 Motion

Lesson: Ready for Action Lesson Plan

Subject: IGCSE Combined Science



What can I use this lesson plan for?

This is a great lesson plan for introducing students to the IGCSE Combined Science - Physics curriculum and Kognity's digital textbook features at the beginning of the school year. The activities in this lesson work well with remote or in person learning. As the year progresses, you can use these activities with different sections of the Combined Science digital textbooks.

Lesson Objectives:

Students will be able to apply Kognity's digital textbook features to classroom learning in IGCSE Combined Science.

Time Allotment:

Recommended time is *one hour*, however the revision activity provides opportunities for extensions.

Materials:

[Lesson plan P1.2.1](#), [Combined Science 1.2.1 powerpoint](#), [Speed Mastery Grid](#), [1.2.1 \(speed\)](#)

Note:

For an in-depth lesson with pedagogical guidance, please refer to this [lesson plan](#) and this [powerpoint](#).

Activities with Kognity

Hook

1. Project the lesson's [powerpoint](#) (or share your screen)
2. Introduce students to subtopic [1.2](#) (Motion) by playing the following game called **On Your Marks**
 - Instructions: To calculate speed, velocity and acceleration it is important to measure both time and distance.
 - Select the correct piece of apparatus to measure the following: (show slide 2 of the powerpoint)
3. Pose the following questions for class discussion:
 1. Why would (a different measuring implement) not be suitable?
 2. Is this tool accurate/precise? Will it allow you to generate reliable data?

Introduction Activity

With the [overview](#) projected on the board (in person) or through screen share (remote), give a brief introduction of Kognity and the useful features for students, **by explaining that:**

- The content in each section of the book incorporates features like **videos**, **study skills boxes**, **models**, and **activities** to enhance students' learning.

- Each subtopic has a series of **section questions** at the end that allow students to check their knowledge and understanding in small increments.
- The **practice centre** has exam style questions, strength tests and battles for all topics that allow students to check their knowledge and understanding of each topic. As they engage with the **strength test and battles**, their **strength bar** (on the overview page) will increase, allowing them to keep track of their strong content areas and areas they need to work on.
- Teachers can assign readings and questions and can keep track of student progress.

Paired Activity (also works as an independent activity)

Catch the Pigeon.

1. Show slide 3 of the [powerpoint](#) and explain the following activity:

Dick Dastardly famously never stopped the Pigeon.
A Pigeon can fly at top speed of 42 m/s.
Can any of these speed demons overtake one flying at top speed?



2. Students should calculate the average speed of 4 world record holders and must decide if they could catch a pigeon flying at top speed. They should use the worked example calculation in section [1.2.1](#) to help them.
3. Discuss the following questions as a class:
 - How was distance (or time) measured?
 - What are the units?
 - How much faster can the pigeon fly than xxx run/swim/cycle?

Group Activity

1. Show slide 4 of the [powerpoint](#) and ask students to complete the following practical in groups of four maximum.
2. In this activity, **Speed Trap**, students must measure the average speed of a “dynamics trolley” as it falls down a ramp. They must aim to get within 10% of the value calculated simultaneously by a light gate.
3. Before they start the activity, discuss the following questions as a class:
 - How will you measure distance and time?
 - Why is it important to be within 10% of the value of speed as calculated by the light gate?
 - What are the sources of error generated by this experiment? How did you seek to overcome them?

Independent Activity

1. Show slide 5 of the powerpoint
2. Have students complete a [question assignment](#) from subtopic 1.2.
3. Have students complete the [Speed Mastery grid](#) for further practice.
4. If there is time, go over the assignment as a class.

Revision Activities

At the end of subtopic 1.2, there are several possible activities you can do with your class.

- Show slide 6 of the [powerpoint](#) and have students create a set of comprehension questions that their teacher could use in future lessons as revision.
- Assign your students [Practice/Exam-style questions](#), where they can answer one to two questions for a specific subtopic that has already been discussed in class. These questions are modelled after IGCSE exams and are invaluable when students are preparing for exam papers.
- Have students go to the [practice centre](#) to take the 1.2 Strength test as a post assessment, or engage in a [strength battle](#) with a classmate (These questions encompass all of topic 1).