

Starting the School Year with Kognity

Topic: B1.1 Approaches to computational thinking

Lesson: Ready for Action Lesson Plan

Subject: IBDP Computer Science



What can I use this lesson plan for?

This lesson introduces students to the structure of the IBDP Computer Science course, Kognity's digital book features and the problem-solving habits they will use throughout the programme. Students explore a real-world computing scenario, construct a simple problem specification and navigate the tools they will use for reading, collaboration, feedback and independent practice. The activities work in person or remotely and can be reused with later subtopics.

Lesson Objectives:

Students will be able to navigate the Kognity Computer Science book, identify key learning features, construct a simple problem specification and describe the four fundamental concepts of computational thinking.

Time Allotment:

The recommended time is 60 minutes. The independent and revision activities provide opportunities for extension or a second lesson.

Materials:

Kognity IBDP Computer Science, one internet-connected device per student or pair, and paper or a shared digital document for group planning.

Activities with Kognity

Hook (7 minutes)

- Display the Tokyo subway earthquake scenario from the B1.1 subtopic introduction.
- Ask: "A computer cannot panic or guess. What would a developer need to define before a computer could help?"
- Collect student ideas and group them under information, instructions, constraints and evidence of success.

Introduction Activity (10 minutes)

- Give a guided tour of the subtopic page. Point out the guiding question, prior learning, learning objectives, inquiry question, glossary links, notebook, Immersive Reader, activities and section questions.
- Explain that the Practice Centre provides strength tests, battles and exam-style practice, while assignments and Insights help students and teachers monitor progress.
- Have students open the glossary or dictionary for one unfamiliar term and save one useful note in the notebook.

Group Activity (20 minutes)

- In groups of three, students read the relief organisation transcript in B1.1.1.
- Each group drafts one problem statement, two objectives, two constraints and two measurable evaluation criteria.
- Groups exchange work and check whether the interface constraint created by thick protective gloves has been addressed.
- Invite two groups to share one strong criterion and explain why it is measurable.

Independent Activity (15 minutes)

- Students read the introduction to decomposition, pattern recognition, abstraction and algorithmic thinking in B1.1.2.
- They apply each concept to a school digital inventory system or another familiar problem, writing one sentence for each concept.
- Students complete the relevant section questions or a short teacher-created question assignment.

Additional Activities (8 minutes)

- Students write one feature of Kognity they will use for independent study and one Computer Science idea they learned.
- Ask students to answer: “What makes an evaluation criterion objective and testable?”
- Use responses to identify whether the next lesson should revisit problem specifications or move into deeper computational thinking practice.

Revision activities for later in the course

- Assign one or two practice or exam-style questions for a recently completed subtopic and discuss the markscheme after submission.
- Ask students to write a short explanation, code trace or diagram in their Kognity notebook for each learning objective in a subtopic.
- Use a strength test as a post-assessment, then ask students to choose one weak area for targeted reading and practice.
- Create a reading or question assignment and have students locate it in the Assignments tab, complete it and review the feedback.



Activity 1



Individual | 10 min | ATL: Thinking: Critical thinking | LP: Thinker

Read the following transcript.

We need to track our medical supplies. Right now we use paper, and things get lost. We want a digital system to show us what is in each warehouse and alert us when stocks are low. Our field workers only have old tablets. They often have no internet connection for days. They also wear thick protective gloves and speak three different languages.

Draft a problem specification for this scenario. Include one problem statement, two objectives, two constraints and two evaluation criteria. Make each criterion measurable.

