Bebras Mega Problem Lesson Plan – Holidays!

Computational thinking skills are essential and critical in various roles, but students can struggle to relate these skills to concepts like future jobs, workforce needs or even holiday a planning! Demonstrating the usefulness of these skills in different contexts can aid student comprehension and enhance their engagement in lessons.

Goal

This activity showcases the versatility of computational thinking. Students are tasked with using computational thinking to plan a budgeted and time-constrained dream holiday. Tasks include setting a budget, allocating funds, choosing accommodation based on price and preferences, organising activities, packing, and creating a travel timeline.

STEM Professional Partnership

It is anticipated that this lesson with be teacher facilitated. STEM Professionals can assist students during the activity by enhancing their understanding of the six computational thinking skills.

Target Year Level

Upper primary and lower secondary

Time

Approximately 45-90min

Resources

Materials needed	Optional
Student workbooks	Markers
Bebras Mega Challenge PowerPoint	Poster paper/A3 paper
Holiday brochures or computers with internet access	Computers

Lesson Breakdown

Use the Bebras Mega Problem PowerPoint to accompany this lesson. Slides are referenced below.

Step 1: *Display slide 1*	Let the STEM professional introduce themselves and discuss how tasks often require multiple skills used simultaneously. Explain that these skills are valuable in everyday life, and today's project will challenge students to think like a (insert your STEM Professional's job title here) and utilize diverse computational thinking skills.
Step 2: *Display slides 2 and 3*	Display slide 2 and read the task to students. As a class, summarise the key information presented on slide 3. Emphasise the use of abstraction to complete this task . Students can work individually or in pairs/groups (preferably groups or pairs).
Step 3: *Display slide 4*	As a class, brainstorm tasks and corresponding computational thinking skills (refer to the accompanying PowerPoint). Visually record and display student responses.
Step 4:	In pairs or groups, students plan their holiday, ensuring clear documentation for sharing with another group. Set a time limit and provide periodic reminders. The teacher and STEM Professional can assist and discuss the task. Consider providing brochures or internet access for resources and suggest using Excel for budgeting (based on the group's age).
Step 5: *Display Slide 5*	After completing their holiday plans, bring the class back together. Discuss group plans. You may use suggested questions from the accompanying PowerPoint.
Step 6: *Display Slide 6*	Review and discuss each skill used during the planning process with students. Encourage discussions, group activities on posters, or have students write tasks on post-its and place them under the corresponding skill. Alternatively, you can directly scribe their responses onto the slide.
Step 7:	If time allows, give each group time to evaluate and make any necessary changes to their holiday plans.
Step 8:	Emphasise to students the need for multiple computational thinking skills and the value of group work, drafts, trials, and re-evaluation in completing tasks. If possible, have the STEM Professional share their own example of work that required using various skills and group planning.
Step 9: *Display Slide 7*	Display students' holiday plans in the room and, if time permits, have students read out some of the highlights of their holiday plan.