Creating a Collaborative Problem-Solving Task

Saadeddine Shehab
shehab2@illinois.edu

Sections of the Task Template

Section 1	Introduction	A short story that contextualizes the problem in an authentic situation. It is based on the real-life application of the key concepts. It is usually supported by figures.
Section 2	The problem	A short description of the problem.
Section 3	Your task	A description of task(s) that students are expected to achieve in their groups in order to solve the problem in a specific time.
Section 4	Supplementary material	Numbers, figures, tables, and/or any other information that the group members may need to solve the problem.
Section 5	Tools	Scaffolding tools that the group members can use to write a plan and/or sketch any diagrams to solve the problem.

EXAMPLE TASK
Escaping the Contaminated Lab

Introduction

Viruses are tiny organisms that may lead to mild to severe illnesses in humans, animals and plants. This may include flu or a cold to something more life threatening like HIV/AIDS.

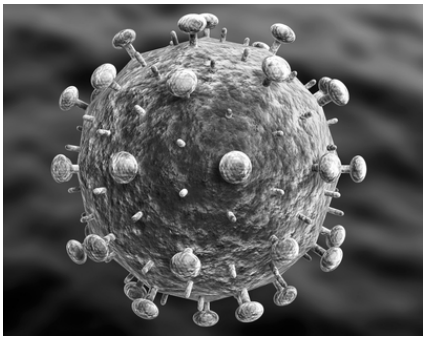

Figure 1. An Electron Microscope Image of the HIV Virus

The Problem

You lead a scientific expedition to Siberia, where your team successfully obtains a sample of an ancient virus preserved in the permafrost. You and your team quickly head back to the lab to isolate the virus. After a long night's work, you successfully isolate the virus in a series of test tubes for study. Before leaving the lab, a sudden earthquake rocks the surrounding countryside. You hear an alarm that indicates that the test tubes of the isolated virus have been broken and a toxic gas is released in most of the lab rooms. Unfortunately, in a short time, the lab will automatically vent the rooms releasing the deadly virus into the atmosphere.

Your Task

As a team, your job is to use the ***Supplementary Material*** and ***Tools*** to stop the venting process and leave the lab. You also need to be able to explain the steps you followed to do this.

Supplementary Material

- The lab consists of 16 rooms in a 4x4 configuration. It can be modeled using the 2D diagram below.
- The entrance room of the lab is at the top left and the exit door is at the bottom right.
- All rooms, except the entrance room, had test tubes of the virus and thus are contaminated.
- Some rooms have two exit doors, others have three or four exit doors.
- You and your team members are in the entrance room which contains gas masks for everyone. You decided to stick together as you try to escape the lab.
- Once you and your team enter a contaminated room you must pull an emergency switch that will release a chemical that neutralizes the deadly virus. Once the switch is pulled in a certain room all its exit doors start to close and you must quickly leave the room. Once you leave, all doors are locked, and you cannot reenter the room.