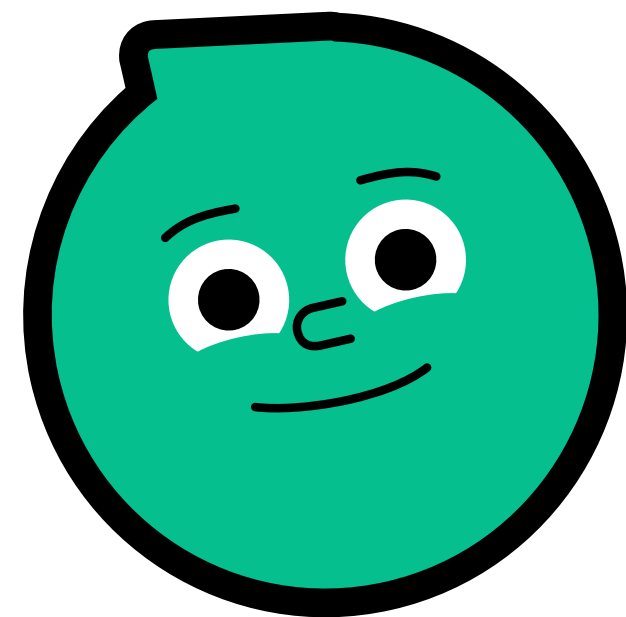


# Math and Video Games!

Elementary School – Cycle 3



Scaffolded  
Problem

# Scenario

The school administration has given the green light: The students in Grades 5 and 6 will have their own video game room in the school for the end-of-year celebration.

It's a big project, and your teacher has chosen you to coordinate all the preparations.

You need to do the following:

- Calculate the exact quantities of equipment needed based on the expected number of players.
- Calculate the equipment rental costs.

→ *What clues are missing?*

→ *What information do you need to solve this problem?*



# Number of Students

Grade Level	Number of Students
Grade 1	59 students
Grade 2	59 students
Grade 3	55 students
Grade 4	60 students
Grade 5	57 students
Grade 6	63 students

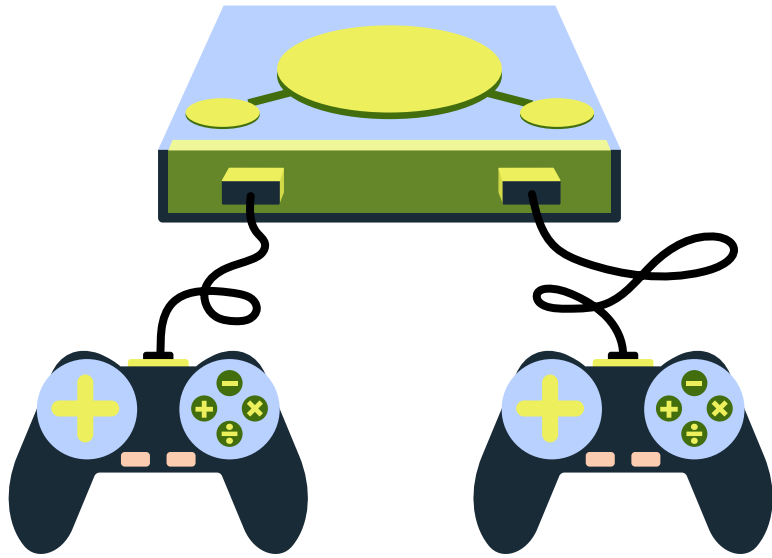


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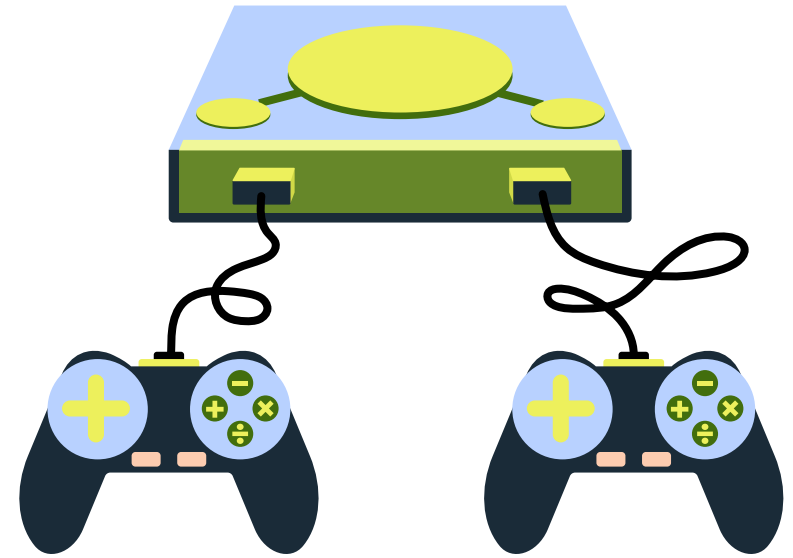


# Equipment Needed



- There must be enough video game controllers so that one third of the Grade 5 and Grade 6 students can play at the same time.
- There needs to be 20 video games available to students.
- The number of *retro* game consoles needed is equal to  $\frac{1}{4}$  of the students playing at the same time.
- The number of *new-generation* game consoles needed is equal to  $\frac{1}{5}$  of the students playing at the same time.
- The number of TVs needed is equal to the total number of *retro* and *new-generation* consoles.

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## Clue: Equipment Rental Costs



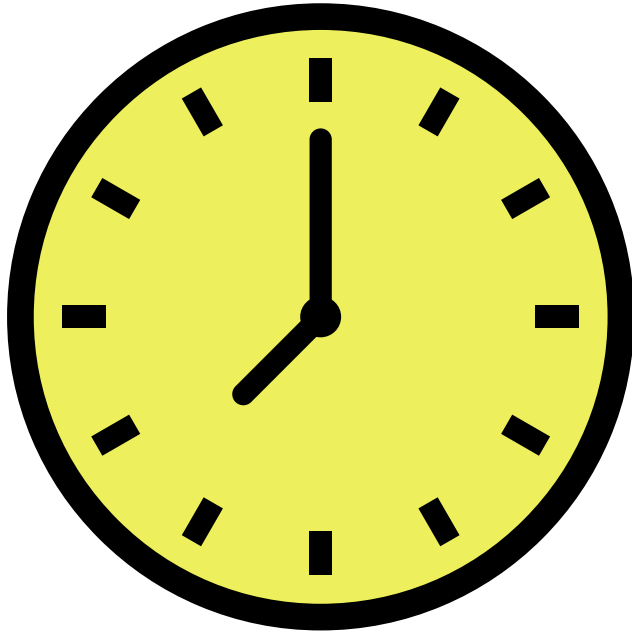
- The room where the event will be held is free of charge.
- The cost to rent a box of 10 video games is \$8.50 for 2 hours.
- The cost to rent 1 *retro* game console is \$17.35 per hour.
- The cost to rent 2 *new-generation* consoles is \$25.58 per hour.
- The cost to rent a box of 5 video game controllers is \$12.50 for 3 hours.
- The cost to rent 1 TV with the necessary cables is \$38.30 for 6 hours.
- Note that if you rent more than 3 boxes of controllers, you get 1 for free.

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# Event Length



- The video game room must be available to the students for 4 hours.
- The school administration would like to have access to the equipment one hour before the start of the event and one hour after the event, so they have enough time to set everything up and take everything down.

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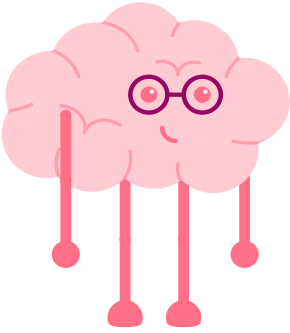
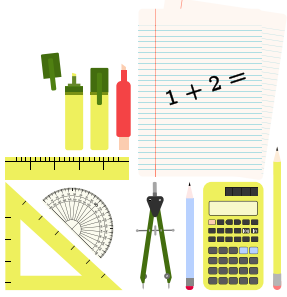



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## Observation Rubric

Student's name: \_\_\_\_\_

Date : \_\_\_\_\_

Mathematical Criteria	Observable Elements	Teacher's Comments
<p><b>understanding of the scaffolded problem</b></p> 	<ul style="list-style-type: none"> <li><input type="checkbox"/> The student asks the teacher clear, relevant questions to receive clues.</li> <li><input type="checkbox"/> The student takes the constraints of the problem into account.</li> <li><input type="checkbox"/> The student adapts flexibly when new constraints are introduced.</li> <li><input type="checkbox"/> The student represents the problem using materials and equipment, drawings, or diagrams.</li> </ul>	
<p><b>Student's effort</b></p> 	<ul style="list-style-type: none"> <li><input type="checkbox"/> The student chooses the right mathematical concepts to solve the scaffolded problem.</li> <li><input type="checkbox"/> The student correctly applies the concepts and processes.</li> </ul>	
<p><b>Explanation</b></p> 	<ul style="list-style-type: none"> <li><input type="checkbox"/> The student explains their choices.</li> <li><input type="checkbox"/> The student shows their mathematical work clearly to explain their solution..</li> </ul>	