**LESSON PLAN TEMPLATE**

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| **Term** | **Date** | **Subject**  | **Class**  | **Unit**  | **Lesson**  | **Duration**  | **Class Size**  |
| 1 | 15/11/2020 | ICT | 4 | 12 | 2 | 40 minutes | 40 |
| Type of special Educational Needs to be catered for in this lesson and number of learners in each category | Unknown |
| **Unit title** | Control Statements in C++ |
| **Key Unit competence**  | To be able to use control statements in C++ program to implement branching and iterations |
| **Title of the lesson**  | **Looping** |
| **Instructional objective**  | Learners will be able to:Demonstrate how looping works in C++ using Scratch blocks |
| **Plan for this Class (location: in/outside)** | Inside |
| **Learning Materials (For all learners)** | Computers, projector, scratch editor and digital material. |
| **References**  | Computer Science Competence Based Syllabus for Rwanda Education SystemLearner’s Book Senior FourTeacher’s Guide Senior Four |

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| --- | --- | --- |
| **Timing for each step** | Description of teaching and learning activityGiven the activities, the learner should be able to answer the questions asked. | Generic competences and Cross cutting issues to be addressed + a short explanation  |
| Teacher activities  | Learner activities  |  |
| **Introduction** **5 minutes** | Teacher will ask students to write a flowchart of a program that has recurring actions  | Referring to Unit-7: where they studied introduction to Computer Algorithm, out of their creativity, learners will write a flowchart of a program with recurring actions | • Critical thinking• Creativity and innovation• Research and problem solving |
| **Development of the lesson** **STEP 1:** **10 minutes****STEP 2:****15 minutes** | Teacher will pick up two flowcharts, one provided by a boy and another provided by a girl, and use them demonstrate to turn a flowchart into a sequential Scratch program.Teacher will then tell learners to work in groups and turn remaining flowchart into Scratch programsThe teacher will take a sequential Scratch program written in Step 1 and shorten it using loop blocks.  | Learners will follow the teacher as s/he demonstrates how a flowchart is turned into a sequential Scratch program.Learners will work in groups to turn their flowcharts into sequential Scratch ProgramsLearners will follow the example of the teacher and then, still in their respective groups, shorten the Scratch programs written in Step 1 | • Communication• Cooperation, interpersonal relations and life skills• Communication• Cooperation, interpersonal relations and life skills |
| **Conclusion** **10 minutes** | Teacher will relate the program written using Scratch to a program written in C++. The teacher will write a sequential program in C++ and then shorten it using loop controls. See appendices: A & B | Learners will, still in their respective group write sequential C++ programs and then shorten them using loop controls | • Communication• Cooperation, interpersonal relations and life skills |
| **Teacher self-evaluation**  | If anticipated conditions are met then students will master the content at a percentage equal to 100%. |

**Appendices**

**Appendix A: C++ program that prints out a pyramid**

//C++ program to print triangle

#include<iostream>

using namespace std;

int main()

{

 int rows, i, j, space;

 cout << "Enter number of rows: ";

 cin >> rows;

 for(i = 1; i <= rows; i++)

 {

 //for loop to put space in pyramid

 for (space = i; space < rows; space++)

 cout << " ";

 //for loop to print star

 for(j = 1; j <= (2 \* rows - 1); j++)

 {

 if(i == rows || j == 1 || j == 2\*i - 1)

 cout << "\*";

 else

 cout << " ";

 }

 cout << "\n";

 }

 return 0;

}

**Appendix B: Drawing a triangle in Scratch**

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