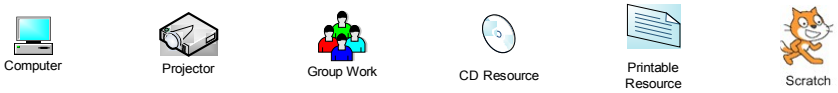
Module 10
Scratch Project

Lesson 1 Getting Started

Students are divided into pairs and the Scratch project is described. A PowerPoint presentation guides the students through the criteria for the project. Students are introduced to the Scratch Design Process model and begin brainstorming ideas for their projects.



Lesson 2 Sharing – Setting up a Scratch Account

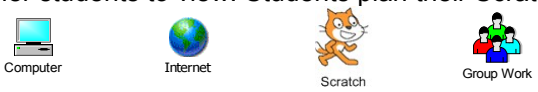
Students will sign up for a Scratch account on the Scratch website. They will learn how to upload their project to this account.

Lesson 3 Create

Students create their Scratch projects. This lesson will extend over a number of classes at the teacher's discretion. Students are reminded that they must fill out their Group Report at the end of each lesson, while they are creating their Scratch projects.

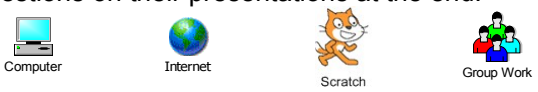
Lesson 4 Publish and Present

Students learn how to upload their projects to the Irish Scratch Club for other students to view. Students plan their Scratch project presentations.



Lesson 5 Presentations

Students present their Scratch projects to the class. They will answer questions on their presentations at the end.



© 2009 Lero, IT Tallaght, CIO Ireland

Lesson 1
Getting Started

Resources:
Getting Started (Resource 1), Group Report (Resource 2), Types of General Projects Handout (Resource 3), Examples of Games Handout (Resource 4), Sample Scratch Projects (Resource 5), Unit Marking Sheet for all students (See Appendix 1)

Key Vocabulary:
Debugging

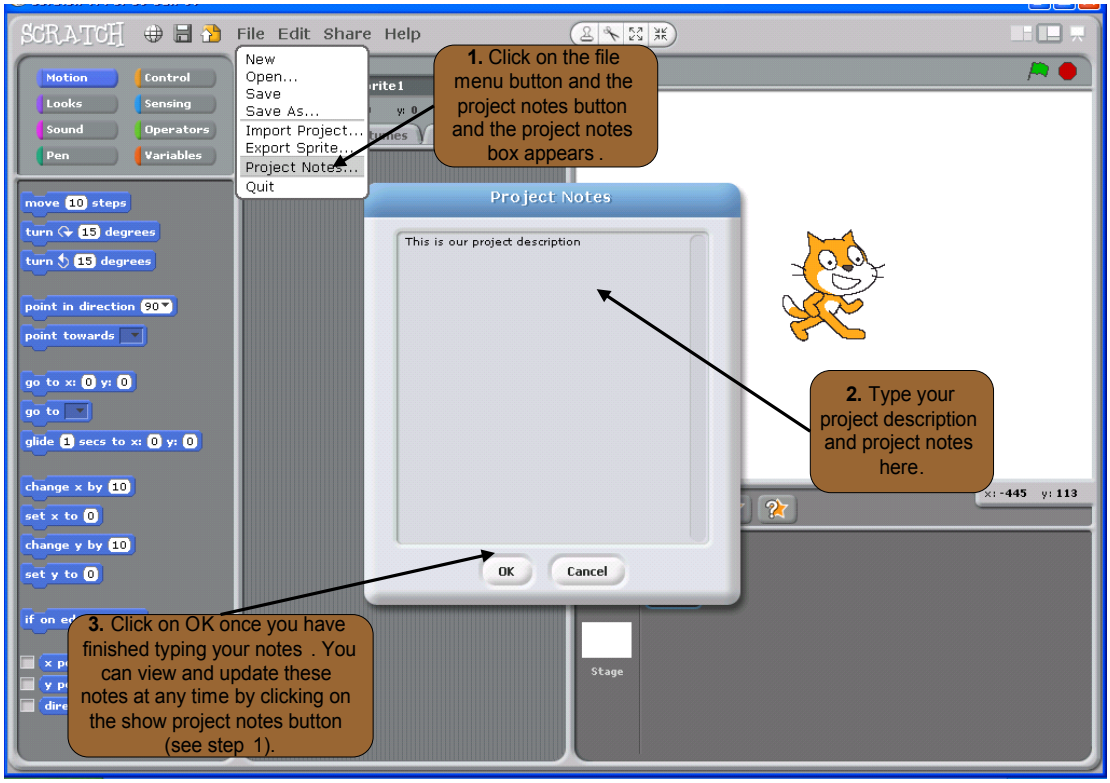
Description:
Students are divided into pairs and the Scratch project is described. A PowerPoint presentation, Getting Started, guides the students through the criteria for the project. Students are introduced to the Scratch Design Process model (they saw a modified version of this for the Research Project Plan in Lesson 1, Module 8). This model will help students to design, create, test and evaluate their project. At the end of the PowerPoint presentation, the project groups will brainstorm project ideas, using the criteria outlined as a guide and will begin their project descriptions.

Learning Objectives:
1. Students are introduced to the criteria for their Scratch project.
2. Students will understand how to plan and design their project and will be able to write a brief project description.

Lesson Introduction:
- Explain to students that they will begin planning their final Scratch projects in this lesson.
- They will be divided into groups for their project and will be given time to discuss ideas for projects. By the end of the lesson, they should be able to write a brief project description.

Lesson Breakdown:
1. Divide students into project groups. If possible, students should be divided into pairs.
2. Start PowerPoint presentation Getting Started.
3. Present students with the Scratch project Design Process model. Ask them if they recognise the model (Module 8, Lesson 1) and see if they can spot the extra element (Debug).
4. Explain each part of the model. This will help students to plan their projects.

5. Next present students with the project criteria. Answer any questions students may have at this stage.
6. Present students with the Group Report sheet (Resource 2) and explain the Group Report and its function to help students monitor the development of their project and to document their work as the project progresses. This will form part of their assessment at the end. It must be updated and submitted to the teacher at the end of every class.
7. Next explain the presentation of their projects. Explain that all group members will have to present part of the project. This will also form part of their assessment at the end of the project.
8. Finally explain to students that they will be assessed on their Scratch project (must include all criteria, as outlined in the presentation and develop these if possible), the Group Report, their project presentation, answers to questions from the class, evidence of teamwork and suggested improvements or developments for their project.
9. At the end of the presentation, present students with Resource 3 (Types of General Projects handout) and Resource 4 (Examples of Games handout). Explain to students that these handouts will help them with their own brainstorm for project ideas.
10. Finally to further help students with their brainstorm for project ideas, show them some of the sample Scratch projects (Resource 5) for inspiration. The projects are categorised as Animation, Games, Music and Simulation.
11. Give students time to discuss project ideas and to brainstorm in their project groups.
12. Once they have decided on a final idea, students should write a brief project description in the project notes section of Scratch. The following image illustrates how to access the project notes section of Scratch (This was already explained to students in Module 1, Lesson 2).



13. If students have not finished their project description by the end of this lesson, tell them they may do so at the start of the next lesson.

Resource 1

Getting Started

A PowerPoint slideshow to introduce the Scratch Project to students

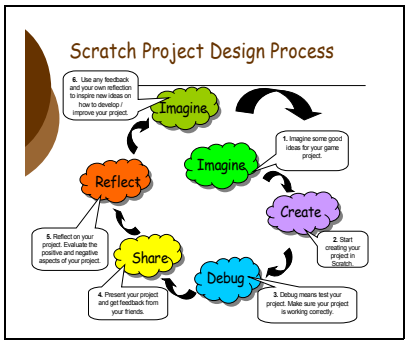
CD Resource

“M10L1R1 Getting Started.ppt”

Slide 1

Introduce topic.

Slide 2



The MIT Media Lab spiral model will guide you through your project.

First you should imagine. This involves imagining some good ideas for your project and making a plan.

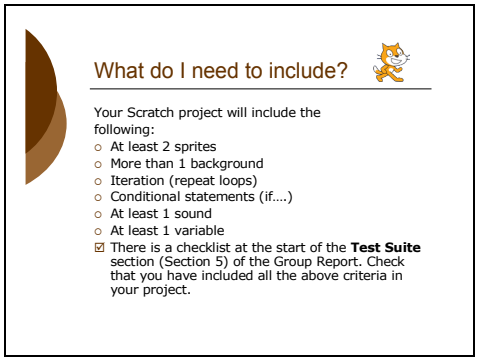
Once you have some good ideas for your project, you can start to create your project in Scratch. This is where the fun begins!

It is important to test your project as you proceed to make sure each part is working correctly. Programmers do this all the time and it is a very important stage in the creation of your Scratch project.

At the end of your project, you will share your project with your class by presenting it. You will answer questions from the class about your project.

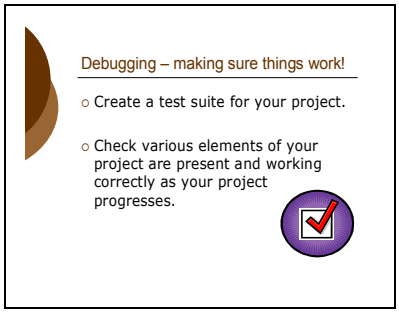
You will also have the opportunity to upload your project to a gallery on the Scratch website, so that others can see it.

Slide 3



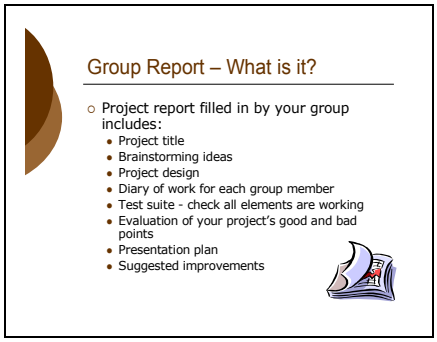
Your Scratch project game must include the following criteria:
It must have at least 2 sprites, more than 1 background, iteration i.e. repeat loops, conditional statements, at least 1 sound and at least 1 variable. You can check that you have included these criteria in your project using the Test Suite in your Group Report.
You are free to be creative and can add other elements and functionality to your project as you wish.

Slide 4



As part of the project design process you will need to debug your project. This means that you must test the different parts of your project to make sure it is working correctly.
You will use the Test Suite outline on the Group Report sheet, which you will receive, to create a test suite for your own project. You will be familiar with the test suite idea from Module 9 when you created an advanced game in Scratch.

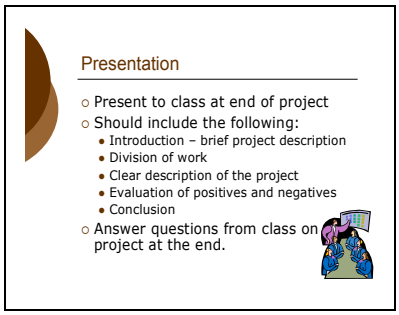
Slide 5



The Group Report, which you have been given, is a very important part of your project and will form part of your assessment.
The report must be updated at the end of each lesson and should include the following:
Brainstorming ideas for your project, project design, diary of work for each group member (this records the work done each class by each member), test suite to check all parts of your project are working, evaluation of the positive and negative aspects of your project, a plan for how you will present your project and finally 2 suggested

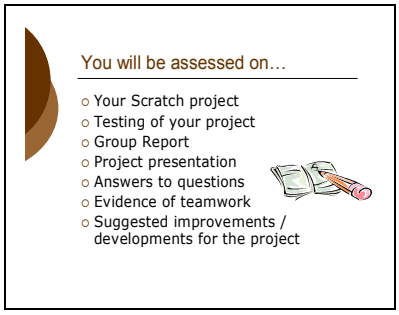
improvements for your project.
The Group Report must be submitted at the end of every lesson.

Slide 6



Once you have completed your project in Scratch, you will present it to the class.
Each group member will present part of the project. You will create a plan for your project presentation on the Group Report sheet.
The presentation should include: a brief description of your project, how the work for the project was divided among group members, a clear description of the project, an evaluation of what was positive and what was challenging and a conclusion.
At the end of the presentation, you will answer questions from the class.

Slide 7



You will be assessed on the following:
Your Scratch project, testing of your project, your group report, your project presentation, your answers to questions, evidence of how you worked together as a team and the suggested improvements / developments for your project.

Slide 8

Finally, good luck and have fun creating your projects!

Resource 2

Group Report

A worksheet for students to fill in as they progress through the Scratch project. It will form part of their final assessment.

Group Report – Scratch Project

Students' Names: _____
_____
_____

1. **Project title:**

2. **Brainstorming ideas (write words or draw pictures on anything relating to your project):**

3. Project Design

Use your brainstorming to describe all sprites used in your project.	
Use your brainstorming to describe all back-grounds used in your project.	
Describe the sounds used in your project.	
What are the instruc-tions for operating your project?	
Describe the following phases of your project: <u>Start:</u>	
<u>Middle:</u>	
<u>Finish:</u>	
What variables are used for your project?	

4. Diary of work for each group member
(To be filled in and handed up at the end of each class)

Date	Group Member 1 Work Done	Group Member 2 Work Done	Group Member 3 Work Done

Date	Group Member 1 Work Done	Group Member 2 Work Done	Group Member 3 Work Done

Date	Group Member 1 Work Done	Group Member 2 Work Done	Group Member 3 Work Done

5. Test Suite

Test Case	Peer Check	Teacher Check
At least 2 sprites exist		
More than 1 background included		
Repeat loops included		
At least 1 ‘if’ statement included		
At least 1 sound included		
At least 1 variable included		

6. Evaluation of our project:

1. Challenges we faced / Negative aspects

2. Things we enjoyed / Positive aspects

7. Presentation Plan (create speaker notes for presentation)

Introduction	
Division of Work for Team Members	
Description of Project	
Testing – problems / solutions	
Challenges we faced / Things we enjoyed	
Conclusion	

8. 2 Suggested Improvements for our project

1.

_____
_____
_____
_____
_____

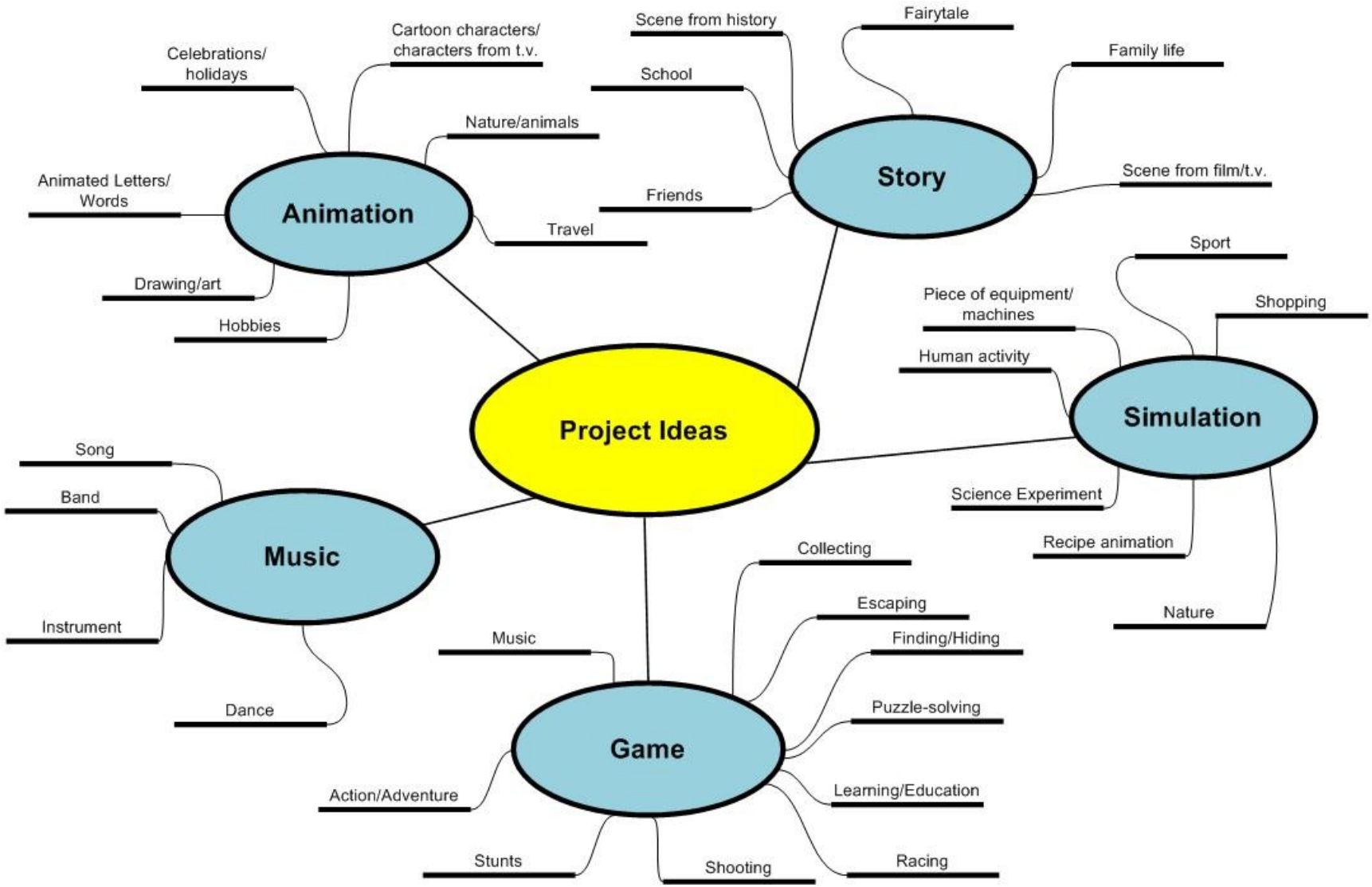
2.

_____
_____
_____
_____
_____

Resource 3

Types of General Projects Handout

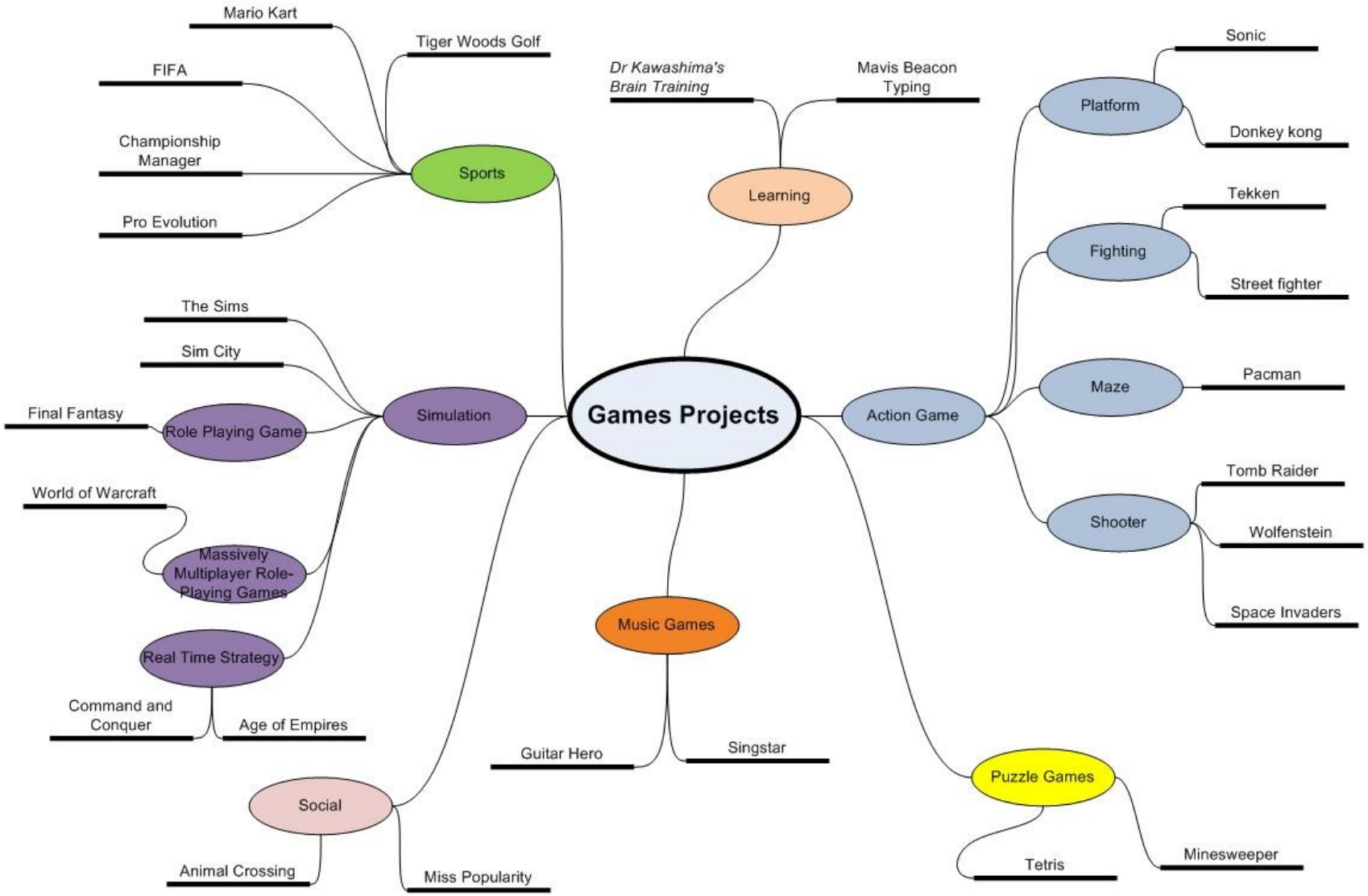
A handout on various possibilities for projects to create in Scratch. The handout will help students with their own brainstorm.


Project Ideas
Animation
Celebrations/ holidays
Cartoon characters/ characters from t.v.
Nature/animals
Animated Letters/ Words
Travel
Drawing/art
Hobbies
Story
Scene from history
Fairytale
Family life
School
Scene from film/t.v.
Friends
Simulation
Sport
Shopping
Piece of equipment/ machines
Human activity
Science Experiment
Recipe animation
Nature
Music
Song
Band
Instrument
Dance
Game
Collecting
Escaping
Finding/Hiding
Music
Puzzle-solving
Action/Adventure
Learning/Education
Stunts
Shooting
Racing

Resource 4

Examples of Games Handout

A handout on various types of games with examples. The handout will help students who wish to create a game for their Scratch project.


Games Projects
Sports
Mario Kart
Tiger Woods Golf
FIFA
Championship Manager
Pro Evolution
Learning
Dr Kawashima's Brain Training
Mavis Beacon Typing
Simulation
The Sims
Sim City
Role Playing Game
Final Fantasy
Massively Multiplayer Role-Playing Games
World of Warcraft
Real Time Strategy
Command and Conquer
Age of Empires
Social
Animal Crossing
Miss Popularity
Music Games
Guitar Hero
Singstar
Action Game
Platform
Sonic
Donkey kong
Fighting
Tekken
Street fighter
Maze
Pacman
Shooter
Tomb Raider
Wolfenstein
Space Invaders
Puzzle Games
Tetris
Minesweeper

Resource 5

Sample Scratch Projects

Sample Projects in Scratch to inspire students. The projects are categorized as Animation, Games, Music and Simulation.

CD Resource

"M10L1R5 Sample Scratch Projects"

Lesson 2
Sharing – Setting up a Scratch Account

Resources:
Group Report (Resource 2, Lesson 1), Unit Marking Sheet (See Appendix 1)

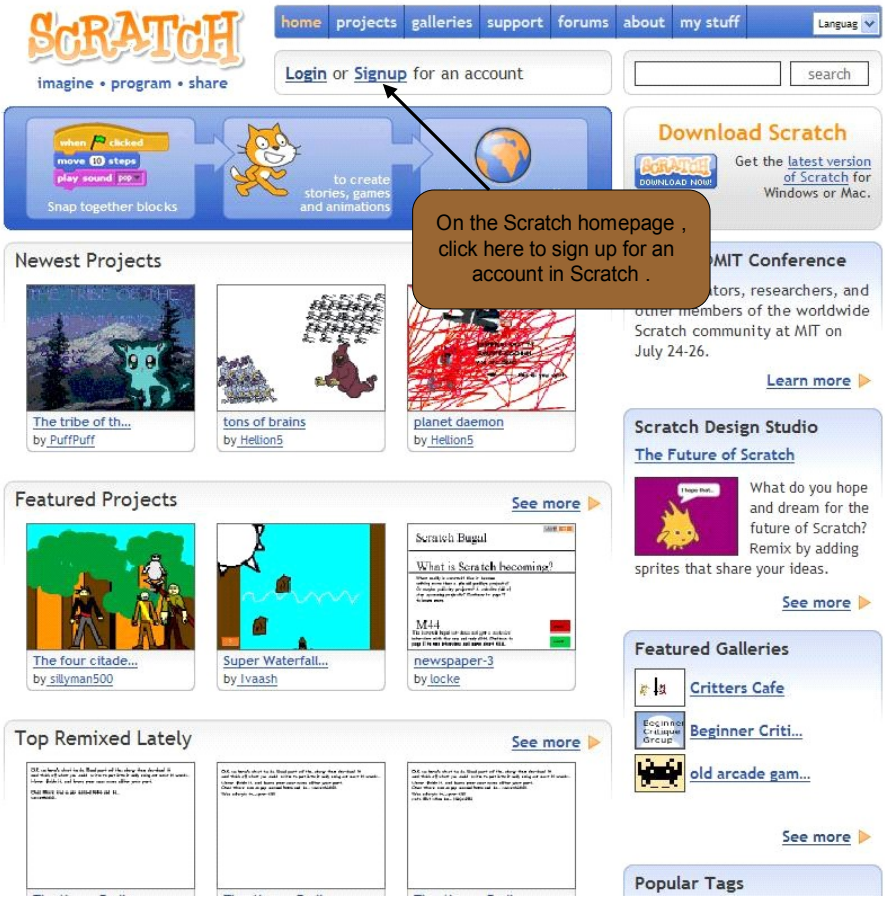
Key Vocabulary:
Not applicable

Description:
Students will sign up for a Scratch account on the Scratch website. This is very useful if students do not have access to a shared drive in school as it will allow them to upload their projects to the Scratch website and download them again to work on them in class. They will learn how to upload their project to their account. They will do this at the end of each lesson. Every member of the group will then have access to the project at all times. **Note:** Any students who have not finished their project descriptions from the previous lesson may do so at the end of this lesson.

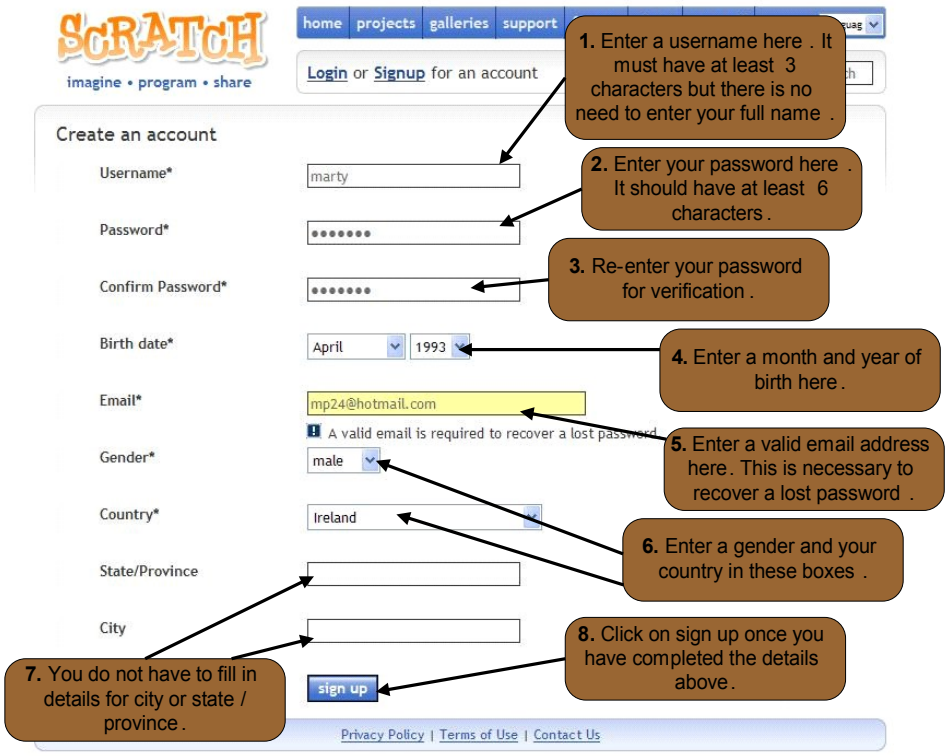
Learning Objectives:
1. To allow students to understand how to create a Scratch account.
2. To allow students to learn how to upload their projects to the Scratch website at the end of each lesson.

Lesson Introduction:
- Explain to students that today they will sign up for an account on the Scratch website.
- This will allow them to upload their projects to the Scratch website at the end of each lesson.
- It will mean that the project is accessible to all members of the group at any time. If one member of the group is missing from a class and has edited the project in the previous class, the other members of the group will be able to download the edited version of the project from the Scratch website, using the group's username and password.

Lesson Breakdown:
1. Ask students to form their project groups and to nominate one student who will create the group's Scratch account. All members of each group must observe the process and take note of the username and password created for their own group.
2. Ask the nominated students from each project group to open the Scratch homepage at http://scratch.mit.edu/.
3. Ask them to click on the signup link at the top of the page as shown below in the following image.

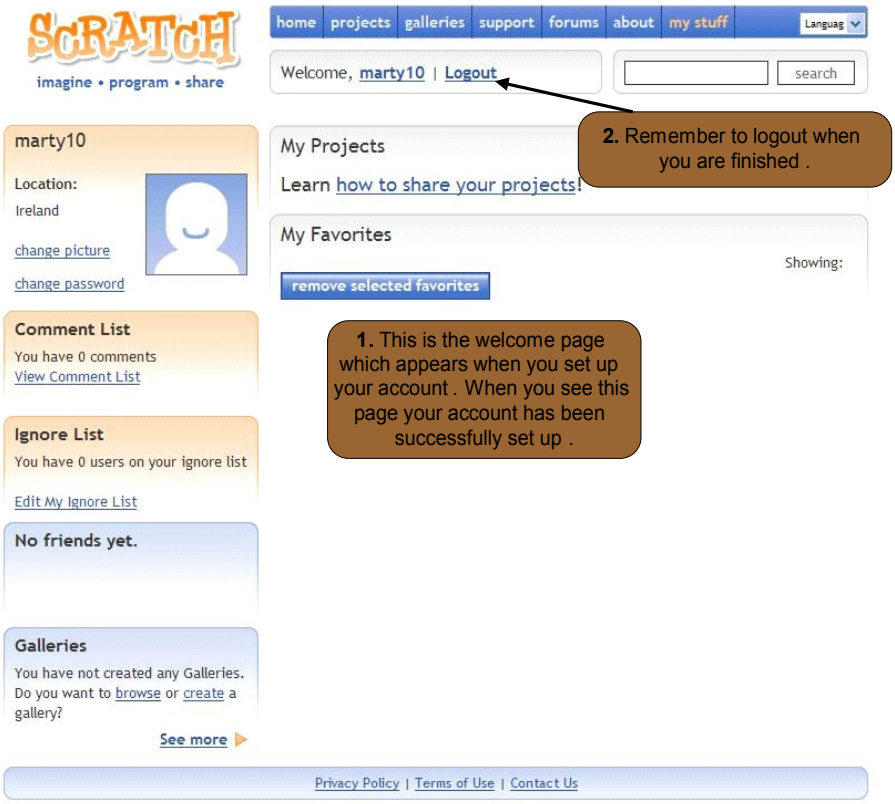


4. Enter your details to set up an account as follows:

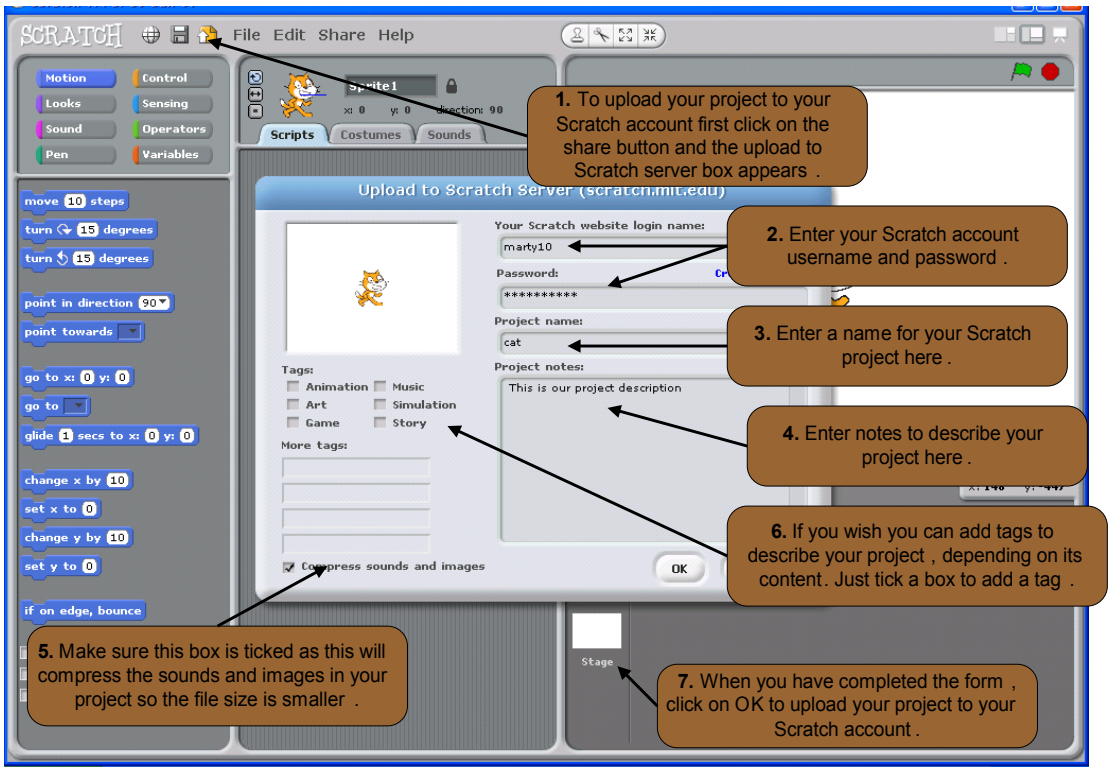


Remind students that they will have to **remember** their **username and password** each time they login to their account on the Scratch website.

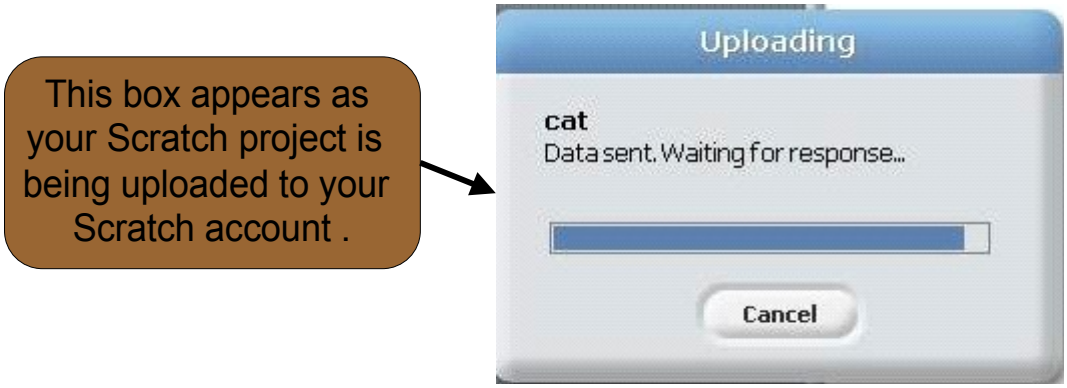
5. Once you have clicked sign up, the following welcome page will appear.



6. The following images show how students can upload their projects to their account on the Scratch website.

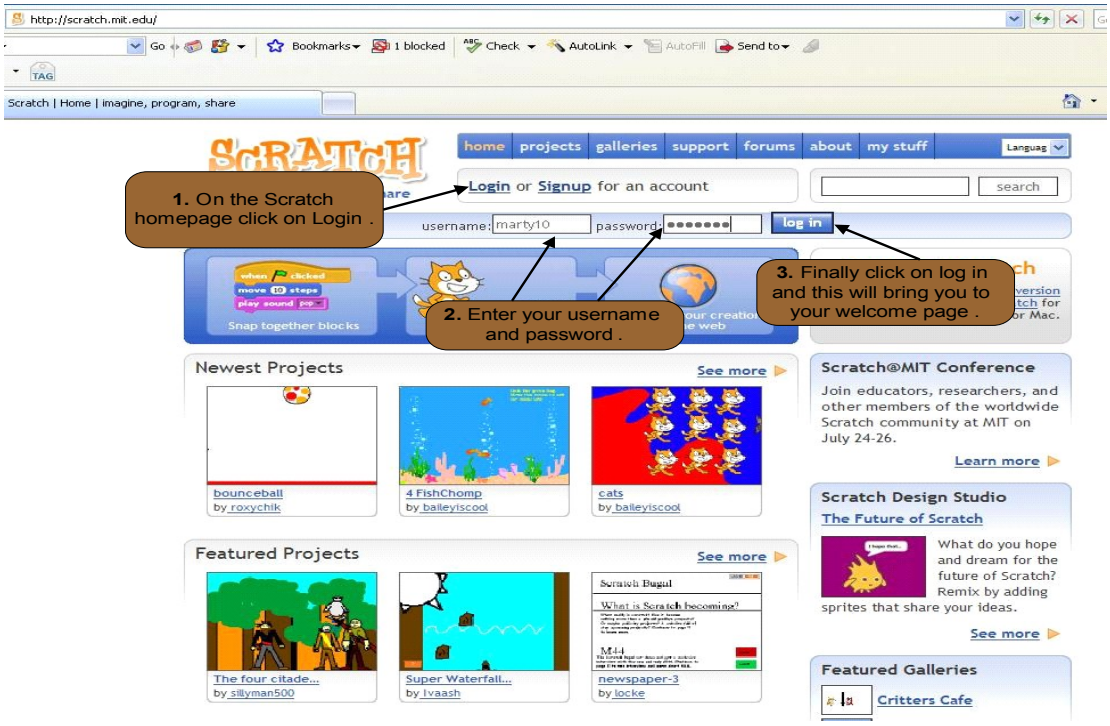


The following screen appears as your project is being uploaded.

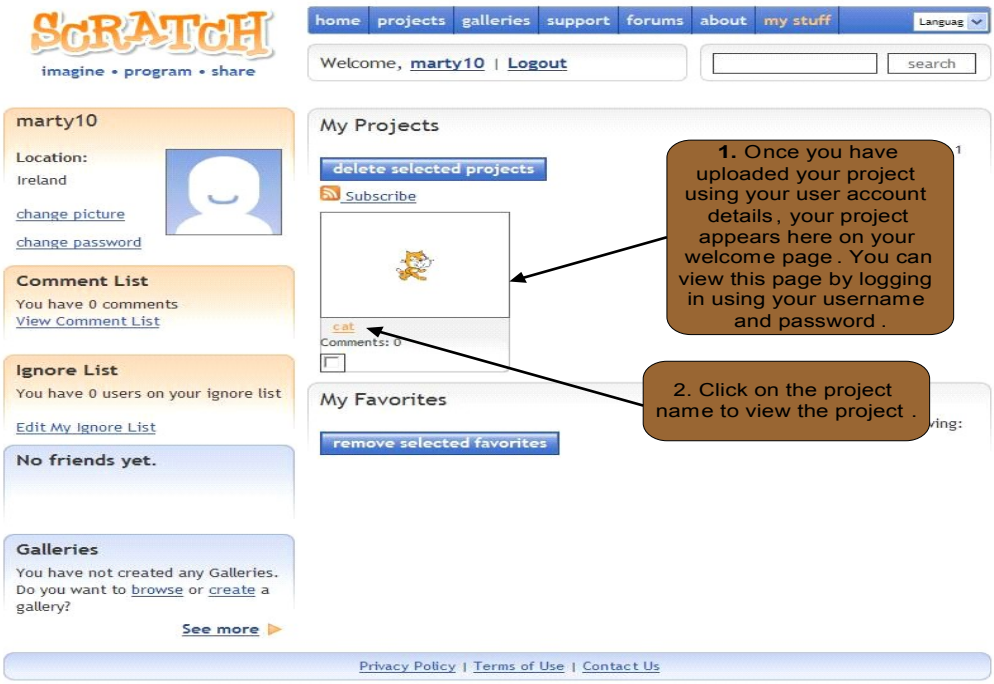


Once your project has been successfully uploaded to your account, the following screen appears.

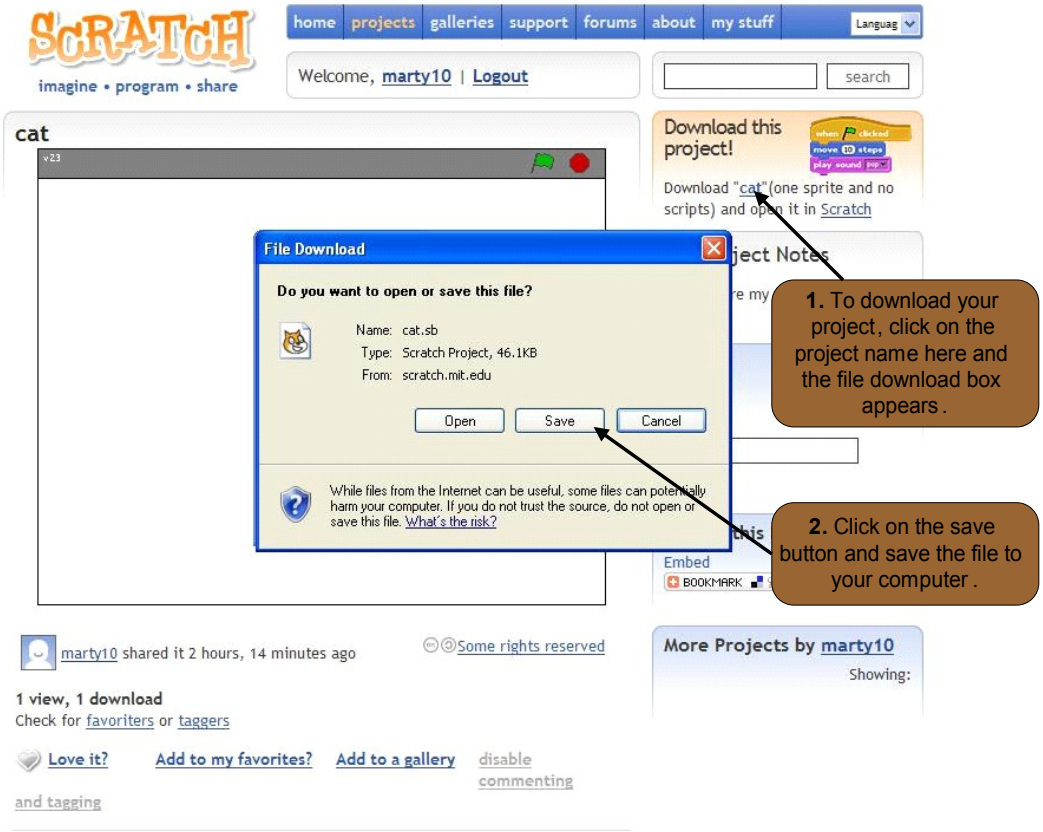
Once the project has been uploaded, you can view the project by logging in, using your username and password on the Scratch homepage as shown.



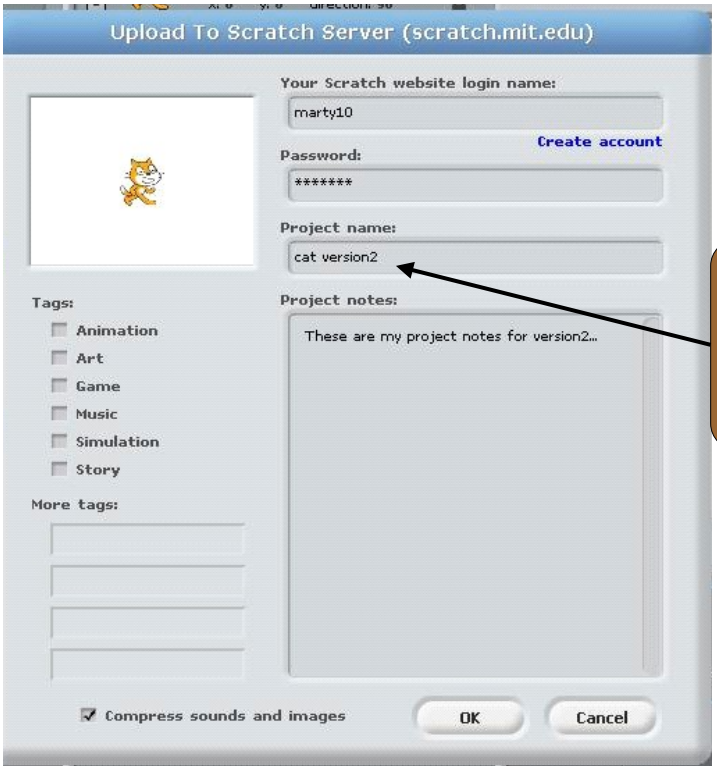
Your project should appear on your welcome page as shown below. To view the project, click on the project name.



7. The following images show you how to download your project when you wish to edit it.



N.B. Each time students are uploading an edited version of their project to their Scratch account, they should enter a new project name for the new version e.g. 'cat version2', as shown below. This will mean that they will have a number of versions of the project stored in their account on the Scratch website.



Each time your project is edited , when uploading it to your Scratch account , you should enter a new version name as shown . All versions will be stored in your Scratch account .

Lesson 3
Create

Resources:
Group Report (Resource 2, Lesson 1), Unit Marking Sheet (See Appendix 1)

Key Vocabulary:
Not applicable

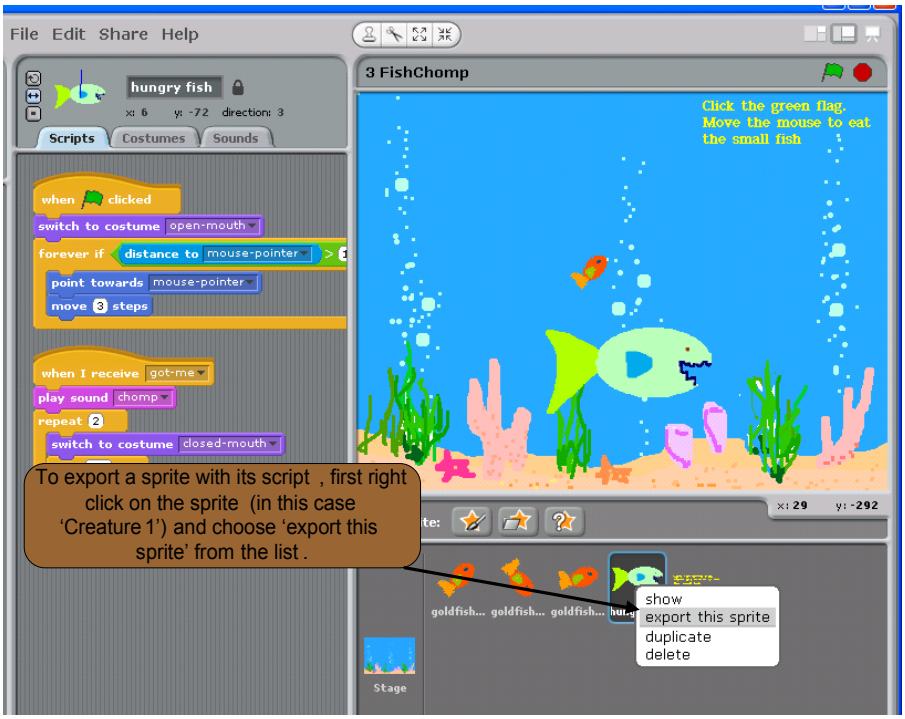
Description:
Students start creating their Scratch projects. This lesson will extend over a number of classes and this number is at the teacher's discretion. Students are reminded that they must fill out their Group Report at the end of each lesson, while they are creating their Scratch projects. The Group Report must be submitted to the teacher at the end of each lesson. As part of their project, students must create a test suite, which is part of the Group Report, as their project must be tested by a student and also by the teacher. The teacher may decide when peer / teacher testing takes place. It is also important to explain to students as this stage that if team members are working on different parts of the same project in class, it is possible for them to merge their projects by exporting and importing sprites and the sprites' scripts.

Learning Objectives:
1. Students will explore Scratch to create their own projects.
2. Students will develop the skill of testing their projects to ensure they work properly.
3. Students will develop their skills of working as part of a team to achieve a goal.

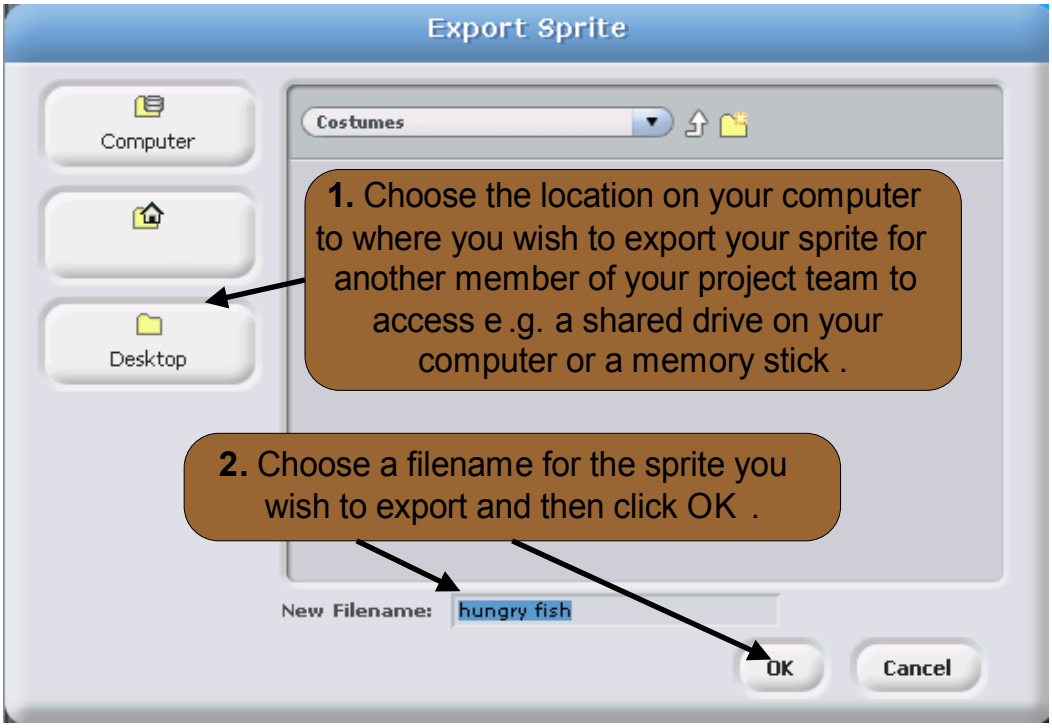
Lesson Introduction:
- Tell students that they will start creating their Scratch projects.
- Explain that they must complete the Group Report at the end of each lesson and that this must be handed back to the teacher at the end of the lesson.
- Explain that if they are working on different parts of the same project in Scratch, they can export and import sprites with their scripts to the other team members' project. This process will be explained once the students are divided into their project groups.

Lesson Breakdown:
1. Ensure that students are divided into their project groups.
2. Distribute the Group Report sheets (Resource 2, Lesson 1) to each project group and ensure that students complete the project design section.

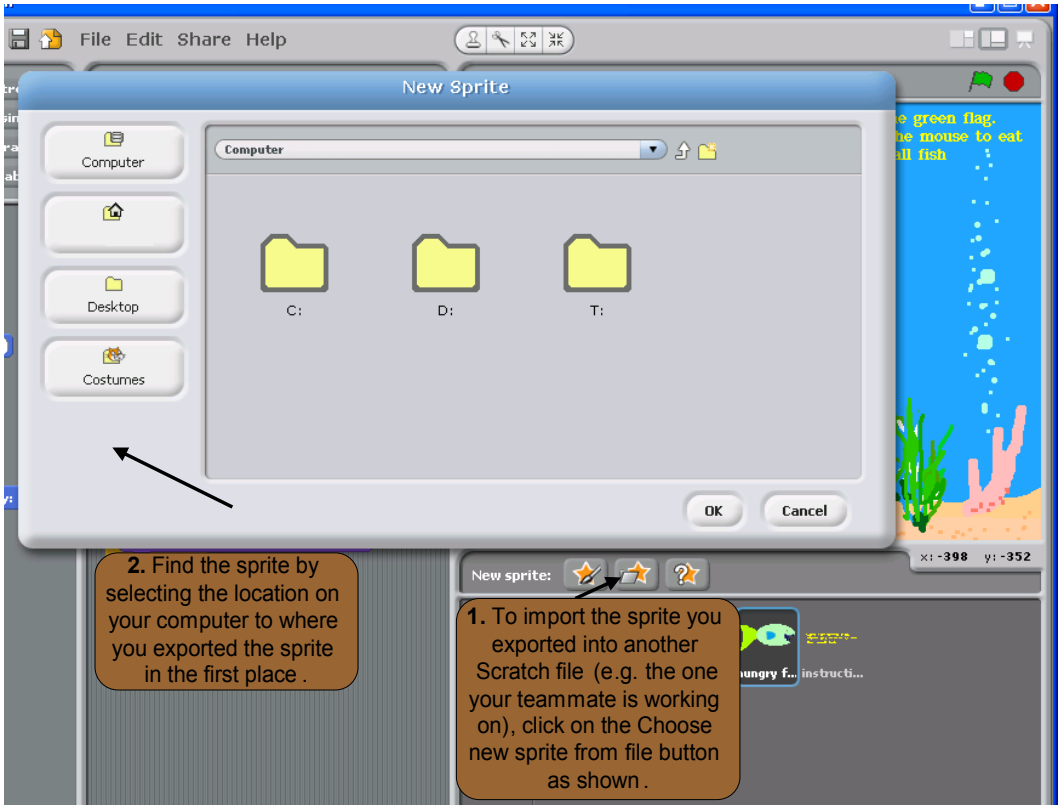
3. Explain to students that they can export a sprite from their part of the Scratch project and import it into another team member's part of the Scratch project as follows:
    - Right click on the sprite you wish to export and choose 'export this sprite' from the list, as shown.



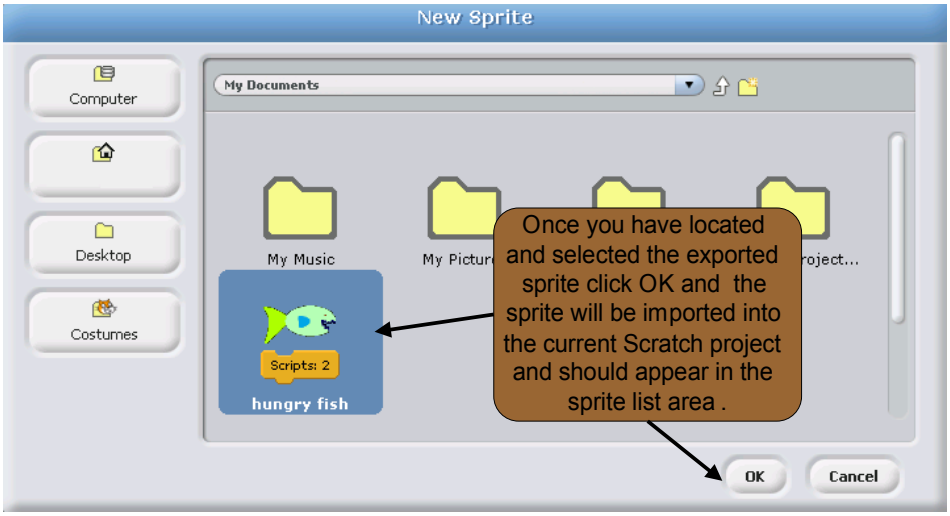
- Choose a location on your computer to where you wish to export the sprite, as shown. The sprite has then been exported, together with its script.



- To import the sprite into another Scratch project, open the project and click on the 'choose a new sprite from file' button, as shown. Find the sprite by selecting the location to which you had exported it from the previous project.



- Once you have located the sprite, select it and click OK. This will import the sprite, together with its script, into the current project, where it will appear in the sprite list area.



If students are working on different sprites in different Scratch files and wish to merge their work into one project, the ability to export and import sprites with their scripts is very important.

4. Students begin work on their Scratch projects.
5. Give students time to fill in their Group Reports at the end of the lesson and collect these, once completed. Explain the importance of completing Section 4 ‘Diary of Work’ at the end of every class.

Note: As was previously mentioned, a number of weeks of class time will be needed to complete this phase, as the students create their projects.

Lesson 4
Publish and Present

Resources:
Group Report sheet (Resource 2, Lesson 1), Unit Marking Sheet for all Students (See Appendix 1)

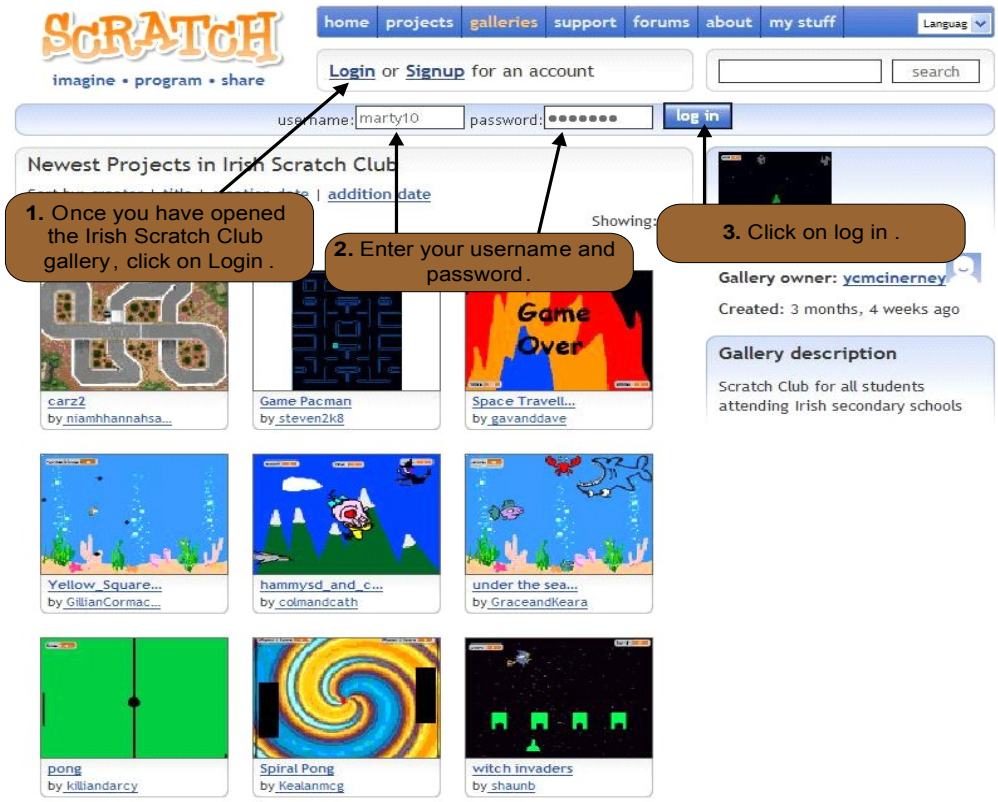
Key Vocabulary:
Not applicable

Description:
Students learn how to upload their final projects to the Irish Scratch Club gallery (www.tinyurl.com/irishscratchclub) on the Scratch website. They will also learn how to open and present their projects from this website. Students will also begin to plan their project presentation.

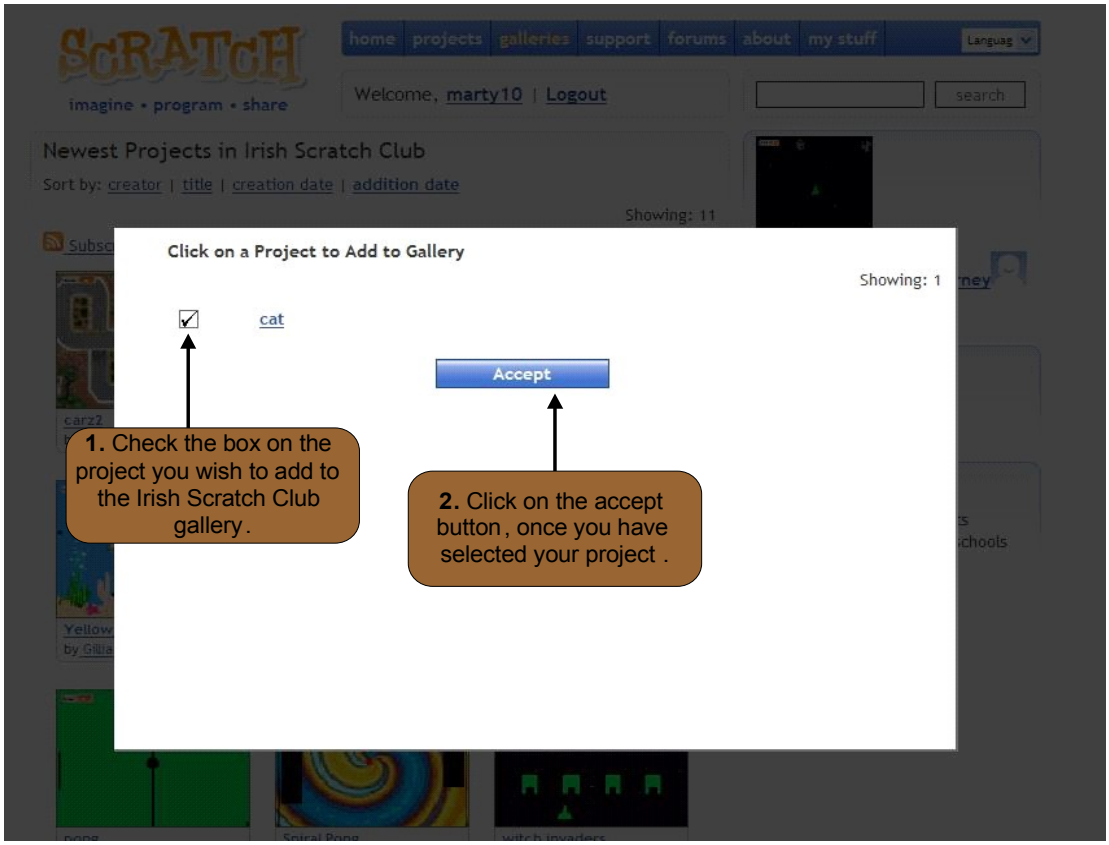
Learning Objectives:
1. Students will learn how to upload their projects to the Irish Scratch Club gallery so that they can share their work with others.
2. Students will understand what is expected for the presentation of their Scratch projects and will be able to plan their project presentation.

Lesson Introduction:
- Explain to students that in this lesson they are going to upload their projects to the Irish Scratch Club gallery on the Scratch website. This will mean that they can share their projects with others.
- Tell students they will also begin to plan their project presentations.

Lesson Breakdown:
1. Ask students to open their Internet browser and to open the Irish Scratch Club gallery page by typing in the following address: www.tiny-url.com/irishscratchclub.
2. Students must log in to their own account from the Irish Scratch Club gallery. The following image explains how to do this. Alternatively students can just search for the Irish Scratch Club once they have logged in to the Scratch website.



3. Once students are logged in, they can add their projects. The following images show how this can be done.


home projects galleries support forums about my stuff
Welcome, marty10 | Logout
search
Newest Projects in Irish Scratch Club
Sort by: creator | title | creation date | addition date
Showing: 11
Click on a Project to Add to Gallery
Showing: 1
cat
Accept
1. Check the box on the project you wish to add to the Irish Scratch Club gallery.
2. Click on the accept button, once you have selected your project .

home projects galleries support forums about my stuff
Welcome, marty10 | Logout
search
Newest Projects in Irish Scratch Club
Sort by: creator | title | creation date | addition date
Subscribe
2. Don't forget to log out when you are finished.
Gallery owner: ycmcinerney
Created: 4 months ago
add my projects
bookmark gallery
Gallery description
Scratch Club for all students attending Irish secondary schools
cat by marty10 | [x]
carz2 by niamhhannahsa...
Game Pacman by steven2k8
1. Your project should appear in the Irish Scratch Club gallery for others to view .
Space Travell... by gavanddave
Yellow_Square... by GillianCormac...
hammysd_and_c... by colmandcath
under the sea... by GraceandKeara
pong by killiandarcy
Spiral Pong by Kealanmcg

4. Explain to students that they will now plan their project presentation.
5. They will present their Scratch project from the Irish Scratch Club gallery.
6. Students will use the presentation plan section of the Group Report sheet to plan their presentation. They will write speaker notes for the various headings in this presentation plan.
7. All group members will have to present part of the project.
8. Remind students of the characteristics of a good presentation e.g. clear speaking voice, good posture, enthusiasm, good introduction, clear description of the project with a good conclusion.
9. Remind students that they will have to answer questions on their presentation at the end.
10. Once again, students must hand up the Group Report at the end of class.

Lesson 5
Presentations

Resources:
Group Report (Resource 2, Lesson 1), Unit Marking Sheet (See Appendix 1)

Key Vocabulary:
Not applicable

Description:
Students present their Scratch projects to the class. They will answer questions about their presentations at the end. Students will present their projects from the Irish Scratch Club gallery at www.tinyurl.com/irishscratchclub, or alternatively, if the Internet is not available, they may just open their project in Scratch. Based on feedback and their own reflections, students will have to record 2 suggested improvements for their project on the Group Report sheet at the end of their presentation.

Learning Objectives:
1. Students will be able to present their Scratch projects to their peers.
2. Students will be able to suggest improvements or developments for their projects based on their own reflections and feedback from the class.

Lesson Introduction:
- Tell students that they will present their projects to the class.
- Each member of each project group will present part of the project.

Lesson Breakdown:
1. Ask the first project group to present their project.
2. After the presentation, ask the class if they have any questions for the group members. The group may also be asked questions by the teacher.
3. Once they have presented, remind the group that they will have to make 2 suggestions for improvement / development of their project and they will record this on their Group Report sheet.
4. Once they have completed the suggestions for improvement on the Group Report sheet, the project group must submit the Group Report to the teacher as part of the assessment of the project.
5. Each project group will go through the same process of presenting their project, answering questions and suggesting improvements / developments for their project on the Group Report sheet.

Note: Presentations may run over several lessons, depending on class size etc. Once all students have presented, the teacher completes the final assessment sheet for all students. The marks for the Research Project from Module 8 have already been recorded.

References

Lesson 1
Resource 1
Slide 2
Based on Scratch Process of Design model
http://scratch.mit.edu/files/Learning-with-Scratch.pdf

Resource 5
- The following projects are located at http://learnscratch.org: *Cheetah_animation.sb* and *Web-Spinning_Spider.sb*
- The following projects are located at http://scratch.mit.edu: *Rock_Lee_The_Movie.sb*, *Bubbles.sb*, *Blobin'_Around.sb*, *Arrows_DanceDanceRevolution.sb*
- The following projects are located in the projects' library of Scratch version 1.3.1: *ChristmasPresents.sb*, *OceanMusicBox.sb*, *Stargate.sb, Farmer'sProblemEnglish.sb* (Please note that this project, as included in the resources folder M10L1R5 Sample Scratch Projects, has been modified to include translations from Catalan to English. The original project 'Pastor.sb' located in the Simulation projects folder in Scratch 1.3.1 is mostly in Catalan).