Computers

STAGE 2 SUGGESTED CLASSROOM ACTIVITIES

Science

ST2-151 - Describes ways that information solutions are designed and produced, and factors to consider when people use and interact with information sources and technologies

Student Activity:

Explain to students the following task: You are going to create an idea for a computer game. You need to think about what genre, characters and setting will be involved. For example will it be a game where a knight has to save a princess from a castle, will it be a puzzle game, will it be a game with a frog that needs to escape a hungry bird or will it be a car racing game? Any appropriate idea is fantastic as long as it is not a copy of another game. You need to make a mind map of all of your ideas on one page using pictures and words. Mind maps should be shared with a partner.

Student Activity:

Allow your students some time to familiarise themselves with the following website that allows students to create stories, games and animations: http://scratch.mit.edu/ From this website students should write a report that describes ways that information solutions are designed and produced, and factors to consider when people use and interact with information sources and technologies.
## HSIE

**SSS2-7** - Describes how and why people and technologies interact to meet needs and explains the effects of these interactions on people and the environment.

**Student Activity:**

An article in the ‘Business Financial Post’ states that computer games make people happier and healthier: [http://business.financialpost.com/2013/09/14/11-ways-playing-video-games-makes-you-smarter-and-healthier/](http://business.financialpost.com/2013/09/14/11-ways-playing-video-games-makes-you-smarter-and-healthier/) What other evidence can you find to suggest that playing computer games has either a negative or positive effect on people?

## Creative Arts

**VAS2.4** - Identifies connections between subject matter in artworks and what they refer to, and appreciates the use of particular techniques.

**Student Activity:**

Find and print three different online images of ‘computer game inspired art’. For each art work, discuss the subject matter and what it refers to as well as any particular technique used. Present the images and your report in a poster format and present it to the class.

## PDHPE

**MOS2-4** - Displays a focus on quality of movement in applying movement skills to a variety of familiar and new situations.

**Student Activity:**

In pairs, students pick one computer game that they both know and have access to play with in the classroom. While one person plays, the partner will write a list of all the movements / actions they see on the screen (e.g. forward roll, jump etc). Students will then use (some of) these actions to perform a simple dance that combines these movements. Each pair should be given the opportunity to pick their own music and perform for one minute for the rest of the class.
Name

1. *In the world of computer gaming, the world doesn’t have to be the same as ours (eg, blue trees, green sky)*.
   Design your own computer game world. Draw it and colour it in this box:

2. What game would you design to help athletes reach their peak? Imagine you are training a team that will be going to the Olympic Games in a year’s time for the sport hurdles. How could you use motion capture to develop exercises or a more interesting way to train? Create an idea for a game for athletes that will encourage them to train. Write out your instructions to the game developer.

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Mapped to Australian Curriculum and NSW BOSTEC standards as at March 2014
Computers

STAGE 3 SUGGESTED CLASSROOM ACTIVITIES

### Science

**ST3-151** - Describes how social influences impact on the design and use of information and communication systems

**Student Activity:**
Compile a report on the history of computer gaming, including updating of technologies and the ways that gaming communication has changed over the years.

**ST3-5WT** - Plans and implements a design process, selecting a range of tools, equipment, materials and techniques to produce solutions that address the design criteria and identified constraints

**Student Activity:**
Today you will be working in teams just like game developers do when they are making a computer game. In the team you will need one person to be responsible for creating the world the game takes place in, one person needs to create a good character, one person needs to create a bad character and the last team member needs to work out what will happen in the game. As a whole team you should work out what your game is about and your audience. Teams take time to create their characters, setting and basic game ideas. All teams should present their finished ‘team package’ to the class. Class mates can offer constructive and positive feedback to each team.

**Student Activity:**
Watch the video [http://research.microsoft.com/apps/video/dl.aspx?id=138732](http://research.microsoft.com/apps/video/dl.aspx?id=138732) to introduce students to Kodu. Kodu provides an end-to-end creative environment for designing, building, and playing your own new games. Students work on computers (individually or in pairs) to create a simple game. Set students the task of creating a game with an object that lets you accumulate points and an object which will subtract points.

- What did you like about programming a game?
- What did you not like about programming a game?
- Do you think you would like to do this at university and for a job?
- Would programming be different to this at university?

### Creative Arts

**VAS3-1** - Investigates subject matter in an attempt to represent likeness of things in the world.

**Student Activity:**
Search for online images depicting ‘computer games for kids’. Choose and print one image that you like. Recreate a piece of art using your image as inspiration. Your art work should include a recognisable subject matter from your printed image.

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*Mapped to Australian Curriculum and NSW BOSTEC standards as at March 2014*
## PDHPE

### MOS3-4 - Refines and applies movement skills creatively to a variety of challenging situations

**Student Activity:**
Imagine you and your partner are computer game characters. Your main 'power' is your ability to run. Devise a variety of running patterns to cater for sprinting, distance running, side stepping, dodging and defensive marking. Refine your pattern and commit it to memory before presenting it to fellow classmates.

## Mathematics

**MA3-2WM - Selects and applies appropriate problem solving strategies, including technological applications in undertaking investigations**

**MA4-2WM – Applies appropriate mathematical techniques to solve problems**

**Student Activity:**
Apply appropriate problem-solving techniques by playing a variety of games found online:
http://www.learn4good.com/games/strategy-newest.htm
Motion capture is used in many games and movies. Research a movie that used motion capture. Write a simple explanation on how motion capture works for someone your own age.

List three movies and five games that used motion capture to develop the animations or game characters:

From your list above, which ones work best?

Why?

What is the history of motion capture?

What future, do you think, motion capture has in game development?

Draw your favourite character from either a game or a movie, that uses motion capture:
Certificate of Achievement

You are well on your way to becoming a Lecturer in Computer Software.

"Enquiring Minds" From... Congratulations

Signed

Date

makeyourmark.edu.au

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Computers

STAGE 4 SUGGESTED CLASSROOM ACTIVITIES

**Mandatory Technology**

*Stage 4*

4.1.3 - Identifies the roles of designers and their contribution to the improvement of the quality of life
4.2.2 – Selects, analyses, presents and applies research and experimentation from a variety of sources

**Student Activity:**

Students work in groups to design a computer game that encourages students to read. They should design characters, locations, challenges and give examples of how reading is encouraged.

**Resources:**

The characteristic of good computer game are outlined in the article below.

http://www.thegamesjournal.com/articles/WhatMakesaGame.shtml

**Information Software and Technology**

*Stage 5*

5.2.1 - Describes and applies problem-solving processes when creating solutions
5.2.2 - Designs, produces and evaluates appropriate solutions to a range of challenging problems

**Student Activity:**

Students to use appropriate planning tools to design a computer game that uses user movement. In their plan they should consider appropriate GUIs.

**Resources:**

The characteristic of good computer game are outlined in the article below.

http://www.thegamesjournal.com/articles/WhatMakesaGame.shtml

**Visual Design**

*Stage 5*

VD5.4 - Investigates and responds to the world as a source of ideas, concepts and subject matter for visual design artworks
VD5.5 - Makes informed choices to develop and extend concepts and meanings in their visual design artworks.

**Student Activity:**

Students design an introductory screen for a computer-based program that helps people with a disability to engage in physical activity.

**Resources:**

The link below is to an article that outlines how people with disabilities can use computers.

http://www.pcadvisor.co.uk/news/gadget/3217342/14-great-computing-aids-for-the-disabled/

An internet search will lead to a number of YouTube clips - of varying length - which show people working on computer programs for people with disabilities. http://www.ehow.com/list_7280265_games-physically-handicapped.html

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