iMedia

Level 3 iProgram – iDebug

KS2 PPA Cover Planning

- **Work Schemes**
- **Learning Objectives**
- **Key Skills**

iDebug

Unit Length: 5 – 7 hours

Course overview: This workshop will require students to use their knowledge of 'Blockly' to search through a broken program and repair the mistakes to make the program function correctly. They will then progress to create programs of their own design.

Level 3

Learning Outcome for the course: Pupils will learn how to effectively debug their own work, how to spot errors in the code and have enough knowledge to know how to change it. They will also learn about real-world programming solutions.

Keywords: Debug/Debugging; Branch; "Real-World Programming"; Simulate; Automation.

Apps Used Include: Tynker, LightBot, Hopscotch

Learning Session 1: This lesson will start with a recap of previous iProgram levels looking at key elements of programming such as algorithms, conditionals, variables and sequences. We will introduce debugging as the main focus of the course. The students will then be given five projects that will require debugging.

Learning Session 2: Learning Session 2 will continue focusing on the five debugging projects. After the class have managed to fix all five projects, they will have the chance to choose one to develop further and create their own version of the game.

Learning Session 3: This learning session will give pupils the chance to apply the programming skills they have learnt to solve 'real-world' programming problems. The class will be given four briefs to work from. The four briefs are to create a working traffic light system, a combination lock for a bank safe, a working musical keyboard and a calculator.

Learning Session 4: Continuing to develop the 'real-world' solutions the class will look at how programming may be changing our future. The class will be challenged to debug some code that allows the real-life Sphero robot to move across the files in the correct way. If this task is complete, they will continue programming the working keyboard.

Learning Session 5: The final project will involve the class showcasing all the programming knowledge they have gained by designing and developing an endless runner game. This is a never-ending game that involves collecting objects and avoiding obstacles.

Learning Session 6: Continuing development from the previous week to create the game. The last 20 minutes of the lesson will be spent showcasing the work by setting the iPads up with the game and turning the room into an arcade.

Learning Session 7: This session will run either as part of a longer half term or a contingency for pupils or classes who have exceeded the lesson plans for the half term.
During this lesson pupils will learn to code variables into their games. Pupils may move on to adding randomisation and variables into different levels depending on their ability.

Contingency: Additional lesson plans are in place for less able students and higher ability students.

iMedia

In this document we will provide you with key information relating to our PPA Cover

Secure Website

We have created a login for your school on our website where you can access key information. We have found this is a quick and easy way to provide you with all of the information you require. Using this login you can access all of our risk assessments, insurance documents and relevant policies, as well as a copy of each staff member's DBS with a photo of them for identification purposes. The website address to access this information is **www.juniorjam.co.uk/protected**; please use the username and password details that are on your order confirmation.

OFSTED, Planning and Overview Documents

Shortly after booking the main contact will receive a planning document email; by clicking the links in this email you can view the planning, unit overviews and National Curriculum mapping for each level we are delivering. These documents are really important and vital, should OFSTED decide to Deep Dive into one of the subjects we are providing. Please forward this email to the relevant subject coordinator for their records. If OFSTED schedule a visit on a day we are in, please contact the office so we can brief our staff members.

Assessment

From September 2020 our staff will produce a Course Evaluation for each class they teach. This will directly link to the National Curriculum and will detail how the class has achieved key curriculum objectives. This will be done at the end of each half term and will be accessible via the secure section of our website. Junior Jam also offer Reporting & Assessing, where each child receives individual grades at the end of each half term - this is an optional extra and must be requested with your sales agent prior to the order starting. A written report for your students is outside the scope of your PPA Cover contact, however if you give our staff member time and resources within their PPA teaching time, they will endeavour to provide this for you – this time cannot be their lunch or during their break and should be requested via your sales agent. If no time is available within your PPA Cover, additional time can be requested from your Junior Jam sales agent.

Space Requirements

Our iMedia lessons simply require the use of a classroom with an interactive whiteboard. Depending on the activity type we may be required to move desks around to create a more effective space; the staff members will always return the classroom to the state it was found in. The iDesign and iFilm workshops may also utilise outdoor spaces to add to the children's learning; this will always be done with school permission prior to the session beginning.

PPA Questionnaire

Before the first PPA cover session our leader will arrive 30 minutes early to fill in a quick question sheet relating to your school and the classes they will be teaching. If you could arrange for either yourself, a deputy or a class teacher to sit down with our staff member to run through this questionnaire it would be of great benefit to the lessons they run.

iMedia Uploads

Several of our iMedia subjects have work from the students which we can upload to our secure website. Your order confirmation contains the login details, simply click on the 'Media Uploads' tab to see the work that has been completed at the end of each half term. Whilst logged in you can see Wall Posts from our staff giving you an overview of how the lessons are going. There are some subjects where uploads are not produced due to GDPR and safeguarding; for more information on this please view our Digital Procedure Policy within the secure section of our website.

Level 3 iDebug: Curriculum links

The learning pathways for each iMedia subject are in line with the Curriculum 2014. Below outlines all the curriculum points hit during this unit. iMedia levels are topic-based so students will be learning beyond these attainment targets and in real-life contexts.

Curriculum 2014

Computing

- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.
- Use sequence, selection and repetition in programs; work with variables and various forms of input and output.
- Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.
- Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
- Use technology safely, respectfully and responsibly; know a range of ways to report concerns and inappropriate behaviour.

Level 3 iDebug: Learning Objectives and Lesson Outcomes

Learning Session 1

Learning Objective:
Today we are learning about the keyword Debugging, and what that word means in terms of evaluating code.

Learning Outcome:
By the end of the lesson - Upper KS2;
All pupils will

- know the meaning of the word Debug.

Most pupils will

- be able to fix code when problems are pointed out.

Some pupils will

- be able to spot errors in the code without guidance.

Learning Session 2

Learning Objective:
Today we are learning how to Branch an existing program, written by someone else, into our version.

Learning Outcome:
By the end of the lesson- Upper KS2;
All pupils will

- be able to branch pre-existing programs after debugging.

Most pupils will

- be able to branch pre-existing programs with greater details.

Some pupils will

- be able to branch pre-existing programs with lots of detail.

Learning Session 3

Learning Objective:
Today we are learning about real-world programming; what is affected by this and how it's used to help us every day.

Learning Outcome:
By the end of the lesson - Upper KS2;
All pupils will
- be able to list a number of real-world digital solutions.

Most pupils will
- be able to program some real-world solutions with minimal errors.

Some pupils will
- be able to code real-world solutions and debug their own work if there are any issues.

Learning Session 4

Learning Objective:
Today we will learn about Automation; what is it and how is it used?

Learning Outcome:
By the end of the lesson - Upper KS2;
All pupils will
- know what home automation is and be able to give examples.

Most pupils will
- be able to code a working home automation using conditionals.

Some pupils will
- be able to debug their own work and evaluate the work of others.

Learning Session 5

Learning Objective:
Today we will learn how to create an "Endless Runner" game to a series of specifications.

Learning Outcome:

By the end of the lesson - Upper KS2;

All pupils will

- be able to make an endless runner game using prompt text.

Most pupils will

- make an endless runner game to the specifications Junior Jam give.

Some pupils will

- be able to use "random" effectively as a value.

Learning Session 6

Learning Objective:
Today we will learn how to review our programs.

Learning Outcome:

By the end of the lesson - Upper KS2;

All pupils will

- be able to say what they like and dislike about other pupils' work.
- know the difference between constructive and non-constructive criticism.

Most pupils will

- be able to provide constructive criticism about other pupils' work.

Some pupils will

- be able to say how they would change their program, based on the feedback from the class.

Learning Objective:
Today we will learn how to expand our programs by changing variables.

Learning Outcome:
By the end of the lesson - Upper KS2;

All pupils will

- be able to understand how to expand their program using variables.
- be able to code variables.

Most pupils will

- be able to code variables using randomisation.

Some pupils will

- be able to code different variables to different levels of their game to increase difficulty.

Differentiation and Progression

Differentiation within Level 3

Pupils of a lower ability will be encouraged to continue working on the debugging from the beginning of the course until all of the debugging tasks are finished.

Pupils of a higher ability will be expected to use variables and conditionals in their work every time to extend their program.

Progression

Level 4: iDevelop

Now that the pupils are well versed in the programming language Blockly they will begin to learn to code in Java script and create intricate programs that give the illusion of AI.