Year 1 Computing Overview

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| **Key Concepts****NC PoS Reference** | **Vocabulary** | **Knowledge (specific facts or truth components. A knowledge statement will often contain substantive, declarative or explicit knowledge.)****Composite Knowledge****Specific Knowledge – Component Knowledge**  | **Skills (the use and application of composite knowledge. A skill statement will often contain implicit, procedural and disciplinary knowledge.)** |
| Unit 1.1 – Online Safety & Exploring Purple Mash - Safe LoginsMy Work AreaPurple Mash TopicsPurple Mash Tools | Alert: A system that lets you know if you have something to look at.• Avatar: A digital picture to represent someone.• Button: An area where you click to make something happen.• Device: A piece of electrical equipment made for a purpose.• File Name: The name given to an online piece of work.• Filter: A way of removing information you are not interested in.• Home Screen: The home screen of a website is like the front page andcontents page of a book.• Icon: An image on a web page that you can click on to navigate tosomewhere.• Login: Using a username and password to access a system.• Log out: Leaving a computer system.• Menu: A button which gives the user different options.• My Work Area: The place on Purple Mash where your work is stored. Onlyyou and your teachers can access this.• Notification: A message telling you about something.• Password: A series of letters, numbers and special characters that is enteredafter the username to access an online site. In Purple Mash, this can also be aseries of pictures.• Private: Keeping information restricted from other people.• Purple Mash Tools: A selection of programs which help you carry outdifferent tasks.• Saving: Store your work as you create something so it can be accessed later.• Search: A way of finding specific resources you want to look at.• Shared Folder: An area to save your work that everyone in the class can use.• Textbox: A box in which to add words.• Think About Box: Information in a writing template which give you ideas onwhat to write.• Topic Area: A place on Purple Mash where you find activities all aboutsomething you are learning about.• Tool bar: A strip of icons that can be clicked to perform different functions.• Typing: The action of writing something on a computer.• Writing Template: A guide which a writer follows when doing some writing.Activities: Tasks you do and complete.• Criteria: A way in which something is judged.• Describe: To give a detailed account of something.• Equal: When two amounts are the same.• Groups: Objects arranged and put together because they have features incommon.• Less than: When an amount is smaller than another amount.• More than: When an amount is bigger than another amount.• Sort: Put things together by features they have in common.Collect Data: Gathering facts and information.• Compare: Looking at what is the same and what is different.• Data: A collection of information, used to help answer questions.• Pictogram: A diagram that uses pictures to represent data.• Record Results: Writing down what you have found out.• Title: The name given to a piece of work.• Totals: The whole number or amount of something.• Visual: Using your eyes to see something.Algorithm: a precise, step-by-step set of instructions used to solve a problemor achieve an objective.• Code: Instructions that a programmer enters into a computer that cause thecomputer to perform a certain way.• Computer: An electronic device for storing and processing data.• Debugging: To find and remove errors from computer hardware or software.• Instructions: detailed information about how something should be done oroperated.• Machine: A moving mechanical device made to do a task, making work easierfor people.• Program: An algorithm that has been coded into something that can be runby a machine, e.g., a computer or a robot.• Recipe: A set of instructions which describes how to prepare a dish of food.• Sequence: Putting things in an order which follows on from one thing to thenext.Algorithm: a precise, step-by-step set of instructions used to solve a problemor achieve an objective.• Challenge: A task to be completed.• Command: An action such as left command.• Delete: Removes something such as an instruction.• Direction: The path that something travels. For example, a robot movingforwards, backwards or diagonal.• Instruction: Detailed information about how something should be done oroperated.• Left and Right: A position which relates to something. For example, make thefish move left of the screen.• Route: A path an object or thing takes to get somewhere.• Undo: If we make a mistake, we can press the undo button.• Unit: A unit such as make the turtle move 2 units (squares)Animation: An object that moves on screen.• Background: An image inserted into a file that sits behind text, objects, orbuttons.• Category: A place where similar files are found. For example, AnimalsCategory where animal images can be found.• Clip-art gallery: A place in software such as 2Create a Story where a libraryof images can be found and inserted into a file.• Copy: A feature that lets users copy things like text, images, sounds.• Drop-down menu: A menu where a list of choices is displayed.• E-book: A book that can be read on the computer or on a tablet.• Edit: Edit means to change something. For example, change some text toimprove it.• Eraser: In some software like 2Create a Story, erasers are used to removeunwanted drawn images.• Features: In 2Create a Story there are features such as animation and sound.• Font: The style of text used in a piece of writing on a computer or tablet.• Sound: Sounds can be uploaded into software from a file or created.• Overwrite: When opening a previous file, users can make changes and save,which overwrites the file.• Paint tools: Lets a user create drawings in software such as 2Create a Story.• Paste: A feature that pastes copied items.• Play Mode: A mode that plays a file such as 2Create a Story.• Redo: If a user has clicked undo by mistake, they can click on redo.• Save: Files such as 2Create a Story, can be saved in a folder so work isn’tlost.• Sound effect: A sound other than speech or music made for use in a play,film or computer file.• Text: Words, letters, numbers or symbols entered into a computer, such aswriting text in 2Create a Story.• Undo: When a user makes a paint mark for example, this can be undone withthe undo button.• Voice recording: In software such as 2Create a story, users can record theirvoice and insert it into the file.Action: the way that objects change when programmed to do so. Forexample, move.• Algorithm: a precise, step-by-step set of instructions used to solve a problemor achieve an objective.• Background: In 2Code the background is an image in the design that doesnot change.• Click: This describes the action of clicking a mouse pointer on the screen ortapping with a finger on a touch screen.• Code: Instructions that a programmer enters into a computer that cause thecomputer to perform a certain way.• Code blocks: A way to write code using blocks which each have an object oran action• Coding: writing instructions that the computer can process (understand) tomake programs (software).• Code view: The view in 2Code that shows the coding blocks used to makethe program.• Command: A single instruction in 2Code.• Debug\ Debugging: Fixing code that has errors so that the code will run theway it was designed.• Design View: The view in 2Code that shows what the program looks like tothe user.• Event: An occurrence that causes a block of code to be run. The event couldbe the result of user action such as the user pressing a key or clicking thescreen. In 2Code, the event commands are used to create blocks of code thatare run when events happen.• Execute: This is the proper word for when you run the code. We say, ‘theprogram (or code) executes.’• Instruction: detailed information about how something should be done oroperated.• Object: Items in a program that can be given instructions to move or changein some way (action).• Output: Information that comes out of the computer e.g. sound that comesout of the speakers.Plan: When coding, a plan means including the objects and actions into awritten document that shows what the program should look like (the design)and what the objects should do (the actions).• Programmer: A person who writes computer programs. Sometimes called acoder.• Properties: These determine the look and size of an object. Each object hasproperties such as the image, scale and position of the object.• Run: This is what you do when you click the Play button in 2Code: Theprogram runs.• Scale: This is a property of an object that changes its size.• Scene: In 2Code, this is the combination of the background and objects in aprogram.• Software: The programs that run on a computer that are used by people todo things. For example, write, draw or play games.• Sound: An output from the computer that makes a noise.• When Clicked: An event command that is triggered when an object is clickedon.Button: An object you click that performs an action. E.g., print.• Calculations: Maths calculations can be entered into a cell. For example, thetotal of two cells can be added together using a calculation that appears in anew cell.• Cell: An individual section of a spreadsheet grid. It contains data orcalculations.• Clip-art: A library of images that a user can choose from and insert in a file.• Column: Boxes running vertically in a spreadsheet.• Count tool: In 2Calculate, this counts the number of cells with a value thatmatches the value of the cell to the left of the tool.• Data: A collection of information, used to help answer questions.• Delete: Removes contents such as the contents in a cell.• Image: A drawing or photograph that users can import into a file.• Lock cell: This feature lets a user lock a cell so its contents can’t be deleted.• Move cell: The move tool in 2Calculate lets a user move the contents of a cellto a new cell.• Row: Boxes running horizontally in a spreadsheet.• Select: A user can select one or more cells and perform an action such as lockall selected cells.• Speak tool: This tool will speak the contents of a cell containing a numbereach time the value changes.• Spreadsheet: A computer program that represents information in a grid ofrows and columns.• Value: Images can have values given to them. For example, an apple could begiven a value of 1 and a pear a value of 2.Computer: An electronic device for storing and processing data.• Technology: Science and engineering knowledge put into practical use tosolve problems or invent useful tools. | To log in safely and understand why thatis important.• To create an avatar and to understandwhat this is and how it is used.• To be able to create a picture and addtheir own name to it.• To start to understand the idea of‘ownership’ of creative work.• To save work to the My Work area andunderstand that this is private space.• To learn how to find saved work in theOnline Work area.• To learn about what the teacher hasaccess to in Purple Mash.• To learn how to see messages left by theteacher on their work.• To learn how to search Purple Mash tofind resources.To become familiar with the types ofresources available in the Topics section.• To become more familiar with the iconsused in the resources in the Topicssection.• To start to add pictures and text to work.To explore the Tools area of Purple Mashand to learn about the common iconsused in Purple Mash for Save, Print,Open, New.• To explore the Games area on PurpleMash.• To understand the importance of loggingout when they have finished. | Children can log in to Purple Mash using theirown login.• Children have created their own avatar andunderstand why they are used.• Children can add their name to a picture theycreated on the computer.• Children are beginning to develop anunderstanding of ownership of work online.• Children can save work into the My Work folderin Purple Mash and understand that this is aprivate saving space just for their work.Children can find their saved work in the OnlineWork area of Purple Mash.• Children can find messages that their teacherhas left for them on Purple Mash.• Children can search Purple Mash to findresources.Children will be able to use the different typesof topic templates in the Topics sectionconfidently.• Children will be confident with the functionalityof the icons in the topic templates.• Children will know how to use the differenticons and writing cues to add pictures and textto their work.Children have explored the Tools section onPurple Mash and become familiar with some ofthe key icons: Save, Print, Open and New.• Children have explored the Games section andlooked at Table Toons (2x tables).• Children can log out of Purple Mash when theyhave finished using it and know why that isimportant. |
| Unit 1.2 – Grouping & Sorting - Sorting Away from the ComputerSorting on the Computer | To sort items using a range ofcriteria.To sort items on the computerusing the ‘Grouping’ activities inPurple Mash. | Children can sort various items offline using avariety of criteria.Children have used Purple Mash activities tosort various items online using a variety ofcriteria. |
| Unit 1.3 – Pictograms - Data in PicturesClass PictogramRecording Results | To understand that data can berepresented in picture format.To contribute to a class pictogram.To use a pictogram to record theresults of an experiment. | Children can discuss and illustrate thetransport used to travel to school.• Children can contribute to the collection ofclass data.• Children have used these illustrations tocreate a simple pictogram.Children can contribute to a class pictogram.• Children can discuss what the pictogramshows.Children can collect data from rolling a die 20times and recording the results.• Children can represent the results as apictogram. |
| Unit 1.4 – Lego Builders - Following Instructions Following and Creating Simple Instructions on the ComputerTo consider how the order of instructions affects the result. | To emphasise the importance offollowing instructions.To follow and create simpleinstructions on the computer.To consider how the order ofinstructions affects the result. | Children know that to achieve the effect theywant when building something, they need tofollow accurate instructions.• Children know that by following theinstructions correctly, they will get the correctresult.• Children know that an algorithm is a precise,step-by-step set of instructions used to solvea problem or achieve an objective.Children can follow instructions in a computerprogram.• Children can explain the effect of carrying outa task with no instructions.• Children know that computers need preciseinstructions to follow.• Children know that an algorithm written for acomputer to follow is called a program.• Children understand how the order in whichthe steps of a recipe are presented affects theoutcome.• Children can organise instructions for a simplerecipe.• Children know that correcting errors in analgorithm or program is called ‘debugging’. |
| Unit 1.5 – Maze Explorers - Challenges 1 and 2Challenges 3 and 4Challenges 5 and 6Setting More Challenges | • To understand the functionality ofthe basic direction keys inChallenges 1 and 2.• To be able to use the direction keysto complete the challengessuccessfully.To understand the functionality ofthe basic direction keys inChallenges 3 and 4.• To understand how to create anddebug a set of instructions(algorithm).To use the additional direction keysas part of their algorithm.• To understand how to change andextend the algorithm list To create a longer algorithm for anactivity.To provide an opportunity for thechildren to set challenges for eachother.• To provide an opportunity for theteacher to add these challenges to adisplay board for the class to try | Children know how to use the direction keysin 2Go to move forwards, backwards, left andright.• Children know how to add a unit ofmeasurement to the direction in 2GoChallenge 2.• Children know how to undo their last move.• Children know how to move their characterback to the starting point.Children can use diagonal direction keys tomove the characters in the right direction.• Children know how to create a simplealgorithm.• Children know how to debug their algorithm.Children can use the additional direction keysto create a new algorithm.• Children can challenge themselves by usingthe longer algorithm to complete challengesChildren can change the background imagesin their chosen challenge and save their newchallenge.• Children have tried each other’s challenges. |
| Unit 1.6 – Animated Story Books - Drawing and CreatingAnimationSounds and More!Making a StoryCopy and Paste | To understand the differencesbetween traditional books and ebooks.• To explore the tools of 2Create aStory’s My Simple Story level.• To save the page they have createdTo add animation to a picture.• To play the pages created so far.• To save the additional changes andoverwrite the fileTo add a sound effect to a picture.• To add a voice recording to thepicture.• To add created music to the pictureTo add a background to the story.• To demonstrate a goodunderstanding of all the tools theyhave used in 2Create a Story anduse these successfully to createtheir own story.To use the copy and paste featureto create additional pages.• To continue and complete ananimated story.• To create a class display board ofthe story books created by theclass. | Children know the difference between atraditional book and an e-book.• Children can use the different drawing toolsto create a picture on the page.• Children can add text to a page.Children can open previously saved work.• Children can add an animation to a page.• Children can play the pages created.• Children can save changes and overwrite thefile.Children can add a sound to the page.• Children can add voice recording to the page.• Children can create music for a page.Children can add a background to the page.• Children can use the additional drawing toolson My Story mode.• Children can change the font style and size.Children can use the copy and paste functionto add more pages to their animated e-book.• Children can share their e-books on a classstory book display board. |
| Unit 1.7 – Coding – InstructionsObjects and ActionsEventsWhen Code ExecutesSetting the SceneUsing a Plan | • To understand what instructions are.• To predict what will happen wheninstructions are followed.• To understand that computerprograms work by followinginstructions called code.To use code to make a computerprogram.• To understand what objects andactions are.To understand what an event is.• To use an event to control an object.To understand what an event is.• To begin to understand how codeexecutes when a program is run.To understand what backgroundsand objects are.• To understand how to use the scaleproperty.• To plan a computer program.• To make a computer program. | Children can give and follow instructions.• Children can draw symbols to representinstructions.• Children can arrange code blocks to create aset of instructionsChildren can create a program using codeblocks.• Children can use object and action codeblocks.Children can create a simple program usingcode blocks.• Children can use event, object and action codeblocks.Children can create a simple program usingcode blocks.• Children can use event, object and action codeblocks.• Children can notice when their code executeswhen their program is run.Children can edit a scene by adding, deletingand moving objects.• Children can change the size of objects usingthe properties table.Children can create a design plan for theirFree Code Scene program.• Children can use code to make the programthey have designed work |
| Unit 1.8 – Spreadsheets - Introduction to SpreadsheetsAdding Images to a Spreadsheet and Using the Image ToolboxUsing the ‘Speak’ and ‘Count’ Tools in 2Calculate to Count Items | To understand what a spreadsheetlooks like.• To be able to navigate around aspread sheet and enter data.• To learn new vocabulary related tospreadsheets.To add clipart images to aspreadsheet.• To use the ‘move cell’ and ‘lock’ToolsTo use the ‘speak’ and ‘count’ toolsin 2Calculate to count items. | Children can navigate around aspreadsheet.• Children can explain what rows andcolumns are.• Children can save and open sheets.• Children can enter data into cells.Children can open the Image toolbox andfind and add clipart.• Children can use the ‘move cell’ tool so thatimages can be dragged around thespreadsheet.• Children can use the ‘lock’ tool to preventchanges to cells.Children can give images a value that thespreadsheet can use to count them.• Children can add the count tool to countitems.• Children can add the speak tool so that theitems are counted out loud.• Children can use a spreadsheet to helpwork out a fair way to share items(Extension) |
| Unit 1.9 – Technology outside school - What is Technology?Technology outside school. | To find and understand examplesof where technology is used in thelocal communityTo record examples of technologyoutside school. | Children understand what is meant by‘technology’.• Children have considered types of technologyused in school and out of school.Children have recorded 4 examples of wheretechnology is used away from school. |