**Computing in EYFS**

***Intent***

In line with statutory Early Years DfE Guidance, we believe that it is important to provide our youngest learners with a wide range of opportunities to use, explore, learn about and learn through technology in order for them to develop their understanding of our ‘technologically diverse world’. By the end of the EYFS, learners should know more about technologies and devices they regularly use than they did at the start. Activities should promote interactions to extend their existing knowledge of computing technologies. Accordingly, there should be specific targeting of vocabulary and the repeated use of key words in everyday contexts such as: directional language, sequencing words, imperative - bossy words, algorithms and problem solving. Computing thinking like algorithmic thinking, understanding patterns and logical reasoning can be taught to prepare children ahead of the statutory teaching requirement for Year 1.

## *****In practice*****

## The EYFS Development Matters objectives which have direct links to the KS1/KS2 National Curriculum for Computing are:

## Personal, Social & Emotional Development

## • Remember rules without needing an adult to remind them.

## • Show resilience and perseverance in the face of a challenge.

## • Know and talk about the different factors that support their overall health and wellbeing – sensible amounts of screen time.

## • Be confident to try new activities and show independence, resilience and perseverance in the face of a challenge.

## • Explain the reasons for rules, know right from wrong and try to behave accordingly.

## Physical Development

## • Match their developing physical skills to tasks and activities in the setting.

## • Develop their small motor skills so that they can use a range of tools competently, safely and confidently.

## • Know and talk about the different factors that support their overall health and wellbeing: sensible amounts of screen time.

## Understanding the World

## • Explore how things work.

## Expressive Arts and Design

## • Explore, use and refine a variety of artistic effects to express their ideas and feelings.

## • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

**Free flow activities**:

**Role Play Area –  Include examples of technology; home corner - phones, microwave, CD player.** If the role play area is set up as a Post Office -  planning could centre around the computing competence of developing algorithmic thinking because an algorithm is essentially a sequence of steps that solves a problem: writing instructions for posting a letter, following instructions needed for wrapping a present for posting, devising an algorithm design for wrapping paper.

**Building things** – **construction**: the computing competence here is decomposition and this centres around reducing a big problem into smaller parts: Organising and sorting equipment into compartments – grouping items in a particular way based on set criteria. Teacher models constructing an object and provides the parts/pieces to do this but includes a problem solving element, which piece isn’t needed?  Can you build with fewer pieces?

**Small world** Here, the computing competence centres around logic and developing their logical reasoning. This allows children to make accurate predications based on the information they know and have been given. This builds understanding of systems, lists and possible rules.  If the small world is a Zoo, in this activity, children use a picture checklist to ensure that each animal gets the right food, makes sure that each enclosure has the correct home, facilities and equipment e.g.  penguins- water, giraffe- tall trees. The teacher can put everything in a box and the activity would be to set up the zoo following the instructions on the checklist. Many other small world activities can be organised in a similar way.

**Teacher led activities**

**Use of a drawing or painting app** to create an algorithm design for wrapping paper or wallpaper. An algorithm can also be set of rules. Example Algorithm is: 1 Draw lines:  straight, thick lines, thin lines, use three colours. 2. Draw circles: big circles, small circles, over lapping, use four colours. Teachers can devise different algorithms based on pupil need and these can increase in complexity as children’s understanding develops.

**Use the camera app** to organise open ended task that supports active learning and builds understanding about what a digital image is. This activity covers the area of computing that is about using technology purposefully e.g. photos that children might see on a visit to the dentist or on a display at the park.  This sees children working collaboratively to take their own photos, edit them, save them and then print. The editing that the children will do includes decision making around which photos should be kept or deleted, which should be altered, cropped, screen shot. Practitioners can lead by modelling concepts such as how to take good a photo, focus on subject matter or a close up. Topics could be based on any area of learning.

**Beebots** to create an algorithm. This activity covers the area of computing programming. Practioners can extend skill in this area by modelling concepts such as predicting. They can support children to extend sequences and introduce specific vocabulary.

**Logging in to the devices** Teachers will need to model and scaffold this and use their judgement as to when in the year this is appropriate for their pupils. Pupils should be taught about the safety aspect of logging into the computer system as well as the skills of using the keyboard to type their login information.

**Demonstrating using technology**

**Doing the register on the IWB** Rather than doing the register on ipad, login on laptop and switch the screen on, children will get to see this being completed, they will recognise their own name and their peers’ names. They will see technology being used for a purpose.

**Listening to audiobooks-** Use CD player to play audiobook, talk through the process of how to use the CD player, use laptop and display on IWB, children make choice over story to listen to.

**Long Term Plan**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| Resources will be available during free flow but each half term staff will deliver focused input on the area on this LTP. | Ipad games  Sound buttons and recording  PSHE- Being me | Taking photos & videos  PSHE- Celebrating differences | Safer internet Day  PSHE- Dreams and Goals | Programming  PSHE- Healthy Me | Drawing software  PSHE- Relationships | Logging in/writing own name on computer  PSHE- Changing Me |

**Information Technology**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **EYFS Objective** | **NC Objectives** | **Computing strand** | **Skills/**Knowledge | **Apps/Software** | **Subject/Lessons** |
| • Explore how things work• Explore, use and refine a variety of artistic effects to express their ideas and feelings.• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.. | .  ♣ use technology purposefully to create, organise, store, manipulate and retrieve digital content | Word processing / typing | * Play on a touch screen game and use computers, keyboards and mice in role play * Type letters with increasing confidence using a keyboard and tablet * Dictate short, clear sentences into a digital device | Ipads  laptops | Literacy Communication and language |
| Data handling | * Identify a chart * Sort physical objects, take a picture and discuss what they have done * Present simple data on a digital device | 2count  2graph | Maths  Understanding the world |
| Video Creation | * Know the difference between a photograph and video * Record a short film using the camera * Watch films back | iPad camera  imovie | Expressive arts and  design |
| Photography and  digital art | * Take a photograph * Use a painting app and explore the paint and brush tools | iPad camera  2paint | Expressive arts and  design |
| Sound | * Record sounds with different resources * Find ways to change their voice when recording (tins, tubes, shouting, etc) | Sound tins  iPad camera Voice Memos | Understanding the  world |

**Computer Science**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **EYFS Objective** | **NC Objectives** | **Computing strand** | Skill/Knowledge | **Apps/Software** | **Subject/Lessons** |
| • Explore how things work.Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language  to describe them. | ♣ create and debug simple programs  ♣ use logical reasoning to predict the behaviour of simple programs | Computational thinking | * Follow simple oral algorithms * Spot simple patterns * Sequence simple familiar tasks |  | Literacy  Maths |
|  |  |  |  | Timetables |
|  |  | Coding and | * Use a mouse, touch screen or appropriate device to target and select options on screen * Input a simple sequence of commands to control a digital device | BeeBots  Ipads  2code | Daily use of |
|  |  | programming |  | smartboard |
|  |  |  |  | General iPad use |
|  |  |  |  |  |
|  |  |  |  |  |

**Digital Literacy**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| EYFS Objectives | NC Objectives | Computing strand | Skills/Knowledge | Apps/Software | Subject/Lessons |
| • Remember rules without needing an adult to remind them.• Show resilience and perseverance in the face of a challenge.• Know and talk about the different factors that support their overall health and wellbeing – sensible amounts of screen time.• Be confident to try new activities and show independence, resilience and perseverance in the face of a challenge.• Explain the reasons for rules, know right from wrong and try to behave accordingly. | Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. | Self-image and identity | * Recognise that I can say ‘no’ to someone if it will   make me feel sad, embarrassed or upset   * Explain how this could be in real life or online | JigsawPSHE  Project Evolve | PSHE ‘Being Me’ PSHE ‘Relationships’ Safer Internet Week  EYFS Aspects  Personal Social and Emotional Development  Understanding the World Communication and Language |
|  | Online relationships | * Recognise and give examples of some ways in which the internet can be used to communicate | iPad Video | PSHE ‘Relationships’  EYFS Aspects  Personal Social and Emotional Development  Understanding the World Communication and Language |
|  |  | Online reputation | * Identify ways that I can put information on the internet | School Website (class pages)  iPads | Safer Internet Week  EYFS Aspects  Personal Social and Emotional Development |
|  |  | Online bullying | * Describe ways that some people can be unkind online * Offer examples of how this can make others feel | JigsawPSHE  Project Evolve | PSHE ‘Relationships’  PSHE ‘Celebrating Differences’  Anti-Bullying Week |
|  |  |  |  |  | EYFS Aspects  Personal Social and Emotional Development  Understanding the World |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | Communication and Language Literacy |
| Managing online  information | * Talk about how I can use the internet to find things   out   * Identify devices I could use to access information on the internet * Give a simple examples of how to find information | Search Engines  Google Maps YouTube iPads Computer  Voice activated Searching (Siri,  Alexa) | All subjects  EYFS Aspects Understanding the World  Communication and Language |
| Health, well-being  and lifestyle | * Identify and give examples of rules that help keep us   safe and healthy in and outside of home when using technology | Interactive White Board | PSHE ‘Healthy Me’  EYFS Aspects  Personal Social and Emotional Development  Physical Development |
| Privacy and  security | * Give simple examples of my personal information   (e.g. name, address, birthday, age, etc)   * Identify the people I can trust and can share information with | eBook  [https://www.childnet.com/resourc](https://www.childnet.com/resources/digiduck-stories/digiducks-famous-friend) [es/digiduck-stories/digiducks-](https://www.childnet.com/resources/digiduck-stories/digiducks-famous-friend) [famous-friend](https://www.childnet.com/resources/digiduck-stories/digiducks-famous-friend) | Safer Internet Day  Literacy  EYFS Aspects  Personal Social and Emotional Development  Communication and Language |
| Copyright and  ownership | * Know that work I create belongs to me * Name my work so that others know it belongs to me | laptops Purple Mash  iPad Camera/Video | PSHE ‘Being Me’  All Subjects  EYFS Aspects  Personal Social and Emotional Development  Communication and Language  Literacy |

**Impact**

|  |
| --- |
| By the end of Reception we want pupils to |
| Computer System and Network:  I can log onto a computer  I can use technology to help me learn about the world  I can ask questions about different digital devices  I can answer questions about what I am doing with a range of technology  I can use a mouse to click and drag  I can find the letters of my name on a keyboard  I can talk about what might stop a device working |
| Creating Media:  I can use a digital device to make pictures, videos and music  I can talk about what I am doing on the iPad  I can record my voice on a digital device |
| Data and information:  I can collect information and make a pictogram in Purple Mash  I can use a pictogram to help me answer questions  I can count, sort and group information |
| Programming:  I can give a series of instructions to a friend or robot  I can code a robot to go to a certain place  I can debug an algorithm or some code |
| Online Safety:  I can tell a trusted adult if something on the screen upsets me  I can stop using a digital device when my timer runs out  I can talk about ways to stay safe when I am using a digital device |
| Computational Thinking skills:  I can persevere  I can think logically about a problem  I can work with a partner to solve a problem  I can spot patterns, similarities and differences  I can create things  I can play and explore/ have a go |