# Implement Digital Technologies now

## Simple class activities for Prep to Year 6

CODINGKIDS

# Prep

| Task | Alignment | Tools | Description | Curriculum Content Descriptor |
|---|---|---|---|---|
| Digital Systems worksheet | NA | Unplugged | Worksheet: cut and paste images and sort into hardware and software. E.g. printer, Scratch Jr, computer mouse. | Recognise and explore digital systems (hardware and software components) for a purpose (ACTDIK001) |
| People Patterns | NA | Unplugged | A simple whole class game. Teachers calls names of students and asks them to stand in order they were called. Students asked to identify the pattern created, e.g. boy-girl-boy-girl. Then move to less obvious patterns, e.g. velcro shoes - shoe laces - velcro shoes - shoe laces. Patterns can extend to: AB, ABC or AABB etc. | Recognise and explore patterns in data and represent data as pictures, symbols and diagrams. (ACTDIK002) |
| Life in a prep classroom | Art | Explain Everything app | Explain to the children that we will be creating and organising information about life in the prep classroom to share with the new prep children. Collate images, sounds, text and work in groups on various questions, e.g. What the school uniform is like, What the classroom looks like. | Create and organise ideas and information using information systems independently and with others, and share these with known people in safe online environments (ACTDIP006) |

# Year 1

| Task | Alignment | Tools | Description | Curriculum Content Descriptor |
|---|---|---|---|---|
| Beebot maze | Math | Beebot | Create a maze on the floor, i.e. masking tape on carpet. Program the BeeBot robots to navigate through the maze from start to finish. | Recognise and explore patterns in data and represent data as pictures, symbols and diagrams. (ACTDIK002)<br>Algorithms: Sequence of step and decisions (ACTDIP004) |
| Tell a story | English | Explain Everything app | Create an animation in the app to tell a story. | Recognise and explore digital systems (hardware and software components) for a purpose (ACTDIK001)<br>Collect, explore and sort data, and use digital systems to present the data creatively (ACTDIP003) |
| Sort the street | Maths | Unplugged | Use cards of images of houses. Sort the houses based on various features e.g. door colour, roof colour. | Recognise and explore patterns in data and represent data as pictures, symbols and diagrams (ACTDIK002) |

# Year 2

| Task | Alignment | Tools | Description | Curriculum Content Descriptor |
|---|---|---|---|---|
| Earth's resources | Science | Book Creator app | Create e-book to share research and practices to save water. | Recognise and explore digital systems (hardware and software components) for a purpose (ACTDIK001)<br>Recognise and explore patterns in data and represent data as pictures, symbols and diagrams (ACTDIK002)<br>Collect, explore and sort data, and use digital systems to present the data creatively (ACTDIP003)<br>Explore how people safely use common information systems to meet information, communication and recreation needs (ACTDIP005)<br>Create and organise ideas and information using information systems independently and with others, and share these with known people in safe online environments (ACTDIP006) |
| Picture graphs | Maths | Unplugged or Explain Everything app | Students brainstormed possible questions that could result in the given categories, e.g. favourite colour, favourite fruit, favourite sport, favourite school subject etc. The students then created their own question based on a set of images, survey their classmates and record their data. | Collect, explore and sort data, and use digital systems to present the data creatively (ACTDIP003) |

# Year 3

| Task | Alignment | Tools | Description | Curriculum Content Descriptor |
|---|---|---|---|---|
| Digital Systems | NA | Unplugged | Hardware and software worksheet | Identify and explore a range of digital systems with peripheral devices for different purposes, and transmit different types of data (ACTDIK007) |
| Australian convict crime and punishment quiz | HASS | Scratch | Create a quiz with Scratch on Australian convict crime and punishment. | Implement simple digital solutions as visual programs with algorithms involving branching (decisions) and user input (ACTDIP011)<br>Explain how student solutions and existing information systems meet common personal, school or community needs (ACTDIP012) |
| Aussie Animals | Science | Airtable, Do Ink | Create a database about Aussie Animals with Airtable.<br>Create a short video documentary about research using Do Ink. | Collect, access and present different types of data using simple software to create information and solve problems (ACTDIP009) |

# Year 4

| Task | Alignment | Tools | Description | Curriculum Content Descriptor |
|---|---|---|---|---|
| Schoolyard rubbish | Geography | Answer Garden, Canva, Spreadsheets | Conduct research on volume, types and location of schoolyard litter.<br>Use Answer Garden to create a word cloud based on numbers of types of rubbish e.g. fruit sticker, popper straw, plastic wrapper.<br>Use Canva to create an infographic of research results.<br>Use spreadsheets to create tables, graphs and pie charts of results. | Recognise different types of data and explore how the same data can be represented in different ways (ACTDIK008) |
| Erosion | Science | Scratch | Create an animation that explains soil erosion. | Identify and explore a range of digital systems with peripheral devices for different purposes, and transmit different types of data (ACTDIK007)<br>Define simple problems, and describe and follow a sequence of steps and decisions (algorithms) needed to solve them (ACTDIP010)<br>Implement simple digital solutions as visual programs with algorithms involving branching (decisions) and user input (ACTDIP011)<br>Explain how student solutions and existing information systems meet common personal, school or community needs (ACTDIP012) |

| | | | | |
|---|---|---|---|---|
| Angles, measurement, and time. | Maths | Scratch | Use Scratch to explore angles, measurement, and time. | Identify and explore a range of digital systems with peripheral devices for different purposes, and transmit different types of data (ACTDIK007)<br>Collect, access and present different types of data using simple software to create information and solve problems (ACTDIP009)<br>Define simple problems, and describe and follow a sequence of steps and decisions (algorithms) needed to solve them (ACTDIP010)<br>Implement simple digital solutions as visual programs with algorithms involving branching (decisions) and user input (ACTDIP011) |

# Year 5

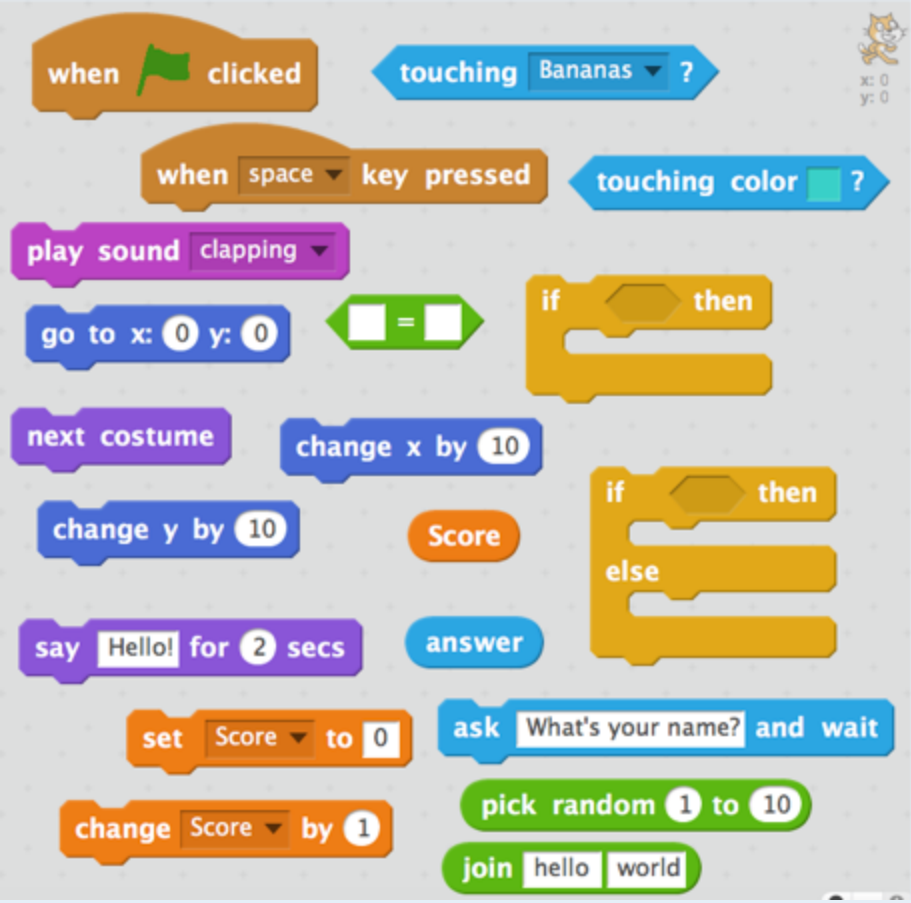
| Task | Alignment | Tools | Description | Curriculum Content Descriptor |
|---|---|---|---|---|
| Maze game | NA | Scratch | Create a maze game with Scratch. | Define problems in terms of data and functional requirements drawing on previously solved problems (ACTDIP017)<br>Design a user interface for a digital system (ACTDIP018)<br>Design, modify and follow simple algorithms involving sequences of steps, branching, and iteration (repetition) (ACTDIP019)<br>Implement digital solutions as simple visual programs involving branching, iteration (repetition), and user input (ACTDIP020) |
| Digital Systems & Networks quiz | NA | Scratch | Create a quiz on Digital Systems & Networks | Examine the main components of common digital systems and how they may connect together to form networks to transmit data (ACTDIK014) |
| Blogging | Cross-curricular | Blogging platform | Class Blog. Each student has own page. Required to blog various tasks regularly throughout the year. | Plan, create and communicate ideas and information, including collaboratively online, applying agreed ethical, social and technical protocols (ACTDIP022) |

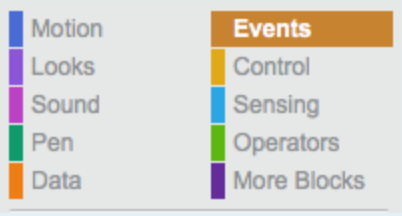
# Year 6

| Task | Alignment | Tools | Description | Curriculum Content Descriptor |
|---|---|---|---|---|
| Binary numbers | NA | Unplugged | Use dot cards to count to 31. Worksheet to practice converting numbers between decimal and binary. | Examine how whole numbers are used to represent all data in digital systems (ACTDIK015) |
| Digital Systems | NA | Unplugged | Research, worksheet and oral presentation on the school system. | Examine the main components of common digital systems and how they may connect together to form networks to transmit data (ACTDIK014) |
| Electrical energy and electrical circuits | Science | Makey Makey or EV3 robots | Explore circuits, sensors and output devices with either a Makey Makey of EV3 robot. | Acquire, store and validate different types of data, and use a range of software to interpret and visualise data to create information (ACTDIP016)<br>Define problems in terms of data and functional requirements drawing on previously solved problems (ACTDIP017)<br>- Design, modify and follow simple algorithms involving sequences of steps, branching, and iteration (repetition) (ACTDIP019) |

Only 20 blocks are needed to create your own digital solutions for the Year 3-6 Scratch projects (scratch.mit.edu)

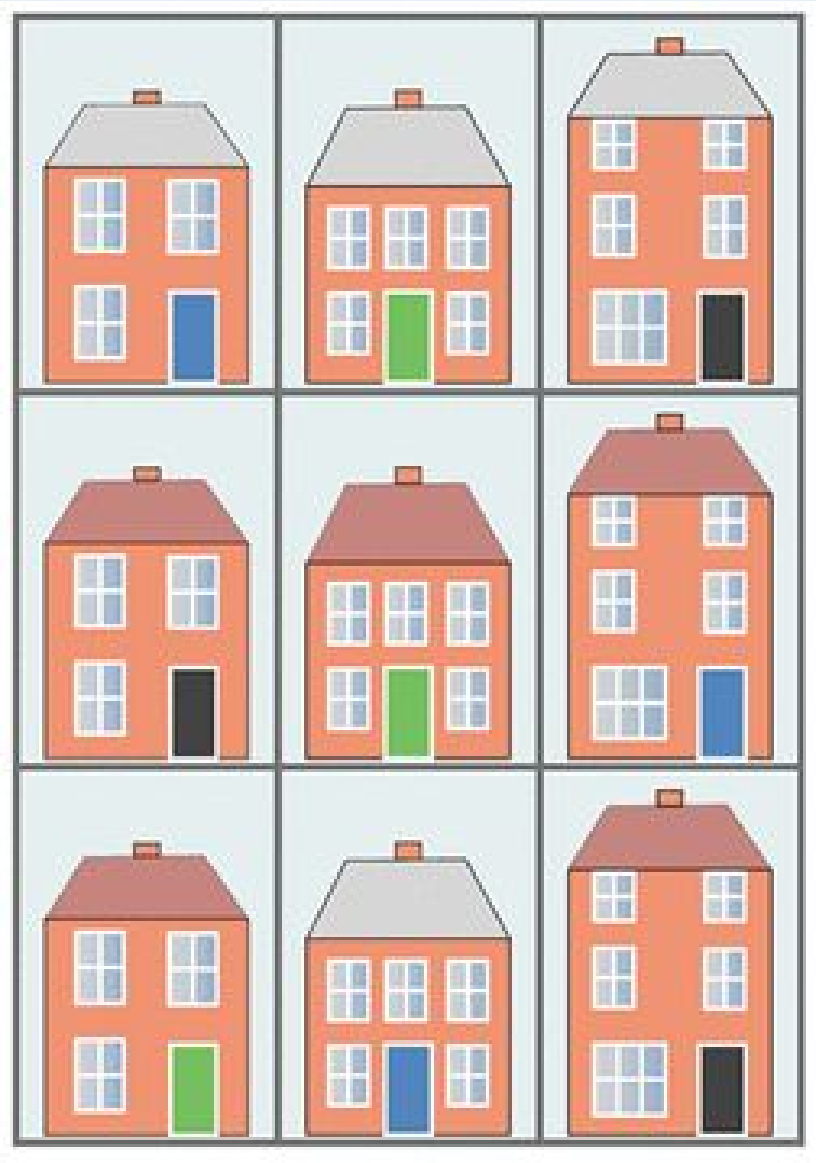
**20 blocks**




**Block categories**

**Sort the street, Year 1** (Source: nRich maths https://nrich.maths.org/5157)



Picture graphs, Year 2

# Zoo animals

| | | | | |
|---|---|---|---|---|
| **Koala** |  |  |  |  |
| **Giraffe** |  |  |  | |
| **Tiger** |  |  | | |
| **Gorilla** |  | | | |
| **Elephant** |  |  |  | |
| **Seal** | | | | |

## Aussie Animals database with Airtable, Year 3

Aussie Animals

Animals

Main View | Hide fields | Filter | Group | Sort

| | Animal species | Classification | Appearance | Body covering | Number of legs |
|---|---|---|---|---|---|
| 1 | Kangaroo | Mammal |  | Fur | |
| 2 | Bandicoot | Mammal | | | |
| 3 | Bilby | Mammal | | Fur | |
| 4 | Black Swan | Bird | | Feathers | |
| 5 | Cassowary | Bird | | Feathers | |
| 6 | Saltwater crocodile | Reptile | | Scales | |
| 7 | Dingo | | | | |
| 8 | Dugong | | | | |
| 9 | Echidna | | | | |
| 10 | Emu | | | | |
| 11 | Wombat | | | | |
| 12 | Yabby | Crustacean | | | |
| 13 | Quokka | | | | |
| 14 | Koala | | | | |
| 15 | Quoll | | | | |
| | Numbat | | | | |
| 17 | Sugar glider | | | | |
| 18 | Tasmanian devil | | | | |

(Source: http://dabblingindata.weebly.com/aussie-animals.html)

Coding Kids is inspiring the next generation of creators, innovators and change makers. We run after-school coding clubs, school holiday code camps and professional development workshops for educators. Children build their own computer games, animation movies, artwork and digital solutions. Through fun and and play children discover computational thinking, design thinking and entrepreneurship.

We at Coding Kids are a Brisbane-based organisation passionate about empowering young minds to become digital creators and entrepreneurs. In light of the new Digital Technologies subject in Australian schools — as well as the increasing need for STEM and entrepreneurship programs in schools — we have a wide range of programs to aid both students and teachers in their ultimate goal to become proficient digital citizens and educators.

We have a range of school incursion programs available for students, as well as professional development sessions for teachers, on topics mentioned prior. Coding Kids has worked with all manner of organisations, including the Queensland College of Teachers (QCT), the Australian School Library Association (ASLA), and the Queensland University of Technology (QUT). We have travelled far and wide delivering Digital Technologies, STEM, and entrepreneurship programs in places such as the Torres Strait, Mt. Isa, and Thargomindah.

We can support you in giving your school community the resources to become creators, innovators, and changemakers, and give them the chance to set themselves apart.

Please do not hesitate to contact me if you would like more information about how we can help your school community achieve success and create life-changing opportunities.

Our team at Coding Kids is looking forward to working with you.

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