Computers and codes
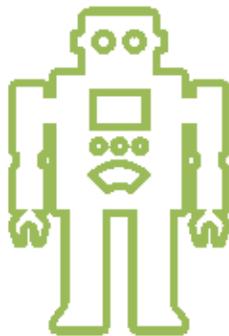
Student activity book

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Contents

Home Tutor information

It is important to:

- know what work your student will be covering before starting to deliver the lesson each day

- mark work task by task showing ticks, comments and prompts where appropriate, to encourage your student to expand on answers, use vocabulary relevant to this topic and edit own work.

Day 1: What is a digital system?
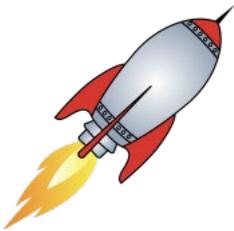
Welcome to the *Computers and codes* set. Computers and codes are parts of a digital system. What do you think a *digital system* means? Discuss your ideas with your Home tutor and write a definition below.

A digital system is

Digital systems are electronic systems. These objects contain digital systems to help them work. Draw three more.

Parts of a digital system

To find information or data on the web, we use a digital system. Let's find out more about the parts of this system.

Read the names of the parts or **components** of a computer digital system.
Read and discuss the definitions with your Home tutor.
Use coloured pencils to match each component to its definition.

Components		Definitions
headphones		used to type characters into the computer
tower		moves the cursor around the screen
screen or monitor		used to listen to music or spoken information
mouse		shows an image of what is happening on the computer
keyboard		stores the computer's 'brain' or microprocessor

Use the matching activity above to help you identify the components of the computer digital system. Print a label for each component.

_____

_____

_____

_____

_____

Input and output

Some parts of a digital system let you input (or put in) information and some give you (or output) information.

These parts are called **peripherals**. They allow you to use the computer's brain or microprocessor to find the data you want.

Which **peripherals** would you use to input information into the computer when you are searching for data or information? Shade the bubbles.

◯ mouse   ◯ tower   ◯ keyboard   ◯ monitor

Which **peripherals** would give you the information? Shade the bubbles.

◯ headset   ◯ tower   ◯ keyboard   ◯ monitor

Here are some images of other **peripherals** that work with your computer to input and output data. Discuss what they are and what they do with your Home tutor.

Print a label for each **peripheral**.

Tick the **peripherals** that output information so you can see or hear it.

Peripherals with storage

The tower in a computer digital system contains the 'brain' or microprocessor of the computer. It also contains a storage device. This is called **internal** storage. It isn't a **peripheral** device**.**

Peripheral or **external** storage devices store information. They can be disconnected from the computer so you can carry them with you.

Peripheral storage devices are different sizes and can be used on different computers.

	Discuss these **peripheral** storage devices. Print the name of each device beside it.
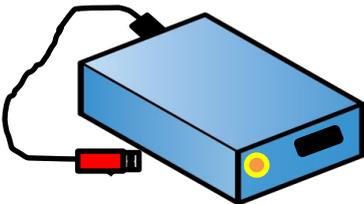
What have you stored on the **internal** storage device of a computer?

What **peripheral** or external storage devices have you used?

What did you store on them?

What is data?

What is data? Discuss your ideas with your Home tutor and write a definition.

Data is

Data is a collection of information. It can be found in many different places.

If you wanted to find some information about insects, where would you go or look? List four ideas on the lines below.

-
-
-
-

Where would you find a book about insects? Write a full sentence answer.

How would you find the insect information inside the book? Write a full sentence answer.

Data presentation

Data can be presented in many different ways.

How might the insect information be presented in a book? List your ideas in a sentence, using a comma between each idea.

_____

_____

_____

The data might be presented in a brainstorm cloud. Write some information you know about insects into this cloud.
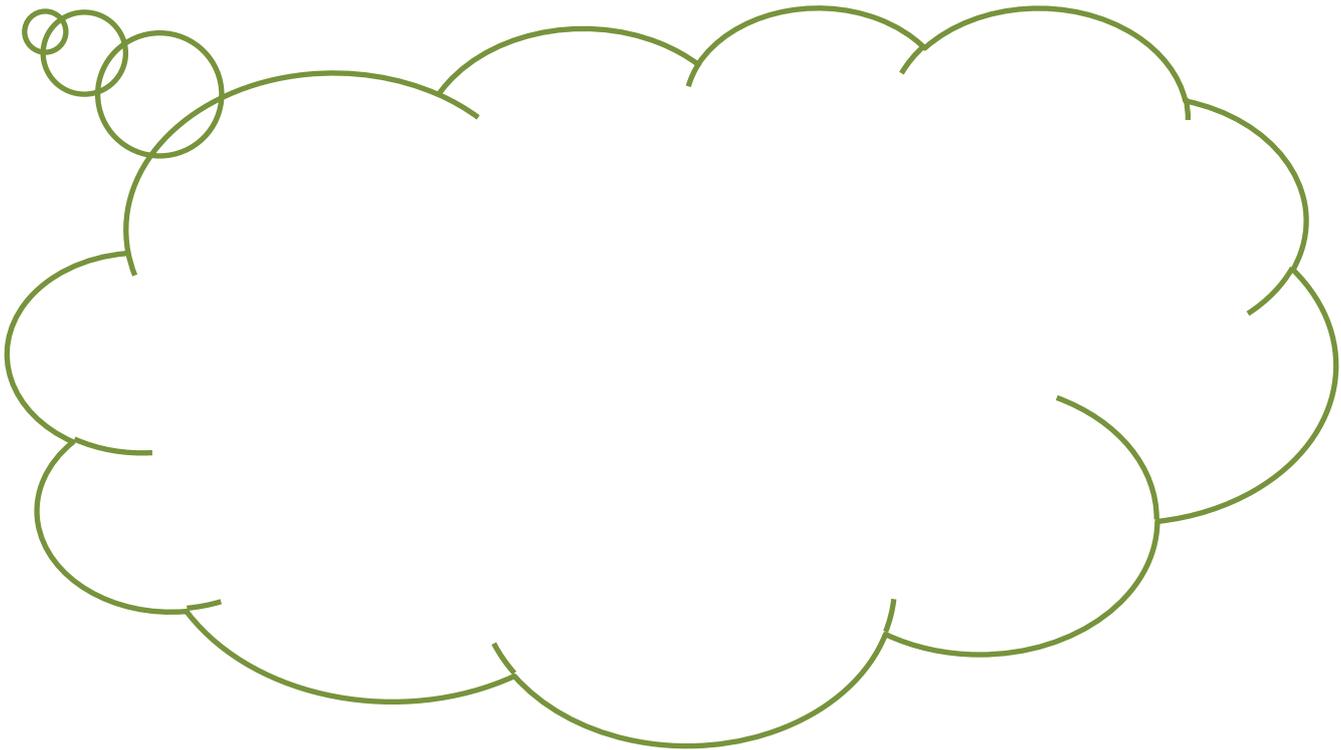
How else could you present your insect data? List your ideas in a sentence, using a comma between each idea.

_____

_____

How is data stored?

> Data is stored on computers in the same way we store books in libraries. Data is stored as a computer **file**.

A computer **file** is like a book. It is a resource for storing information or data. Examples of **files** are documents, slide shows, music and video clips and images.

Computer **files** are created using different program formats. You open, read, change and close computer **files** using the program attached to it.
Look at these icons (or pictures) that represent five different programs.
Discuss them with your Home tutor.

Word document	PDF	Powerpoint	Jpeg image	video
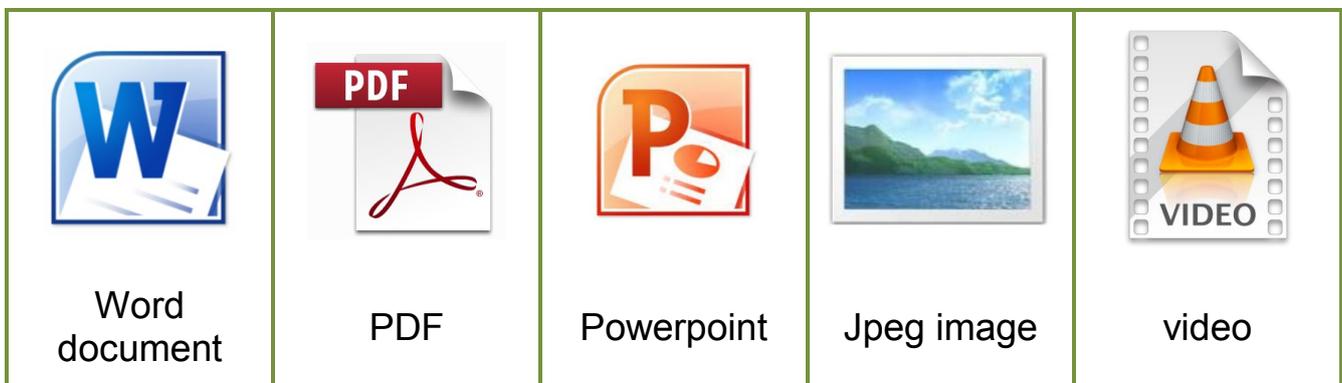
This **file** is made using the Word program. When a **file** is saved, the program icon is attached, so you know which program was used to create it. Each **file** is given a name so you know what it is about, eg letter to granny.

This icon represents a computer **folder**. A computer **folder** is like a book shelf because it stores computer **files**. Each **folder** is given a name to describe the files inside, eg family letters.
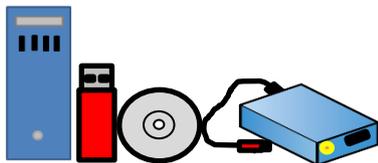
Internal hard drives (inside towers), USBs, discs and external hard drives are like libraries. They are used to store **folders.**

Discuss this flowchart.

My word wall

Materials:

- computer, laptop or tablet with a document making program.
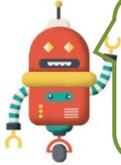
Today we learnt and used many new words that are part of our digital world. Tell your Home Tutor four new words or terms you learnt.

Follow the steps below to create a word wall on the computer to record all the new words you learnt and used today. We will use a landscape oriented page to do this.

1. Open a word document on the computer.

2. Read across the top tab line to find and select *Page Layout*.

3. Find and select the *Orientation* drop down arrow.

4. Select *Landscape* from the menu.

5. Type the title *My Word Wall* into the top of the document.

6. Press the *enter* key.

7. Read across the top tab line to find and select 'Insert'.

8. Find and select the *Table.*

9. Scroll over the pop up table to select a 4 column x 6 row table.

Click inside one of the sections in the table.

Type one of your new words into the space, eg peripheral.

Select another space and type another word.

Continue until you have typed all the new words you know.

Ask your Home tutor what to do next and where to save the word wall.

Day 2: A safe space

We use computers, laptops, tablets and mobile phones for many different activities. List some of the things you do using these devices.

We need to make sure we look after ourselves when we are using these devices.

Discuss ways you can stay healthy when using digital devices.

List some of your ideas here.

-
-
-
-

Draw these items onto the picture to show that the boy is using his computer in a safe way:

- computer screen at eye level
- keyboard in reach
- lamp or overhead light
- comfortable straight backed computer chair

Devices and technologies

What electronic devices do you, your family members and friends use? Ask them and list them here.

Tick the technologies you, your family members and friends use. Place one tick for each person who uses the technology.

search engine	social media
video chat	podcasts
messaging	music
games	maps

Which technology is the most popular?

Data display

Look at the tick tally data you collected about how people use technologies in the previous activity.

What are some other ways you could present that data? Write your ideas on the line below.

Use this space to present the data in another way.

Digital safety

We enjoy sharing pictures, videos and news with friends and family. We also like to play online games with friends, family and strangers.

Strangers? That sounds a bit dangerous. How will I know a stranger is safe? How can I protect myself?

That's what we'll explore. Everyone needs to know how to stay safe online before they start sharing information with family, friends and strangers.

With your Home tutor, discuss ideas about how you can stay safe when you are communicating online.

Record your ideas in this mind map.

Staying safe online

Sharing with family and friends

We often share things online with family and friends. Write a list of people you share information with and how you share it.

Name	How you share information

What information do you share with family and friends?

_____

_____

Discuss information you should not share with family or friends and why.

What things should you be careful **not** to share with friends?

_____

_____

Sometimes family or friends might share your personal information or photographs. Always think carefully before you share something.

Always ask an adult if you are not sure about sharing something.

Stranger danger

When we see a stranger in the street or park, we know that we should not talk to them, take anything from them or go anywhere with them.

It's more difficult to recognise strangers online as we cannot see them. They might be good people and want to join us in an online game or they might want to cause mischief.

If a stranger asks questions or wants photos of you or your family, do not answer and tell an adult.

To stay safe online, do not share passwords or personal information.

What is a password? When do we need or use one? Discuss with your Home tutor.

When do we use passwords? List some instances.

_____

_____

_____

_____

Personal information tells others who you are and where to find you.

Shade the bubbles to show the personal information that you should **not** share

◯ hair colour	◯ favourite colour	◯ birthdate
◯ telephone number	◯ home address	◯ height
◯ age	◯ school	◯ full name

Adding to the word wall

Materials:

- computer, laptop or tablet to access the *Word wall* document.

Your word wall is a record of your growing knowledge about the digital theme.

Open the *Word wall* document you made on Day 1.

Think back over the activities you did today. What new terminology did you learn?

Type the new terms into your *Word wall*.

If you fill the word wall, create a new wall on another page in the document, using the instructions from Day 1.

Look through today's activity sheets to find other new terms that can be included.

Type these new terms into your *Word wall*.

Check the spelling is correct for each term.

Each day you will be asked to add some words to your *Word wall* and save it in readiness for use on the next day.

Save your *Word wall* for use on Day 3.

Day 3: World Wide Web

We can use our computer digital system to find information on the **World Wide Web**.

The **Web** is an information space where documents and other resources are stored. We access it using the **Internet**.

Why do you think the information space is called the **Web**?

_____

_____

It's called the **Web** because the data or information is connected in many ways, like the parts of a spider's web.

The data on the Web is presented in **websites**. Website is a compound word. Write the two words to complete this sentence.

+ _____ **=** _website_

_____

Web refers to the **World Wide Web** and **site** means **place** so **website** means **a place on the web**.

A **website** is a folder of data that a computer can read.

Discuss and list ways data can be presented on a website.

_____

_____

Using a digital system

Materials:

- computer, laptop or tablet with internet access.

Let's explore the web to find out how we can use it.

Turn on the computer and open your search engine.
Point to the search bar.
Type *insects for kids* into the search bar.
Press the *enter key.*

A computer *icon* is a small picture. *Icons* help us perform tasks and find our way around our screen.

Look for these icons on your screen. Tick any you can see.
Discuss each icon and its meaning.
Write some words to explain what each icon means or does.

←	
🔍	
🎤	
✕	
↻	
📷	
🖶	

Draw your own icon and say what it represents.	

To click or not to click

When we are playing a game or looking at a website online, we often see things that have nothing to do with our game or the information we are seeking.

Look at this Dinosaurs Alive 1 game screen. Circle anything you see that has nothing to do with playing the game.

Click to meet new friends!

Living with Dinosaurs 2 Out now!

Buy now! $50!

Crazy mammoth toy!

Eat Cheeky Chocs!

What did you find?

You are researching insects and open an insect website. You see all sorts of information and some of it has nothing to do with your insect research.

Which bubbles match information that you should **NOT** click to open?

◯ insect diagram	◯ flashing sign saying WIN! WIN!
◯ flea picture	◯ a small screen that pops up on the main screen
◯ dog bed advertisement	◯ video of bees collecting pollen

Insect data

Let's explore the data about insects.
One form of data is an **image**.

Return to the *Insects* screen on the computer, laptop or tablet.
Select the *Images* tab below the search bar on your screen.

Look for these image examples. Tick each one as you find it.

chart showing different insects	life cycle	cartoon style insect
photograph	labelled diagram	insects made using craft materials

Another form of data is a video.

Select the *Videos* tab below the search bar on your screen.

View three videos. Print their titles on these lines.

_____

_____

_____

Select the *All* tab below the search bar on your screen.
Scroll down the page until you come to the list of *links*.
Each *link* will take you to different website about insects.

Select three links and view the information on the websites.

Which was the best website?
_____

How was the data presented?
_____

_____

Insect task

You have investigated the Web and found insect data. You can use your research skills to complete this task.

Read the task with your Home tutor.
Discuss anything you do not understand.

1. Create a blank document on the computer.

2. Type a title at the top of the page, eg Insect data.

3. Below the title, insert a table that is 2 columns wide and 3 rows down.

4. Find examples of the following insect data on an insect website:
- labelled diagram of an insect
- life cycle diagram
- three different insect images.

5. Copy and paste the images from the website into the rectangles or **cells** in the table. One **cell** will be blank.

Here is an example of the insect task.
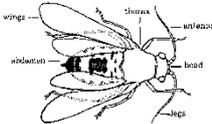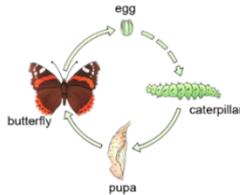
The dashed lines show the **cells** in the table.

See the Home tutor's notes to find out about this space!

Ask your Home tutor to supervise and give help if you need it.

Open your *Word wall* document and add some new words from today.

Day 4: My digital footprint

Have you heard the term *digital footprint*? What do you think it means? Talk about it with your Home tutor and write your ideas on the next lines.

_____

_____

_____

_____

A *digital footprint* is a trail of data you make when you use the internet. It includes the websites you visit, emails and information you send or share with others.

List data or information that might be in your digital footprint.

- _____

- _____

- _____

- _____

Your *digital footprint* includes the websites you visit, emails, messages, photos and information you send or share with others.

People can find you and your information using your digital footprint. This is why we must be careful about what we do when we are using digital devices.

Digital rules

Every family has rules about how, when and where digital devices can be used and the information that can be shared.

These rules help keep your information private and stop mischief makers from using your data.

What are your family rules about using the television? Discuss with your Home tutor and write them below.

-
-
-
-

What are your family rules about using a digital device like a computer, mobile phone or tablet?
Discuss with your Home tutor and write them below.

-
-
-
-
-

Remember! Once you have shared information including photos and videos using a digital device, you cannot take it back.

Tablets and mobile phones

Many people like to play games or message friends using a tablet or mobile phone.
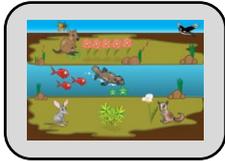
Which games do you play on a phone or tablet?

_____

_____

When is it appropriate to play games on a phone or tablet? Shade the bubble to show when you think you should be able to do this.

◯ at the movies	◯ in the school playground
◯ at school in class	◯ walking along the street
◯ in your bedroom	◯ when you are bored
◯ at a party	◯ watching tv with your family

Should you be able to use a mobile phone or tablet during meal times with your family?
Discuss your thoughts with your Home tutor.
Record your ideas in this table.

Yes because	No because

My decision

In the previous activity, you wrote some reasons to say why you should or shouldn't use a mobile phone or tablet during meal times with your family.

What do YOU really think? If it was your decision, what would you do? Would you allow the use of phones and tablets at mealtimes?

Write a sentence to show your choice below.

_____

_____

_____

Look at your *Tablets and mobile phones* activity sheet. Read the reasons that match yes or no choice from the table at the bottom.

How are you going to convince your family that you are right? You need to write a persuasive argument to persuade them.

Use your reasons from the previous activity to help write your persuasive argument.

Place your lined paper and the *Tablets and mobile phones* activity sheet on the table so you are ready to write.

Your Home tutor will help you create your persuasive argument.

Let's edit

Successful writers always edit their written work.

Read this checklist. It will help you edit your persuasive argument.

Edit checklist	Tick
Each sentence is a complete thought.	
Each sentence starts with a capital letter and ends with a full stop.	
The spelling words I know are spelled correctly.	
I have had a go at spelling difficult words.	
I used a dictionary to find out how to spell difficult words.	
I have used some strong, persuasive words.	
My writing has paragraphs.	

Use the checklist to edit your persuasive writing from the *My decision* activity.

Make changes by:

- drawing a line through words you want to change
- writing the new word above
- adding or changing punctuation.

Online behaviour

We need to recognise and practise appropriate online behaviour. Complete this task to show your understanding of online behaviour.

Read each online behaviour.

Tick the information that describes *appropriate* online behaviours.

respecting the ideas of others	
sharing content that is rude or mean	
introducing yourself	
using sites that you have permission to use	
telling your parent or teacher if you are concerned about something your read or saw	
using your full name as your user name	
typing in all capital letters	
not sharing personal information	
complimenting others	
sending photos or videos to strangers	
agreeing to meet with someone you met online	
using polite language	
sharing your passwords with your friends	

Discuss your choices with your Home tutor.

Open your *Word wall* document and add some new words from today.

Day 5: Insect fun

Materials:

- Cusenaire rods (from Maths kit) or other building blocks of different shapes and sizes

What are the features of an insect? If you are not sure, use a book or the internet to do some research. List the features.

Use your Cuisenaire rods to make an insect.
Draw the model in the space below. Label the parts so you know which blocks you used to make it, eg wing – brown rod.

Follow me

Materials:

- Cusenaire rods (from Maths kit) or other building blocks of different shapes and sizes
- large book or similar to use as a barrier
- camera.

The Home tutor will help you set up this activity.

You

book barrier

Home tutor

Cuisenaire rods
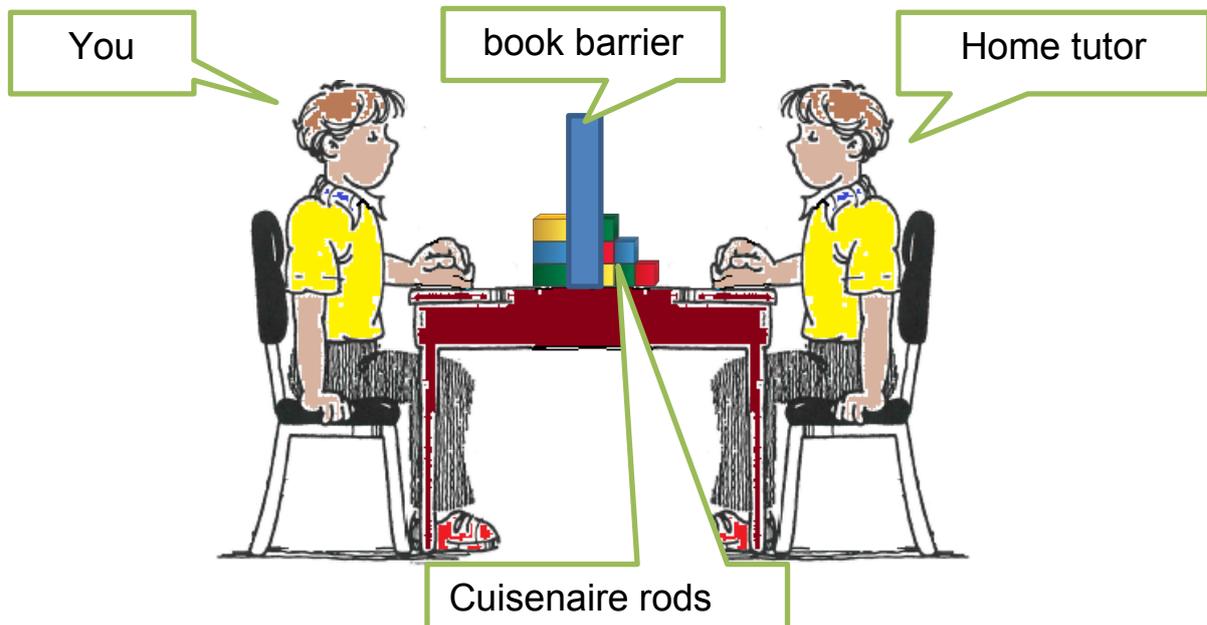
Make an insect model using the rods. Do not let your Home tutor see what you are doing.

Give the Home tutor directions to make an insect like yours. Do not look at what the Home tutor is doing.

Carefully take down the barrier. Are the insects the same?

Take a photograph of both insects and save it into your Set folder.

Discuss the similarities and differences between the two models. Discuss why they do or do not match exactly.

Play the game again.

Clear directions

Computers follow directions to do tasks. If the directions are not clear, the computer cannot do its job.

The Home tutor was the 'computer' in the barrier game. In the last activity you used your voice and words to code or program your 'computer'.

Did the 'computer' make the insect correctly?

Why?

Did the 'computer' make the second insect correctly?

Why?

What did you learn about giving instructions to computers?

Step by step sequence

Materials:

- computer, laptop or tablet with internet access.

A **sequence** is a set of steps or code completed in a certain order. You follow sequences every day, including getting ready for bed.

Discuss some sequences or ordered steps you follow each day.

Write three events where you follow a sequence.

- _____

- _____

- _____

Ask your Home tutor to help you follow this sequence to find and watch a video.

Open the search engine on your computer.

Type *dk coding for kids* into the search bar and press the *enter* key.

Select the *videos* tab below the search bar.

Select the *Coding for kids 3: Think like a computer.*

Select the *Skip Ad* tab on the right of the screen to skip the advertisement.

Watch the video.

What happened to the robot?

_____

Why?

_____

_____

This page has been intentionally left blank.

Ordering steps

You saw what happened to the robot waiter when the sequence was not correct. If the sequence does not include every possible step to complete the task, the computer cannot do what you ask.

Read the sequence of steps at the bottom of the page.

What is the sequence telling you?

_____

_____

If you follow the sequence as it is, will you

complete the task successfully?

Why?

_____

_____

Cut out the text boxes on the dashed lines and put them into a sequence that will allow you to successfully make the sandwich.

Take a photograph of your sequence. Save it into your Set folder.

Use a knife to spread the jam on top of the butter on one slice of bread.

Cut the sandwich in half.

Place two slices of bread on a bread board.

Place the buttered slice of bread, with the butter side down, on top of the jam side of the other slice.

Use a knife to spread butter on the top surface of each slice of bread.

This page has been intentionally left blank.

Testing the sequence

Materials:

- bread board
- two slices of bread
- butter
- jam (or other spread)
- bread and butter knife
- camera
- sequence strips (from previous activity).
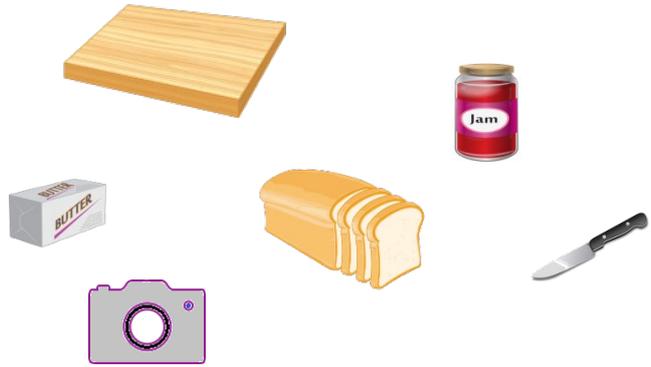
Let's test your sequence. This time you are the computer!

Follow your ordered steps to make the sandwich. You must do exactly what each step tells you, in the order you have them.

Did your sequence work?

Why?

If the sequence did not work, change the steps and try again.

Did you make changes?

Did your new sequence work?

If you made changes, take a photo of your new sequence.
Save it to send to your teacher.

Open your *Word wall* document and add some new words from today.

Day 6: Think about codes

Computer directions are written as code. A code uses symbols and pictures to represent a message or story.

Use your computer to find some images for these codes. Complete the table to show some information about each code.

Code	Information	Examples
Aboriginal symbols	Early Aboriginal people used symbols in their rock art. This is how we know about their lives from many years ago.	
Braille alphabet and numbers	Used by people with sight problems to read. Our monetary notes have Braille dots imprinted on them to help sight disabled people recognise them.	
Auslan		
Phone text		

What do these picture codes say?

Follow a code

Materials:

- ruler
- coloured pencils.

Computer screens are divided into a grid of small dots or pixels. **Pixels** are **pic**ture **el**ements.

Each pixel has a code for its colour. Read the colour code key below.

B = blue   P = purple   W = white   Y = yellow   R = red   G = green

Follow the code from left to right, colouring the pixels or squares to find the hidden picture

5W, 2P, 5W

5W, 1P, 6W

4W, 1G, 1P, 1Y, 5W

3W, 2G, 1P, 2Y, 4W

2W, 3G, 1P, 3Y, 3W

1W, 4G, 1P, 5Y, 1W

5W, 1P, 6W

12R

1W, 10R, 1W

2B, 1R, 2B, 1R, 2B, 1R, 3B

12B

What is the hidden picture?

My coded picture

Are you up for a challenge? Have a go at making your own coded picture. Your Home tutor will give you some tips.

number/letter code	picture/pattern

Colour code key:

Check your code matches your picture.

Make any changes so the code it correct.

Testing the code

Copy the *Colour code key* for your picture into the box below.

Colour code key:

Ask your Home tutor to read the *Colour code key* and select the matching coloured pencils.

Hold the *My coded picture* activity sheet so you can read it but your Home tutor cannot see it.

Now it's time to guide your Home tutor to shade the grid. Your Home tutor will explain how you do this.

Compare your coded picture with the picture made by the Home tutor. Do they match? Why?

If there are coding errors, work out a new code and print it on the matching line of the Home tutor's picture.

Making choices

Materials:

- Attribute blocks from Maths kit – large blue and yellow shapes
- 5 small containers, eg plastic cups.

When you play computer games, your computer reacts to the choices and actions you make. When you press a button, a character jumps or runs. In this activity, you make a choice and a shape ends up in a cup.

Read these dot points with your Home tutor.

- place the five containers in a column on the table
- select a shape
- read each question and answer it, based on the shape's features
- continue reading and answering until the shape is placed into a cup
- choose another shape and repeat the steps
- continue until all the shapes are sorted into the cups.

1. Is it round?

| **Yes** – place into the first container. | **No** – ask the next question. |

2. Does it have four sides?

| **Yes** – place into the second container. | **No** – ask the next question. |

3. Does it have three sides?

| **Yes** – place into the third container. | **No** – ask the next question. |

4. Is it blue?

| **Yes** – place into the fourth container. | **No** – place into the fifth container. |

Draw the shapes in each container.

1	2	3	4	5

Branching

When we make decisions, we are **branching**. You were **branching** when you were sorting the shapes.

You can make a **branching flow chart** to show yes/no information.

Use the flow chart to sort these shapes. Draw the shapes into the buckets. Cross off each shape after you have put it into a bucket.

Is it purple? → Put into bucket 1 →

Is it square? → Put into bucket 2 →

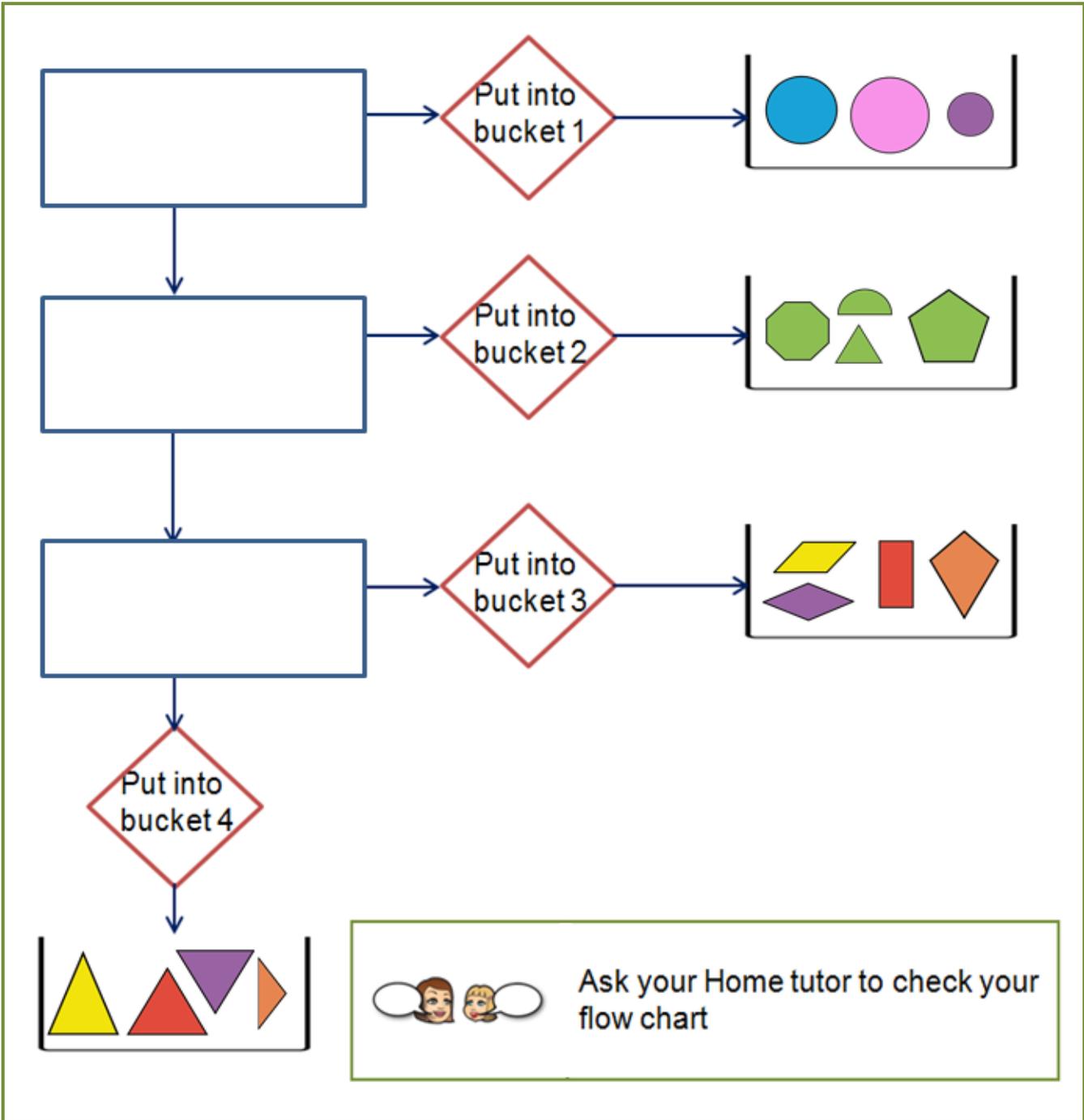Is it blue? → Put into bucket 3 →

Put into bucket 4

Ask your Home tutor to check your flow chart sorting.

Your flow chart

Have a go at completing this branching flow chart.

Look at the shapes in each bucket. In each rectangle write a question that would make this happen.

Ask your Home tutor to check your flow chart

Open your *Word wall* document and add some new words from today.

Day 7: Lightbot fun

Materials:

- computer, tablet or laptop with internet access.

Programming (or coding) is the way people tell a computer what to do, using instructions the computer understands. The computer programmer decides the action the computer should do and writes the code so it happens.

You will explore and do some coding to solve some puzzles using a program called *Lightbot. Lightbot* is a free educational video game that helps you learn about programming and coding.

Read and discuss the information about *Lightbot* in the table with your Home tutor.

Program	format	Hardware
Lightbot: code hour	App Web based	iPad and Android tablets laptops and desktop computers

Will you use a tablet or computer?

Why?

You are **programming** or **coding** when you play *Lightbot*!

Lightbot teaches specific coding skills that are used in many programming languages. The technical terms are:

Sequential control flow: Commands get executed one after the other.

Procedures: Blocks of code for taking advantage of re-usable patterns.

Loops: Blocks of code specifically used for patterns that repeat or 'loop'.

Debugging: Running and re-running a program, testing solutions and fixing errors.
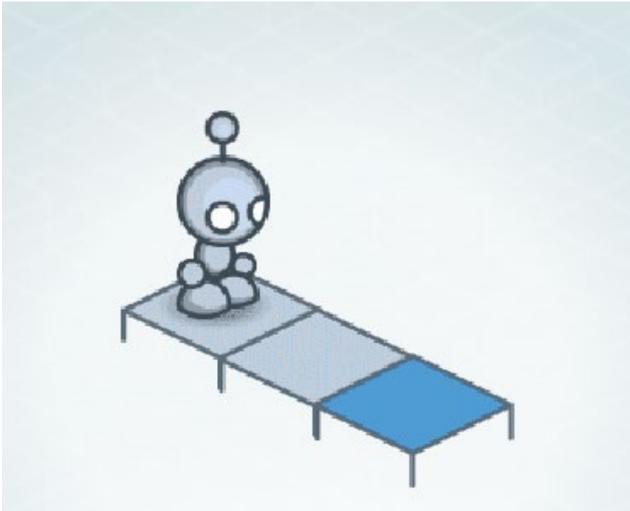
Let's meet Lightbot

Hi! I'm Lightbot. These are the coding symbols you use to make me move. Before you choose a symbol, look carefully to see which direction I am facing.

forward	turn left	turn right	jump	light

This is my first puzzle. Can you draw the symbols so I move forward two spaces and light up the third tile? You need three symbols.

	Code

Let's use the *Lightbot* program to check your code.

The *Lightbot* program is accessed in different ways for tablet and computer users.

Please read the access information on the next page and open the *Lightbot* program as directed.

Opening Lightbot

To access *Lightbot* on an android or iPad tablet, read below.

Ask your Home tutor to help you download the *Lightbot* application from the *App Store* (iPad) or Google Play.

Turn your device to landscape orientation.
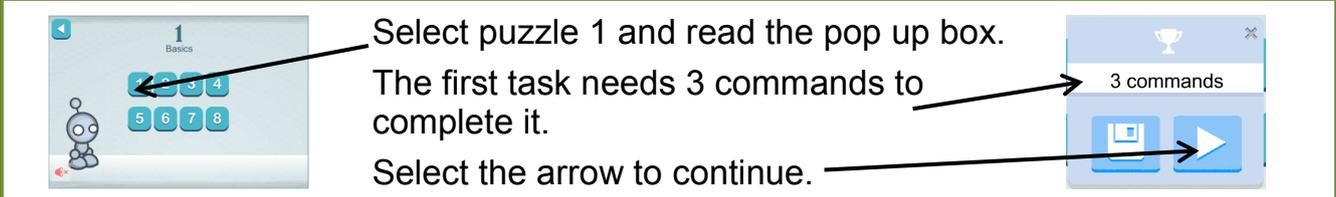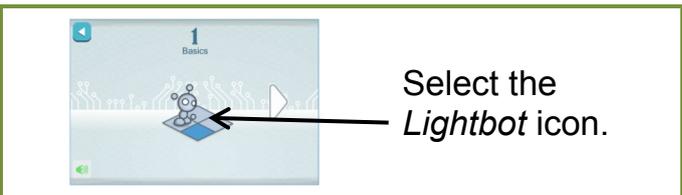Select the *Lightbot Hour* icon on your screen.

To access *Lightbot* on a laptop or desktop computer, read below.

Open your computer search engine.

Type *lightbot.com/flash.html* into the search bar and press the *enter* key.

NOTE: Adobe Flash Player may need to be run before the game opens.

The *Lightbot* game will open.

Now we can move on together. Follow these directions to open and try the first puzzle.

Select the green arrow.

Select the *Lightbot* icon.

Select puzzle 1 and read the pop up box.

The first task needs 3 commands to complete it.

Select the arrow to continue.

3 commands

Speech bubbles will explain what to do.

The first puzzle is guided. Have a go at puzzle 1 to find out how the program works.

Welcome to Lightbot! (Tap anywhere to continue)

Check your code from the *Let's meet Lightbot* activity sheet with your code in the game.

Another puzzle or two

Congratulations on coding your first puzzle so that I could complete the task.

Press the double arrow on the screen.

Read Lightbot's speech bubble and then click on the screen.

Continue to read the speech bubbles and click on the screen until the second puzzle is shown.

This puzzle has some extra symbols. How many commands or code symbols will you need to solve this puzzle?

	To find out the number of commands needed for a puzzle, press the *go back* arrow at the top of the screen.
	Select the number 2 for puzzle 2. The number of commands will be displayed.
	Select the arrow to go to the puzzle.
	Select this arrow if you want to read the tips again.

To place the code symbols into the box, you can drag them or click on them.

	To test part or all of your puzzle, click on this arrow.

Have a go at coding puzzles 2 and 3.

Always look carefully at the direction *Lightbot* is facing before you start coding.

Open your *Word wall* document and add some new words from today.

Day 8: Lightbot check

Materials:

- computer, laptop or tablet with internet access
- video camera.

Follow the directions below to open the *Lightbot* program.

Lightbot: code hour – iPad or Android tablet

Select the *Lightbot Hour* icon on your screen.

OR

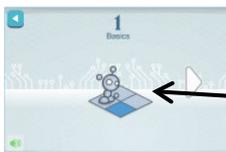**Lightbot: code hour – web browser for laptop or computer**

Open your computer search engine.

Type *lightbot.com/flash.html* into the search bar and press the *enter* key.

The *Lightbot* Home page will open.

Select the green arrow.

Select the *Lightbot* icon.

Select puzzle 4 and read the pop up box.

9 commands

Select the arrow to continue.

Have a go at coding puzzles 4, 5, 6, 7 and 8.

In the next activity you will record some of your puzzles and the codes you made.

My Lightbot coding

You have had a go at coding all the Lightbot puzzles.
Shade the bubbles of the puzzles that you solved on your own.
Tick the puzzles you solved with someone else.

◯ puzzle 1	◯ puzzle 2	◯ puzzle 3	◯ puzzle 4
◯ puzzle 5	◯ puzzle 6	◯ puzzle 7	◯ puzzle 8

You can video two puzzles to show your teacher your coding.
Choose one puzzle and code it.

Test the code to make sure I can complete the puzzle task.

Follow the steps below to video and save your puzzle and the code as it runs.

⏪	Press the double arrow at the right top of the screen to go back to run the program again.
📷 ▶	Select the arrow at the right top of the screen to run the program. Video the puzzle and the code as it runs.

Ⓢ Save the video into the Set folder.

Label it to show the Day and puzzle number, eg Day 8 Puzzle 7.

Choose another puzzle, solve and test it.
Make a video and save it into the Set folder.

You might like to try the *Lightbot* Level 2 Procedures puzzles. If you solve any of these, make a video and save it into the Set folder.

Lightbot thoughts

Think about the Lightbot work you have completed in this Set and record answers that show what you think.

My favourte puzzle was puzzle number

○ 1   ○ 2   ○ 3   ○ 4   ○ 5   ○ 6   ○ 7   ○ 8

because

The most difficult puzzle I solved was number

○ 1   ○ 2   ○ 3   ○ 4   ○ 5   ○ 6   ○ 7   ○ 8

because

I enjoyed learning how to program using Lightbot.

○ yes   ○ no   ○ sometimes

Why?

When I solve difficult puzzles I

Open your *Word wall* document and add some new words from today.

Day 9: Scratch cat

Materials:

- iPad or android tablet with internet access
- headset or speakers.

Hi I'm the Scratch Cat from *Scratch Junior*. Have you heard of a program called *Scratch Junior*? It is a free app that you can use to create interactive projects.

Scratch Junior has been created using computer programs and codes. It has tools to code projects.

When you create a project, you make decisions that cause the computer to make choices.

Let's use the internet to find out about the different parts of the *Scratch Junior* screen or interface.

Turn your tablet to landscape orientation.

Open the internet search engine on your device.

Type *scratchjr.org* into the search bar and press the *enter* key.

SCRATCHJr About Learn	Select the *Learn* tab in the menu bar along the top of the screen.
(Interface Guide image)	You will see the *Interface Guide.* Select each number label and read the information that appears in the right panel.
Interface Guide — Paint Editor Guide	Select the *Paint Editor Guide* tab in the menu bar. Select each number label and read the information that appears in the right panel.
t Editor le — Block Descriptions	Select the *Block Descriptions* tab in the menu bar. Scroll down, reading the description for each block.

Scratch Jr tutorial time

The *Tips and Hints* tab is next to the *Block Descriptions* tab. Select the tab.

Tips & Hints

Watch these four videos:

- Making, renaming and deleting projects
- Character animation using the *ScratchJr* blocks
- Multiple characters
- Trigger blocks

You can also read the other tips in the list.

Let's download the *ScratchJr* application and have a go!

Ask your Home tutor to help you download the *ScratchJr* application from the *App Store* (iPad) or Google Play.

Turn your device to landscape orientation.
Select the *ScratchJr* icon on your screen.

Select the question mark icon.

Select the arrow head and watch the video.
This video will give you an overview of *ScratchJr*.

Scratch Jr exploring

You can view the sample projects from the same screen.

The Sample Projects Library is a collection of *ScratchJr* projects that show you the variety of projects you can make.

Select a project and run it.

Pay close attention to the blocks and features you see.

To run the whole project at the same time:

- select each character in the left menu
- touch the green flag in each row of blocks

Change the order of the blocks or add new blocks to see what happens.

Watch and experiment with four other projects.

Use the [SCRATCHJR] or [house icon] to return to the Sample Projects screen each time.

Choose your favourite project and open it again.

Turn to the mind map (**on the next page**):

Print the name of the project into the centre bubble in the mind map.

Print comments about the project inside each mind map bubble.

You could write about:

- what the project does, the characters used and how they moved, the background
- the different blocks used, other features used
- how you changed the blocks and what happened when you did this.

Scratch Jr exploring (continued)
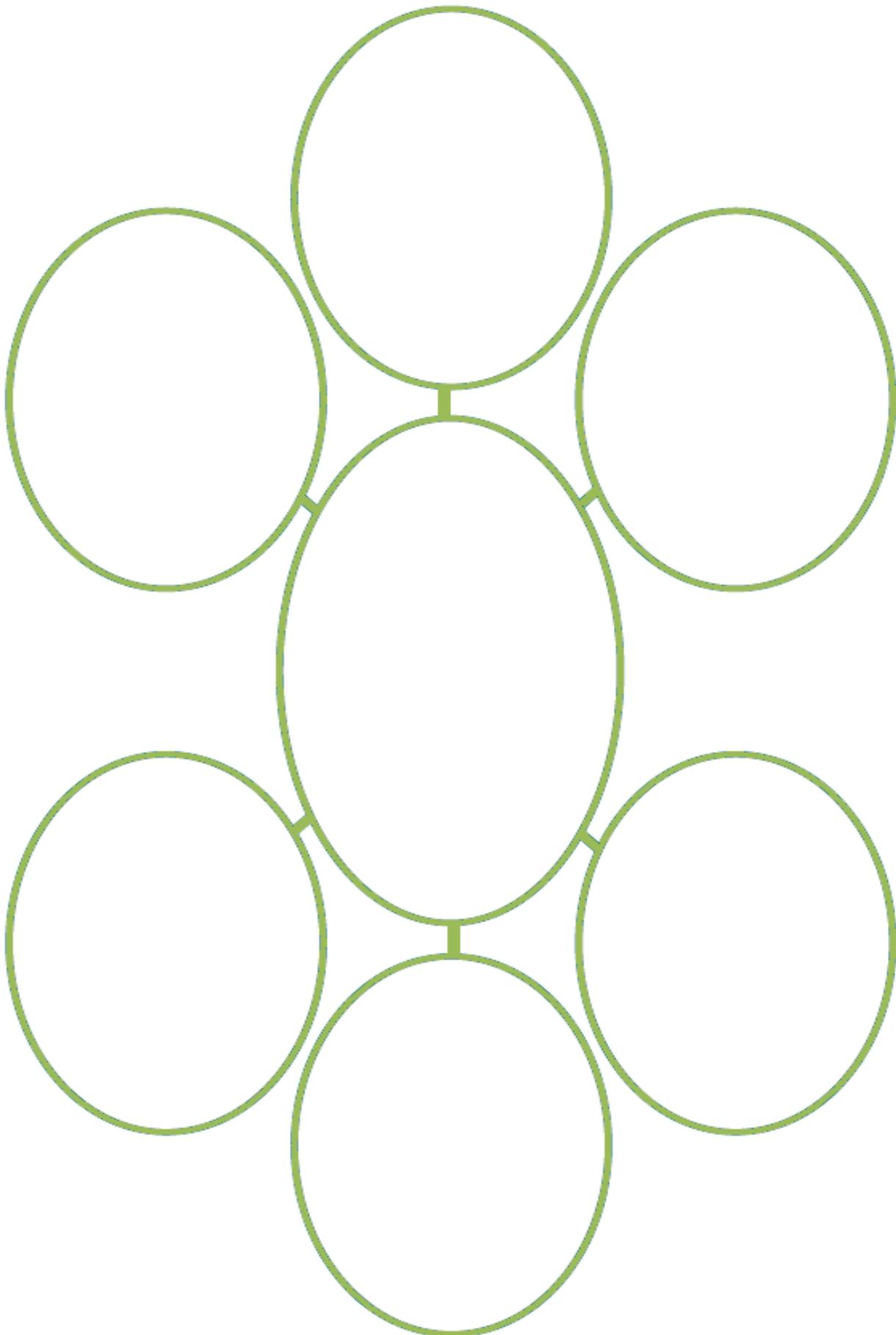
Scratch Jr experimenting

Select the *Home* icon to go to the *My Projects* screen. This is where you can create a project and experiment with the tools.

If you need help when you are making your project, select the orange book in the top right corner of the screen to find the Help tabs.

You saw this information on the *ScratchJr* website.

When you select the *Interface Guide, Paint Editor Guide* or *Blocks Guide* tabs, screens will open and you can check the information.

Let's open a new project and have some fun!

Select the blue 'add' button to open a new project.

Experiment with the tools on the new project page.
Test the characters, backgrounds, actions and sounds.

Discuss your ideas and ask your Home tutor for help as you experiment with your project and the tools.
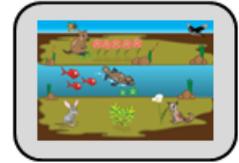
Your project will automatically save when you close the *ScratchJr* app.

Open your *Word wall* document and add some words from today's activities.

Day 10: Scratch Junior

Materials:

- tablet with internet access
- headset or speakers
- video camera
- camera.

Let's create a new project to send to your teacher. Follow the instructions to open *Scratch Junior* on your tablet.

	Select the *ScratchJr* icon on your screen.
	Select the home icon.

You will see your project from Day 9.

Select the blue 'add' button to open a new project.

Select the orange corner tab to open the naming screen.

Select the title space and delete the title.

Type a new title that says **Day 10** into the space.

Click the arrow to save the title and go back to the project screen.

Scratch Junior plan

Yesterday you experimented with the different blocks, characters and other tools. You can make a new project today.

What will this new project show? You can use the space below and the *Scratch Jr* tools to plan it.

You can draw one plan or divide the planning area into sections.

Read the dot points below to help you design your plan.

- Choose a background from the *ScratchJr* backgrounds
- Draw it in the planning space
- Choose some characters and objects from the *ScratchJr* characters section
- Draw them into the planning space
- Draw labels to show any movement
- Draw speech bubbles to show speech and sound

You can divide the space into sections to show different screens in the project.

Let's code the project

Now you can code the project you planned.

Place your project plan beside your tablet so you can refer to it as you make your project.

Remember that your plan is just a guide. You can change it as you make your project.

Select the *Home* icon to go to the *My Projects* screen.

Select and open the **Day 10** project.

Remember:

If you need help, select the orange book in the top right corner of the screen to find the Help tabs.

Select the *Interface Guide, Paint Editor Guide* or *Blocks Guide* tabs to help.
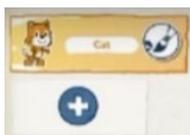
You might want to use the *Tips & Hints* on the *Scratch Jr* website *scratchjr.org*.

The project coding will take some time to complete.

Take a break when you need one.

	Select your planned background.
	Select your character/s and object/s
	Use the blocks and other features to code your project.

Test and record my project

I guess you have been testing and checking your project as you made it so you are almost ready to record it for your teacher.

Run your project one more time to make sure it is doing everything you want it to do.

Now let's add to the Day 10 title. What will you call your project?

Select the orange corner tab to open the naming screen.

Select the title space.

Type a title after **Day 10.**

Click the arrow to save the title and go back to the project screen.

You're ready! You will make a video of your project as it runs. You can use a phone or video camera.

Then you'll take photographs of the coding blocks for each character. The steps are listed below.

Ask your Home tutor to help you follow the recording and photographing steps.

Make a video of your project as you run it.

Take photographs of the coding blocks for each character.

Save the video and photographs into your Set folder.

Show your project to your Home tutor and other family members.

Scratch Junior champion

Think about the *Scratch Jr* work you completed in this Set and record answers that show what you think.

I enjoyed learning programming using Scratch Jr.

◯ yes   ◯ sometimes   ◯ no

Why?

_____

_____

The most difficult part was

because

_____

The best thing about learning this way was

_____

_____

When I make another Scratch Jr project I will

_____

What did Scratch Jr teach you about being a

computer programmer?

_____

_____

Finishing the word wall

Materials:

- computer, laptop or tablet to access the *Word wall.*

Your word wall is almost finished.

Open the wall and type in any new terminology from today's activities.

You could also add other words you know that relate to the digital theme.

Check the spelling is correct for each term.

If you fill the word wall, create a new wall on another page in the document, using the instructions from Day 1.

I wonder how many words in your wall? Count them and type the number at the end of the document.

Save your word wall and send it to your teacher with this Set.

On my own

You have used digital technology and digital devices in this set. Shade the stars to show the tasks you can complete on your own.

☆	Use a search engine to find a website or video.
☆	Find and download an app for an iPad or tablet.
☆	Create a table on a document on the computer.
☆	Save a document into a computer folder.
☆	Take a photograph with a camera, mobile phone, iPad or tablet.
☆	Make a video recording using a mobile phone, iPad, tablet or video camera.
☆	Transfer a photograph from a camera onto a computer or tablet.
☆	Transfer a video from a camera onto a computer or tablet.
☆	Reduce the file size of a photograph or video.
☆	Electronically transfer documents onto a USB or hard drive.

I can also perform these tasks:

☆	Scan a document.
☆	Print a page using a printer.
☆	Electronically transfer documents using email or into Moodle.

Home Tutor Reflection

Please complete this reflection to assist with the assessment of the student's skills and performance.

My student was able to	Developing	Achieved
identify digital systems		
identify parts of a digital system and their purposes		
identify peripheral devices		
understand that peripherals can be used to input and output data		
define data and understand that data can be represented in different ways		
understand that peripheral devices can store data		
identify internal and external data storage devices		
demonstrate an understanding of appropriate online behaviour and the sharing of information		
understand that permission must be acknowledged when using information from a website		
understand digital technology terms, eg sequence, data		
make decisions when creating a sequence of steps to solve a puzzle or problem		
collect and present different types of data in a variety of ways, eg table, poster.		
use a simple visual programming environment, eg *ScratchJr* and *Lightbot*, to plan a sequence of steps		
identify and use appropriate resources from a given set, eg symbols or coding blocks		
develop and communicate design ideas and decisions using annotated drawings eg story board, plan, diagram		
work independently to plan, create and communicate ideas and information for solutions		
Other comments		

Set return checklist

Day	Item	Check
1	All activity sheets from the Student activity book where the student has completed tasks	
2	All activity sheets from the Student activity book where the student has completed tasks	
3	All activity sheets from the Student activity book where the student has completed tasks	
	Insect task – electronic document	
4	All activity sheets from the Student activity book where the student has completed tasks	
	Persuasive writing	
5	All activity sheets from the Student activity book where the student has completed tasks	
	Follow me – photograph	
	Ordering steps – photograph	
	Testing the sequence – photograph (if sequence changed)	
6	All activity sheets from the Student activity book where the student has completed tasks	
7	All activity sheets from the Student activity book where the student has completed tasks	
8	All activity sheets from the Student activity book where the student has completed tasks	
	My Lightbot coding – video recordings	
9	All activity sheets from the Student activity book where the student has completed tasks	
10	All activity sheets from the Student activity book where the student has completed tasks	
	Test and record my project – video recording and photographs	
	Word wall – electronic document	
	Home tutor reflection	
	Set return checklist	