



Ashbrook Junior School

Curriculum Subject Progression Overview



Computing

	Whole School Concept					
	Identity & Diversity	Community	Sustainable Development	Perseverance	Equality & Fairness	Creativity
Year 3 E-Safety Cycle A	What is Cyberbullying?	To buy or not to buy?	Keep it to yourself.	Emailing	Online Communication	Party Planners
Year 3 E-Safety Cycle B	Cyberbullying	Internet Searches	Copying information online	Sharing information online	Online communities	Helping people online
Year 3	<p>Basic Computing skills</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> ● use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 	<p>Creating Media</p> <p>National curriculum:</p> <ul style="list-style-type: none"> ● Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information ● use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report 	<p>Data Logging</p> <p>National curriculum:</p> <ul style="list-style-type: none"> ● select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information ● use technology safely, respectfully and responsibly <p>What children need to know/ be able to do:</p>	<p>Presentation Skills</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> ● Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content ● Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and 	<p>Coding</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> ● Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts ● Use sequence, selection, and repetition in programs; work with variables and various forms of input and output ● Use logical reasoning to explain how some simple algorithms work, and to detect and correct 	<p>Programming</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> ● Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts ● Use sequence, selection, and repetition in programs; work with variables and various forms of input and output ● Use logical reasoning to explain how some simple algorithms work and to detect and correct



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		<p>concerns about content and contact.</p> <p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> -explain that animation is a sequence of drawings or photographs - draw a sequence of pictures -create an effective flip book—style animation - relate animated movement with a sequence of images - create an effective stop-frame animation - describe an animation that is achievable on screen -use onion skinning to help me make small changes between frames 	<ul style="list-style-type: none"> - create questions with yes/no answers - make up a yes/no question about a collection of objects - create two groups of objects separated by one attribute -identify the attributes needed to collect data about an object - select an attribute to separate objects into groups - create a group of objects within an existing group - arrange objects into a tree structure - create a branching database - select objects to arrange in a branching database - group objects using my own yes/no questions - test my branching database to see if it works - create questions that will enable 	<p>presenting data and information</p> <p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> - recognise how text and images convey information - recognise that text and images can communicate messages clearly - identify the advantages and disadvantages of using text and images - recognise that text and layout can be edited - change font style, size, and colours for a given purpose - edit text - choose appropriate page settings - explain what 'page orientation' means - recognise placeholders and say why they are important 	<p>errors in algorithms and programs</p> <ul style="list-style-type: none"> ● Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information <p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> - explore a new programming environment - identify the objects in a Scratch project (sprites, backdrops) - recognise that commands in Scratch are represented as blocks 	<p>errors in algorithms and programs</p> <ul style="list-style-type: none"> ● Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information <p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> - choose which keys to use for actions - identify a way to improve a program - create a program to move a sprite in four directions - choose a character for my project
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			<p>objects to be uniquely identified</p> <ul style="list-style-type: none"> - create a physical version of a branching database - suggest real-world uses for branching databases 	<ul style="list-style-type: none"> - create a template for a particular purpose - add content to a desktop publishing publication - choose the best locations for my content - paste text and images to create a magazine cover - make changes to content after I've added it - consider how different layouts can suit different purposes - identify different layouts - match a layout to a purpose - choose a suitable layout for a given purpose <p>To consider the benefits of desktop publishing</p> <ul style="list-style-type: none"> - identify the uses of desktop publishing in the real world 	<ul style="list-style-type: none"> - create a program following a design - create a sequence of connected commands - recognise that a sequence of commands can have an order - combine sound commands- order notes into a sequence - build a sequence of commands - decide the actions for each sprite in a program - identify and name the objects I will need for a project - implement algorithm as code 	<ul style="list-style-type: none"> - choose a suitable size for a character in a maze - program movement - adapt a program to a new context - choose blocks to set up my program - build more sequences of commands to make my design work - identify and fix bugs in a program
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Year 4 E-Safety Cycle A	What is Cyberbullying?	To buy or not to buy?	Keep it to yourself.	Emailing	Online Communication	Party Planners
Year 4 E-Safety Cycle B	Cyberbullying	Internet Searches	Copying information online	Sharing information online	Online communities	Helping people online
Year 4	<p>Computing Systems and Networks - The Internet</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> ● Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration ● Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content ● Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and 	<p>Programming-Scratch</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> ● Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information ● Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact 	<p>Creating Media - Audio Production</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> ● Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts ● Use sequence, selection, and repetition in programs; work with variables and various forms of input and output ● Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs ● Select, use and combine a variety of software (including 	<p>Programming A - Repetition in Shapes</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> ● Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts ● Use sequence, selection, and repetition in programs; work with variables and various forms of input and output ● Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs ● Select, use and combine a variety of software (including 	<p>Creating Media - Photo Editing</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> ● Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information ● Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact 	<p>Data Logging</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> ● Use sequence, selection, and repetition in programs; work with variables and various forms of input and output ● Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information <p>What children need to know/ be able to do:</p>



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	<p>create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information</p> <ul style="list-style-type: none"> ● Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. <p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> - describe how networks physically connect to other networks - describe the internet as a network of networks - demonstrate how information is shared across the internet 	<p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> - develop the use of count-controlled loops in a different programming environment - list an everyday task as a set of instructions including repetition - modify a snippet of code to create a given outcome - modify loops to produce a given outcome - choose when to use a count-controlled and an infinite loop - modify an infinite loop in a given program - design a project that includes repetition - select key parts of a given project to use in my own design - build a program that follows my design 	<p>internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information</p> <p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> - identify that sound can be recorded - identify the input and output devices used to record and play sound - use a computer to record audio - re-record my voice to improve my recording - inspect the soundwave view to know where to trim my recording 	<p>internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information</p> <p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> - program a computer by typing commands - create a code snippet for a given purpose - create a program in a text-based language - use a template to draw what I want my program to do - write an algorithm to produce a given outcome - identify patterns in a sequence 	<p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> - improve an image by rotating it - use photo editing software to crop an image - experiment with different colour effects - add to the composition of an image by cloning - remove parts of an image using cloning - experiment with tools to select and copy part of an image - use a range of tools to copy between images <p>I can explain why photos might be edited</p> <ul style="list-style-type: none"> - combine images for a purpose - choose suitable images for my project 	<ul style="list-style-type: none"> - choose a data set to answer a given question <p>I can suggest questions that can be answered using a given data set</p> <ul style="list-style-type: none"> - identify data that can be gathered over time <p>To use a digital device to collect data automatically</p> <ul style="list-style-type: none"> - use data from a sensor to answer a given question - identify that data from sensors can be recorded <p>To explain that a data logger collects 'data points' from sensors over time</p> <ul style="list-style-type: none"> - recognise that a data logger collects data at given points - identify the intervals used to collect data - talk about the data that I have captured - recognise how a computer can help us analyse data
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	<ul style="list-style-type: none">- recognise how networked devices make up the internet- recognise that the World Wide Web contains websites and web pages- understand how websites can be shared via the World Wide Web (WWW)- recognise that I can add content to the WWW- explain that internet services can be used to create content online- recognise how the content of the WWW is created by people- know that websites and their content are created by people- know that there are rules to protect content- evaluate the consequences of unreliable content- know that not everything on the World Wide Web is true		<ul style="list-style-type: none">- save my project so the different parts remain editable- combine audio to enhance my podcast project- listen to an audio recording to identify its strengths	<ul style="list-style-type: none">- use a count-controlled loop to produce a given outcome- modify a count-controlled loop to produce a given outcome- design a program that includes count-controlled loops- develop my program by debugging it	<ul style="list-style-type: none">- create a project that is a combination of other images- combine text and my image to complete the project	<ul style="list-style-type: none">- view data at different levels of detail- sort data to find information- use data from sensors to answer questions- interpret data that has been collected using a data logger
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	<ul style="list-style-type: none"> - know why some information I find online may not be honest, accurate, or legal - know why I need to think carefully before I share or reshare content 					
Year 5 E-Safety Cycle A	Scams	Sites to cite	Managing Passwords	Online Images	Safety Scenarios	Consolidation- Online safety story telling
Year 5 E-Safety Cycle B	Cyberbullying	Secure Websites	People Online	Boys and Girls online	SMARTbots	Online Safety Quizzing
Year 5	Video Production Computing National Curriculum: <ul style="list-style-type: none"> ● Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content ● Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, 	Radio production National Curriculum: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts <ul style="list-style-type: none"> ● Use sequence, selection, and repetition in programs; work with variables and various forms of input and output 	Programming National Curriculum: <ul style="list-style-type: none"> ● Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts ● Use sequence, selection, and repetition in programs; work with variables and various forms of input and output 	Coding -RodoCodo National Curriculum: <ul style="list-style-type: none"> ● design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts ● sequence, selection, and repetition in programs; work with variables and various forms of input and output 	Flat File Databases National Curriculum: <ul style="list-style-type: none"> ●search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content ●Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given 	Internet research National Curriculum: understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration <ul style="list-style-type: none"> ● use search technologies effectively, appreciate how results are selected and ranked,



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	<p>and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact</p> <p>●Internet safety- Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour</p> <p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> - use a digital device to record video - identify and find features on a digital video recording device 	<ul style="list-style-type: none"> ● Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs ● Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information <p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> - use software to create my own sounds by recording, editing and playing. - combine audio effects to create an original radio jingle 	<ul style="list-style-type: none"> ● Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs ● Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information <p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> - control a simple circuit connected to a computer I can create a simple circuit and connect it to a microcontroller - program a microcontroller to 	<ul style="list-style-type: none"> ●logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs <p>What children need to know/ be able to do :</p> <ul style="list-style-type: none"> - understand that Selection is how a computer program makes decisions, and that those decisions are based on conditions - understand the difference between Counting Loops and Conditional Loops understand that Conditional Loops repeat until a certain condition has been reached understand that variables help computers remember values that can change 	<p>goals, including collecting, analysing, evaluating, and presenting data and information</p> <p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> - use a form to record information I can create a database using cards - order, sort, and group my data cards To compare paper and computer-based databases - navigate a flat-file database to compare different views of information - combine grouping and sorting to answer specific questions To explain that tools can be used to select specific data - choose which field and value are 	<p>and be discerning in evaluating digital content</p> <p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> - Identify advantage and disadvantages of internet research - malaise internet resources for reliability - understand plagiarism and edit work accordingly - understand and create a bibliography
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	<ul style="list-style-type: none"> - experiment with different camera angles - make use of a microphone - capture video using a range of techniques <p>I can suggest filming techniques for a given purpose</p> <ul style="list-style-type: none"> -capture video using a range of filming techniques 	<ul style="list-style-type: none"> - use software to create and present digital content for a radio podcast - design and record a persuasive radio advert for a product or service. <p>present and evaluate audio content.</p> <ul style="list-style-type: none"> - present and evaluate audio content. 	<p>make an LED switch on</p> <ul style="list-style-type: none"> - connect more than one output component to a microcontroller - use a count-controlled loop to control outputs - design sequences that use count-controlled loops <p>-I can design a conditional loop</p> <ul style="list-style-type: none"> - program a microcontroller to respond to an input -use selection (an 'if...then...' statement) to direct the flow of a program -create a detailed drawing of my project -create a program that controls a physical computing project - test and debug a project 	<p>debug programs which include both Functions and Loops</p> <ul style="list-style-type: none"> - create programs using Functions and Loops - create programs using Functions and Loops - write complex programs using selection, Loops and Functions <p>write complex programs using conditional Loops, Functions and Selection</p> <ul style="list-style-type: none"> - use Variables within simple programs <p>write complex programs that include Variables, Loops and functions</p>	<p>required to answer a given question</p> <p>I can outline how 'AND' and 'OR' can be used to refine data selection</p> <ul style="list-style-type: none"> - use a real-world database to answer questions <p>I can ask questions that will need more than one field to answer</p>	
Year 6 E-Safety Cycle A	Scams	Sites to cite	Managing Passwords	Online Images	Safety Scenarios	Consolidation- Online safety story telling
Year 6 E-Safety Cycle	Cyberbullying	Secure Websites	People Online	Boys and Girls online	SMARTbots	Online Safety Quizzing



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<p style="text-align: center;">Year 6</p>	<p style="text-align: center;">3D Modelling</p> <p>National Curriculum: <ul style="list-style-type: none"> ● Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information ● Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact <p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> - recognise that you can work in three </p>	<p style="text-align: center;">Coding- Rodocodo</p> <p>National Curriculum: <ul style="list-style-type: none"> ● design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts ● sequence, selection, and repetition in programs; work with variables and various forms of input and output ● logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs <p>What children need to know/ be able to do:</p> </p>	<p style="text-align: center;">Drawing and iPad publication</p> <p>National Curriculum: <ul style="list-style-type: none"> ● select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information <p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> - draw with different shapes and lines. - order and group objects. manipulate shapes and lines - recognise effective layout. </p>	<p style="text-align: center;">Internet research</p> <p>National Curriculum: <ul style="list-style-type: none"> ● understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration ● use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content <p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> - Identify advantage and disadvantages of internet research - malaise internet resources for reliability </p>	<p style="text-align: center;">Data and information -Excel Spreadsheets</p> <p>National Curriculum: <ul style="list-style-type: none"> ● Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information <p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> - create a data set in a spreadsheet I can collect data I can suggest how to structure my data I can enter data into a spreadsheet - build a data set in a spreadsheet </p>	<p style="text-align: center;">Programming Variables in games</p> <p>National Curriculum: <ul style="list-style-type: none"> ● Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts ● Use sequence, selection, and repetition in programs; work with variables and various forms of input and output <p>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p> <ul style="list-style-type: none"> ● Select, use and combine a variety of software (including internet services) on a range of digital devices to design and </p>



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	<p>dimensions on a computer</p> <ul style="list-style-type: none"> - add 3D shapes to a project - view 3D shapes from different perspectives - move 3D shapes relative to one another - identify that digital 3D objects can be modified - resize an object in three dimensions - lift/lower 3D objects - recolour a 3D object - recognise that objects can be combined in a 3D model - rotate objects in three dimensions - duplicate 3D objects - group 3D objects - create a 3D model for a given purpose - accurately size 3D objects - show that placeholders can create holes in 3D objects - combine a number of 3D objects 	<ul style="list-style-type: none"> - understand that Selection is how a computer program makes decisions, and that those decisions are based on conditions - understand that Selection is how a computer program makes decisions, and that those decisions are based on conditions - understand the difference between Counting Loops and Conditional Loops - understand that Conditional Loops repeat until a certain condition has been reached - write complex programs using Conditional Loops, Functions and Selection - write complex programs that include Variables and Loops (basic and 	<ul style="list-style-type: none"> - combine text and images. - lay out objects effectively. 	<ul style="list-style-type: none"> - understand plagiarism and edit work accordingly - understand and create a bibliography 	<p>I can explain what an item of data is</p> <p>I can choose an appropriate format for a cell</p> <ul style="list-style-type: none"> - apply an appropriate format to a cell - construct a formula in a spreadsheet - identify that changing inputs changes outputs - calculate data using different operations - create a formula which includes a range of cells - apply a formula to multiple cells by duplicating it - create a spreadsheet to plan an event - use a spreadsheet to answer questions - choose suitable ways to present data <p>I can produce a chart</p> <p>I can use a chart to show the answer to a question</p> <p>I can suggest when to use a table or chart</p>	<p>create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information</p> <p>What children need to know/ be able to do:</p> <ul style="list-style-type: none"> - define a 'variable' as something that is changeable I can identify examples of information that is variable - identify that variables can hold numbers or letters - identify a program variable as a placeholder in memory for a single value - design a project that builds on a given example
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		<p>nested) To write complex programs that include Variables, Loops and Functions</p> <ul style="list-style-type: none">- understand that variables help computers remember values that can change- use the If Else command to write more complex Selection chains that instruct the character to perform different actions- use Variables within simple programs				<p>I can choose the artwork for my project</p> <ul style="list-style-type: none">- create algorithms for my project- choose a name that identifies the role of a variable- test the code that I have written- use variables to extend my game
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