

## COMPUTING

### MILESTONE THREE

#### Cycle A

Autumn

Spring

Summer

#### Code:

Motion - Set IF conditions for movements. Specify types of rotation giving the number of degrees.

Looks - Change the position of objects between screen layers (send to back, bring to front).

Sound - Upload sounds from a file and edit them. Add effects such as fade in and out and control their implementation.

Draw - Combine the use of pens with movement to create interesting effects.

Events - Set events to control other events by 'broadcasting' information as a trigger.

Control - Use IF THEN ELSE conditions to control events or objects.

Sensing - Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions

Variables and lists - Use lists to create a set of variables.

Operators - Use the Boolean operators :  $() < ()$  ,  $() = ()$  ,  $() > ()$  ,  $() \text{and} ()$  ,  $() \text{or} ()$  ,  $\text{Not} ()$  to define conditions.

Use the Reporter operators:  $() + ()$  ,  $() - ()$  ,  $() * ()$  ,  $() / ()$  to perform calculations.

Pick Random  $()$  to  $()$

Join  $()$   $()$

Letter  $()$  of  $()$

Length of  $()$

$() \text{ Mod } ()$  This reports the remainder after a division calculation

Round  $()$

$()$  of  $()$ .

#### Scratch units:

Animated stories <https://www.twinkl.co.uk/resource/tp2-i-039-planit-computing-year-6-scratch-animated-stories-unit-pack>

#### Connect:

**Develop an understanding of how to safely connect with others.**

Link with PSHE: Aiming High

<https://www.twinkl.co.uk/resource/computing-online-safety-y6-unit-pack-tp2-i-932>

- Collaborate with others online on sites approved and moderated by teachers.
- Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems.
- Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder.

#### Collect:

**Develop an understanding of databases and their uses**

Link with science: Animals or Properties of Materials

<https://www.twinkl.co.uk/resource/tp2-i-041-new-planit-computing-year-6-spreadsheets-unit-pack>

- Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner.

#### Communicate:

**Use apps to communicate one's ideas.**

Link with summer performance

<https://www.twinkl.co.uk/resource/tp2-i-220-planit-computing-year-6-film-making-unit-pack>

- Choose the most suitable applications and devices for the purposes of communication.
- Use many of the advanced features in order to create high quality, professional or efficient communications.

<ul style="list-style-type: none"> <li>• Understand the effect of online comments and show responsibility and sensitivity when online.</li> <li>• Understand how simple networks are set up and used.</li> </ul>		
<b>Approved sites:</b>	<b>Database app:</b>	<b>Suggested apps:</b>

**Computing opportunities across the curriculum to embed learning:**

- Describe how internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely.
- Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

**COMPUTING**  
**MILESTONE THREE**  
**Cycle B**

**Code:**

Motion - Set IF conditions for movements. Specify types of rotation giving the number of degrees.

Looks - Change the position of objects between screen layers (send to back, bring to front).

Sound - Upload sounds from a file and edit them. Add effects such as fade in and out and control their implementation.

Draw - Combine the use of pens with movement to create interesting effects.

Events - Set events to control other events by ‘broadcasting’ information as a trigger.

Control - Use IF THEN ELSE conditions to control events or objects.

Sensing - Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions

Variables and lists - Use lists to create a set of variables.

Operators - Use the Boolean operators : () < (), () = (), () > (), () and (), () or (), Not() to define conditions.  
Use the Reporter operators: () + (), () - (), () \* (), () / () to perform calculations.

Pick Random () to ()

Join () ()

Letter () of ()

Length of ()

() Mod () This reports the remainder after a division calculation

Round ()

() of ().

**Scratch units:**  
<https://www.twinkl.co.uk/resource/tp2-i-028-planit-computing-year-5-scratch-unit-pack>

<p><b>Connect:</b> <b>Develop an understanding of how to safely connect with others.</b> Link with PSHE &amp; Personal development <a href="https://www.twinkl.co.uk/resource/computing-online-safety-unit-pack-year-5-tp2-i-936">https://www.twinkl.co.uk/resource/computing-online-safety-unit-pack-year-5-tp2-i-936</a></p>	<p><b>Collect:</b> <b>Develop an understanding of databases and their uses</b> Link with geography: North and South America <a href="https://www.twinkl.co.uk/resource/computing-strategic-searching-online-year-5-unit-pack-t-i-1655913355">https://www.twinkl.co.uk/resource/computing-strategic-searching-online-year-5-unit-pack-t-i-1655913355</a></p>	<p><b>Communicate:</b> <b>Use apps to communicate one’s ideas.</b> Link with history: Local theme <a href="https://www.twinkl.co.uk/resource/tp2-i-159-planit-computing-year-5-radio-station-unit-pack">https://www.twinkl.co.uk/resource/tp2-i-159-planit-computing-year-5-radio-station-unit-pack</a></p>
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<ul style="list-style-type: none"> <li>• Collaborate with others online on sites approved and moderated by teachers.</li> <li>• Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems.</li> <li>• Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder.</li> <li>• Understand the effect of online comments and show responsibility and sensitivity when online.</li> <li>• Understand how simple networks are set up and used.</li> </ul>	<ul style="list-style-type: none"> <li>• Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner.</li> </ul>	<ul style="list-style-type: none"> <li>• Choose the most suitable applications and devices for the purposes of communication.</li> <li>• Use many of the advanced features in order to create high quality, professional or efficient communications.</li> </ul>
<b>Approved sites:</b>	<b>Database app:</b>	<b>Suggested apps:</b>
<b>Computing opportunities across the curriculum to embed learning:</b> <ul style="list-style-type: none"> <li>• Describe how internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely.</li> <li>• Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.</li> </ul>		

## COMPUTING

### MILESTONE TWO

#### Cycle A

Autumn	Spring	Summer
<b>Code</b> Developing an understanding of instructions, logic and sequences: Motion - Use specified screen coordinates to control movement. Looks - Set the appearance of objects and create sequences of changes. Sound - Create and edit sounds. Control when they are heard, their volume, duration and rests. Draw - Control the shade of pens. Events - Specify conditions to trigger events. Control - Use IF THEN conditions to control events or objects. Sensing - Create conditions for actions by sensing proximity or by waiting for a user input (such as proximity to a specified colour or a line or responses to questions). Variables and lists - Use variables to store a value. Use the functions define, set, change, show and hide to control the variables. Operators - Use the Reporter operators: () + (), () - (), () * (), () / () to perform calculations.		
<b>Scratch units:</b> <a href="https://www.twinkl.co.uk/resource/tp2-i-018-planit-computing-year-4-scratch-questions-and-quizzes-unit-pack">https://www.twinkl.co.uk/resource/tp2-i-018-planit-computing-year-4-scratch-questions-and-quizzes-unit-pack</a>		

<p><b>Connect:</b>  <b>Develop an understanding of how to safely connect with others.</b>  Link with PSHE &amp; PD  <a href="https://www.twinkl.co.uk/resource/tp2-i-911-computing-online-safety-year-4-unit-pack">https://www.twinkl.co.uk/resource/tp2-i-911-computing-online-safety-year-4-unit-pack</a></p> <ul style="list-style-type: none"> <li>• Contribute to blogs that are moderated by teachers.</li> <li>• Give examples of the risks posed by online communications.</li> <li>• Understand the term 'copyright'.</li> <li>• Understand that comments made online that are hurtful or offensive are the same as bullying.</li> <li>• Under stand how online services work.</li> </ul>	<p><b>Collect:</b>  <b>Develop an understanding of databases and their uses</b>  Link with Science: Rocks and soils  <a href="https://www.twinkl.co.uk/resource/programming-branching-databases-ages-7-11-t-par-1649245638">https://www.twinkl.co.uk/resource/programming-branching-databases-ages-7-11-t-par-1649245638</a></p> <ul style="list-style-type: none"> <li>• Devise and construct databases using applications designed for this purpose in areas across the curriculum.</li> </ul>	<p><b>Communicate:</b>  <b>Use apps to communicate one's ideas.</b>  Link with History: Ancient Egypt or Geography: a region/area of the UK  <a href="https://www.twinkl.co.uk/resource/tp2-i-129-new-planit-computing-year-4-animation-unit-pack">https://www.twinkl.co.uk/resource/tp2-i-129-new-planit-computing-year-4-animation-unit-pack</a>  <b>OR</b>  <a href="https://www.twinkl.co.uk/resource/computing-communication-and-collaboration-year-4-planning-overview-t-i-1657031378">https://www.twinkl.co.uk/resource/computing-communication-and-collaboration-year-4-planning-overview-t-i-1657031378</a></p> <ul style="list-style-type: none"> <li>• Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally.</li> </ul>
<p><b>Approved sites:</b></p>	<p><b>Database app:</b></p>	<p><b>Suggested apps:</b></p>

**Computing opportunities across the curriculum to embed learning:**

- 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.

## COMPUTING

### MILESTONE TWO

#### Cycle B

**Code**

**Developing an understanding of instructions, logic and sequences:**

Motion - Use specified screen coordinates to control movement.

Looks - Set the appearance of objects and create sequences of changes.

Sound - Create and edit sounds. Control when they are heard, their volume, duration and rests.

Draw - Control the shade of pens.

Events - Specify conditions to trigger events.

Control - Use IF THEN conditions to control events or objects.

Sensing - Create conditions for actions by sensing proximity or by waiting for a user input (such as proximity to a specified colour or a line or responses to questions).

Variables and lists - Use variables to store a value.

Use the functions define, set, change, show and hide to control the variables.

Operators - Use the Reporter operators: () + (), () - (), () \* (), () / () to perform calculations.

**Scratch units:**

<https://www.twinkl.co.uk/resource/computing-coding-with-scratch-learning-loops-year-3-unit-pack-t-i-1666269412>

<https://www.twinkl.co.uk/resource/tp2-i-040-new-planit-computing-year-3-programming-turtle-logo-and-scratch-unit-pack>

<https://www.twinkl.co.uk/resource/tp2-i-060-planit-computing-year-4-programming-turtle-logo-unit-pack>

<p><b>Connect:</b>  <b>Develop an understanding of how to safely connect with others.</b>  Link with PSHE and PD  <a href="https://www.twinkl.co.uk/resource/tp2-i-920-computing-online-safety-year-3-unit-pack">https://www.twinkl.co.uk/resource/tp2-i-920-computing-online-safety-year-3-unit-pack</a></p> <ul style="list-style-type: none"> <li>• Contribute to blogs that are moderated by teachers.</li> <li>• Give examples of the risks posed by online communications.</li> <li>• Understand the term 'copyright'.</li> <li>• Understand that comments made online that are hurtful or offensive are the same as bullying.</li> <li>• Understand how online services work.</li> </ul>	<p><b>Collect:</b>  <b>Develop an understanding of databases and their uses</b>  Link with science: Living things and their habitats  <a href="https://www.twinkl.co.uk/resource/computing-online-searchers-and-surfers-year-3-unit-pack-t-i-1655913689">https://www.twinkl.co.uk/resource/computing-online-searchers-and-surfers-year-3-unit-pack-t-i-1655913689</a></p> <ul style="list-style-type: none"> <li>• Devise and construct databases using applications designed for this purpose in areas across the curriculum.</li> </ul> <p>Games to embed:  <a href="https://www.twinkl.co.uk/resource/invertebrates-branching-database-game-t-i-1668616250">https://www.twinkl.co.uk/resource/invertebrates-branching-database-game-t-i-1668616250</a>  and  <a href="https://www.twinkl.co.uk/resource/safari-animals-branching-database-game-t-i-1668599240">https://www.twinkl.co.uk/resource/safari-animals-branching-database-game-t-i-1668599240</a></p>	<p><b>Communicate:</b>  <b>Use apps to communicate one's ideas.</b>  Link with history: Theme in history  <a href="https://www.twinkl.co.uk/resource/tp2-i-207-planit-computing-year-3-drawing-and-desktop-publishing-unit-pack">https://www.twinkl.co.uk/resource/tp2-i-207-planit-computing-year-3-drawing-and-desktop-publishing-unit-pack</a>  <b>OR</b>  <a href="https://www.twinkl.co.uk/resource/tp2-i-179-planit-computing-year-3-presentation-skills-unit-pack">https://www.twinkl.co.uk/resource/tp2-i-179-planit-computing-year-3-presentation-skills-unit-pack</a></p> <ul style="list-style-type: none"> <li>• Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally.</li> </ul>
<p><b>Approved sites:</b></p>	<p><b>Database app:</b></p>	<p><b>Suggested apps:</b></p>
<p><b>Computing opportunities across the curriculum to embed learning:</b></p> <ul style="list-style-type: none"> <li>• 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.</li> </ul>		

<b>COMPUTING</b>		
<b>MILESTONE ONE</b>		
<b>Cycle A</b>		
<b>Autumn</b>	<b>Spring</b>	<b>Summer</b>
<p><b>Code:</b>  <b>Developing an understanding of instructions, logic and sequences:</b>  Motion - Control motion by specifying the number of steps to travel, direction and turn.  Looks - Add text strings, show and hide objects and change the features of an object.  Sound - Select sounds and control when they are heard, their duration and volume.  Draw - Control when drawings appear and set the pen colour, size and shape.  Events - Specify user inputs (such as clicks) to control events  Control - Specify the nature of events (such as a single event or a loop).  Sensing - Create conditions for actions by waiting for a user input (such as responses to questions like: What is your name?).</p>		

<b>Scratch unit:</b> <a href="https://www.twinkl.co.uk/resource/tp-i-005-planit-computing-year-2-programming-turtle-logo-and-scratch-unit-pack">https://www.twinkl.co.uk/resource/tp-i-005-planit-computing-year-2-programming-turtle-logo-and-scratch-unit-pack</a>		
<b>Connect:</b> <b>Develop an understanding of how to safely connect with others.</b> Link with PSHE & PD <a href="https://www.twinkl.co.uk/resource/tp-i-181-computing-online-safety-year-2-unit-pack">https://www.twinkl.co.uk/resource/tp-i-181-computing-online-safety-year-2-unit-pack</a> <ul style="list-style-type: none"> <li>• Participate in class social media accounts.</li> <li>• Understand online risks and the age rules for sites.</li> </ul>	<b>Collect:</b> <b>Develop an understanding of databases and their uses.</b> Link with history: Great Fire of London and/or geography: counties and capitals of the UK <a href="https://www.twinkl.co.uk/resource/tp-i-147-y2-planit-computing-using-and-applying-unit-pack-1">https://www.twinkl.co.uk/resource/tp-i-147-y2-planit-computing-using-and-applying-unit-pack-1</a> <b>OR</b> <a href="https://www.twinkl.co.uk/resource/tp-i-148-year-2-using-the-internet-unit-pack">https://www.twinkl.co.uk/resource/tp-i-148-year-2-using-the-internet-unit-pack</a> <ul style="list-style-type: none"> <li>• Use simple databases to record information in areas across the curriculum.</li> </ul>	<b>Communicate:</b> <b>Use apps to communicate one's ideas.</b> Link with science: Space and/or geography: Continents and Oceans <a href="https://www.twinkl.co.uk/resource/tp-i-0125-planit-computing-year-2-computer-art-unit-pack">https://www.twinkl.co.uk/resource/tp-i-0125-planit-computing-year-2-computer-art-unit-pack</a> <b>OR</b> <a href="https://www.twinkl.co.uk/resource/tp-i-0022-new-planit-computing-year-2-presentation-skills-unit-pack">https://www.twinkl.co.uk/resource/tp-i-0022-new-planit-computing-year-2-presentation-skills-unit-pack</a> <ul style="list-style-type: none"> <li>• Use a range of applications and devices in order to communicate ideas, work and messages.</li> </ul>
<b>Approved sites:</b>	<b>Database app:</b>	<b>Suggested apps:</b>
<b>Computing opportunities across the curriculum to embed learning:</b> <ul style="list-style-type: none"> <li>• Organise, store, manipulate and retrieve data in a range of digital formats.</li> <li>• Communicate safely and respectfully online, keeping personal information private and recognise common uses of information technology beyond school.</li> </ul>		
<b>COMPUTING</b>		
<b>MILESTONE ONE</b>		
<b>Cycle B</b>		
<b>Code:</b> <b>Developing an understanding of instructions, logic and sequences:</b> Motion - Control motion by specifying the number of steps to travel, direction and turn. Looks - Add text strings, show and hide objects and change the features of an object. Sound - Select sounds and control when they are heard, their duration and volume. Draw - Control when drawings appear and set the pen colour, size and shape. Events - Specify user inputs (such as clicks) to control events Control - Specify the nature of events (such as a single event or a loop). Sensing - Create conditions for actions by waiting for a user input (such as responses to questions like: What is your name?).		
<b>Scratch units:</b> <a href="https://www.twinkl.co.uk/resource/tp-i-0114-planit-computing-year-1-programming-with-scratchjr-unit-pack">https://www.twinkl.co.uk/resource/tp-i-0114-planit-computing-year-1-programming-with-scratchjr-unit-pack</a> <a href="https://www.twinkl.co.uk/resource/tp-i-171-computing-programming-toys-year-1-unit-pack">https://www.twinkl.co.uk/resource/tp-i-171-computing-programming-toys-year-1-unit-pack</a>		
<b>Connect:</b>	<b>Collect:</b>	<b>Communicate:</b> Use apps to communicate one's ideas.

<p><b>Develop an understanding of how to safely connect with others.</b>  <a href="https://www.twinkl.co.uk/resource/tp-i-191-computing-online-safety-year-1-unit-pack">https://www.twinkl.co.uk/resource/tp-i-191-computing-online-safety-year-1-unit-pack</a></p> <ul style="list-style-type: none"> <li>• Participate in class social media accounts.</li> <li>• Understand online risks and the age rules for sites.</li> </ul>	<p><b>Develop an understanding of databases and their uses.</b>  <a href="https://www.twinkl.co.uk/resource/tp-i-159-planit-computing-year-1-using-and-applying-unit-pack">https://www.twinkl.co.uk/resource/tp-i-159-planit-computing-year-1-using-and-applying-unit-pack</a>  <b>OR</b>  <a href="https://www.twinkl.co.uk/resource/tp-i-0078-planit-computing-year-1-computer-skills-unit-pack">https://www.twinkl.co.uk/resource/tp-i-0078-planit-computing-year-1-computer-skills-unit-pack</a></p> <ul style="list-style-type: none"> <li>• Use simple databases to record information in areas across the curriculum.</li> </ul>	<p><a href="https://www.twinkl.co.uk/resource/computing-digital-painting-year-1-unit-pack-t-i-1677580149">https://www.twinkl.co.uk/resource/computing-digital-painting-year-1-unit-pack-t-i-1677580149</a>  <b>OR</b>  <a href="https://www.twinkl.co.uk/resource/tp-i-001-new-planit-computing-year-1-word-processing-skills-unit-pack">https://www.twinkl.co.uk/resource/tp-i-001-new-planit-computing-year-1-word-processing-skills-unit-pack</a></p> <ul style="list-style-type: none"> <li>• Use a range of applications and devices in order to communicate ideas, work and messages.</li> </ul>
<p><b>Approved sites:</b></p>	<p><b>Database app:</b></p>	<p><b>Suggested apps:</b></p>
<p><b>Computing opportunities across the curriculum to embed learning:</b></p> <ul style="list-style-type: none"> <li>• Organise, store, manipulate and retrieve data in a range of digital formats.</li> <li>• Communicate safely and respectfully online, keeping personal information private and recognise common uses of information technology beyond school.</li> </ul>		

This plan anticipates the following:

\*There should be ongoing development of coding across the year in half termly units, interspersed with the other elements of connect, collect and communicate.

Collect and Communicate should be used as cross curricular tools in other areas such as science, history and geography as an alternative to work in books.

Online safety is a feature every autumn term

Cycle A is comprised of Y6, 4 and 2 units, while cycle B is comprised of Y5, 3 and 1 units. These will need to be adapted as necessary to meet the needs of the cohort at the time. However, each unit should work as part of the Milestone across two years as each cohort will meet it only once.

Spaces are left for staff to fill in sites, databases and other apps which may be useful as work progresses over the year and for future reference – Computing lead to oversee and approve.