

Conditional Selection

Computing Science Glossary

Sequence One thing following another in which the order may or may not be important.

PRIMM A strategy that promotes Predicting, Running, Investigating and Modifying code before Making something.

Algorithm Part of planning stage before programming written for another human to read.

USE MODIFY MAKE A strategy that promotes using and modifying code before creation

Selection An event or multiple events are triggered by a condition

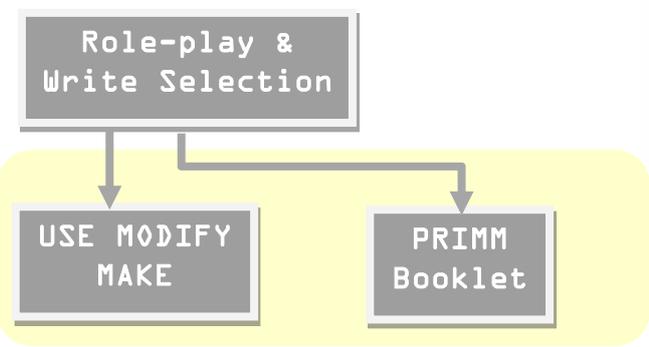
PICO & TERRA

Questions & Answers

How does this fit in with other app programming? See overview document
What age is this for? Y4 or Y5 is a good place to use this if pupils have done other work on sequence and repetition first. **How hard is this to teach?** Very easy as all the code instructions are in the booklets. **How do we Assess learning?** Pupils use answers provided to mark their own work. **Is it in line with NC?** Yes see next page. **Why is there a choice?** All of the methods chosen have good research behind them but we don't know which are best or even if there is a best for all pupils. We do know that it helps pupils to encounter a variety of different types of method so they are continually challenged. If you work your way through all modules I recommend you switch strategies each time to keep the challenge high. **How creative is this?** This combines the best knowledge we have about how to learn something new with the opportunity at the end for pupils to create something that they want to create that uses their new knowledge.

Everyday Selection Download **Everyday computing concepts PDF** from <http://code-it.co.uk/wp-content/uploads/2019/04/everydaycomputingconcepts.pdf> Use slides 15-21 (everyday selection) to introduce the idea of selection in our everyday lives. By linking the concept to its everyday use you are linking to known knowledge which means pupils are more likely to assimilate the idea into an established mental schema.

Role-play & write Selection Download **selection introduction PDF** Use all the slides to roleplay, write and trace the flow of control. This covers condition starts action, condition switches between actions and condition stops a loop.



Condition starts actions

If you are hungry
put your hand up

If you like computing
smile

If you are 8 or older
Stand
Sit

Now write your own everyday algorithm that uses condition starts action

Can your neighbour act it out?

One mark if it makes sense
One mark if each section is on a new line
One mark if you indent the actions

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Booklet Choices

You choose from one of the options above. Each option has its own booklet which guides pupils through the stages, making them think deeply about either the code or the algorithm before modifying it and having a choice of things to make. Pupils are instructed when to work in pairs and when to work alone. Separate the answer sheet (last pages of the booklet) into sections as pupils will need to mark their work as part of their learning process. If you are not sure which to choose download the booklets and look at the differences.

National Curriculum Programs of Study

(bold text is covered in this module)

Pupils should be taught to:

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

Before the module

Read the planning and download PDF for Selection introduction. Decide which booklet variation you are going to use and download and print it out one per pupil. Remove the answer sheets for pupils and separate them into sections for pupils to access when they need to. Download the code for your version of Scratch 2 or 3 and place it on your network where pupils can access it, or note where it is on the Scratch website if using Scratch online.

Formative assessment support

If pupils are struggling to predict, investigate/use or modify ask them to read code or algorithm out loud. If pupils are struggling to work together in a meaningful way then encouraging and rewarding positive attitudes to working collaboratively using the communicates stickers shown at the end helps. Lots of misconceptions can be solved by reading the code or algorithm slowly and out loud to their partner.

Classroom Organisation

In some sections pupils are asked to work with a partner of similar programming ability. If you are not sure what programming ability they are go with Maths skills as a starting place. You can move partners around between modules so that pupils benefit from different interactions. I recommend working with a partner in all sections apart from the last make or create section when working individually allows greater creation and assessment opportunities.

Providing Feedback

If you find a question that lots of pupils get stuck on please let me know so we can evaluate if it needs hints or rewriting or even removing.

Any other feedback, verbal or written, is also welcome. You can find my contact details at <http://code-it.co.uk/contact/>

Resources

Selection Introduction PFD

PRIMM Code

Pupil booklets

Scratch 2 & 3 Code to download

Scratch 3 code on Scratch website

USE MODIFY MAKE

Pupil booklets

Scratch 2 & 3 Code to download

Scratch 3 code on Scratch website

All Resources at

<http://code-it.co.uk/goldapps/>

Further Research Reading

Use Modify Create

Irene Lee et al Computational thinking for Youth in practice (2011)

PRIMM Sentence

<https://blogs.kcl.ac.uk/cser/2017/09/01/primm-a-structured-approach-to-teaching-programming/>



I recognise there is more than one way to solve/describe a problem

I don't just accept the first solution

I look for a range of solution to the same problem

I can evaluate my solutions against a set criteria



I look for how a project can be extended

I can design criteria to evaluate my creations



Insert picture of your students here



I can break complex problems into parts

I can contribute useful ideas to a partner or group

I can discover / concentrate on the most important part of a problem

I can encourage others to share their ideas



I can identify patterns in problems & solutions

I can adapt existing ideas to solve new problems

I lead using all the people talent in my group

Communicates

Adapts

I can develop, test and debug until a product is refined

I learn from setbacks and don't let them put me off



Investigates



I make predictions about what will happen

I can persevere even if the solution is not obvious

Perseveres

I repeatedly experiment through predicting, making, testing & debugging