

Unplugged Computing

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Computing Science Teacher Five Schools

Links

Unplugged Computing Keynote

<http://code-it.co.uk/links.html>

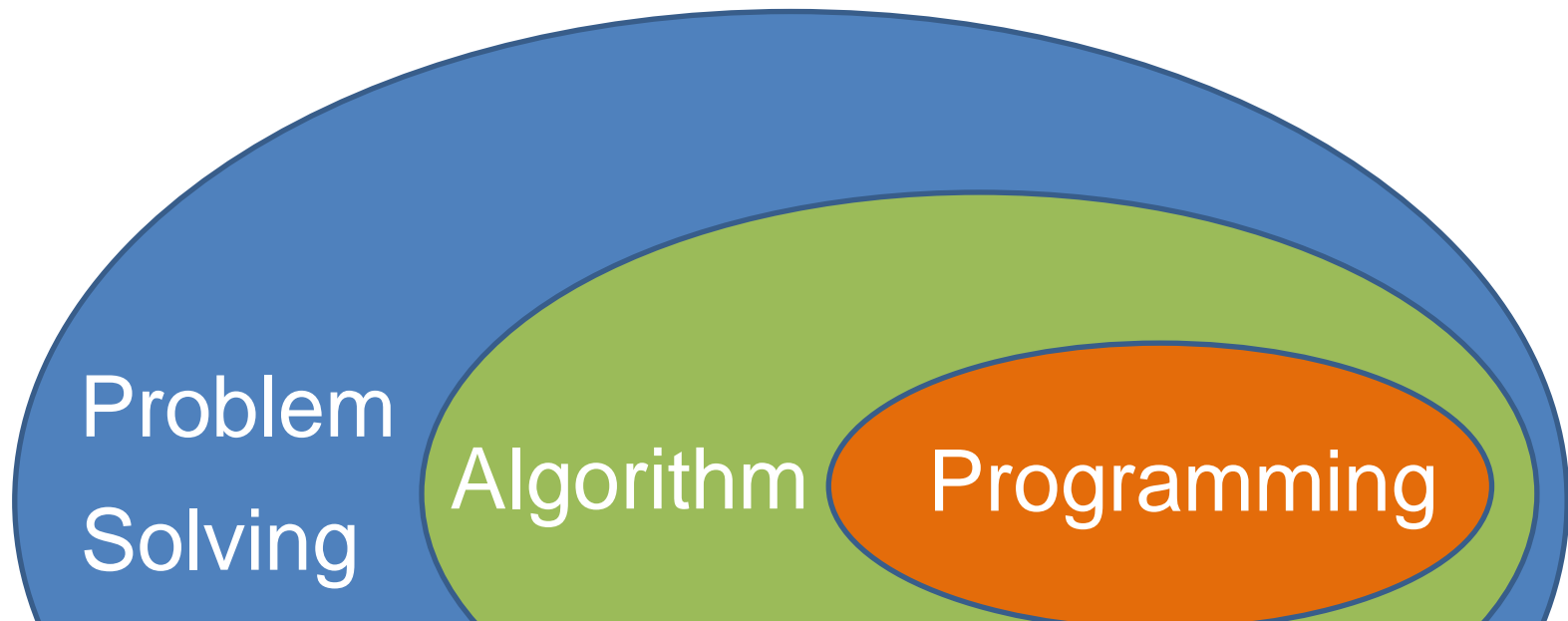
Computing Science Resources

<http://code-it.co.uk/csplanning.html>

Twenty Primary Scratch Programming Projects

<http://code-it.co.uk/scratch/scratchplan.html>

Relationship between Algorithm & Programming



Put chalk down on playground
repeat next 2 commands 4 times
forward 1 meter
right 90 degrees
remove chalk from playground



KS1 POS Programming Burger

Pupils should be taught to:

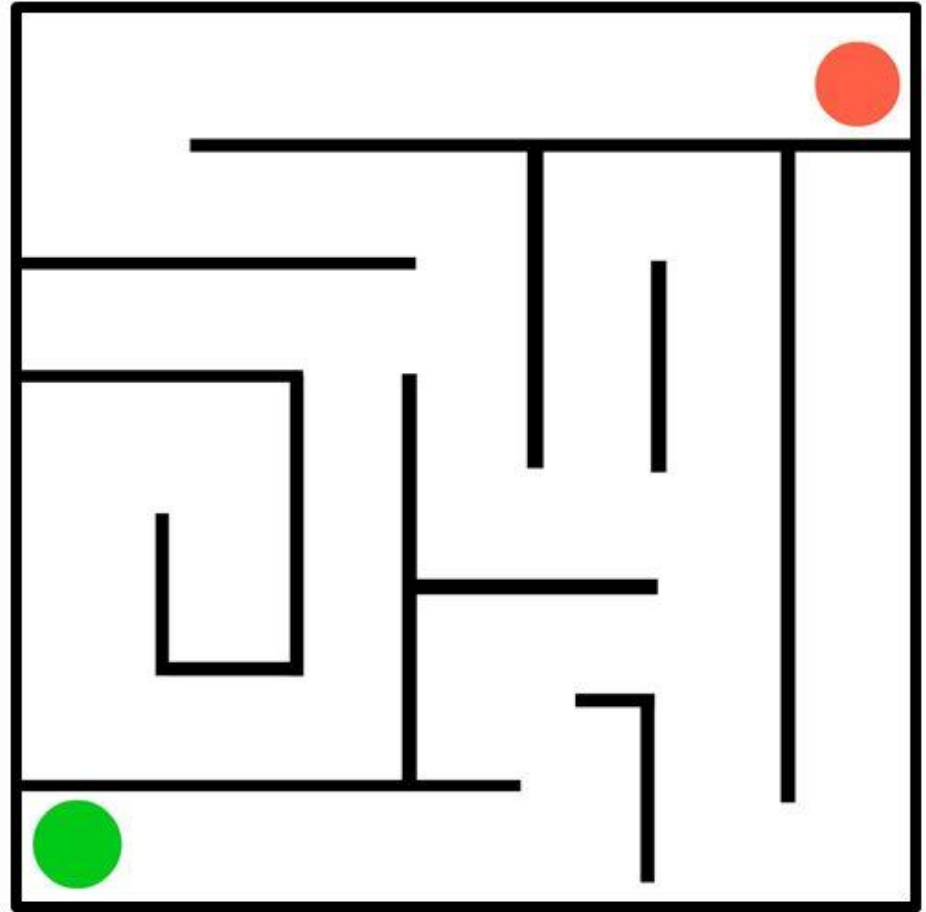
- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs (algorithms)
- use logical reasoning to predict the behaviour of simple programs

KS2 Programming Sandwich with Internet Side Salad

- design, write and debug programs (**algorithms**) 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
- understand computer networks including the internet; how they can provide multiple services, such as the world wide web
- appreciate how internet search results are selected and ranked

Human Robots at KS1

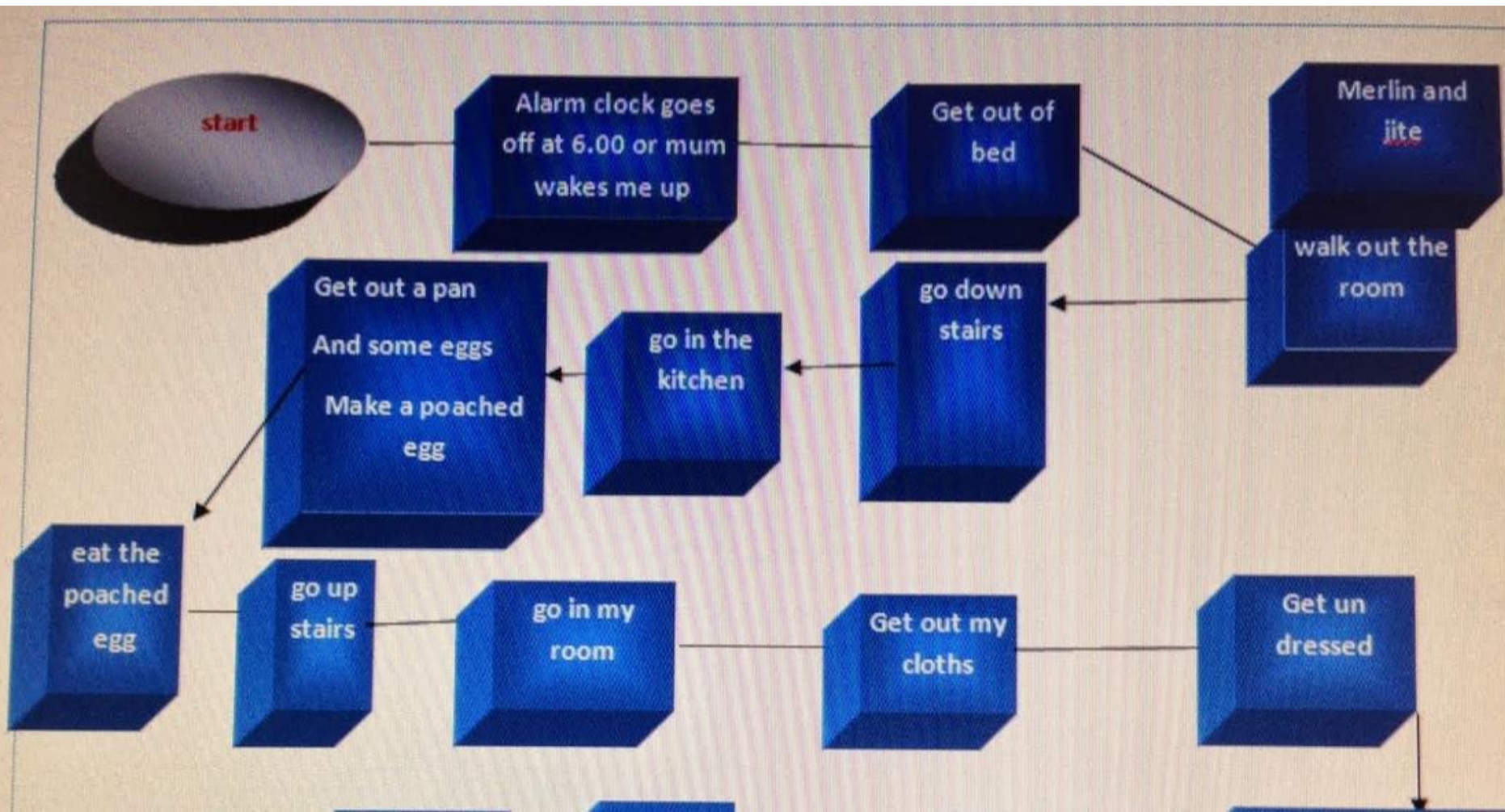
Solve maze whilst
blindfolded on paper
Solve masking tape
maze whilst
blindfolded in hall or
chalk maze outside
Moving towards
complete set of
instructions before
attempting



Getting Up Algorithm

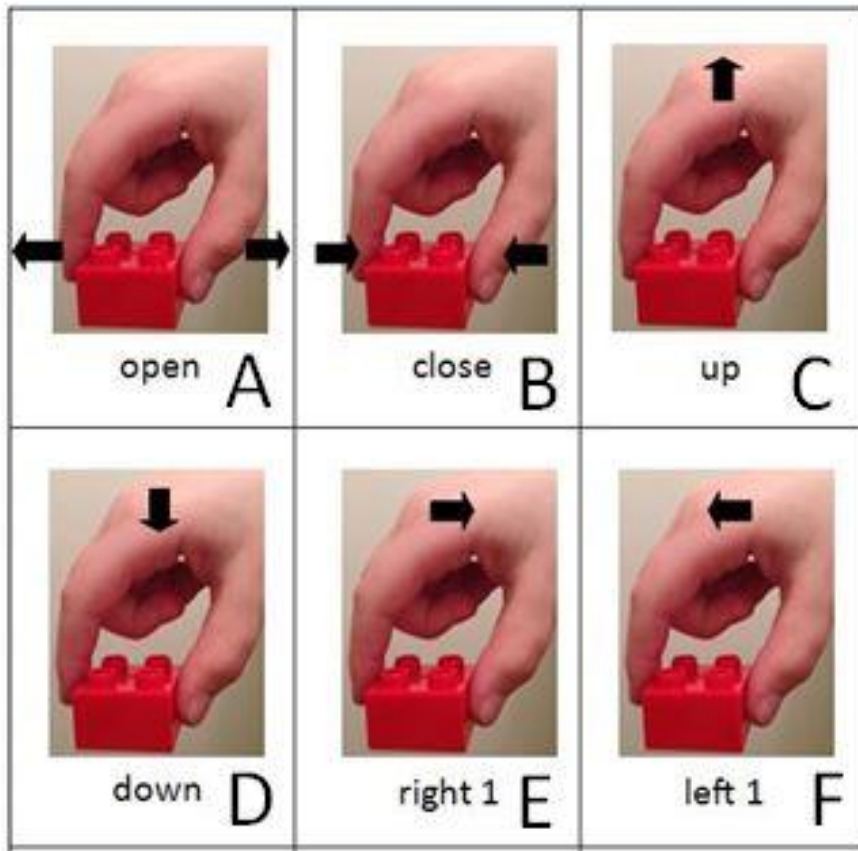
Getting Up Algorithm

- <http://code-it.co.uk/unplugged/gettingup.html>



Everyday Algorithms Extended

- Let them choose everyday task to write an algorithm for
- Decompose into sub sections first
 - Out of bed
 - Washing
 - Changed
 - Breakfast
 - Journey to school
- Test them in action



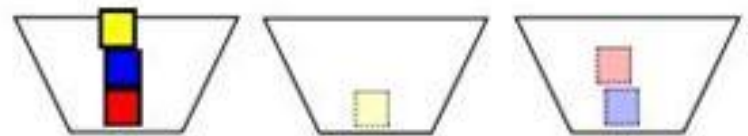
Human Crane Algorithm

Start above left bowl

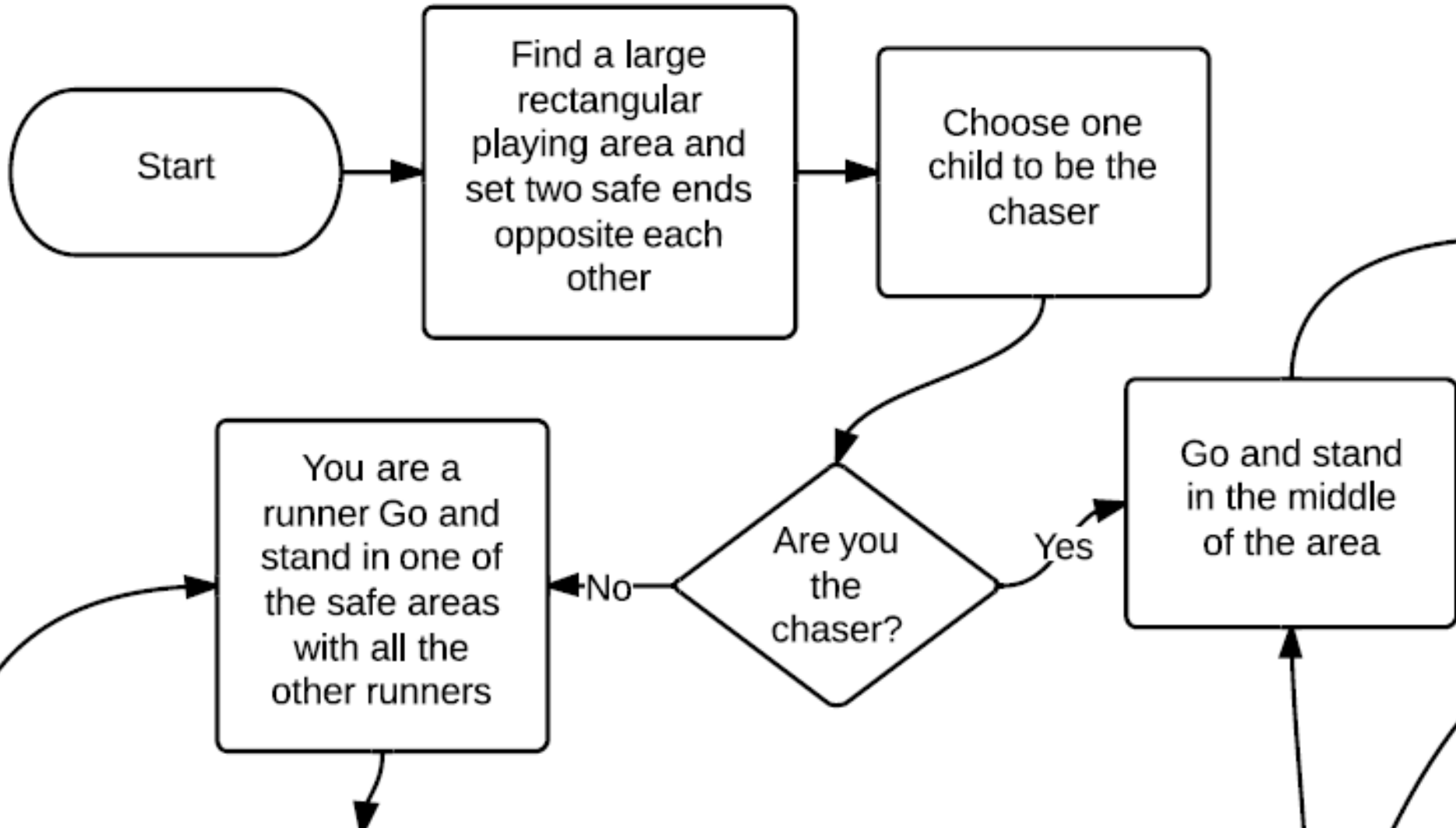
Use letters to create algorithm

Full planning is here

<http://code-it.co.uk/csplanning.html>



Playground Games



Jam Sandwich Algorithm

Planning

<http://code-it.co.uk/unplugged/writesandwichalgorithm2.pdf>

Out Takes Video (Teachers use only)

<http://www.youtube.com/watch?v=leBEFaVHlIE>

SEN Joined Words Sheet

<http://code-it.co.uk/unplugged/sandwichalgorithmSEN.pdf>

Right Hand	spread	butter	fast
Left Hand	scoop	tub	repeat
Pick up	packet	bread	hard
Press down	knife	slice	soft
cut	blade	plate	forward
Put down	handle	turn	back
hold	jam	top	put
unscrew	jar	bottom	Table
remove	lid	slow	Surface

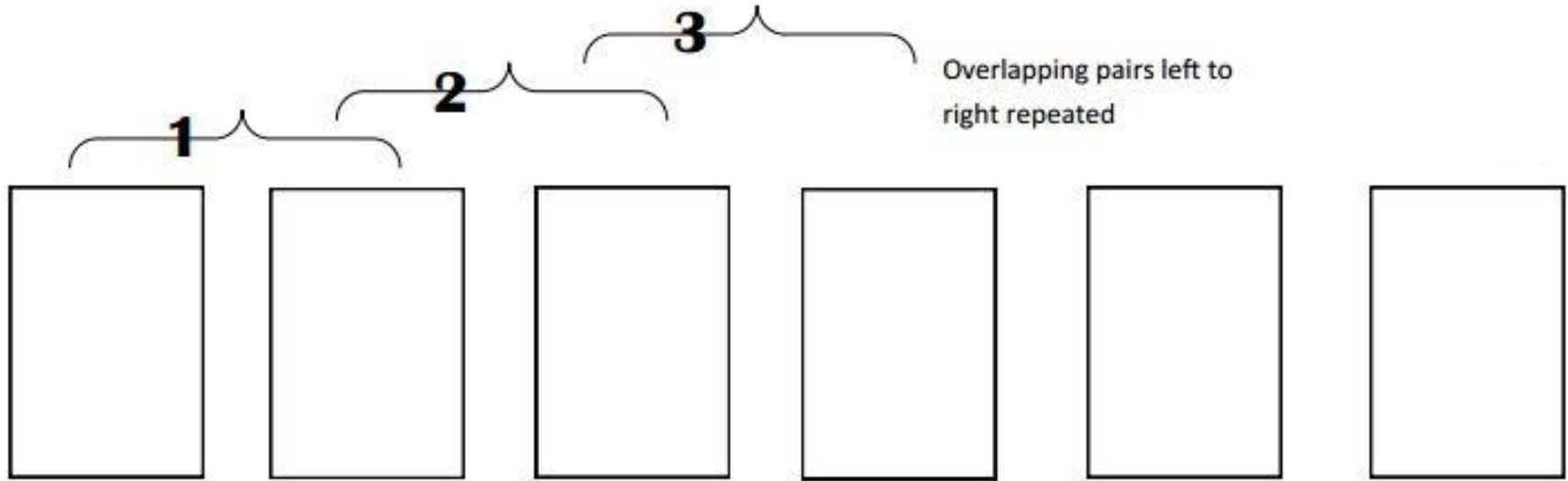
Selection PowerPoint



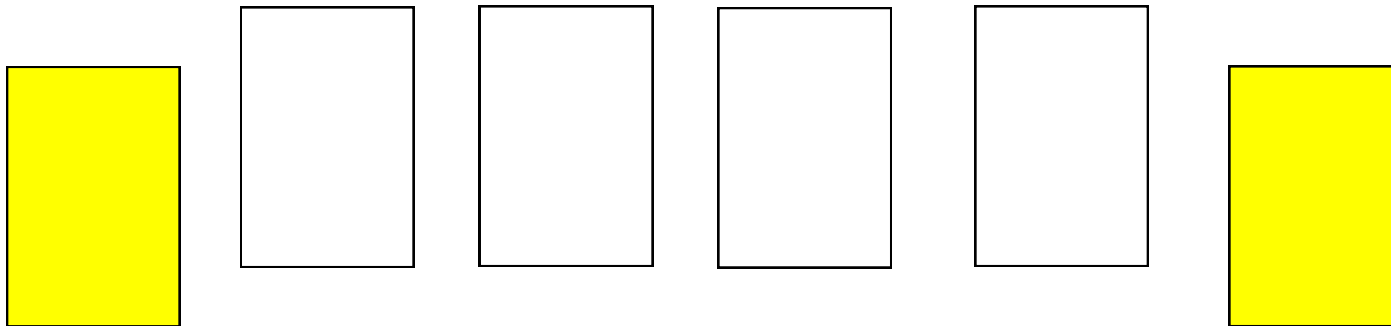
POS

use sequence,
selection, and
repetition in
programs

Exchange Sorting Investigation



<http://code-it.co.uk/unplugged/sort/sortoverview.html>

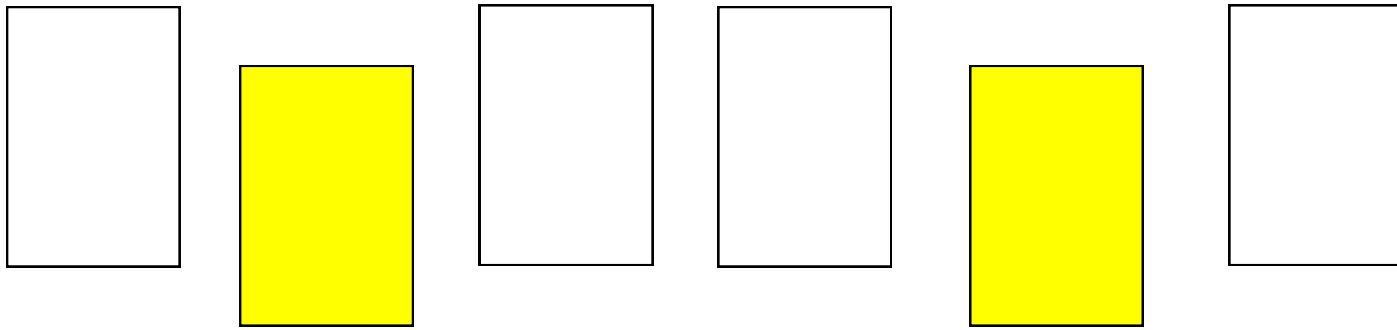


Work in pairs

Example

Ends to centre

Find as many different ways to
compare the cards

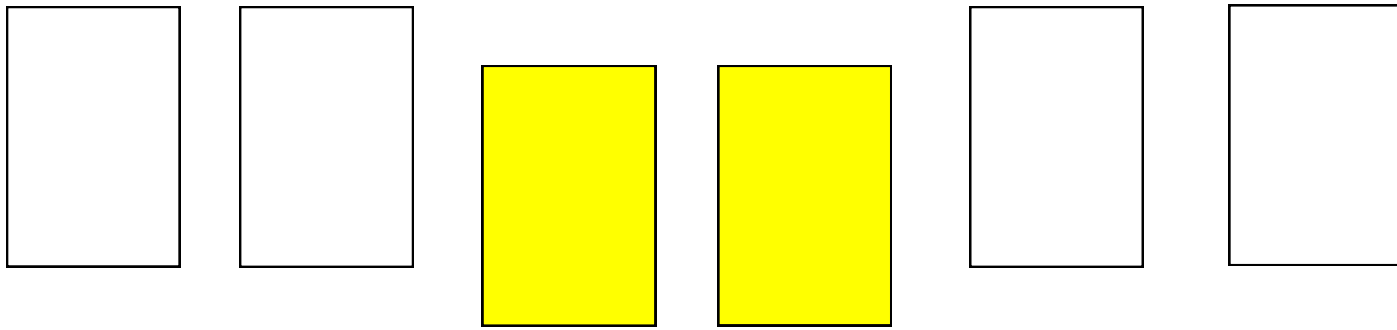


Work in pairs

Example

Ends to centre

Find as many different ways to
compare the cards

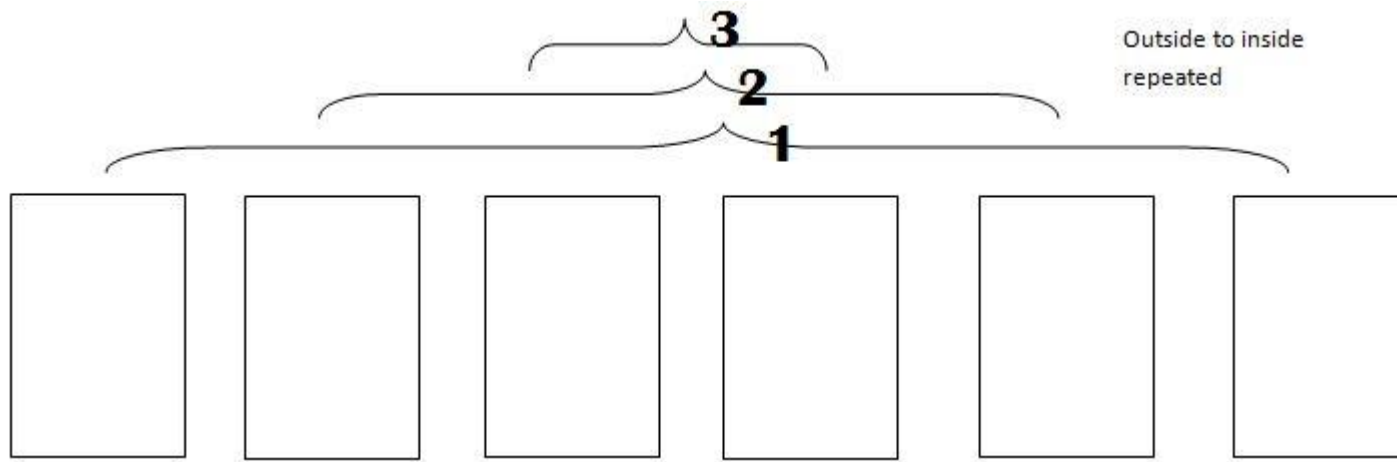


Work in pairs

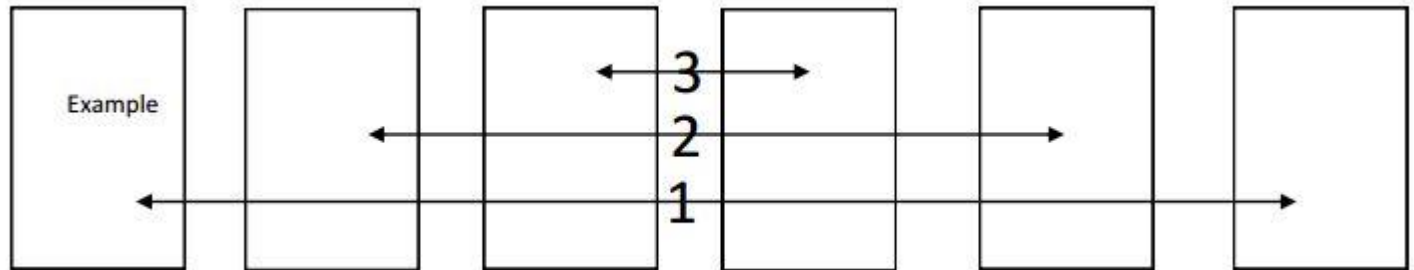
Example

Ends to centre

Find as many different ways to
compare the cards



Ways to Record



Find as many different ways to compare the cards

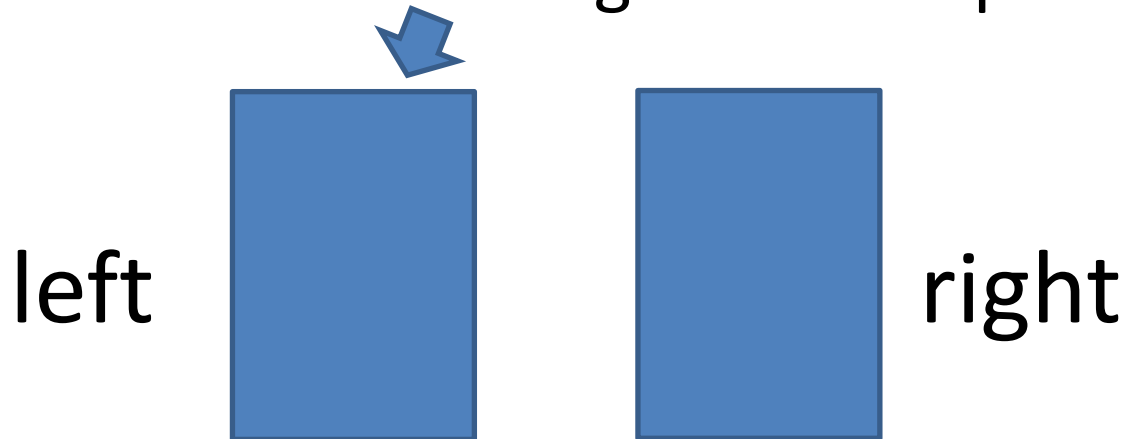
Record on your sheets

Use brackets or lines to show which cards to compare with which and numbers to show order

Sorting Rule

Rule

If the number on the left is greater swap the cards



Test each pattern on the sheet until it has sorted the numbers or looks like it will never sort the numbers. Record your findings on the sheet.

From Unplugged to Plugged

