

## Problem 1: Button Patterns

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Teaching and observation points

- using a systematic crossing off strategy
- using guess and check to test patterns
- spotting patterns
- making 'counters' to model the patterns

**Resources:** counters, sticky dots or scrap paper

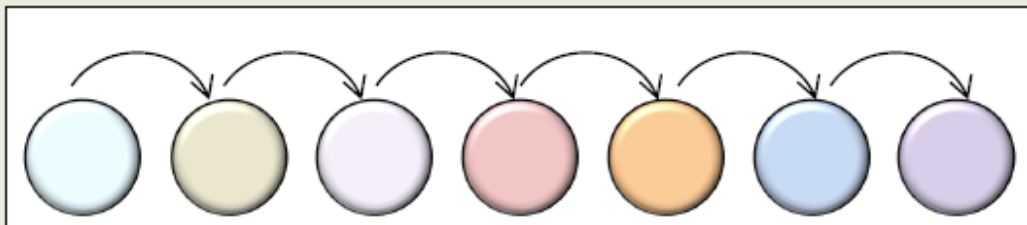
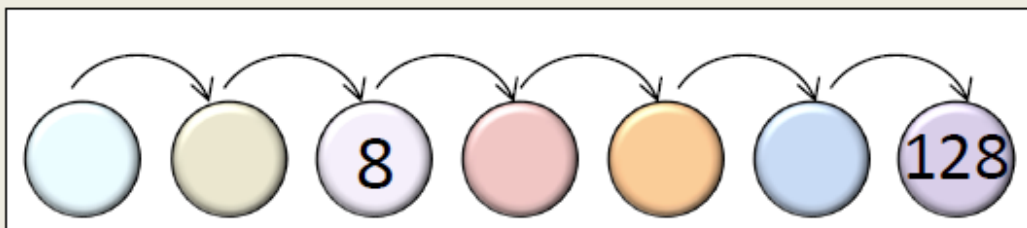
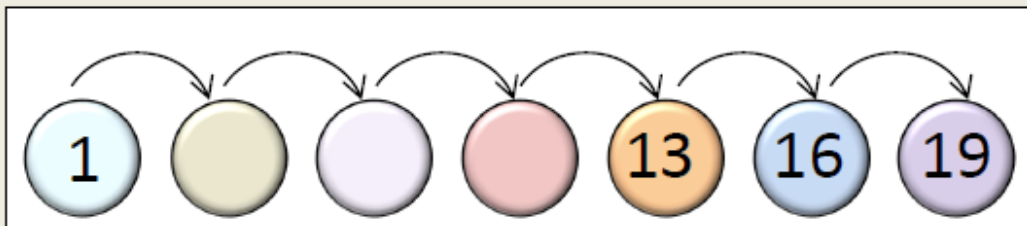
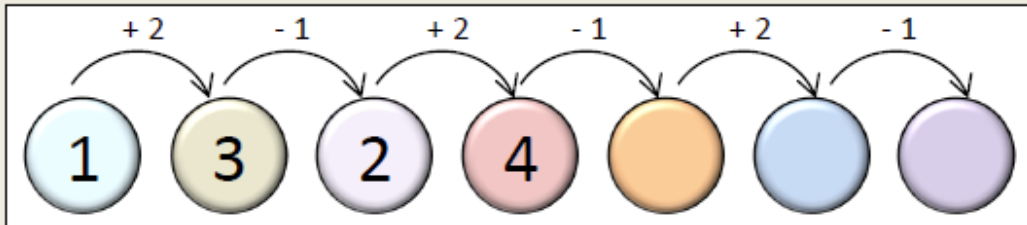
Now would be a good time to introduce the *All Change* game, a video of which is included in the *Games* folder on the CD. The *Exploring Sequences* spreadsheet provides an endless supply of sequences in which the last number is missing – it's a great way to get everyone thinking about patterns in sequences.

STAR

<b>Sort out</b>	What is the problem about? What did the teacher do with her buttons? What are you being asked to find out? What/where is the important information?
<b>Think about</b>	What problem solving strategies might be useful? How would making counters or slips of paper with numbers on help? How will you keep track of numbers you have used? Which patterns will it be easiest to start with?
<b>Action</b>	A blank <i>Button Pattern</i> Sheet has been provided for students to make a similar problem of their own.
<b>Reflect on</b>	Which information gave you the clue about how to solve the second button patterns? How did you work out the other patterns? Which strategies were most effective? Did guess and check/make a model help? Why was it important to systematically cross off or remove the numbers already used?

## Problem 1: Button Patterns

Mrs Black likes to use her button collection to make up problems for her class. "Your problem for today," she said, "is to find out where the buttons in my button box belong in these button patterns."



The Button Box

