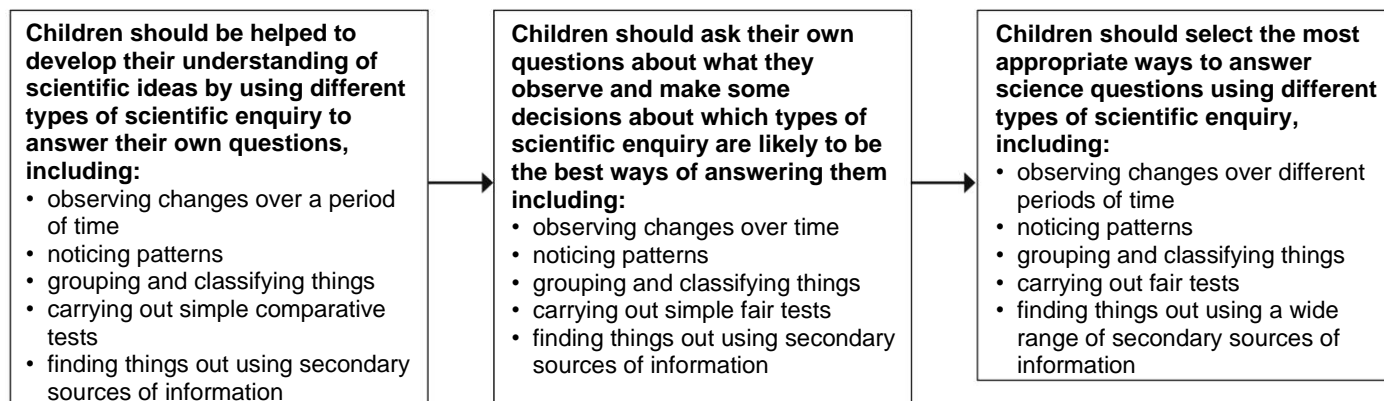


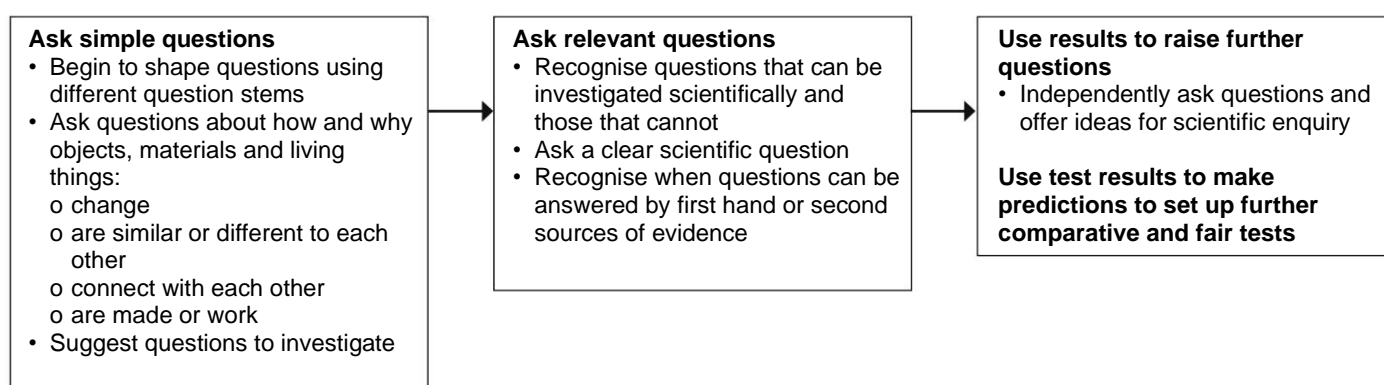
# WORKING SCIENTIFICALLY

Developing independence and autonomy in raising questions, planning and carrying out investigations

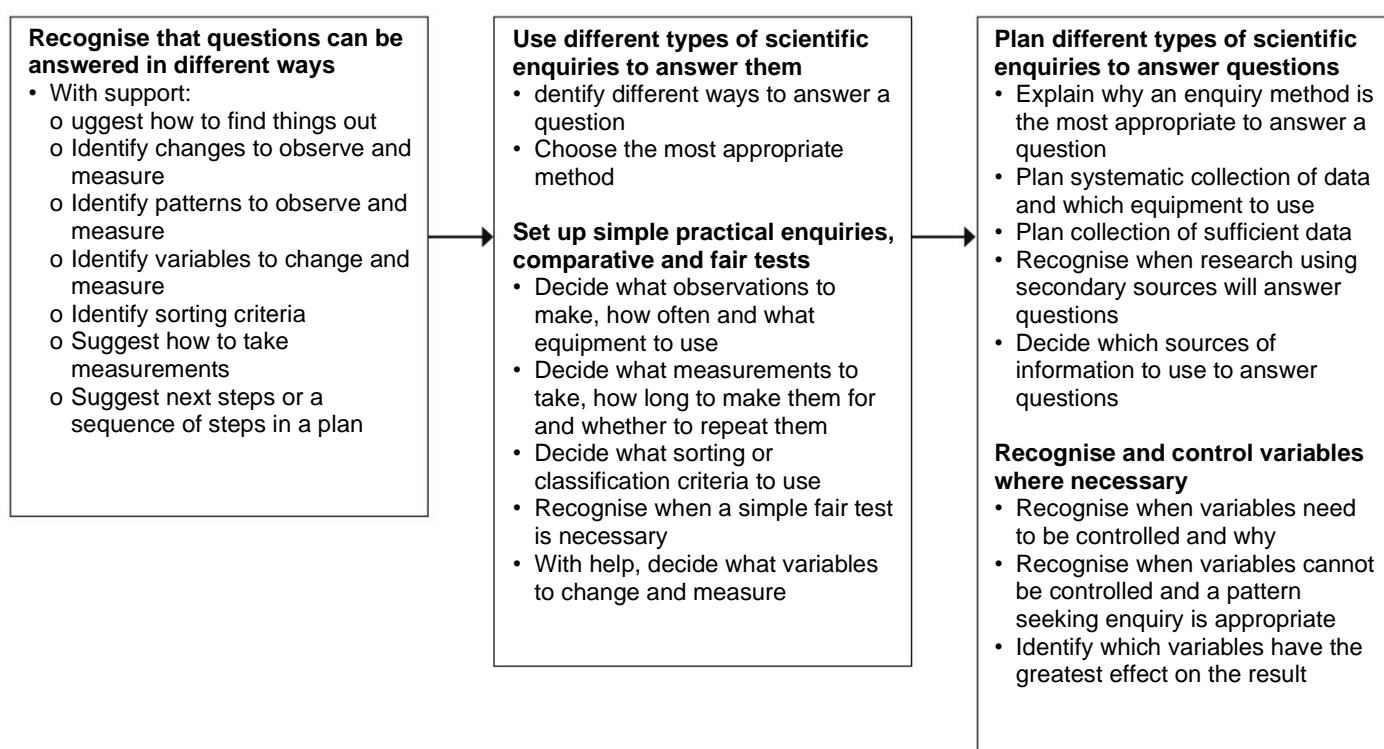
## Approaches to enquiry



## Asking questions



## Planning



Becoming more systematic and accurate in collecting, recording and presenting data

## Collecting data

### Observe closely, using simple equipment

- Choose and use appropriate simple equipment to make observations
- Use non-standard units to collect observations

### performing simple tests

- Choose and use appropriate simple equipment with increasing accuracy to collect comparative data
- Use non-standard units to collect data

### identifying and classifying

- Sort objects by observable and behavioural features
- Make comparisons between simple features

### gathering data to help in answering questions

- Gather data to answer questions from a variety of sources including talking to people, simple books and electronic media, first hand observation and practical activity

### Make systematic and careful observations where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers

- Use a range of equipment including data loggers to collect data using standard measures
- With support take accurate measurements on measuring equipment, recognising when to repeat them
- Carry out simple tests to sort and classify materials according to properties or behaviour

### Gather data in a variety of ways to help in answering questions

- Gather data to answer questions from a variety of sources including using textbooks, simple keys, electronic media, first hand observation, practical activity and data collected by others

### Take measurements, using a range of scientific equipment with increasing accuracy and precision

- Use a range of equipment accurately without support to collect observations and measurements
- Repeat sets of observations or measurements, where appropriate, selecting suitable ranges and intervals
- Use a series of tests to sort and classify materials
- Use relevant information and data from a range of secondary sources to answer questions

## Presenting data

### Record data to help in answering questions

- Talk about what has been found out and how
- Record observations in word and pictures
- Record observations and test results in simple prepared pictograms, tables, tally charts, bar charts and maps including ICT formats
- Record sorting in sorting circles or tables

### Record data in a variety of ways to help in answering questions

- Make notes
- Record data in tables and bar charts
- Use graphs produced by data loggers

### Classify in a variety of ways to help in answering questions

- Use Carroll diagrams, and Venn diagrams to classify
- Use and make simple keys to identify and classify

### Present data in a variety of ways to help in answering questions

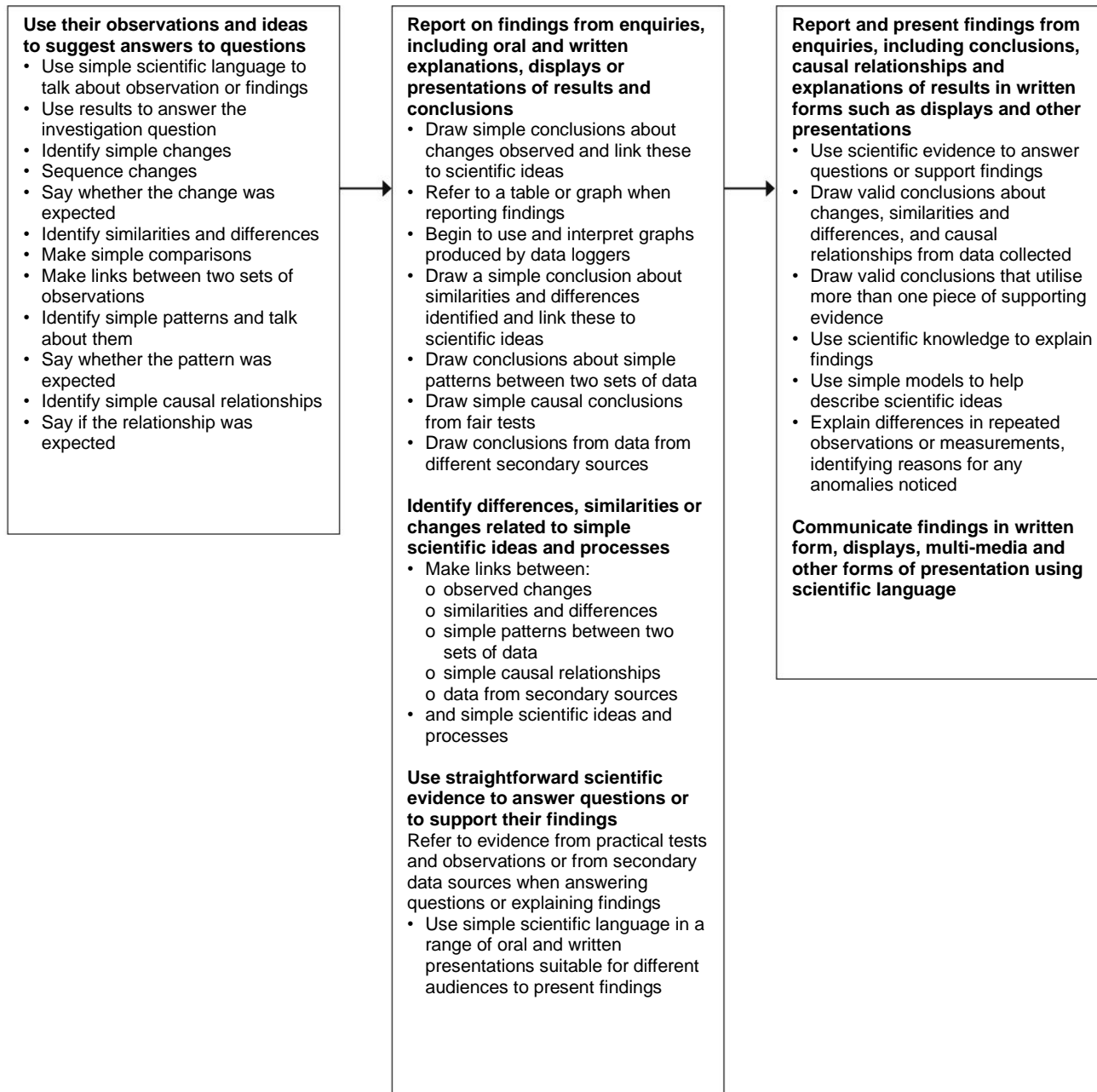
- Drawings, labelled diagrams
- Bar charts, bar line graphs, simple scatter graphs and tables using ICT where appropriate

### Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs and models

- Decide how to record data accurately and appropriately
- Use appropriate scientific language in oral and written presentations
- Make keys and branching databases with 4 or more items
- Use more than one source of scientific evidence to identify and classify things
- Present data in line graphs, scatter graphs and frequency charts

Increasingly using scientific knowledge and understanding in conclusions and explanations

## Concluding



## Evaluating

