



Core units: Key understandings Years F-4

Illustration 2: Sequential development of understanding maps

Sequential development of understanding elements of maps

The development of understanding of mapping elements is divided into six elements.

The elements are listed from one to six in an order which approximately represents how children seem to grasp these ideas. The sixth element is the representation of data on maps, and this is divided into six sub-groups.

In each of these elements, the usual stages of a child's development of understanding are listed in sequential order.

The line drawn at one point in each sequence is roughly the point between primary and secondary school.

1. Plan View

Distinguishing horizontal, oblique and vertical views of discrete objects

Distinguishing horizontal, oblique and vertical views of discrete objects and larger areas at differing scales

Distinguishing objects on maps drawn at differing scales

Recognising objects on aerial photographs

Analysing location and distribution of objects on aerial photographs

Analysing location and distribution of objects on satellite images

2. Direction

Random estimation of direction

Random estimation of N, S, E, W

Perception and knowledge of the four cardinal points (four-point compass rose)

Using N, S, E, W on maps

Perception and knowledge of an eight-point compass rose

Using a compass to understand angular measurements of 0 to 360 degrees

Practice in the application of direction on a range of map forms and the globe

3. Location and reference systems

Verbal descriptions of location of objects in the immediate environment

Reading and constructing concrete grids on two-dimensional surfaces

Reading and constructing 'street directory' type grids from large scale to small scale

Reading and constructing area references on maps of varying scales

Identifying main lines of latitude and longitude

Reading and constructing six-point references

Using latitude and longitude measurements

4. Proportion and scale

Distinguishing relative sizes of large scale objects

Distinguishing and describing relative sizes of groups of objects

Distinguishing and describing relative sizes of groups of objects at a smaller scale

Introduction to use of scale ruler

Measuring distances on map using scale ruler

Using a simple linear scale and statement of scale

Using complex line scales

Expression of simple ratios to describe scale

Using the representative fraction to describe scale

5. The measurement of distances

Estimating and measuring short distances

Estimating and measuring medium distances (> 30 m)

Measuring on large scale maps (with increasing accuracy)

Measuring on small scale maps (with increasing accuracy)

6. The representation of data on maps

6a. Map colour

Using colour to arbitrarily discriminate between features on a map

Using conventional colours (for example. blue for water, green for vegetation)

Using colour on political maps

Using colour to discriminate between signs on thematic maps, for example, density of colour indicating density of distribution

Using colour to show relief in a variety of ways

Conventional representation of colour on a topographic map

6b. Base data on maps

Drawing thick coastline and rivers

Drawing main rivers

Drawing thick political boundaries

Finer representation of coastline

Variety of features named

Finer representation of river systems

Finer representation of political boundaries

Wide range of features named

River systems defined very accurately

Detailed representation of political boundaries

6c. Map signs

Recognising the relationship between type of sign and reality, for example, line, point, area signs to represent line, point and area features

Classifying and labelling the types of signs

Increasing sophistication of signs from real to abstract

Developing hierarchies of signs within each class

Using signs that measure amounts

Using size and shape of signs to discriminate between features on a map

6d. Lettering and numbers on maps

Recognising that different sizes and styles of type can be used to distinguish between classes of features

Identifying different sizes and styles of type on a map

Classifying different sizes and styles of type in a key

Classifying different sizes and styles of type on a map

6e. Representing relief on maps

Simple verbal description of relief

Hill shading (large scale)

Hill shading (small scale)

Layer colouring

Using contours to read heights of locations

Using contour patterns to recognise landforms from patterns of contours

Source: Adapted, modified and updated from Butler, J., Clough, R., Gerber, R., Senior, B., Smith, S., Wilson, R. (1983). *Jacaranda atlas project resource book one*. Milton, Qld: Jacaranda Press.

Making a chart

You may wish to put this information into a chart for easy reference. An example is provided on the next page. You will need an A3 format.

Example A3 chart for sequential development of understanding elements of maps

Element of map understanding	1. Plan view	2. Direction	3. Location and reference systems	4. Proportion and scale	5. The measurement of distances	6a Map Colour	6b	6c	6d	6e
Progression of understanding through Primary Years	<ul style="list-style-type: none"> • Distinguishing horizontal, oblique and vertical views of discrete objects • Distinguishing horizontal, oblique and vertical views of discrete objects and larger areas at differing scales • Distinguishing objects on maps drawn at differing scales • Recognising objects on aerial photographs 	<ul style="list-style-type: none"> • Random estimation of direction • Random estimation of N, S, E, W • Perception and knowledge of the four cardinal points (four-point compass rose) • Use of N, S, E, W on maps • Perception and knowledge of an eight-point compass rose 								
Progression of understanding through Secondary Years	<ul style="list-style-type: none"> • Analysing location and distribution of objects on aerial photographs • Analysing location and distribution of objects on satellite images 	<ul style="list-style-type: none"> • Using a compass to understand angular measurements of 0 to 360 degrees • Practice in the application of direction on a range of map forms and the globe 								