



This shape and space activity is in three sections:

- A Identifying everyday objects photographed from plan and elevation views
- B Drawing 3D sketches of solids from their plan and elevation views
- C Drawing plans and elevations of given objects.

### Suitability

Level 1 (Foundation)

Could also be used as an introduction for Level 2 (Intermediate/Higher) work, but this would need to be extended to include showing hidden detail.

### Time

1 hour

### Resources

Student worksheet  
*Optional:* slideshow

### Equipment

Rulers, pencils, squared paper

### Key mathematical language

Plan, front elevation, side elevation, 3-dimensional sketch,  
2-dimensional shapes

### Notes on the activity

This activity can be used to introduce the idea of representing objects using plans and elevations.

You could use the slideshow at the beginning or before Section B.

Students could try section A immediately, but discussion of the use of plans and elevations and how to sketch 3D objects is likely to be needed before they try Section B.

Section C can be done immediately after Section B, or left until later.

Only rough sketches are requested in this activity rather than accurate scale drawings, and the answers given below are not exact.

Although the plans and elevations given in Section B and the answers are presented as third angle orthogonal projections, it is not intended that this should be done formally.

## During the activity

Advise students not to worry about scale when they try Sections B and C. Encourage them to discuss their ideas and show each other their attempts.

## Points for discussion

Discuss reasons why it is useful to use plans and elevations in various occupations. It may also be worth discussing the different ways of interpreting and arranging front elevation and side elevations.

## Extensions

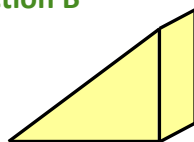
Arrange for the students to work in pairs with digital cameras to take photographs of objects around the school, using plan and elevation views. Ask them to choose unusual objects which may not be recognised by their classmates. Put the photographs into a slideshow to use as a quiz for plenary.

## Answers

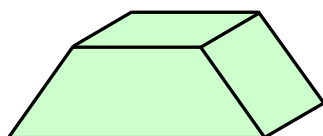
### Section A

- |                              |                       |                       |
|------------------------------|-----------------------|-----------------------|
| <b>A</b> Fire extinguisher   | <b>B</b> Fork         | <b>C</b> Lamp         |
| <b>D</b> Sellotape in holder | <b>E</b> Hole puncher | <b>F</b> Bulldog clip |
| <b>G</b> Kettle              | <b>H</b> Mouse        | <b>I</b> Glass        |
| <b>J</b> Hammer              | <b>K</b> Flowerpot    | <b>L</b> Stapler      |

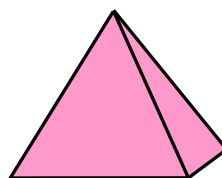
### Section B



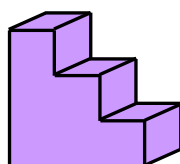
Object A



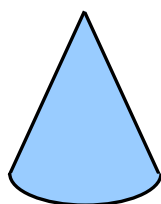
Object B



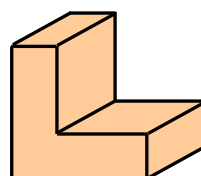
Object C



Object D



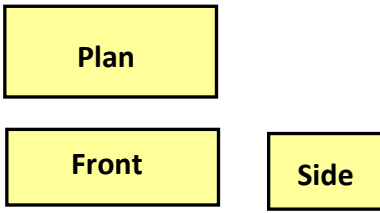
Object E



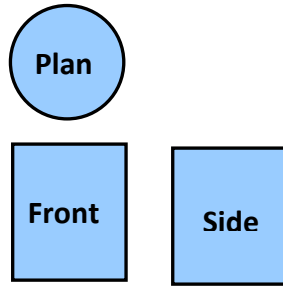
Object F

Section C

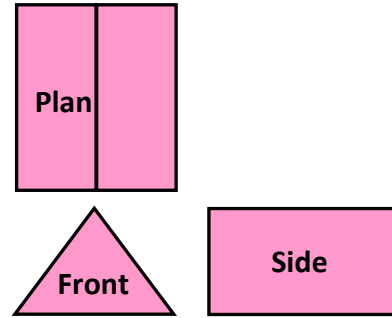
Object A



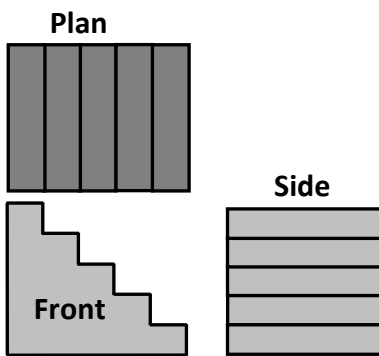
Object B



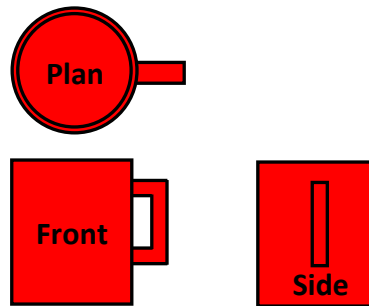
Object C



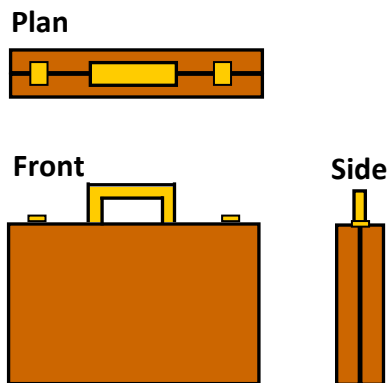
Object D



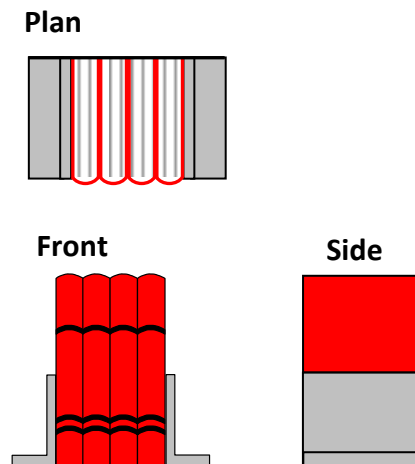
Object E



Object F

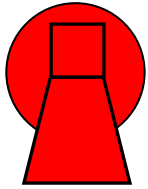


Object G

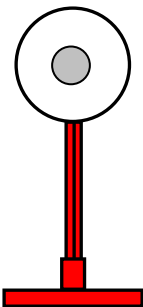


**Object H**

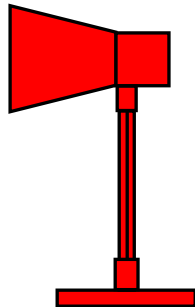
**Plan**



**Front**

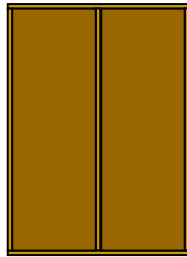


**Side**



**Object I**

**Plan**



**Front**



**Side**

