ICT Curriculum Team

*Tîm Cwricwlwm TGC*

Scheme of Work for Information Communication Technology

**ICT Year 6**

# Unit 6C: Graphical Modelling

## About this Unit:

In this unit children learn to use an object-based graphics package to produce images and visual models. They learn the key differences between an object-based program and a paint package and understand that visual models can be used to identify patterns and relationships.

Children will be able to apply what they have learnt in this unit when making maps in geography and drawing diagrams in science.

## Where this Unit fits in:

This unit builds on earlier units which used paint packages and supports other modelling activities.

The unit assumes that children can use graphic conventions, such as those used in drawing maps and circuit diagrams.

## Vocabulary:

Layer | Object

## Resources:

Object-based drawing package

## Expectations: at the end of this unit,

*Most pupils will be able to:* use an object-based graphics package to create, combine and manipulate objects and explore possibilities.

*Some pupils will only be able to:* use an object-based graphics package to create and manipulate basic objects.

*Some pupils will also be able to:* use an object-based graphics package to create and explore an accurate graphical model checking predictions and make decisions.

*These units have been adapted from material available on the QCA Schemes of Work website*

| **Learning Objectives**<br>*Pupils should learn…* | **Possible Activities** | **Learning Outcomes**<br>*Pupils can…* | **Consider** |
|---|---|---|---|
| **Setting the Scene** | | | |
| • **key idea:** that images can be created by combining and manipulating objects. | • Remind the class of the techniques they have learnt using paint packages. Discuss the use of collage and the way it allows elements to be moved. Show the class that when graphic elements are incorporated into an image in paint package, it is not possible to treat them as individual objects, *eg a section of a picture can be moved, but a circle cannot.* Discuss how this might be useful when producing images, maps, charts and diagrams and in designing. | • Understand the limitations of paint packages for modelling. | |
| **Short Focused Tasks** | | | |
| • **technique:** to move, rotate and re-size graphic elements. | • Use an object-based graphics package to create a range of geometric shapes similar to those in 'The Snail' by Matisse.<br>• Demonstrate to the class how these shapes can be selected and rearranged, how colours can be changed, how shapes can be re-sized and how shapes can be copied and layered.<br>• Divide the children into pairs and ask them to apply these techniques to create different images, print out the work and compare the results. | • Use the object-based graphics package to manipulate shapes. | |

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| **Learning Objectives**<br>*Pupils should learn…* | **Possible Activities** | **Learning Outcomes**<br>*Pupils can…* | **Consider** |
|---|---|---|---|
| **Short Focused Tasks (Cont.)** | | | |
| • **technique:** to use geometric tools to create objects which can be manipulated using an object-based graphics package. | • Show the class how to create various objects using straight lines, curved lines, geometric shapes and curved shapes. Ask the children to create a set of graphic elements which could be used to produce a plan of the classroom. | • Create objects using an objects-based graphics package. | • More able children could be encouraged to work to scale. |
| • **key idea:** that a graphical model can be used to explore alternatives and identify patterns and relationships. | • Ask the children to find out how many tables would fit in the classroom using different layouts and different-sized chairs and tables.<br>• Ask the children to consider alternatives, *e.g. what would happen if the tables were twice as long*? and to identify any patterns. | • Use a graphical model to identify patterns and relationships. | • More able children could be encouraged to work to scale, identify quantitative relationships, e.g. *each table is worth three chairs* and to optimise the use of the space. |

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| **Learning Objectives**<br>*Pupils should learn…* | **Possible Activities** | **Learning Outcomes**<br>*Pupils can…* | **Consider** |
|---|---|---|---|
| **Assessment Task** | | | |
| • to use an object-based graphics package to produce and explore a graphical model | • Ask the class to think of ways to improve the school site. Ask them to produce maps showing the site as it is, and their proposals. Tell them that they need to show that their proposals will not disrupt requirements, *e.g. access and parking.* | • Use a graphical model to inform decisions about improving the school site. | • Encourage the children to make preliminary sketches. This could be done as homework. |