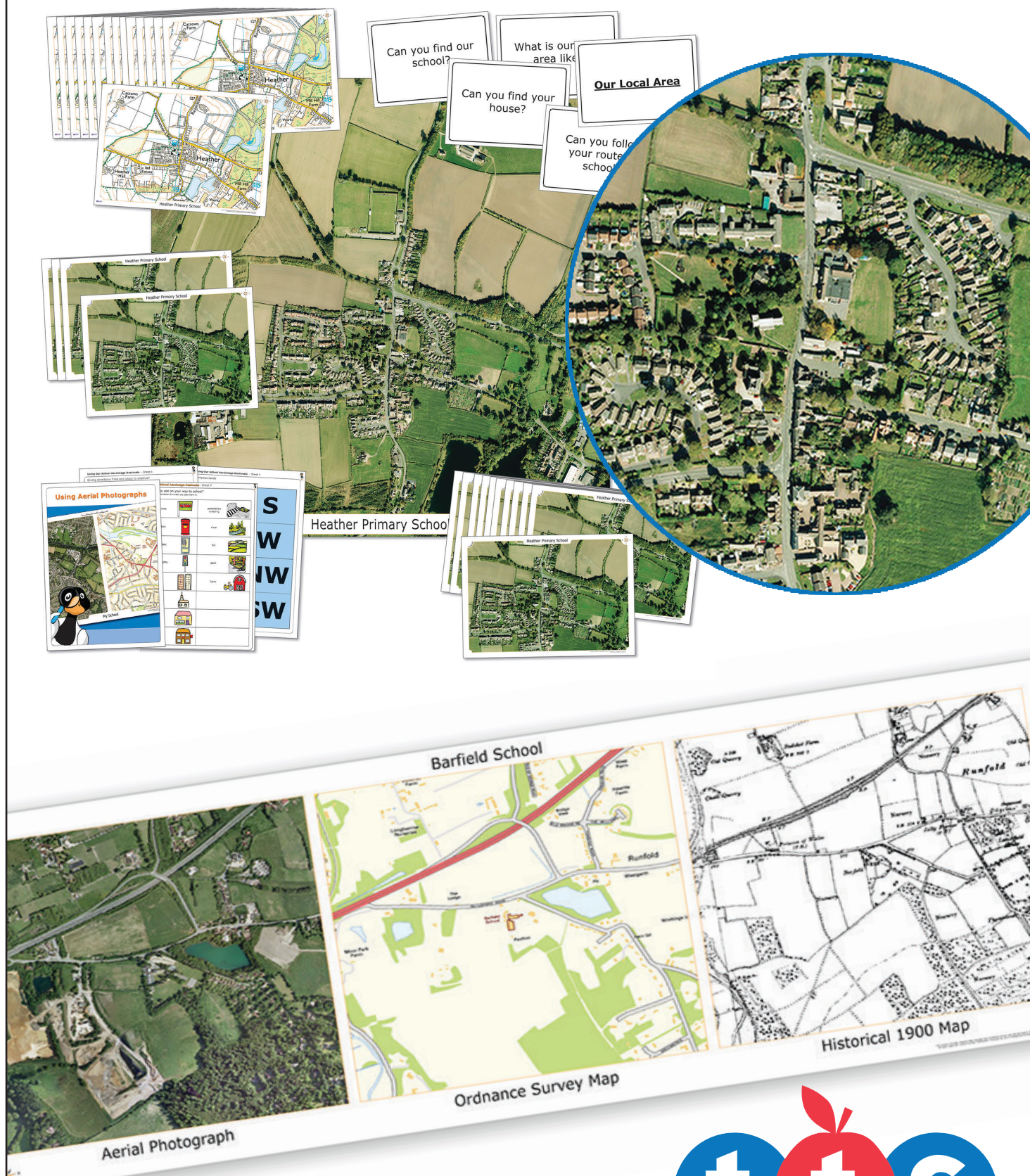


Using Aerial Photographs, Ordnance Survey & Historical Mapping



Lesson Plan and Teaching Ideas



Aerial Photographs, Ordnance Survey & Historical Mapping

This resource pack includes lesson plans to enable teachers to make the best possible use of aerial photographs and maps, including historical maps.

The lessons are intended as a guide only, and teachers can select ideas from them as they wish. Teachers may decide to use each lesson plan over more than one session, depending on the amount of time available to them.

There are 9 photocopiable sheets, some of which are included as part of lesson plans. Teachers may wish to use the remaining sheets in lessons of their own devising, or as activities for pupils of differing abilities.



Contents

Lesson 1 - Focus on plan views

Lesson 2 - Focus on aerial photographs

Lesson 3 - Focus on maps

Lesson 4 - Focus on routes

Lesson 5 - Focus on distance and compass directions

Lesson 6 - Focus on the local area

Lesson 7 - Focus on historical mapping

Other Activities

Sheet 1 - Human and Physical Features

Sheet 2 - Making a Map Key

Sheet 3 - Compass Cards

Sheet 4 - Using Compass Directions

Sheet 5 - Using a Scale Bar

Sheet 6 - My Route to School

Sheet 7 - What Do You See On Your Way to School?

Sheet 8 - Giving Directions

Sheet 9 - What Do We Know About Our Local Area? - Discussion Topics

Medium Term Plan

Focus on plan views

Learning intentions:

- To understand that plans are created from an aerial view
- To find information from plan views
- To create a plan

Resources:

Photographs of objects taken from above; large sheets of paper and pencils; 3D shapes and objects to sketch

Introduction

Provide a selection of photographs of common objects, but taken from above. Challenge the class to identify them. (Depending on the age and stage of the children, you may decide to bring the actual objects in for them to select from, or you may wish to give them clues.) Ask the children where the camera would have been when the photographs were taken, and discuss the idea of a 'bird's eye view'.

Activity

Working in small groups, using a variety of 3D shapes and objects from around the classroom as models (these can be cereal boxes, cardboard tubes, pencil cases, shoes etc) challenge the children to draw accurate plan views which other people will be able to identify. Remind them that placing the object on the floor and looking directly down on it will produce the best results. Swap the plans with another group, and ask them to record their attempts at identification.

Plenary

Review the results of the swap – were the plan views accurate enough to allow others to work out which object had been drawn? If not, why not?

Were some objects harder to represent in plan view? Which ones, and why?

Extension

Using the objects again, ask each group to arrange them in a pattern and produce a plan view of the pattern so that someone else would be able to reproduce it simply by looking at their plan. Again, swap plans and objects with another group and ask them to reproduce the pattern using the objects.

Focus on aerial photographs

Learning intentions:

- To understand that maps are created using an aerial view
- To find information from an aerial photograph
- To interpret information from an aerial photograph
- To create a simple sketch map

Resources:

Aerial / Mapping deskmats or aerial photographs of local area; Sheet 1; magnifying glasses

Introduction

Look at aerial photograph of local area. Reinforce what is meant by 'aerial view', referring back to lesson on plan views. Compile a list of features the children can see on the photograph. How can they tell what they are? (Answers might include colour, shape, location.) You might wish to have an idea of features in the local area you would like to draw attention to, for the children to search for.

Discuss the meanings of 'human' and 'physical' in relation to features on maps and aerial photographs, using the examples on Sheet 1, and begin to sort the features on your list.

Activity

Ask the children to sort the remainder of the features from your list, using the table on Sheet 1. Using the photograph as a guide, ask the children to draw a sketch of the photograph, labelling the features on the list, using one colour for the human feature labels and another colour for the physical features.

Plenary

Look at some of the sketches, and highlight the fact that what they have actually produced are maps. Briefly discuss any obvious differences between maps and aerial photographs.

Extension

Use other aerial photographs from contrasting areas as the basis for sketch maps. Note similarities and differences between the areas, and talk about what your local area is like, compared with other localities. Some discussion of types of land use (e.g. housing, industrial, agriculture) may also be appropriate.

Focus on maps

Learning intentions:

- To learn about the features of a map
- To create a simple map
- To find information from a map

Resources:

Aerial / Mapping deskmaps or Ordnance Survey map of your local area; Sheet 2; sketch maps from previous lesson; magnifying glasses

Introduction

Look at the sketch maps created in the previous lesson. The labels tell us what the features are, but take up space on the map. So map-makers (cartographers) use symbols to tell us what the features are. Draw attention to the symbols visible on the map of your local area and the features they represent.

Activity

Ask the children to complete Sheet 2, creating their own symbols for the features shown, and adding the symbols for the features labelled on the sketch maps. The symbols should be clear and give an idea of what they represent.

Plenary

Revisit the list of features made in the previous lesson from looking at the aerial photograph. Looking carefully at the map, make another list of features that are shown on the map but not on the photograph. What is the difference between them? (Maps show features which are permanent, whereas aerial photographs may show seasonal variations, traffic jams, shadows etc.)

Extension

Children could draw a new sketch map, using their symbols instead of labels, adding a title and a key. The idea of compass directions could also be introduced, and a compass rose added to the map.

Focus on routes

Learning intentions:

- To use a map to trace a route
- To use an aerial photograph to trace a route
- To reinforce the differences between maps and aerial photographs

Resources:

Aerial / Mapping deskmaps, or aerial photographs and maps of your local area; magnifying glasses

Introduction

Look at the deskmaps, or the aerial photographs and maps, and brainstorm a list of the differences between them. These can include the way they look, the way they are created, what they show or don't show, and how they are used. Discuss the reasons for the similarities and differences.

Activity

1. Looking at the map, ask the children to track their route to school and produce a pictorial map showing significant features. They will need to consider features which appear on maps, and those which don't. It may be helpful to write a list of features to be included before starting work on the map. The map will differ from a general map of the area – it is simply showing a single route.

2. Looking at the aerial photograph, ask the children to track a route between 2 points (this could be the same for everyone, or they could decide upon their own) and write a description of the journey. This could be a factual description or a piece of creative writing inspired by the route. Again, it may be helpful to create list of significant features before starting the writing.

Plenary

Review examples of the two pieces of work. Which would be easiest to follow if you wanted to retrace the route? If children have chosen their own starting and finishing points, the rest of the class could try to guess them from the descriptions or the creative writing.

Extension

Children could create a pictorial map of a route around the school grounds and ask a partner to try to follow the route. How reliable was their map? They could then write a description of the route and ask someone else to try to follow it.

Focus on distance and compass directions

Learning intentions:

- To use compass directions to find information from an aerial photograph
- To measure distances on a map

Resources:

Aerial / Mapping deskmats, or aerial photographs and maps of your local area; Sheet 3 (compass cards); Sheet 4; Sheet 5

Introduction

Talk about the compass rose shown on the deskmats, and reinforce the compass directions if necessary. Ask 4 children to hold up cards with the compass directions on (see Sheet 3), perhaps standing in 4 corners of the room. Locate the school in the centre of the aerial photograph and name or point to features on the photograph, asking the children to point to the card which shows the correct direction from the school to that feature. (You may prefer to ask each child to hold up a card showing the direction, or to ask them to move to the appropriate corner.) Sheet 5 also shows the intermediate directions of north-east, north-west, south-east and south-west, which could be introduced at this point.

Activity

1. In pairs, ask the children to describe the location of some features on the aerial photograph to their partner, using compass directions. It may be helpful to use the intermediate directions of north-east, north-west, south-east and south-west. The other child tries to guess the feature their partner is talking about. Ask them to record the information on Sheet 4.

2. Ask the children to locate their homes on the map. (If anybody lives outside the area shown, they could use another local feature.) In pairs, ask them to measure and copy exactly the scale bar shown on the deskmat on to a strip of paper. They should then use their measure to determine the relative distances from their home to the school. This exercise can be repeated with other features and recorded on Sheet 5.

Plenary

Discuss who the children think lives closest to the school and then look at the recorded distances to see if they were correct. Who lives furthest away? Is there anyone who lives exactly the same distance away as someone else?

Extension

This activity could be extended by deciding on a few facilities that are convenient to live near e.g. shop, park, post office, health centre etc and then calculating who lives in the most convenient place by working out average distances.

Activities using compasses to determine the direction of features, buildings, or even rooms within school could lead to children writing a set of directions to a particular location or for a treasure hunt perhaps.

Focus on the local area

Learning intentions:

- To learn about the local area
- To create a variety of maps of the local area

Resources:

Digital camera; clipboards

Introduction

Explain that you will be taking a walk around the local area with the aim of creating a map. You need to decide what features should be shown on the map, so draw up a list, which you will need to take with you.

Activity

Walk around a fairly small part of the local area. Children can take photographs of features, draw sketches and make notes to help them remember exact locations and any other important information.

Back in the classroom, this information can be used to produce various types of map – sketch maps, a photographic display of where features are located, pictorial maps, written descriptions, 3D models, a taped 'walk-through' using description or sound effects.

Plenary

Review the various forms of map. Which would be the best if you needed to find your way somewhere? What about if you wanted to find out what the area is like? Or if you wanted to find out what type of houses were in the area?

Extension

Children could create a map, in any of the above formats, of their ideal place to live. They would need to think about facilities, housing, shops and leisure time.

Focus on historical mapping

Learning intentions:

- To consider historical changes in the local area
- To reinforce the differences between historical and contemporary maps
- To reinforce the differences between maps and aerial photographs

Resources:

Aerial / historical mapping deskmaps, or aerial photograph, historical map and Ordnance Survey map of the local area

Introduction

Look at the deskmaps, or the aerial photographs and maps and brainstorm a list of the differences between them. These can include the colouring, what they show or don't show, whether they have symbols or not, and their possible uses.

Activity

Looking at the aerial photograph and the historical map, ask the children, working in groups, to identify one feature that is the same on both and one feature or type of land-use that has changed. Using geographical terms, directions etc, ask them to write descriptions of the two features, including location, the type of feature, any changes that have occurred, and their thoughts on why things have or have not changed.

Repeat the exercise, this time using the up-to-date and historical maps.

Plenary

Review examples of the work and identify any changes. Are they an improvement? How might the lives of people living nearby have been affected? What changes do the children think might occur in the next 100 years?









Extension

Using the historical map, ask the children to choose two points on the map, imagine they are walking from one point to the other and describe their journey as they go. This could be an oral or written activity.

- Walk a route and create a piece of writing, art, poetry about it.
- What types of land use are visible on the aerial photograph? Does the map convey the same information?
- Is there any pattern to the land use?
- Estimate the percentage of each type of land use shown.
- Are there any potential environmental problems or issues visible either on the aerial photograph or the map?
- What type of housing is visible?
- What differences would you be able to see in the photograph if it was taken at a different time of the year?
- What transport links are visible, either on the photo or on the map? Why are they located where they are?
- Why do you think this settlement has developed like this?
- Research a particular local landmark or building.
- A poster-sized (A0) version of the Our School Aeroimage Deskmat is also available from Wildgoose (see **www.wildgoose.ac** for details), which could be displayed on the wall and used for similar activities.
- Wildgoose also produce Our School Through the Ages, which features an aerial photograph, Ordnance Survey map and nineteenth-century map of your school area. This provides evidence of historical change and introduces more opportunities for learning about the local area in historical context.
- Our School Historical Deskmat is also available from Wildgoose. The aerial photograph is shown next to a nineteenth-century map of the same area, allowing comparisons be made and changes to be identified.




Human Features and Physical Features

Complete the chart, putting features from your local area in the correct section.

| Human Feature | Physical Feature |
|---|---|
| <div>house</div>  | <div>forest</div>  |
| <div>town</div>  | <div>beach</div>  |
| <div>road</div>  | <div>river</div>  |
| <div>city</div>  | <div>valley</div>  |
| | |
| | |
| | |
| | |

Making a Map Key

- Create your own symbols for the features listed, and add more features of your own.

| Symbol | What the symbol means |
|---|------------------------|
|  | picnic site |
|  | bus stop |
|  | post office |
| | school |
| | car park |
| | railway station |
| | |
| | |

Compass cards

N

S

E

W

NE

NW

SE

SW

Using Compass Directions

[illegible]

Using a Scale Bar

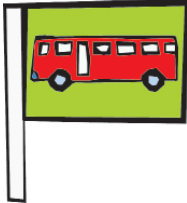

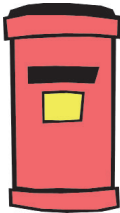





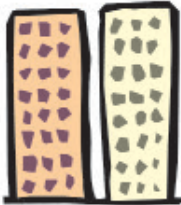




[illegible]

A map showing my route to school - Remember to think about things you see on the way and to draw any buildings you can remember.

What do you see on your way to school?

- Cut and stick to show the order you see them in.

Think about your route to school and features you see on the way. You can draw additional features in the boxes, and cut out and stick onto either a sketch map you have drawn, or create a simple linear journey.

| | | | |
|----------------|---|---------------------|---|
| bus stop |  | pedestrian crossing |  |
| postbox |  | river |  |
| phonebox |  | hill |  |
| traffic lights |  | park |  |
| flats |  | farm |  |
| church |  | | |
| shop |  | | |
| pub |  | | |



Giving directions from one place to another

- you may find it helpful to use some of these words:

Think about your route to school and features you see on the way. You can draw additional features in the boxes, and cut out and stick onto either a sketch map you have drawn, or create a simple linear journey

| | | | | |
|-------------------|-------------------|-----------------------|----------------------------|-----------------|
| left | right | straight on | next to | opposite |
| cross over | near | past | turn | corner |
| road | crossroads | traffic lights | pedestrian crossing | |

Starting point _____

Finishing point _____

You will need to go _____

You will pass _____

Next you need to go _____

You will pass _____

What do we know about our local area?

What types of building
are in our area?



What problems does traffic
cause in our area?



How do people in our area
spend their leisure time?



What types of jobs do
people in our area do?





| Learning intentions | Pupil activities | Resources | Key vocabulary | Assessment |
|---|---|---|--|--|
| <ul style="list-style-type: none">• To understand that plans are created from an aerial view• To find information from plan views• To create a plan | <p>Identify objects from above.</p> <p>Draw plan views.</p> | <p>Photographs of objects taken from above; large sheets of paper and pencils; 3D shapes and objects to sketch</p> | <p>Plan view; aerial view</p> | <p>Pupils should be able to:</p> <ul style="list-style-type: none">- explain what a plan view is- recognise objects from a plan view- draw an accurate plan view |
| <ul style="list-style-type: none">• To understand that maps are created using an aerial view• To find information from an aerial photograph• To interpret information from an aerial photograph• To create a simple sketch map | <p>Identify features on an aerial photograph.</p> <p>Classify features into human and physical.</p> <p>Create a sketch map, using the aerial photograph as a guide.</p> | <p>Aerial / Mapping deskmats or aerial photographs of local area; Sheet 1; magnifying glasses</p> | <p>Aerial photograph; human features; physical features; location; map; sketch map</p> | <p>Pupils should be able to:</p> <ul style="list-style-type: none">- recognise features on an aerial photograph- explain the difference between human and physical features- produce a map from an aerial photograph |
| <ul style="list-style-type: none">• To learn about the features of a map• To create a simple map• To find information from a map | <p>Identify symbols and what they represent on a map.</p> <p>Create symbols and a map key.</p> | <p>Aerial / Mapping deskmats or Ordnance Survey map of your local area; Sheet 2; sketch maps from previous lesson; magnifying glasses</p> | <p>Map; symbol; feature</p> | <p>Pupils should be able to:</p> <ul style="list-style-type: none">- Recognise map symbols and identify the feature they represent- Create a key for a map |
| <ul style="list-style-type: none">• To use a map to trace a route• To use an aerial photograph to trace a route• To reinforce the differences between maps and aerial photographs | <p>Trace their route to school using a map.</p> <p>Create a pictorial map.</p> <p>Trace and describe a route between 2 points, using an aerial photograph.</p> | <p>Aerial / Mapping deskmats, or aerial photographs and maps of your local area; magnifying glasses</p> | <p>Route; map; aerial photograph; pictorial; features</p> | <p>Pupils should be able to:</p> <ul style="list-style-type: none">- Use a map to trace a route- Use an aerial photograph to trace a route- Describe a route from an aerial photograph |

| Learning intentions | Pupil activities | Resources | Key vocabulary | Assessment |
|---|---|---|--|--|
| <ul style="list-style-type: none"> To use compass directions to find information from an aerial photograph To measure distances on a map | <p>Describe locations using compass directions.</p> <p>Measure the distance between home and school on the map.</p> | <p>Aerial / Mapping deskmats, or aerial photographs and maps of your local area; Sheet 3; Sheet 4; Sheet 5</p> | <p>Compass; direction; north; south; east; west; scale; distance</p> | <p>Pupils should be able to:</p> <ul style="list-style-type: none"> Use compass directions to describe a location Use a scale bar to measure distances on a map |
| <ul style="list-style-type: none"> To learn about the local area To create a variety of maps of the local area | <p>A walk around the local area.</p> <p>Create a map from the information gathered on the walk.</p> | <p>Digital camera; clipboards</p> | <p>Local; map; features; location; facilities</p> | <p>Pupils should be able to:</p> <ul style="list-style-type: none"> Assess the type of information appropriate to show on a map Use information they have collected to create a map |
| <ul style="list-style-type: none"> To consider historical changes in the local area To reinforce the differences between historical and contemporary maps To reinforce the differences between maps and aerial photographs | <p>Identify historical changes in the local area</p> <p>Identify reasons for and effects of land-use changes</p> | <p>Aerial/historical mapping deskmats, or aerial photograph, historical map and Ordnance Survey map of the local area</p> | <p>Historical; change; map; land-use</p> | <p>Pupils should be able to:</p> <ul style="list-style-type: none"> Identify and summarise changes in land-use over a period of time Recognise the differences between the information shown on aerial photographs and different types of maps |
| | | | | |



Production & ©Wildgoose Education Ltd,
for TTS-Group Ltd, Harrier Park,
Building 1, Heyworth Road, Hucknall,
Nottingham, NG15 6XJ.

Tel: 0800 1381370

Email: sales@tts-group.co.uk

Web: www.tts-group.co.uk