

Eyes in the Skies: Aerial Reconnaissance in World War I

This resource is designed mainly for younger school children (Early, First and Second Level pupils in Scotland and Early Years and Key Stages 1-3 in n), although some of the tasks can be adapted for older learners. It explores the topic of aerial reconnaissance, photography and mapping during World War I and at other time too. It uses outdoor learning, active play and observation skills for younger children and maths and technology skills for older children.

Set the Scene

At the start of World War I, while most of the major powers had some aircraft, they were not considered essential to the conflict. Any aerial reconnaissance was generally carried out using balloons, and it had proven very successful in conflicts such as the American Civil War. WWI was a new kind of war, however, and one that was set to bring about rapid advances in technology and especially the use of machine-powered aviation.

In general, military chiefs believed that, while planes might enhance the findings of aerial reconnaissance from balloons, on-the-ground cavalry and scouting parties were a much better way of gathering intelligence. This belief quickly changed as early as 1914 when, thanks to the observations of the Royal Flying Corps (hereafter RFC), the British Field Marshal Sir John French was alerted to German army movements and realigned his troops accordingly, saving them from defeat at Mons. The RFC fought in the Battle of Mons and gained its first air victory. French's first official dispatch said of the Royal Flying Corps:

Their skill, energy, and perseverance has been beyond all praise. They have furnished me with most complete and accurate information, which has been of incalculable value in the conduct of operations. Fired at constantly by friend and foe, and not hesitating to fly in every kind of weather, they have remained undaunted throughout. Further, by actually fighting in the air, they have succeeded in destroying five of the enemy's machines.

Field Marshal French noted that the German army would have surrounded his forces at Mons. This was one of many instances where aerial scouting proved its worth for the Allies.

You can read more about the development of aerial reconnaissance throughout the early part of WW1 here:

<https://blog.nationalarchives.gov.uk/blog/aerial-photography-first-world-war/>

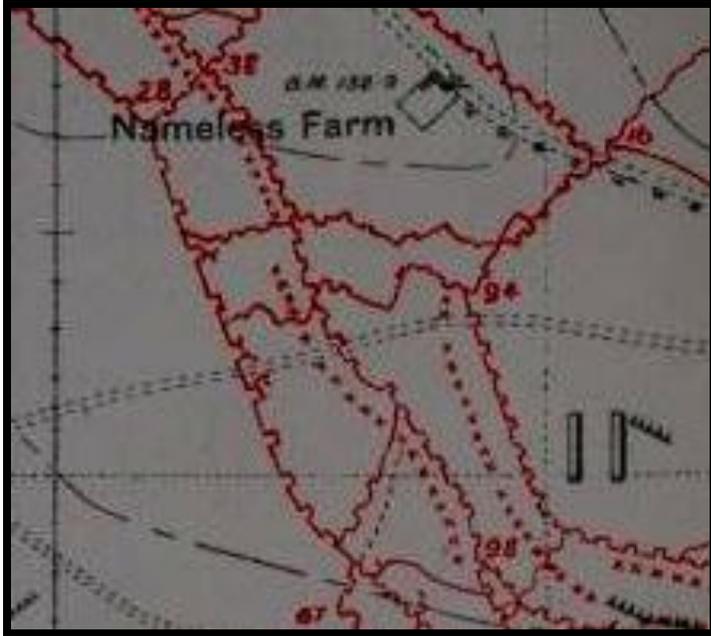
<https://firstworldwar.com/airwar/observation.htm>

Soon both sides of the conflict were using aircraft to monitor the movements of their enemies in the field. Having photographs taken from 'eyes in the skies' proved vital for both offensive and defensive planning. In 1915, a School of Photography was established at Farmborough to provide training in photography, camera maintenance, mapping and - most important of all - the interpretation of aerial photographs. It became apparent that people with archaeological training were particularly suited to interpretation.

By the middle of 1916, the RFC were able to get photographs taken, printed and ready for distribution within an hour. Cartographers found that photographs taken from 4,000 feet were the most suitable for making scale maps of the trenches and identifying features on the ground.



German trenches east of
Hebuterne, taken on 23
November 1916 (catalogue
reference: AIR
1/895/204/5/714)



Trench map detail east of Hebuterne
(catalogue reference: WO 297/6639)

Both sides of the conflict relied more heavily on aircraft as the war progressed. Aerial photographs proved more valuable than anyone had thought possible, and by the close of the war they were being produced on a huge scale: in the first six months of 1918, over three million photographs were taken from the air.

Tasks

These tasks are designed to develop pupils' skills in visual observation and numeracy, and they can be adapted for Third Level (Key Stage 3) pupils, too. They encourage children to be visually aware and consider how different views might not give a complete picture.

First and Second Level

- Discuss shapes and sizes, scale and perspective. Select objects of various shapes and sizes and use the **Eyes in the Skies Activity Sheet A** to get the children using observation and estimating skills in the playground.
- Use chalk to draw shapes across the playground. Using the **Eyes in the Skies Activity Sheet B**, send the children out in groups to find all of the shapes (approximately six) and complete the tasks.
- Using disposable cameras, ask the children to take pictures of small, medium and large objects, firstly without a scale and again with a scale. Discuss the importance of scale and relate this to everyday life. For example, a photograph of a piece of cake on a menu may look lovely, but what if it's tiny when it comes? Maybe some

trousers bought online seem to be a bargain, but oh no - they will only fit your Barbie doll! Use the photographs in any way (cut up, mixed media, etc) as part of a WWI-based art project.

Second Level

- Look at the geo-referenced maps of World War I trenches on the National Library of Scotland website: <https://maps.nls.uk/ww1/trenches/>.
- Use the **Eyes in the Skies Activity Sheet C** to explore this resource.
- Have the pupils research early aviation and its development in the early twentieth century. For example, they could research the Wright brothers: who were they, what did they do and was there another family member who is less well known? Look at the development of flight from 1900 to 1920. How did aviation technology affect World War I, and how did the conflict affect the development of aviation technology? (see Teachers Notes for Second Level below)

Third/Fourth/Senior Level

These tasks can be adapted according to learners' level and needs.

- Divide into class groups and have them investigate the role of aerial photography during WWI. Discover how aerial photographs were used during the war and how they were made into maps. Make a short Powerpoint (or other form of) presentation for the class.
- Using **Eyes in the Skies Activity Sheet D**, make a map of the Digging In trenches by tracing the aerial photograph. Create a key that identifies the elements present, getting ideas from the WWI key (<http://geo.nls.uk/mapdata3/trench/key/openlayers.html#nls>) and adding other symbols that pupils think might be useful. On the Digging In photo, the Allied trenches are to the west and the German trench is to the east. If you have the software available, use the computers to create a geo-referenced map from the photograph in GIS.
- **Eyes in the Skies Activity Sheet E** shows how to measure the scale of an aerial photograph. If your school has access to the National Collection of Aerial Photography (<https://ncap.org.uk/>), try and use this formula to scale some aerial photographs and work with maps.
- Pupils imagine they are an observer during WWI and you are in a plane over the Western Front. What do you see and experience? Research this job (online) and discover more about the lives of observers and pilots during the war. Write creatively about the experience of taking the aerial photographs over the Western Front.