# Broadcasting Maths Project – Lesson Plan 3

**Main focus of activity:**

- To model how transmitters work using scales and loci

**Learning objectives:**

- To be able to use scales
- To be able to construct Loci

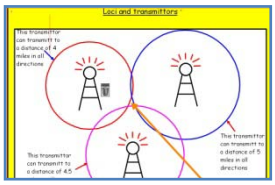
**Links to curriculum:** Links to the maths curriculum are as follows

- Scales
- Loci
- Construction

**Activity outline:**

**This lesson would make an excellent lesson whilst the construction part of the syllabus/scheme of work is being covered**

**Introduction**




- Students have a starter activity where they need to look at the ranges of three transmitters. They have to answer questions linking to the starter. For instance what happens if you live in an area which is not within one of the circles?

- The next slide models the same principle but this time overlaps a map. This time the questions are more specific geographically focused about which areas can receive broadcasts.

- The concepts can be very clearly demonstrated using the built in software within the IWB (Interactive White board)See following video clip http://videocentral.lgfl.org.uk/Watch.aspx?v=tUIKOyAGY17vEN


**Main Part of Lesson:**

Teaching and Learning:

- Pupils are given a variety of tasks involving real maps taken from Google maps.
- The questions are designed so that they have different scales.

- The students do not just have to carry out the construction but they need to apply their findings to decide if an area can receive a broadcast. The problems become progressively harder as they involve deciding on the best position of a new transmitter. (Will it cover the whole area required etc) Students will need to interpret the information which will involve other variables such as population.
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Plenary:

- How many transmitters are required to give full coverage in the UK if each transmitter has a radius of 30miles in any direction?
- How is receiving a satellite signal different to receiving a signal from transmitter?

**Notes/links**

**http://www.digitaluk.co.uk/when_do_i_switch**

http://videocentral.lgfl.org.uk/Watch.aspx?v=tUIKOyAGY17vEN