**What do numbers mean??**

Teacher-led Introductory discussion:

**Ideas**: Place value in numbers, bases

Standards:

**Numerosity:** Concrete, pictorial, symbolic

counting - how many - picture = number line, etc symbols 10s, 100s, ....

**Vocabulary** - how do you define numbers? Eg different languages

**example** - how did the Romans count? How did they add and subtract or multiply/divide...

**Place value?**  - base 10, other bases - eg Romans, computers, shepherds, India

Look at these **Celtic Shepherd “numbers”** (out in the fields they had no calculators)

- **and answer the questions on your whiteboard**



**Group work examples:**

1 - What base is being used? Justify your answer (Why?)

2 - write the equivalent of the “arabic numbers” 24 and 26 in this system (difficult?)

3 - Invent your own representative numbering system with the same base.

And write down “arabic numbers” 26, 38 and 99 in your new system.

4. Does this help you to understand “counting”?

**Whiteboard session** - discussing the group results – leading back to the introductory discussion