**NRICH Progression in Reasoning: Five stages**

**Step One** - Describing: simply tells what they did.

**Step Two** - Explaining: offers some reasons for what they did. These may or may not be correct. The argument may yet not hang together coherently. This is the beginning of inductive reasoning.

**Step Three** – Convincing: confident that their chain of reasoning is right and may use words such as ‘I reckon’ or ‘without doubt’. The underlying mathematical argument may or may not be accurate yet is likely to have more coherence and completeness than the explaining stage. This is called inductive reasoning.

**Step Four** – Justifying: a correct logical argument that has a complete chain of reasoning to it and uses words such as ‘because’, ‘therefore’, ‘and so’, ‘that leads to…’

**Step Five** – Proving: a watertight argument that is mathematically sound, often based on generalisations and underlying structure. This is also called deductive reasoning.