well_fnd_intro[12,41]

Defines predicate saying that a binary relation over some type is well-founded.
Well-foundedness is phrased in terms of a 'course of values' induction principle, since this is more useful constructively than alternative formulations (e.g. saying that there are no infinite descending chains, or saying that every non-empty subset has a minimal element). NB: constructively, these alternative formulations are not equivalent.

Lemmas and tactics are introduced for induction on the rank of an expression ('inverse image induction'). One deficiency of Nuprl's type theory is that in some situations (notably when proving well-formedness goals) lemmas are unusable, and instead one must resort to using tactics that reproduce equivalent sequences of primitive rules.
The theorem 'inv_image_ind_tp' provides a template for such a tactic that mirrors the 'inv_image_ind_a' lemma.