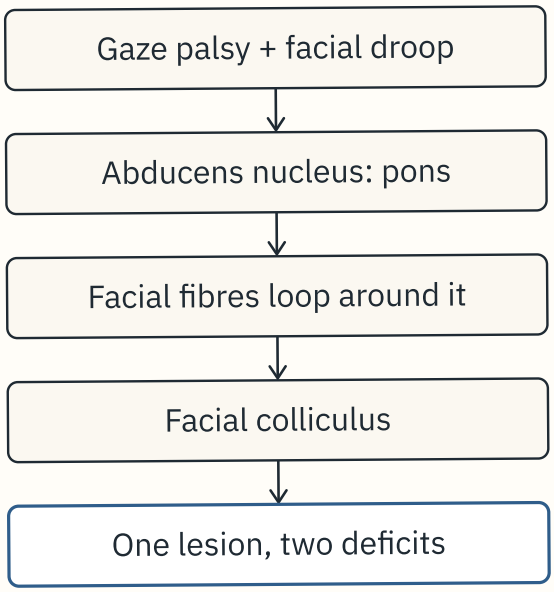
Cranial nerve nuclei in 2 rules

Place each nucleus by level and by position



Step by step

1. Rule one: level (two, four, four)
2. Rule two: sulcus limitans, motor medial, sensory lateral
3. III, IV, VI and XII lie nearest the midline
4. Nuclear lesion: usually same-side lower motor neuron signs

Level	Nuclei	Count
Midbrain	III, IV	2
Pons	V, VI, VII, VIII	4
Medulla	IX, X, XII, XI (cranial)	4
Exception	Trigeminal: all 3 levels	

Cranial nerve nuclei by level

Memory hook

Level: two, four, four

Motor medial, sensory lateral

Exam traps

- The trigeminal nuclei span midbrain, pons and medulla
- Trochlear fibres cross; oculomotor has crossed and two-sided parts
- The spinal part of XI comes from the upper cervical cord

Cranial nerve nuclei: a brainstem map by level and position

Video, written lesson, practice question and sources: medservatory.com/usmle-step-1/neuroanatomy-localisation/cranial-nerve-nuclei-brainstem-map

For exam study only, not medical advice. Follow local guidelines and your lab's ranges.
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