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## Learning Outcomes

- Be aware of the main acoustic cues that allow us to distinguish different *nasal* sounds

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## Acoustic cues - consonants

- Fricatives e.g. /s/, /f/, /ʃ/ and the voiced equivalents /z/, /v/, /ʒ/
- Plosives e.g. /p/, /t/, /k/ and /b/, /d/, /g/
- Affricates (combination of fricative and plosive) e.g. /tʃ/ as in “church” or /dʒ/ as in “jar”
- Nasals e.g. /m/, /n/ and /ŋ/ as in “ring”**
- Approximants e.g. /w/, /j/, /y/ and /l/
- For each different “manner” will look at the different place and voicing contrasts

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## Acoustics of consonant contrasts - nasals

- Main acoustic cue to nasals is a strong “nasal formant” at around 300Hz with F2 and higher resonances diminished due to energy passing through the nasal cavity rather than the buccal cavity
- F2 transitions important in distinguishing between nasals

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## Acoustics of consonant contrasts - nasals

/mɑ:/      /nɑ:/      /ŋɑ:/

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