The phonetic representation of a word consists of the phones that make up the pronunciation of a word. It is enclosed in square brackets and is made up of phonetic symbols. For example:

- friends: [frɛndz]
- ships: [ʃips]
- cow: [kʰaw]
- scow: [skaw]

If a word is pronounced differently in different dialects of English, the phonetic representation will be different. The two main dialects of English are General American (GA) and Received Pronunciation (RP) (the official British dialect), but there are many others.

- dance: GA [dæns] RP [daɲs]
- morphology: GA [mɔɹfələɹi] RP [mɔɹfələɹi]
- joker: GA [ʃəwkr] RP [ʃəwkə]

However, there is more to pronunciation (phonetics) than this.

The crucial observation that lies behind phonology is that while most things about the way a word is pronounced are unpredictable, there are predictable aspects, too. If we want to understand the nature of pronunciation, we need to be aware of the distinction between the predictable and the unpredictable. What phonology does, then, is separate those aspects of pronunciation that are predictable from those that are not predictable.

For example, consider the fact that the first phone in cow is [kʰ] and the second phone in scow is [k]. The fact that these are voiceless velar stops is unpredictable; there is no reason that these words should have such a sound. On the other hand, the fact that the one in cow is aspirated and the one in scow is unaspirated is predictable: any voiceless stop at the beginning of a word in English is aspirated. In this respect, representing the first sound of cow as [kʰ], while phonetically accurate, is misleading as a representation of what speakers of English do when they say the word. They pronounce a voiceless velar stop, which is an unpredictable element in the pronunciation of this word. When they pronounce it, they (predicably) pronounce it with aspiration. A linguistically accurate (as opposed to physically accurate) representation would therefore just say that cow begins with a voiceless velar stop—the same sound, in fact, as the second sound in scow.

This sense of “sound” in which cow and scow have the same sound is technically referred to as a phoneme, and the different predictable ways of pronouncing a phoneme are called its allophones. Notationally, phonemes are represented by putting them between slashes instead of square brackets. We can say that the English phoneme /k/ has the allophones [k] and [kʰ]. The formal expression of the unpredictable aspects of the pronunciation of a word is thus a list, in the correct sequence, of the phonemes of which the word is composed. This is called the phonemic
The predictable aspects are expressed in rules of pronunciation, technically called phonological rules. We say that the phonological rules derive the phonetic representation from the underlying representation. In this case, a phonological rule called Aspiration derives [kʰaw] from /kaw/. Informally, the rule says:

A voiceless stop becomes aspirated in the environment: beginning of the word

More formally, we can write this as:

voiceless stop → aspirated / # ___

Similarly, the pronunciation of the /t/ in the middle of bottom in GA (as [D]) and Cockney (as [?]') is due to phonological rules in those dialects. We will not state those rules here.

The pronunciation of a word is thus a result of the unpredictable aspects combined with the predictable aspects, or, in technical terminology, the phonetic representation of a word is the result of applying phonological rules to the underlying representation:

The arbitrary aspects of pronunciation are actually properties of morphemes, not words. A given morpheme (assuming it doesn’t have allomorphs) has only one underlying form, regardless of what word it is in. The underlying representation of a word with more than one morpheme is made up of the underlying representations of its morphemes. So the word friends, which is made up of morphemes with the underlying representations /frɛnd/ and /z/, has the underlying representation.
The second morpheme in the word *ships* is the same as the second morpheme in the word *friends*, so it has the same underlying representation. Since the word *ships* is made up of morphemes with the underlying representations /šw/ and /z/, its underlying representation is

/šwz/

The difference in the pronunciation of the last sound in these words ([frɛndz] vs. [ʃips]) is the result of the operation of a phonological rule. This explains our observation earlier in the course that the pronunciation of the plural morpheme is predictable.

To reiterate: underlying representation is a property of morphemes.

Consider the [ʃ] in each of the following words:

*ship*  [ʃip]
*Egyptian*  [ɪjɪpaʃən]
*electrician*  [ɛlktrɪʃən]
*sensual*  [sɛnʃʊəl]

In the word *ship*, the [ʃ] is just /ʃ/. But *Egyptian* is derived morphologically by adding the suffix -*ian* to *Egypt*. Since *Egypt* ends with a /t/, the [ʃ] in *Egyptian* must be an underlying /t/. In *electrician*, the same suffix is added to *electric*, which ends in /k/, so the [ʃ] of *electrician* is underlying /k/. Finally, *sensual* is derived from *sense*, so the [ʃ] is underlingly /s/. A phonetic [ʃ] in English can thus derive from underlying /ʃ/, /t/, /k/, or /s/. Phonological rules, which we will be discussing later, are responsible for all four of these surfacing as [ʃ].