

Guidance for Developing Your Word Wall

This unit refers to two categories of academic language (i.e., vocabulary). Most often in this unit, students will have experiences with and discussions about science ideas before they know the specific vocabulary word that names that idea. After students have developed a deep understanding of a science idea through these experiences, and sometimes because they are looking for a more efficient way to express that idea, they have “earned” that word and can add the specific term to the class Word Wall. These “words we earn” should be recorded on the Word Wall using the students’ own definition whenever possible. On the other hand, “words we encounter” are “given” to students in the course of a reading, video, or other activity, often with a definition clearly stated in the text. Sometimes, words we encounter are helpful only in that particular lesson and need not be recorded on the Word Wall. However, if a word we encounter will be frequently referred to throughout the unit, it should be added to the Word Wall. As such, the Word Wall becomes an ongoing collection of words we will continue to use, including all the words we earn in the unit and possibly a few key words we encounter.

It is best for students if you wait and create cards for the Word Wall in the moment, using definitions and pictorial representations that the class develops together as they discuss their experiences in the lesson. When they co-create the posted meaning of the word, students “own” the word—it honors their use of language and connects their specific experiences to the vocabulary of science beyond their classroom. It is especially important for emergent multilingual students to have a reference for this important vocabulary which includes an accessible definition and visual support.

Sometimes creating Word Wall cards in the moment is a challenge. The teacher guide provides a suggested definition for each term to support you in helping your class develop a student-friendly definition that is also scientifically accurate. If you keep one Word Wall in your classroom for several sections of students, you might choose to record each class’s definition separately and then propose at the next class meeting to post an “official” definition that captures the collected meaning.

The words we earn and words we encounter in this unit are listed in this document and in each lesson to help prepare and also to avoid introducing a word before students have earned it. They are not intended as a vocabulary list for students to study before a lesson, as that would undermine the authentic and lasting connection students can make with these words when they are allowed to experience them first as ideas they’re trying to figure out.

Special note about supporting emergent multilingual learners with vocabulary development: In this unit, there are words we earn that could have different meanings depending on the suffix and the word’s use in a sentence. For example the -ive in “reflective” indicates the word is an adjective, while the -ion in “reflection” indicates it’s a noun. However, the use of -ing in “reflecting” could indicate its use as an adjective or a verb. When we talk about light reflecting off a surface, it’s an action by the light. Because suffixes change the meaning of words in this way, it is especially important for you and your students not to use variations of this unit’s high-frequency words interchangeably, particularly with your emerging multilingual learners. Talk with your school’s language specialist for additional support.

Special note about systems and models: Students start to develop their understanding of “system” in Lesson 1. They use the term throughout Lessons 2–7 but do not define it until Lesson 8 when they co-construct a definition to be placed on the Word Wall. Likewise, the term “model” is also introduced in Lesson 1. Students work with both physical models and conceptual, diagrammatic models throughout Lessons 1–4. They reflect on their modeling work in Lesson 5 and define the term when they place it on the Word Wall. For more information on the unit’s approach to systems thinking and modeling, refer to the teacher background information.

Lesson	Words we learn	Words we encounter	Words we reinforce or apply from previous units
L1		one-way mirror, scale model, norm	
L2			light source
L3	reflect, transmit	independent variable, dependent variable, experimental question	
L4		silvering, transparent, opaque	
L5	model		
L6		retina, optic nerve, refract	
L7			
L8	system	scattering, specular reflection	