Teaching challenging vocabulary

Use these example Frayer models to explore, explain and consolidate new terms with your students

From Education in Chemistry rsc.li/2WXtuAz
1. Explore your key term
   - Find out what your students know about the word already.

2. Explore the key term further
   - Show the links between words and their composite parts.

3. Explain what the word means
   - Introduce the correct definition that students will need for their exams/assessments.

4. Consolidate the word
   - Get students using the word in sentences.
1. What does the word reflection mean to you? Where have you come across this word before?

2. Looking more into the word reflect
   
   Etymology
   Flect = genuflect = deflect

3. The definition of reflection and ray diagram to show this.

4. Write an explanation of why you can see yourself in a mirror. You should use the idea of reflection in your answer.
1. What does the word transmission mean to you? Where have you come across this word before?

2. Looking more into the word transmission
   Etymology
   Trans = transatlantic mission – going somewhere

3. The definition of transmission.

4. Now give two examples of where light is transmitted. They could be examples from school at home or in one of your hobbies.
1. What is a lens?
   Where have you come across this word before?

2. Looking more into the word lens
   Can you think of any words which contain the word letters 'len'?

3. Describe in your own words what a lens is and what it does.

4. Now draw a simple ray diagram to show how a lens works.
1. Where have you come across the word *incident* before? What does it mean to you? Can you use the word *incident* in a sentence?

2. Looking more into the word *incident*
   Can you think of any words which have the same meaning as *incident*?

3. What does *incident* mean in physics? Let's draw a simple ray diagram to show the incident beam.

   The angle of incidence is equal to the angle of reflection.

   There was an incident on the roads when someone got injured.

   The light beam is incident to the mirror.

4. Which of the following is the correct use of the words *incident* and *incidence*?

   - The angle of incidence is equal to the angle of reflection.
   - There was an incident on the roads when someone got injured.
   - The light beam is incident to the mirror.
1. What does the word conservation mean to you? Where have you come across this word before?

2. Definition of the word conservation.
   Can you think of any words which are similar to conservation?
   Conserve = jam

3. Draw a simple diagram(s) to describe the word ‘conservation’ AND ‘conservation of mass’.

4. Which of the following are correct uses of the words conservation and conserve?

   We need to conserve the rainforests as they provide habitats for thousands of species.

   York Minster is currently being conserved because the old brick are being replaced.

   In a chemical reaction mass is not lost or gained – it remains the same and is conserved.

   I had a conservation with my friends at lunch about the football at the weekend.
1. What does the word displacement mean to you? Where have you come across this word before?

2. Explore displacement. Dis and placement. Can you think of any similar words to displacement?

3. Definition of displacement.

4. Can you explain why this is a displacement reaction?

Calcium + copper chloride → calcium chloride + copper
1. What does the word extraction mean to you? Where have you come across this word before?

2. Explore extraction.
   Ex and traction
   Can you think of any synonyms for extraction? What is the opposite of extraction?

3. Definition of extraction.

4. Describe the process of extracting a metal from its ore. You should include a word equation as part of your answer.
1. What does the word formula mean to you? Where have you come across this word before? Can you think of any words containing the letters ‘form’?

2. Explore formula. The meaning of ‘form’

3. What is a formula in chemistry?

4. From the list below, circle/highlight the formulas.

   - CaO
   - Carbon dioxide
   - Water
   - CO
   - LiF
   - Magnesium chloride