

4. Chunking

Chunking is a simple strategy that involves dividing a task or activity into a series of small 'chunks'. Each chunk can be divided into even smaller chunks if necessary. The purpose of chunking is to make a large or difficult task much more achievable and manageable. Learning tasks that are complex, difficult or time-consuming should be divided into smaller pieces to make them easier for students.

When students complain that a task is too difficult, it's often because there are too many pieces (even if no single piece is overly challenging). Chunking helps to reduce the cognitive load and make the task more achievable. For example, say a project is expected to take 4 weeks and a student is having trouble getting started. Using a chunking strategy, the TA can help the student to divide their project into 12 stages. The student can then concentrate on one manageable stage at a time.

Hint

Don't make the assumption that students will know how to divide a task into neat sections even if it seems obvious to you – many adults can't even do this!

If a student is struggling with a maths or science question, chunking the problem down into logical sections allows both you and the student to identify exactly where the problem lies. Take a maths problem that requires 4 steps. A student will typically believe that he or she 'can't do it' when in fact only 1 step is the stumbling block. This type of chunking is also known as 'task analysis' or 'task analytic instruction'. It is commonly used when working with students who have disabilities to learn simple skills such as hand washing or tying a shoelace. Chunking can also be used for memorising lists. Remembering 18 items is nearly impossible, but remembering 3 categories that each contain 6 items might be achievable.

Here is an example of how you might chunk a basic maths question into 8 steps. You could then identify and target the step where the student is struggling.

Find the mean of the following numbers: 5, 10, 50, 100, 75, 12.

- Step 1: how is the mean calculated?
- Step 2: guess the mean from looking at the numbers.
- Step 3: add all the numbers together and write down the answer.
- Step 4: count the number of numbers and write that down too.
- Step 5: do the mean calculation: step 3 / step 4.
- Step 6: write down the answer in a sentence: 'The mean is ____'.
- Step 7: check your answer is similar to your guess (step 1).
- Step 8: double check your calculations.

Once the student can easily use this process, the number of steps might be reduced to 3 or 4. With that mastered, the student is ready to tackle more advanced calculations – if he/she gets stuck, the process is there as a reference.

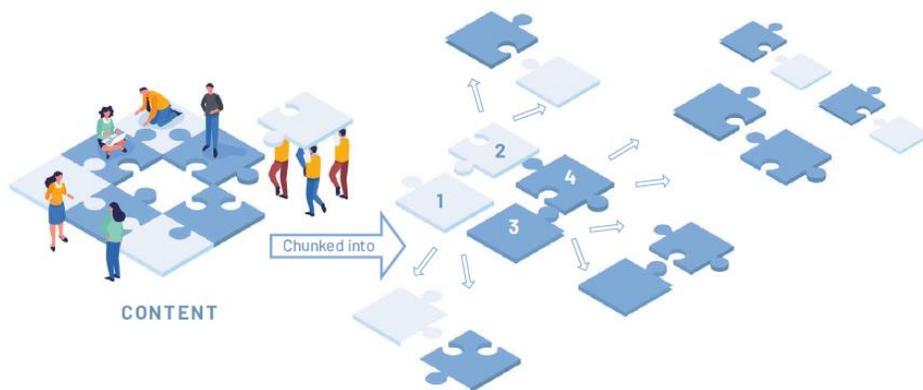


Figure 21. If a student says, 'this is too hard', it's probably because there is too much to learn at once and he or she is overwhelmed. Divide the task or concept into manageable chunks in this situation.

Here is how fading can be used in conjunction with chunking:

1. Explain how to do the task and model it for the student (go through the steps).
2. Have the student practise with a set of simple numbers (e.g., 2, 2, 4, 4).
3. Use a few different numbers so the student can practise.
4. Use more numbers (e.g., 8, and larger numbers, e.g., 120).
5. Help the student with each step while remembering the importance of prompting.
6. Once the student 'gets it', leave him/her to do 5 practice questions.