Working Memory Intervention Summary

Running the 3 Teacher led activities (‘Words’, ‘Colours’ and ‘Digits’)

- Start with the ‘Word recall’ task first.
- Load the power point file for ‘Words’ from the website, and show it on ‘slideshow’ by clicking the icon on the toolbar.
- You will need to photocopy a record sheet before you start which you complete for each child each time they play. This can be found on the website.

1. Word recall
   Structure
   - There are 7 levels, or ‘spans’, for the children to work through over the whole of the intervention time.
   - Each of the spans has 9 ‘trials’.
   - A trial is made up of one sentence for span 1, 2 sentences for span 2, 3 sentences for span 3 and so on up to 7 sentences for span 7
   - The first span (level) starts with one sentence each time. This is where all children start so they get the sense of the activity. Work through all levels, please don’t miss any out.

   Procedure
   - The child is shown the first picture and told a sentence by the teacher to describe the picture, to which they have to say whether the sentence is ‘true’ or ‘false’. There is a space to record their answer on the recording sheet.
   - They also are told to remember the last word of the sentence. You might be signing the sentences to the child and they may be signing the words when they rehearse. In this case, it is important that the last word which we want them to rehearse and remember is clear to them. (SSE)
   - Now you introduce to them how to rehearse the word to help them with recall.

Rehearsal strategy to be taught:
- Each time they have a word to remember, they need to be told to say it, or sign it, over to themselves,
  e.g. ‘shoelaces, shoelaces, shoelaces, ….
- When they have had time to rehearse like this, you then click for the next slide, the ‘?’ slide appears, the child has to recall the last word of the sentence.
- If they recall correctly, they get a score on the record sheet. If they recall incorrectly, they score 0. The recall for span 1 is not too difficult but they learn the task and procedure and will probably move quickly to span (level) 2.
- Each time they answer, you write true (T) or false (F) according to their reply and then record which word they recalled.
- When they have scored 4 by getting 4 trials correct, they have passed this span and can move on to the next.
• If they are not able to get 4 out of the nine possible attempts correct in one go, then this span is repeated the next time you do the activity.

Span 2
• In this span, they will have 2 sentences, so 2 words to remember. The final word of the second sentence is put with the one from the first sentence and rehearsed. e.g. ‘shoelaces, fish……shoelaces, fish……

• The child is encouraged to repeat the words several times, and to assign each word they are rehearsing to a finger, so they can get the 2 words in the correct order when they recall. Rehearsal is the key strategy.
• In the task, children are asked, via a slide, at regular intervals ‘What helps you remember?’
• If they have not managed to recall correctly, then this question makes them think about the strategy they need to use.
• If they have been successful, this question makes them reflect on what they did to achieve success.

True/false
• When you run the activity, if the child has considered the truth of a sentence but makes an error, saying ‘true’ when it should be ‘false’, it is not important to correct them, because this will interfere with the memory process.
• We are asking the child to do 2 things; to manipulate some information at the same time as storing other information, which is what many classroom tasks demand.
• Of course, if a child is consistently just saying ‘true’ all the way through without really considering the answer, then they need to be encouraged to answer as accurately as possible.

Teacher feedback
• Teacher feedback is vital in this task.
• If a child cannot recall the words, they must be encouraged to think about, and explain, the strategy they need to use.
• If they recall the words correctly, ‘Well done!’ does not appear as a slide, in case some children have not recalled correctly, so any positive feedback has to come from the teacher.
• If they get the words in the wrong order, it is not correct and they need to remember to rehearse in the correct order. This is when using their fingers to assign a word to a finger can be helpful and they can count them off.
• The recording sheet for their responses enables you to keep track of where each child needs to start the next session.
• If they get some trials correct, some incorrect, that’s fine, as long as at the end they have got 4 out of the possible 9 correct which enables them to move to the next span.
• Keeping an appropriate level of challenge is essential. You will see if the child is ready to move to the next span, as they will quickly get 4 trials correct.
Alternative sentences

• All children will get to a span where they need several sessions trying to get the required 4 trials correct at one go. That is what we expect.
• You will find on the website an alternative set of sentences for spans 2 up to 6, (labelled 2b, 3b etc.) so that the children have the opportunity for new sentences and pictures if they have repeated a level several times, in order that the challenge does not become too repetitive.

2. Colour Recall

• This is the second teacher led activity, which is delivered through a slide show presentation. It is introduced after the child has reached a level in ‘Word’ recall when they have tried the alternative slides for that span and need to move to a different activity for a change of context to practice rehearsal.
• Load the power point file for ‘Colours’ from the website, and show it on ‘slideshow’ by clicking the icon on the toolbar.
• Before you start, you will need to photocopy a record sheet for each child which you complete each time they do the activity. This can be found on the website.
• The child is shown a strip of colours and will be asked to remember 2 colours from the strip to start with. It runs by the same principles as the word recall.
• They will need to use the rehearsal strategy as explained above, as well as a visual strategy based on where the colour is in the strip. So make sure they look closely at positions of the colours on the strip. Recalling the position of a colour is an aide to remembering the colour.
• The task starts with 2 colours forwards, then moves on to 2 colours backwards.
• Then it moves to 3 colours forwards, then 3 colours backwards.
• This activity also goes up to 7 levels.
• To pass a level, the child needs to have 4 questions correct, achieved in one session.

3. Digits Recall

• This is the third teacher led activity, which is delivered through a slide show presentation. It is introduced after the child has reached a level in ‘Word’ and in ‘Colours’ when they have tried the alternative set of slides for that span and need to move to a different activity for a change of context to practice rehearsal.
• Load the power point file for ‘Digit’$\text{s}$ from the website, and show it on ‘slideshow’ by clicking the icon on the bottom toolbar.
• Before you start you will need to photocopy a record sheet for each child which you complete each time they do the task. This can be found on the website.
• There are seven levels and each level starts with a practice question followed by six questions.
• In each question, the child is shown a series of number strings and will be asked to recall the last digit in one of the strings at level 1, the last 2 digits in one of the
strings at level 2 and so on until they try to recall the last 5 digits in one of the strings at level 7.

- Children will need to use the rehearsal strategy as explained above, as well as a visual strategy based on where the number is in the string.
- Children do not know beforehand which string of numbers in the series they will have to recall. Each time they see a string, they rehearse it and when they have had sufficient time, you click to the next screen to see if the question marks appear.
- If the question mark slide appears, the child needs to tell you the last string they have rehearsed. You click to the next slide and the start of the string is given and the child has to recall the rest.
- Sometimes it is the first string which they have to recall, sometimes it can be the last of 5 strings which they will be asked for. So each time, they have to rehearse the string to themselves in case it is going to be the one which they are asked to recall. (If you look on the recording sheet, you can see if it will be the first, second, third etc. but the children will not know beforehand.)
- This is to give them lots of practice at rehearsing so that it becomes an automatic strategy.
- To reinforce this, children are asked, via a slide, at regular intervals ‘What helps you remember?’
- If they have not managed to recall correctly, then this question makes them think about the strategy they need to use. If they have been successful, this question makes them reflect on what they did to achieve success.
- When the child has tried to recall the last digits of the string, if you click again, the correct answer appears and the child can see if they were correct.
- To pass a level, the child needs to have 4 questions correct, achieved in one session.

**Timescale**

- We are hoping that you will be able to do the equivalent of an hour per week over 12 weeks between September and February as a minimum.

- 20 minutes of this hour per week would be teacher led activities (‘Word’, ‘Colours’ or ‘Digits’ recall) and 40 minutes for the child to work on the computer games by themselves which reinforce what you have done in the teacher led activities. (They will need some help at the start of the individual computer games, making sure they know where to click and how to record etc.)

- Always start with ‘Word recall’ first. If the child reaches a plateau and has done the alternative game for that level (3b for example), they might benefit from a change of context. This would be an opportune time to move to ‘Colours’. Remember you can always go back to Word recall later. When the child’s progress in ‘Colours’ has reached a plateau, the third activity ‘Digits’ can then be introduced.
• Children will then have had lots of experience of rehearsal and recall with words, colours and digits and we hope these activities provide an enjoyable context for the challenge.