

Supplemental Material S1. Guidelines provided to student clinicians.

Vocabulary Intervention

There are always two target words per lesson. By the end of the first week (10 lessons) each of the 20 words will be targeted. We will return to each word in pairs as the lessons continue for a cumulative total of four lessons per target word. The intervention involves modeling the target words using a variety of strategies to ensure engagement as well as eliciting the word from the child in a meaningful context.

Models

Your goal is to model each word at least **3** times per lesson.

NOTE: There will also be models in the story-book reading. These are already scripted into the book for you. Sometimes the target words will appear as part of the science lesson as well. The models that already occur in the science lesson and the storybooks do NOT count towards your goal of at least 3 models.

You will model using these strategies:

1. Child-friendly explanations

These are definitions and examples that are simple enough for the child to understand. It is especially important to use this strategy in the early lessons. It may not be necessary in later lessons when the child has already had experience with the target word.

2. Contextualizing

These are times where you ask children about their experiences within the camp (e.g., asking for an explanation of plungers popping out of syringes, something they tried earlier). You can:

- Remind them of the relevant experience: "remember when we made the plungers pop out?..."
- Use visuals (gestures, hold up the tool in question, etc.)
- Reinforce child attempts to answer. By this, we don't mean stickers; we mean praise, acknowledgment, even a high-five! If they can't answer correctly, model: "What I remember is that xxxx"

3. Recontextualizing

There are times where you help children link up the word you are teaching to their own experiences; this is called recontextualizing. For example, you may ask children about other times they have seen *multiple* of something. Especially in the beginning of camp, kids may need support to do this. Do *not* just repeat the target question/word several times. It is OK to include gestures! If kids do not respond, you can try:

- Offer some examples or choices (e.g., I saw a lot of fingers!)
- Use a yes/no question with something you *know* kids have experienced (Have you seen a lot of fingers?)
- Ask a specific child by name, a specific question: "Jo do you have pets? (Jo says dog and cat). Oh you have MULTIPLE pets, not just one!"

4. Engaging games/routines

These are meant to get the children engaged and thinking. For example: "I'm going to show you some pictures. If you see MULTIPLES say YES! If it's just one thing say No!"

5. Notebook labeling

The children will end the science lessons with their journals. In addition to doing what the science lesson requires in the journal activity, you could label a part of the child's drawing that involves one of the two target words of the lesson. For example, if the target word is 'scientist' and the child draws himself in the journal you could say, "That's you collecting the seeds! Today you were a SCIENTIST!" (and write SCIENTIST on the drawing).

You can learn more about these strategies in Beck, McKeown, and Kucan (2008), Chapters 3 and 4.

Elicitation

Your goal is to elicit each word at least **1** time per lesson.

To elicit the word from the child, it is useful to think of a hierarchy of support.

The least support is to simply ask a question: "what's this?" "what do you think?" "what did we see?"

Next is to use a carrier phrase: We didn't use REAL grass, we used a _____ (to elicit *model*).

For both questions and carrier phrases, you can add a cue if needed. That might be a gesture or a phonological cue (for example: *mmm....* To elicit *model*).

The most scaffolded way to elicit is to ask the child to imitate. "MODEL, you say it!"

If a child uses a target word, give praise/affirm her correct usage.

It is very important to try to elicit the word in a meaningful context. Don't ask them to imitate a word when the word has nothing to do with what's going on or what the child is paying attention to. Wait until the time is right, or create moments that are right. You will get better at this over time.

Children will learn the vocabulary and science better if they are paying attention. Here are some ways to help:

1. Check for eye contact. If children are not looking at you, call their attention to you.
2. Use children's names, or an attention-getting into (Oh wow, Sam! Listen to this!)
3. Hold onto the materials while talking, or otherwise avoid active exploration during the few seconds you need to go through this section.
4. MOST IMPORTANT OF ALL, be prepared with your science so that you can work at a pace that keeps the child interested. Be flexible. If the child initiates, don't ignore!

Reference

Beck, I. L., McKeown, M. G., & Kucan, L. (2008). *Creating robust vocabulary: Frequently asked questions and extended examples*. Guilford Press.