

Attachment 22

List Sorting

Name of test: List Sorting

Estimated time burden: 10 minutes

Estimated number of items: Children up to 34; Adults up to 30

Materials:

Speakers
Laptop & mouse
Computer monitor

Description:

This task assesses working memory and requires the participant to sequence different visually and orally presented stimuli. Pictures of different foods and animals are displayed with both a sound clip and written text that name the item. The task has two different conditions: 1-List and 2-List. In the 1-List condition, participants are required to order a series of objects (either food or animals) in size order. In the 2-List condition, participants are presented both food and animals and are asked to report the food in size order, followed by the animals in size order.

Children ages 3 to 6 are given 4 practice items in each condition: a 2-stimulus item in which both images appear simultaneously, a 3-stimulus "simultaneous" item, a 2-stimulus item in which the images briefly flash on the screen one at a time, and a 3-stimulus "flashing" item. Participants ages 7-85 receive 2 practice items in each condition: a 2-stimulus "flashing" item and a 3-stimulus "flashing" item. All of the actual test items are presented in a "flashing" manner.

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Ages 3-6:

For the youngest age group, each practice item has multiple questions. Letters designate the question (e.g., A, B). Children have three opportunities to answer each question correctly, and the examiner records #1, 2, or 3 on the examiner screen based on which of those trials the child answered correctly. The final choice on the examiner screen is #4, and indicates the conditions for which the test will be discontinued and no more items will be presented.

1-List Practice Item 1 (1LP1):

Say: “Now, we’re going to look at things that are different sizes. Some of the things are small and some things are big (use hand gestures). Your job is to tell me what is smallest and what is biggest. Let’s start by looking at some pictures of animals together.” Click on **NEXT** and **PLAY Dog, Horse** and say: “This is a dog (point to the dog on the screen) and this is a horse (point to the horse).”

Question A, Trial 1:

Say: “Tell me which animal is the smaller animal.” If the child does not respond, say: “Which is smaller, the DOG or the HORSE?”

Correct Response:

If the child says “DOG,” say: “Good job,” choose #1 on the examiner’s screen, click **NEXT**, and ask Question B, Trial 1.

Incorrect Response:

If the child does not say “DOG,” say: “Let’s try that again.”

Question A, Trial 2: say: “See, the DOG is smaller than the HORSE (point out the relative sizes using gestures on the screen). Now, tell me the smaller animal.”

If the child does not say “DOG,” say: “Let’s try that once more.”

Question A, Trial 3: say: “See, the DOG is smaller than the HORSE (point out the relative sizes using gestures on the screen). Now, tell me the smaller animal.”

If the child answers correctly after Trial 2, choose #2 or after Trial 3, choose #3 on the examiner’s screen, say, “Good job,” click **NEXT**, and ask Question B, Trial 1.

If the child still answers incorrectly after 3 tries, choose #4 on the examiner’s screen, and the **test will be discontinued.**

Question B, Trial 1:

Say: **“Now, tell me the bigger animal.”**

Correct Response:

If the child says “HORSE,” say: “**Good job,**” choose #1, and go to 1-List Practice Item 2 by clicking **NEXT.**

Incorrect Response:

If the child does not say “HORSE,” say: “**Let’s try that again.**”

Question B, Trial 2: say: “**See, the HORSE is bigger than the DOG** (point out the relative sizes using gestures on the screen). **Now, tell me the bigger animal.**”

If the child does not say “HORSE,” say: “**Let’s try that once more.**”

Question B, Trial 3: say: “**See, the HORSE is bigger than the DOG** (point out the relative sizes using gestures on the screen). **Now, tell me the bigger animal.**”

If the child answers *correctly* after Trial 2, choose #2, or after Trial 3, choose #3, say: “**Good Job,**” and go to 1-List Practice Item 2 by clicking **NEXT.**

If the child still answers *incorrectly* after 3 tries, choose #4, and **the test will be discontinued.**

1-List Practice Item 2 (1LP2):

Say: **Now we are going to do some more.** Click on **NEXT** and **PLAY: Rabbit, Sheep, Elephant.** **“This is a RABBIT** (point to the RABBIT on the screen); **this is a SHEEP** (point to the SHEEP); **and this is an ELEPHANT** (point to the ELEPHANT).”

Question A, Trial 1:

Say: **“Tell me the smallest animal.”**

Correct Response:

If the child says “RABBIT,” say: “**Good job,**” choose #1, click **NEXT,** and ask Question B, Trial 1.

Incorrect Response:

If the child does not say “RABBIT,” say: “**Let’s try that again.**”

Question A, Trial 2: say: **“See, the RABBIT is smaller than the SHEEP (point to the RABBIT and the SHEEP and use hand gestures to indicate relative size), and the RABBIT is smaller than the ELEPHANT (point to the RABBIT and the ELEPHANT and use hand gestures to indicate relative size). The RABBIT is the smallest animal. OK, now you tell me the smallest animal.”**

If the child does not say “RABBIT,” say: **“Let’s try that once more.”**

Question A, Trial 3: say: **“See, the RABBIT is smaller than the SHEEP (point to the RABBIT and the SHEEP and use hand gestures to indicate relative size), and the RABBIT is smaller than the ELEPHANT (point to the RABBIT and the ELEPHANT and use hand gestures to indicate relative size). The RABBIT is the smallest animal. OK, now you tell me the smallest animal.”**

If the child answers correctly after Trial 2, choose #2 or after Trial 3, choose #3, say: **“Good job,”** click **NEXT**, and ask Question B, Trial 1.

If the child still answers incorrectly after 3 tries, choose #4, and the test will be discontinued.

Question B, Trial 1:

Say: **“Now tell me the NEXT biggest animal.”**

Correct Response:

If the child says “SHEEP,” say: **“Good job,”** choose #1, click **NEXT** and ask Question C, Trial 1.

Incorrect Response:

If the child does not say “SHEEP,” say: **“Let’s try that again.”**

Question B, Trial 2: say: **“See, the SHEEP is bigger than the RABBIT (point to the RABBIT and the SHEEP and use hand gestures to indicate relative size) and the SHEEP is smaller than the ELEPHANT (point to the ELEPHANT and the SHEEP and use hand gestures to indicate relative size). We know that the RABBIT is the smallest animal; tell me the next biggest animal.”**

If the child does not say “SHEEP,” say: **“Let’s try that once more.”**

Question B, Trial 3: say: **“See, the SHEEP is bigger than the RABBIT (point to the RABBIT and the SHEEP and use hand gestures to indicate relative size) and the SHEEP is smaller than the ELEPHANT (point to the ELEPHANT and the SHEEP and use**

hand gestures to indicate relative size). **We know that the RABBIT is the smallest animal; tell me the next biggest animal.**

If the child answers correctly after Trial 2, choose #2 or after Trial 3, choose #3, say: “Good job,” click NEXT, and ask Question C, Trial 1.

If the child still answers incorrectly after 3 tries, choose #4, and the **test will be discontinued.**

Question C, Trial 1:

Say: **“Now tell me the biggest animal.”**

Correct Response:

If the child says “ELEPHANT,” say: “Good job,” choose #1, **and** move to 1-List Practice Item 3 by clicking NEXT.

Incorrect Response:

If the child does not say “ELEPHANT,” say: “Let’s try that again.”

Question C, Trial 2: say: “See, the ELEPHANT is bigger than the RABBIT (point to the RABBIT and the ELEPHANT and use hand gestures to indicate relative size), **and the ELEPHANT is bigger than the SHEEP** (point to the ELEPHANT and the SHEEP and use hand gestures to indicate relative size). **We know that the RABBIT is the smallest animal, and the SHEEP is the next biggest animal; tell me the biggest animal.**”

If the child does not say “ELEPHANT,” say: “Let’s try that once more.”

Question C, Trial 3: say: “See, the ELEPHANT is bigger than the RABBIT (point to the RABBIT and the ELEPHANT and use hand gestures to indicate relative size), **and the ELEPHANT is bigger than the SHEEP** (point to the ELEPHANT and the SHEEP and use hand gestures to indicate relative size). **We know that the RABBIT is the smallest animal, and the SHEEP is the next biggest animal. Now tell me the biggest animal.**”

If the child answers correctly after Trial 2, choose #2 or after Trial 3, choose #3, say: “Good Job,” and move to 1-List Practice Item 3 by clicking NEXT.

If the child still answers *incorrectly* after 3 tries, choose #4, and the **test will be discontinued.**

1-List Practice Item 3 (**1LP3**):

Say: “**Now we are going to do some more. This time, you’re only going to see one picture at a time. You have to remember what you see and tell me the smaller and then the bigger animal. Let’s start by looking together.**”
PLAY Dog, Horse series.

Question A, Trial 1:

When the screen is blank, say: “**Now, tell me the smaller animal.**”

Correct Response:

If the child says “DOG,” say: “**Good job,**” choose #1, click **NEXT**, and ask Question B, Trial 1.

Incorrect Response:

If the child does not say “DOG,” say: “**Let’s try that again.**”

Question A, Trial 2: say: “**The DOG is smaller than the HORSE. Now, tell me the smaller animal.**”

If the child does not say “DOG,” say: “**Let’s try that once more.**”

Question A, Trial 3: **REPLAY** Dog, Horse series and say: “**See, the DOG is smaller than the HORSE. Now, tell me the smaller animal.**”

If the child answers *correctly* after Trial 2, choose #2 or after Trial 3, choose #3, say: “**Good job,**” click **NEXT**, and ask Question B, Trial 1.

If the child still answers *incorrectly* after 3 tries, choose #4, and the **test will be discontinued.**

Question B, Trial 1:

Say: “**Now, tell me the bigger animal.**”

Correct Response:

If the child says “HORSE,” say: “**Good job,**” choose #1, and move to 1-List Practice Item 4 by clicking **NEXT**.

Incorrect Response:

If the child does not say “HORSE,” say: “**Let’s try that again.**”

Question B, Trial 2: say: **"The HORSE is bigger than the DOG. Now, tell me the bigger animal."**

If the child does not say "HORSE," say: **"Let's try that once more."**

Question B, Trial 3: **REPLAY** Dog, Horse series and say: **"See, the HORSE is bigger than the DOG. Now, tell me the bigger animal."**

If the child answers correctly after Trial 2, choose #2 or after Trial 3, choose #3, say: **"Good Job,"** and move on to 1-List Practice Item 4 by clicking **NEXT**.

If the child still answers incorrectly after 3 tries, choose #4, and the **test will be discontinued**.

1-List Practice Item 4 (1LP4):

Say: **"Now we are going to do some more. Are you ready?"** PLAY Rabbit, Sheep, Elephant series.

Question A, Trial 1:

When the screen is blank, say: **"Tell me the smallest animal."**

Correct Response:

If the child says "RABBIT," say: **"Good job,"** choose #1, click **NEXT**, and ask Question B, Trial 1.

Incorrect Response:

If the child does not say "RABBIT," say: **"Let's try that again."**

Question A, Trial 2: say: **"The RABBIT is smaller than the SHEEP and the RABBIT is smaller than the ELEPHANT. The RABBIT is the smallest animal. OK, now you tell me the smallest animal."**

If the child does not say "RABBIT," say: **"Let's try that again."**

Question A, Trial 3: **REPLAY** Rabbit, Sheep, Elephant series one more time and say: **"See, the RABBIT is smaller than the SHEEP and the RABBIT is smaller than the ELEPHANT. The RABBIT is the smallest animal. OK, now you tell me the smallest animal."**

If the child says "RABBIT" after Trial 2, choose #2 or after Trial 3, choose #3, say: **"Good job,"** click **NEXT** and ask Question B, Trial 1.

If the child still answers incorrectly after 3 tries, choose #4, and the **test will be discontinued.**

Question B, Trial 1:

Say: "Now tell me the **NEXT biggest animal.**"

Correct Response:

If the child says "SHEEP," say: "**Good job,**" choose #1, click **NEXT**, and ask *Question C, Trial 1.*

Incorrect Response:

If the child does not say "SHEEP," say: "**Let's try that again.**"

Question B, Trial 2: say: "**The SHEEP is bigger than the RABBIT and the SHEEP is smaller than the ELEPHANT. We know that the RABBIT is the smallest animal; tell me the next biggest animal.**"

If the child does not say "SHEEP," say: "**Let's try that once more.**"

Question B, Trial 3: **REPLAY** Rabbit, Sheep, Elephant series one more time and say: "**The SHEEP is bigger than the RABBIT and the SHEEP is smaller than the ELEPHANT. We know that the RABBIT is the smallest animal; tell me the next biggest animal.**"

If the child answers correctly after Trial 2, choose #2 or after Trial 3, choose #3, say: **Good job,**" click **NEXT** and ask *Question C, Trial 1.*

If the child still answers incorrectly after 3 tries, choose #4, and the **test will be discontinued.**

Question C, Trial 1:

Say: "Now tell me the **biggest animal.**"

Correct Response:

If the child says "ELEPHANT," say: "**Good job,**" choose #1, and move to the 1-List Test Items by clicking **NEXT.**

Incorrect Response:

If the child does not say "ELEPHANT," say: "**Let's try that again.**"

Question C, Trial 2: say: “**The ELEPHANT is bigger than the RABBIT and the ELEPHANT is bigger than the SHEEP. We know that the RABBIT is the smallest animal, and the SHEEP is the next biggest animal; tell me the biggest animal.**”

If the child does not say “ELEPHANT,” say: “**Let’s try that one more time.**”

Question C, Trial 3: **REPLAY** Rabbit, Sheep, Elephant series one more time and say: “**The ELEPHANT is bigger than the RABBIT and the ELEPHANT is bigger than the SHEEP. We know that the RABBIT is the smallest animal, and the SHEEP is the next biggest animal; tell me the biggest animal.**”

If the child answers correctly after Trial 2, choose #2 or after Trial 3, choose #3, say: “**Good job,**” and move to the 1-List Test Items by clicking **NEXT.**

If the child still answers incorrectly after 3 tries, choose #4, and the **test will be discontinued.**

1-List Test Items:

Say: “**Let’s look at some more pictures. Remember, after you see the pictures you will see a blank screen. Once you see this blank screen, I want you to tell me what you just saw in size order from smallest to biggest.**”

Continue: “**It is important to pay attention to the size of the object on the screen when putting things in size order from smallest to biggest.**”

PLAY: Pig, Mouse series. Mark the item CORRECT (“Yes”) or INCORRECT (“No”) based on the child’s response.

If the child makes a CORRECT response, the computer will bring up the *Pumpkin, Strawberry, Banana* series and continue until the child completes all the items or until a discontinue criterion is met. If the child makes an INCORRECT response, the computer will bring up another 2-stimulus series: *Bird, Cow*. If a child does not succeed with the first item of a set, the second item will be presented (see Table 1 and Table 2 at the end of the instructions for a list of 1-List and 2-List test items).

2-List Practice Item 1 (**2LP1**):

Say: “**We’re going to look at more pictures. This time, you will see both food and animals. I’d like you to tell me the food first, and then the animals. Let’s**

start by looking at some more pictures together.” PLAY Bear, Banana and say: “This is a BEAR (point to the bear) and this is a BANANA” (point to the banana).

Question A, Trial 1:

Say: **“Tell me which one is a food.”**

Correct Response:

If the child says “BANANA,” say: “Good job,” choose #1, click **NEXT**, and go to Question B, Trial 1.

Incorrect Response:

If the child does not say “BANANA,” say: “Let’s try that again.”

Question A, Trial 2: say: “The BEAR is an animal; the BANANA is a food. OK, now you tell me the food.”

If the child does not say “BANANA,” say: “Let’s try that one more time.”

Question A, Trial 3: say: “The BEAR is an animal; the BANANA is a food. OK, now you tell me the food.”

If the child answers “BANANA” after Trial 2, choose #2 or after Trial 3, choose #3, say: “Good job,” click **NEXT**, and go to Question B, Trial 1.

If the child still answers incorrectly after 3 tries, choose #4, and the **test will be discontinued**.

Question B, Trial 1:

Say, **“Now tell me the animal.”**

Correct Response:

If the child says “BEAR,” say: “Good job,” choose #1 and go to 2-List Practice Item 2 by clicking **NEXT**.

Incorrect Response:

If the child does not say “BEAR,” say: “Let’s try that again.”

Question B, Trial 2: say: “The BANANA is a food; the BEAR is an animal. OK, tell me the animal.”

If the child does not say “BEAR,” say: “Let’s try that again.”

Question B, Trial 3: say: “The BANANA is a food; the BEAR is an animal. OK, tell me the animal.”

If the child answers "BEAR" after Trial 2, choose #2 and after Trial 3, choose #3, say: "Good Job," and go on to 2-List Practice Item 2 by clicking NEXT.

If the child still answers incorrectly after 3 tries, choose #4, and the test will be discontinued.

2-List Practice Item 2 (2LP2):

Say: "Now we are going to do some more." PLAY Pineapple, Frog, Tiger series.

Say: "This is a PINEAPPLE (point to the pineapple); this is a FROG (point to the frog); and this is a TIGER" (point to the tiger).

Question A, Trial 1:

Say: "Tell me the food."

Correct Response:

If the child says "PINEAPPLE," say: "Good job," choose #1, click NEXT, and go to Question B, Trial 1.

Incorrect Response:

If the child does not say "PINEAPPLE," say: "Let's try that again."

Question A, Trial 2: say: "The FROG and TIGER are animals and the PINEAPPLE is a food (point to the frog, tiger and pineapple). Now, tell me the food."

If the child does not say "PINEAPPLE," say: "Let's try that again."

Question A, Trial 3: say: "The FROG and TIGER are animals and the PINEAPPLE is a food (point to the frog, tiger and pineapple). Now, tell me the food."

If the child says "PINEAPPLE" after Trial 2, choose #2 and after Trial 3, choose #3, say: "Good job," click NEXT and go to Question B, Trial 1.

If the child still answers incorrectly after 3 tries, choose #4, and the test will be discontinued.

Question B, Trial 1:

Say: "Tell me the smaller animal."

Correct Response:

If the child says "FROG," say: "Good job," choose #1, click NEXT, and go to Question C, Trial 1.

Incorrect Response:

If the child does not say "FROG," say: "Let's try that again."

Question B, Trial 2: say: "The FROG and TIGER are animals and the FROG is smaller than the TIGER (point to the frog and the tiger and use hand gestures to indicate relative size). The FROG is the smaller animal. OK, now you tell me the smaller animal."

If the child does not say "FROG," say: "Let's try that one more time."

Question B, Trial 3: say: "The FROG and TIGER are animals and the FROG is smaller than the TIGER (point to the frog and the tiger and use hand gestures to indicate relative size). The FROG is the smaller animal. OK, now you tell me the smaller animal."

If the child says "FROG" after Trial 2, choose #2 or after Trial 3, choose #3, say, **Good Job,** click **NEXT,** and go to Question C, Trial 1.

If the child still answers *incorrectly* after 3 tries, choose #4, and the **test will be discontinued.**

Question C, Trial 1:

Say: "Tell me the bigger animal."

Correct Response:

If the child says "TIGER," say: "**Good job,**" choose #1, and go to 2-List Practice Item 3 by clicking **NEXT.**

Incorrect Response:

If the child does not say "TIGER," say: "Let's try that again."

Question C, Trial 2: say: "The FROG and TIGER are animals and the TIGER is bigger than the FROG (point to the frog and the tiger and use hand gestures to indicate relative size). The FROG is the smaller animal, and the TIGER is the bigger animal. OK, now you tell me the bigger animal."

If the child does not say "TIGER," say: "Let's try that one more time."

Question C, Trial 3: say: "The FROG and TIGER are animals and the TIGER is bigger than the FROG (point to the frog and

the tiger and use hand gestures to indicate relative size). **The FROG is the smaller animal, and the TIGER is the bigger animal. OK, now you tell me the bigger animal.**

If the child answers correctly after Trial 2, choose #2 or after Trial 3, choose #3, say: “Good Job,” and go to 2-List Practice Item 3 by clicking NEXT.

If the child still answers incorrectly after 3 tries, choose #4, and the **test will be discontinued.**

2-List Practice Item 3 (2LP3):

Say: “Now we are going to do some more. This time, we’re only going to see one picture at a time. You are going to have to remember what you saw AND tell me the food first, then the animal. Let’s start by looking together.”
PLAY Bear, Banana series.

Question A, Trial 1:

When the screen is blank, say, “Tell me the food.”

Correct Response:

If the child says “BANANA,” say: “Good job,” choose #1, click NEXT, and go to Question B, Trial 1.

Incorrect Response:

If the child does not say “BANANA,” say: “Let’s try that again.”

Question A, Trial 2: say: “You saw a BANANA and a BEAR; the BANANA is a food and the BEAR is an animal. Now you tell me the food.”

If the child does not say “BANANA,” say: “Let’s try that again.”

Question A, Trial 3: REPLAY Bear, Banana series one more time and say: “You saw a BANANA and a BEAR; the BANANA is a food and the BEAR is an animal. Now you tell me the food.”

If the child says “BANANA” after Trial 2, choose #2 or after Trial 3, choose #3, say: “Good job,” click NEXT, and go to Question B, Trial 1.

If the child still answers incorrectly after 3 tries, choose #4, and the **test will be discontinued.**

Question B, Trial 1:

Say: “Now tell me the animal.”

Correct Response:

If the child says "BEAR," say: "Good job," choose #1, click NEXT, and go to Question C, Trial 1.

Incorrect Response:

If the child does not say "BEAR," say: "Let's try that again."

Question B, Trial 2: say: "You saw a BANANA and a BEAR; the BANANA is a food and the BEAR is an animal. Now, you tell me the animal."

If the child does not say "BEAR," say: "Let's try that once more."

Question B, Trial 3: REPLAY Bear, Banana series one more time and say: "You saw a BANANA and a BEAR; the BANANA is a food and the BEAR is an animal. Now, you tell me the animal."

If the child says "BEAR" after Trial 2, choose #2 or Trial 3, choose #3, say: "Good job," click NEXT and go to Question C, Trial 1.

If the child still answers incorrectly after 3 tries, choose #4, and the test will be discontinued.

Question C, Trial 1:

After the child correctly identifies the food and the animal separately, PLAY Bear, Banana series again and say: "Now, tell me the food, then the animal."

Correct Response:

If the child says "BANANA, BEAR," choose #1, say: "Good job," and move on to 2-List Practice Item 4 by clicking NEXT.

Incorrect Response:

If the child says "BEAR, BANANA" or some other incorrect pair of words, say: "Let's try that again."

Question C, Trial 2: say: "You saw a BANANA and a BEAR; the BANANA is a food and the BEAR is an animal. Now tell me the food first, then the animal."

If the child says "BEAR, BANANA" or some other incorrect pair of words, say: "Let's try that once more."

Question C, Trial 3: **REPLAY** Bear, Banana series one more time and say: “The BEAR is an animal; the BANANA is a food. Now, tell me the food, then the animal.”

If the child says “BANANA, BEAR” after Trial 2, choose #2 or after Trial 3, choose #3, say: “Good job,” and move on to 2-List Practice Item 4 by clicking **NEXT**.

If the child still answers incorrectly after 3 tries, choose #4, and the **test will be discontinued**.

2-List Practice Item 4 (2LP4):

Say: “**Now we are going to do some more. Are you ready?**” PLAY Pineapple, Frog, Tiger series.

Question A, Trial 1:

When the screen is blank, say: “Tell me the food.”

Correct Response:

If the child says “PINEAPPLE,” say: “Good job,” choose #1, click **NEXT**, and go to Question B, Trial 1.

Incorrect Response:

If the child does not say “PINEAPPLE,” say: “Let’s try that again.”

Question A, Trial 2: say: “You saw a PINEAPPLE, a FROG and a TIGER. The PINEAPPLE is a food and the FROG and TIGER are animals. Tell me the food.”

If the child does not say “PINEAPPLE,” say: “Let’s try that once more.”

Question A, Trial 3: **REPLAY** Pineapple, Frog, Tiger series one more time and say: “You saw a PINEAPPLE, a FROG and a TIGER. The PINEAPPLE is a food and the FROG and TIGER are animals. Tell me the food.”

If the child says “PINEAPPLE” after Trial 2, choose #2 or after Trial 3, choose #3, say: “Good job,” click **NEXT** and go to Question B, Trial 1.

If the child still answers incorrectly after Trial 3, choose #4, and the **test will be discontinued**.

Question B, Trial 1:

Say: "Now tell me the smaller animal."

Correct Response:

If the child says "FROG," say: "Good job," choose #1, click **NEXT**, and go to *Question C, Trial 1*.

Incorrect Response:

If the child does not say "FROG," say: "Let's try that again."

Question B, Trial 2: say: "You saw a PINEAPPLE, a FROG and a TIGER; the FROG and TIGER are animals and the FROG is smaller than the TIGER. The FROG is the smaller animal. Now you tell me the smaller animal."

If the child does not say "FROG," say: "Let's try that again."

Question B, Trial 3: **REPLAY** Pineapple, Frog, Tiger series one more time and say: "You saw a PINEAPPLE, a FROG and a TIGER; the FROG and TIGER are animals and the FROG is smaller than the TIGER. The FROG is the smaller animal. Now you tell me the smaller animal."

If the child says "FROG" after Trial 2, choose #2 or after Trial 3, choose #3, say: "Good job," click **NEXT** and go to *Question C, Trial 1*.

If the child still answers incorrectly after Trial 3, choose #4, and the **test will be discontinued**.

Question C, Trial 1:

Say: "Now tell me the bigger animal."

Correct Response:

If the child says "TIGER," say: "Good job," choose #1, click **NEXT**, and go to *Question D, Trial 1*.

Incorrect Response:

If the child does not say "TIGER," say: "Let's try that again."

Question C, Trial 2: say: "You saw a PINEAPPLE, a FROG and a TIGER; the FROG and TIGER are animals and the TIGER is bigger than the FROG. The TIGER is the bigger animal. Now you tell me the bigger animal."

If the child does not say "TIGER," say: "Let's try that one more time."

Question C, Trial 3: **REPLAY** Pineapple, Frog, Tiger series one more time and say: "You saw a PINEAPPLE, a FROG and

a TIGER; the FROG and TIGER are animals and the TIGER is bigger than the FROG. The TIGER is the bigger animal. Now you tell me the bigger animal."

If the child says "TIGER" after Trial 2, choose #2 or after Trial 3, choose #3, say: "Good job," click NEXT and go to Question D, Trial 1.

If the child still answers incorrectly after Trial 3, choose #4, and the **test will be discontinued.**

Question D, Trial 1:

Say: "Now tell me the food first and then the animals in size order."

Correct Response:

If the child says "PINEAPPLE, FROG, TIGER," say: "Good job," choose #1, and go to the 2-List Test items by clicking **NEXT.**

Incorrect Response:

If the child gives the wrong order, say: "Let's try that again."

Question D, Trial 2: say: "You saw a PINEAPPLE, a FROG and a TIGER; the FROG and TIGER are animals and the TIGER is bigger than the FROG. Now, tell me the food in size order starting with the smallest food, and THEN the animals in size order, from smallest to biggest."

If the child gives the wrong order, say: "Let's try that once more."

Question D, Trial 3: **REPLAY** Pineapple, Frog, Tiger series one more time and say: "You saw a PINEAPPLE, a FROG and a TIGER; the FROG and TIGER are animals and the TIGER is bigger than the FROG. Now, tell me the food in size order starting with the smallest food, and THEN the animals in size order, from smallest to biggest."

If the child answers correctly after Trial 2, choose #2 or after Trial 3, choose #3, say: "Good Job," and go to the 2-List Test items by clicking **NEXT.**

If the child still answers incorrectly after Trial 3, choose #4, and the **test will be discontinued.**

2-List Test Items

Say: **“Let’s look at some more pictures. Remember, after you see the pictures you will see a blank screen. Once you see this blank screen, tell me the food first, then the animal.”**

Continue: **“It is important to pay attention to the size of the object on the screen when putting things in size order from smallest to biggest. “**

PLAY *Cow, Popcorn.* Mark the item *CORRECT* (“Yes”) or *INCORRECT* (“No”) based on the child’s response.

After the first item has been completed, say: **“Let’s look at some more pictures. Remember, after you see the pictures you will see a blank screen. Once you see this blank screen, tell me the foods first, in size order from smallest to biggest, then the animals, in size order from smallest to biggest. Ready?”**

If the child makes a *CORRECT* response to *Cow, Popcorn*, the computer will bring up the 3-stimulus item: *Elephant, Pumpkin, Duck*, and continue until the child completes all the items or until a discontinue criterion is met. If the child makes an *INCORRECT* response to *Cow, Popcorn*, the computer will bring up another 2-stimulus item: *Rabbit, Corn*. If a child does not succeed with the first item of a set, the second item will be presented. If a child is incorrect on both parts of an item set, the test is discontinued.

Ages 7-85:

Participants have 3 tries to answer practice items correctly; these are indicated by trial 1, 2 or 3 below, and the examiner records #1, 2, or 3 on the examiner screen based on which of those trials the participant answered correctly. The last choice on the examiner screen is 4, and indicates the conditions for which the test will be discontinued and no more items will be presented.

1-List Practice Item 1 (1LP1):

Say: "I'm going to show you some pictures one at a time on the screen. After each set of pictures, you will see a blank screen. When you see the blank screen, I want you to tell me the names of the pictures in size order from smallest to biggest. For example, if I show you a motorcycle, a bus, and a car, you would say: motorcycle, car, bus. Do you have any questions? Let's practice." **PLAY** Horse, Dog series.

Trial 1: When the screen is blank, say: "Tell me the animals in size order."

Correct Response:

If the participant says "DOG, HORSE," say: "That's right," choose #1 on the examiner's screen, and go to 1-List Practice Item 2 by clicking **NEXT**.

Incorrect Response:

If the participant does not say "DOG, HORSE," say: "Let's try that again."

Trial 2: say: "You saw a DOG and a HORSE; the DOG is smaller than the HORSE. Tell me the animals in size order."

If the participant does not say "DOG, HORSE," say: "Let's try that one more time."

Trial 3: **REPLAY** HORSE, DOG series once more and say, "You saw a DOG and a HORSE; the DOG is smaller than the HORSE. Tell me the animals in size order. Now you tell me the smaller animal (wait for response). Now tell me the bigger animal."

If the participant answers both parts of the question correctly after Trial 2, choose #2 or after Trial 3, choose #3 on the examiner's screen, say: "Good," go to 1-List Practice Item 2 by clicking **NEXT**.

If the participant still answers one or both parts of the question incorrectly, choose #4 on the examiner's screen, and the **test will be discontinued.**

1-List Practice Item 2 (1LP2):

Say: "Now we are going to do some more. Are you ready?" **PLAY** Elephant, Rabbit, Sheep series.

Trial 1: When the screen is blank, say: "Tell me the animals in size order, starting with the smallest animal."

Correct Response:

If the participant says "RABBIT, SHEEP, ELEPHANT," say: "That's **right,**" choose #1, and move to the 1-List Test items by clicking **NEXT.**

Incorrect Response

If the participant gives the wrong order, say: "Let's try that again."

Trial 2: say: "You saw a RABBIT, SHEEP and ELEPHANT; the RABBIT is smaller than the SHEEP and the SHEEP is smaller than the ELEPHANT. The RABBIT is the smallest animal, the SHEEP is the next biggest animal, and the ELEPHANT is the biggest animal. Now, tell me the animals in size order, starting with the smallest animal."

If the participant gives the wrong order, say: "Let's try that once more."

Trial 3: **REPLAY** Elephant, Rabbit, Sheep series and say: "You saw a RABBIT, SHEEP and ELEPHANT; the RABBIT is smaller than the SHEEP and the SHEEP is smaller than the ELEPHANT. The RABBIT is the smallest animal, the SHEEP is the next biggest animal, and the ELEPHANT is the biggest animal. Now, tell me the animals in size order, starting with the smallest animal."

If the participant answers correctly after Trial 2, choose #2 or after Trial 3, choose #3, say: "**Good,**" and go to the 1-List Test items by clicking **NEXT.**

If the participant still answers any part of the question incorrectly, choose #4, and the **test will be discontinued.**

1-List Test Items:

Say: **“Let’s look at some more pictures. Remember, after you see the pictures you will see a blank screen. Once you see this blank screen, I want you to tell me what you just saw in size order from smallest to biggest.”**

Continue, **“It is important to pay attention to the size of the object on the screen when putting things in size order from smallest to biggest.”**

PLAY *Pig, Mouse series.* Mark the item CORRECT (“Yes”) or INCORRECT (“No”) based on the participant’s response.

If the participant makes a *CORRECT* response, the computer will bring up the 3-stimulus item: *Pumpkin, Strawberry, Banana* and continue until the participant completes all the items or until a discontinue criterion is met. If the participant makes an *INCORRECT* response, the computer will bring up another 2-stimulus item: *Bird, Cow*. If a participant does not succeed with the first item of a set, the second item will be presented (see Table 1 and Table 2 at the end of the instructions for a list of 1-List and 2-List test items).

2-List Practice Item 1 (2LP1):

Say: **“We’re going to look at more pictures. This time, you will see both food and animals in a set of pictures. I’d like you to tell me the food first, and then the animals, in size order from smallest to biggest. Let’s start by looking at some more pictures together.”** **PLAY:** *Bear, Banana series.*

Trial 1: When the screen is blank, say: **“Tell me the food, then the animal.”**

Correct Response:

If the participant says “BANANA, BEAR,” say: **“That’s right,”** choose #1, and go to 2-List Practice Item 2 by clicking **NEXT.**

Incorrect Response:

If the participant does not say “BANANA, BEAR,” say: **“Let’s try that again.”**

Trial 2: say: **“The BEAR is an animal; the BANANA is a food. Now you tell me the food first and then the animal.”**

If the participant does not say “BANANA, BEAR,” say: **“Let’s try that once more.”**

Trial 3: **REPLAY:** *Bear, Banana series* and say, **“The BEAR is an animal; the BANANA is a food. Now you tell me the food first and then the animal.”**

If the participant answers the question *correctly* after Trial 2, choose #2 or after Trial 3, choose #3, say: “**Good,**” and go to 2-List Practice Item 2 by clicking **NEXT**.

If the participant still answers any part of the question *incorrectly* after Trial 3, choose #4, and the **test will be discontinued**.

2-List Practice Item 2 (2LP2):

Say: “**Now we are going to do some more.**” **PLAY** *Frog, Pineapple, Tiger* series.

Trial 1: When the screen is blank, say: “**Tell me the food in size order from smallest to biggest and then tell me the animals in size order from smallest to biggest.**”

Correct Response:

If the participant says “PINEAPPLE, FROG, TIGER,” say: “**That’s right,**” choose #1, and go to the 2-List Test items by clicking **NEXT**.

Incorrect Response:

If the participant gives a wrong order, say: “**Let’s try that again.**”

Trial 2: say: “**You saw a frog, a pineapple, and a tiger. The pineapple is a food; the frog is the smallest animal, and the tiger is the biggest animal. Now, you tell me the food in size order starting with the smallest food, and THEN the animals in size order, from smallest to biggest.**”

If the participant gives a wrong order, say: “**Let’s try that once more.**”

Trial 3: **REPLAY** *Frog, Pineapple, Tiger* series and say: “**You saw a frog, a pineapple, and a tiger. The pineapple is a food; the frog is the smallest animal, and the tiger is the biggest animal. Now, you tell me the food in size order starting with the smallest food, and THEN the animals in size order, from smallest to biggest.**”

If the participant answers *correctly* after Trial 2, choose #2 or after Trial 3, choose #3, say: “**Good,**” and go to the 2-List Test items by clicking **NEXT**.

If the participant still answers any part of the question incorrectly after Trial 3, choose #4, and the **test will be discontinued.**

2-List Test Items

Say: “**Let’s look at some more pictures. Remember, after you see the pictures you will see a blank screen. Once you see this blank screen, tell me the food first, then the animal.**”

Continue: “**It is important to pay attention to the size of the object on the screen when putting things in size order from smallest to biggest.**”

PLAY Cow, Popcorn. Mark the item CORRECT (“Yes”) or INCORRECT (“No”).

After the first item has been completed, say: “**Let’s look at some more pictures. Remember, after you see the pictures you will see a blank screen. Once you see this blank screen, tell me the foods first, in size order from smallest to biggest, then the animals, in size order from smallest to biggest.**”

If the participant makes a CORRECT response to Cow, Popcorn, the computer will bring up a 3-stimulus item: Elephant, Pumpkin, Duck, and continue until the participant completes all the items or until a discontinue criterion is met. If the participant makes an INCORRECT response to Cow, Popcorn, the computer will bring up another 2-stimulus item: Rabbit, Corn. If a participant does not succeed with the first item of a set, the second item will be presented. If a participant is incorrect on both parts of an item set, the test is discontinued.

Table 1: 1-List items

Item A	Item B
Banana Watermelon	Apple Blueberry
Pig Mouse**	Bird Cow
Pumpkin Strawberry Banana	Dog Horse Rabbit
Elephant Butterfly Pig Rabbit	Pineapple Strawberry Pear Blueberry
Bird Bear Elephant Dog Duck	Sheep Bee Horse Cat Mouse
Blueberry Strawberry Lemon Pineapple Cherry Pumpkin	Horse Cat Turtle Bee Frog Dog
Dog Frog Elephant Butterfly Rabbit Tiger Camel	Hamburger Popcorn Peach Pumpkin Corn Strawberry Lemon

**test begins here

Table 2: 2-List items

Item A	Item B
Cow Popcorn**	Rabbit Corn
Elephant Pumpkin Duck	Apple Cat Watermelon
Strawberry Dog Corn Turtle	Hamburger Pig Orange Lion
Peach Elephant Blueberry Tiger Rabbit	Cherry Duck Egg Bird Apple
Pineapple Monkey Cherry Bear Banana Turtle	Pineapple Pig Peach Mouse Blueberry Horse
Orange Butterfly Egg Cow Blueberry Duck Pineapple	Rabbit Pear Bird Watermelon Sheep Cherry Tiger

**test begins here

Sample screenshot:

