

KANSAS REFLECTION-IMPULSIVITY SCALE FOR PRESCHOOLERS (KRISP)

Description of the Instrument:

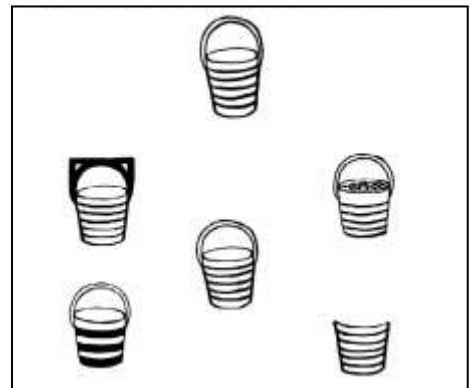
- The KRISP (Wright, 1971) is a match-to-sample task based on the Matching Familiar Figures Test (Kagan, 1965). The rules for the task are as follows: children are presented with an array of line drawings and asked to identify the drawing that is an exact duplicate of a standard/target item. The example on the left illustrated the task with the target item on top and the possible choices below it.
- The task was developed as an assessment of attentiveness, reflexive processing, and sustained focus. Also considered a measure of conceptual tempo.



Base Reference/Primary Citation:

Wright, J. C. (1971). *Kansas Reflection-Impulsivity Scale for Preschoolers (KRISP)*. St. Louis: CEMREL, Inc.

Gaddis, L. R. & Martin, R. P. (1989). Relationship among measures of impulsivity for preschoolers. *Journal of Psychoeducational Assessment*, 7, 284-295.
doi:10.1177/073428298900700401



Psychometric Information (sample, reliability, validity):

- **Wright, 1973** (via Gaddis & Martin, 1989): Report moderate to strong reliabilities for the KRISP. 99.4% rater agreement on errors made. Test-retest reliability (1- to 8-week delay) was .75.
- **Gaddis & Martin (1989)**: 39 children between the ages of 46 & 62 months ($M = 53.67$, $SD = 4.54$) from middle to upper-middle class homes. Families were 97.4% Caucasian and well educated; on average 83.5% of parents had a bachelor's degree and 53.5% held a graduated degree. Gave 10 items to children and reported mean errors of 2.95 (2.33). Only attempt per item.
- **Carlson (2005)**: The goal of the study was to provide age-related trends in performance on a series of measures of executive function, including KRISP, for early childhood (2 to 6 years of age). Data was aggregated across multiple studies conducted by the author. The samples were predominantly middle class and Caucasian. Raw scores for the task were not provided; instead performance on the task was converted to a pass/fail score where the probability of passing by chance was less than .05. For the KRISP was a score of 8 or more correct out of 10 on first try. Percentage of children passing the KRISP were as follows: Young 3 = 0%, Older 3 = 41%, Younger 4 = 81%, Older 4 = 75%, and 5 = 94%.
- **Carlson & Meltzoff (2008)**: The study examined differences on the KRISP among native Spanish-English bilinguals, English monolinguals, and English speakers enrolled in second-language immersion kindergarten. Study consisted of 50 kindergarteners and their parents. Mean age was 72 months ($SD = 5.68$ months). The native bilinguals were from homes with median maternal and paternal education level of high school and annual incomes of about \$25,000, while the other groups were from homes with median maternal and paternal education level of college and annual income of about \$70,000. Children were allowed up to 3 errors per each of the tasks 15 item. No difference were seen between groups and on average children made 5.75 errors ($SD = 2.83$).
- **Carlson & Moses (2001)**: Study examined differences in measures of inhibitory control and theory of mind between 107 predominantly white 3- and 4-year-olds. Allowed 3 errors for each of the 10 items presented. 3-year-olds (mean age 3 years 8 months) made 9.4 errors, while 4-year-olds (mean age 4 years 5 months) made 5 errors. This was a significant age difference. The study also examined the interrelations among the KRISP and other measures of inhibitory control.
- **Sabbagh, Xu, Carlson, Moses, & Lee (2006)**: The study examined group differences between Chinese and U.S. preschooler's executive function, including the KRISP. The study included 109 Chinese and 107 U.S. preschoolers; mean age = 48.28 and 47.36 months, respectively. In both groups, children attended preschools serving middle-class families. KRISP was scored as the number of correct responses, which ranged from 0 to 10. The study only reported standardized scores and did not indicate specifically if there were age and county differences for the KRISP. However, MANCOVA analysis with the the KRISP and other EF measures as dependent variables indicated that there were age and county differences favoring older and Chinese children. The graphs provided seemed to illustrate a linear age effect, but not a county difference for the KRISP.

- **Murray & Kochanska (2002):** The study used the KRISP as part of a behavioral battery effortful control. Three difference batteries were given at the three assessment time points (toddlerhood, preschool, and early school age) for this this longitudinal study of 103 children. The KRISP was only given when children were in preschool (mean age = 46.01 months, $N = 99$) and early school (mean age = 65.89 months, $N = 83$). The sample was diverse in terms of education and income, but was predominantly Caucasian. The KRISP consisted of 20 items. Only one attempt per item. Preschoolers had an average 8.09 ($SD = 4.70$) errors and early school children averaged 2.93 ($SD = 3.29$) errors.

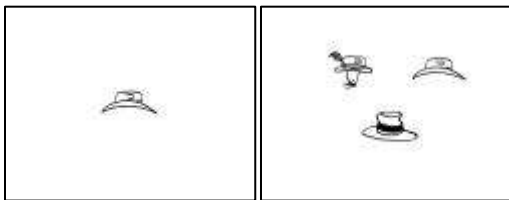
KRISP MATERIALS

The KRISP picture book consisted of 32 (30 for K) pictures; 16 (15 for K) pictures of the standard, to be matched images and 16 (15 for K) pictures containing the array of potential matches for the standard. There are separate sets of images for Pre-Kindergarteners and Kindergarteners. Images of the items in their order of presentation are given below. The full-size (8.5" by 11") images are provided in a separate PDF.

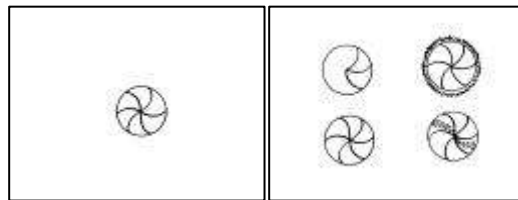
Images are inserted into clear plastic cover sheets and placed into a 1" 3-ring binder. Images are arranged so the when the binder is open, the standard image is presented on a top and the array of choices are presented on the bottom (see image on right). Each set of items are separated by a set of blank sheets, so that when the page is turned, no item is presented.



Pre-K Item 1:



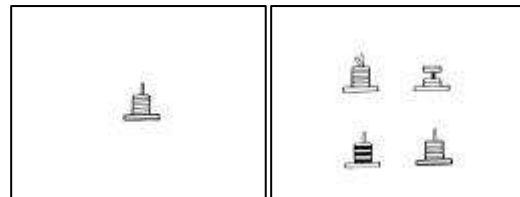
Pre-K Item 2 & Kindergarten Item 2:



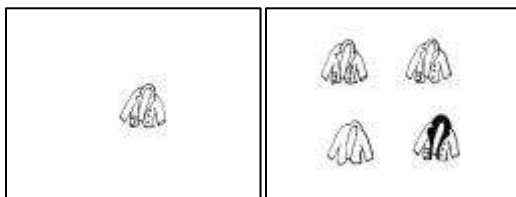
Pre-K Item 3 & Kindergarten Item 1:



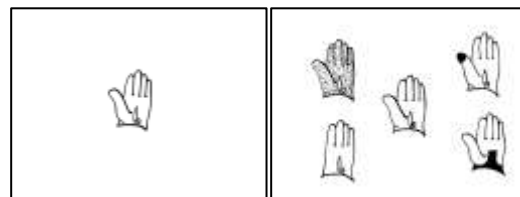
Pre-K Item 4 & Kindergarten Item 3:



Pre-K Item 5 & Kindergarten Item 4:



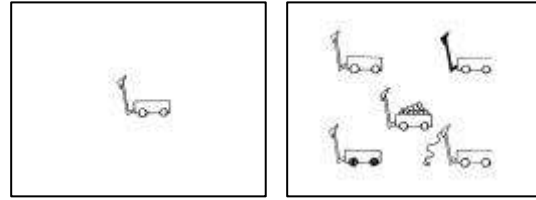
Pre-K Item 6 & Kindergarten Item 12:



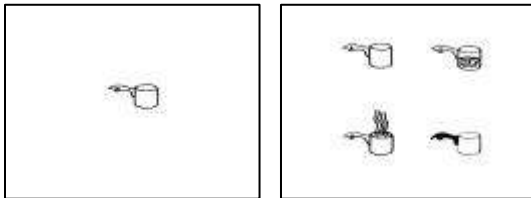
Pre-K Item 7 & Kindergarten Item 5:



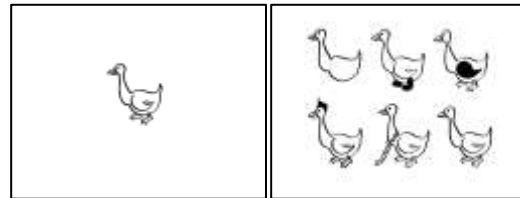
Pre-K Item 8 & Kindergarten Item 6:



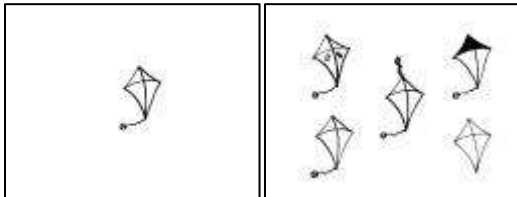
Pre-K Item 9 & Kindergarten Item 7:



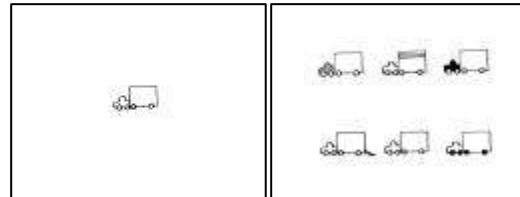
Pre-K Item 10 & Kindergarten Item 15:



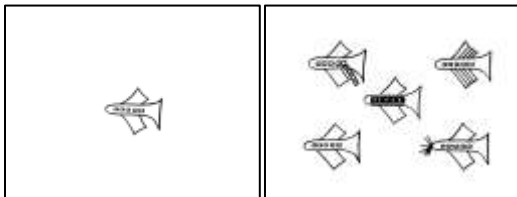
Pre-K Item 11 & Kindergarten Item 8:



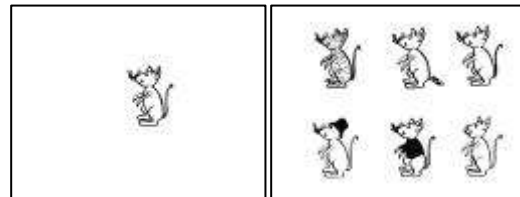
Pre-K Item 12 & Kindergarten Item 9:



Pre-K Item 13 & Kindergarten Item 13:



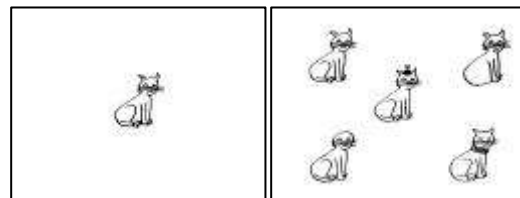
Pre-K Item 14 & Kindergarten Item 10:



Pre-K Item 15 & Kindergarten Item 14:



Pre-K Item 16 & Kindergarten Item 11:



PRE-K KRISP TASK SCRIPT

We have a new game to play today. Here's how we play the game: Open book to first practice item (Hat).

Practice item:



Do you see this picture on the top? Point and make sure the child is looking at the picture on the top page. **Can you find the picture down here** (point to array on lower page) **that looks just like the one up here?** (point to the top page)

- If the child points to the correct choice say: **Very good. Let's do that every time. Always point to one down here that is just exactly like the one up here.** (turn to blank page)
- If the child points to the incorrect choice, say: **No, that's not exactly the same as the one up here, because it is** (describe the discrepancy). **Now point to the one that is exactly like this one up here.**

Test items:



Proceed with the next item (Ball) While on the blank page between items say: **O.k. when I turn the page, point to the picture down here** (indicate) **that is exactly the same as the one you will see up here** (point). **Ready?**

Turn the page and ask: **Which one down here is just like this one? Can you point to it the first time?**

- If the child points to the correct choice say: **Very good. Let's do that every time. Always point to one down here that is just exactly like the one up here.** (turn to blank page)
- If the child points to the incorrect choice, say: **No, that's not exactly the same as the one up here, because it is** (describe the discrepancy). **Now point to the one that is exactly like this one up here.**

On blank page before the umbrella say: **Remember, only one is exactly the same. Always try to find it the first time. Are you ready?**



Turn the page and allow child to make choice.

- If the child is correct, give brief and varied social reinforcement without reminders or instructions.
- If the child is incorrect **do not** point out the discrepancy. Instead point to the item on the top page and say: **No, look up here. Can you find the one that is exactly like this one up here?**

Say nothing during the display of the preceding blank pages except: **Ok, ready for the next one?**

- If the child is correct, give brief and varied social reinforcement without reminders or instructions.
- If the child is incorrect **do not** point out the discrepancy. Instead point to the item on the top page and say: **No, look up here. Can you find the one that is exactly like this one up here?**

If a second error is made, do the above instructions again. But if the third choice is still incorrect turn the page and say: **Ok, let's go on to the next one. Remember, only one is exactly the same as the one up here. Can you find it the first time?**

- Turn page immediately after correct response (or the third error on the same page) and immediately record responses on the coding sheet.

Prompts:

Standard prompts are to be used in the event that the child says or does certain things indicating that he/she is having difficulty. These prompts can be used throughout the assessment.

- Child says: “None of these match” or equivalent.
Assessor: **Yes, there is one that is exactly the same. Keep looking and see if you can find it.**
- Child says: “All of them are the same” or equivalent.
Assessor: **No, some are different. (pause) Only one is exactly the same. Can you find it?**
- Child says: “I don’t know” or equivalent.
Assessor: **Keep looking. Try to find the one that’s the same as the one on top.**
- Child points to one and says: “That’s not it” or equivalent.
Assessor: **Just point to the one that is exactly the same. Try to find it the first time.**
- Child points rapidly to more than one alternative.
Assessor: **Which one did you point to first? Just point to the one that is the same, but don’t point to the others.**

KINDERGARTEN KRISP TASK SCRIPT

We have a new game to play today. Here's how we play the game: Open book to first practice item (Umbrella).

Test Items:



Do you see this picture on the top? Point and make sure the child is looking at the page with the standard. **Can you find the picture down here** (point to array on lower page) **that looks just like the one up here?** (point to the standard)

- If the child points to the correct choice say: **Very good. Let's do that every time. Always point to one down here that is just exactly like the one up here.** (turn to blank page)
- If the child points to the incorrect choice, say: **No, that's not exactly the same as the one up here, because it is** (describe the discrepancy). **Now point to the one that is exactly like this one up here.**

Proceed with the next item. While on the blank page say: **O.k. when I turn the page, point to the picture down here** (indicate) **that is exactly the same as the one you will see up here** (point). **Ready?**

Turn the page and allow child to make choice.



- If the child is correct, give brief and varied social reinforcement without reminders or instructions.
- If the child is incorrect **do not** point out the discrepancy. Instead point to the standard and say: **No, look up here. Can you find the one that is exactly like this one up here?**

Say nothing during the display of the preceding blank pages except: **Ok, ready for the next one?**

Then turn the page and allow child to make choice.

- If the child is correct, give brief and varied social reinforcement without reminders or instructions.
- If the child is incorrect **do not** point out the discrepancy. Instead point to the standard and say: **No, look up here. Can you find the one that is exactly like this one up here?**

If a second error is made, do the above instructions again. But if the third choice is still incorrect turn the page and say: **Ok, let's go on to the next one. Remember, only one is exactly the same as the one up here. Can you find it the first time?**

- Turn page immediately after correct response (or the third error on the same page) and immediately record responses on the coding sheet.

Prompts:

Standard prompts are to be used in the event that the child says or does certain things indicating that he/she is having difficulty. These prompts can be used throughout the assessment.

- Child says: “None of these match” or equivalent.
Assessor: **Yes, there is one that is exactly the same. Keep looking and see if you can find it.**
- Child says: “All of them are the same” or equivalent.
Assessor: **No, some are different. (pause) Only one is exactly the same. Can you find it?**
- Child says: “I don’t know” or equivalent.
Assessor: **Keep looking. Try to find the one that’s the same as the one on top.**
- Child points to one and says: “That’s not it” or equivalent.
Assessor: **Just point to the one that is exactly the same. Try to find it the first time.**
- Child points rapidly to more than one alternative.
Assessor: **Which one did you point to first? Just point to the one that is the same, but don’t point to the others.**

PRE-K KRISP RECORD FORM

<i>Stimulus</i>	<i>Number of Errors (0-3)</i>	<i>Comments</i>
1. Hat		
2. Ball		
3. Umbrella		
4. Candle		
5. Coat		
6. Glove		
7. Pail		
8. Wagon		
9. Pan		
10. Goose		
11. Kite		
12. Truck		
13. Rocket		
14. Mouse		
15. Cat		
16. Kitten		

TOTAL ERRORS FOR ITEMS 2-16: _____

KINDERGARTEN KRISP RECORD FORM

<i>Stimulus</i>	<i>Number of Errors (0-3)</i>	<i>Comments</i>
1. Umbrella		
2. Ball		
3. Candle		
4. Coat		
5. Pail		
6. Wagon		
7. Pan		
8. Kite		
9. Truck		
10. Mouse		
11. Kitten		
12. Glove		
13. Rocket		
14. Cat		
15. Goose		

TOTAL ERRORS FOR ITEMS 1 - 15: _____

TOTAL ERRORS FOR ALL ITEMS: _____

KRISP SCORING

PRE-K Scoring

Each item is scored based on the number of incorrect responses made on that item, up to 3 errors. Therefore, each item can have a score of 0, 1, 2, or 3 errors made.

Final Score: The total number of errors possible minus the number of actual errors made is used so that higher scores on the measure would reflect better self-regulation.

- **Pre-K Total Score:** The value of the total number of errors possible (45) minus the actual number of errors made on items 2 through 16. Item 1 is considered a practice item and not included in this score.
- **Pre-K and Kindergarten Comparison Total Score:** The value of the total number of errors possible (45) minus the actual number of errors made on items 2 through 16.

Kindergarten Scoring

Each item is scored based on the number of incorrect responses made on that item, up to 3 errors. Therefore, each item can have a score of 0, 1, 2, or 3 errors made.

Final Score: The total number of errors possible minus the number of actual errors made is used so that higher scores on the measure would reflect better self-regulation.

- **Pre-K and Kindergarten Comparison Total Score:** The value of the total number of errors possible (45) minus the actual number or errors made on items item 1 through 15. Items 1-15 are the same items as Pre-K items 2-16.
- **Kindergarten Total Score:** The value of the total number of errors possible (45) minus the actual number or errors made on items item 1 through 15.

Kansas Reflection-impulsivity Scale for Preschoolers Form A - KRISP. It was developed by Wright (1971) and composed of 15 shapes. Before ten shapes, there are five sample shapes that give information about how to solve the test. Scores gathered from the Kansas Reflection-Impulsivity Scale for Preschoolers Form A were used to identify what kind of cognitive styles children have and it was calculated by considering their average scores from number of error and reaction time. At the end of this calculation children were grouped as reflective, impulsive, fast- accurate and slow- inaccurate. KRISP (Kansas reflection-impulsivity scale for preschoolers). Lawrence: University of Kansas, has been cited by the following article - Social Skills subscale (EAS) and Behavior Problems (EPC) was applied to the Behavioral Scale for Preschool-PKBS (Gomes & Pereira, 2012), Portuguese version of PKBS-2 (Merrell, 2002), Likert-type, four response levels, which seeks to assess the social and emotional skills, and behavior problems in early childhood, with the participation of educators. The Statistical Package for Social Sciences (SPSS), version 17.0 for Windows. The main results show that there are gender differences in the level of social skills. The girls reveal behaviors based on Social Cooperation and Social Interacti