

## Cognitive Complexity of Activity Demands of ACL Screen's Performance Task

Table 1 summarizes the cognitive complexity of selected elements of the Allen Cognitive Level Screen's<sup>1,2</sup> three stitches, the administrator's directions, and the problem-solving and learning opportunities for each of the stitches in relation to Levels 3, 4, and 5 on the Allen Cognitive Scale of Levels and Modes of Performance.<sup>1,2</sup> The increasing cognitive complexity of these elements may be appreciated by comparing the elements horizontally across the table. Screen scores based on the complexity of the stitch a person completes *estimate* the person's functional cognitive capacity, including learning potential, and functional performance abilities requiring that capacity.

**Table 1:** *Cognitive Complexity of Activity Demands of ACL Screen's Performance Task*

Components/Elements of Performance Task	Cognitive Complexity of Activity Demands for Each Stitching Task		
	ACL 3 Least Complex Running Stitch	ACL 4 Whipstitch	ACL 5 Most Complex Single Cordovan Stitch
<b>Stitching Tasks</b>			
<b>Motor Actions</b>	Hold tool Grasp/release needle Push needle through hole Pull lace tight Move in a direction L→R	Turn over tool Rotate lace to untwist	Fluid, continuous manipulation of tool in space Fine motor manipulation of lace to loosen & tighten stitches
<b>Visuospatial Cues</b>	Immediate result of pushing needle through hole Line made by stitch Holes on surface of tool	Color/texture of 2-sided lace Stamp on front of tool Front/back (lace & tool) Over/under (lace over tool edge, crossed in back) Number of stitches (3)	Stitch construction details, e.g., relative position & direction of lace through holes & loop, tension & angle of lace within one stitch
<b>Administrator Directions</b>			
<b>Demonstrations</b>	One action at a time	Short sequence of steps	Long sequence of steps
<b>Verbal Statements</b>	Nouns & verbs describing actions, e.g., "Push needle"	Adjectives describing striking features of objects, e.g., dark/smooth side of lace, front/back of tool, number of stitches	Directions describing primary & secondary effects <sup>a</sup> of actions, cues, precautions, e.g., "Don't pull the lace tight..."; "You have the first part right."
<b>Problem Solving/Learning Opportunities</b>			
<b>Problem Solving</b>	No problems to solve	Compare two striking features to match an exact sample Remove a stitch error Modify an action	Compare features of complex visual cues Alter sequence of steps, position/direction of lace through holes/loop, & methods of tightening stitch.
<b>Learning</b>	Imitate familiar actions	Imitate a short sequence of steps	Imitate long sequence of steps OR Self-directed exploration to solve the problem

*Note.* Tool = Screen tool; <sup>a</sup>Primary effects are the immediate, intended or unintended changes in objects resulting from a person's actions on objects; secondary effects are immediate or delayed consequences of primary effects. Adapted from *Analysis of Cognitive Complexity of Activity Demands of Three ACLS-5 Stitching Tasks* [Table] by C.A. Earhart, November, 2010 for "Cognitive Disabilities Model in 2010" [Presentation] by C.A. Earhart at the 8<sup>th</sup> Cognitive Symposium sponsored by Allen Cognitive Network, King of Prussia, PA. Adapted 2022 by C.A. Earhart for *Manual for Version 5 of the Allen Cognitive Level Screen-2<sup>nd</sup> Edition*<sup>2</sup> and as a PDF Download under Resources at [www.allencognitive.com](http://www.allencognitive.com). Copyright 2010, 2022 by C.A. Earhart and ACLS and LACLS Committee. Used with permission.

<sup>1</sup>Allen, C. K., Earhart, C. A., & Blue, T. (1992). *Occupational therapy treatment goals for the physically and cognitively disabled*. American Occupational Therapy Association, pp. 85-102.

<sup>2</sup>Earhart, C. A., McCraith, D. B., & Riska-Williams, L. (2022). *Manual for Version 5 of the Allen Cognitive Level Screen-2<sup>nd</sup> Edition*. ACLS and LACLS Committee/Allen Cognitive Group.