

Pyramid Puzzle

User Instructions



3700 Sagamore Parkway North
Lafayette, IN 47904 USA

Tel: (765) 423-1505 • (800) 428-7545

Fax: (765) 423-4111

info@lafayetteinstrument.com

www.lafayetteinstrument.com

Description

This classic puzzle problem has long been used for the study of problem solving, in sight learning, and concept formation. The device consists of a block containing three posts and a series of graduated blocks. The object of the puzzle is to transfer the series of blocks without ever placing a larger block over a smaller.

Procedure

It is suggested that both the experimenter and subject read Woodworth and Schlosberg, pages 768 and 769, also page 827, before starting this experiment. One student will serve as experimenter (E) and the other as subject (S). E will place the problem board before S with the six blocks stacked at Peg 1. The blocks should be stacked according to size with the largest block on the bottom.

1. E should give S the following instructions:
"You are to transfer this pile of blocks from Peg 1 to Peg 3 by moving one block at a time. A block may be moved from any peg to any other peg, but no block can be placed on a smaller block. You will call each move as you make it—A to 3, B to 2, A to 1, etc—I will record each move so do not go too fast, but keep your attention on the problem, not on the record which I am keeping."
2. S should work at the problem until he succeeds in transferring all of the blocks from Peg 1 to Peg 3. He should, in solving the problem try to figure out how it is solved, and keep in mind any rules or principles which lead to the solution.
3. E will keep a record of each move made by S by writing the letter of the block and the number of the peg to which it is moved. Thus, E will have on his record sheet a series of moves such as A3, B2, C3, etc. Duplicate copies of all records should be made by using carbon paper.
4. After S has solved the problem the first time, he should take a sheet of paper and write a report of how he solved the problem or of any ideas which he thinks might be of value in solving it again. In brief, the report should reveal any "insight" which S gains in solving the problem.
5. Following this report, S will again transfer the blocks from Peg 1 to Peg 3, calling each move as it is made. E will keep a record of the moves as before.
6. On a third trial, S should move the blocks from Peg 1 to Peg 2. After each trial, S will write a report of how the problem was solved, any new ideas or additional insight gained regarding the solution of the problem.

E will next give in succession, the problem of transferring three blocks, four blocks, five blocks, and six blocks, from Peg 1 to Peg 3. E will keep a record as before. Each problem should be repeated until S has discovered the smallest number of moves necessary for solving each problem. After each problem has been solved, S will write a report in which he describes any principles or ideas, which he has learned regarding the nature of the solution of the problem and the number of moves needed for solving the problem.

Results

The correct solution of each problem is the one that requires the minimum number of moves.

1. Determine the number of errors made on each trial for each problem.
2. Present these errors in a table.
3. Prepare another table to show the smallest number of moves for solving each problem.
4. From S's written reports prepare a list of the principles involved in the solution of these problems. For example, S should have discovered a rule formula, or principle by which one could calculate the number of moves needed for solving a problem involving any number of blocks.
5. Can you prepare a learning curve from this data?

Discussion - Interpretation - Criticism - Suggestions

1. What can you say concerning any of the principles S used in the solution of the problem?
2. Can you cite any examples from your experiment to show how "fixed assumptions" interfere with the solution of the problem?
3. If you were able to prepare a learning curve, what does it indicate? To what extent was "trial and error" behavior evident?
4. When S had mastered the problem, could E have performed 100% accurately after being only a "spectator"? Does this prove that the doctrine "we learn only by doing" is false?

Summary and Conclusions

Summarize and draw conclusions from your data.

Questions: (to be answered from your reading in the references).

1. Define idea, meaning, insight, thinking, and process-tracing experiments.
2. Distinguish between "trial and error" and "thinking" as methods of solving problems.
3. In describing problem solving by adults, Ruger states that "analysis varies from the purely perceptual to the purely ideational." What does this statement mean?
4. What did Ruger use as indications of insight?
5. What is the solution to the problem of the Captain and the fifty men given by Woodworth on page 774 (834 in Woodworth and Schlosberg)?
6. What is the evidence that implicit speech is involved in thinking?
7. What are some of the factors that influence the course of problem solving?
8. What are positive and negative transfer effects in problem-solving activities?

References

- Andrews, T.G. (ed). Methods of psychology. New York: John Wiley and Sons, Inc., 1948, Chapter 4.
- Baker, L.M. General experimental psychology. New York: Oxford University Press, 1960, Chapter 15.
- Bugelski, B.R. A first course in experimental psychology. New York: Henry Hold and Company, 1951, Chapter 17.
- Deese, James W. The psychology of learning, 2nd edition. New York: McGraw-Hill and Company, 1958, Chapter 11.
- Garrett, H.E. Great experiments in psychology, 3rd edition. New York: Appleton-Century-Crofts, Inc., 1951, Chapters 3 & 4.
- Osgood, C.E. Method and theory in experimental psychology. New York: Oxford University Press, 1953, Chapter 14.
- Postman, Leo and Egan, J.P. Experimental psychology: an introduction. New York: Harper and Brothers, 1949, Chapter 13.
- Underwood, B.J. Experimental psychology. New York: Appleton-Century-Crofts, Inc., 1949, Chapters 12 & 13.
- Woodworth, R.S. Experimental psychology. New York: Henry Hold and Company, 1938, Chapters 29 & 30.
- Woodworth, R.S. and Schlosberg, Harold, Experimental psychology, rev. edition. New York: Henry Holt and Company, 1954, Chapter 26.

Terms and Conditions

LIC Worldwide Headquarters

Toll-Free: (800) 428-7545 (USA only)

Phone: (765) 423-1505

Fax: (765) 423-4111

Email: sales@lafayetteinstrument.com

export@lafayetteinstrument.com (Outside the USA)

Mailing Address:

Lafayette Instrument Company

PO Box 5729

Lafayette, IN 47903, USA

Lafayette Instrument Europe:

Phone: +44 1509 817700

Fax: +44 1509 817701

Email: esales@lafayetteinstrument.com

Phone, Fax, Email or Mail-in Orders

All orders need to be accompanied by a hard copy of your purchase order. All orders must include the following information:

- Quantity
- Part Number
- Description
- Your purchase order number or method of pre-payment
- Your tax status (include tax-exempt numbers)
- Shipping address for this order
- Billing address for the invoice we'll mail when this order is shipped
- Signature and typed name of person authorized to order these products
- Your telephone number
- Your email address
- Your FAX number

Domestic Terms

There is a \$50 minimum order. Open accounts can be extended to most recognized businesses. Net amount due 30 days from the date of shipment unless otherwise specified by us. Enclose payment with the order; charge with VISA, MasterCard, American Express, or pay COD. We must have a hard copy of your purchase order by mail, E-mail or fax. Students, individuals and private companies may call for a credit application.

International Payment Information

There is a \$50 minimum order. Payment must be made in advance by: draft drawn on a major US bank; wire transfers to our account; charge with VISA, MasterCard, American Express, or confirmed irrevocable letter of credit. Proforma invoices will be provided upon request.

Exports

If ordering instrumentation for use outside the USA, please specify the country of ultimate destination, as well as the power requirements (110V/60Hz or 220V/50Hz). Some model numbers for 220V/50Hz will have a "C" suffix.

Quotations

Quotations are supplied upon request. Written quotations will include the price of goods, cost of shipping and handling, if requested, and estimated delivery time frame. Quotations are good for 30 days, unless otherwise noted. Following that time, prices are subject to change and will be re-quoted at your request.

Cancellations

Orders for custom products, custom assemblies or instruments built to customer specifications will be subject to a cancellation penalty of 100%. Payment for up to 100% of the invoice value of custom products may be required in advance. Cancellation for a standard Lafayette Instrument manufactured product once the product has been shipped will normally be assessed a charge of 25% of the invoice value, plus shipping charges. Resell items, like custom products, will be subject to a cancellation penalty of 100%.

Exchanges and Refunds

Please see the cancellation penalty as described above. No item may be returned without prior authorization of Lafayette Instrument Company and a Return Goods Authorization (RGA#) number which must be affixed to the shipping label of the returned goods. The merchandise should be packed well, insured for the full value and returned along with a cover letter explaining the reason for return. Unopened merchandise may be returned prepaid within thirty (30) days after receipt of the item and in the original shipping carton. Collect shipments will not be accepted. Product must be returned in saleable condition, and credit is subject to inspection of the merchandise.

Repairs

Instrumentation may not be returned without first receiving a Return Goods Authorization Number (RGA). When returning instrumentation for service,

please call Lafayette Instrument to receive a RGA number. Your RGA number will be good for 30 days. Address the shipment to:

Lafayette Instrument Company

3700 Sagamore Parkway North

Lafayette, IN 47904, USA.

Shipments cannot be received at the PO Box. The items should be packed well, insured for full value, and returned along with a cover letter explaining the malfunction. An estimate of repair will be given prior to completion ONLY if requested in your enclosed cover letter. We must have a hard copy of your purchase order by mail or fax, or repair work cannot commence for non-warranty repairs.

Damaged Goods

Damaged instrumentation should not be returned to Lafayette Instrument prior to a thorough inspection. If a shipment arrives damaged, note damage on delivery bill and have the driver sign it to acknowledge the damage. Contact the delivery service, and they will file an insurance claim. If damage is not detected at the time of delivery, contact the carrier/shipper and request an inspection within 10 days of the original delivery. Please call the Lafayette Instrument Customer Service Department for repair or replacement of the damaged merchandise.

Limited Warranty

Lafayette Instrument Company warrants equipment manufactured by the company to be free of defects in material and workmanship for a period of one year from the date of shipment, except as provided hereinafter. The original manufacturer's warranty will be honored by Lafayette Instrument for items not manufactured by Lafayette Instrument Company, i.e. resell items. This assumes normal usage under commonly accepted operating parameters and excludes consumable products.

Warranty period for repairs or used instrumentation purchased from Lafayette Instrument is 90 days. Lafayette Instrument Company agrees either to repair or replace, at its sole option and free of part charges to the customer, instrumentation which, under proper and normal conditions of use, proves to be defective within the warranty period. Warranty for any parts of such repaired or replaced instrumentation shall be covered under the same limited warranty and shall have a warranty period of 90 days from the date of shipment or the remainder of the original warranty period whichever is greater. This warranty and remedy are given expressly and in lieu of all other warranties, expressed or implied, of merchantability or fitness for a particular purpose and constitutes the only warranty made by Lafayette Instrument Company.

Lafayette Instrument Company neither assumes nor authorizes any person to assume for it any other liability in connection with the sale, installation, service or use of its instrumentation. Lafayette Instrument Company shall have no liability whatsoever for special, consequential, or punitive damages of any kind from any cause arising out of the sale, installation, service or use of its instrumentation. All products manufactured by Lafayette Instrument Company are tested and inspected prior to shipment. Upon prompt notification by the Customer, Lafayette Instrument Company will correct any defect in warranted equipment of its manufacture either, at its option, by return of the item to the factory, or shipment of a repaired or replacement part. Lafayette Instrument Company will not be obliged, however, to replace or repair any piece of equipment, which has been abused, improperly installed, altered, damaged, or repaired by others. Defects in equipment do not include decomposition, wear, or damage by chemical action or corrosion, or damage incurred during shipment.

Limited Obligations Covered by this Warranty

1. In the case of instruments not of Lafayette Instrument Company manufacture, the original manufacturer's warranty applies.
2. Shipping charges under warranty are covered only in one direction. The customer is responsible for shipping charges to the factory if return of the part is required.
3. This warranty does not cover damage to components due to improper installation by the customer.
4. Consumable and/or expendable items, including but not limited to electrodes, lights, batteries, fuses, O-rings, gaskets, and tubing, are excluded from warranty.
7. Failure by the customer to perform normal and reasonable maintenance on instruments will void warranty claims.
8. If the original invoice for the instrument is issued to a company that is not the company of the end user, and not an authorized Lafayette Instrument Company distributor, then all requests for warranty must be processed through the company that sold the product to the end user, and not directly to Lafayette Instrument Company.

Export License

The U.S. Department of Commerce requires an export license for any polygraph system shipment with an ULTIMATE destination other than: Australia, Japan, New Zealand or any NATO Member Countries. It is against U.S. law to ship a Polygraph system to any other country without an export license. If the ultimate destination is not one of the above listed countries, contact us for the required license application forms.