Further Resources and Applications: A , B, and C are by the authors of our textbook.

A. *Study Guide for Beginners*: extra problems, some solved, Chapters 1-3.

http://www.math.niu.edu/∼beachy/abstract_algebra/guide/contents.html

B. *Review Problems on Groups and Galois Theory*: for Chapter 7

http://www.math.niu.edu/∼beachy/abstract_algebra/review/review.pdf

C. *Some Topics in Group Theory*: Sections 7.8-7.10 online

http://www.math.niu.edu/∼beachy/abstract_algebra/supplement.pdf

D. *Algebra: Abstract and Concrete*, by Frederick M. Goodman:

http://homepage.divms.uiowa.edu/∼goodman/algebrabook.dir/book.2.6.pdf

E. *Group Theory*, by E. J.S. Milne:

http://www.jmilne.org/math/CourseNotes/GT310.pdf

F. *Group and Representations*, by F. J. L.Alperin and Rowen B. Bell, Springer GTM #162

A good quick review and sequel text.

G. *Groups and Symmetry*, by G. Mark; A. Armstrong, Springer UTM, ISBN-13: 978-0387966755.

Emphasizes geometry, symmetry and matrix groups. Used as text in Fall 2016.

H. *History of group theory*, J. J. O'Connor and E.F. Robinson:

http://www.gap-system.org/∼history/HistTopics/Development_group_theory.html

I. *GAP*: software for working with groups http://www.gap-system.org/sitemap.html

Prof. Gene Cooperman of CCIS at NU is one of the many authors. He and D. Kunkle wrote a program for fast solutions of Rubik's cube

http://www.ccs.neu.edu/home/kunkle/papers/kunkle-issac07.pdf

J. A brief note by Keith Conrad (U. Conn.):

http://www.math.uconn.edu/∼kconrad/math216/whygroups.html

K. *Group Theory in a Nutshell for Physicists*, by J. Anthony Zee, Princeton Univ. Press (2016).

L. *Applications of Group Theory to Chemistry*, a nice illustrated article at LibreText

http://chem.libretexts.org/Core/Physical_and_Theoretical_Chemistry/Group_Theory/Group_Theory%3A_Theory

M. *Applied Group Theory for Physicists and Chemists*, by L. George Duffey, Dover Books on Physics, ISBN-13: 978-0486783147.

N. *An Introductory Course on Group Theory and Chemical Applications*, by M. Hikmat S. Hilal and Abed Al-Hafez Sayda, An-Najah N. University, West Bank, Palestine (2011), ISBN: 978-1-61761-923-6.

It is meant to give access to applications without the proofs.

https://www.novapublishers.com/catalog/product_info.php?products_id=18082

O. *Vibration Analysis and Structural Dynamics for Civil Engineers: Essentials and Group-Theoretic Formulations*, by N. Alphose Zingoni, CRC Press (2014), ISBN 9780415522564.