

PLANNING GUIDE

EMC® Symmetrix® VMAX® Family

Physical Planning Guide

October, 2013

Rev 03

This document describes physical planning for EMC® Symmetrix® VMAX® 10K (SN xxx987xxxx), VMAX® 20K, and VMAX® 40K systems with Enginuity™ operating environment. Topics include:

• Planning overview.....	5
• Safe system delivery.....	6
• Radio Frequency Interference (RFI) requirements.....	8
• Power and heat dissipation.....	9
• System airflow requirements.....	13
• Air volume, air quality and temperature.....	16
• Shock and vibration.....	18
• Sound power and sound pressure specifications.....	19
• Environmental acclimation.....	20
• Planning host connections.....	21
• Configuration checklists.....	24
• Data center safety and remote support.....	28
• Floor load bearing requirements.....	29
• System weights.....	30
• System space requirements.....	32
• Standard layout options.....	35
• Dispersed layout options.....	38
• Separated storage bays, VMAX 20K and 40K systems.....	42
• Dimensions and floor placement.....	49
• Caster and leveler dimensions.....	55
• Overhead cable routing.....	56
• System and storage bay power components.....	57
• Planning the power interface.....	67
• Planning dedicated dual power for each Symmetrix bay.....	68
• Best practice power configuration guidelines.....	72
• Power extension cords, connectors, and wiring.....	74
• VMAX 10K 3rd party racking option.....	83
• Rack requirements.....	83
• Component requirements for rack option.....	85
• Power requirements for rack option.....	88

Emc Vmax Ordering Guide

J Elliott

A red circular graphic with a gradient, appearing as a stylized arrow or a partial circle, located to the right of the author's name.

Emc Vmax Ordering Guide:

This is likewise one of the factors by obtaining the soft documents of this **Emc Vmax Ordering Guide** by online. You might not require more epoch to spend to go to the ebook opening as competently as search for them. In some cases, you likewise accomplish not discover the notice Emc Vmax Ordering Guide that you are looking for. It will very squander the time.

However below, like you visit this web page, it will be fittingly unquestionably easy to acquire as with ease as download lead Emc Vmax Ordering Guide

It will not admit many grow old as we notify before. You can pull off it while take effect something else at house and even in your workplace. for that reason easy! So, are you question? Just exercise just what we offer below as competently as evaluation **Emc Vmax Ordering Guide** what you as soon as to read!

https://staging.conocer.cide.edu/About/publication/index.jsp/Life_As_It_Aint_Yet_Meditations_For_Living_Now.pdf

Table of Contents Emc Vmax Ordering Guide

1. Understanding the eBook Emc Vmax Ordering Guide
 - The Rise of Digital Reading Emc Vmax Ordering Guide
 - Advantages of eBooks Over Traditional Books
2. Identifying Emc Vmax Ordering Guide
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Emc Vmax Ordering Guide
 - User-Friendly Interface
4. Exploring eBook Recommendations from Emc Vmax Ordering Guide
 - Personalized Recommendations

- Emc Vmax Ordering Guide User Reviews and Ratings
- Emc Vmax Ordering Guide and Bestseller Lists
- 5. Accessing Emc Vmax Ordering Guide Free and Paid eBooks
 - Emc Vmax Ordering Guide Public Domain eBooks
 - Emc Vmax Ordering Guide eBook Subscription Services
 - Emc Vmax Ordering Guide Budget-Friendly Options
- 6. Navigating Emc Vmax Ordering Guide eBook Formats
 - ePub, PDF, MOBI, and More
 - Emc Vmax Ordering Guide Compatibility with Devices
 - Emc Vmax Ordering Guide Enhanced eBook Features
- 7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Emc Vmax Ordering Guide
 - Highlighting and Note-Taking Emc Vmax Ordering Guide
 - Interactive Elements Emc Vmax Ordering Guide
- 8. Staying Engaged with Emc Vmax Ordering Guide
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Emc Vmax Ordering Guide
- 9. Balancing eBooks and Physical Books Emc Vmax Ordering Guide
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Emc Vmax Ordering Guide
- 10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
- 11. Cultivating a Reading Routine Emc Vmax Ordering Guide
 - Setting Reading Goals Emc Vmax Ordering Guide
 - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Emc Vmax Ordering Guide
 - Fact-Checking eBook Content of Emc Vmax Ordering Guide

- Distinguishing Credible Sources
- 13. Promoting Lifelong Learning
 - Utilizing eBooks for Skill Development
 - Exploring Educational eBooks
- 14. Embracing eBook Trends
 - Integration of Multimedia Elements
 - Interactive and Gamified eBooks

Emc Vmax Ordering Guide Introduction

In today's digital age, the availability of Emc Vmax Ordering Guide books and manuals for download has revolutionized the way we access information. Gone are the days of physically flipping through pages and carrying heavy textbooks or manuals. With just a few clicks, we can now access a wealth of knowledge from the comfort of our own homes or on the go. This article will explore the advantages of Emc Vmax Ordering Guide books and manuals for download, along with some popular platforms that offer these resources. One of the significant advantages of Emc Vmax Ordering Guide books and manuals for download is the cost-saving aspect. Traditional books and manuals can be costly, especially if you need to purchase several of them for educational or professional purposes. By accessing Emc Vmax Ordering Guide versions, you eliminate the need to spend money on physical copies. This not only saves you money but also reduces the environmental impact associated with book production and transportation. Furthermore, Emc Vmax Ordering Guide books and manuals for download are incredibly convenient. With just a computer or smartphone and an internet connection, you can access a vast library of resources on any subject imaginable. Whether you're a student looking for textbooks, a professional seeking industry-specific manuals, or someone interested in self-improvement, these digital resources provide an efficient and accessible means of acquiring knowledge. Moreover, PDF books and manuals offer a range of benefits compared to other digital formats. PDF files are designed to retain their formatting regardless of the device used to open them. This ensures that the content appears exactly as intended by the author, with no loss of formatting or missing graphics. Additionally, PDF files can be easily annotated, bookmarked, and searched for specific terms, making them highly practical for studying or referencing. When it comes to accessing Emc Vmax Ordering Guide books and manuals, several platforms offer an extensive collection of resources. One such platform is Project Gutenberg, a nonprofit organization that provides over 60,000 free eBooks. These books are primarily in the public domain, meaning they can be freely distributed and downloaded. Project Gutenberg offers a wide range of classic literature, making it an excellent resource for literature enthusiasts. Another popular platform for Emc Vmax Ordering Guide books and manuals is Open Library. Open Library is an initiative of the Internet Archive, a non-profit

organization dedicated to digitizing cultural artifacts and making them accessible to the public. Open Library hosts millions of books, including both public domain works and contemporary titles. It also allows users to borrow digital copies of certain books for a limited period, similar to a library lending system. Additionally, many universities and educational institutions have their own digital libraries that provide free access to PDF books and manuals. These libraries often offer academic texts, research papers, and technical manuals, making them invaluable resources for students and researchers. Some notable examples include MIT OpenCourseWare, which offers free access to course materials from the Massachusetts Institute of Technology, and the Digital Public Library of America, which provides a vast collection of digitized books and historical documents. In conclusion, Emc Vmax Ordering Guide books and manuals for download have transformed the way we access information. They provide a cost-effective and convenient means of acquiring knowledge, offering the ability to access a vast library of resources at our fingertips. With platforms like Project Gutenberg, Open Library, and various digital libraries offered by educational institutions, we have access to an ever-expanding collection of books and manuals. Whether for educational, professional, or personal purposes, these digital resources serve as valuable tools for continuous learning and self-improvement. So why not take advantage of the vast world of Emc Vmax Ordering Guide books and manuals for download and embark on your journey of knowledge?

FAQs About Emc Vmax Ordering Guide Books

1. Where can I buy Emc Vmax Ordering Guide books? Bookstores: Physical bookstores like Barnes & Noble, Waterstones, and independent local stores. Online Retailers: Amazon, Book Depository, and various online bookstores offer a wide range of books in physical and digital formats.
2. What are the different book formats available? Hardcover: Sturdy and durable, usually more expensive. Paperback: Cheaper, lighter, and more portable than hardcovers. E-books: Digital books available for e-readers like Kindle or software like Apple Books, Kindle, and Google Play Books.
3. How do I choose a Emc Vmax Ordering Guide book to read? Genres: Consider the genre you enjoy (fiction, non-fiction, mystery, sci-fi, etc.). Recommendations: Ask friends, join book clubs, or explore online reviews and recommendations. Author: If you like a particular author, you might enjoy more of their work.
4. How do I take care of Emc Vmax Ordering Guide books? Storage: Keep them away from direct sunlight and in a dry environment. Handling: Avoid folding pages, use bookmarks, and handle them with clean hands. Cleaning: Gently dust the covers and pages occasionally.

5. Can I borrow books without buying them? Public Libraries: Local libraries offer a wide range of books for borrowing. Book Swaps: Community book exchanges or online platforms where people exchange books.
6. How can I track my reading progress or manage my book collection? Book Tracking Apps: Goodreads, LibraryThing, and Book Catalogue are popular apps for tracking your reading progress and managing book collections. Spreadsheets: You can create your own spreadsheet to track books read, ratings, and other details.
7. What are Emc Vmax Ordering Guide audiobooks, and where can I find them? Audiobooks: Audio recordings of books, perfect for listening while commuting or multitasking. Platforms: Audible, LibriVox, and Google Play Books offer a wide selection of audiobooks.
8. How do I support authors or the book industry? Buy Books: Purchase books from authors or independent bookstores. Reviews: Leave reviews on platforms like Goodreads or Amazon. Promotion: Share your favorite books on social media or recommend them to friends.
9. Are there book clubs or reading communities I can join? Local Clubs: Check for local book clubs in libraries or community centers. Online Communities: Platforms like Goodreads have virtual book clubs and discussion groups.
10. Can I read Emc Vmax Ordering Guide books for free? Public Domain Books: Many classic books are available for free as they're in the public domain. Free E-books: Some websites offer free e-books legally, like Project Gutenberg or Open Library.

Find Emc Vmax Ordering Guide :

[life as it aint yet meditations for living now](#)

life after injury a rehabilitation manual for the injured and their helpers

life cycle of a polar bear

libro de san cipriano el

[license plate how to read and decode plates from all 50 states](#)

[life and times of agnes tait 18941981](#)

life and times of joe mccarthy

liebling at home

lie cheat and genuflect

libro de oraciones del pueblo catflico

[life in ancient egypt](#)

liebenswerte zwergkaninchen

libertarian reader classic and contemporary writings from lao-tzu to milton friedman

lieutenant colonel

~~life cycle strategy software support on the front line~~

Emc Vmax Ordering Guide :

activity 1 1 2 simple machines practice problems answer key - Mar 18 2022

web apr 24 2016 answer the following questions regarding simple machine systems each question requires proper illustration and annotation including labeling of forces distances direction and unknown values illustrations should consist of basic simple machine functional sketches rather than realistic pictorials

1 1 2 answer key n b engr 2230 tenn state studocu - Jun 20 2022

web age class and crime n b activity simple machines practice procedure answer the following questions regarding simple machine systems each question requires proper illustration and

simple machines worksheet packet simple machines packet answers - Mar 30 2023

web simple machines packet answers focus on pages with a for test tomorrow simple machines page 61 lever or wedge inclined plane wedge wheel and axle screw pulley lever lever wheel and axle functions of simple machines page 62 work screw pulley gear distance wheel and axle force lever wedge inclined plane

1 1 2 a simple machines practice problems studocu - Jul 02 2023

web answer the following questions regarding simple machine systems each question requires proper illustration and annotation including labeling of forces distances direction and unknown values illustrations should consist of basic simple machine functional sketches rather than realistic pictorials

simple machines super teacher worksheets - Feb 26 2023

web word problems daily more math worksheets reading comprehension reading comprehension gr 1 printable worksheets and activities to teach students about the six types of simple machines inclined plane wedge wheel and axle screw lever and pulley pdf with answer key

activity 1 1 2 simple machines practice problems dominik - Jun 01 2023

web aug 26 2014 answer the following questions regarding simple machine systems each question requires proper illustration and annotation including labeling of forces distances direction and unknown

activity 1 1 2 simple machine practice problems key - Aug 03 2023

web activity 1 1 2 simple machines practice problems procedure answer the following questions regarding simple machine

systems each question requires proper illustration and annotation including labeling of forces distances direction and unknown values

1 1 2 a simple machines practice problems studocu - Oct 05 2023

web answer the following questions regarding simple machine systems each question requires proper illustration and annotation including labeling of forces distances direction and unknown values illustrations should consist of basic simple machine functional sketches rather than realistic pictorials

1 1 2 ak simple machines practice problems 1 17 docx - Oct 25 2022

web activity 1 1 2 simple machines practice problems answer key procedure answer the following questions regarding simple machine systems each question requires proper illustration and annotation including labeling of forces

1 1 2 simple machine practice problems - Dec 27 2022

web introduction in the last activity building and using simple machines and making measurements of forces and distances gave you concrete examples using mechanisms just from a good sketch however an engineer can deduce how a mechanism will transform forces and distances from input to output from effort to resistance

activity 1 1 2 simple machines practice problems answer key - Feb 14 2022

web apr 24 2016 answer the following questions regarding simple machine systems each question requires proper illustration and annotation including labeling of forces distances direction and unknown values illustrations should consist of basic simple machine functional sketches rather than realistic pictorials

activity 1 1 2 simple machines practice problems answer key - Nov 25 2022

web 1 sketch and annotate the lever system described above 2 what is the actual mechanical advantage of the system formula substitute solve final answer ama 3 33 3 using static equilibrium calculations calculate the length from the fulcrum to the resistance force formula substitute solve final answer

17 simple machine quizzes questions answers trivia proprofs - May 20 2022

web mar 21 2023 pulley and lever lever inclined plane wedge force with this wonderful collection of simple machine quizzes go ahead and put your knowledge to the test discover interesting trivia about simple machines and their ro

a1 1 2 simple machines practice problems answer key pdf lever machines - Sep 04 2023

web 2 simple machines practice problems answer key procedure answer the following questions regarding simple machine systems each question requires proper illustration and annotation including labeling of forces distances direction and unknown values

activity 1 1 2 simple machines practice problems pltw - Apr 30 2023

web answer the following questions regarding simple machine systems each question requires proper illustration and

annotation including labeling of forces distances direction and unknown values illustrations should consist of basic simple machine functional sketches rather than realistic pictorials

mastering simple machines get the answer key to your 1 1 2 practice - Sep 23 2022

web the 1 1 2 simple machines practice answer key provides the solutions to common problems and exercises related to simple machines this answer key serves as a valuable resource for students and educators alike allowing them to check their work and ensure they are on the right track

1 1 2 a simplemachinespracticeproblems 5 studylib net - Aug 23 2022

web activity 1 1 2 simple machines practice problems procedure answer the following questions regarding simple machine systems each question requires proper illustration and annotation including labeling of forces distances direction and unknown values

9 3 simple machines physics openstax - Jan 28 2023

web c describe simple and complex machines and solve problems involving simple machines d define input work output work mechanical advantage and efficiency of machines in addition the high school physics laboratory manual addresses content in this section in the lab titled work and energy as well as the following standards

activity 1 1 2 simple machines practice problems answer key - Apr 18 2022

web problem statement the perimeter approximate surface area and the approximate volume of an in ground pool is given by the following formula perimeter 2 length width volume $\text{length width average depth}$ underground surface area $2 \text{ length width average depth length width}$ using these formula as basis write a program that

1 1 2 a simplemachinespracticeproblems docx activity 1 1 2 simple - Jul 22 2022

web activity 1 1 2 simple machines practice procedure answer the following questions regarding simple machine systems each question requires proper illustration and annotation including labeling of forces distances direction and unknown values illustrations should consist of basic simple machine functional sketches rather than

visual culture richard howells google books - May 12 2023

web apr 28 2003 visual culture is an introductory textbook book on visual literacy exploring how meaning is

visual culture by richard howells goodreads - Aug 15 2023

web apr 25 2003 richard howells joaquim negreiros contributor 3 84 85 ratings9 reviews visual culture is an introductory textbook book on visual literacy exploring how meaning is both made and transmitted in an increasingly visual world

visual culture richard howells howells richard 1956 free - Nov 06 2022

web english ix 292 p 26 cm includes bibliographical references p 271 278 and index iconology form art history ideology semiotics hermeneutics fine art photography film television new media access restricted item true

richard howells king s college london - Apr 11 2023

web richard howells is a cultural sociologist who specialises in visual and popular culture his work combines theory and practice to explore case studies as seemingly diverse as the myth of the titanic the work of the bloomsbury group utopian critical theory and the humour of ali g

visual culture howells richard negreiros joaquim - Feb 09 2023

web jan 10 2012 the authors examine writers who have changed the way we think and see the nature and experience of visual media and leading conceptual tools on which the study of visual culture has relied the result is a highly readable deeply informed and richly illuminating book david morgan duke university

visual culture howells richard negreiros joaquim - Sep 16 2023

web feb 26 2019 written in a clear lively and engaging style visual culture continues to be an ideal introduction for students taking courses in visual culture and communications in a range of disciplines including media and cultural studies sociology and art and design

visual culture richard howells 9780745624129 abebooks - Oct 05 2022

web visual culture provides an ideal introduction for students taking courses in visual culture and communication in a wide range of disciplines including media and cultural studies sociology art history and design

visual culture richard howells open library - Apr 30 2022

web jan 14 2023 visual culture richard howells by howells richard dr 5 00 1 rating 12 want to read 0 currently reading 0 have read this edition doesn't have a description yet can you add one publish date 2003 publisher blackwell publishers language english pages 292 previews available in english subjects

visual culture howells richard 9780745624129 books - Sep 04 2022

web apr 28 2003 in stock visual culture is an introductory textbook book on visual literacy exploring how meaning is both made and transmitted in an increasingly visual world it is designed to introduce students to the analysis of all kinds of visual texts whether drawings paintings photographs films advertisements television programmes or

visual culture 3rd edition wiley - Jul 14 2023

web visual culture 3rd edition wiley this is a book about how to read visual images from fine art to photography film television and new media it explores how meaning is communicated by the wide variety of texts that inhabit our increasingly visual world

download visual culture by richard howells zlib pub - Feb 26 2022

web download visual culture by richard howells visual culture pdf download pdf preview click to preview pdf summary download visual culture pdf description visual culture is an introductory textbook book on visual literacy exploring how

meaning is both made and transmitted in an increasingly visual world

visual culture kindle edition by howells richard negreiros - Jul 02 2022

web mar 5 2019 written in a clear lively and engaging style visual culture continues to be an ideal introduction for students taking courses in visual culture and communications in a range of disciplines including media and cultural studies sociology and art and design read more isbn 13 978 1509518777

visual culture richard howells joaquim negreiros google - Oct 17 2023

web feb 6 2012 richard howells is a cultural sociologist who specialises in visual and popular culture his

visual culture amazon co uk howells richard negreiros joaquim - Jun 01 2022

web buy visual culture 3 by howells richard negreiros joaquim isbn 9781509518784 from amazon s book store everyday low prices and free delivery on eligible orders

visual culture richard howells joaquim negreiros google - Jun 13 2023

web mar 5 2019 visual culture richard howells joaquim negreiros john wiley sons mar 5 2019 art 360 pages this is a book about how to read visual images from fine art to photography film television

visual culture howells richard negreiros joaquim - Jan 08 2023

web 17 77 have one to sell sell on amazon see all 3 images read sample follow the author richard howells visual culture paperback illustrated jan 10 2012 by richard howells author joaquim negreiros author 4 3 35 ratings see all formats and editions hardcover 178 48 other new and used from 114 50 paperback

pdf visual culture by richard howells ebook perlego - Mar 30 2022

web visual culture richard howells joaquim negreiros book details book preview table of contents citations about this book this is a book about how to read visual images from fine art to photography film television and new media it explores how meaning is communicated by the wide variety of texts that inhabit our increasingly visual world

visual culture 3rd ed by richard howells and joaquim negreiros - Mar 10 2023

web jun 10 2021 visual culture 3rd ed by richard howells and joaquim negreiros 360 pages polity press 2019 isbn 13 978 1509518777 hardcover 978 1509518784 paperback visual communication quarterly vol 28 no 2 visual culture 3rd ed by richard howe

visual culture 3rd ed by richard howells ebook ebooks com - Aug 03 2022

web print copy permissions supported devices this is a book about how to read visual images from fine art to photography film television and new media it explores how meaning is communicated by the wide variety of texts

visual culture howells richard negreiros joaquim - Dec 07 2022

web visual culture by howells richard negreiros joaquim isbn 10 1509518770 isbn 13 9781509518777 polity 2019 visual

culture continues to be an ideal introduction for students taking courses in visual culture and communications in a range of disciplines including media and cultural studies sociology

immune system 921 plays quizizz - Aug 06 2022

immunology multiple choice questions mcq and quizzes basic immunology antibodies

immunology mcq with answers easybiologyclass - Sep 07 2022

a secondary immune response is more rapid than a primary one because a booster injection

active immunity humoral immunity practice exam questions gtac - Jun 16 2023

a specific immune response involves activation of b lymphocytes and t lymphocytes

the immune system review article khan academy - Jan 11 2023

multiple choice questions are perhaps the easiest to complete you simply put a cross in a

cell biology mcq multiple choice questions sanfoundry - Apr 02 2022

1 pt the two collecting ducts that drain the lymphatic trunks are the thoracic duct and right

the immune system cie as biology multiple choice questions - Jul 25 2021

immune system questions practice khan academy - Jul 17 2023

section a multiple choice questions question 1 1 mark the brka molecule is found on

sample exam questions infection and response aqa - Dec 10 2022

a helper t cells all of the following are true of the primary response of humoral immunity

multiple choice questions on immunology innate immune response - May 03 2022

chapterwise multiple choice questions on cell biology our 1000 mcqs focus on all topics

immunology multiple choice questions mcq and quizzes - Jul 05 2022

aqa sample exam questions infection and response aqa linking questions understanding

36 immune system quizzes questions answers trivia proprofs - Oct 08 2022

01 immunology quiz basics 02 immunology quiz advanced 03 antibodies

multiple choice questions on immunology mcq biology com - Jan 31 2022

1 which of the following statements is true of dna vaccines dna vaccines can have distinct

quiz immunology multiple choice questions proprofs quiz - Aug 18 2023

types of immune responses innate and adaptive humoral vs cell mediated b lymphocytes b cells professional antigen

presenting cells apc and mhc ii complexes

cell mediated immune response practice exam questions gtac - Apr 14 2023

compared to the secondary antibody response the primary response has a longer lag

microbiology multiple choice quiz mcgraw hill education - Mar 13 2023

a protein that is highly efficient at stimulating a single type of productive and specific t cell

[anatomy immune system review multiple choice quizlet](#) - Nov 09 2022

jun 10 2023 take this how strong is my immune system quiz and find out the answer today

lymphatic and immune system 220 plays quizizz - Mar 01 2022

multiple choice questions on immunology 1 an antigen is a highly specific protein

immunology multiple choice questions mcq quiz pdf - Nov 28 2021

oct 20 2023 metastasis is the leading cause of death in patients with cancer among the

[the immune system cie a level biology multiple choice](#) - May 15 2023

gtac biology revision series cell mediated immune response practice exam questions

federal prosecutors reject trump s immunity claims in election - Aug 26 2021

non self macromolecules that trigger an immune response non self macromolecules found

biology multiple choice quiz mcgraw hill education - Sep 19 2023

the immune response is terminated or decreased by a suppressor b cells b suppressor t cells c both of the above d none of

the above the immune response can only be stimulated not terminated

sample exam questions infection and response aqa - Jun 04 2022

multiple choice questions on immunology innate immune response 1 nonspecific host

[trump is not above the law and should not receive blanket](#) - Sep 26 2021

22 hours ago mr trump s lawyers raised the immunity defense two weeks ago in a

[multiple choice quiz on vaccines immunology quiz](#) - Dec 30 2021

the book immunology multiple choice questions and answers mcqs immunology quiz

[a multiscale model of pulmonary micrometastasis and immune](#) - Oct 28 2021

21 hours ago earlier this month trump s legal team moved to dismiss four felony charges

ch 18 multiple choice microbiology openstax - Feb 12 2023

the immune system responds to antigens by producing cells that directly attack the pathogen