

The logo for Next Step Test Prep is centered in the upper half of the image. It consists of a blue square containing the words "Next Step" in a large, white, sans-serif font, with "Next" on the top line and "Step" on the bottom line. Below "Step", the words "TEST PREP" are written in a smaller, white, all-caps, sans-serif font.

Next  
Step  
TEST PREP

**PCAT WEBINAR**  
**Math Bootcamp**

# Today's Agenda

- ▶ Welcome to this Info Session!
- ▶ Introduction
- ▶ Quantitative reasoning section strategy
- ▶ Logarithms
- ▶ How can Next Step Help
- ▶ Questions?

Next  
Step  
TEST PREP



# Who Is Next Step?

- Began in 2009 as a tutoring company
- Focus on graduate admissions tests only
- Team of educational experts
- First company to have materials built from ground up for 2016 PCAT format

✓ We never stop improving our materials!

Next  
Step  
TEST PREP



STUDENTS HAVE A CHOICE

# Introduction

**Hi, I'm Phil!**

- ▶ **PCAT Content writer**
  - ▶ **Tutored and taught for 9+ years**
  - ▶ **Attended University of Nebraska Medical Center as an MD/PhD student.**
- ✓ **Next Step is a team of test prep and educational experts committed to excellence.**





PCAT Subtests	Number and Approximate Percentage of Item Types
<b>1. Writing (30 minutes)</b>	<b>1 prompt</b>
<b>2. Biological Processes (45 minutes)</b>	<b>48 items</b>
General Biology	50%
Microbiology	20%
Human Anatomy and Physiology	30%
<b>3. Chemical Processes (45 minutes)</b>	<b>48 items</b>
General Chemistry	50%
Organic Chemistry	30%
Basic Biochemistry Processes	20%
<b>Rest Break (optional): 15 minutes (not included in total testing time)</b>	
<b>4. Critical Reading (50 minutes)</b>	<b>48 items</b>
Comprehension	30%
Analysis	40%
Evaluation	30%
<b>5. Quantitative Reasoning (50 minutes)</b>	<b>48 items</b>
Basic Math	25%
Algebra	25%
Probability & Statistics	18%
Precalculus	18%
Calculus	14%
<b>Total Test (220 minutes): 192 multiple-choice items, 1 writing prompt</b>	

## KEY STRATEGIES:

▶ Timing

▶ Higher vs Lower yield

## Quantitative Reasoning

Quantitative Reasoning Content Objectives
<b>Q1. Basic Math</b>
<b>A. Fractions, Percentages, &amp; Decimals</b>
<b>B. Unit Conversions</b>
<b>C. Log Base 10</b>
<b>Q3. Algebra</b>
<b>G. Expressions, Equations, and Inequalities</b>
<ol style="list-style-type: none"> <li>Evaluate algebraic expressions for given values</li> <li>Represent verbal quantitative situations as algebraic expressions or equations</li> <li>Solve problems using linear equations and inequalities</li> <li>Solve problems using equations and inequalities involving absolute value</li> <li>Solve problems using equations and inequalities involving rational expressions</li> <li>Solve quadratic equations and inequalities</li> <li>Solve equations and inequalities involving 1 or 2 radicals</li> <li>Solve systems of equations or inequalities involving 2 or 3 variables</li> </ol>
<b>I. Functions</b>
<ol style="list-style-type: none"> <li>Perform algebraic operations on functions</li> <li>Determine compositions of functions</li> <li>Determine inverses of functions</li> <li>Determine and use maximum and minimum points</li> </ol>
<b>Q4. Probability &amp; Statistics</b>
<b>A. Measures of Central Tendency</b>
<b>B. Variation</b>
<b>C. Graphical</b>
<b>D. Probability</b>
<b>E. Statistical Concepts</b>

Quantitative Reasoning Content Objectives <i>(continued)</i>
<b>Q5. Precalculus</b>
<b>A. Functions</b>
<ol style="list-style-type: none"> <li>Graph and identify domains, ranges, intercepts, and zeros of exponential functions</li> <li>Logarithms (natural or other base with multiple operations)</li> <li>Solve problems related to exponential and logarithmic functions</li> <li>Graph and identify domains, ranges, intercepts, zeros, and inverses of the circular functions</li> <li>Perform algebraic operations on functions</li> <li>Identify and use composite functions</li> </ol>
<b>B. Complex Numbers</b>
<b>C. Vectors</b>
<ol style="list-style-type: none"> <li>Add vectors graphically and algebraically</li> <li>Perform scalar multiplications</li> <li>Represent and/or recognize vector equations of lines and planes</li> </ol>
<b>Q6. Calculus</b>
<b>A. Limits</b> (Find: Limits of functions, One-sided limits, Infinite limits)
<b>B. Continuity</b> (Interpret graphs of continuous and discontinuous functions)
<b>C. Derivatives</b>
<ol style="list-style-type: none"> <li>Find derivatives of algebraic functions by means of the Sum and product, Power rule, apply the Mean Value Theorem</li> <li>Use the Chain Rule to find derivatives of composite functions</li> <li>Solve problems by differentiation (e.g., velocity and acceleration)</li> <li>Use and/or interpret derivative tests to find extrema, points of inflection, intervals</li> <li>Interpret and/or use the derivatives of circular functions and their inverses</li> <li>Interpret and/or use the derivatives of transcendental functions</li> <li>Determine the derivatives of composite functions involving the circular and transcendental functions</li> <li>Use implicit differentiation</li> <li>Determine related rates</li> </ol>
<b>D. Integrals</b>
<ol style="list-style-type: none"> <li>Find antiderivatives, and interpret C</li> <li>Understand and use sigma notation for simplifying sums</li> <li>Approximate areas bounded by curves</li> </ol>
<b>E. Integration</b>

# Logarithms

What is a log?

$$x-2=y \quad x=y+2$$

It's just a way to rewrite an exponential equation!

$$x/4 = y \quad x=4y \quad \rightarrow$$

$$\log_{10} x = y \quad x=10^y \quad \rightarrow$$

# Logarithms

$$\log_2 A = B$$

$$A = 2^B$$

$$\log_2 8 = ?$$

$$A = 8$$

$$8 = 2^B$$

$$\log_2 A = B$$

$$8 = 2 \times 2 \times 2$$

$$A = 2^B$$

$$8 = 2^3$$



# Logarithms

$$(x^{12} (x^y) / x^{16})^{-2}$$

$$(x^{12+y} / x^{16})^{-2}$$

$$(x^{12+y-6})^{-2}$$

$$(x^y)^{-2}$$

$$1 / (x^{y-4})^2$$

$$1 / x^{2y-8}$$

## Exponential Laws

---

$$x^a \cdot x^b = x^{a+b}$$

$$\frac{x^a}{x^b} = x^{a-b}$$

$$(x^a)^b = x^{ab}$$

$$x^{-a} = \frac{1}{x^a}$$

$$x^0 = 1$$

# Logarithms

## Exponential Laws

$$x^a \cdot x^b = x^{a+b}$$

$$\frac{x^a}{x^b} = x^{a-b}$$

$$(x^a)^b = x^{ab}$$

$$x^{-a} = \frac{1}{x^a}$$

$$x^0 = 1$$

## Logarithm Laws

$$\log(ab) = \log(a) + \log(b)$$

$$\log\left(\frac{a}{b}\right) = \log(a) - \log(b)$$

$$\log(a^b) = b \cdot \log(a)$$

$$\log_x\left(\frac{1}{x^a}\right) = -a$$

$$\log_x 1 = 0$$

# Logarithms

Solve  $\log_{\sqrt{2}} (4x)^3 - \log_{\sqrt{2}} x$ .

$$\log_{\sqrt{2}} (4x)^3 - \log_{\sqrt{2}} x$$

$$= 3 \log_{\sqrt{2}} 4x - \log_{\sqrt{2}} x$$

$$= (3 \log_{\sqrt{2}} 4) + (3 \log_{\sqrt{2}} x) - \log_{\sqrt{2}} x$$

$$= 3(2) + 2 \log_{\sqrt{2}} x$$

$$= 6 + 2 \log_{\sqrt{2}} x$$

## Logarithm Laws

---

$$\log(ab) = \log(a) + \log(b)$$

$$\log\left(\frac{a}{b}\right) = \log(a) - \log(b)$$

$$\log(a^b) = b \cdot \log(a)$$

$$\log_x\left(\frac{1}{x^a}\right) = -a$$

$$\log_x 1 = 0$$

# Logarithms

Solve  $4 = \log(100x)^2 - \log(100)$

$$4 = 2 \log(100x) - \log 100$$

$$4 = 2 \log(100) + 2 \log(x) - \log 100$$

$$4 = 4 + 2 \log(x) - 2$$

$$4 = 2 + 2 \log x$$

$$2 = 2 \log x$$

$$1 = \log x$$

## Logarithm Laws

---

$$\log(ab) = \log(a) + \log(b)$$

$$\log\left(\frac{a}{b}\right) = \log(a) - \log(b)$$

$$\log(a^b) = b \cdot \log(a)$$

$$\log_x\left(\frac{1}{x^a}\right) = -a$$

$$\log_x 1 = 0$$



# Logarithms

Solve  $10^{\log 12} = x/3$

## Logarithm Laws

---

$$\log(ab) = \log(a) + \log(b)$$

$$\log\left(\frac{a}{b}\right) = \log(a) - \log(b)$$

$$\log(a^b) = b \cdot \log(a)$$

$$\log_x\left(\frac{1}{x^a}\right) = -a$$

$$\log_x 1 = 0$$

# Next Step: Core Values

Next  
Step  
TEST PREP



**Educate Daily**



**Approachability**



**Authenticity**



**Professionalism**



**Ownership**

**We are dedicated to providing personalized support, advice and prep options that match each student's individual needs.**

# Students Have a Choice

Next  
Step  
TEST PREP

✓ **Over 50,000 students have used Next Step Test Prep in their prep journey**

- Always up-to-date content, strategy and tests
- Guaranteed Satisfaction
- No call center – instead, Academic Managers guide you all the way!
- Always updating our content based on announced changes and student feedback
- Are ensured the most up-to-date, realistic experience... always
- Access to Online Forum for additional live support from fellow students and NSTP Content Team

SHOPPER  
APPROVED

4.7



# Personalized Options

Next  
Step  
TEST PREP

- ✓ No matter your study style, subject expertise, or PCAT goal, Next Step has an option for your personal needs and lifestyle.
- Free Practice Bundle Materials
- Self-Prep Materials and Planning
- Guided Online Study with Free Extra Help
- One-on-One Tutoring

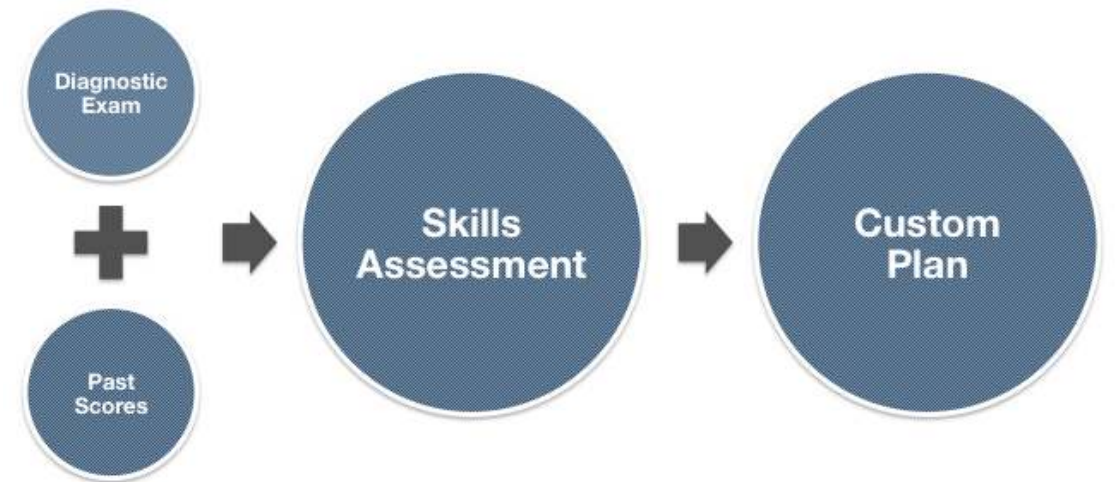




# One-On-One Tutoring

- ✓ No matter your study style, subject expertise, or PCAT goal, Next Step's Tutoring is personalized for YOU
- Tailored Study Plan
- Flexible Online Tutor Sessions
- Top-Scoring, Expert PCAT Tutors

Next  
Step  
TEST PREP

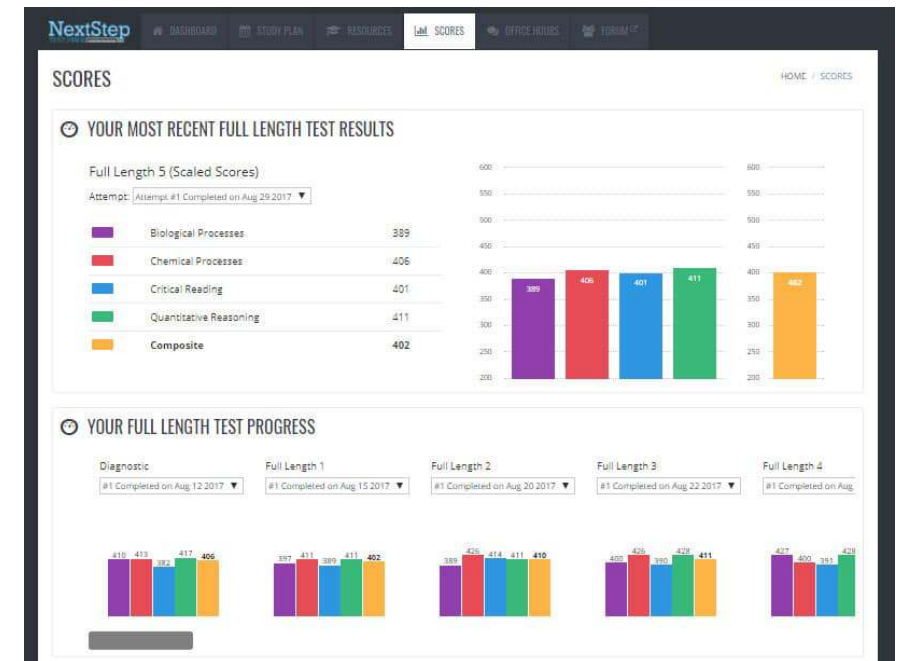


# Unmatched Online Course

Next  
Step  
TEST PREP

✓ **Finally, a high-quality PCAT prep choice delivering personalization, flexibility, and affordability in an easy-to-understand platform and a score guarantee.**

- **One-On-One Orientation**
- **Exclusive Study Plan Generator**
- **Ongoing Live-Online Office Hours (2x/week)**
- **5 Full Length PCAT Practice**
- **1 Full Length PCAT Diagnostic**
- **Extra focus on high-yield and difficult subjects**
- **Review Book: 500+ pages**
- **Content Book: 200+ pages**
- **Lesson Videos: over 30 hours**
- **Content Videos: 50 videos with interactive quizzes**
- **11 Qbanks with over 450 questions**
- **Expertise Built & Supported by 99<sup>th</sup> percentile instructors**





# Next Step: Educate Every Da

Next  
Step  
TEST PREP

## ✓ Get the **ONLY FREE PCAT Practice Bundle**

- Full-Length PCAT Diagnostic Test
- Diagnostic Test Review Video (4 segments)
- Lesson 1 from PCAT Online Course
- PDF Sample: Lesson Book for Lesson 1
- PDF Sample: Review Book for Chapters 1-3
- Content Review Videos
  - Scientific Method and Data Interpretation
  - Quantitative Reasoning: Math Skills I
  - Chemistry: Substitution and Elimination Reactions
  - Biology: Kidney Structure and Function
- Exclusive Study Plan Generator
- Free Public Q&A Office Hours & Webinars

Access your  
**FREE PCAT Practice now!**

[nextstepprep.com/  
free-pcat-practice-bundle](https://nextstepprep.com/free-pcat-practice-bundle)



# Take the Best Next Ste



## Meet with an Academic Manager and build a strategy

- Discuss what works for you: from self-study to tutoring
- Personalize A Study Plan for YOU
- Plan around your study style and class/work schedule
- Speak with educational pros, not a call center

## Attend our free webinars

- Download the FREE PCAT BUNDLE and take the Diagnostic
- Take advantage of the free webinars and open Office Hours with a focus on PCAT subject reviews and strategy sessions

## Let's Get Social

- Follow us on Facebook, Instagram and YouTube

Contact an Academic  
Manager for a free  
**PCAT Consultation**  
and plan your prep today!

[nextsteptestprep.com/  
pcat-tutoring](https://nextsteptestprep.com/pcat-tutoring)

The logo for Next Step Test Prep is centered in a blue square. The words "Next" and "Step" are stacked vertically in a large, white, sans-serif font. Below them, the words "TEST PREP" are written in a smaller, white, all-caps, sans-serif font.

Next  
Step  
TEST PREP

— — — — —

**Step**

**CALL 888-530-6398 FOR A FREE CONSULT**

The logo for Next Step TEST PREP is centered in a blue square. The words "Next" and "Step" are stacked vertically in a large, white, sans-serif font. Below them, the words "TEST PREP" are written in a smaller, white, all-caps, sans-serif font. The background of the slide is dark blue with a repeating pattern of small white plus signs. A large white arrow points downwards from the top of the slide, framing the logo.

Next  
Step  
TEST PREP

**Questions?**