

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

**Next
Step**
TEST PREP

PCAT PUBLIC WEBINAR
Pearson Practice Test Review

Today's Agenda

- ▶ **Welcome to Office Hours!**
- ▶ **Introduction**
- ▶ **Gen Chem Study Strategy**
 - ▶ **Acid-Base Chemistry**
 - ▶ **Solubility**
- ▶ **What Next?**

Next
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TEST PREP



Who Is Next Step?

Next
Step
TEST PREP

- Began in 2009 as a tutoring company
- Focus on graduate admissions tests only
- Team of educational experts
- Helped over 50,000 students in Pre-Health admissions preparation



✓ **We never stop improving our materials!**

STUDENTS HAVE A CHOICE

Introduction to PCAT Webinars

Thanks for coming to today's webinar!

These sessions are meant to be:

- ▶ Interactive
- ▶ Problem-focused

✓ **Think of a question after the webinar?
Post in our forums at [forum-
nextsteptestprep.com](http://forum-nextsteptestprep.com)**

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Getting Started:

1. Turn on your mic
2. Locate the hand-raise button
3. Locate the Question and Chat boxes
4. Let me know if you're having at tech issues!

To review or not to review?

Benefits to taking practice tests:

- ▶ *Setting expectations*
- ▶ *Practicing under test-like conditions*
- ▶ *Reviewing high-yield content*
- ▶ *Developing a game plan*
- ▶ *Building stamina*
- ▶ *Evaluating your content knowledge*
- ▶ *Identifying strengths and weaknesses*

✓ **If you're not reviewing practice tests, you're missing out on their full benefit!**

How To Review Strategically

Today we're going to focus on getting the MOST out of practice tests.

- ▶ *How did your exam go overall?*
- ▶ *How was your timing on each section?*
- ▶ *Where did you miss questions? Passages? Beginning, middle, or end?*
- ▶ *Why did you miss questions? Content? Strategy? Math? Silly mistakes?*
- ▶ *What types of passages or questions were hardest?*
- ▶ *What are the top 3 content areas you should review for each section?*

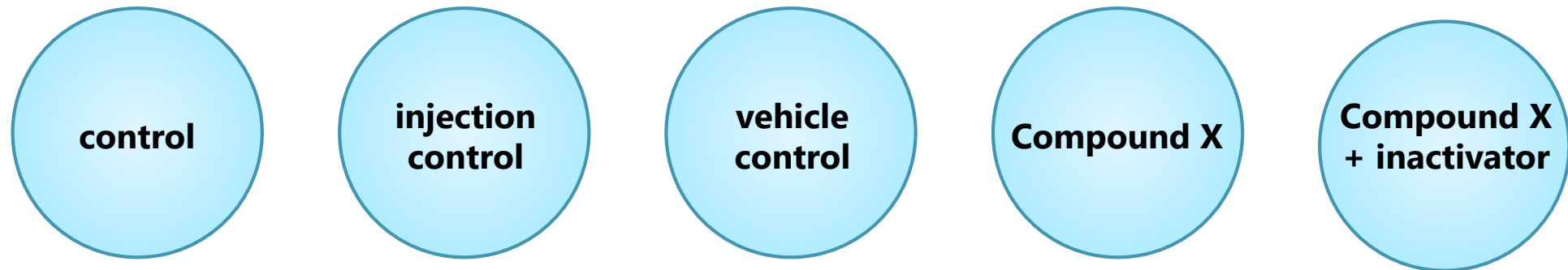
Lessons Learned

What are the major takeaways for Test Day?

Section (topic)	Question	Lesson Learned
BP (immunology)	Diag #14	CD4 ⁺ = helper, CD8 ⁺ = cytotoxic T cell
CP (math)	Diag #2	<i>Don't forget to check units!</i>
QR (functions)	Diag #39	Function composition – start on the inside
QR (basic math)	Diag #45	Plug in answer choices to save time!

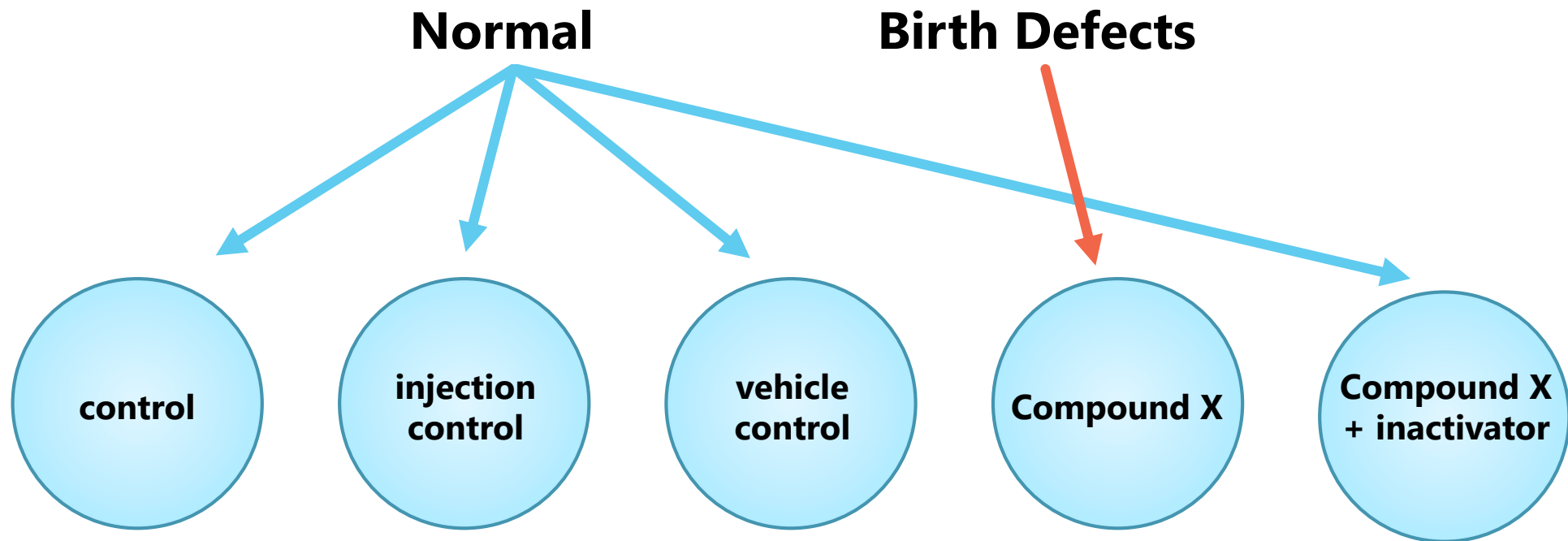
Biology Passage (Q7-10)

- ▶ **Background/Hypothesis:** Compound X → birth defects in birds
- ▶ **Methods:**
 - ▶ eggs from birds never exposed to compound
 - ▶ 10 eggs in 5 treatment subgroups
 - ▶ sealed and incubated
- ▶ **Figure/Table:** treatments A-E



Biology Passage (Q7-10)

If Compound X causes birth defects, then...



Biology Passage

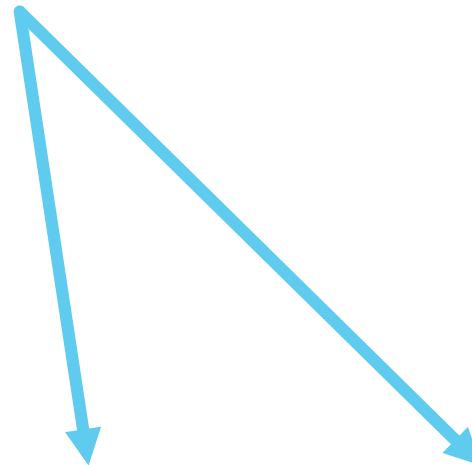
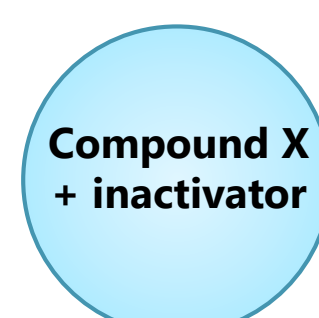
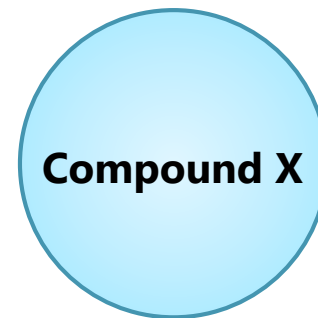
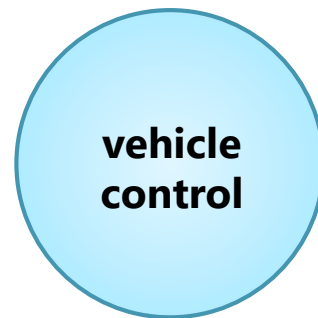
Question 7: What if birth defects are found in...

~~A. This is normal~~

~~B. Due to injection~~

~~C. Due to chelator~~

D. Due to vehicle



Biology Passage

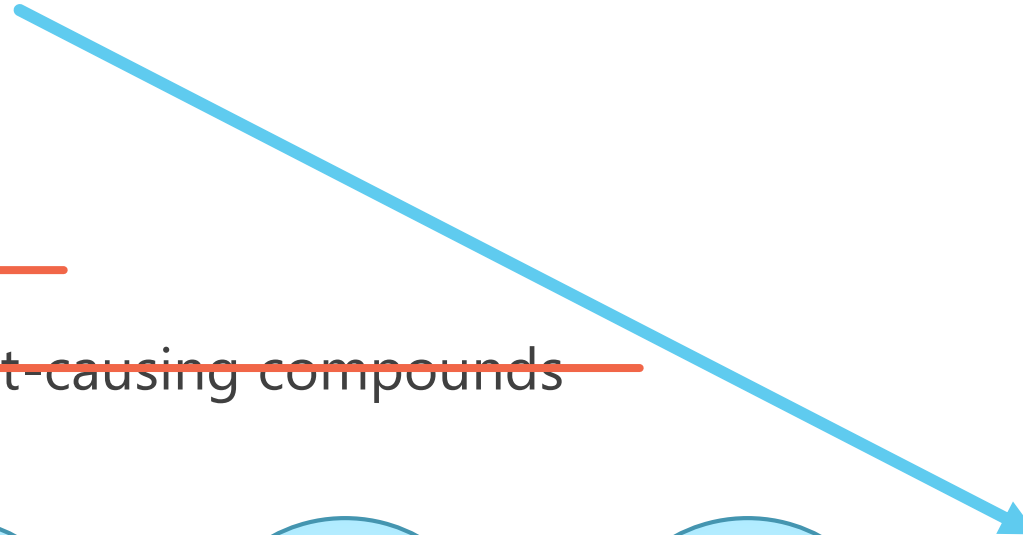
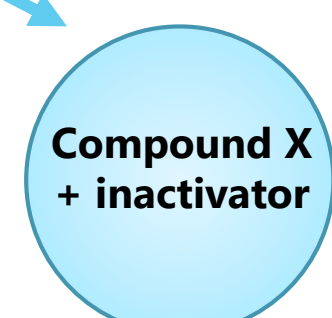
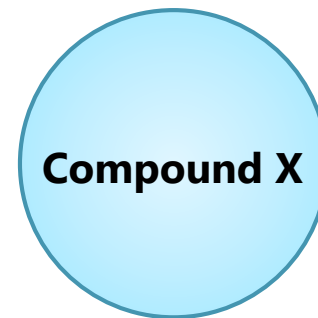
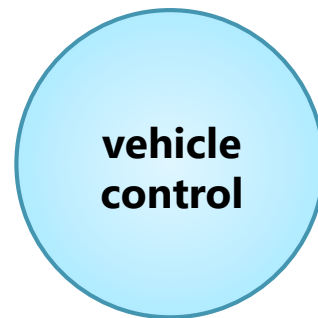
Question 8: Why include...

~~A. Injection control~~

B. Positive control

~~C. Also causes birth defects~~

~~D. Inhibits other birth defect-causing compounds~~



Biology Passage

Question 9: Why would we want to know *how* something causes birth defects?

~~A. Treatment for baby chicks~~

~~B. Everything else that looks like that compound *must* cause defects~~

C. Other compounds that act similarly *might* cause defects

~~D. No need for injection controls~~

Biology Passage

Question 10: What if Compound X affects sexual development but not neurulation ?
Then it must have something to do with:

~~A. Folate~~

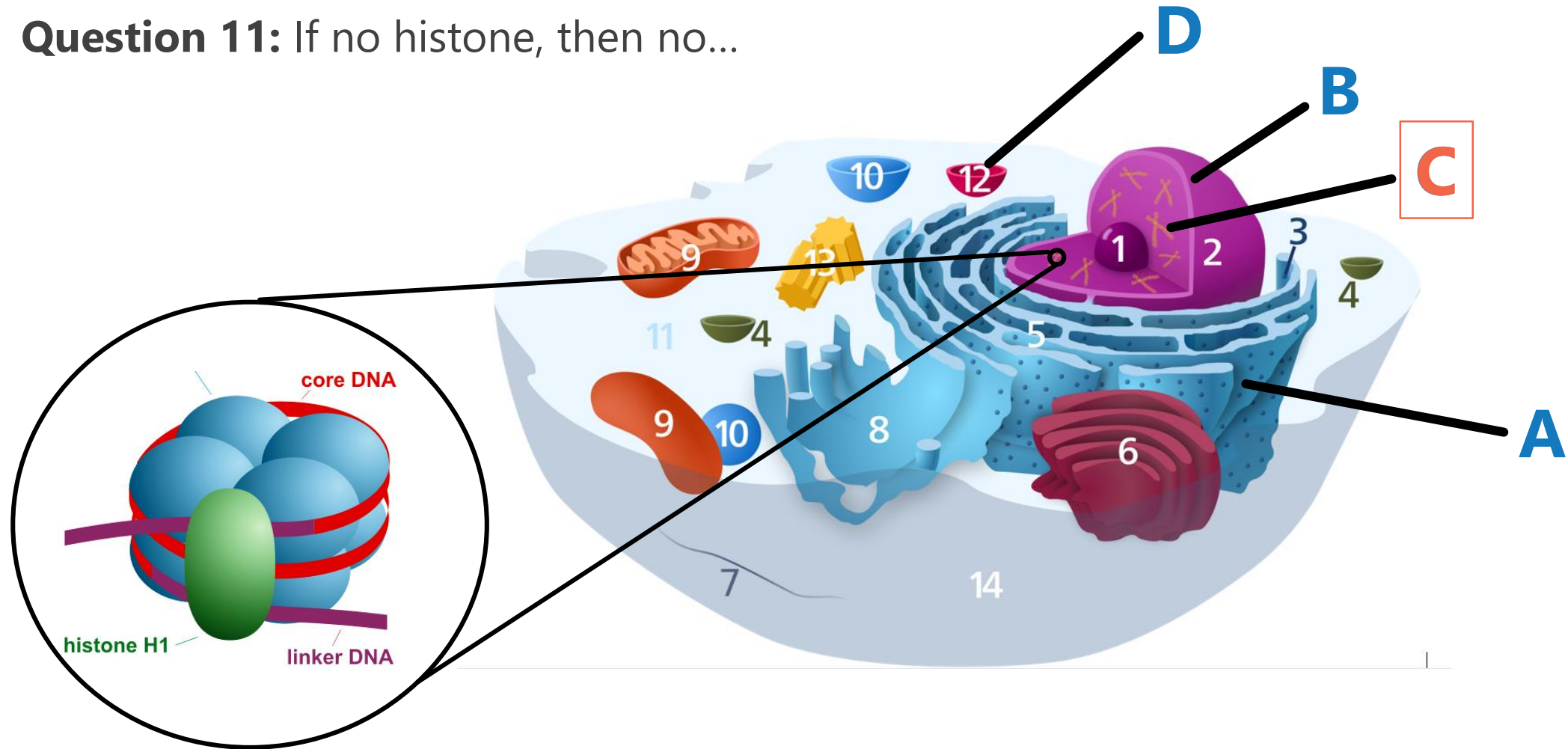
B. Hormones

~~C. Neural crest~~

~~D. ROS (reactive oxygen species)~~

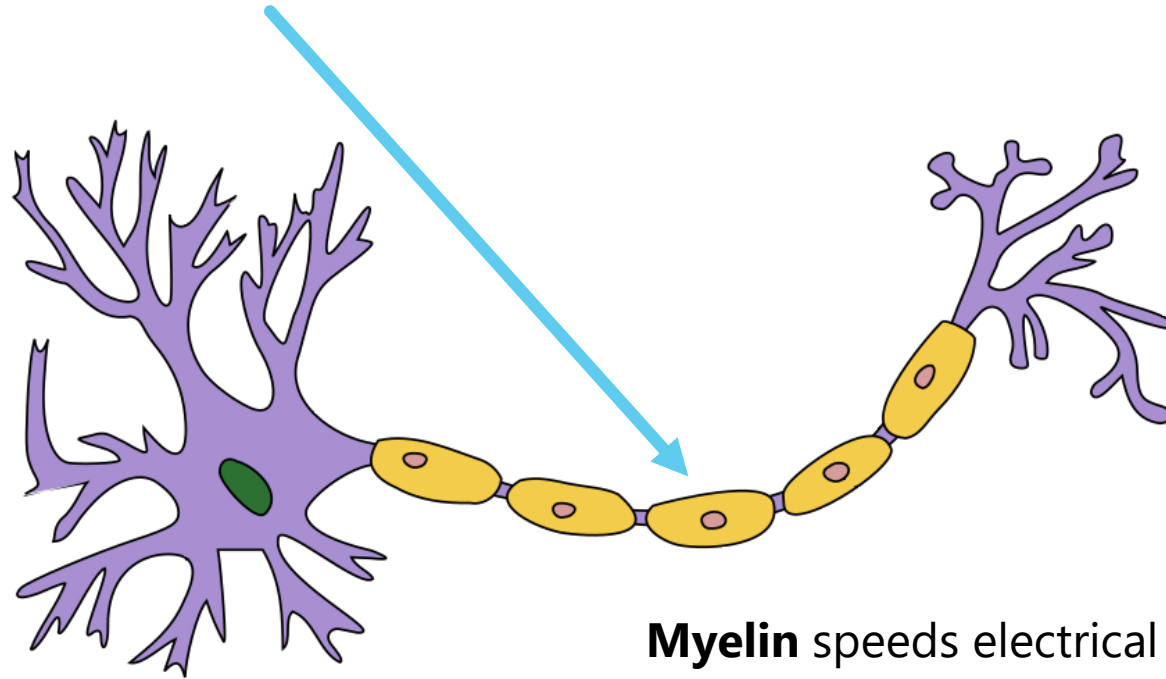
Biology Discretetes

Question 11: If no histone, then no...



Biology Discretes

Question 12: What's this?



Myelin speeds electrical impulses down the axon.

D

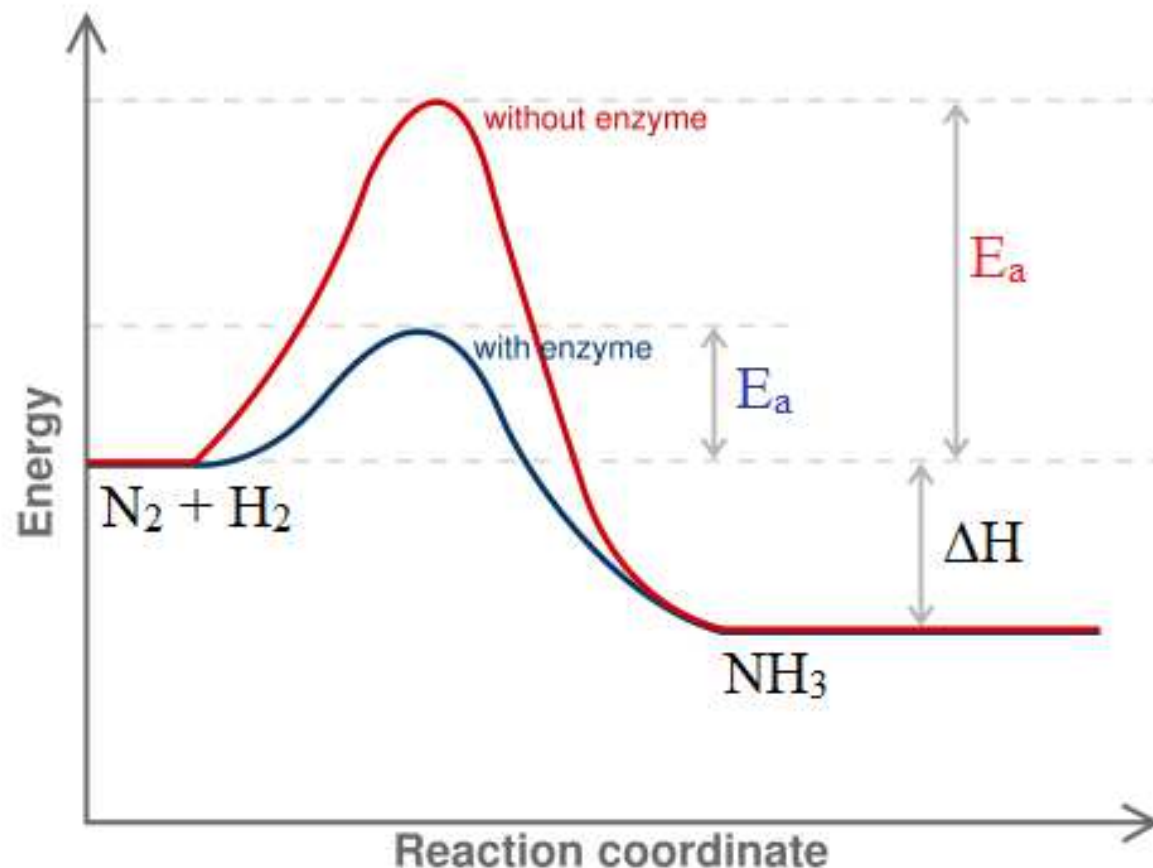
Chemistry Passage (Q35-38)

▶ Haber-Borsch process

- ▶ $N_2 + H_2 \rightarrow NH_3$
- ▶ Exothermic ($-\Delta H$)
- ▶ Le Châtelier's principle: what if we increase pressure? temperature?

▶ Ostwald process

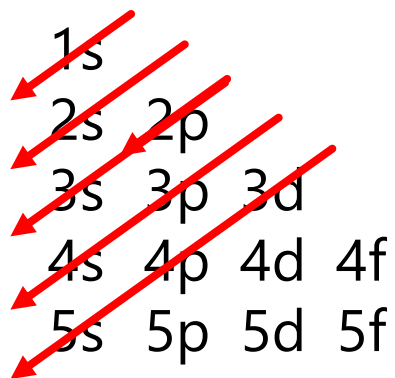
- ▶ $NH_3 \rightarrow HNO_3$
- ▶ N_2 in the air can be converted into NH_3 and HNO_3 which can be used by animals and plants



Chemistry Passage

Question 35: What is the electron configuration of N?

B



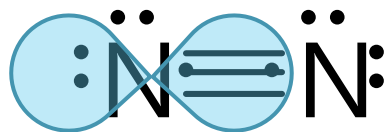
7 total e⁻
5 valence e⁻

1s¹												1s²					
2s¹ 2s²												2p¹ 2p² 2p³		8 O	9 F	10 Ne	
s block		d block										p block					
11 Na	12 Mg	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	13 Al	14 Si	15 P	16 S	17 Cl	18 Ar
19 K	20 Ca	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
37 Rb	38 Sr	57 La *	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
55 Cs	56 Ba	89 Ac *	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
87 Fr	88 Ra											113 Nh	114 Fl	115 Mc	116 Lv	117 Ts	118 Og
		f block															
		* 58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu		
		* 90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr		

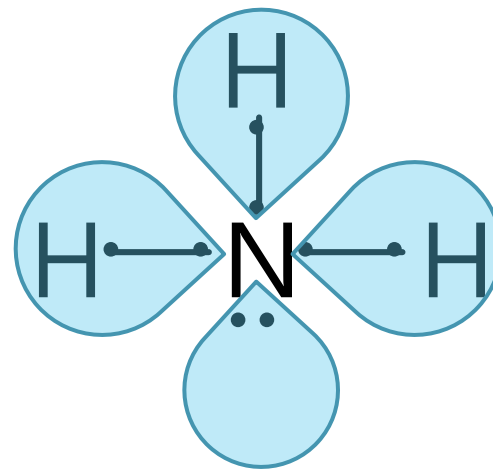
Chemistry Passage

Question 36: What are the hybridizations for N_2 and NH_3 ?

D



s^1p^1
 sp



s^1p^3
 sp^3

Chemistry Passage

A

Question 37: How many grams of NH_3 are needed?

$$V = 165 \text{ L}$$

$$T = 727^\circ\text{C}$$

$$P = 10 \text{ atm}$$

$$PV = nRT$$

$$(10 \text{ atm})(165 \text{ L}) = n \left(0.0821 \frac{\text{L atm}}{\text{mol K}} \right) (1000 \text{ K})$$

$$n = \frac{(10 \text{ atm})(165 \text{ L})}{\left(0.0821 \frac{\text{L atm}}{\text{mol K}} \right) (1000 \text{ K})}$$

$$M = \frac{m}{n}$$

$$m = Mn$$

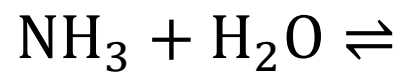
$$m = \left(17 \frac{\text{g}}{\text{mol}} \right) \left(\frac{(10 \text{ atm})(165 \text{ L})}{\left(0.0821 \frac{\text{L atm}}{\text{mol K}} \right) (1000 \text{ K})} \right)$$

$$m = \frac{(17 \text{ g})(10)(165)}{(0.0821)(1000)}$$

Chemistry Passage

Question 38: What is the pH of NH_3 in water?

D



pH = 12



acidic
pH = 0

basic
pH = 14

Critical Reading (Q17-25)

Passage Outline

1. US science literacy is #28 in the world on science literacy – we can do better than the status quo.
2. Leaders in science education have admitted that US science education needs to improve; there is a mismatch between how students are doing (performance) v. how we *think* they're doing (attitudes).
3. Many don't think science illiteracy is an issue in the US – they need convincing! Some things that might help: better teachers + more research skills.
4. We need to convince officials of the stats and explain the consequences of science illiteracy.
5. We need to admit the problem and convince the people that matter that we can do better in the world.

Critical Reading

Question 17: What is the main point?

- A. Convincing others US science education needs to improve
- B. Making people feel “more positive” towards US science education
- C. Teaching others how to talk about improving US science education
- D. Showing reluctance of those in charge to improve science education

A

Critical Reading

Question 18: What is the purpose of the word *permeate* (Par 3)?

- A. To describe how most Americans feel
- B. To discuss an attitude that doesn't align US society
- C. To represent important principles in US society
- D. To show how this attitude has become more pervasive in US society

D

This word is used to discuss the attitude that people have who think US science education is fine as is.

Critical Reading

Question 19: How does the author think we should address this issue?

- A. "I'm glad some leaders have spoken up!"
- B. "We need to change attitudes – and that means we have to convince people that US science education can be improved."
- C. "Everyone should write letters to members of Congress!"
- D. "We have to convince public officials of the problem first so that later citizens will be convinced."

B

Big picture: *ATTITUDES need to change!*

Critical Reading

Question 20: What's the purpose of the middle paragraph?

- A. Research says that US science education is great
- B. A lot of people think that US science education is fine...when it isn't
- C. Teachers recognize that US science education could be improved
- D. Right now, no improvements to US science education are possible

B

*Many don't think science illiteracy is an issue in the US – they need convincing!
Some things that might help: better teachers + more research skills.*

Critical Reading

Question 21: What techniques does the author use in the 3rd and 4th paragraphs?

- A. Describe a concept with examples
- B. Compare/contrast supported with experiment findings
- C. Present an issue with suggested fixes
- D. Cause and effect

C

Par 3: describes attitude problem

Par 4: describes solutions (e.g., communicating with officials)

Critical Reading

Question 22: What *best* supports the author's point?

- A. Leader admitting problems with US science education (P2)
- B. Attitude studies showing students think their education is good (P3)
- C. Experts' ideas to improve science education (P3)
- D. Citizen activism to convince officials of problem (P4)

A

*Backed by an important authority figure
in science education!*

Critical Reading

Question 23: Who does the author think already knows US science education needs to get better?

- A. Experts
- B. Parents
- C. Teachers
- D. Officials

A

P3: mentions that parents (B) and teachers (C) don't realize issue; experts (A) seem to recognize issue

P4: suggests that officials (D) don't realize issue

Critical Reading

Question 24: Why do students have low science literacy?

- A. Family doesn't help
- B. Not enough information on science literacy performance
- C. Teachers need better training
- D. Interfering changes to education

C

Experts recommend hiring teachers with more training.

Critical Reading

Question 25: What does the author say that is *not* an example of rhetoric?

- A. Running analogy
- B. Question about whether US should be okay with low science literacy
- C. Description of leader as important figure
- D. Declaration that people *have to* persuade Congress

D

Author means Choice D literally!

Quantitative Reasoning

Question 6: Driving word problem

Rate of gas usage: 40 mi/gal

Travel speed: 60 mi/hr

Volume: 20 gal

Time: ?

B

1 gallon → 40 mi

20 gallon →

60 mi → 1 hr

800 mi →

Quantitative Reasoning

Question 7: Dividing decimals and fractions

B

Quantitative Reasoning

Question 8: Common solutions

A

$$x^3 - x^2 = 12x$$

$$x^2 - 9 \leq 0$$

$$x^3 - x^2 - 12x = 0$$

$$(x - 3)(x + 3) \leq 0$$

$$x(x^2 - x - 12) = 0$$

$$(x - 3 \geq 0) \text{ and } (x + 3 \leq 0)$$

$$x(x - 4)(x + 3) = 0$$

~~$$x \geq 3 \text{ and } x < -3$$~~

$$x = -3, 0, 4$$

$$-3 \leq x \leq 3$$



Quantitative Reasoning

Question 9: Plugging three values for a and b

$$2a - \frac{1}{2}b =$$

$$2(-2) - \frac{1}{2}(-8) =$$

$$2(1) - \frac{1}{2}(2) =$$

$$2(-3) - \frac{1}{2}(-6) =$$

A

Answer = {0, 1, -3}

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Q&A



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4.7



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- ✓ **No matter your study style, subject expertise, or PCAT goal, Next Step has an option for your personal needs and lifestyle.**
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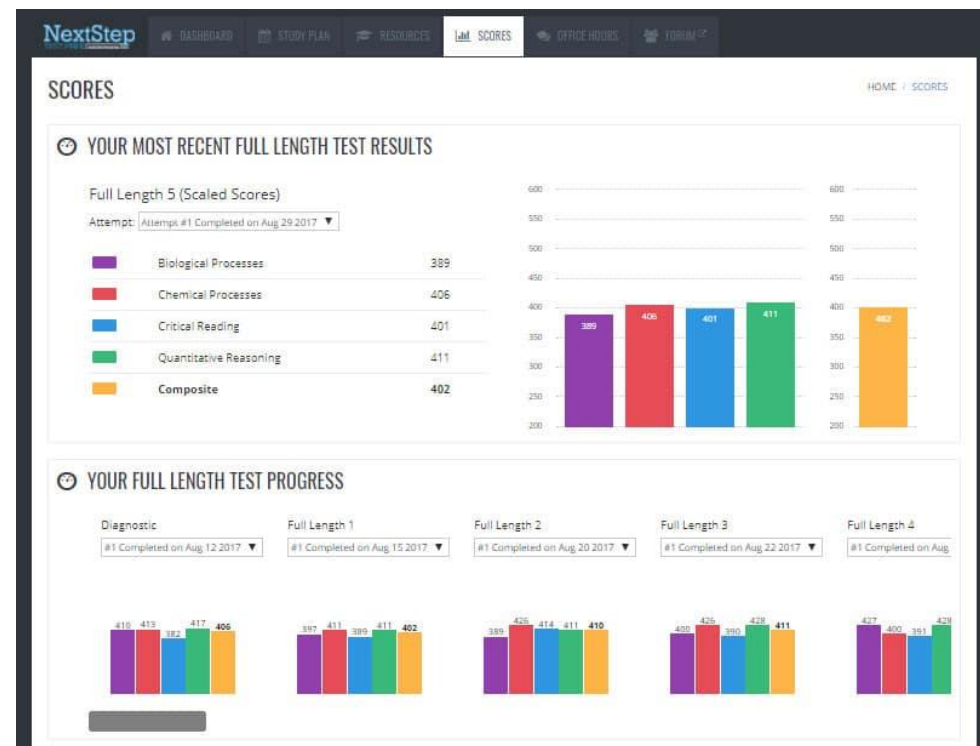


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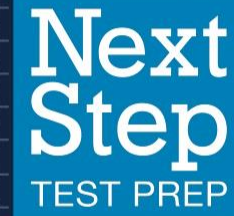
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- Personalize a Study Plan for YOU
- Plan around your study style and class/work schedule
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