

The College Board Readiness and Success System

2016 NM AP Symposium
Edwina Henslee
College Board

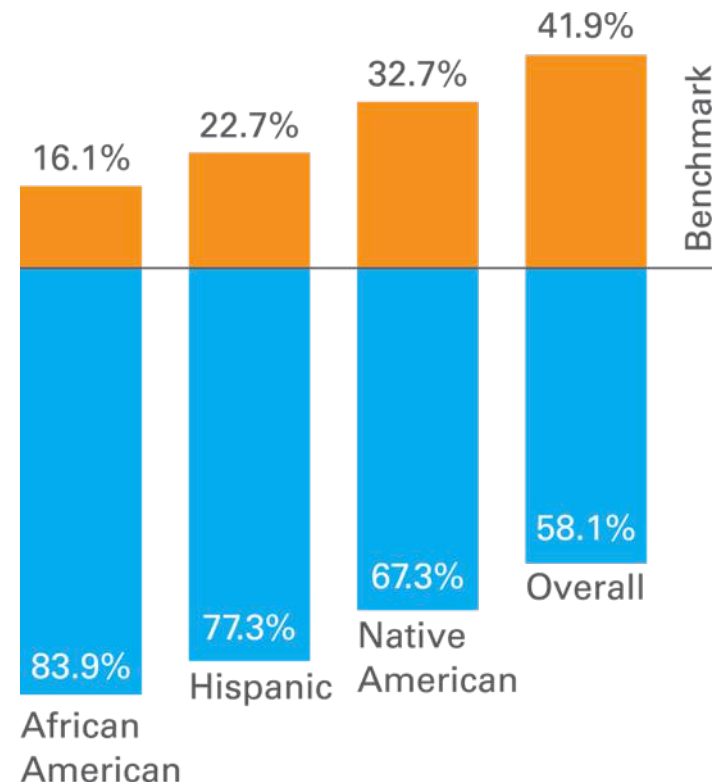
Agenda

- The College and Career Readiness System
 - Focused Assessments
 - Scoring
 - PSAT and AP Potential
- Khan Academy
- AP Insight
- AP Mentoring

Beyond Assessment: Delivering Opportunity

The Class of 2015 and the SAT[®] College and Career Readiness Benchmark

- ▶ **41.9%** of SAT takers met the benchmark
- ▶ **16.1%** of African American SAT takers met the benchmark
- ▶ **22.7%** of Hispanic SAT takers met the benchmark
- ▶ **32.7%** of Native American SAT takers met the benchmark



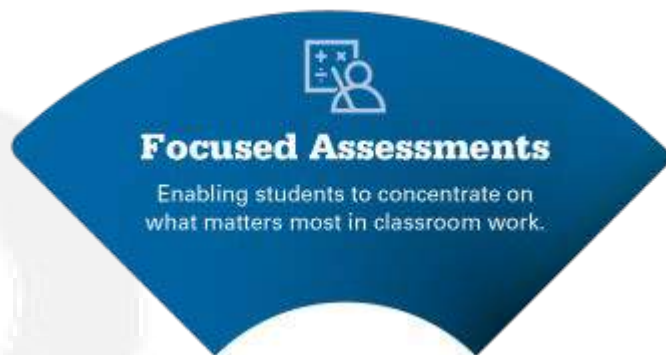
The College Board Readiness and Success System

Beyond tests. More opportunities.



- ▶ **Easier** for students to navigate a path through high school, college, and career
- ▶ Extraordinary, **exclusive** partnerships that deliver **unprecedented** benefits to students, educators, and states/districts

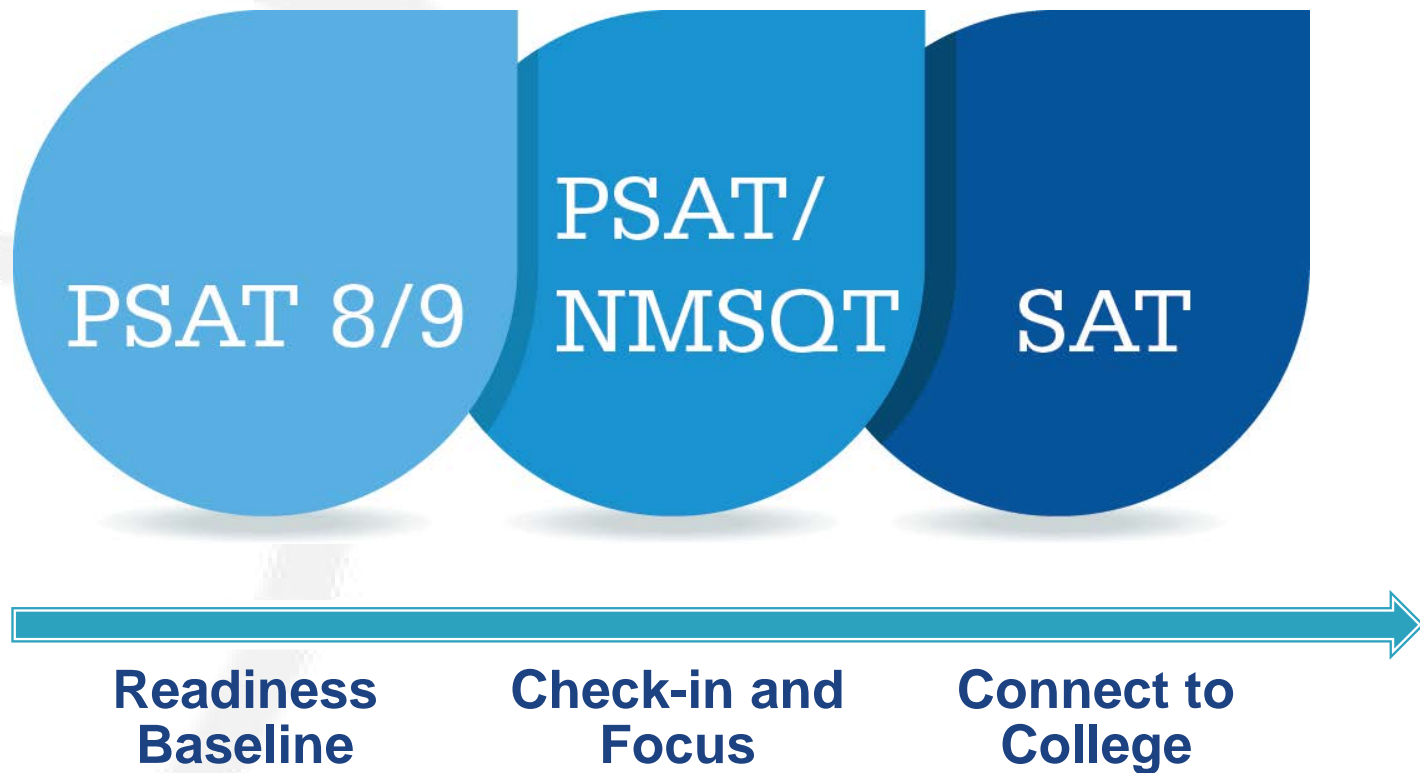
The College Board Readiness & Success System



“What should I focus on?”

- ▶ The few things that matter most
- ▶ The work students are already doing in class
- ▶ A clear and open assessment
- ▶ Useful benchmarks and consistent feedback

The SAT® Suite of Assessments



Eight Key Changes to the Assessments



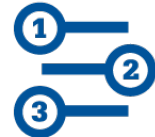
Words in Context



Command of Evidence



Essay Analyzing a Source



Math that Matters Most



Problems Grounded in
Real-World Contexts



Analysis in Science and in
History/Social Studies

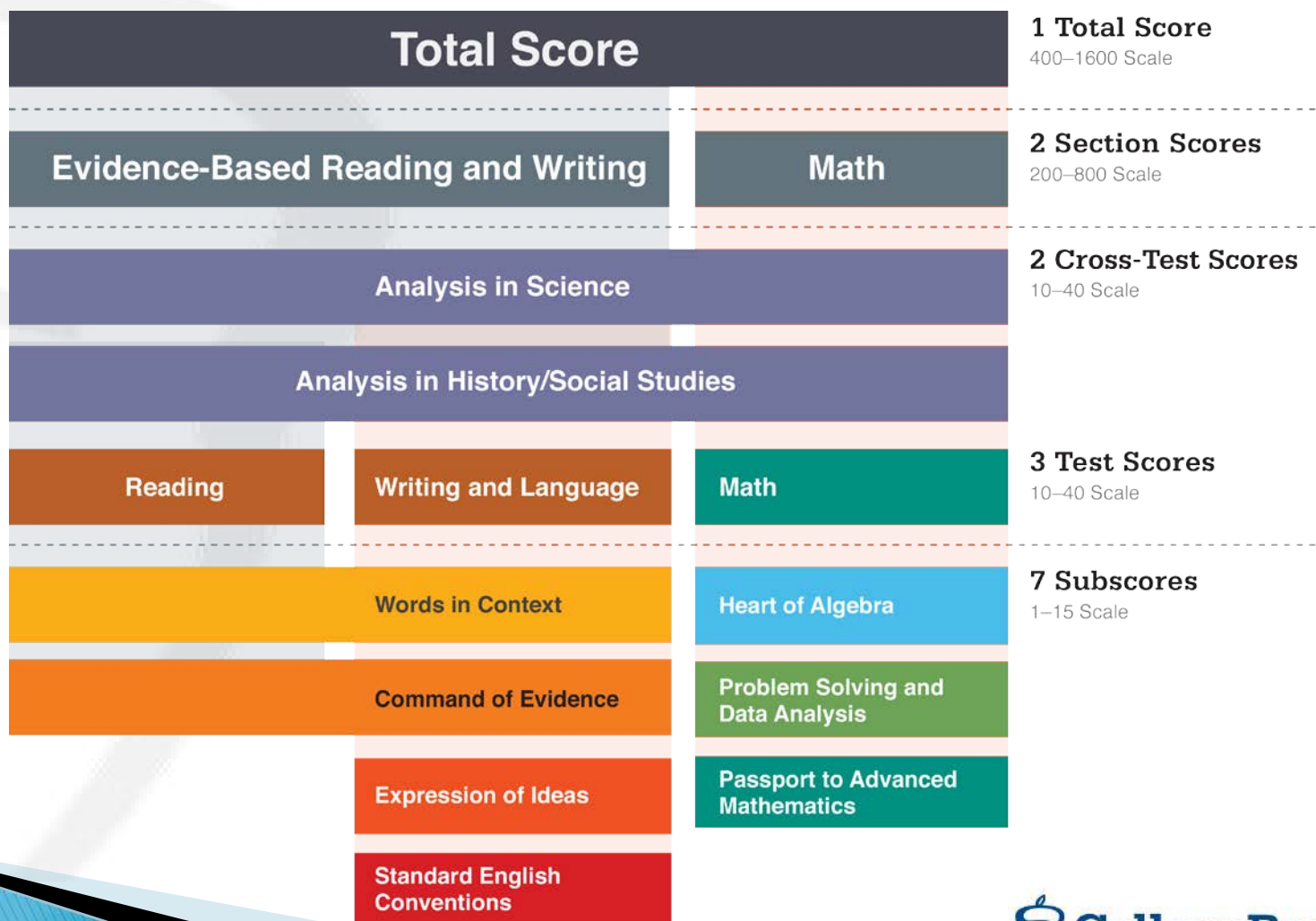


U.S. Founding
Documents and the
Great Global
Conversation



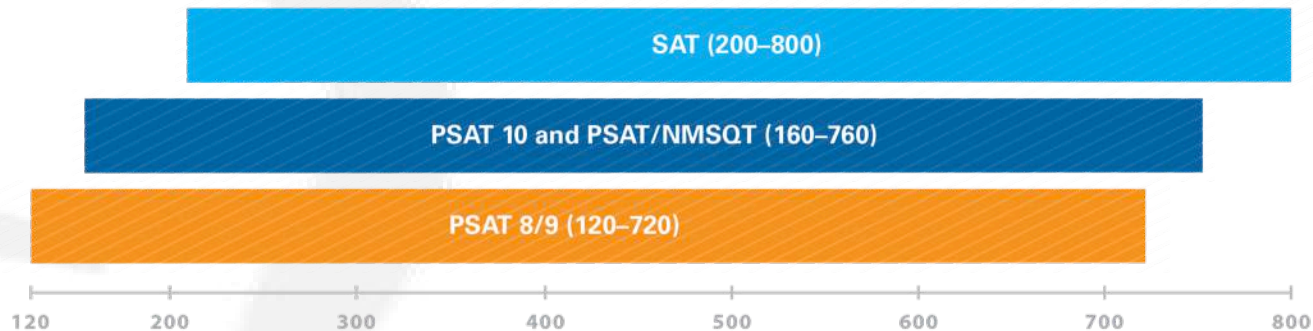
No Penalty for Guessing

Scores and Subscores

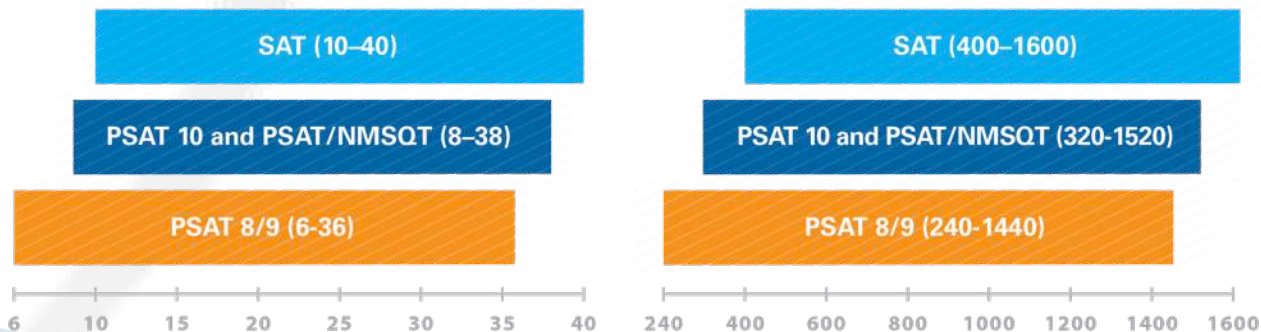


Longitudinal Progress Monitoring

- ▶ **Section Scores** will be placed on a vertical scale.



- ▶ This same concept will hold true for the **Test** and **Cross-Test Scores** as well as **Total Score**.



Vertical Scale Messaging

Keep in mind,
the PSAT/NMSQT
and SAT are on
the same scale.

Your Score tells you how you would have scored on the SAT¹ on that day. How well you do depends on what you do next!

¹ Beginning in March 2016

The SAT Suite of Assessments (interim)

Benchmark Scores

Below is a table of the interim benchmark numbers. These will be revisited after we have more data from the new SAT.

	PSAT 8/9 (8 th)	PSAT 8/9 (9 th)	PN (10 th)	PN (11 th)	SAT
EBRW	320	340	360	390	410
Math	420	450	470	500	520

The College Board Readiness & Success System

“How do I improve?”

Key Components

- ▶ A supplement to great classroom instruction
- ▶ Removing barriers to high-quality practice
- ▶ Personalized practice plans
- ▶ Collaborating with teachers and the community

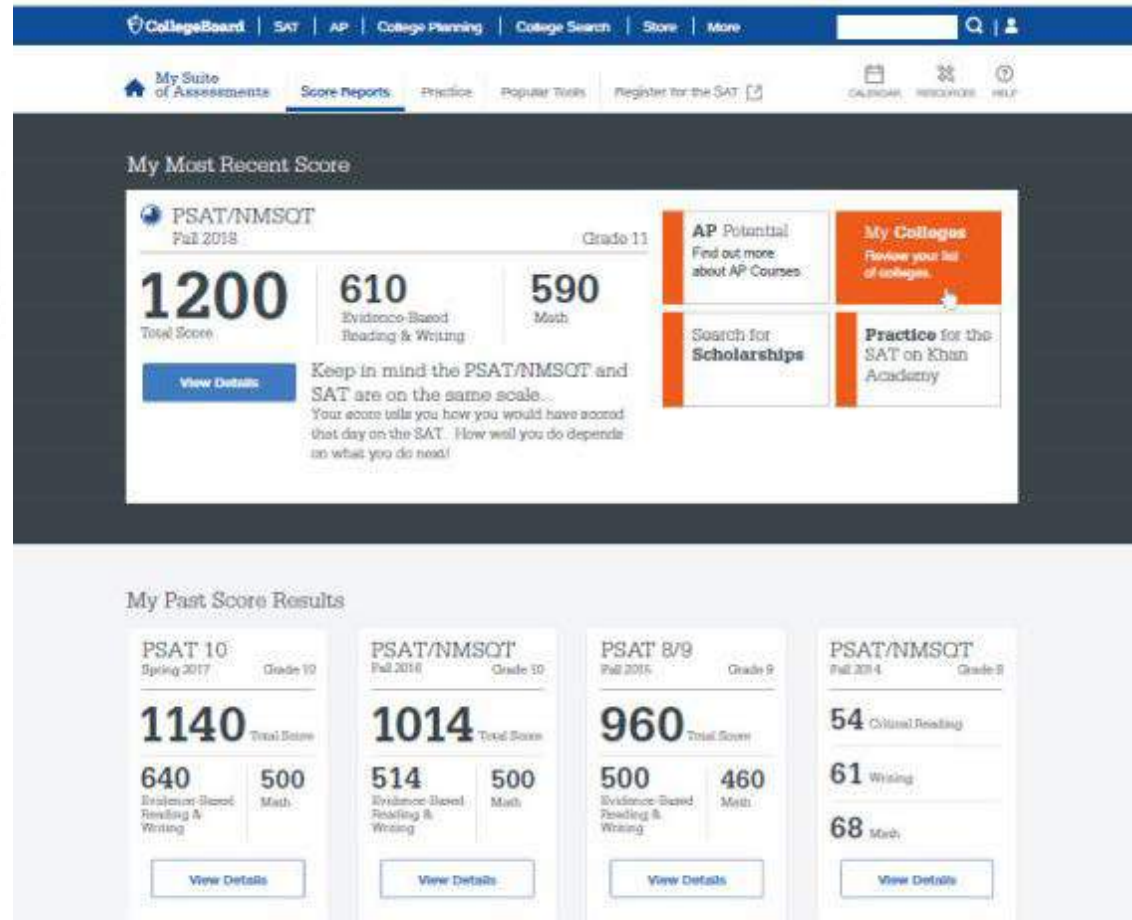


PSAT AP Connection

How understanding the key components of the
PSAT can improve your AP program

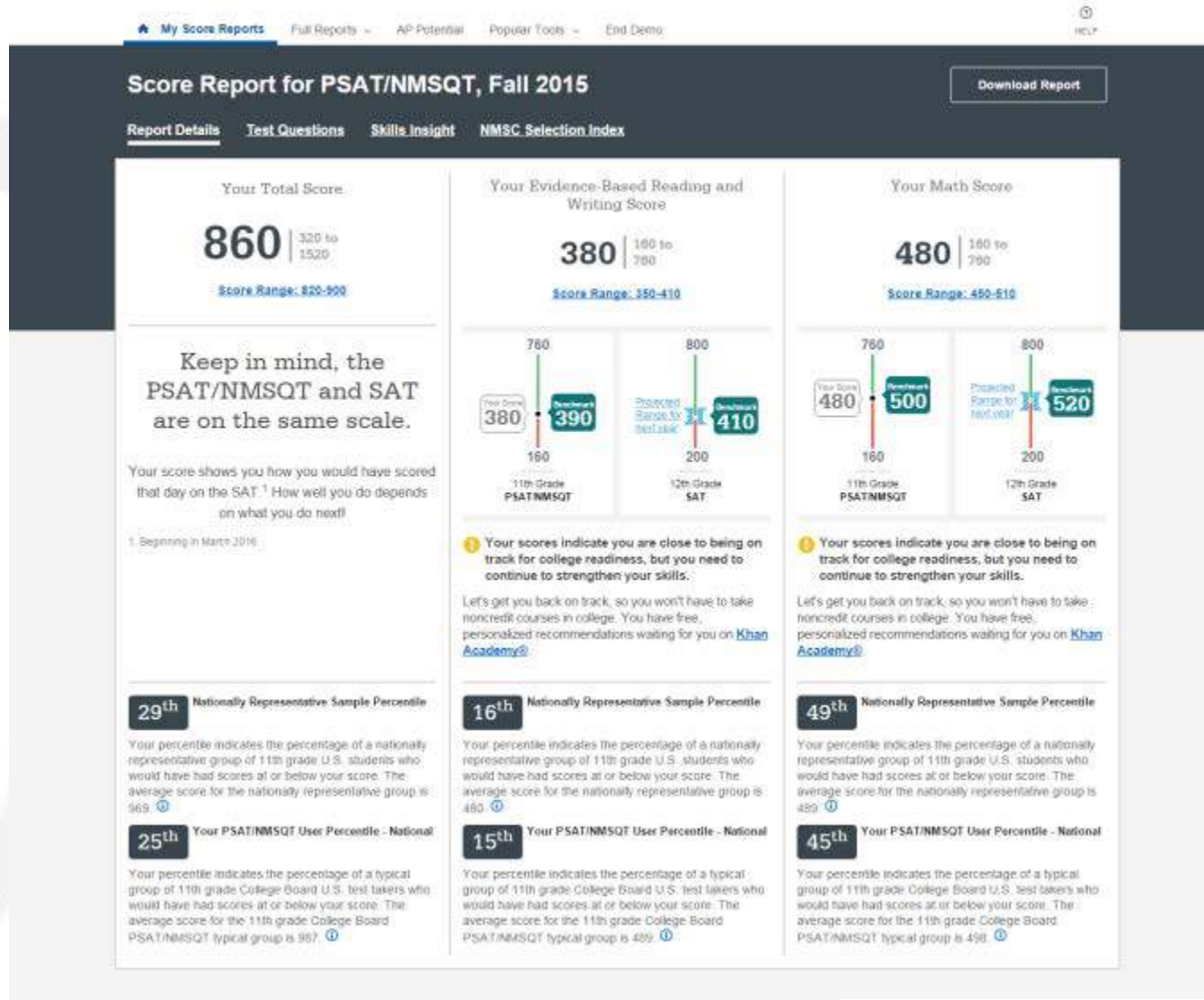
Student Reports - Dashboard

- ▶ Consolidated view of all assessment scores
- ▶ Brief overview of each assessment including grade and year taken plus top level section scores
- ▶ Includes pre-2015 PSAT/NMSQT scores
 - 'Report Details' less detailed for pre-2015 PSAT/NMSQT



NOTE: All reports are subject to change and should not be considered final. Reports shown are illustrations, and all data is

Detailed Scores



Feedback to Support Success on the SAT®?

Your Evidence-Based Reading and Writing Score

380 | 160 to 760

Score Range: 350-410



! Your scores indicate you are close to being on track for college readiness, but you need to continue to strengthen your skills.

Your Math Score

480 | 160 to 760

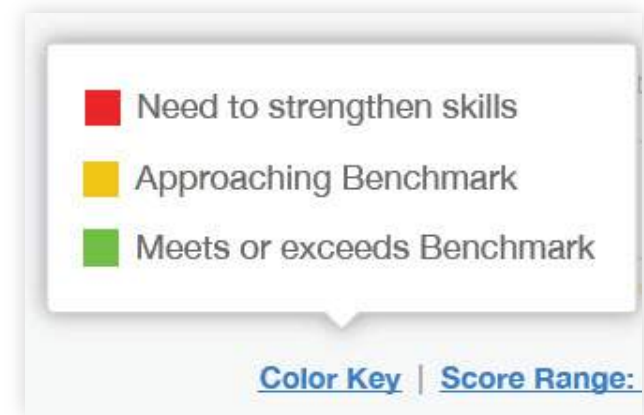
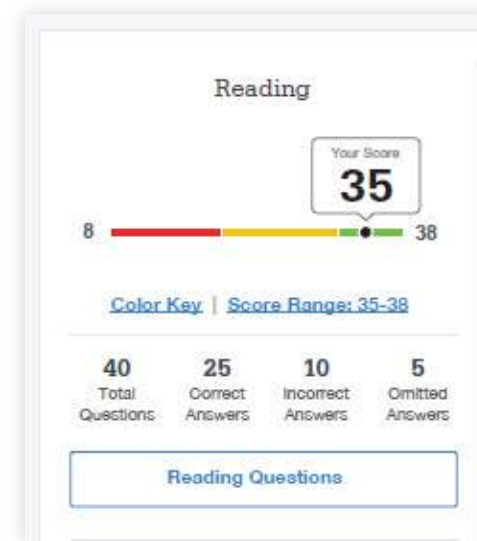
Score Range: 450-510



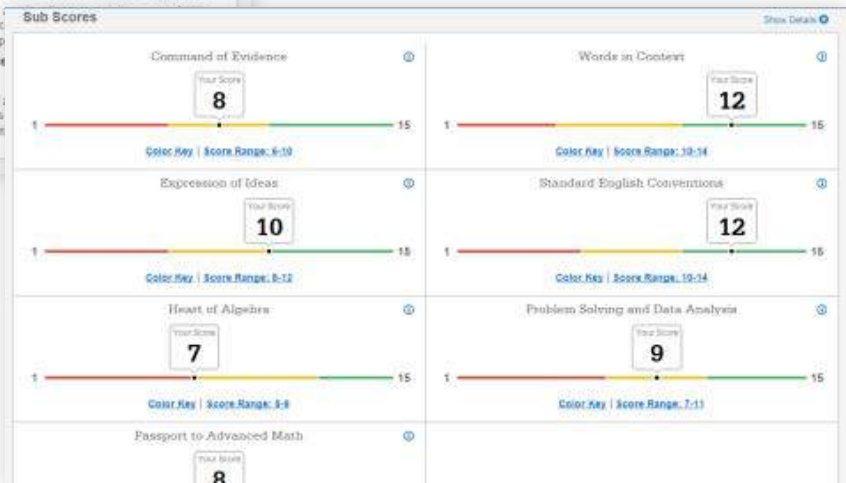
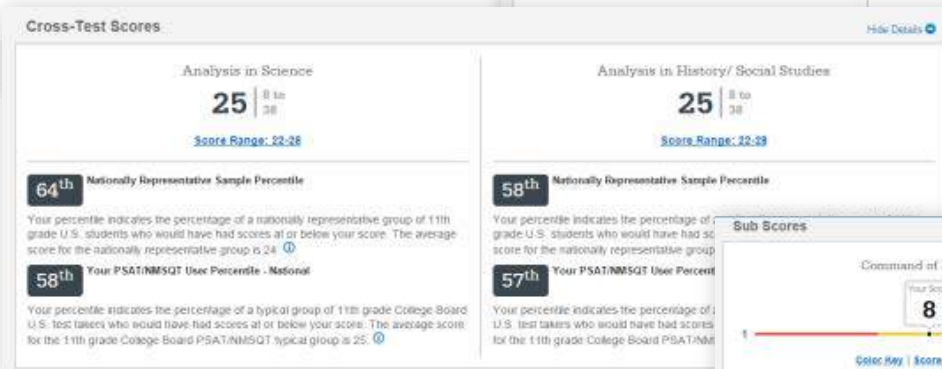
! Your scores indicate you are close to being on track for college readiness, but you need to continue to strengthen your skills.

College Readiness Benchmarks

- ▶ Section, test, and subscores all report scores in performance zones which indicate whether you are on track for success in the first year of college.
- ▶ For section scores
 - **Need to Strengthen Skills** = below grade-level benchmark by more than one year
 - **Approaching Benchmark** = below grade-level benchmark by one year or less
 - **Meets or exceeds Benchmark** = at or above grade-level benchmark
- + For test scores and subscores,
 - Red, yellow, and green ranges reflect areas of strengths and weaknesses compared to the typical performance of students



Information on What Scores Mean



Students Can Learn From Their Answers *(cont.)*

- ▶ Look at the types of questions answered incorrectly and skipped:
 - Identify the level of difficulty. How many questions were missed at each level?
 - Were students more likely to skip questions associated with any subscore or cross-test score?
 - What inferences can we make about areas for improvement based on the types of questions missed and skipped?

Score Report for PSAT/NMSQT, Fall 2015 Test Questions ▾ Download Report

Reading Writing & Language Math with Calculator Math without Calculator

Questions Overview

40 Total Questions	25 Correct Answers	10 Incorrect Answers	5 Omitted Answers
-----------------------	-----------------------	-------------------------	----------------------

Test Questions Key

■ ■ ■ Easy ■ ■ ■ Medium ■ ■ ■ Hard ✓ Correct ✗ Omitted U Unscorable

Reading Test Questions

Select a test question below to review in detail.

Filters Response ▾ Difficulty ▾ Subscores/Cross-test Score ▾

Question ↑↓	Correct Answer	Your Answer	Difficulty ↑↓	Subscores/ Cross-test Score
1	D	D	■ ■ ■	Command of Evidence Relevant Words in Context
2	B	✓	■ ■ ■	Expression of Ideas
3	C	✓	■ ■ ■	Standard English Conventions
4	A	✓	■ ■ ■	Analysis in History/Social Studies
5	A	✗	■ ■ ■	Analysis in Science
6	C	✓	■ ■ ■	Expression of Ideas
7	B	✓	■ ■ ■	
8	D	✓	■ ■ ■	Analysis in History/Social Studies

Students Can Learn From Their Answers

- ▶ Look at the online score report
 - Identify the questions answered incorrectly
 - Find the correct answer and read the answer explanation
 - Explain why the error was made
 - Ask questions about answer explanations that are not clear

The screenshot shows a CollegeBoard Student Score Reporting page. At the top, it says "CollegeBoard Student Score Reporting". Below that, there are tabs for "My Score Reports", "Full Report", "AP Potential", and "Practice Tools". The main section is titled "Questions 20-24 are based on the following passages." and includes a "Reading-Oriented Test" label. The page displays two passages, Passage 1 and Passage 2, with line numbers. To the right of the passages, there are instructions for questions, a list of answer choices (A, B, C, D), and a "Choice B is the best answer" notification. Below the choices, there are detailed explanations for why Choice A is not the best answer, why Choice C is not the best answer, and why Choice D is not the best answer. At the bottom right, it says "Question Difficulty: EASY".

What is My AP Potential™?

- + College Board research shows that students who score a 3 or higher on an AP Exam typically experience greater academic success in college and are more likely to earn a college degree on time than non-AP students.
- + AP Potential™ uses scores from the PSAT/NMSQT to provide predictions for 23 AP Exams.

AP Potential and Coursework

What is AP?

Advanced Placement is a College Board program that enables students to pursue college-level studies - with the opportunity to earn college credit, advanced placement or both - while still in high school. The program offers courses in more than 30 subjects. For a full list of courses, click here. If you've taken a College Board assessment in 9th grade or higher, see below for a list of AP courses that you are likely to succeed in. If you've taken an assessment in 9th grade or higher but don't see any AP courses listed below, click here to link the scores to this account or contact Customer Service at (800) 716-7344 for assistance and questions.

High School Core Coursework

Colleges have different high school course requirements, but all expect you to take classes that challenge your skills. Try to take a core course load of 4 years of English and at least 3 years of Math, Science, and Social Studies. As you work towards your high school diploma, you should consider taking courses that align with your future career interest and college major, which may require more than the standard core course load. You may also want to think about taking Advanced Placement courses in your later years of high school.

[View all AP Courses](#)

AP Potential Key

Potential
Your scores show that you have the potential for success in this course. Speak with your teachers or school counselor to see if you have the appropriate prerequisite courses and find out how you can enroll.

Some Potential
Your scores show that you have some potential for success in this AP course. Having interest in the course subject as well as dedication to working hard will increase your chances for success. Speak with your teachers or school counselor to see if you have the appropriate prerequisite courses and find out how you can enroll.

Potential Not Yet Indicated
Your scores show that you may need more preparation and support to be successful in this course. Share your goals and interests with your teachers and school counselor, and learn which high school courses can prepare you for AP courses in the future. If you're already taking an AP course, you can still succeed through hard work and motivation. Talk to your teachers regularly so they can support you.

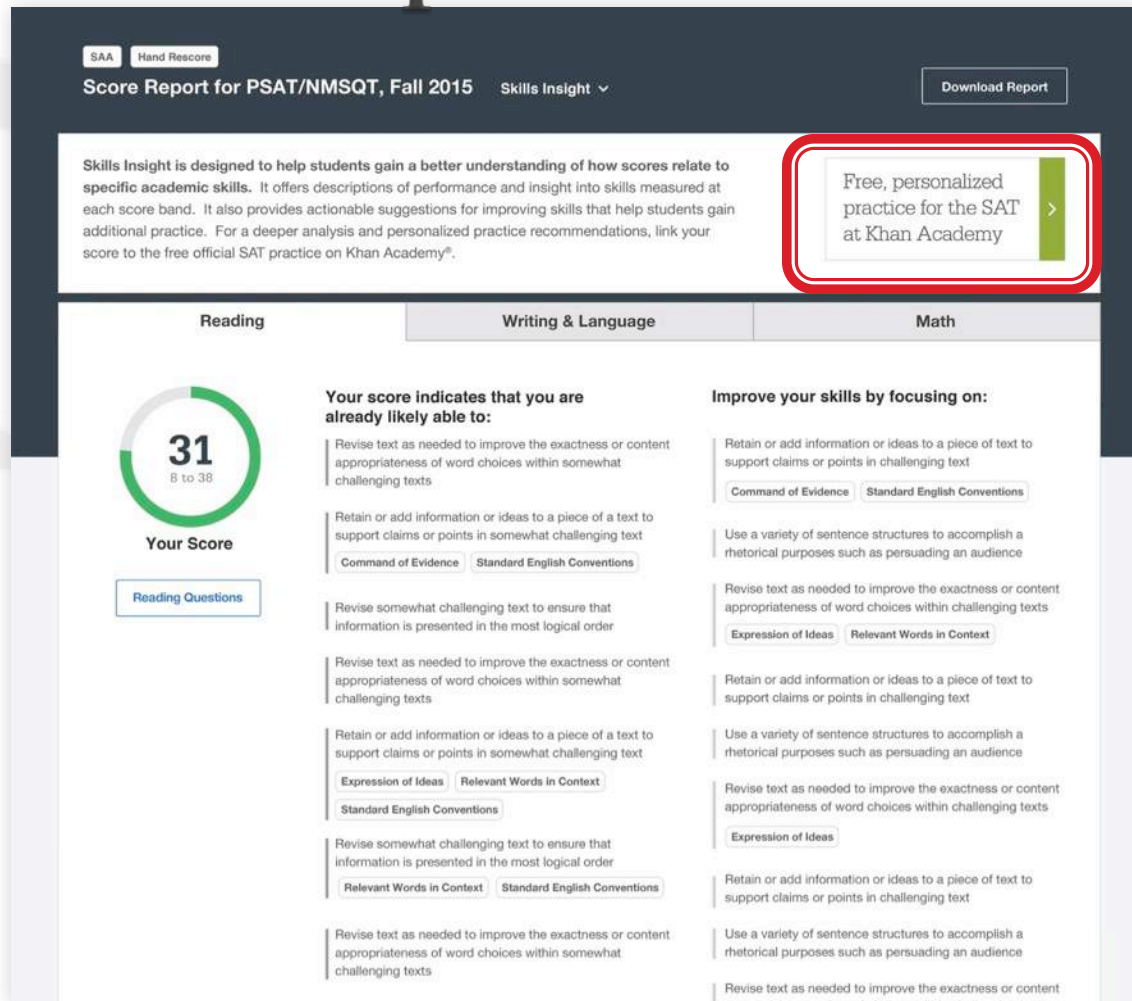
AP Courses

Your scores on the PSAT/NMSQT can identify your potential for success in specific AP courses. Below is a list of these AP courses. The chart identifies your potential for each of these AP courses and if these AP courses are offered in your school. You may also wish to see if these AP courses match your college major.

Select a Major

Subject	AP Potential	Your School Offers this Course	Matches Major
Art History	●●●●		✓
Biology	●●●○	✓	
Calculus AB	●●○○	✓	
Calculus BC	●○○○	✓	✓

Support to Improve Academic Skills



Official SAT[®] Practice

For the first time ever. For you. For free.

- ✓ Get to know the new SAT (March 2016)
- ✓ See recommendations to focus your time
- ✓ Stay on top of important dates and announcements



Check it out now

Or tell a student, parent, or educator you know!



Get started at satpractice.org!

Why link Khan Academy and College Board Accounts?

Students can link their College Board and Khan Academy accounts.

- ▶ Linking accounts will **further personalize practice** as item-level data from the PSAT/NMSQT or PSAT 8/9 will be used by Khan Academy to generate specific practice recommendations based on an actual exam taken under test-like conditions.
- ▶ **All future scores** from the SAT, PSAT/NMSQT, PSAT 10 and PSAT 8/9 will also be sent to help customize practice and recommendations on Khan Academy.
- ▶ Students will be able **to jump right into practice** without having to take any additional diagnostic quizzes or practice tests to get personalized recommendations.

*****Please note that students can terminate account linking at any time.**

TOTAL	MATH	READING & WRITING
710	330	380
	Review Math (No calculator)	Review Reading
	Review Math (Calculator OK)	Review Writing and Language




Jeff's Path to SAT Success

Send Score Data



Personalized Learning Roadmap




FOCUSED PRACTICE

Ratios, rates, and proportions

Last missed on a full exam

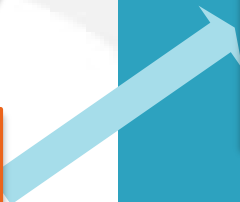
Practice this skill



Official SAT Practice Tests

With Scoring for Paper & Pencil

Powered By Schools, Educators, Community Groups



MATH

READING & WRITING

Complete these 4 quizzes to unlock your personalized Math practice



DIAGNOSTIC QUIZ

Quiz 1 — Math (No Calculator)

Take the quiz



Quiz 1 — Math (No Calculator)



Quiz 2 — Math (No Calculator)



Quiz 3 — Math (Calculator OK)



Quiz 4 — Math (Calculator OK)

Let us know if you [have a problem](#) or [an idea for making this system better!](#)

Or choose from the full list of Math practice and videos



ENERGY POINTS EARNED

725

225 points for answering questions correctly

500 points for completing this quiz



Starting skill level: 3

Complex numbers



Solving systems of linear equations



Circle theorems



Starting skill level: 2

Isolating quantities



Radical and rational equations



Congruence and similarity



Linear equation word problems



Structure in expressions



Graphing linear equations



Linear inequality word problems



[Exit this Diagnostic](#)

[Review your answers](#)

MATH

READING & WRITING

Your Math practice recommendations

OVERALL
Math 

FOCUSED PRACTICE

Solving linear equations

Last missed on a diagnostic quiz

Practice this skill

Solving linear
equationsSolving quadratic
equations

Scatterplots

15
min TIMED MINI-SECTION
Math (Calculator OK)Let us know if you [have a problem](#) or [an idea for making this system better!](#)

Or choose from the full list of Math practice and videos

The College Board Readiness & Success System

“How do I pay for college?”

Key Components

- ▶ Additional funds for student scholarships
- ▶ AP Potential: Inviting students to take advantage of the opportunities they've earned
- ▶ Exam and college admission fee waivers
- ▶ SAT School Day



Expanded Scholarship Opportunities



Fee Waivers Always Available

2015-16 Fee Waiver SAT[®] FOR THE SAT[®] AND THE SAT SUBJECT TESTS[™]

All required fields must be completed for this card to be accepted as valid payment for test fees. Incomplete cards will be returned unprocessed. See the Counselor's Guide to Fee Waivers for instructions.

Maximum value of fees waived (per card):

SAT[®]: \$54.50 Question-and-Answer or
SAT Subject Tests[™]: \$89.00 Student Answer Service: \$18

Use of a fee waiver also includes coverage of four additional score reports over the user's testing lifetime (up to \$45 for 2015-16). This card does not cover Waitlist Status or change fees.

INSTRUCTIONS FOR USE ON REVERSE SIDE

1. TO BE COMPLETED BY COUNSELOR (REQUIRED)

Enter your College Board HIGH SCHOOL CODE/AGENCY CODE.
This must be included to create a valid 12-digit code.

--	--	--	--	--	--	--	--	--	--	--	--

Important: This 12-digit fee-waiver code is good for only one registration, and it can be used to register for the SAT (including the Essay) or up to three SAT Subject Tests on a single test day.

Counselor's Name (REQUIRED — please print)

Counselor's Signature (REQUIRED)

By signing, I confirm that the student listed below meets one or more of the following eligibility requirements to receive an SAT fee waiver. I also acknowledge that fee-waiver eligibility may be audited.

Fill in the ovals that apply (REQUIRED)

- ☐ The student is enrolled in or eligible for the National School Lunch Program (NSLP).
- ☐ The student is enrolled in a federal, state, or local program that aids students from low-income families (for example, a TRIO program such as Upward Bound).
- ☐ The student's annual family income falls within the Income Eligibility Guidelines set by the USDA Food and Nutrition Service (provided at sat.org/fee-waivers).
- ☐ The student's family receives public assistance.
- ☐ The student lives in federally subsidized public housing or a foster home, or is homeless.
- ☐ The student is a ward of the state or an orphan.

2. TO BE COMPLETED BY ELIGIBLE STUDENT (REQUIRED)

Valid from Aug. 10, 2015, through Aug. 8, 2016.

Student's Name (REQUIRED — please print)

Student's Signature (REQUIRED)

By signing and submitting this card, I confirm that I am eligible to use an SAT fee waiver, as outlined in the 2015-16 Fee Waivers for the SAT and the SAT Subject Tests pamphlet and at sat.org/fee-waivers. I understand that if any portion of this card is not completed, my registration will be returned unprocessed.

- ▶ Eligible Free and Reduced Lunch Program students can receive 2 SAT registrations , 2 SAT Subject Test registrations (3 Subject Tests allowed per registration = 6 total).
- ▶ In addition to test fees, the waivers can be used for additional score reports (four for each student).
- ▶ Using a fee waiver generates 4 direct delivery of college application fee waivers

The College Board Readiness & Success System



Career Opportunity

Opening futures by providing the skills and planning tools students need.

“How do I make sure what I do in high school prepares me for a career?”

Key Components

- ▶ Partnerships and Resources that engage students in thinking about their future
- ▶ Delivering skills that matter for jobs of the future

A Strategic Focus

AP Insight

AP Insight

Strategic
Planning

Challenge
Areas

Share What
Works

AP Insight

AP Insight helps you focus on the challenging and foundational areas of the course. Select a [Challenge Area](#) to get started.



New to AP Insight?

Review the [Getting Started Guide](#) for a step by step walkthrough of AP Insight's features.

For every Challenge Area, AP Insight helps you

PREPARE

TEACH

ASSESS

ACT

Prepare to address misunderstandings: Anticipate student misunderstandings and plan strategies to target them throughout instruction.


Key features

- **Challenge Area concept maps** identify the key building blocks, connections and skills
- **Common student struggles** to anticipate in lesson

"How can I anticipate my students' misunderstandings?"

Community Activity

Community

 Diane M Huber wrote a new discussion board post, [Hardy Weinberg Performance Task](#).
5:31 AM

November 2

 A P Program replied to A P Program's discussion board post, [RE: 2.3 Gibbs](#).
4:11 PM

Focused support on challenge areas to help all students succeed

- ▶ AP Insight focuses on “challenge areas” that are foundational to college-level achievement, yet hard to teach and hard to learn
- ▶ AP Insight was developed by and piloted with educators to improve student achievement with a new level of support:

1. Instructional resources

focus on
challenge areas



2. Assessments for learning

provide insight on
misunderstandings

Teachers use AP Insight to help all students make progress on challenge areas with:

1. Instructional resources:

- Target challenge areas
- Anticipate and address stumbling blocks
- Help students monitor their own learning

For students:

- Progress tool
- Performance tasks
- Instructional feedback

For teachers:

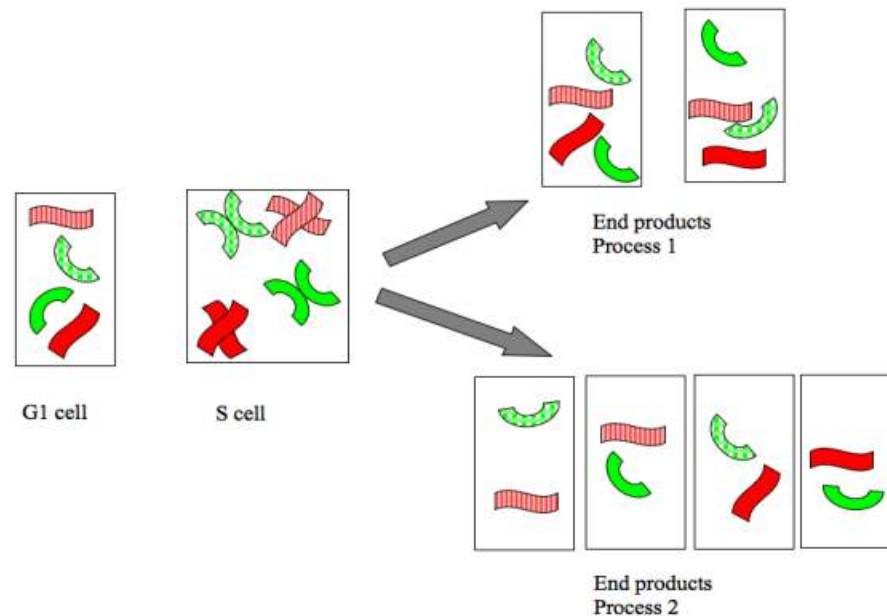
- Flexible online modules
- Expert classroom videos
- Virtual PLC sessions
- Collaboration space
- AP Reader Rubric to evaluate work and give feedback

Performance Tasks use real-world contexts to engage students in groups and individually

Student tasks

Task 1: Making observations (Group)

Use the diagram to answer the questions that follow.



1. Explain the differences in the end products shown in the cell division diagram.

Answer: Process 1 and Process 2 differ in the number and nature of the end products. The two products of Process 1 are identical to the parent (G1) cell, while the four products of Process 2 contain half the number of chromosomes of the parent cell.

Performance Tasks embed checks for understanding and provide frameworks to evaluate student work

Provide
framework
to evaluate
student
work

Check your understanding

Are you confident in your ability to:

- ☐ Identify and compare the variation in the alignment of genetic material in mitosis and meiosis?
- ☐ Relate the laws of segregation and independent assortment to the events of meiosis?

Interpretive framework

Evaluation of student work: The products of these tasks will reveal your students' grasp of three fundamental concepts related to meiosis. Student answers may show variation which may not be related to correctness of the response. The vertical arrangement and the general location of the chromosomes within the cells are not significant, while the horizontal structural arrangement of the chromosomes is demonstrative of student understanding.

Rubric:

Criteria	Beginning	Approaching	Target
Does the student accurately describe the end products of meiosis?	The student confuses the end products of meiosis with the end products of mitosis and struggles to explain how four genetically varied, haploid cells are formed.	The student recognizes that four cells are produced at the end of meiosis but does not describe the cells as haploid or varied in the combinations of chromosomes.	The student recognizes that four cells are produced at the completion of meiosis, that these cells show variation in their genetic content and that these cells are haploid, containing one parent's copy of each chromosome.
Does the student accurately identify and compare the variation in the alignment of genetic material in mitosis and meiosis?	The student recognizes that alignment of chromosomes occurs but cannot discriminate between the alignment of meiosis and mitosis.	The student can identify that replicated chromosomes align during mitosis but struggles to distinguish between the meiosis I and II alignments.	The student can identify that replicated chromosomes align during mitosis while tetrads align in meiosis I and one replicated chromosome of each homologous pair align in meiosis II.

Quick quizzes (10-15 minutes) assess critical building blocks online or paper / pencil

2

of 5

Leaf color in a particular plant is controlled by the gene locus F . Plants with at least one F allele have dark green leaves, and plants with the homozygous recessive genotype have light green leaves. A plant with dark leaves and the FF genotype is crossed with a plant with light leaves, and the F_1 offspring are allowed to self-pollinate.

Which of these describes the possible allele combinations for the F_1 and F_2 generations and the expected percentages for each?

- (A) F_1 ratio: 50% FF , 50% ff
 F_2 ratio: 100% Ff
- (B) F_1 ratio: 50% FF , 50% ff
 F_2 ratio: 25% FF , 50% Ff , 25% ff
- (C) F_1 ratio: 100% Ff
 F_2 ratio: 25% FF , 50% Ff , 25% ff
- (D) F_1 ratio: 100% Ff
 F_2 ratio: 50% FF , 50% ff

NEXT QUESTION

Students receive immediate feedback on misunderstandings

2

of 5

Leaf color
leaves, and
FF genotyp

Which of th
for each?

Mike's Answer

X D F₁ ratio: 100% Ff
F₂ ratio: 50% FF, 50% ff

A F₁ r

F₂ r

B F₁ r

F₂ r

C F₁ r

F₂ r

D F₁ r

F₂ r

Rationale

This answer suggests the student may understand that crossing a h
plant (FF) with a homozygous recessive plant (ff) will produce all het
in the F₁ generation, but **does not understand** how to illustrate, thr
square, that both homozygotes and heterozygotes are produced in t
because alleles will segregate and recombine during meiosis and fer
different allele combinations (FF: 25%, Ff: 50%, ff: 25%) in the offsp

▼ Mike may:

Have difficulty conceptualizing a Punnett square in terms of g
segregation of alleles.

Recommended Next Steps:



Use Meaning of a Punnett Square to review and improve un

Teachers and students receive immediate feedback

Questions mirror AP exam & designed for immediate feedback. Building Block quizzes are 10-15 minutes online or offline.

2

of 5

Leaf color in a particular plant is controlled by the gene locus F . Plants with at least one F allele have dark green leaves, and plants with the homozygous recessive genotype have light green leaves. A plant with dark leaves and the FF genotype is crossed with a plant with light leaves, and the F_1 offspring are allowed to self-pollinate.

Which of these describes the possible allele combinations for the F_1 and F_2 generations and the expected percentages for each?

A

F_1 ratio: 50% FF , 50% ff

F_2 ratio: 100% Ff

Question	Type	Title	✗ Incorrect	✓ Correct
▶ 1.	MC	Dihybrid Cross in Mice	18 (67%)	9 (33%)
▶ 2.	MC	Probability for F1 and F2 in Plants	14 (52%)	13 (48%)
▶ 3.	MC	Determining Parents of Roan Cattle	8 (30%)	19 (70%)
▶ 4.	MC	Determining Probability of Gender	16 (59%)	11 (41%)
▶ 5.	MC	Possible Offspring in Radish Cross	17 (63%)	10 (37%)

F_2 ratio: 50% FF , 50% ff

Including each student's misunderstandings

▼ 2.

MC Probability for F₁ and F₂ in Plants

14 (52%)

13 (48%)

Leaf color in a particular plant is controlled by the gene locus *F*. Plants with at least one *F* allele have dark green leaves, and plants with the homozygous recessive genotype have light green leaves. A plant with dark leaves and the *FF* genotype is crossed with a plant with light leaves, and the F₁ offspring are allowed to self-pollinate.

Which of these describes the possible allele combinations for the F₁ and F₂ generations and the expected percentages for each?

✗ B

F₁ ratio: 50% *FF*, 50% *ff*

F₂ ratio: 25% *FF*, 50% *Ff*, 25%

2

7%

Rationale

This answer suggests the student may understand that alleles are passed from parents to offspring, but does not understand that each parent contributes a single allele (for a particular gene) to the offspring in the form of a gamete, and that a parent's full genotype is not inherited. The student **may not understand** how to create a Punnett square to show how the contribution of a single allele from each parent to an offspring can determine the allele combinations that are possible after fertilization, and how a Punnett square can be used to determine the probability of different allele combinations occurring.

Jane Jones

John Doe

▼ These students may:

Have difficulty conceptualizing a Punnett square in terms of gametes, fertilization, and segregation of alleles.

▼ Recommended next steps:

Individual Student Resource



Use [Meaning of a Punnett Square](#) to review and improve understanding.

Challenge Area assessments gauge mastery

2. In cats the trait for hair length is controlled by gene *S*, where the dominant allele (*S*) results in short hair and recessive homozygotes have long hair. The *W* gene is known as the “masking” gene because a cat that has a dominant *W* allele in its genotype will have an all-white coat due to a lack of melanin in its skin. Cats with a *ww* genotype can have a coat of any color, depending on the inheritance of other genes that determine coat color.

A male cat with long hair and a white coat is crossed with a female cat with short hair and a white coat. The owner of the cats has heard about the masking gene and believes that the cross will produce a litter of all-white kittens, some with short hair and some with long hair.

- (a) Is the owner’s prediction accurate? Give evidence to support your response.
- (b) Based on the given information, determine **all** of the possible genotypes of the kittens in the litter.

AP Reader rubrics help teachers grade FRQs (paper). Scan student work or simply enter results for feedback & resources to close gaps.

Students receive feedback on misunderstandings with targeted resources to improve

What is Cindy's biggest area to improve?

Cindy may:

Insert appropriate alleles into a **Punnett square** and perform the mathematical routines to derive genotypic and phenotypic ratios, but struggles to connect the components of a **Punnett square** to **meiosis** and **fertilization**, indicating that the student does not interpret the **Punnett square** as a tool to analyze the **Mendelian model** of inheritance.

▼ What questions measured this?

Question	Type	Title	Points Earned
1b.	CR	Bison Pedigree: Predicting Outcomes wi...	1 of 3
4b.	CR	Pedigree for Hypercholesterolemia: Pun...	1 of 2

▼ Cindy will demonstrate mastery when Cindy can:

Apply mathematical routines to analyze data sets in order to explain the passage of traits from **parent** to **offspring**. The application of mathematical routines includes:

- 1) Determining possible and probable **parent** and **offspring** phenotype and genotype and
- 2) Identifying **chromosome** reduction and restoration. The explanation includes a description of the processes of **meiosis** that result in distinct gametes (**genetic variation**) and the conservation of **chromosome** number by **fertilization**.

Recommended Next Steps:



Use [Connecting the Components of a Punnett Square to Meiosis and Fertilization](#) to review and improve understanding.

Teachers receive detailed feedback on class strengths and misunderstandings

CA 3.14 Assessment. Print

Class Performance Summary

Approaching Mastery

20 pts possible

Student Performance

▼ 3 (23%) Below Mastery	Pts
Lee Aaron_1	4
Michelle Aazoroth_3	8
Ann Aarensen_K	9

▼ 7 (54%) Approaching Mastery	Pts
Melissa Bbhumerton_6	10
Carl Aapleton_Pre-K	12
Karen Aashdown_1	12
Robert Aastly_2	14
Sue Aatleson_2	14
Vaclav Bbhashimoto_5	14
Daniel Aavery_3	15

▼ 2 (15%) At Mastery	Pts
Patricia Aandre_Pre-K	17
Umberto Bbdistefano_4	17

▼ 1 (8%) with partial results	
Richard Aard_K	

Challenge Area Summary

Question Analysis

Resource Index

Take Action

Use the [Next Steps Guide](#) to analyze your results and commit to next steps.

What Students Understand

38% of your class demonstrated that they can:

5 of 13

Evaluate evidence provided by data sets (e.g., *karyotypes*, $2n+1$, $2n-1$, *pedigrees*) to explain how the passage of traits results in offspring with **genetic disorders**. Explanation includes:

- 1) A claim about what occurs in the process of **meiosis** that results in a **genetic disorder**,
- 2) The selection of relevant evidence from the data set that supports the claim, and
- 3) A description of the relevant events (e.g., nondisjunction, combination of recessive alleles) that occurred during **meiosis**, which provides further support to the claim.

► What questions measured this?

What to Work On

62% of your class may:

8 of 13

Insert appropriate alleles into a **Punnett square** and perform the mathematical routines to derive genotypic and phenotypic ratios, but struggles to connect the components of a **Punnett square** to **meiosis** and **fertilization**, indicating that the student does not interpret the **Punnett square** as a tool to analyze the **Mendelian model** of inheritance.

► What questions measured this?

Question	Type	Title	Partial/No	Full Credit
1b.	CR	Bison Pedigree: Predicting Outcomes with a P...	13 (100%)	0 (0%)
4b.	CR	Pedigree for Hypercholesterolemia: Punnett S...	6 (46%)	7 (54%)

► Students demonstrate mastery when they can:

Apply mathematical routines to analyze data sets in order to explain the passage of traits from **parent** to **offspring**. The application of mathematical routines includes:

- 1) Determining possible and probable **parent** and **offspring** phenotype and genotype and
- 2) Identifying **chromosome** reduction and restoration. The explanation includes a description of the processes of **meiosis** that result in distinct gametes (**genetic variation**) and the conservation of **chromosome** number by **fertilization**.

Teachers have sustained support year-round

- ▶ **Flexible online interactive modules and teacher resources**
- ▶ **Professional learning network of AP teachers with focus on challenge areas and sharing what works:**
 - Virtual sessions help teachers map challenge areas across course and share what's working as they tackle difficult concepts and skills with students
 - PLC sessions and collaboration space with expert teachers
- ▶ **Optional Face to Face training for interested districts**

AP Mentoring

- ▶ Piloted 2015-16
- ▶ Coming for all schools in 2016-17
- ▶ Year round personal AP mentor for:
 - Teachers who want better performance on student AP exams
 - New Teachers who need support
 - Teachers who are singletons in a district and want to collaborate



Edwina Henslee

Director, New Mexico Partnership
The College Board
575-369-9702 (cell)

ehenslee@collegeboard.org



Questions?