How to Use External Assessment in CTE: A Case Study

National Occupational Competency Testing Institute

www.nocti.org

Todd Farr & Dave Matuszak
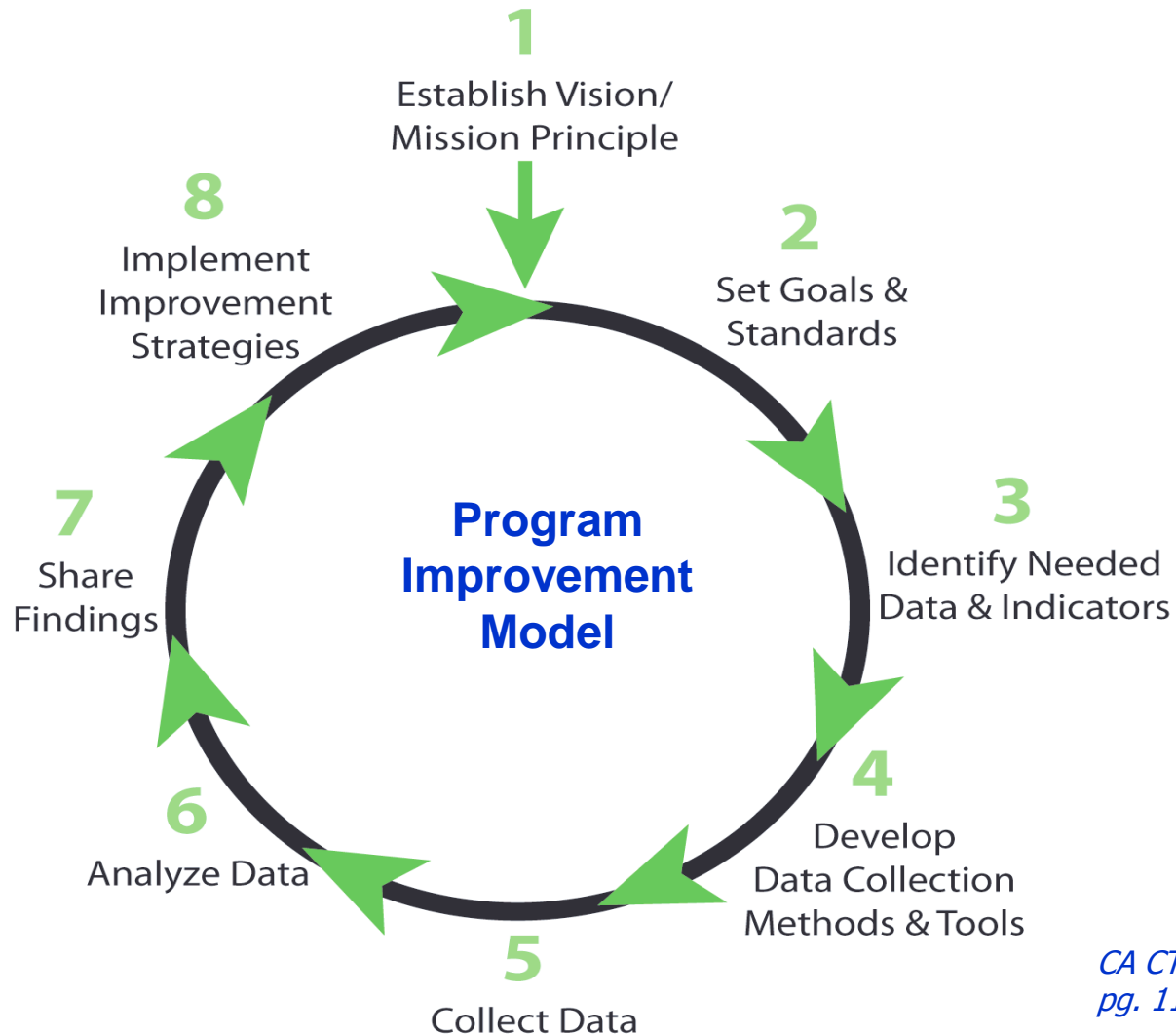
www.sccoe.org/depts/scrop

SANTA CLARA COUNTY ⚜ OFFICE OF EDUCATION

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External Assessment

What is it?

Why is it important?

- Carl D. Perkins Funding Mechanism
- Career Technical Education State Plan

Program Improvement Model

1 Establish Vision/Mission Principle
2 Set Goals & Standards
3 Identify Needed Data & Indicators
4 Develop Data Collection Methods & Tools
5 Collect Data
6 Analyze Data
7 Share Findings
8 Implement Improvement Strategies

CA CTE State Plan, pg. 119

Skill Layers in Career Development

Academic | Employability | Cluster-level | Pathway-level | **Sector** | Program/Occupation

Courtesy of Steve Klein & MPR Associates

Can One Assessment Measure It All?

Program of Study

Industry certification test

State test from National Item Banks

Commercial employability skills test
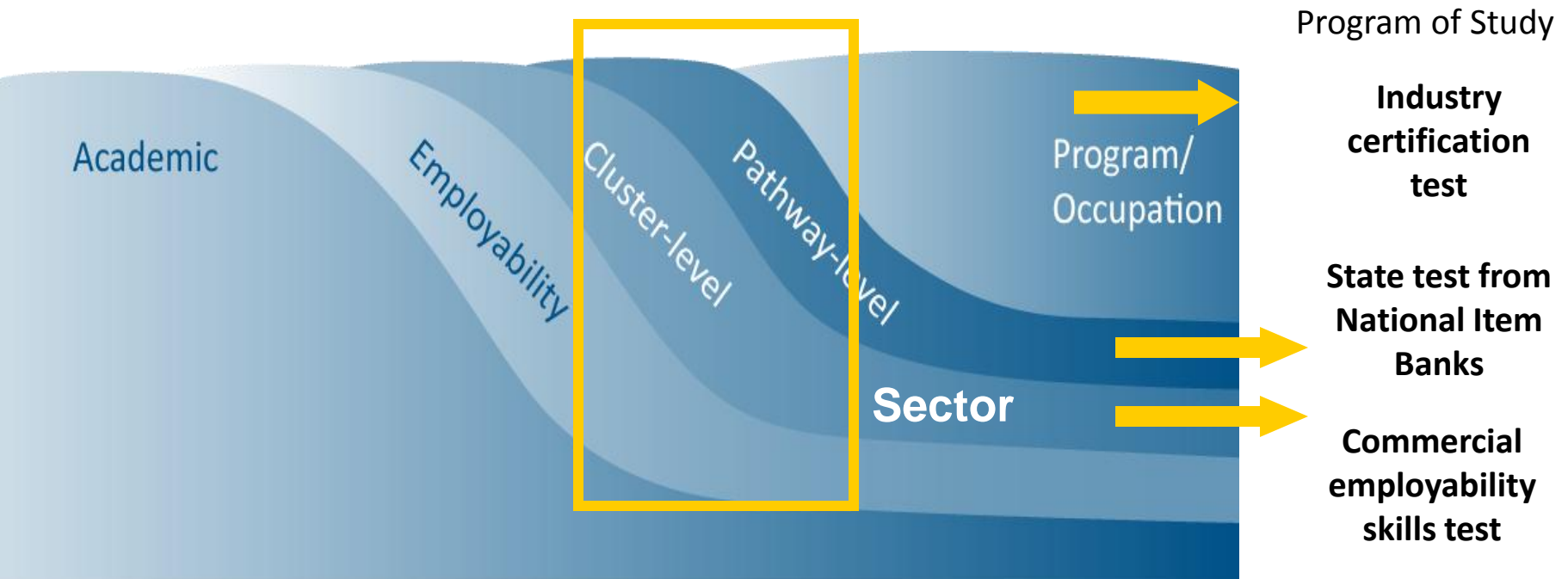
- Applied academic skills
- Employability skills
- Cluster/**Sector**- and pathway-level skills
- Program/occupation skills

Courtesy of Steve Klein & MPR Associates

Case Study Project Goals

Continuous curriculum improvement

- Provide teachers with student assessment data
- Offer students job readiness benchmark
- Program information for school boards

NOCTI History

Developed in 1966

Types of Assessments:
- Entry
- Incumbent Workers
- CTE Teachers

NOCTI Assessments

- Private Industry Tool
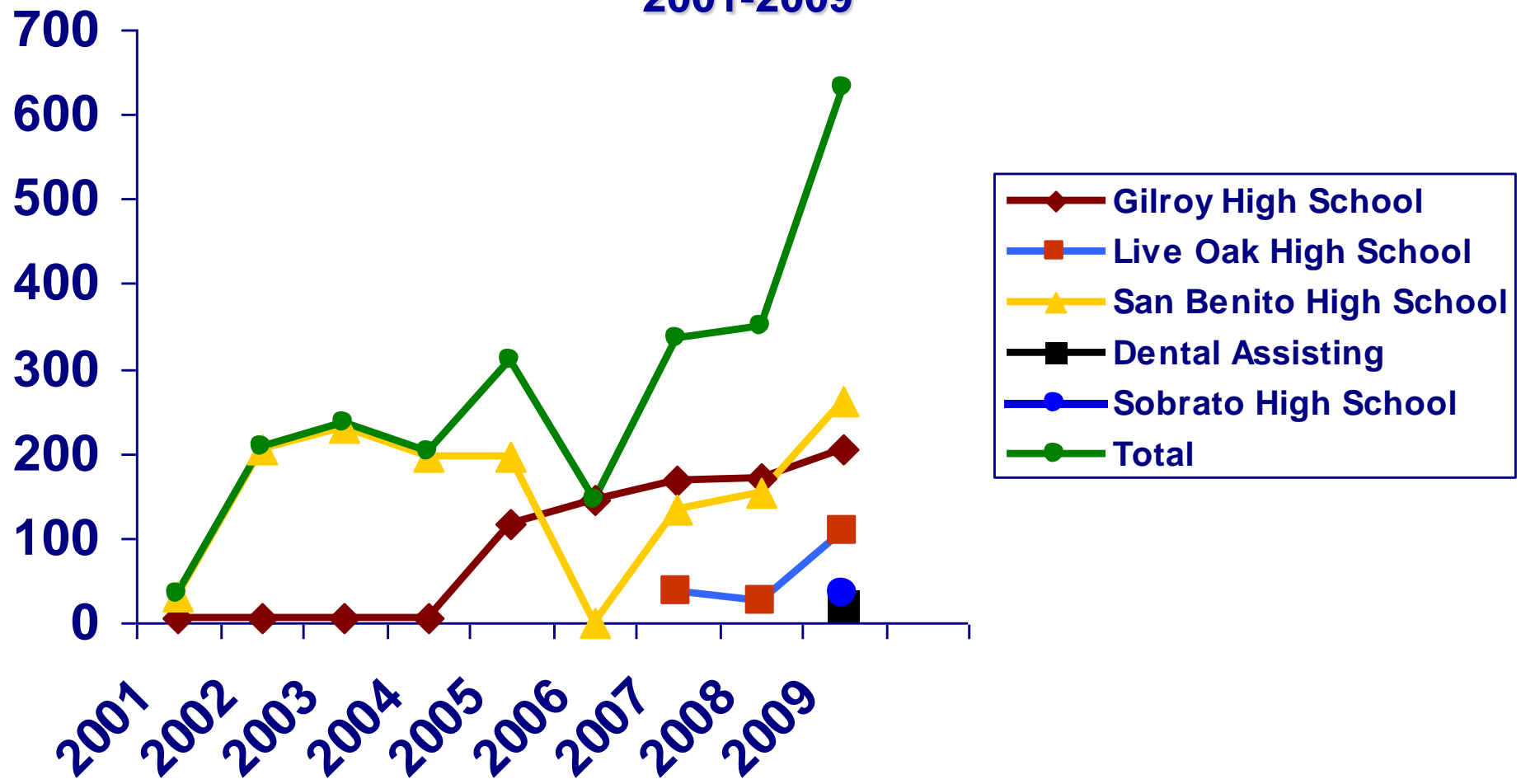- CTE/ROP Tool
- Teacher Credentialling

NOCTI Test Participation by High School 2001-2009

National Occupational Competency Testing Institute

Case Study Programs

1. Accounting
2. Agriculture Mechanics & Construction
3. Agriculture Sales
4. Architectural Drafting
5. Automotive Core
6. Cabinetmaking
7. Careers with Children
8. CAD
9. Environmental Horticulture
10. Floriculture
11. Culinary Careers I & II
12. Law Enforcement
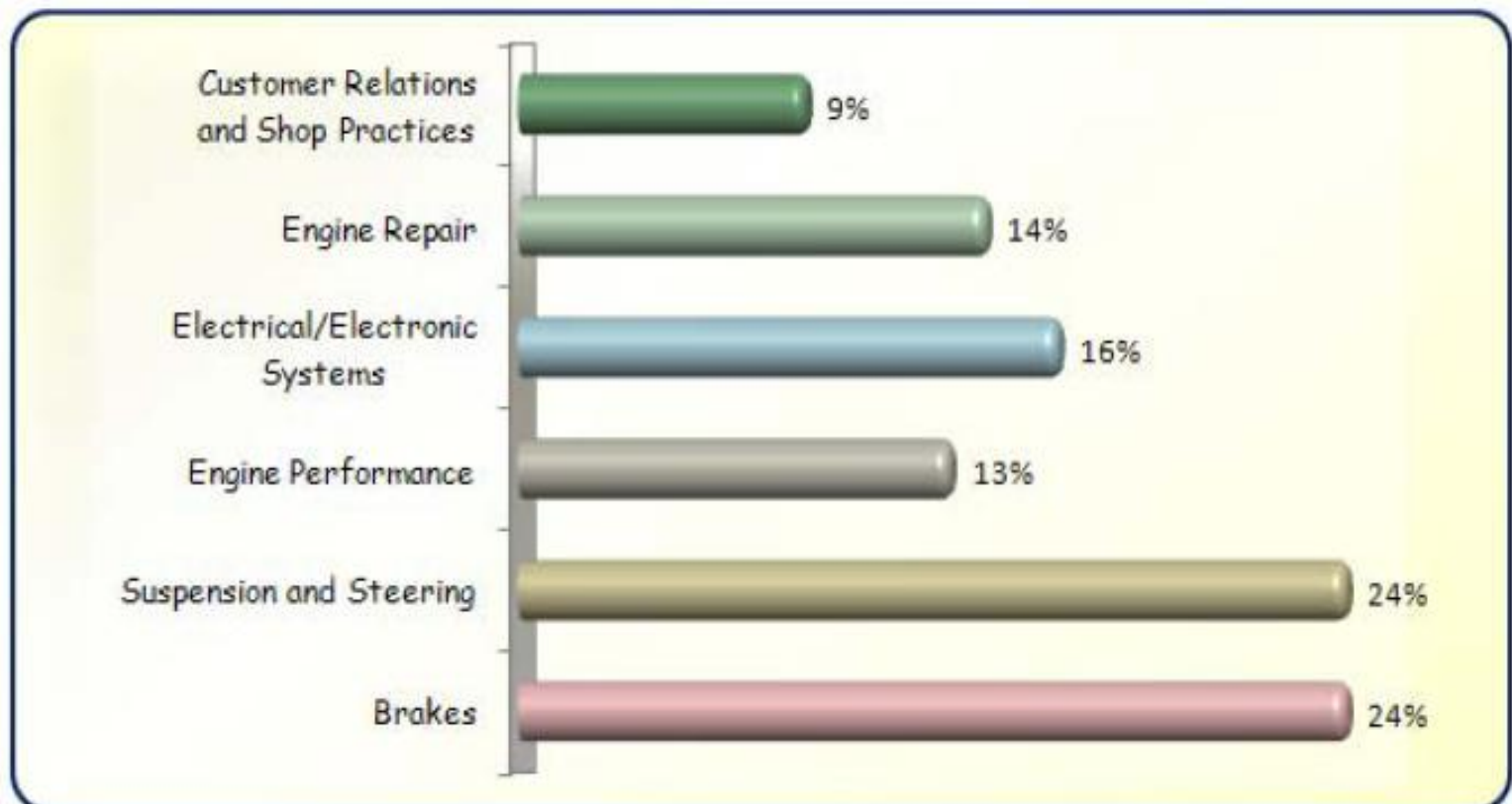13. Merchandising/Marketing
14. Welding

Written Assessment:

Administration Time: 3 hours
Number of Questions: 141

Areas Covered:

Area	Percentage
Customer Relations and Shop Practices	9%
Engine Repair	14%
Electrical/Electronic Systems	16%
Engine Performance	13%
Suspension and Steering	24%
Brakes	24%

- Sample questions
- Study guides/
- planning process

When testing a 12-volt battery, the voltage reading should be not less than

    A.   9.6 volts

    B.   10.6 volts

    C.   11.6 volts

    D.   12.6 volts

When installing a wheel and tire on a vehicle, the lug nuts should be

    A. torqued in a start pattern

    B. fully tightened individually

    C. installed with an impact wrench

    D. torqued in rotational pattern

NOCTI Planning Process Phase I – Foundation

- Review NOCTI website to become familiar with resources, process, and tools
- Develop a list of features/benefits talking points
- Identify Project Champions & Budget
- Talk to a few teachers about developing a pilot
- Complete NOCTI coordinator/proctor online training
- Sign and submit NOCTI coordinator testing agreement
- Identify and confirm courses and participating schools

NOCTI Planning Process Phase II - Framework

- Designate a point person
- Identify structure
- Budget
- Facilities
- Technology
- Scheduling
- Teacher meetings
- Identify and prepare students

Funding $

Budgeted as an on-going expense

- Federal Perkins
- One-time grants
    - SB 70
    - Chamber of Commerce
    - Private Industry
    - Parent Clubs
    - Tech Prep
    - Local operational funds

Developing a NOCTI cost sheet

- Online Pre-test = $11.00 each
- Online Post-test = $18.50 each
- Study Guide Packages = $32
  (1 teacher guide/10 student booklets)
- Study Guide Packages = $8.50
  (Packages of 5 student booklets)
- Unused online user code credit = $5
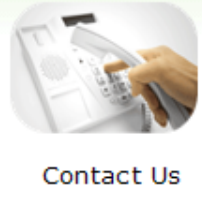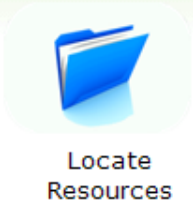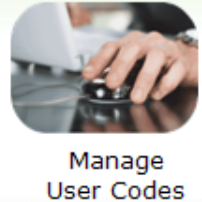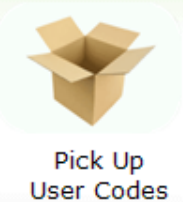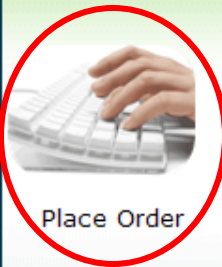
NOCTI Test Administration

- Place on-line test orders
- Retrieve and print out student user and passwords
  - Prepare individual student cards
- Student testing environment
- Student instructions
- Identify Proctor/assistant

http://clientservices.nocti.org/new/Secure/default.aspx

Google

File   Edit   View   Favorites   Tools   Help

Google   Search   Bookmarks   Check   AutoFill   Sign In

Ask   Search   Images   Weather   News   Highlight   Resize   Pop-up Blocker

Favorites   2007-2008   Suggested Sites   Free Hotmail   Get More Add-ons

Client Services: Home

Page   Safety   Tools

NOCTI *Measuring What Matters!*

Client Services Center

Manage Another Site   Logout

Quit Managing

You are currently signed in as site: Santa Clara County ROP Administration - SUPER USER   Site Code: 6131

You are currently managing site: Santa Clara County ROP Administration - SUPER USER   Site Code: 6131

Place Order   Pick Up User Codes   Manage User Codes   View Score Reports   Locate Resources   Contact Us

Online client services

Welcome!
You are signed in as NOCTI site:
Santa Clara County ROP Administration - SUPER USER

Site Code
6131

Manage Another Site

What's New in Client Services Center?

Now entering your performance assessment ratings is easier than ever!
We have added the criteria statements for each performance job and improved

ONLINE SYSTEMS AVAILABILITY

System Maintenance Schedule
Both Online Testing and the Client Services Center are unavailable for use on Thursdays, from 8:00 p.m. until 6:00 a.m. on Fridays, Eastern Standard Time, for regular maintenance.

Done   Trusted sites   100%

start   iTunes   Microsoft Po...   NOCTI   Client Servic...   4:32 PM

File   Edit   View   Favorites   Tools   Help

Google | Search | Bookmarks | Check | AutoFill | Sign In

Ask | Search | Images | Weather | News | Highlight | Resize | Pop-up Blocker

Favorites | 2007-2008 | Suggested Sites | Free Hotmail | Get More Add-ons

N Client Services: Manage User Code List

Home | RSS | Print | Page | Safety | Tools | Help

NOCTI®
Measuring What Matters!
Client Services Center

Home   Manage Another Site   Logout

Quit Managing

You are currently signed in as site: Santa Clara County ROP Administration - SUPER USER   Site Code: 6131

You are currently managing site: Santa Clara ROP - San Benito   Site Code: 6586

Place Order | Pick Up User Codes | **Manage User Codes** | View Score Reports | Locate Resources | Contact Us

Manage active user codes from this page (assign name, complete demographics, release scores, enter performance ratings, etc.). Click on the batch # link to access active user codes.

Sort By Title   Sort By Batch Date   Sort By Expiration Date

Batch #	Test Info	Session Info	Batch Info	Quantity
24900	Accounting Basic - SAMPLE Items, 6000 Student, Secondary Testing Site: http://testing.nocti.org	Level: Practice Test/Quiz Sessions: 1 Group Code: A	Batch Dt: 09/26/2008 Exp Dt: 09/25/2009 Type: Written	35
33799	Agriculture Mechanics - SAMPLE ITEMS, 6102 Student, Secondary Testing Site: http://testing.nocti.org	Level: Practice Test/Quiz Sessions: 1 Group Code: A	Batch Dt: 04/28/2009 Exp Dt: 04/25/2010 Type: Written	30
33838	Agriculture Mechanics, 2102 Student, Secondary Testing Site: http://testing.nocti.org	Level: Post-Test Sessions: 1 Group Code: A	Batch Dt: 04/28/2009 Exp Dt: 10/25/2009 Type: Written	3
	Architectural Drafting - SAMPLE Items, 6004	Level: Practice Test/Quiz	Batch Dt: 09/26/2008	15

Trusted sites   100%

start | iTunes | Microsoft Po... | NOCTI | Client Servic... | 4:40 PM

http://clientservices.nocti.org/new/Secure/testing/usercodepickup.aspx?o=24900&t=13246&tl=5&tm=3

File   Edit   View   Favorites   Tools   Help

Google

Search   Bookmarks   Check   AutoFill   Sign In

Ask   Search   Images   Weather   News   Highlight   Resize   Pop-up Blocker

Favorites   2007-2008   Suggested Sites   Free Hotmail   Get More Add-ons

Client Services: User Code Pickup

Home   Safety   Tools

NOCTI® Measuring What Matters!
Client Services Center

Home   Manage Another Site   Logout

Quit Managing

You are currently signed in as site: Santa Clara County ROP Administration - SUPER USER   Site Code: 6131

You are currently managing site: Santa Clara ROP - San Benito   Site Code: 6586

Place Order   Pick Up User Codes   Manage User Codes   View Score Reports   Locate Resources   Contact Us

Batch Number: 24900   This screen will refresh in 84 seconds.

Test Title: Accounting Basic - SAMPLE Items - 6000 Test Level: Practice Test/Quiz Testing Group: A
Testing URL:http://testing.nocti.org Sessions:1 Classification:Student, Secondary Batch Date:9/26/2008 Test Type:Written

Print   Return to list of Batches

User Code	Password	Expires	Name
553110	NCS259KU	09/25/2009	
553111	QCUHKAZ8	09/25/2009	
553112	TR3HVABY	09/25/2009	
553113	Z8J4RFHP	09/25/2009	
553114	R52QKMF7	09/25/2009	
553115	BHAEV5G9	09/25/2009	

Done   Trusted sites   100%

start   Microsoft PowerPoint ...   Client Services: User ...   4:43 PM

NOCTI Planning Process
Phase III - Staging

- Create an Action Planning sheet
  - Determine if a NOCTI super user account is needed for multiple sites
  - Identify key support personnel at each site
  - Meet with participating teachers
  - List actions, deadlines, and personnel

NOCTI Planning Process
Phase III - Staging

- Develop a cost estimation sheet
- Establish a blanket Purchase Order
- Obtain school bell and testing schedules
- Establish test date/s
- Secure computer lab facilities

NOCTI Planning Process
Phase III - Staging

- Insert sample planning sheet (Gantt)

Test Day

- Have NOCTI phone number for support
- Have site tech support phone number
- Arrive 45-60 minutes prior to assessment and prepare computer lab
  - All computers on and ready for login
- Environment – temperature, blinds, snacks, restrooms
- Supplies – scratch paper, calculators, sharpened pencils

After the Test

- Meet one-on-one with each student

- Release scores online

- Process unused test credits

- Email student reports to teachers or provide print outs

- Review results and prepare teacher folders

- Meet with the teacher/s and provide them with the cumulative student report and national averages.

Data Analysis Process

Overall data review

- **Class**
- **Site**
- **State**
- **Nation**
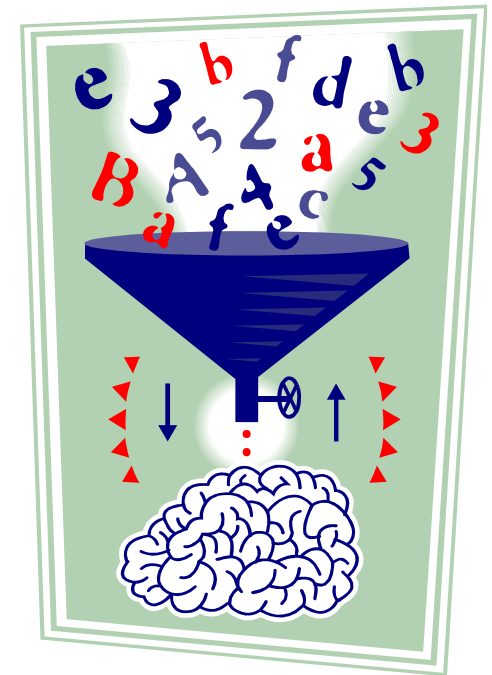
Eight ton diesel powered, nicknamed "the Beast"

Code-named "Stagecoach"

Military-grade armor 8" thick

Ballistic glass 5" thick

1=Customer Relations and Shop Procedures

2=Engine Repair

3=Suspension and Steering

4=Brakes

5=Electrical/Electronic Systems

6=Engine Performance

Test Coordinator's Score Report

SECTION 3: Normative Data, Test #4109 v1

Test: Automotive Technician - Core

Site: White House - Beast Motorcade Crew

Norm		1	2	3	4	5	6
Group: N= 12	Total = 46.8	62.2	49.2	54.3	46.1	39.1	37.9
Site-Cumulative: N= 12	Total = 46.8	62.2	49.2	54.3	46.1	39.1	37.9
	Total =						
State: N= 17	Total = 50.8	67.9	53.5	55.2	48.3	42.8	49.4
Nation: N= 444	Total = 50.4	61.8	52.5	53.8	49.7	47.1	45.6

1=Customer Relations and Shop Procedures

2=Engine Repair

3=Suspension and Steering

4=Brakes

5=Electrical/Electronic Systems

6=Engine Performance

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Participant Score Report
Automotive Technician - Core

Participant Name: **Barack Obama**
Participant ID:

Level: Post-Test
Site: Santa Clara ROP - Gilroy HS

**State:** California
Date: 06/04/2009

Written Test	Pre-Test	Post-Test	% Change	Group	Site	State	Nation
Customer Relations and Shop Procedures	30.8	46.2	15.4	62.2		67.9	61.8
Engine Repair	20.0	40.0	20.0	49.2		53.5	52.5
Suspension and Steering	21.7	47.8	26.1	54.3		55.2	53.8
Brakes	47.4	52.6	5.2	46.1		48.3	49.7
Electrical/Electronic Systems	15.2	30.3	15.1	39.1		42.8	47.1
Engine Performance	21.2	39.4	18.2	37.9		49.4	45.6
Total		41.1		45.8		50.9	50.4

NOTE: All values represent % scored correct

Data Analysis Process

Analysis

- Growth by year
- Multi year trends
- Trend analysis by content
- Individual student growth
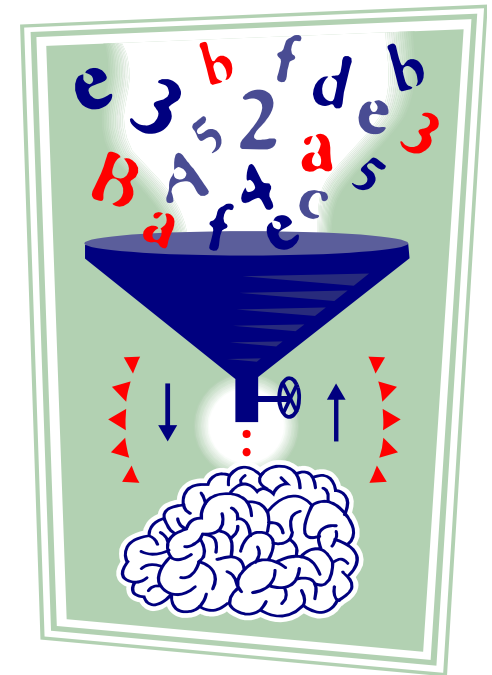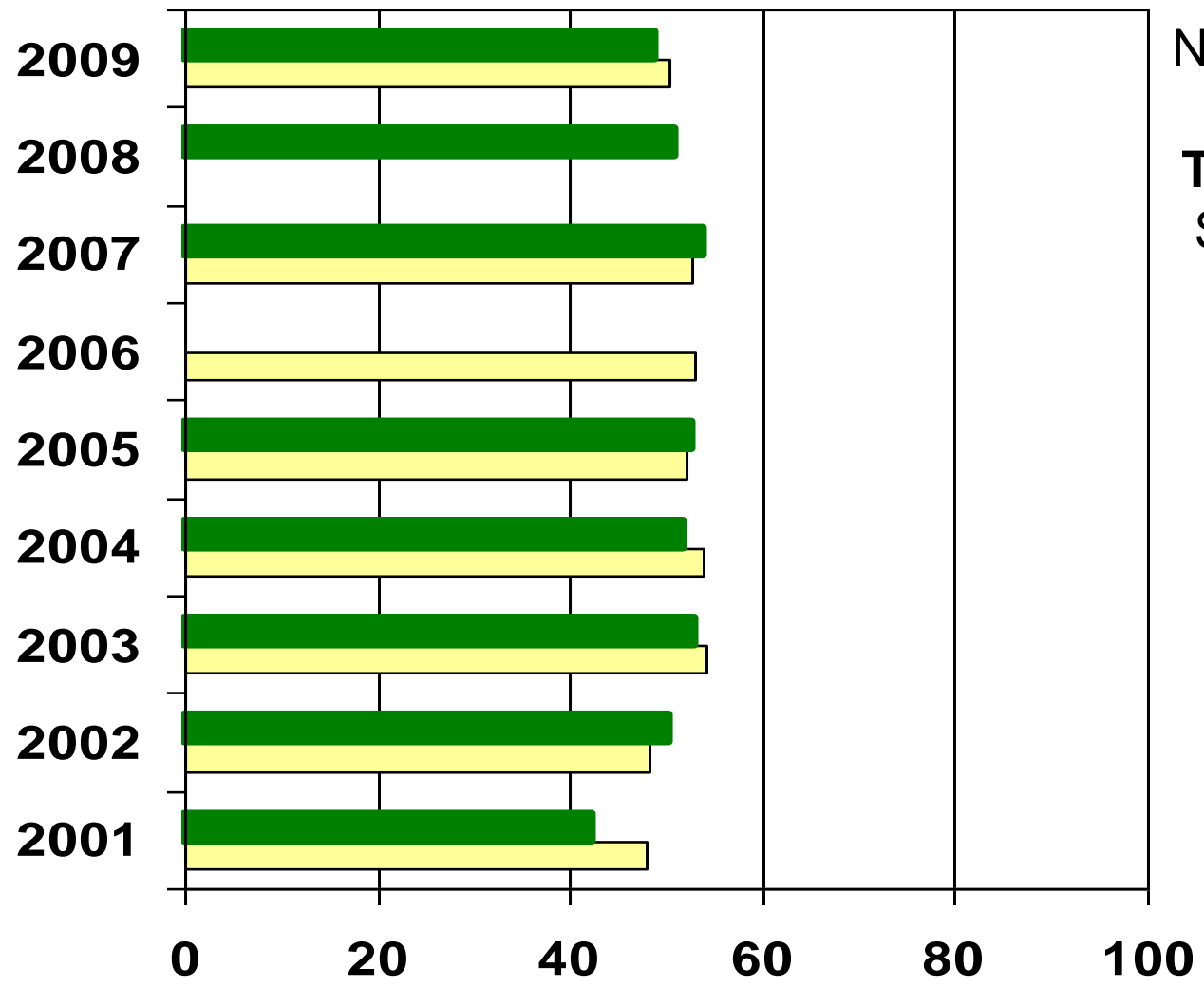
NOCTI **Automotive Core** Test
Trend Analysis by Year
San Benito High School
2001-2009

Legend:
- ■ Site Average (green)
- □ National Average (yellow)

NOCTI **Auto Core** Test
San Benito HS
Trend Analysis by Content Area
3=Suspension & Steering
2003-2009
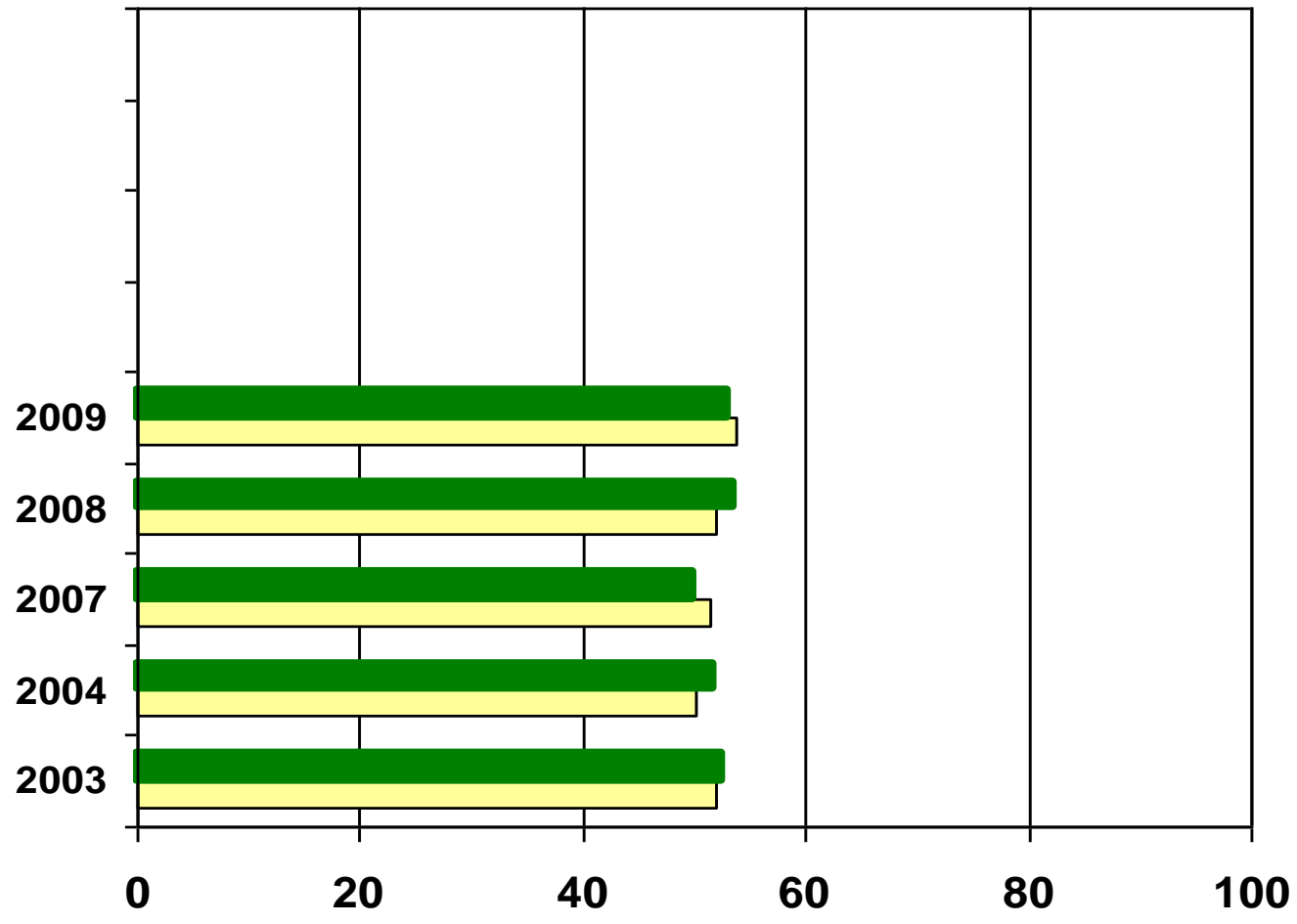
■ **Site Average**
□ **National Average**
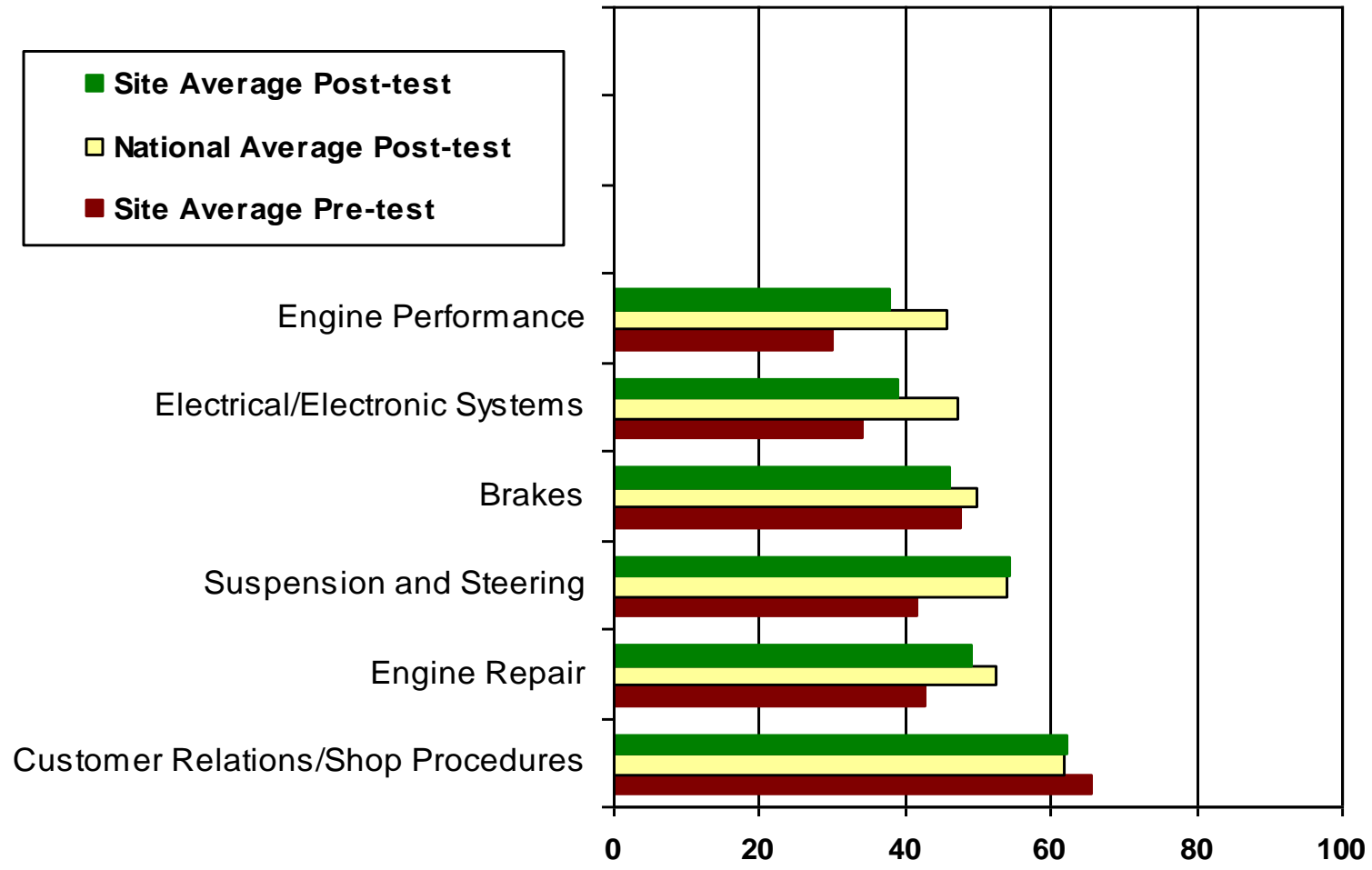
NOCTI Auto Core Test **Growth Analysis** Gilroy High School 2008 - 2009

Case Study Summary

Challenges

- Cost
- Time
- Teacher concerns
- Technology
- Student motivation

Successes

- Teachers found value
- Technology Support
- Added pretests (student growth)

Expansion of External Assessments

- 3 Districts
- 5 Sites
- 2 Counties
- 22 Courses
- 11 Sectors
- 12 Pathways
- 631 Participating Students

- # of courses that use Study Guides
- 5 Courses use Pre-test

Next Steps

- ## Industry Certifications

COURSE CERTIFICATION MATRIX

Course Name	Program Certification	Student Certification	Vendor Curriculum	ASM	Inst. Cert. Avail.	Inst. Cert. Req.	AGE Req.
Auto Mechanics	NATEF	NATEF	ASE	NOCTI	Y	Y	N

NATEF's e-learning: an electronically-based instructor-managed and student-driven process that enhances and/or supplements learning—outside the regularly scheduled classroom and lab/shop timeframe—and *includes integrated and scored auditable assessment and reporting*

Next Steps

- ## NOCTI - 21st Century Skills

Administration Time: 2 hours
Number of Questions: 100
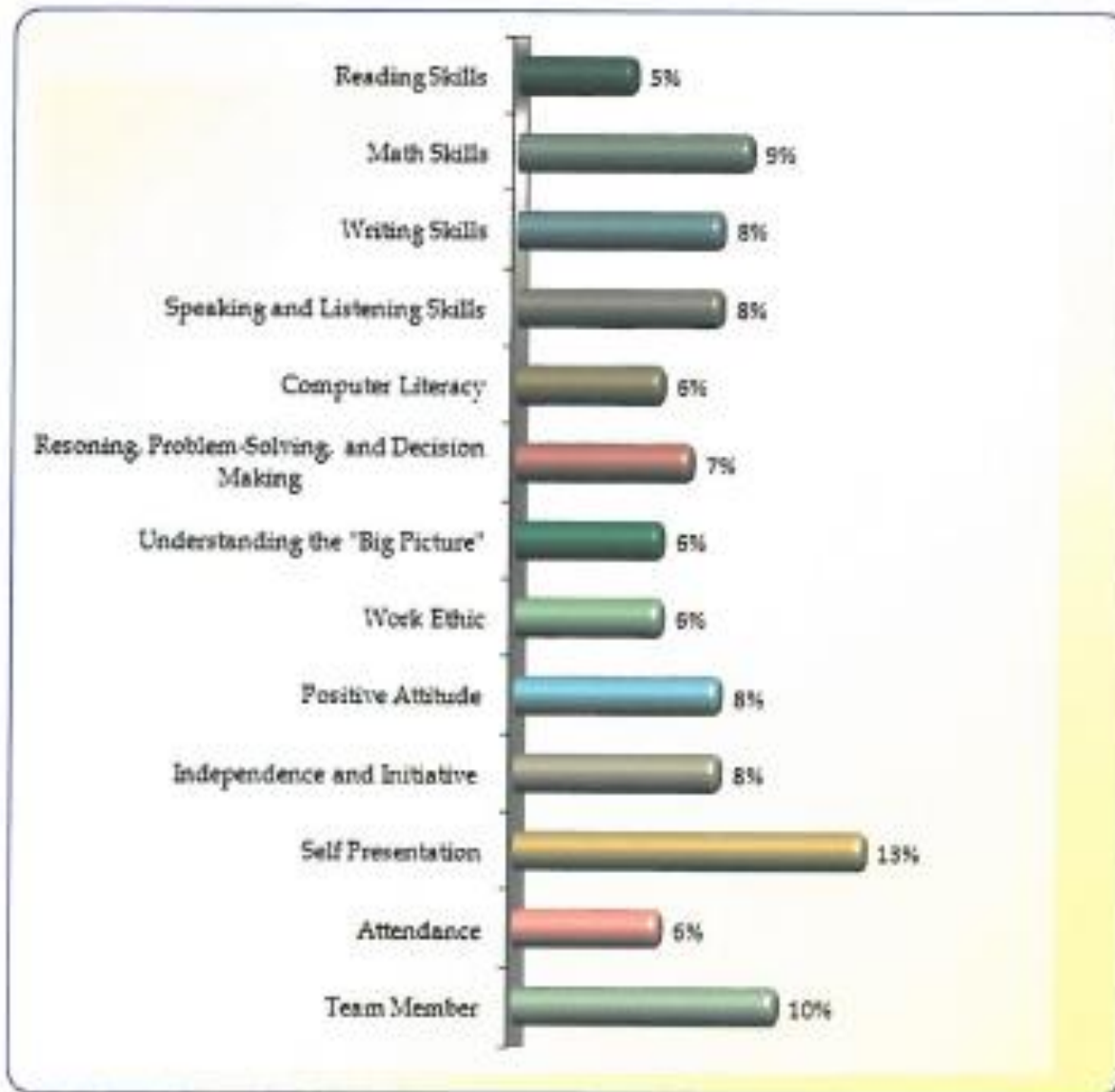**Areas Covered:**

The term "prioritizing" is used in connection with
  - A. managing time
  - B. solving problems
  - C. preparing organizational charts
  - D. listing questions

The purpose of an agenda is to
  - A. set a schedule for a meeting
  - B. gather information
  - C. record inter-office communication
  - D. advertise a product

21ˢᵗ Century Blueprint

For more information, contact:

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Dave Matuszak, david_matuszak@sccoe.org

408.842.0361

www.sccoe.org/depts/scrop

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