



SOUTH CAROLINA
STATE DEPARTMENT
OF EDUCATION

2014 EOCEP Biology

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2013-2014 Biology Testers

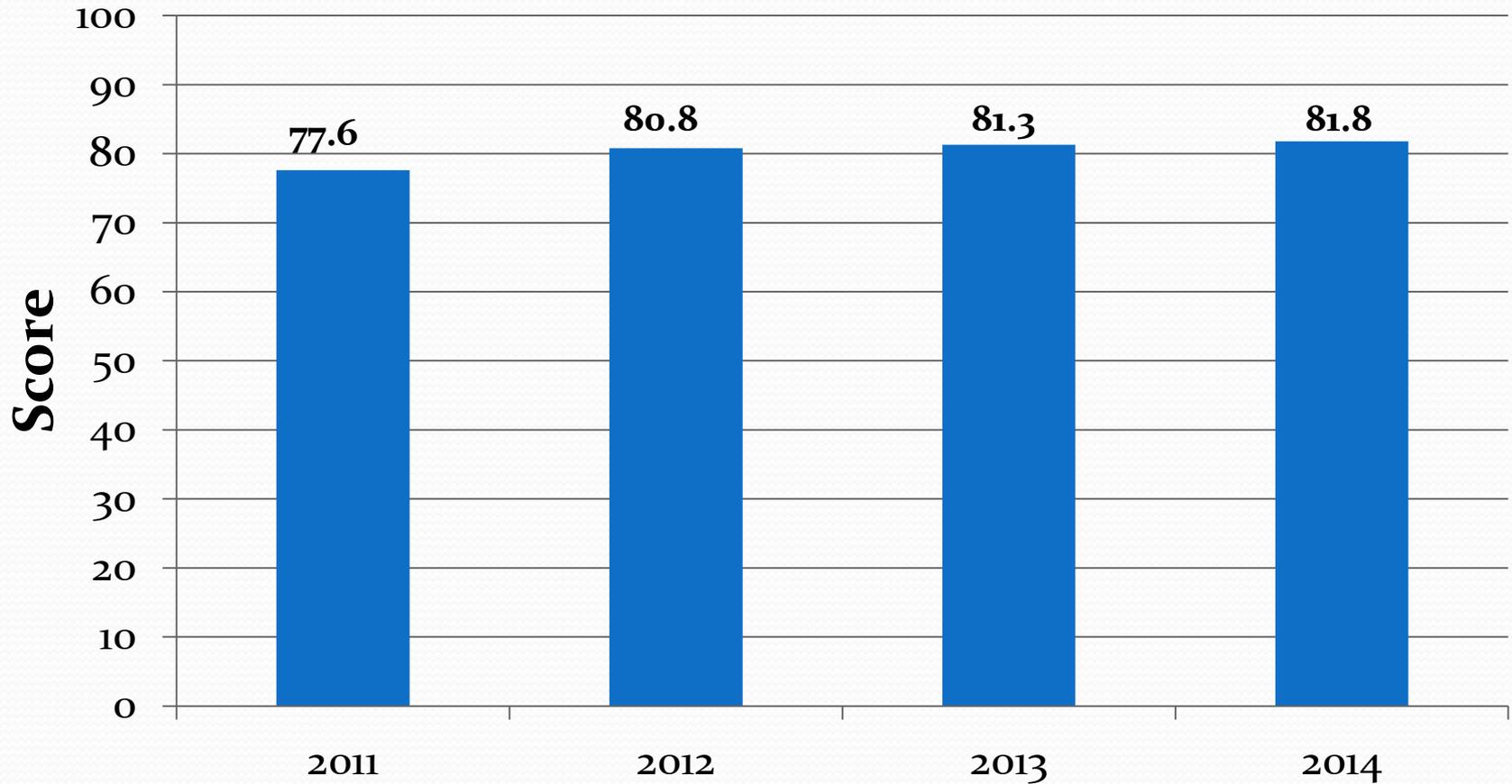
	Fall/Winter	Spring	Summer/Make-up
Online	12,232	35,051	108
Paper/Pencil	767	5,355	3
Total	12,999	40,406	111

Total Number of Testers: 53,516

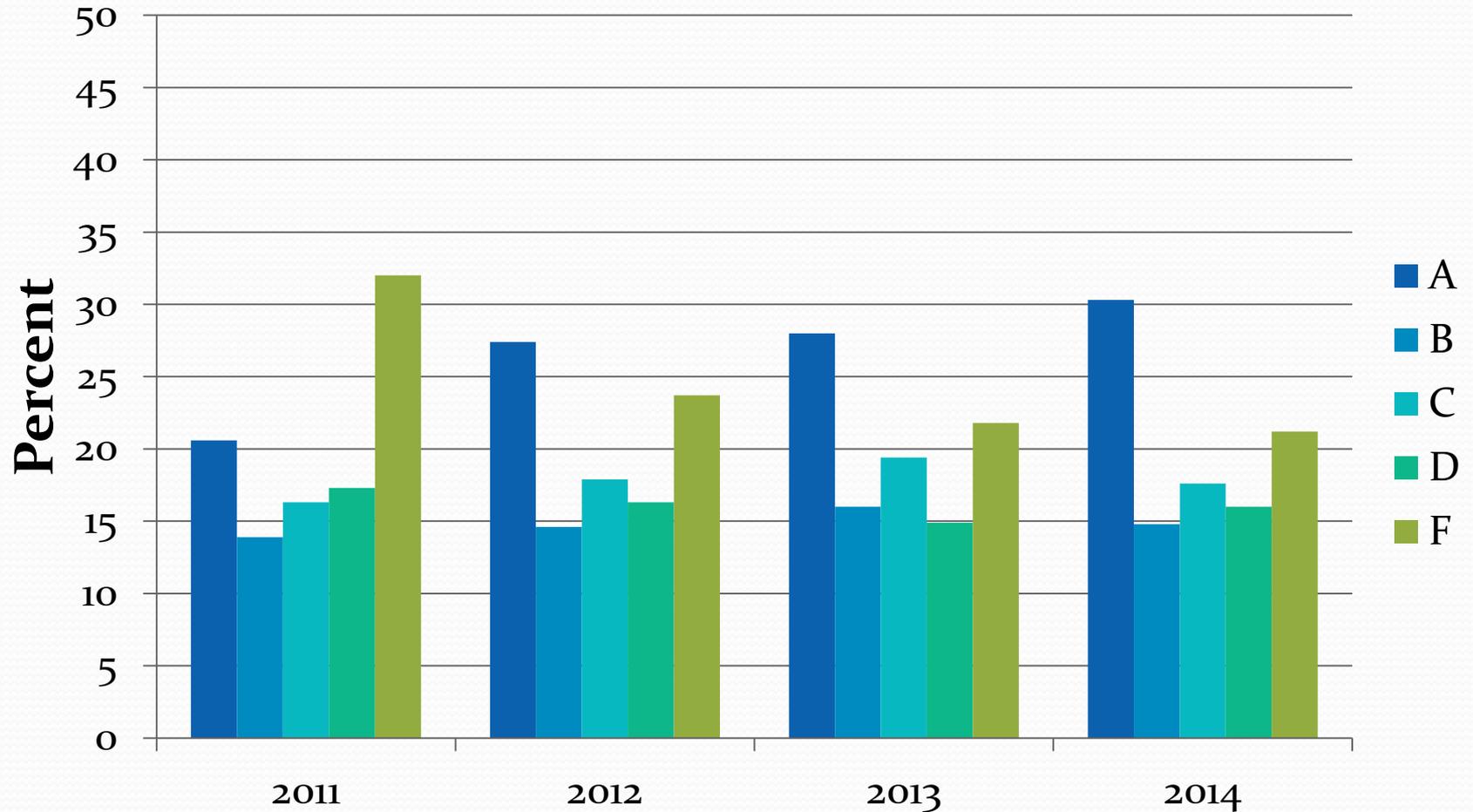
Online: 47,391 (88.6%)

Paper/Pencil: 6,125 (11.4%)

Average Scores 2011-2014



Score Distribution 2011-2014



Areas of Concern: Standard 1--Inquiry

- B1.4-Experimental design: contrast independent variable, dependent variable, control group, treatment group, and controlled variables (=constants).
- B1.3-Select measurement tools by desired precision.

Areas of Concern: Standard 2--Cells

- B2.4-Contrast cell differentiation with cell division by mitosis.
- B2.5-Contrast transport in vesicles--endocytosis and exocytosis--with other forms of cell transport.
- B2.7-Understand ways that cancer cells are unresponsive to the body's control mechanisms.

Areas of Concern: Standard 3--Energy

- B3.1-Predict and interpret the results of experiments involving photosynthesis.
- B3.3- Understand how organisms use ATP for energy.

Areas of Concern: Standard 4--Genetics

- B4.3 & 4.4-Understand how genes code for proteins.
- Know where in the cell each step of protein synthesis is located.
- Connection to Standard 5: How does the study of genes and the proteins for which they code provide evidence for evolutionary relationships among species?

Areas of Concern: Standard 4--Genetics

- A couple of suggested strategies:
 - Strategy: Have students dramatize the steps of translation (or any other process with lots of steps)
 - Watch an animation of protein synthesis, do a few runs of the dramatization, then watch the animation again.
 - Emphasize the functional importance of proteins throughout the course.

Areas of Concern: Standard 5— Evolutionary Biology

- 5.4-Describe the speciation process and contrast it with other evolutionary processes (i.e. gradualism, coevolution, extinction etc.).
- 5.5 & 5.6-Use molecular evidence (nucleotide base sequences and amino acid sequences) to determine the degree of relatedness between pairs of species or other taxonomic groups.

Areas of Concern: Standard 6--Ecology

- B6.2-Recognize examples of abiotic factors and be able to predict how changes in them might affect populations.
- B6.4-Understand the term “fixation” within the context of nitrogen fixation and carbon fixation.
- How does biogeochemical cycling help to maintain the atmosphere?
- Question: do schools that administer the Biology EOCEP in the fall run out of time for teaching ecology?

General Strategies

- **Identifying similarities and differences**-Classroom strategy with the highest potential to enhance student achievement --*Classroom Instruction that Works*, Robert J. Marzano, Debra Pickering & Jane E. Pollock, 2001, ASCD.
 - Very effective for teaching science: graphic organizers, analogies, compare/contrast exercises.
- **Reviewing for EOCEP**—Study sheet with diagrams; visual learning is a powerful tool for teaching biology.

Where to look for EOCEP information:

- Office of Assessment
 - <http://ed.sc.gov/agency/ac/Assessment/>
- End of Course Examination Program
 - <http://ed.sc.gov/agency/programs-services/41/>