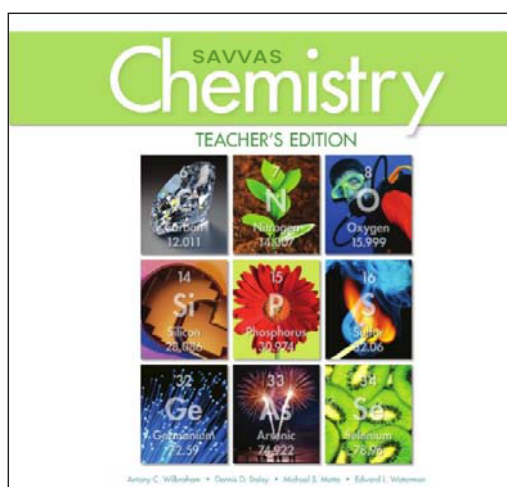




Program Components

Introduction

Savvas Chemistry © 2017 combines tested and proven content with cutting-edge digital support and hands-on learning opportunities. The program provides instruction that teachers need to engage and motivate students, as well as the tools to support the varied types of learners in each classroom. This guide provides an overview of the components that are critical to the implementation of the program.



Print Resources

The program has several print resources available to students, including the on-level student edition and Teacher's Edition, the Foundations Edition, and the *Reading and Study Workbook*.

Student and Teacher's Editions

Savvas Chemistry © 2017 is available in two different editions—a standard on-level edition and a Foundations Edition for struggling reading and math students. Both have an accompanying student and Teacher's Edition that help teachers plan for understanding, set assessment goals, and teach the concepts. They also provide in-text inquiry opportunities that help students think like scientists and enhance their understanding of chemistry concepts. Additionally, both editions provide problem-solving support through the use of stepped-out Sample Problems.

The Foundations Edition provides the same content as the standard edition of the text. However, it is written at a lower readability and offers students additional tools for improved reading comprehension, math skills, and applications.

Reading and Study Workbook

The *Reading and Study Workbook* helps students increase their reading comprehension and improve their problem-solving skills. The workbook includes lesson summaries, reading strategies, writing activities, math practice, and quizzes. Students can find additional skill-building strategies that enhance the math support provided in the student editions.

Digital Resources

Savvas Chemistry comes alive online and on the Classroom Resource DVD-ROM. Students have access to extra practice, tutors, virtual labs, interactive art, and animations. Additionally, teachers have access to editable blackline masters and assessment data.

Six Key Features for Students

SavvasChem.com offers the convenience of online student and Teacher's Editions, and it helps students go well beyond the contents of a textbook. SavvasChem.com offers a completely integrated digital path to learning. Students benefit from six key features of the program listed below.

Concepts in Action

Concepts in Action animations provide an overview of key chapter concepts. In this example, students engage in a skateboard-building activity that prepares them to learn chemical equations.

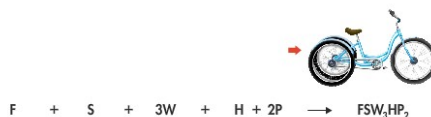


Kinetic Art

Kinetic Art helps make illustrations in the book come alive. The animations take abstract concepts and make them understandable for all students.

Interpreting a Balanced Chemical Equation

To produce a finished tricycle, all of the parts of the tricycle must be present in the correct amounts. In the diagram shown here, FSW_3HP_2 represents the formula for building a tricycle. FW_2HP_4 is not a tricycle.



Virtual Lab

Virtual Lab activities guide students through lab simulations. These investigations explain and reinforce chapter concepts.



Math Tutor

Friendly avatars walk step by step with students as they learn or review math skills that are essential to solving the chapter problems.

Ch. 12 Math Tutorial: Limiting Factors

Q: A painter can paint 100 m^2 of wall per day. She has 12 gallons of paint that can cover 30 m^2 per gallon. How many square meters can she paint? If she spends four days painting, will she run out of paint?

Step 1: Study the problem.
Compare the area the painter has time to paint in four days with the area she can cover with 12 gallons of paint.

Step 2: Write two equations.

Step 3: Substitute the values you know.

$$A_1 = 4 \text{ days} \cdot 100 \text{ m}^2 / \text{day}$$
$$A_2 = 12 \text{ gallons} \cdot 30 \text{ m}^2 / \text{gallon}$$

There are 4 days to paint. The painter can paint 100 m^2 per day.

There are 12 gallons of paint. The painter can cover 30 m^2 per gallon.

6 of 9 ready

Chem Tutor

Similar to Math Tutor, students are provided with extra help as they learn to apply problem-solving skills to chemistry concepts.

Online Problems

If students need additional help, they can access additional problem sets online. Students can complete and submit these sets online for grading.

Complete the mole ratios for the balanced equation

$$4 \text{ Fe} + 3 \text{ O}_2 \rightarrow 2 \text{ Fe}_2\text{O}_3$$

2 3 4 Fe O₂ Fe₂O₃

$\frac{\quad \text{ mole Fe}}{3 \text{ mole } \quad}$ $\frac{4 \text{ mole } \quad}{\quad \text{ mole Fe}_2\text{O}_3}$ $\frac{\quad \text{ mole O}_2}{2 \text{ mole } \quad}$

Teacher Tools

Teachers will benefit from the program's digital tools as well. Many of the traditional teacher's materials like the lab manual, student workbooks, assessment resources, and chapter presentations are available digitally.

Lab Manual

The lab manual is available digitally online or on DVD-ROM. It includes hundreds of lab activities that teachers can edit to match students' needs.

Reading and Study Workbook

There is also an editable version of the *Reading and Study Workbook*, in which teachers can easily customize the activities.

ExamView

Teachers can build custom tests by using the ExamView CD-ROM. The disc includes a test bank with thousands of questions.

Classroom Presentations

There is a Lesson Overview PowerPoint® presentation available for each lesson. Teachers can use these slides to spark discussion, introduce concepts, and provide review.

PowerPoint® is either a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.

12.1 The Arithmetic of Equations > Chemical Equations

Number of Molecules

Nitrogen and hydrogen will always react to form ammonia in a 1:3:2 ratio of molecules.

- It is not practical to count very small numbers of molecules and allow them to react.
- You could take Avogadro's number (6.02×10^{23} molecules) of nitrogen molecules and make them react with three times Avogadro's number of hydrogen molecules.

$$1 \times \left(\begin{array}{c} 6.02 \times 10^{23} \\ \text{molecules N}_2 \end{array} \right) + 3 \times \left(\begin{array}{c} 6.02 \times 10^{23} \\ \text{molecules N}_2 \end{array} \right) \rightarrow 3 \times \left(\begin{array}{c} 6.02 \times 10^{23} \\ \text{molecules NH}_3 \end{array} \right)$$

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Review

This guide provided an overview of the components that are available for Savvas Chemistry © 2017. It explained the two versions of the textbook, and it introduced the *Reading and Study Workbook*. It also introduced the digital components that are available online or on the Classroom Resource DVD-ROM.